

No: AN-M.14.148 - 02

Dat/Nam.:25.07.1995 / D. Whelan

AN-M.14.148

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with flow ring

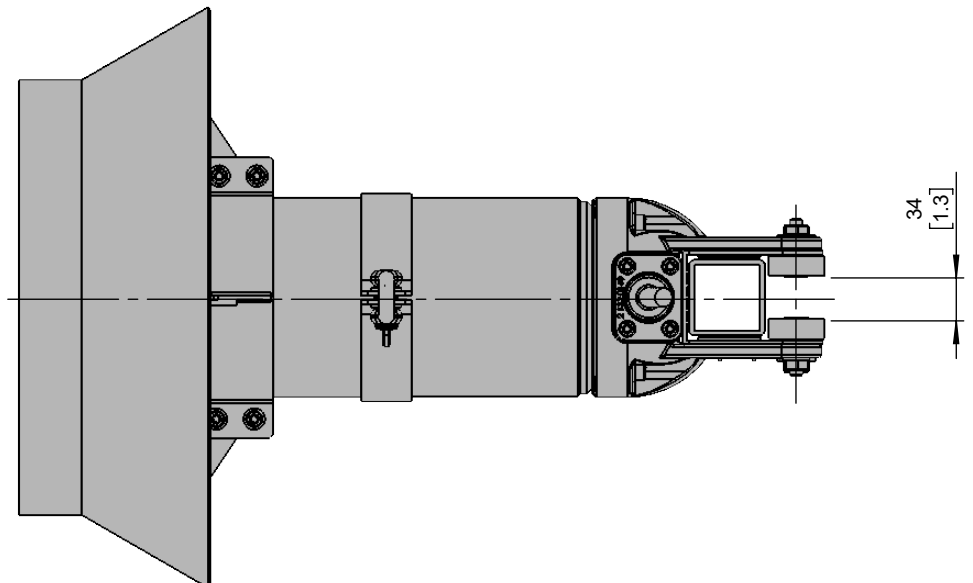
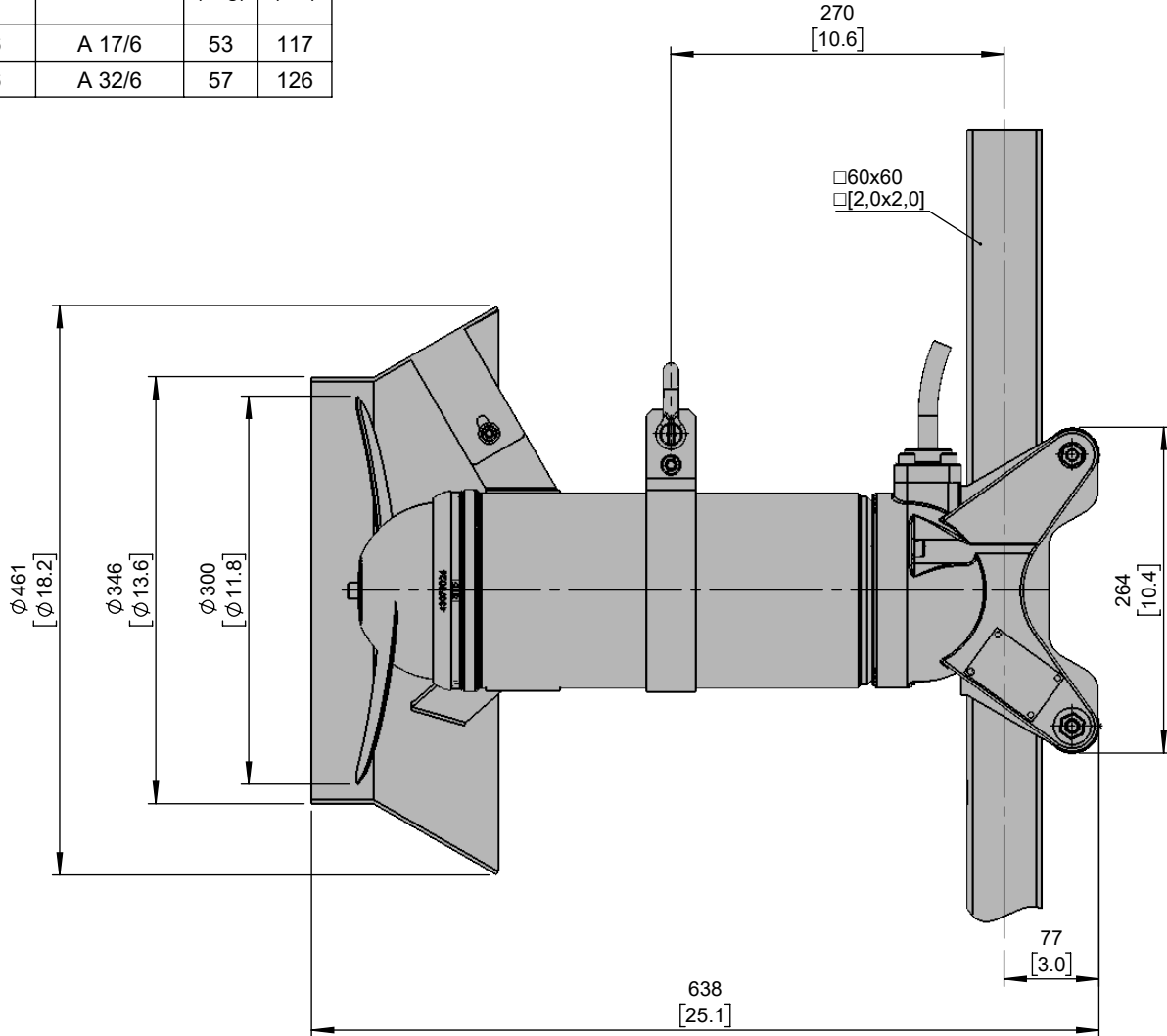
Maßblatt RW300 □60 mit Strömungsring

Plan d'encombrement RW300 □60 avec concentrateur de flux

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	53	117
A 28/6	A 32/6	57	126

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: AN-M.14.147 - 04

Dat/Nam.:25.07.1995 / D. Whelan

Cad Code: AN-M.14.147

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60

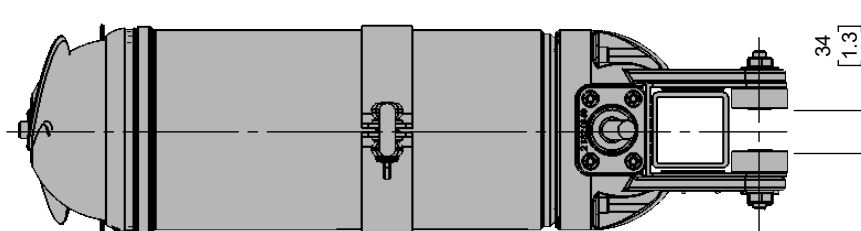
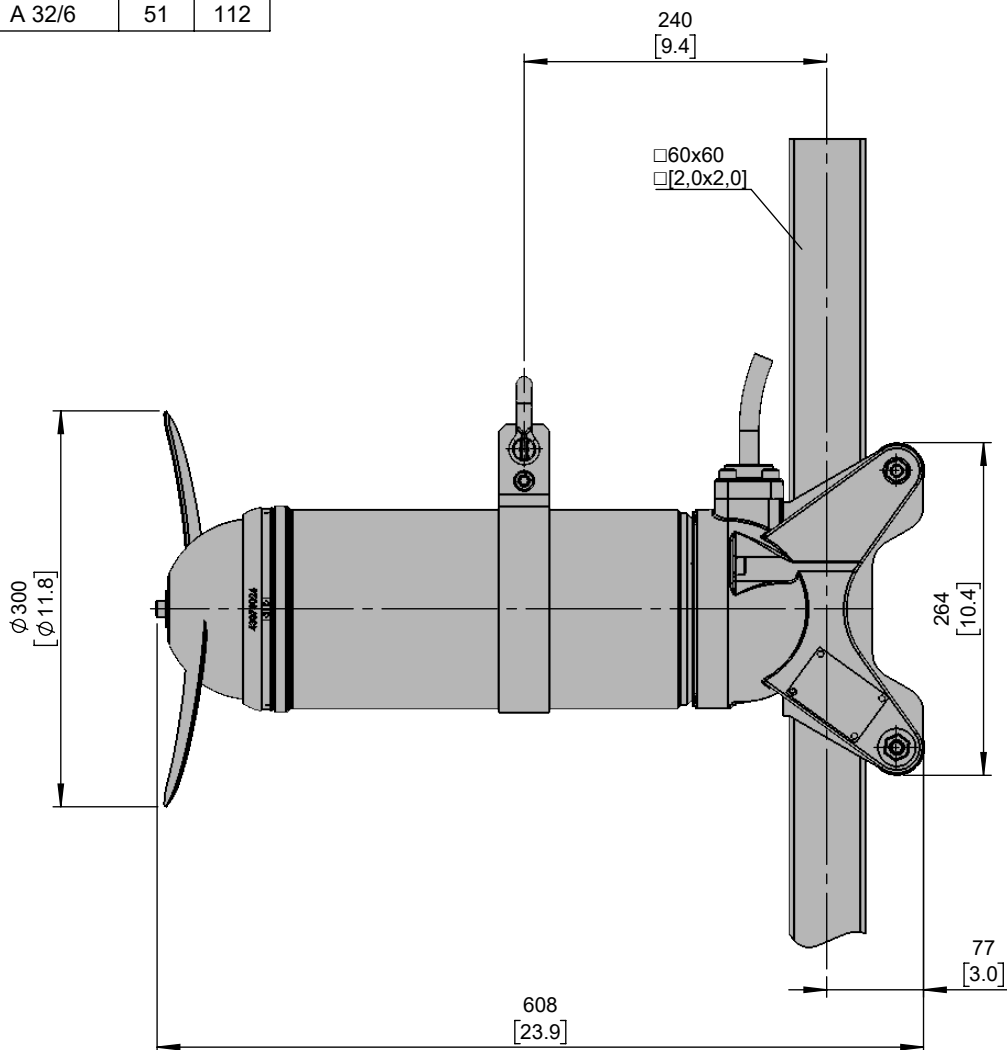
Maßblatt RW300 □60

Plan d'encombrement RW300 □60

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	47	104
A 28/6	A 32/6	51	112

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

No: AN-M.14.151 - 02

Dat/Nam.:25.07.1995 / D. Whelan

Cad Code: AN-M.14.151

Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with support bracket and Vibration Damper

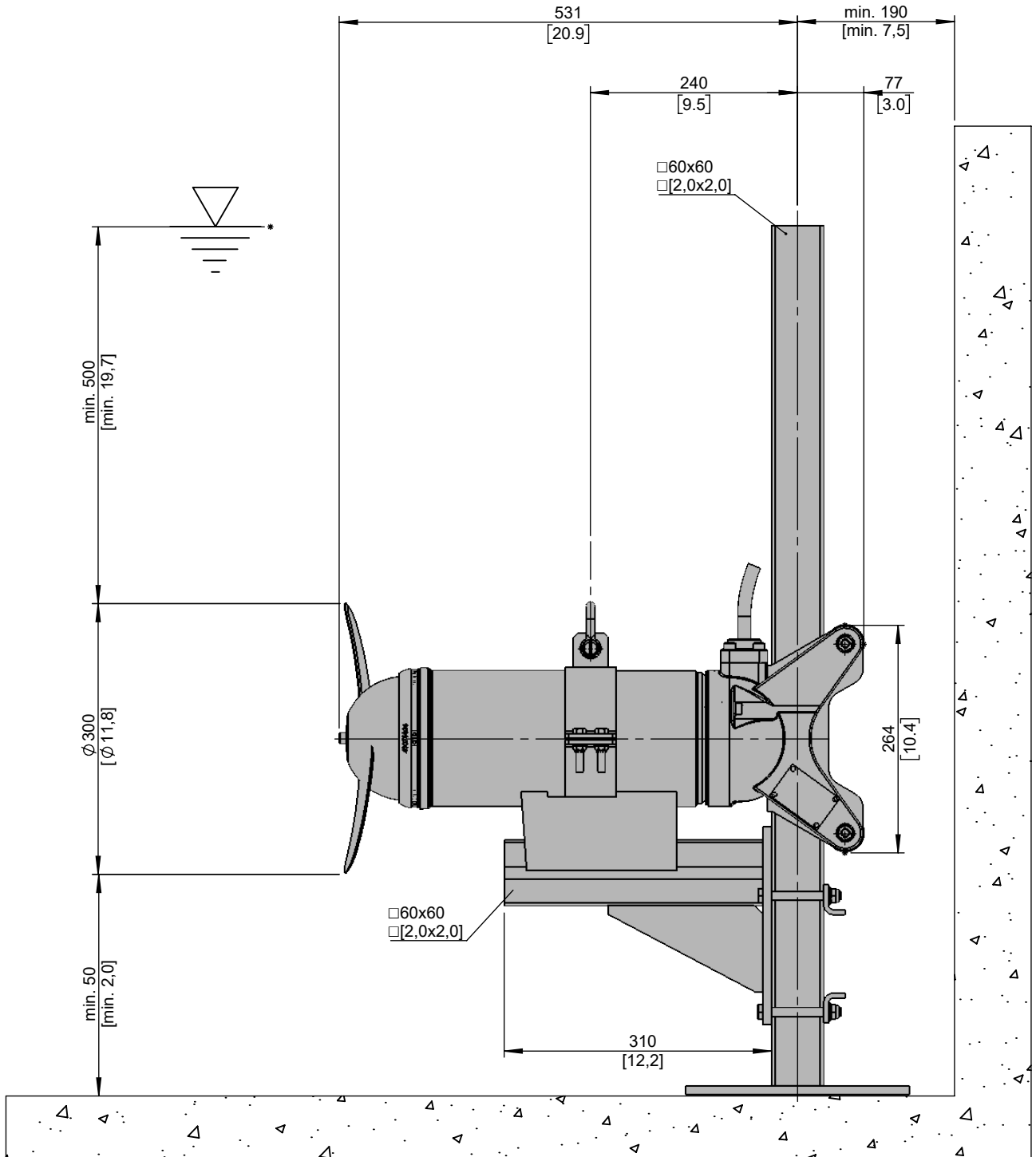
Maßblatt RW300 □60 mit Anschlag und Vibrationsdämfer

Plan d'encombrement RW300 □60 avec support et amortisseur de vibrations



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	47	104
A 28/6	A 32/6	51	112

Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140624 - 00

Dat/Nam.: 19.07.2021 / A. Gole

Cad Code: M-140624

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

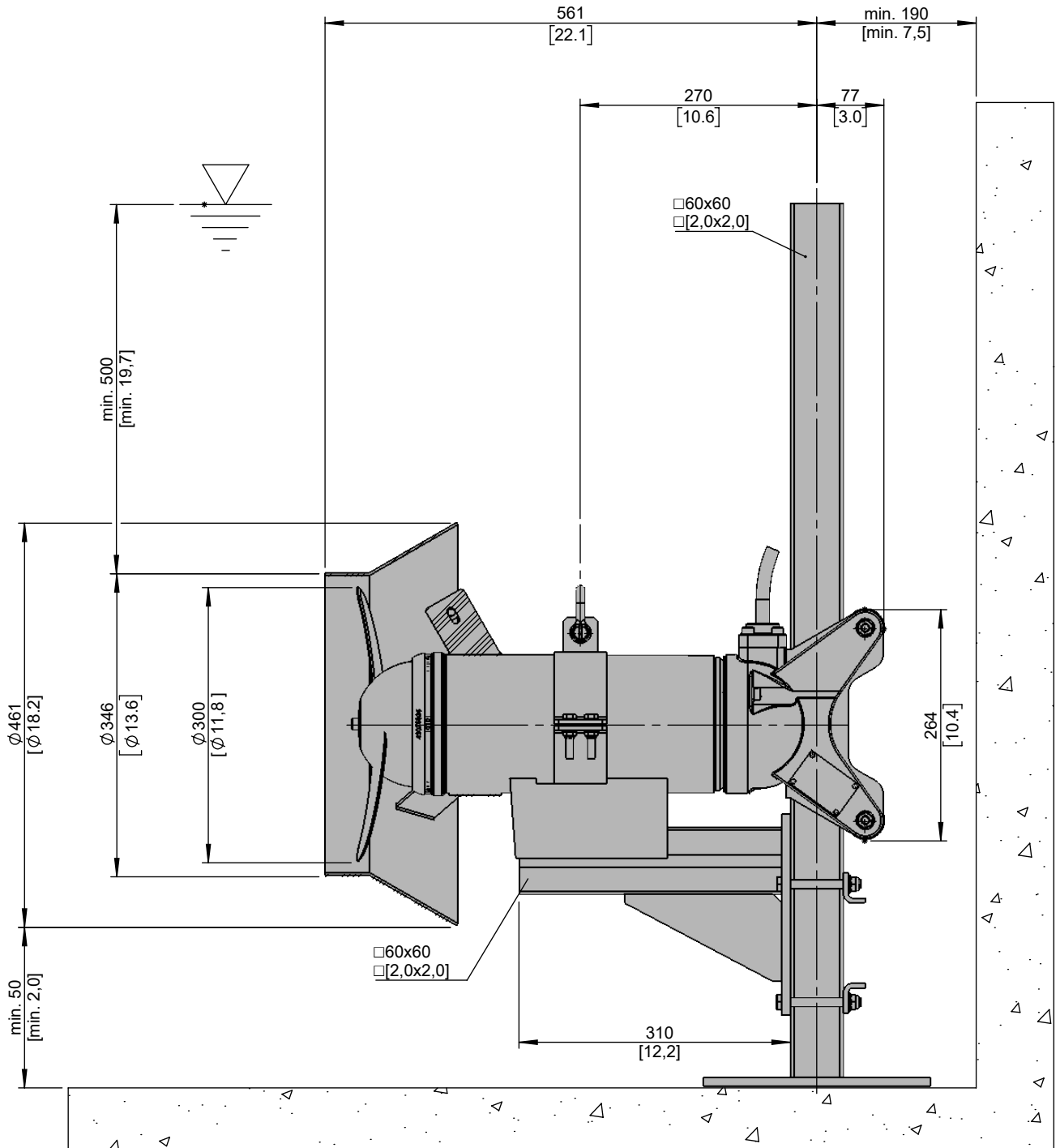
Dimension sheet RW300 □60 with support bracket , Vibration Damper and Flow Ring

Maßblatt RW300 □60 mit Anschlag ,Vibrationsdämfer und Strömungsring

Plan d'encombrement RW300 □60 avec support, amortisseur de vibrations et concentrateur de flux

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	53	117
A 28/6	A 32/6	57	126

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140650 - 00

Dat/Nam.:08.09.2022 / A. Gole

Cad Code: M-140650

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60

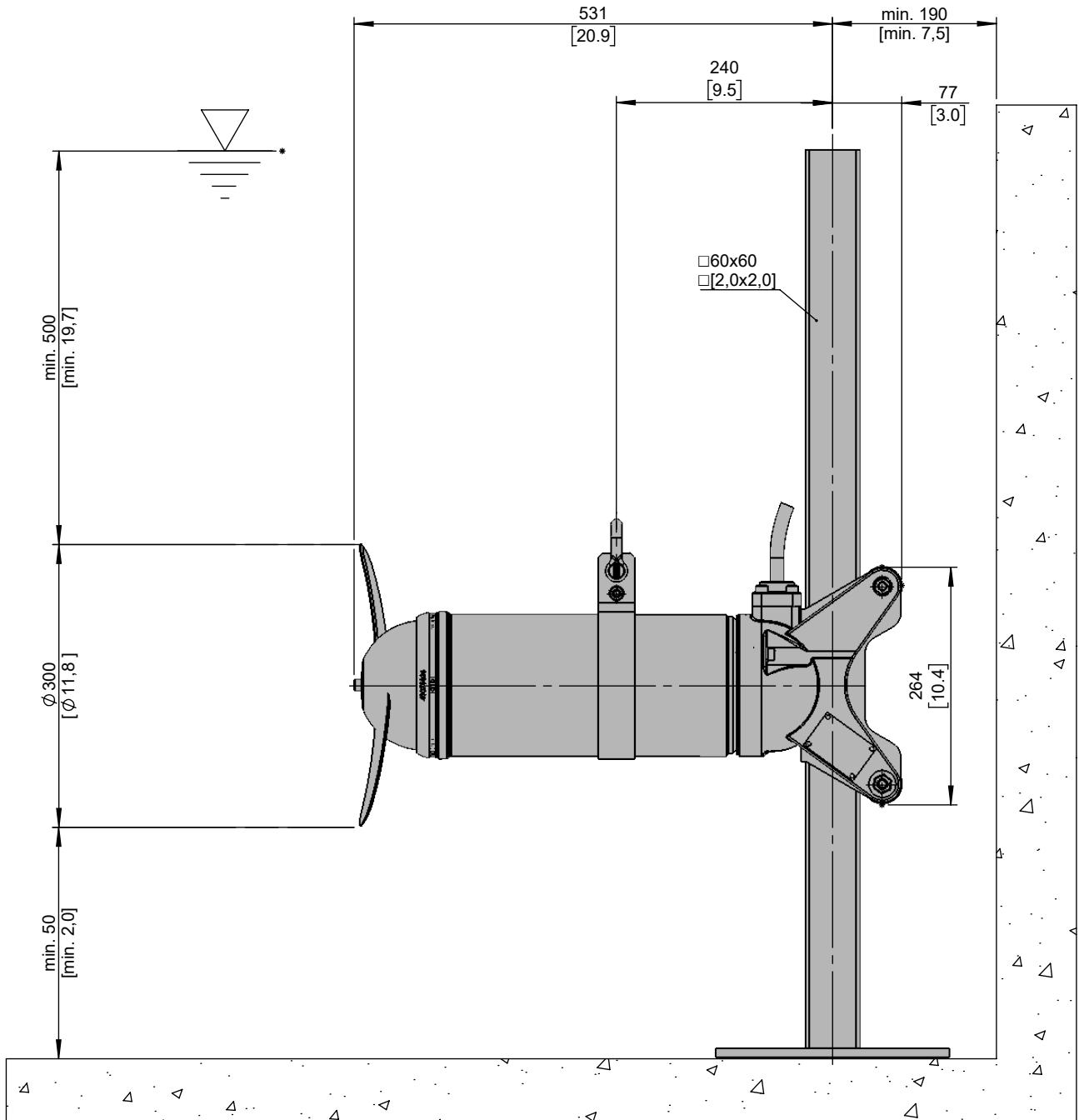
Maßblatt RW300 □60

Plan d'encombrement RW300 □60

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	47	104
A 28/6	A 32/6	51	112

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140651 - 00

Dat/Nam.:08.09.2022 / A. Gole

Cad Code: M-140651

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with flow ring

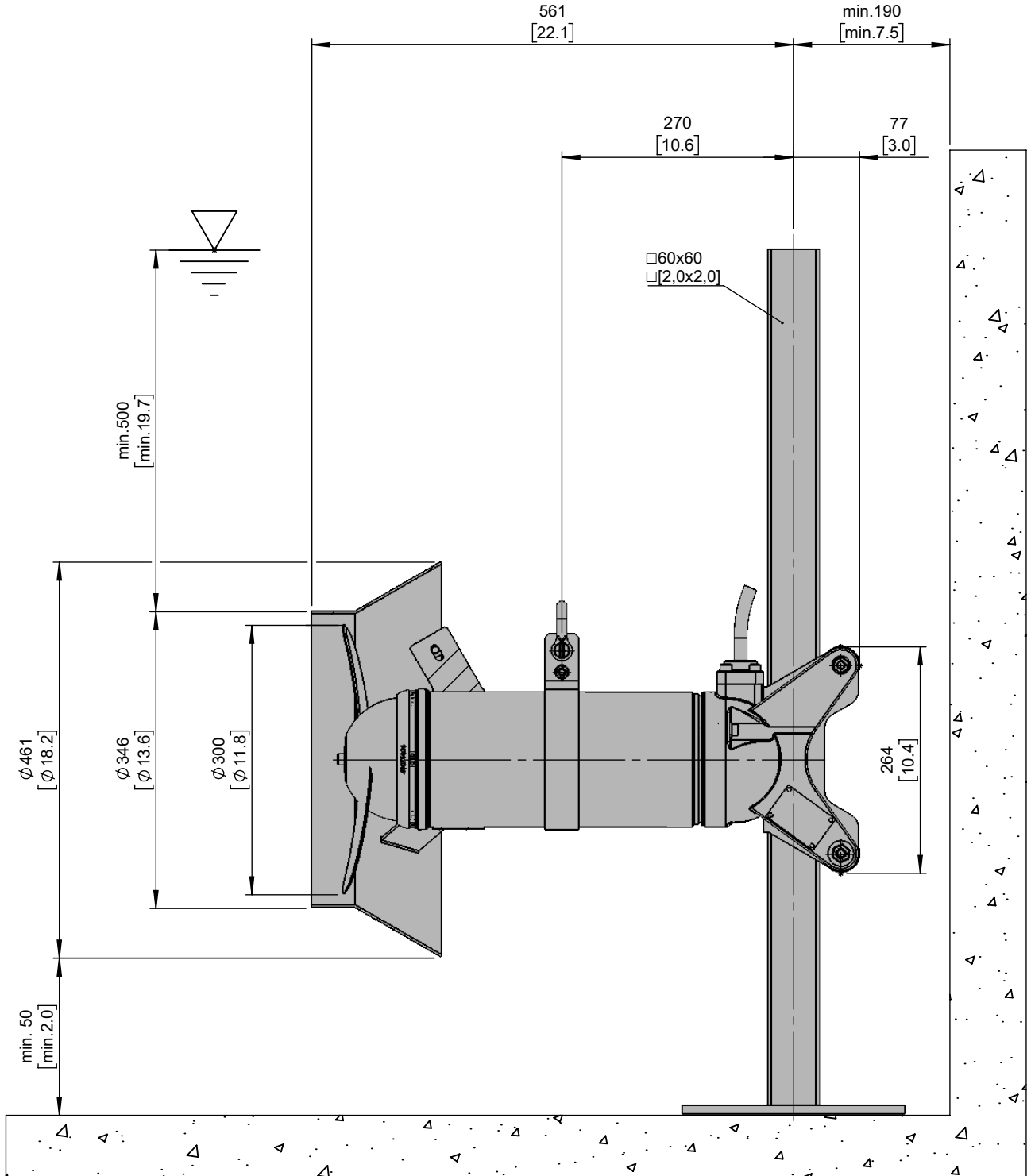
Maßblatt RW300 □60 mit Strömungsring

Plan d'encombrement RW300 □60 avec concentrateur de flux



Type Typ Type	Type Typ Type	Weight Gewicht Poids		A	
		(~kg)	(~lb)	(mm)	(inch)
50Hz	60Hz				
A 15/6	A 17/6	53	117	270	10.6
A 28/6	A 32/6	57	126	270	10.6

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guideline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140652 - 00

Dat/Nam.:28.09.2022 / A. Gole

Cad Code: M-140652

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with Vertical Angle Adjustment

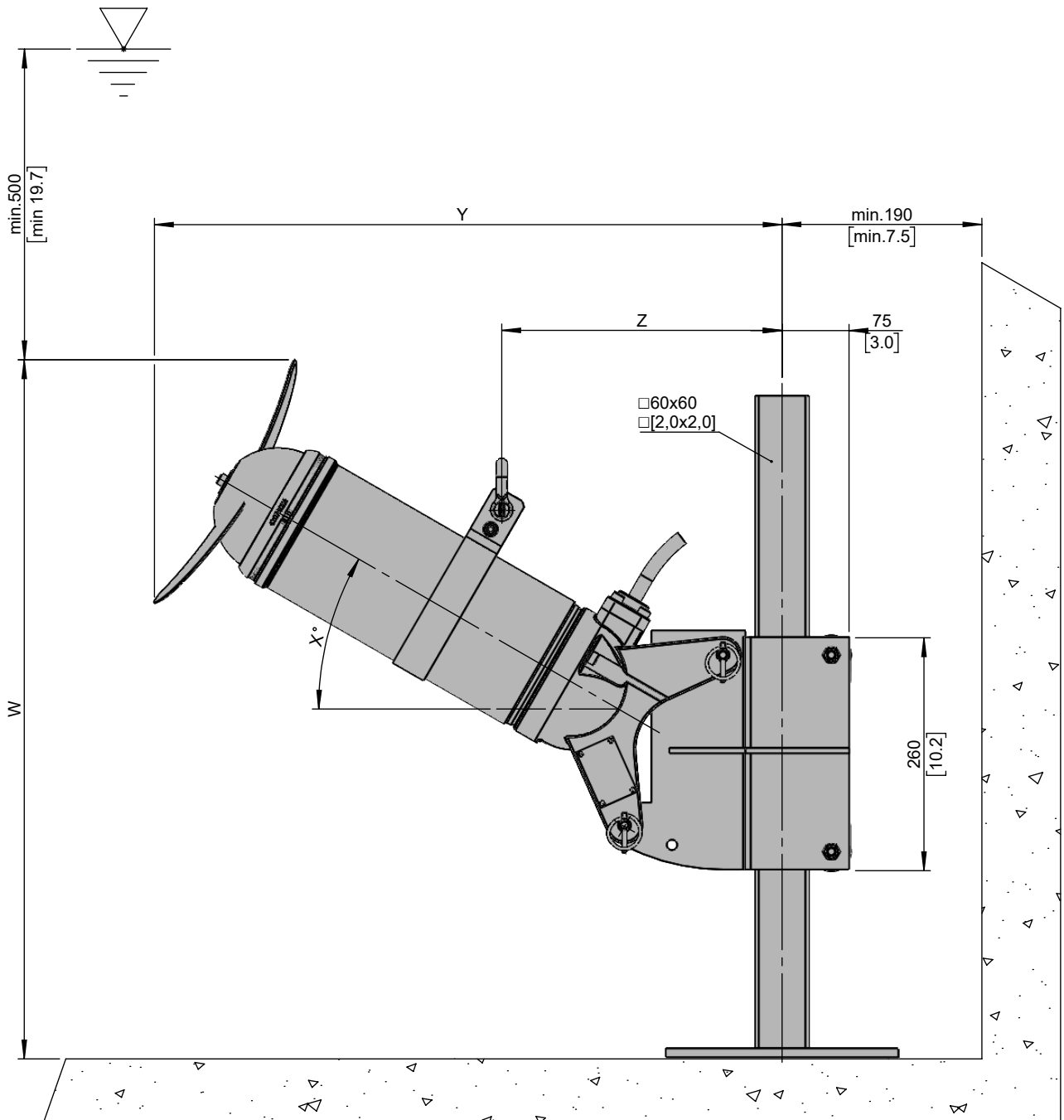
Maßblatt RW300 □60 mit neigungsverstellbare Halterung

Plan d'encombrement RW300 □60 avec réglage angulaire



Type Typ Type 50Hz	Type Typ Type 60Hz	Weight Gewicht Poids			X			X			X	
		(~kg)	(~lb)		15°	30°		15°	30°		15°	30°
A 15/6	A 17/6	47	104	(mm) Y (in)	695 27.4	700 27.6	(mm) Z (in)	345 13.6	310 12.2	(mm) W (in)	645 25.4	780 30.7
A 28/6	A 32/6	51	112	(mm) Y (in)	695 27.4	700 27.6	(mm) Z (in)	345 13.6	310 12.2	(mm) W (in)	645 25.4	780 30.7

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140653 - 00

Dat/Nam.:28.09.2022 / A. Gole

Cad Code: M-140653

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with Vertical Angle Adjustment

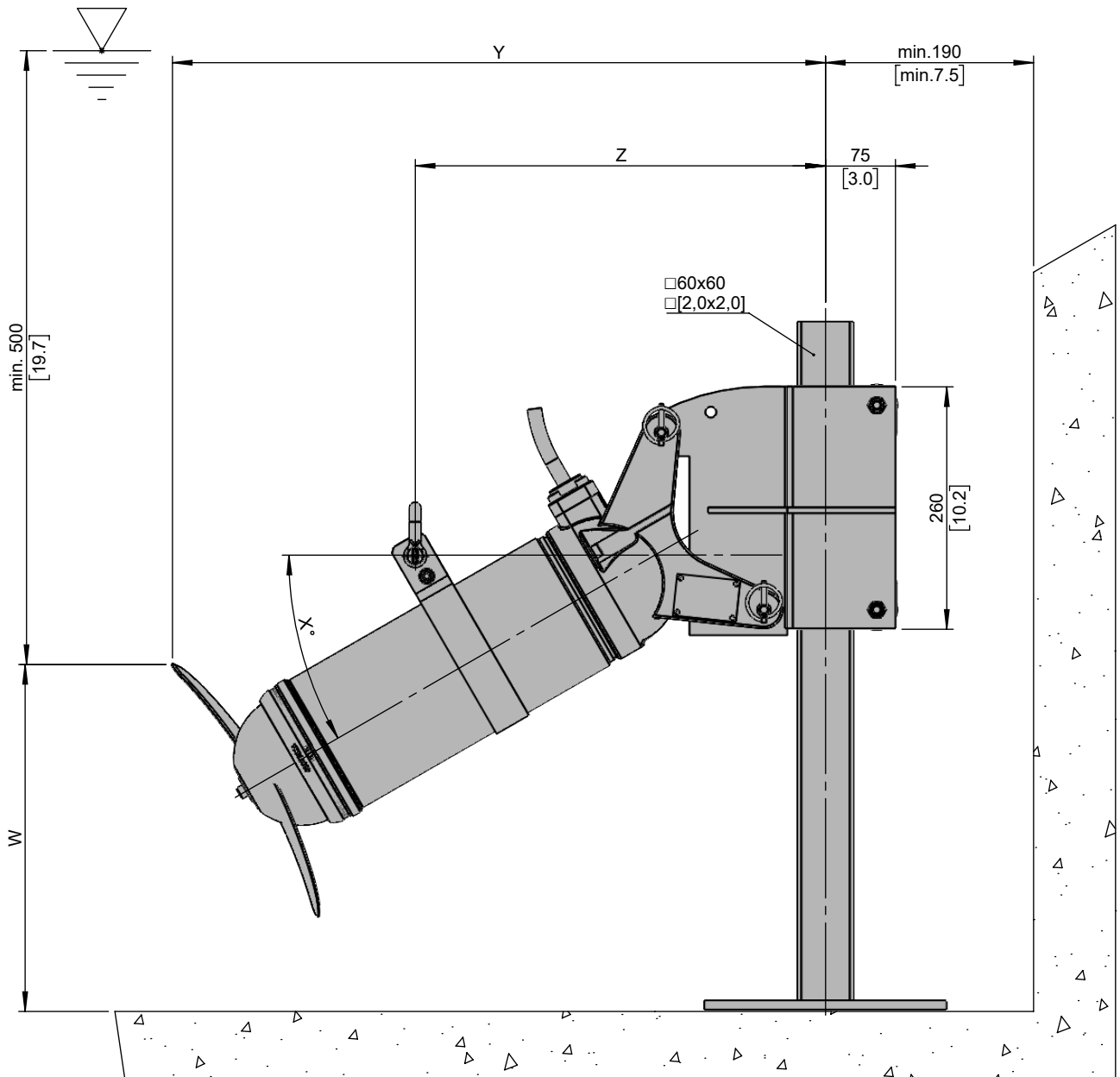
Maßblatt RW300 □60 mit neigungsverstellbare Halterung

Plan d'encombrement RW300 □60 avec réglage angulaire

SULZER

Type Typ Type 50Hz	Type Typ Type 60Hz	Weight Gewicht Poids			X			X			X	
		(~kg)	(~lb)		15°	30°		15°	30°		15°	30°
A 15/6	A 17/6	47	104	(mm) Y (in)	695 27.4	700 27.6	(mm) Z (in)	410 16.1	440 17.3	(mm) W (in)	540 21.3	370 14.6
A 28/6	A 32/6	51	112	(mm) Y (in)	695 27.4	700 27.6	(mm) Z (in)	410 16.1	440 17.3	(mm) W (in)	540 21.3	370 14.6

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140654 - 00

Dat/Nam.:28.09.2022 / A. Gole

Cad Code: M-140654

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

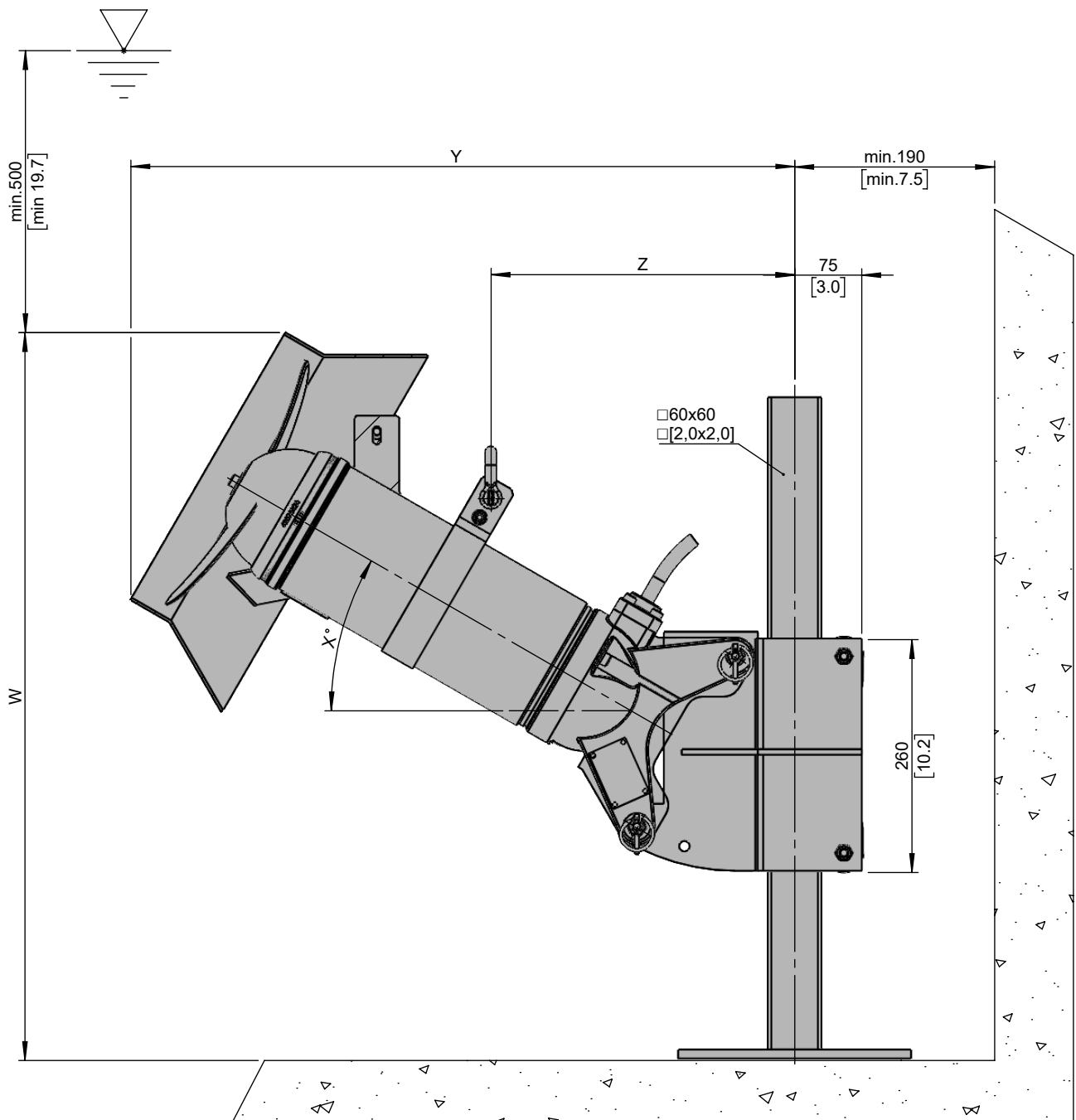
Dimension sheet RW300 □60 with Flow Ring and Vertical Angle Adjustment

Maßblatt RW300 □60 mit Strömungsring und neigungsverstellbare Halterung

Plan d'encombrement RW300 □60 avec concentrateur de flux et réglage angulaire

Type Typ Type 50Hz	Type Typ Type 60Hz	Weight Gewicht Poids			X			X			X	
		(~kg)	(~lb)		15°	30°		15°	30°		15°	30°
A 15/6	A 17/6	53	117	(mm) Y (in)	735 28.9	740 29.1	(mm) Z (in)	375 14.8	340 13.4	(mm) W (in)	335 13.2	510 20.1
A 28/6	A 32/6	57	126	(mm) Y (in)	735 28.9	740 29.1	(mm) Z (in)	375 14.8	340 13.4	(mm) W (in)	335 13.2	510 20.1

Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140655 - 00

Dat/Nam.:28.09.2022 / A. Gole

Cad Code: M-140655

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

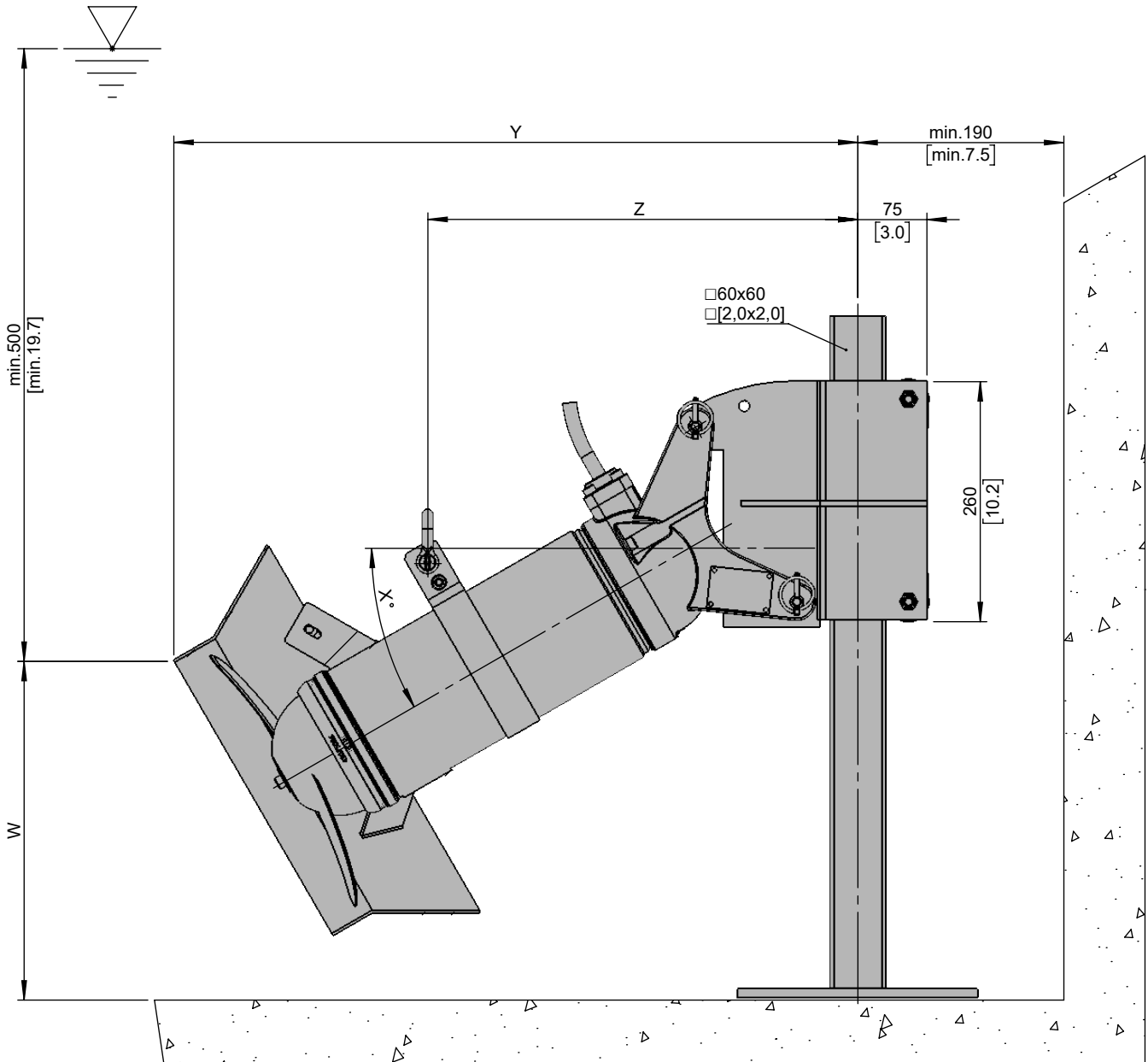
Dimension sheet RW300 □60 with Flow Ring and Vertical Angle Adjustment

Maßblatt RW300 □60 mit Strömungsring und neigungsverstellbare Halterung

Plan d'encombrement RW300 □60 avec concentrateur de flux et réglage angulaire

Type Typ Type 50Hz	Type Typ Type 60Hz	Weight Gewicht Poids			X		X			X		
		(~kg)	(~lb)		15°	30°	15°	30°		15°	30°	
A 15/6	A 17/6	53	117	(mm) Y	735	740	(mm) Z	440	465	(mm) W	540	365
				(in)	28.9	29.1	(in)	17.3	18.3	(in)	21.3	14.4
A 28/6	A 32/6	57	126	(mm) Y	735	740	(mm) Z	440	465	(mm) W	540	365
				(in)	28.9	29.1	(in)	17.3	18.3	(in)	21.3	14.4

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: AN-M.14.148 - 02

Dat/Nam.:25.07.1995 / D. Whelan

AN-M.14.148

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with flow ring

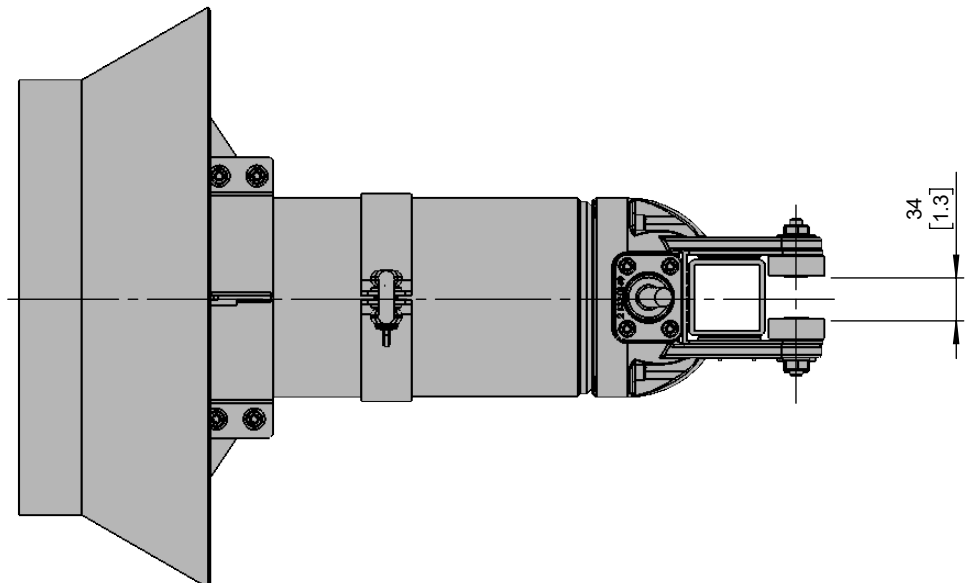
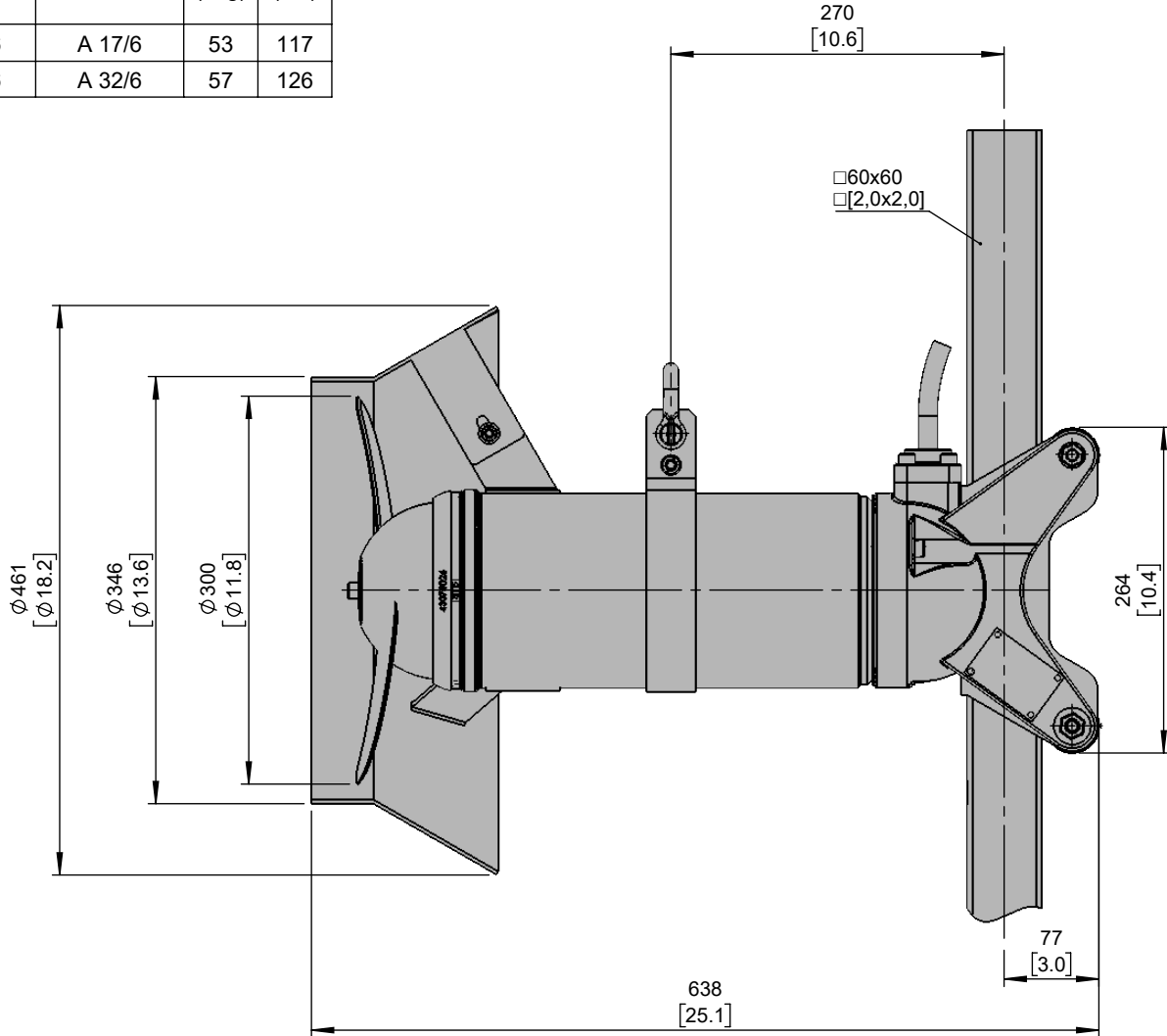
Maßblatt RW300 □60 mit Strömungsring

Plan d'encombrement RW300 □60 avec concentrateur de flux

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	53	117
A 28/6	A 32/6	57	126

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: AN-M.14.147 - 04

Dat/Nam.:25.07.1995 / D. Whelan

Cad Code: AN-M.14.147

Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW300

Dimension sheet RW300 □60

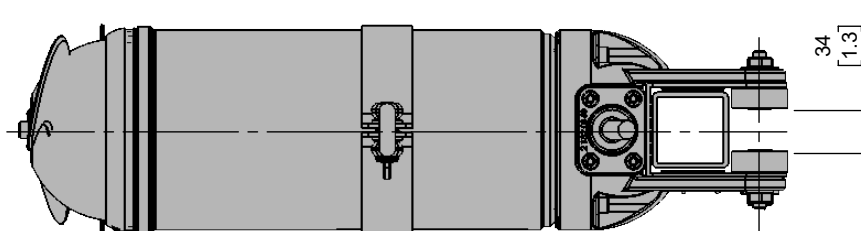
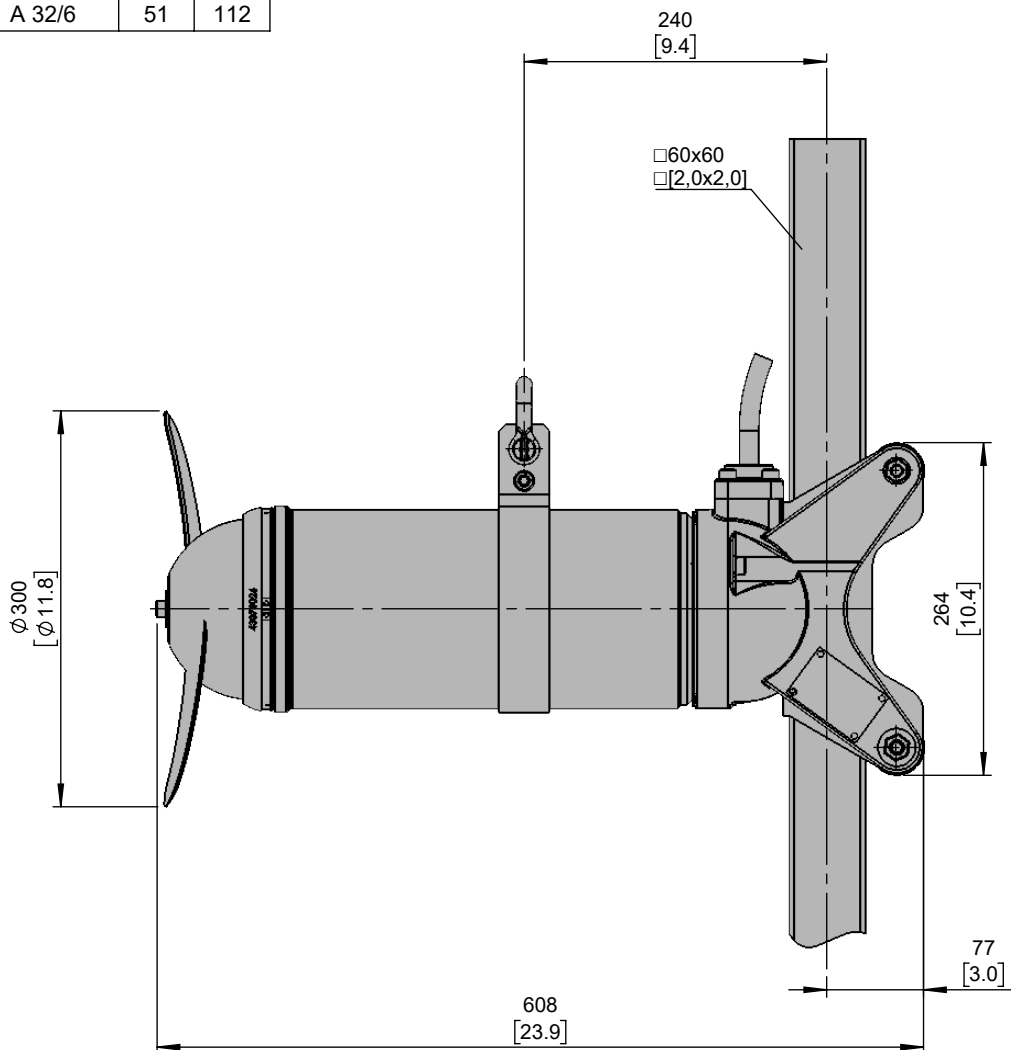
Maßblatt RW300 □60

Plan d'encombrement RW300 □60



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	47	104
A 28/6	A 32/6	51	112

Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

* Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

No: AN-M.14.151 - 02

Dat/Nam.:25.07.1995 / D. Whelan

Cad Code: AN-M.14.151

Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with support bracket and Vibration Damper

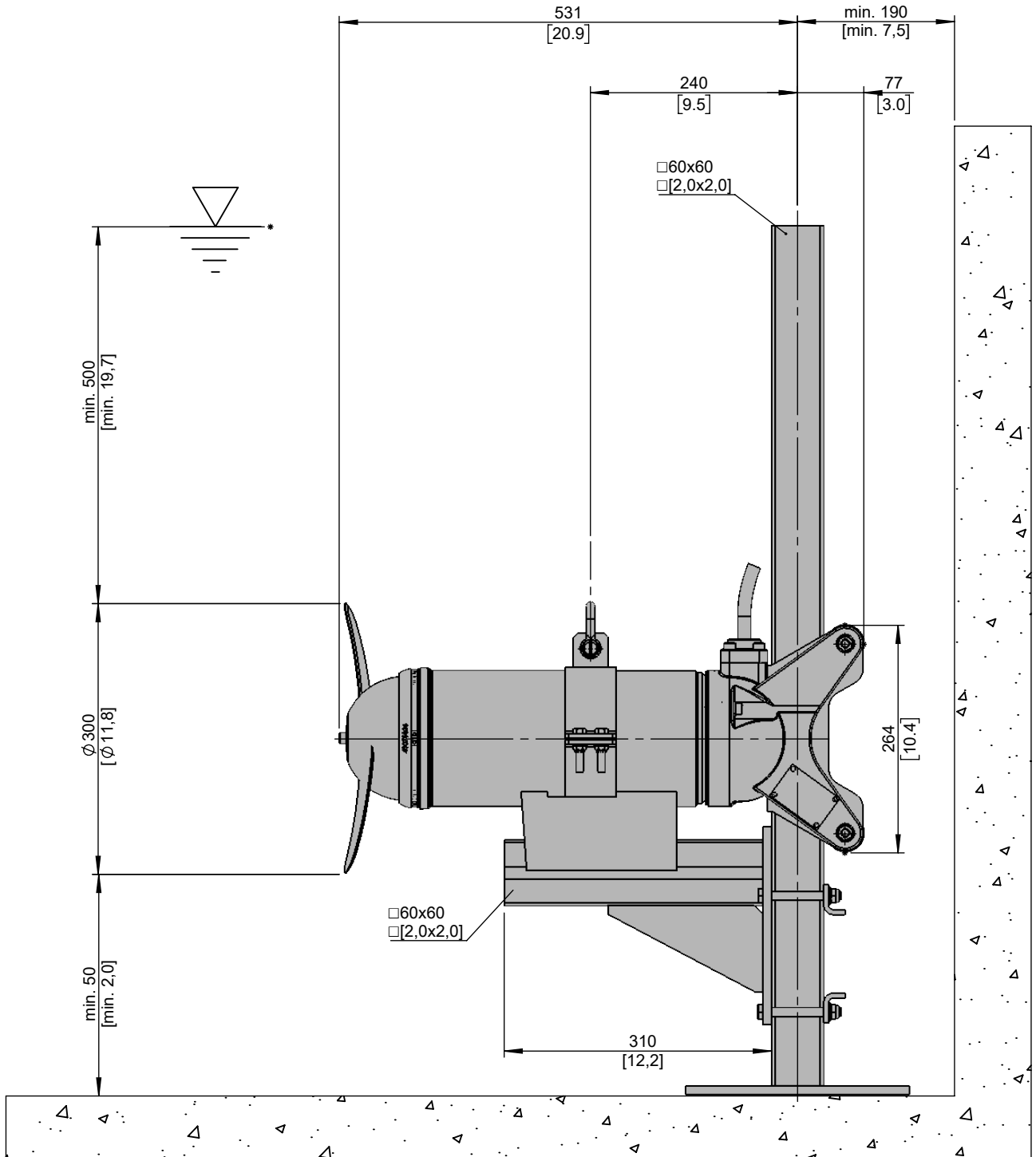
Maßblatt RW300 □60 mit Anschlag und Vibrationsdämfer

Plan d'encombrement RW300 □60 avec support et amortisseur de vibrations



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	47	104
A 28/6	A 32/6	51	112

Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140624 - 00

Dat/Nam.: 19.07.2021 / A. Gole

Cad Code: M-140624

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

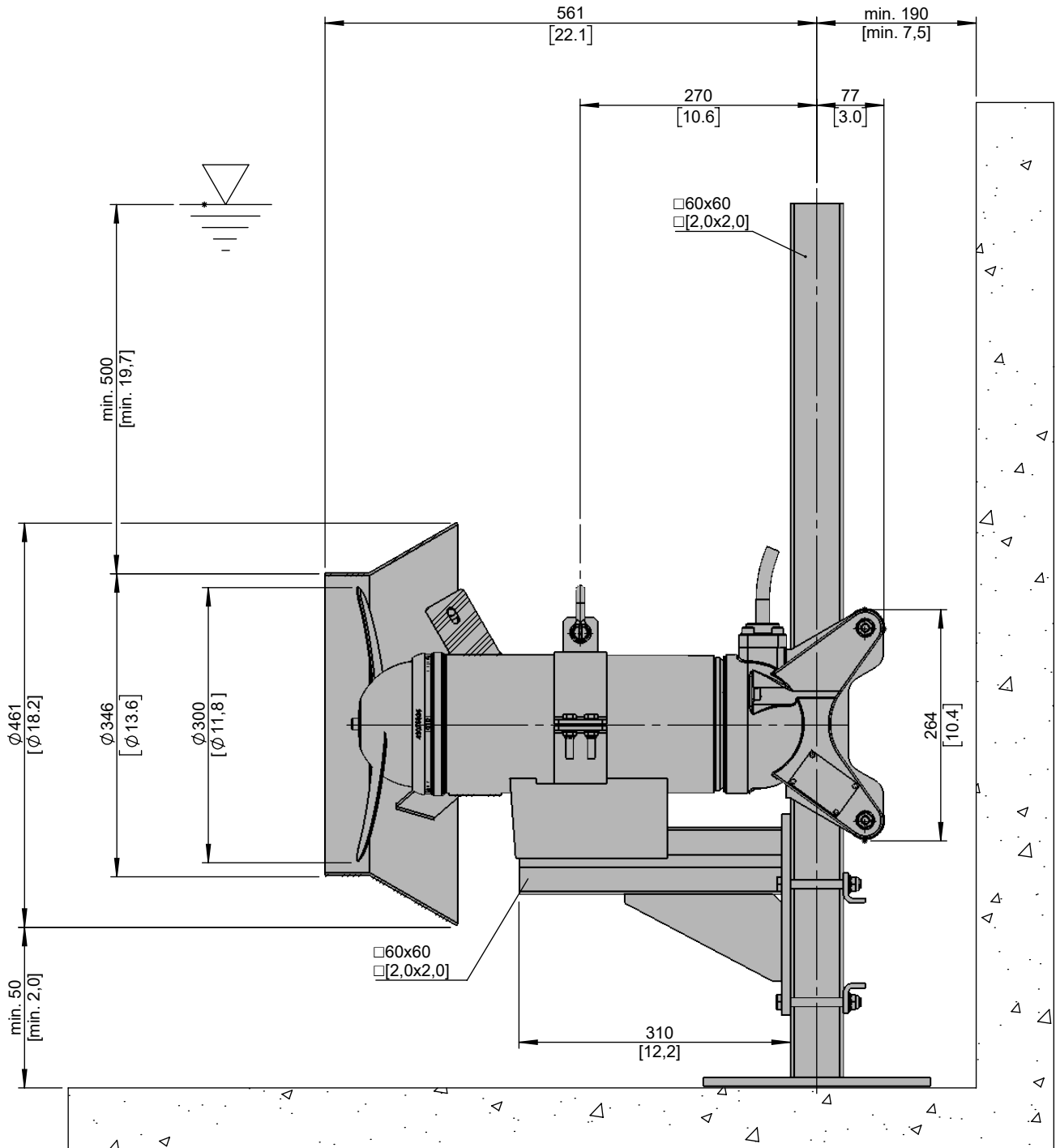
Dimension sheet RW300 □60 with support bracket , Vibration Damper and Flow Ring

Maßblatt RW300 □60 mit Anschlag ,Vibrationsdämfer und Strömungsring

Plan d'encombrement RW300 □60 avec support, amortisseur de vibrations et concentrateur de flux

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	53	117
A 28/6	A 32/6	57	126

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140650 - 00

Dat/Nam.:08.09.2022 / A. Gole

Cad Code: M-140650

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60

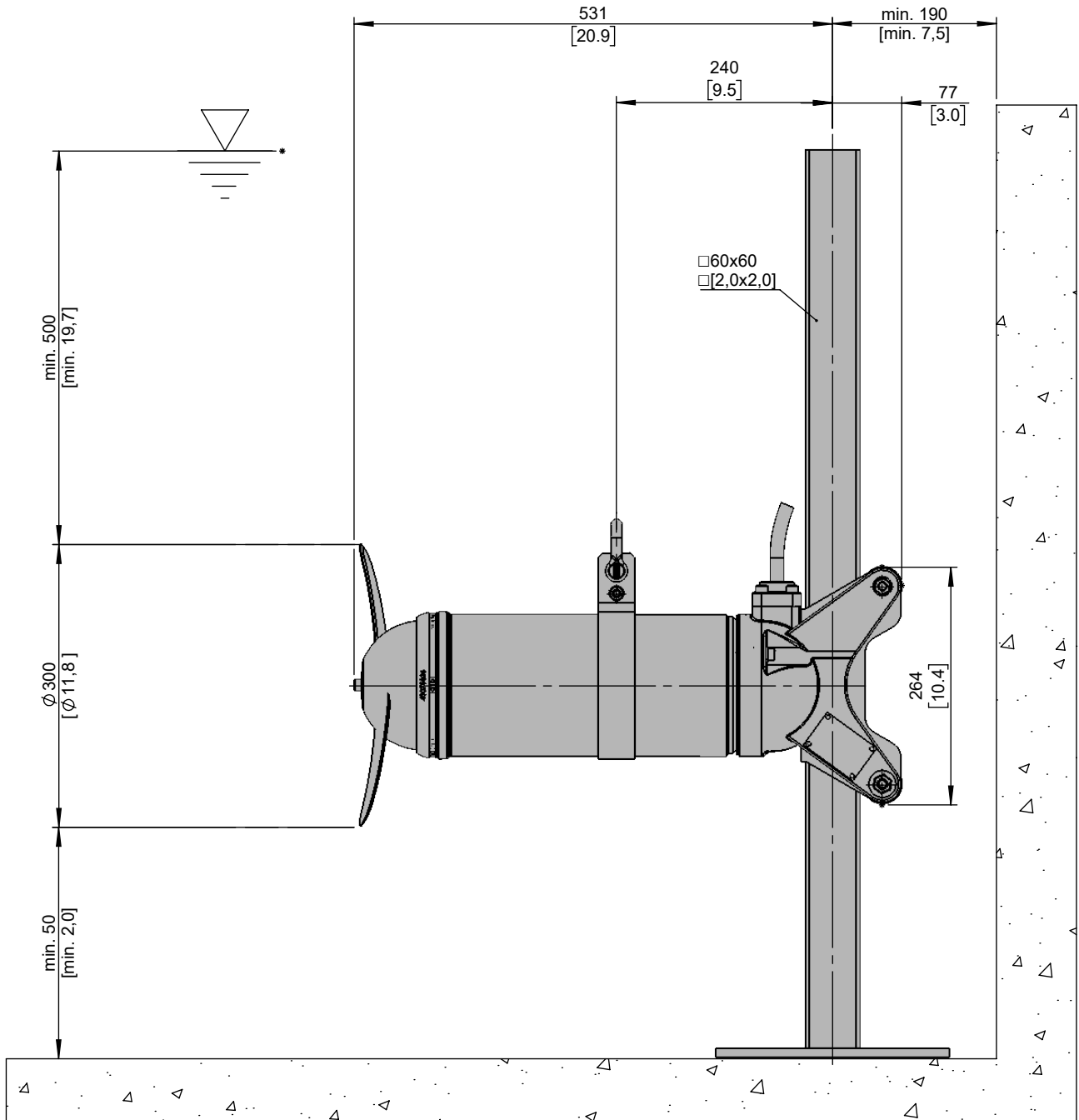
Maßblatt RW300 □60

Plan d'encombrement RW300 □60

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 15/6	A 17/6	47	104
A 28/6	A 32/6	51	112

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guideline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140651 - 00

Dat/Nam.:08.09.2022 / A. Gole

Cad Code: M-140651

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

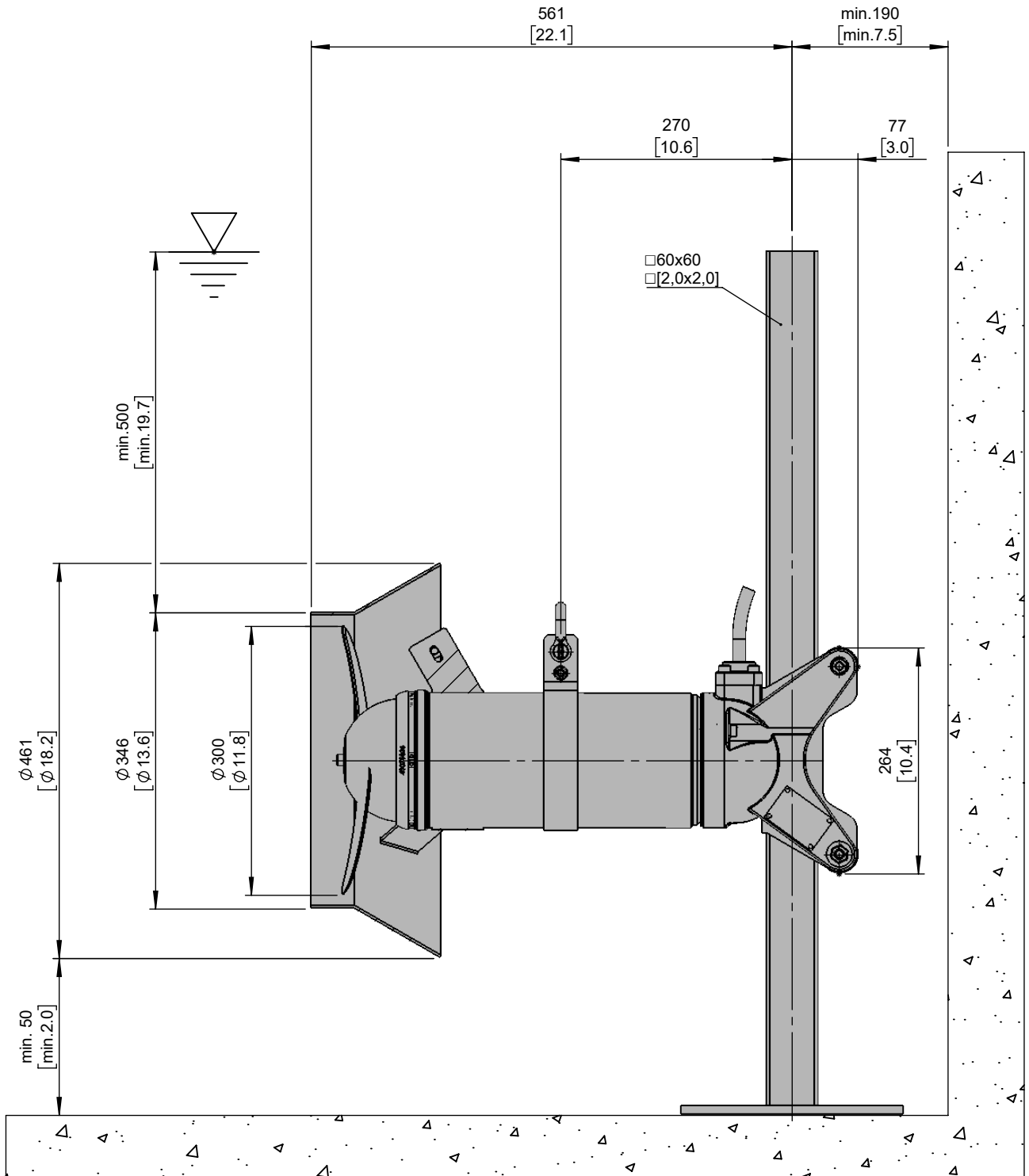
Dimension sheet RW300 □60 with flow ring

Maßblatt RW300 □60 mit Strömungsring

Plan d'encombrement RW300 □60 avec concentrateur de flux

Type Typ Type	Type Typ Type	Weight Gewicht Poids		A	
		(~kg)	(~lb)	(mm)	(inch)
50Hz	60Hz				
A 15/6	A 17/6	53	117	270	10.6
A 28/6	A 32/6	57	126	270	10.6

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guideline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140652 - 00

Dat/Nam.:28.09.2022 / A. Gole

Cad Code: M-140652

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with Vertical Angle Adjustment

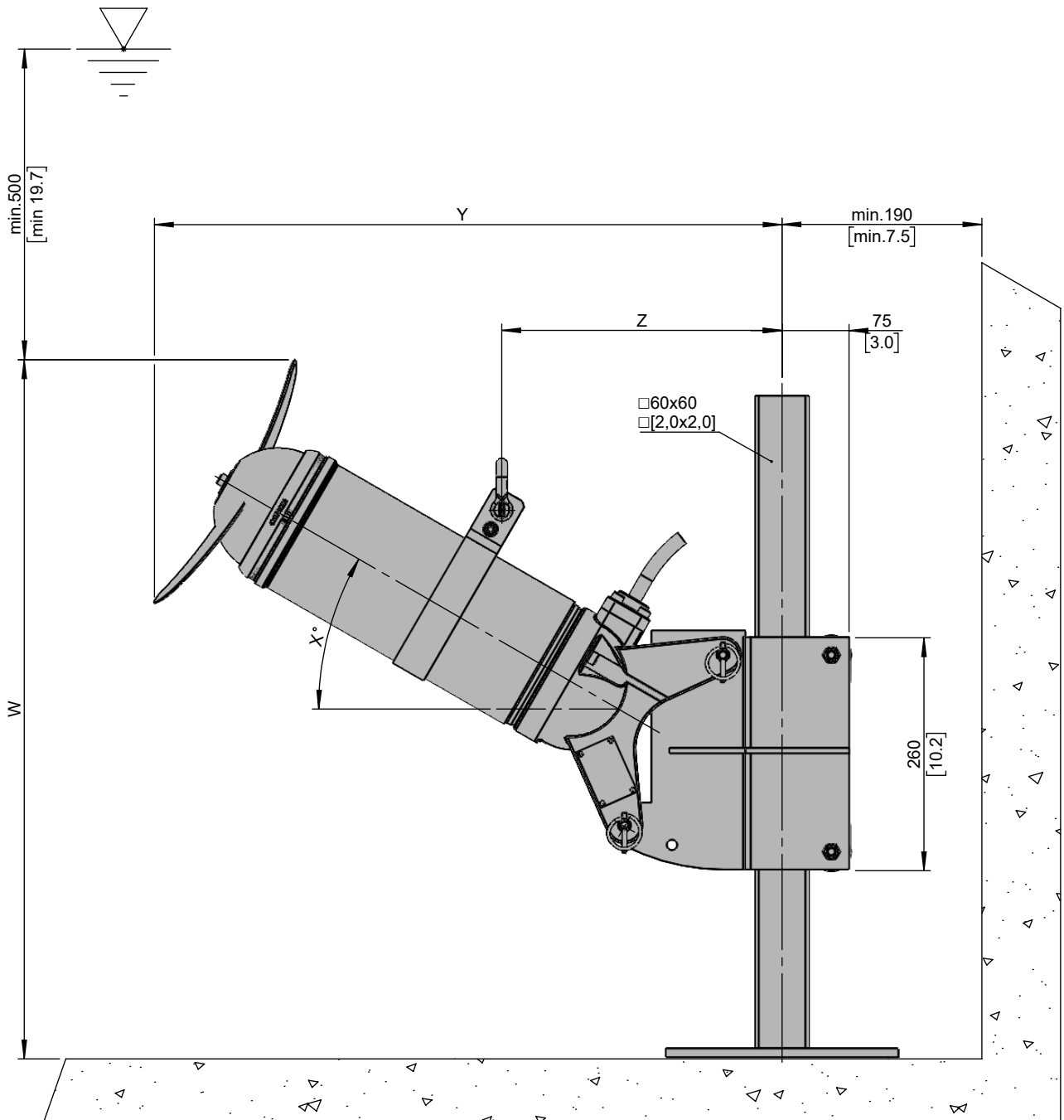
Maßblatt RW300 □60 mit neigungsverstellbare Halterung

Plan d'encombrement RW300 □60 avec réglage angulaire

SULZER

Type Typ Type 50Hz	Type Typ Type 60Hz	Weight Gewicht Poids			X			X			X	
		(~kg)	(~lb)		15°	30°		15°	30°		15°	30°
A 15/6	A 17/6	47	104	(mm) Y (in)	695 27.4	700 27.6	(mm) Z (in)	345 13.6	310 12.2	(mm) W (in)	645 25.4	780 30.7
A 28/6	A 32/6	51	112	(mm) Y (in)	695 27.4	700 27.6	(mm) Z (in)	345 13.6	310 12.2	(mm) W (in)	645 25.4	780 30.7

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140653 - 00

Dat/Nam.:28.09.2022 / A. Gole

Cad Code: M-140653

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with Vertical Angle Adjustment

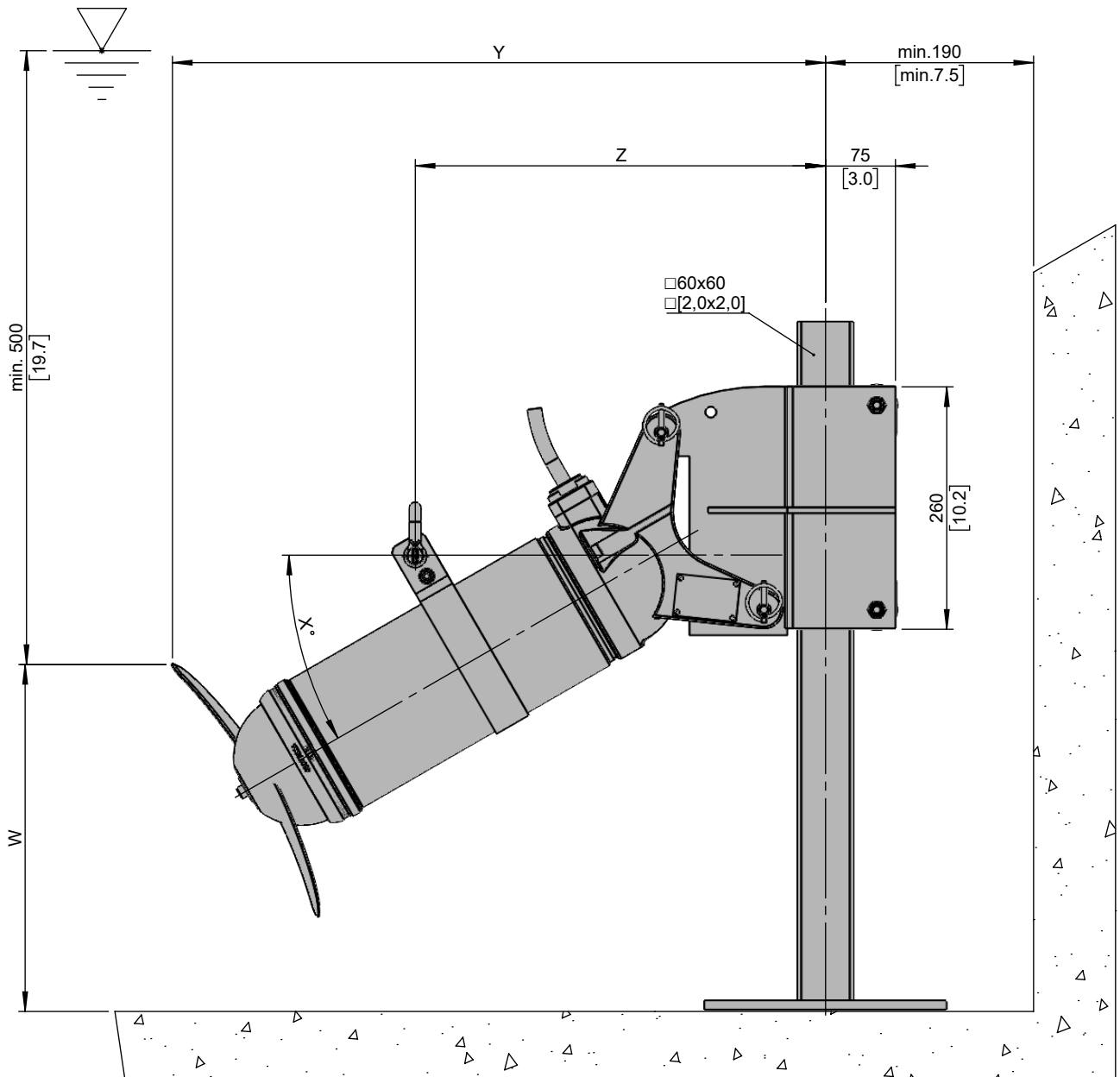
Maßblatt RW300 □60 mit neigungsverstellbare Halterung

Plan d'encombrement RW300 □60 avec réglage angulaire

SULZER

Type Typ Type 50Hz	Type Typ Type 60Hz	Weight Gewicht Poids			X			X			X	
		(~kg)	(~lb)		15°	30°		15°	30°		15°	30°
A 15/6	A 17/6	47	104	(mm) Y (in)	695	700	(mm) Z (in)	410	440	(mm) W (in)	540	370
					27.4	27.6		16.1	17.3		21.3	14.6
A 28/6	A 32/6	51	112	(mm) Y (in)	695	700	(mm) Z (in)	410	440	(mm) W (in)	540	370
					27.4	27.6		16.1	17.3		21.3	14.6

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140654 - 00

Dat/Nam.:28.09.2022 / A. Gole

Cad Code: M-140654

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

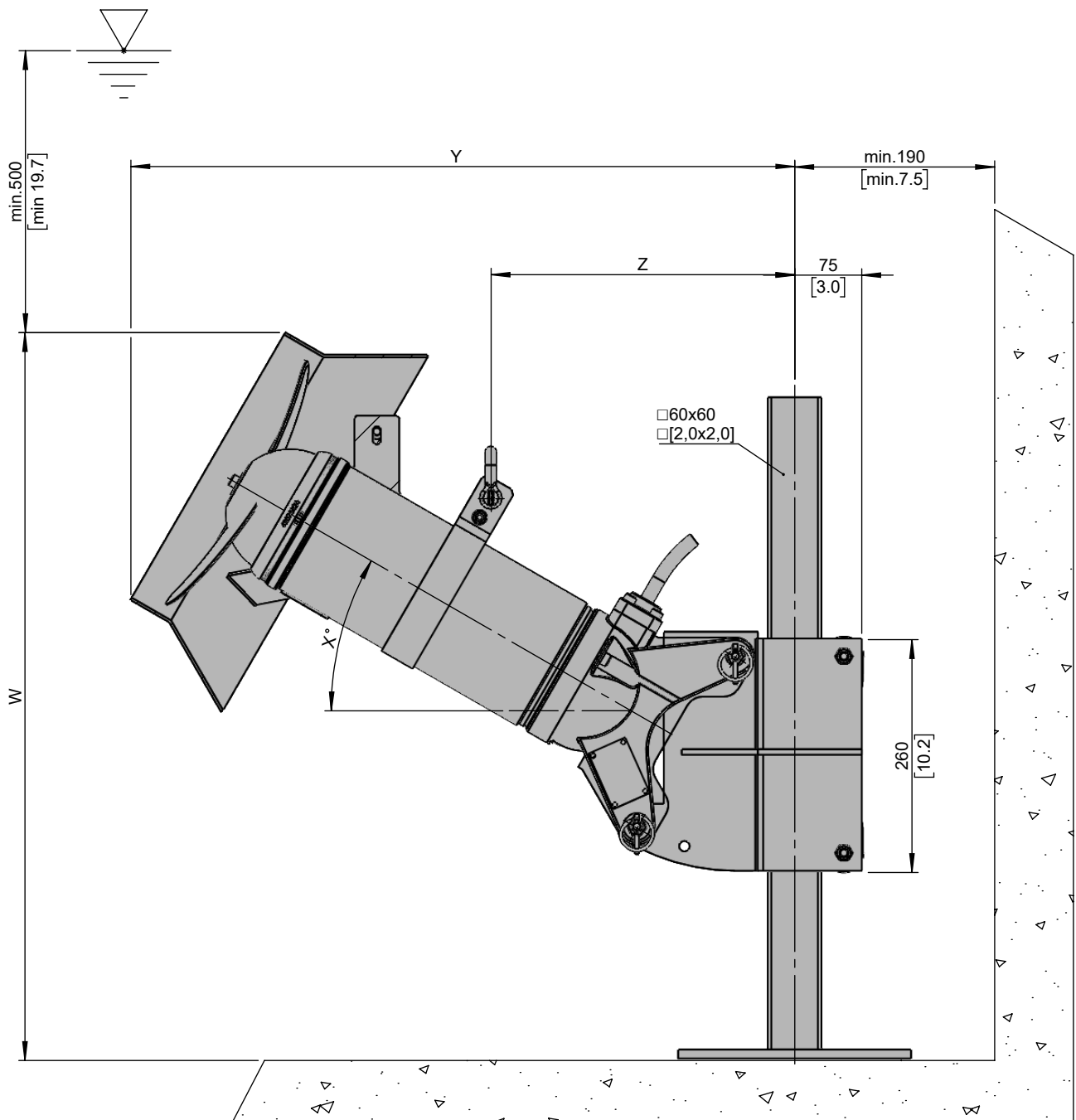
Dimension sheet RW300 □60 with Flow Ring and Vertical Angle Adjustment

Maßblatt RW300 □60 mit Strömungsring und neigungsverstellbare Halterung

Plan d'encombrement RW300 □60 avec concentrateur de flux et réglage angulaire

Type Typ Type 50Hz	Type Typ Type 60Hz	Weight Gewicht Poids			X			X			X	
		(~kg)	(~lb)		15°	30°		15°	30°		15°	30°
A 15/6	A 17/6	53	117	(mm) Y (in)	735 28.9	740 29.1	(mm) Z (in)	375 14.8	340 13.4	(mm) W (in)	335 13.2	510 20.1
A 28/6	A 32/6	57	126	(mm) Y (in)	735 28.9	740 29.1	(mm) Z (in)	375 14.8	340 13.4	(mm) W (in)	335 13.2	510 20.1

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-140655 - 00

Dat/Nam.:28.09.2022 / A. Gole

Cad Code: M-140655

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW300

Dimension sheet RW300 □60 with Flow Ring and Vertical Angle Adjustment

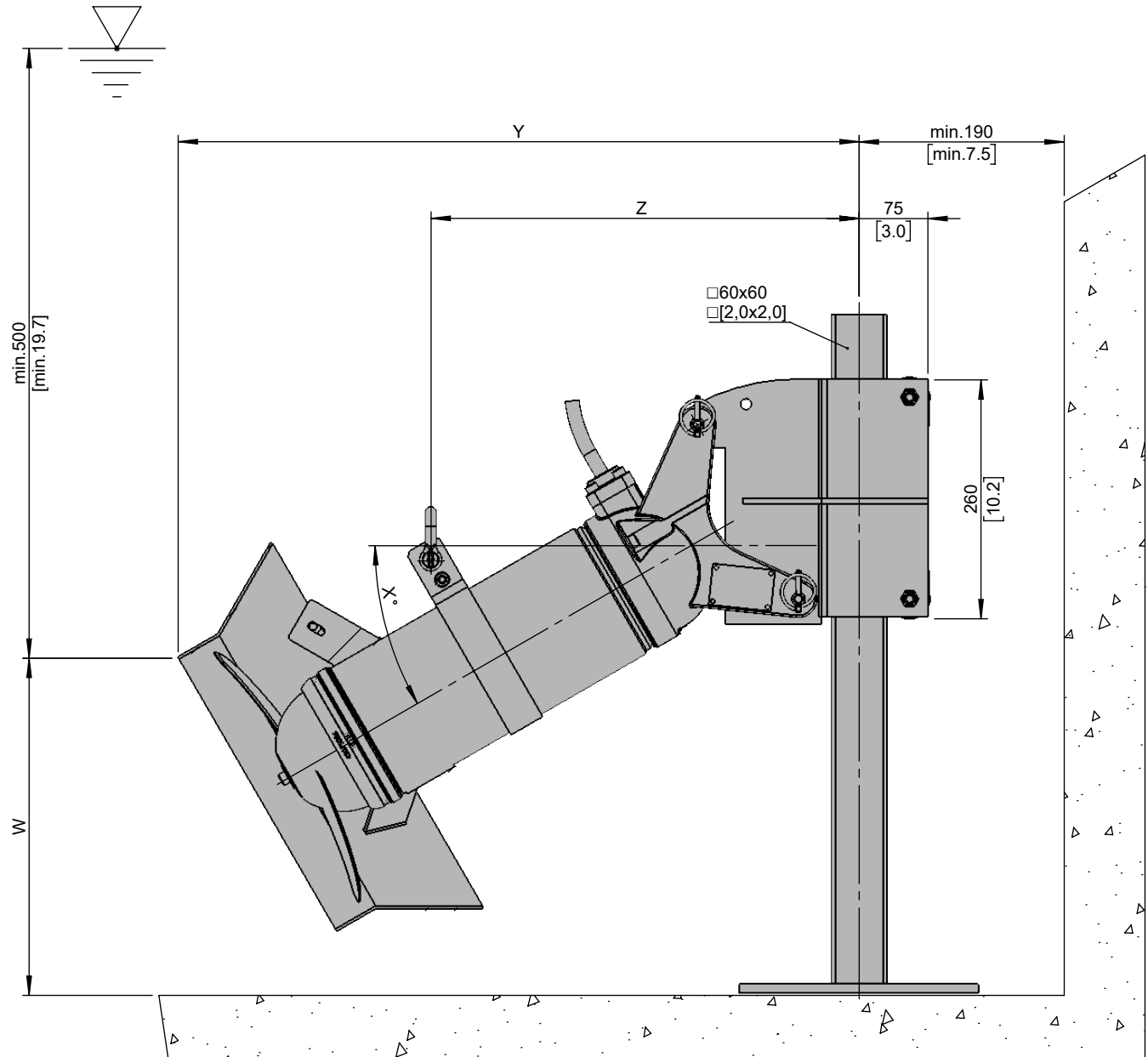
Maßblatt RW300 □60 mit Strömungsring und neigungsverstellbare Halterung

Plan d'encombrement RW300 □60 avec concentrateur de flux et réglage angulaire



Type Typ Type 50Hz	Type Typ Type 60Hz	Weight Gewicht Poids			X		X			X		
		(~kg)	(~lb)		15°	30°	15°	30°		15°	30°	
A 15/6	A 17/6	53	117	(mm) Y (in)	735 28.9	740 29.1	(mm) Z (in)	440 17.3	465 18.3	(mm) W (in)	540 21.3	365 14.4
A 28/6	A 32/6	57	126	(mm) Y (in)	735 28.9	740 29.1	(mm) Z (in)	440 17.3	465 18.3	(mm) W (in)	540 21.3	365 14.4

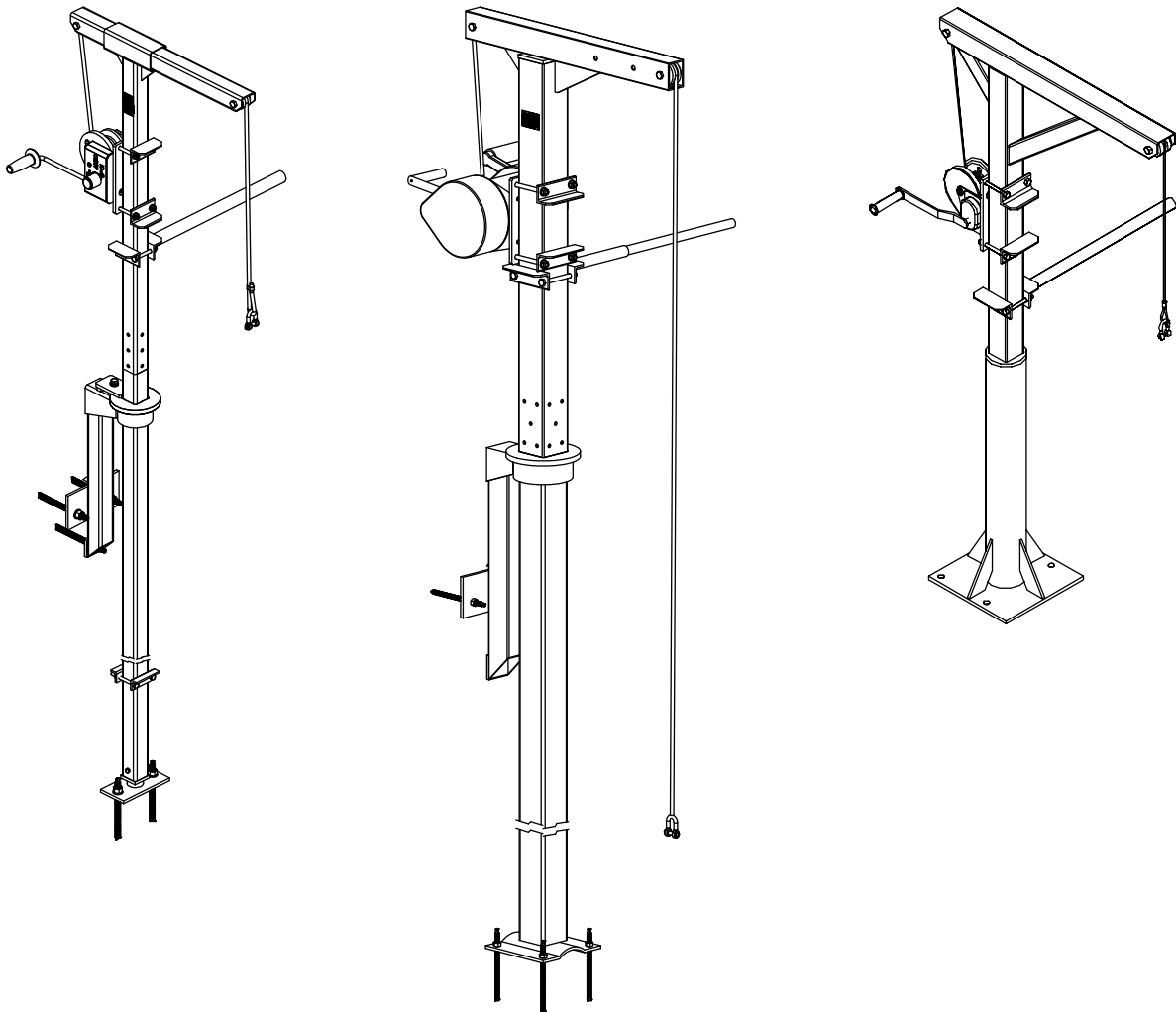
Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

Lifting Device Type ABS 60 mm, 100 mm and 2.3 kN



Installation and Operating Instructions (Translation of Original Instructions)

Lifting Device Type ABS 60 mm, 100 mm, and 2.3 kN

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1.3	Application limitations.....	3
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1.5	Dimensions	4
1.6	Nameplate.....	4
2	Security	4
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6	Check list / Hints for check by an expert	7

1 General

1.1 Introduction

These **Installation and Operating Instructions** and the separate booklet **Safety Instructions for Sulzer Products Type ABS** contain basic instructions and safety hints which must be observed during transport, installation and commissioning. For this reason it is essential that they are read by the installing technician as well as by relevant skilled operators or users. They should also be always available where the unit is installed.



Safety Instructions which might cause danger to life in case of non-observance have been specifically highlighted with the general danger symbol.

ATTENTION *Appears at safety hints, the non-observance of which could damage the unit or affect its functioning.*

NOTE *Used for important pieces of information.*

Illustrations code; e.g. (3/2). The first digit refers to the figure no. and the second digit to the position in that figure.

The documents listed below are integral parts of these installation and operating instructions:

- Installation and operating instructions for Sulzer lifting device.
- Declaration of conformity for Sulzer lifting device as defined by: Machinery Directive 2006/42/EC.
- Checklist for the expert inspection of winches, pulling and lifting devices.

The documents listed below are also substantial parts of these instructions:

- Operating instructions for the winch.
- Instructions for the handling of chemical anchors.

1.2 Application areas

The Sulzer lifting device is suitable to lift and lower submersible mixers manually. It can be rotated 360°; the boom can be adjusted to the required overhang and lifting capacity by tilting it.

In the working position the lifting device is pushed into a lifting device support which is connected to the building.

1.3 Application limitations

The Sulzer lifting device and the lifting device supports are weather proof. Some of the winches are not and should be stored in a sheltered place when not being used.

If the lifting device is operated in an aggressive atmosphere, or the wire rope in an aggressive liquid, they have to be cleaned after operation and must be checked by an expert at shorter intervals.



The maximum allowable loads must be observed when using the Sulzer lifting device.

ATTENTION *Special attention must be paid to the safety and processing instructions from the manufacturer of the fastening systems used!*

1.4 Type designation and components of the Sulzer lifting device

See pages 8 - 9.

1.5 Dimensions

See pages 10 - 12.



The maximum lifting capacity for the different overhangs can be obtained from the nameplate on the lifting device.

1.6 Nameplate

We recommend that you record the data from the original nameplate on the nameplate illustrated *in Fig. 1* below so that you can refer to the data at any time.

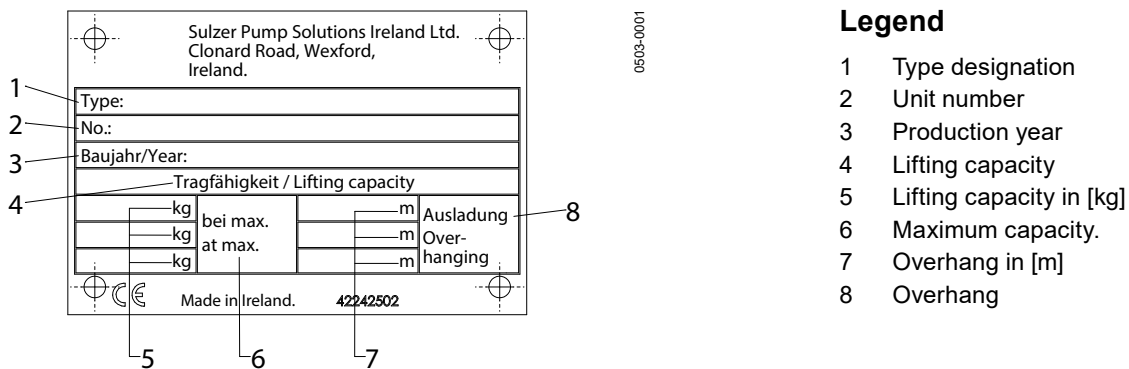


Figure 1: Nameplate

2 Security

The following standards and regulations have to be observed:

- DIN 15020 T1 and 2
- UVV VBG 1, 8, 9, 9a

The owner of the lifting device has to make sure of the following:

- These instructions are always available to the operator.
- The lifting device is only operated by skilled and instructed individuals.
- The operator is using all required personal protection equipment.
- The lifting device is checked by an expert before commissioning (faultless assembly and installation, ready for work). A written report on this inspection is required.
- The unit will be checked by an expert at least once a year (see check list at the end of this booklet). When operating the unit under unfavourable conditions more frequent checks may be required.
- No changes on the unit are to be made without prior written consent from the manufacturer.
- Damage to the unit is immediately repaired and faulty units are not operated.

2.1 Safety instructions for the operator of the lifting device



Study installation and operating instructions with care!



Prior to any operation, the lifting device has to be checked carefully, including correct guidance in the lifting device support. In case of faults the owner has to be informed immediately and the unit has to be blocked!



Make sure no persons are within the working radius of the unit. If required, this area is to be blocked by suitable means.



Do not stand under the suspended load!



Never exceed the maximum load related to the actual overhang!



Use suitable sling elements only (according to VBG UVV 9a)!



Make sure that there is no risk of jamming or catching of the load!



Moving human beings with the lifting device is strictly prohibited!



The load must never move out of perpendicular!



The winch is not to be operated by a motor!



The wire rope must not be used to sling the load!



The load must always be visible to the operator. If this is not possible, the assistance of a second person is required (marshal)!



When winding the wire rope it always has to be held tight! If the rope is not wound tight enough on the winch drum the breaking load of the rope can be reduced dramatically! An additional weight attached to the end of the wire rope will reduce the risk of loose winding.



Attaching the wire rope to the winch drum is to be done according to the instructions of the winch manufacturer!



At least three turns of wire rope must remain on the winch drum when the load is in its lowest position!



When operating the unit all bolts have to be secured by security pins!



Use your safety helmet, gloves and safety shoes!



Connect the equipotential bonding!

These hints are only supplementary to the regulations of DIN 15018 and the regulations for the prevention of accidents from the authorities VBG 8, VGB 9a.

Furthermore, any local regulations are to be observed!

3 Installation of the bottom fixing support

NOTE Please find the necessary dimension for installation at pages 10 - 12.

- First check all parts whether they are correct and all available according to the parts list.
- Inspection of the installation site according to the drawings:
 - a. check the installation site regarding stability (min. B25).
 - b. check the installation place regarding suitability for the safe operation of the lifting device.
- Take care to ensure the correct conditions for anchoring, e.g:
 - depth of holes
 - drill diameter
 - edge spacings
 - working temperature
 - expiration date of plastic mortar
 - curing time
 - fastening torque of nuts
 - nut lockings
- Before the first operation of the lifting device the support installation has to be inspected by an expert. A written report on this inspection is required.

4 Installation of the Sulzer lifting device

See pages 13 - 15.

NOTE The square guide tube section of the lifting device is supplied in a standard length of 6000 mm and will need to be cut to the required length as determined on site by the installation.

5 Tightening torque

Tightening torque for Sulzer stainless steel screws A4-70:								
Thread	M8	M10	M12	M16	M20	M24	M27	M30
Tightening torque	17 Nm	33 Nm	56 Nm	136 Nm	267 Nm	460 Nm	500 Nm	600 Nm

6 Check list / Hints for check by an expert

1. Manufacturer: Sulzer Pump Solutions Ireland Ltd., Clonard Road, Wexford, Ireland.
2. Year of production: _____
3. Serial number: _____
4. Lifting capacity: _____
5. Manufacturer of rope winch: _____ Type: _____
6. Lifting rope: Diameter: Ø _____ mm Min. breaking load: _____ kN
7. Check before first operation: On: _____ By: _____

Recurring checks (at least once a year)

Date	Result	Signature	Repaired	
			On	By

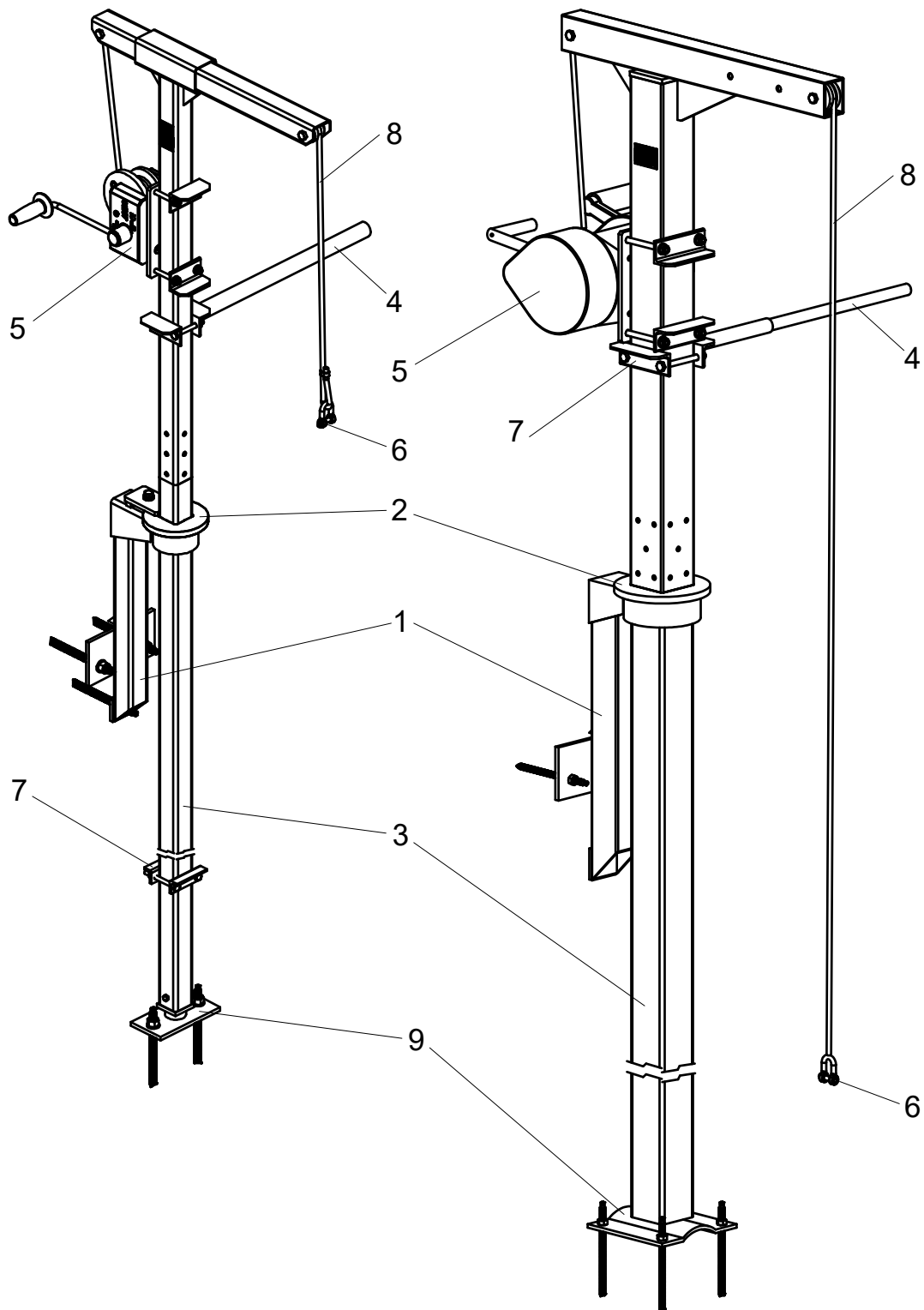
Hints for checks by an expert

1. Are the nameplate, load rating, and warning labels complete and readable?
2. Check the post, boom and lifting device supports regarding damages, wear, corrosion and deformation.
3. Check the load bearing elements regarding smooth function (post, pulley).
4. Check all bolts regarding wear and deformation. Are all securing pins in the bolts?
5. Check the wire rope regarding damage, corrosion and correct dimensions.
6. Winch: inspection according to the instructions of the manufacturer.
7. Installation of the lifting device supports: check regarding damage on the load bearing parts of the building, corrosion, deformation and tight fastening of the base parts.
8. Use your personal protective equipment (PPE).

60 mm & 100 mm

Legend:

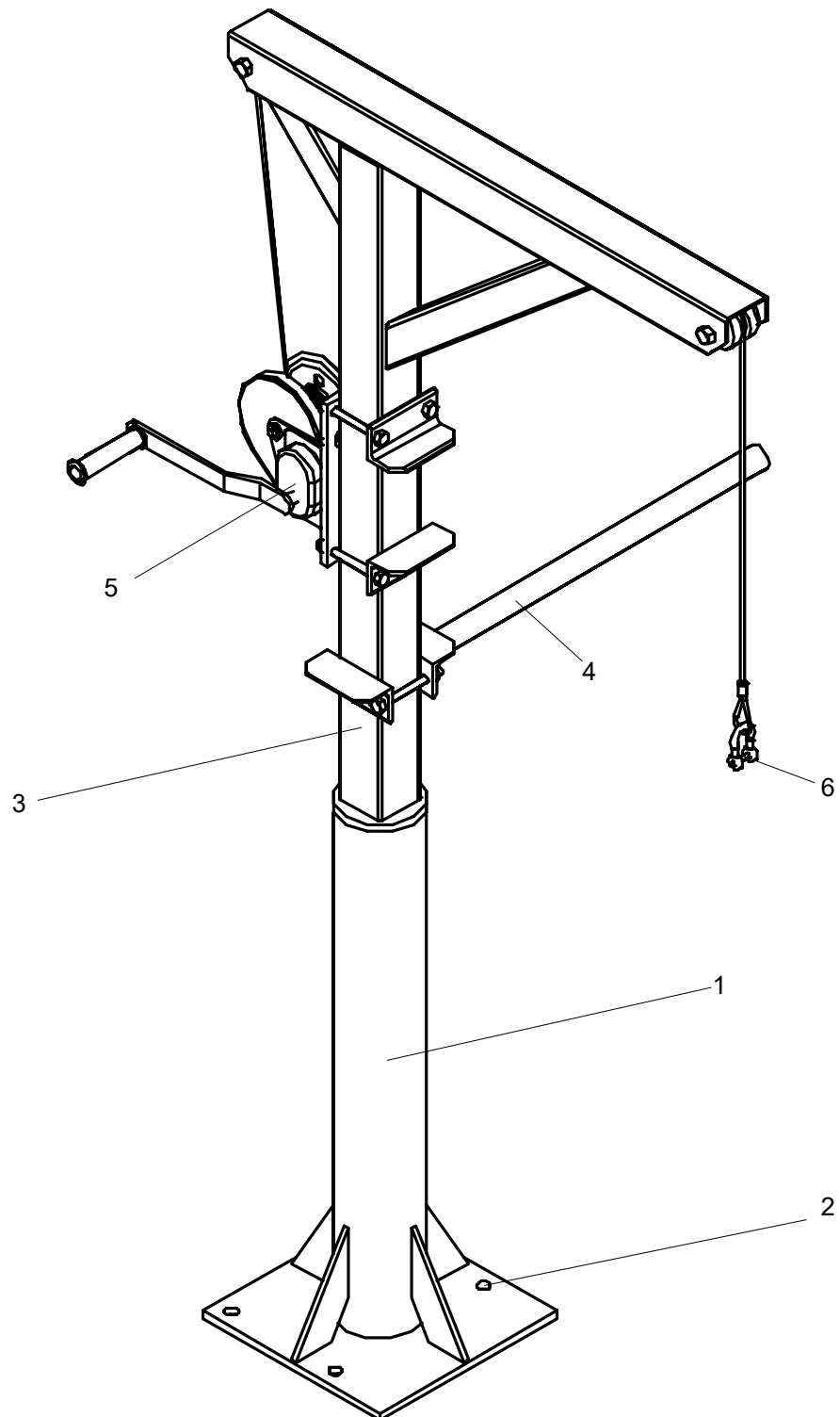
- | | | |
|-----------------------|---------------|-----------------|
| 1 Wall fixing support | 4 Handle grip | 7 Stopper clamp |
| 2 Square tube support | 5 Rope winch | 8 Rope |
| 3 Square tube max.6m | 6 Shackle | 9 Bottom plate |



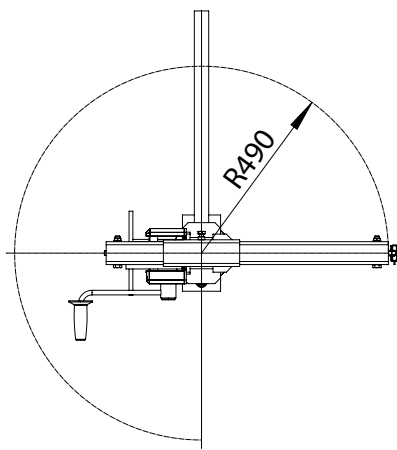
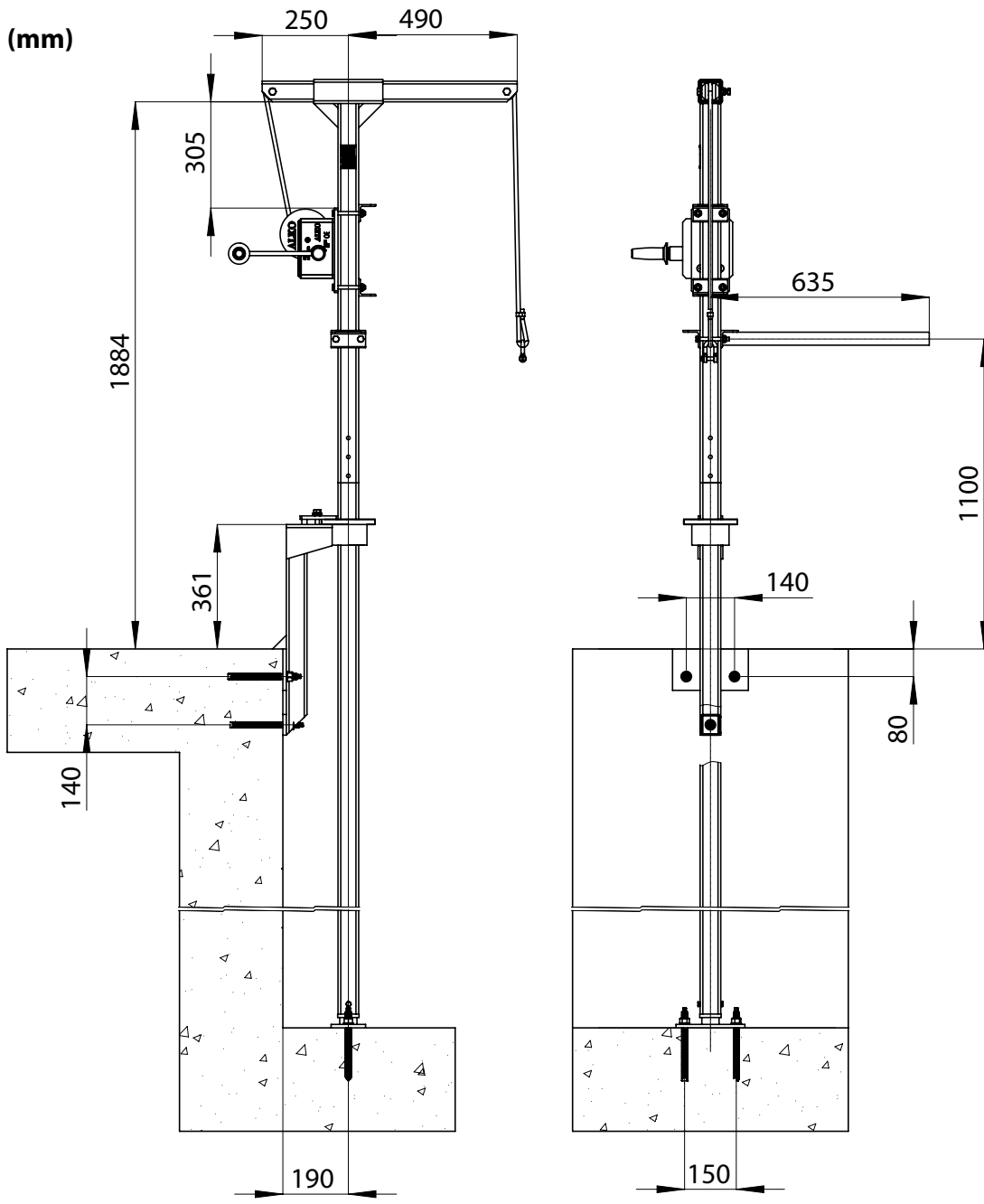
2.3 kN

Legend:

- | | |
|-------------------------|---------------|
| 1 Bottom fixing support | 4 Handle grip |
| 2 Chemical anchor bolts | 5 Rope winch |
| 3 Lifting unit | 6 Shackle |

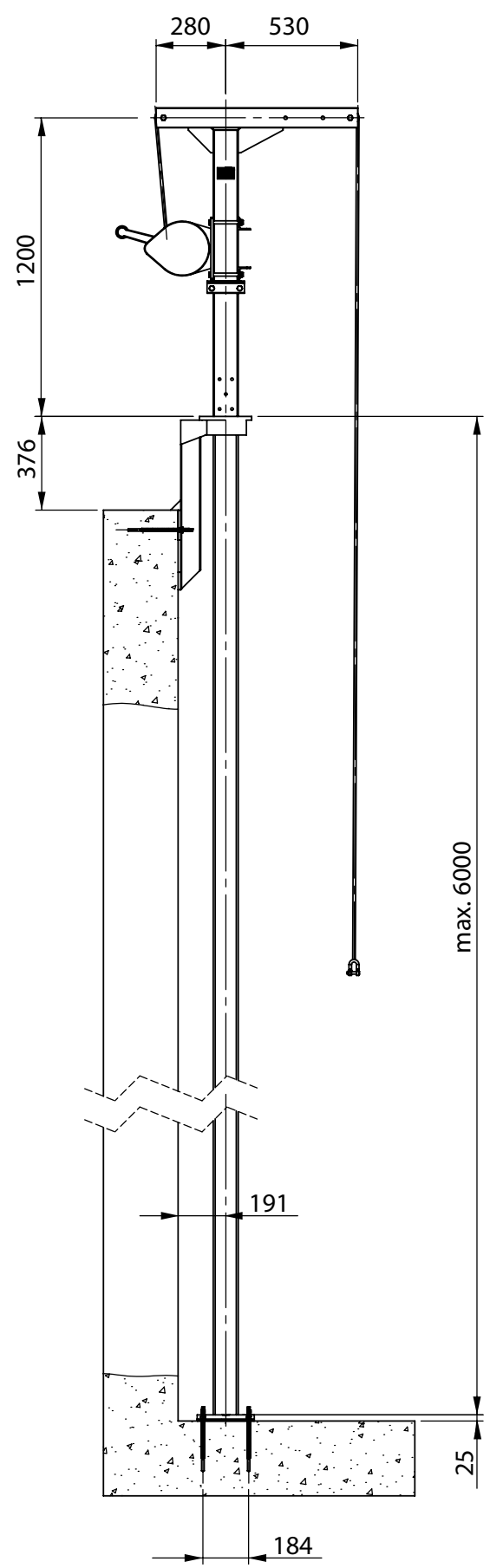
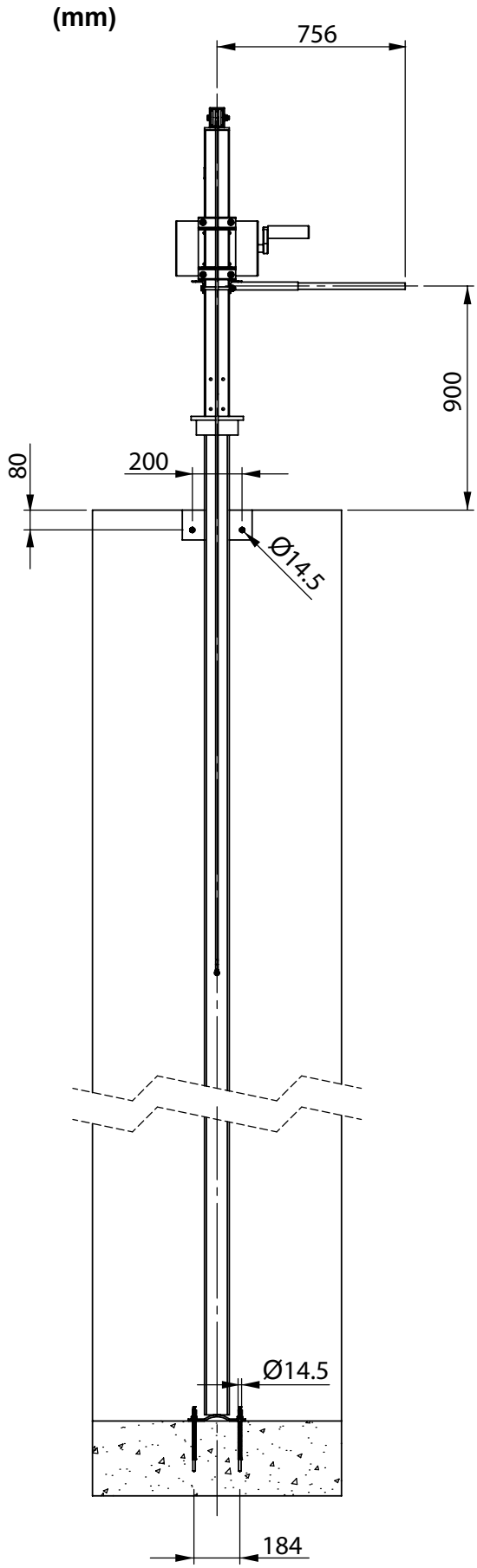


(mm)



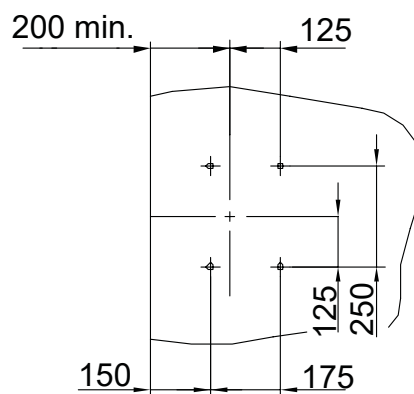
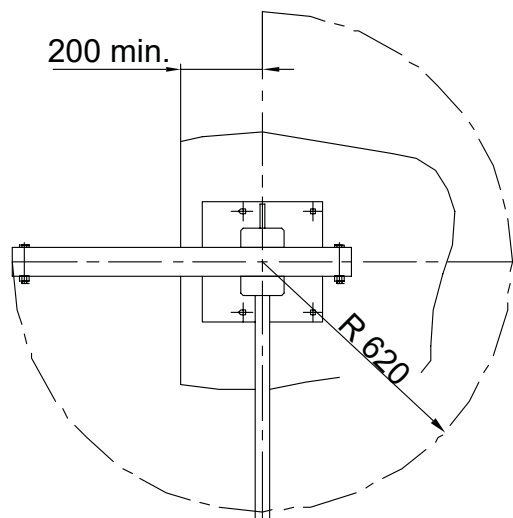
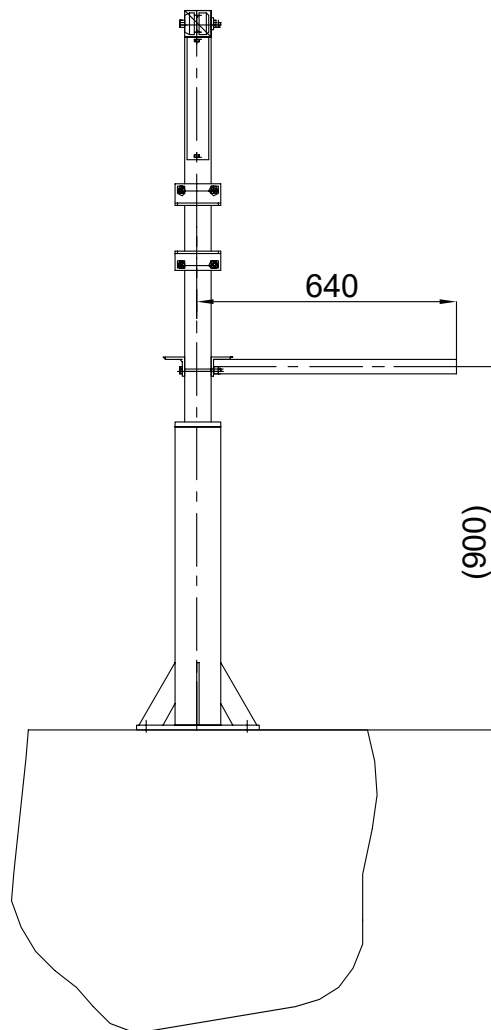
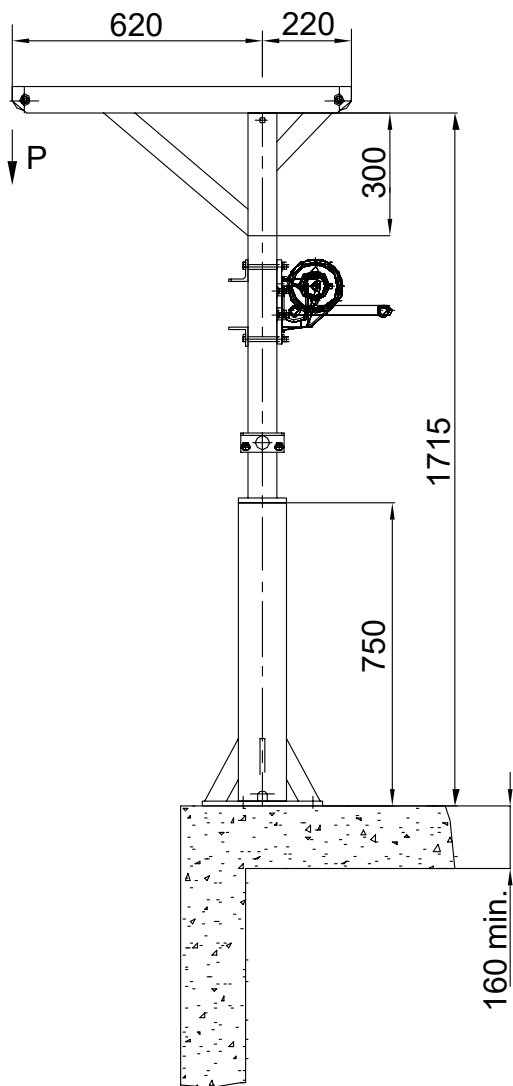
60 mm

0506-0001

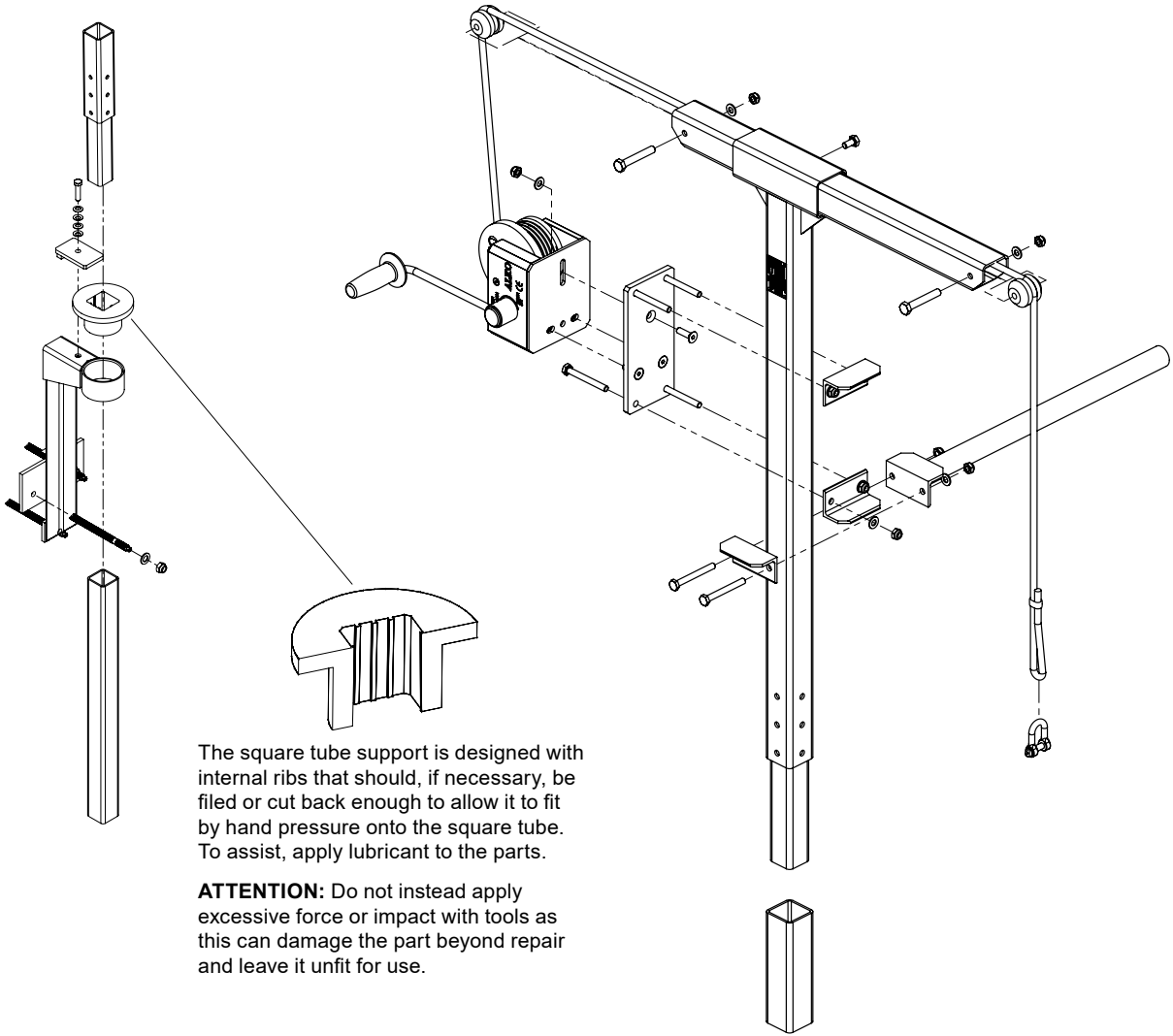


100 mm

(mm)

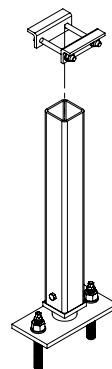
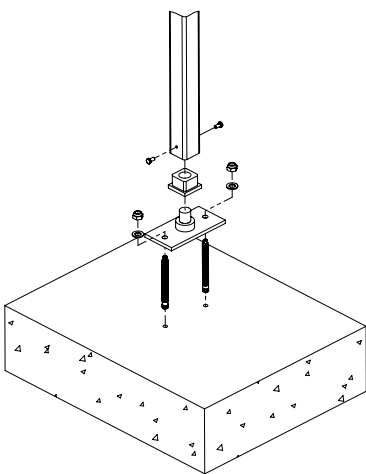


2.3 kN

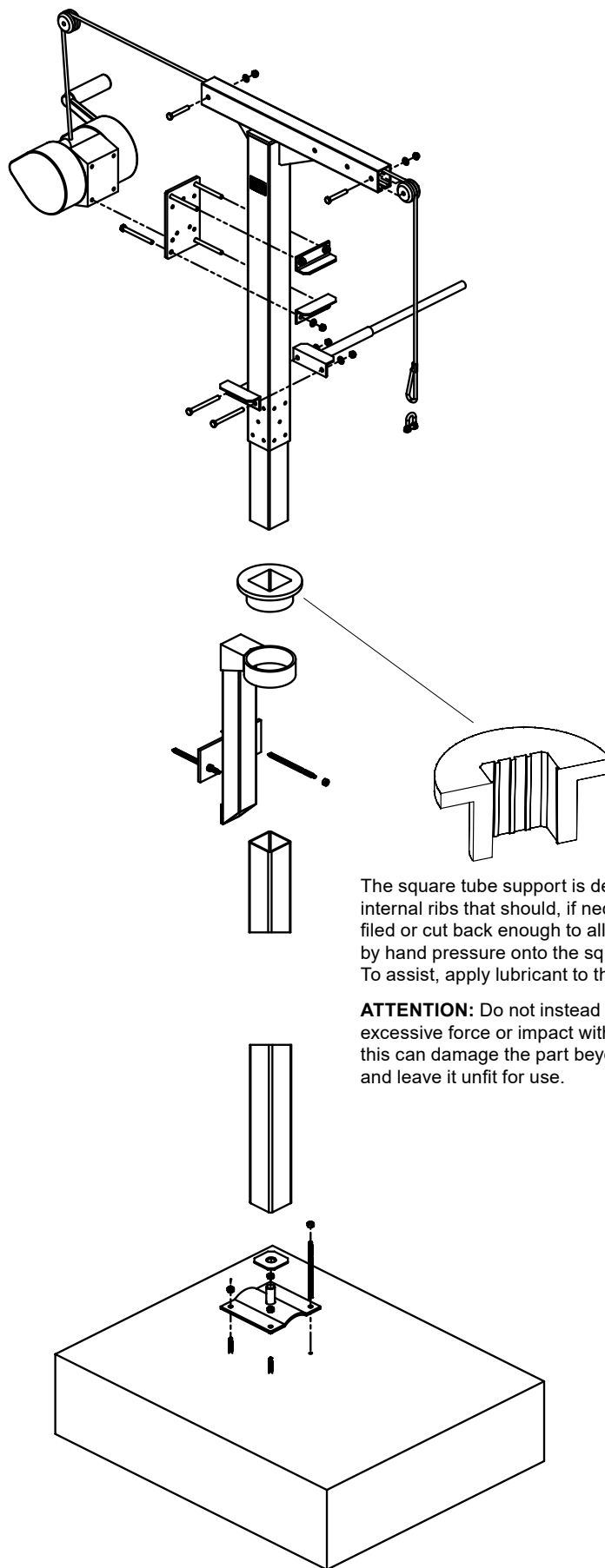


The square tube support is designed with internal ribs that should, if necessary, be filed or cut back enough to allow it to fit by hand pressure onto the square tube. To assist, apply lubricant to the parts.

ATTENTION: Do not instead apply excessive force or impact with tools as this can damage the part beyond repair and leave it unfit for use.



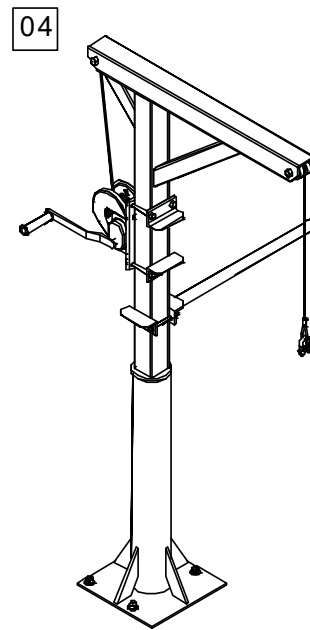
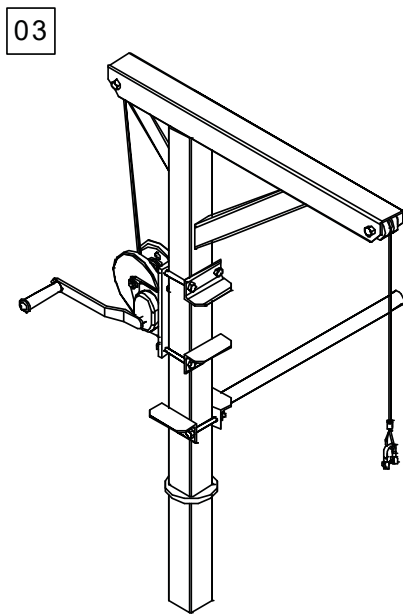
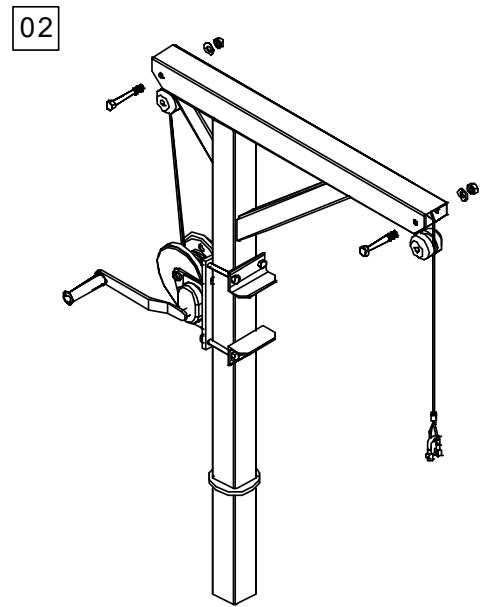
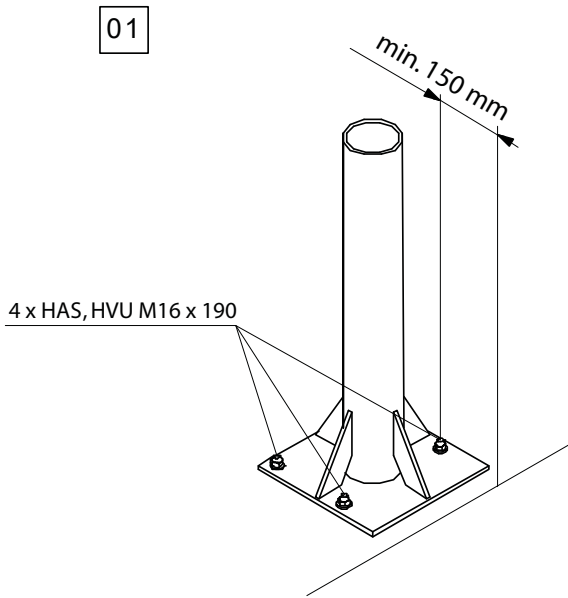
60 mm



The square tube support is designed with internal ribs that should, if necessary, be filed or cut back enough to allow it to fit by hand pressure onto the square tube. To assist, apply lubricant to the parts.

ATTENTION: Do not instead apply excessive force or impact with tools as this can damage the part beyond repair and leave it unfit for use.

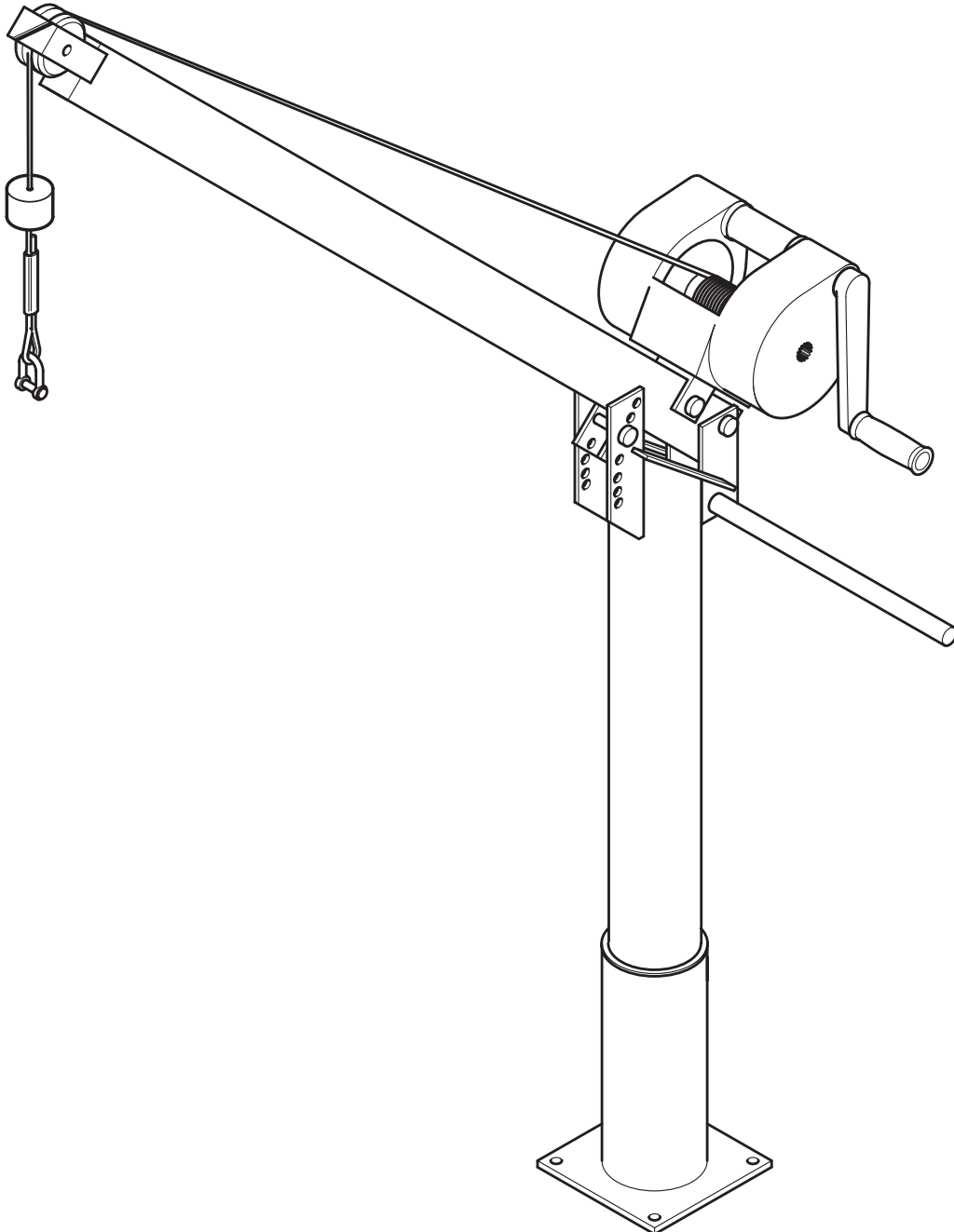
100 mm



2.3 kN



Lifting Unit Type ABS 5 kN



1 597 0503 GB 03.2016

en

Installation and Operating Instructions

Translation from original instruction

www.sulzer.com

Lifting unit type ABS 5 kN

Installation and Operating Instructions

for lifting unit type ABS 5 kN

Lifting device support, shape A (for pedestal base)

Lifting device support, shape B (wall mount base)

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1.6	Nameplate.....	6
2	Security	6
2.1	Safety instructions for the operator of the lifting unit	7
3	Installation of the lifting device support	8
4	Assembly and reassembly of the lifting unit	9
5	Installation example	10

Appendix:

Check list/Hints for the check by an expert

Installation and operating instructions of the winch (part of the packing of the manufacturer).

Instructions for the handling of chemical anchors (part of the packing of the manufacturer).

Lifting unit type ABS 5 kN

1 General

1.1 Introduction

These **Installation and Operating Instructions** and the separate booklet **Safety Hints** contain basic instructions and safety hints which must be observed during transport, installation and commissioning. For this reason it is essential that they are read by the installing technician as well as by relevant skilled operators or users. They should also be always available where the unit is installed.



Safety Instructions which might cause danger to life in case of non-observance have been specifically highlighted with the general danger symbol.

ATTENTION *Appears at safety hints, the non-observance of which could damage the unit or affect its functioning.*

NOTE *Used for important pieces of information.*

Illustrations code; e.g. (3/2). The first digit refers to the figure no. and the second digit to the position in that figure.

The documents listed below are integral parts of these installation and operating instructions:

- Installation and operating instructions for ABS lifting unit 5 kN.
- Declaration of conformity for ABS lifting unit as defined by: Machinery Directive 2006/42/EC.
- Check list for the expert inspections of winches, pulling and lifting devices.

The documents listed below are also substantial parts of these instructions:

- Operating instructions for the winch.
- Instructions for the handling of chemical anchors.

1.2 Application areas

The ABS lifting unit 5 kN is suitable to lift and lower submersible mixers, pumps, aerators and their accessories manually. It can be rotated 360°; the boom can be adjusted to the required overhang and lifting capacity by tilting it.

Rating according to DIN 15018 is H1/B1. The winch rating is 1 Cm.

For easy handling when working in different areas the lifting unit can be disassembled into three main parts:

- 1) Post
- 2) Boom
- 3) Winch with wire rope

In the working position the lifting unit is pushed into a lifting device support which is connected to the building. Lifting device supports are available either for pedestal base (A) or wall mount base (B).

1.3 Application limitations

The ABS lifting unit 5 kN and the lifting device supports are weather proof. Some of the winches are not and should be stored in a sheltered place when not being used.

If the lifting unit is operated in aggressive atmosphere or the wire rope in an aggressive liquid they have to be cleaned after operation and must be checked by an expert in shorter intervals.



The maximum allowable loads must be observed when using the ABS lifting unit 5 kN.

Lifting unit type ABS 5 kN

1.4 Dimensions



The max. lifting capacity for the different overhangs can be obtained from the nameplate on the lifting unit.

0503-0002

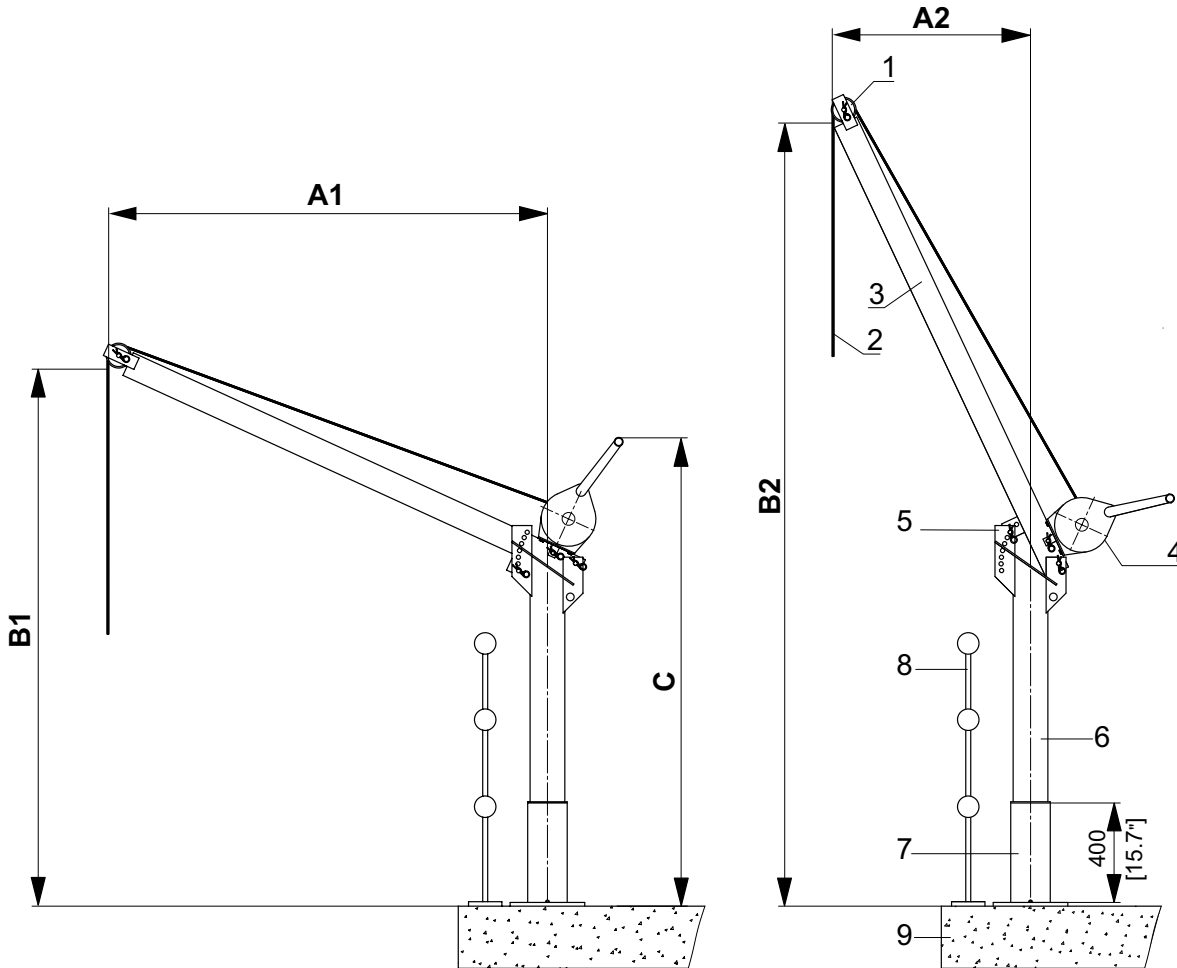


Figure 1 Dimensions

Legend

- | | |
|----------------|---|
| 1 Pulley | 6 Post |
| 2 Rope | 7 Lifting device support |
| 3 Boom | 8 Parapet (Part of the construction) |
| 4 Rope winch | 9 Bottom plate (Part of the construction) |
| 5 Boom locking | |

Dimensions for boom 1500 mm and 2000 mm

Dimension	Boom 1500 mm [59.1 in]	Boom 2000 mm [78.7 in]
A1	max. 1300 mm [51.2 in] to 3 kN [674 lbf] max. 1000 mm [39.4 in] to 5 kN [1124 lbf] max. 800 mm [31.5 in] to 6.5 kN [1461 lbf]	max. 1750 mm [68.9 in] to 3 kN [674 lbf] max. 1000 mm [39.4 in] to 5 kN [1124 lbf] max. 800 mm [31.5 in] to 6.5 kN [1461 lbf]
A2	min. 585 mm [23.0 in]	min. 800 mm [31.5 in]
B1	1980 mm [78.0 in]	2160 mm [85.0 in]
B2	2730 mm [107.5 in]	3150 mm [124.0 in]
C	max. 1850 mm [72.9 in]	max. 1850 mm [72.9 in]

Lifting unit type ABS 5 kN

1.5 Type designation of the ABS lifting unit and the components

Type designation of the complete lifting unit: **ABS lifting unit 5 kN.**

Type designation of the rope winch: e.g. "PFAFF Alu-Wire Rope winch 500 kg with two speeds"

Type designation of the lifting device support:

for pedestal base (A).

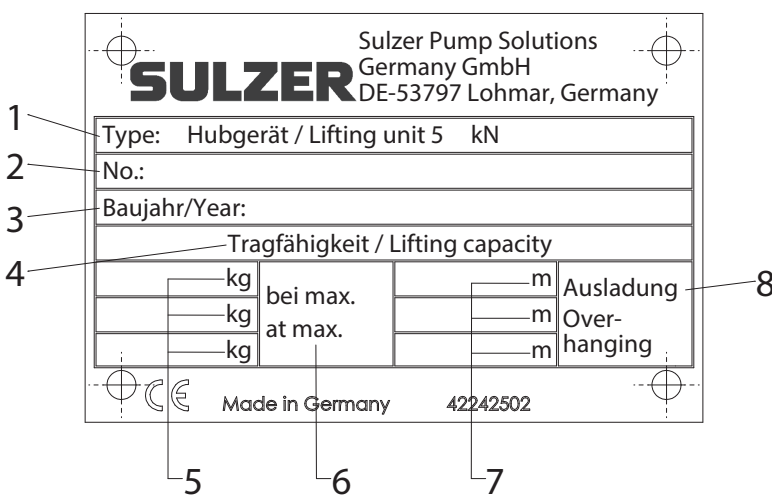
for wall mount base (B).

Type and dimension of the lifting rope:

Wire rope 7 x 19 + SE, acc. to DIN 3069, AISI 316, D = 6 mm, min. breaking load 18.8 kN, low twist.

1.6 Nameplate

We recommend that you record the data from the original nameplate on the nameplate illustrated in Fig. 2 below so that you can refer to the data at any time.



- 0503-2502
- Legend**
- 1 Type designation
 - 2 Unit nr.
 - 3 Production year
 - 4 Lifting capacity
 - 5 Lifting capacity in [kg]
 - 6 at max...
 - 7 overhang in [m]
 - 8 overhang

Figure 2 Nameplate 42242502

2 Security

The following standards and regulations have to be observed:

- DIN 15020 T1 and 2
- UVV VBG 1, 8, 9, 9a

the owner of the lifting unit has to make sure that.....

- These instructions are always available to the operator.
- The lifting unit is only operated by skilled and instructed individuals.
- The operator is using all required personal protection equipment.
- The lifting unit is checked by an expert before commissioning. (Faultless assembly and installation, ready for work). A written report on this inspection is required.
- The unit will be checked by an expert at least once a year.(See check list at the end of this booklet) When operating the unit under unfavourable conditions more frequent checks may be required.
- No changes on the unit are to be made without prior written consent from the manufacturer.
- Damages to the unit are immediately repaired and faulty units are not operated.

Lifting unit type ABS 5 kN

2.1 Safety instructions for the operator of the lifting unit



Study installation and operating instructions with care!



Prior to any operation, the lifting unit has to be checked carefully, including correct guidance in the lifting device support. In case of faults the owner has to be informed immediately and the unit has to be blocked!



Make sure no persons are within the working radius of the unit. If required this area is to be blocked by suitable means.



Do not stand under the suspended load!



Never exceed the maximum load, related to the actual overhang!



Use suitable sling elements only (according to VBG UVV 9a)!



Make sure that there is no risk of jamming or catching of the load!



Moving human beings with the lifting unit is strictly prohibited!



The load must never move out-of-perpendicular!



The winch is not to be operated by motors!



The wire rope must not be used to sling the load!



The load must always be visible to the operator. If this is not possible, the assistance of a second person is required (Marshal)!



When winding the wire rope it always has to be held tight! If the rope is wound not tight enough on the winch drum, the breaking load of the rope can be reduced dramatically! An additional weight attached to the end of the wire rope will reduce the risk of loose winding.



Attaching the wire rope to the winch drum is to be done according to the instructions of the winch manufacturer!



At least three turns of wire rope must remain on the winch drum when the load is in its lowest position!



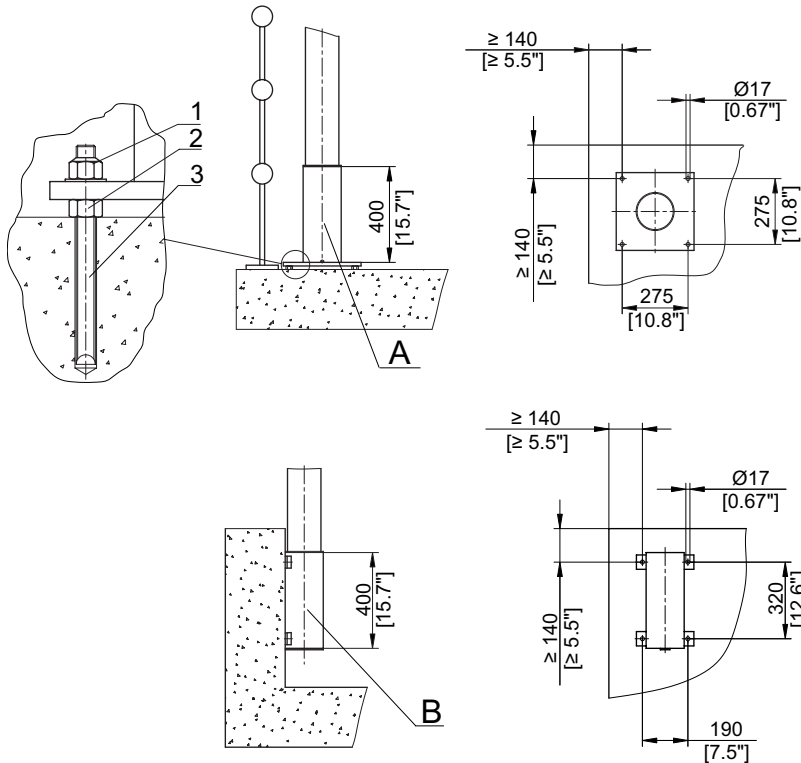
When operating the unit all bolts have to be secured by security pins!

Lifting unit type ABS 5 kN

These hints are only supplementary to the regulations of DIN 15018 and the regulations for the prevention of accidents from the authorities VBG 8, VGB 9a.

Furthermore any local regulations are to be observed!

3 Installation of the lifting device support



Legend

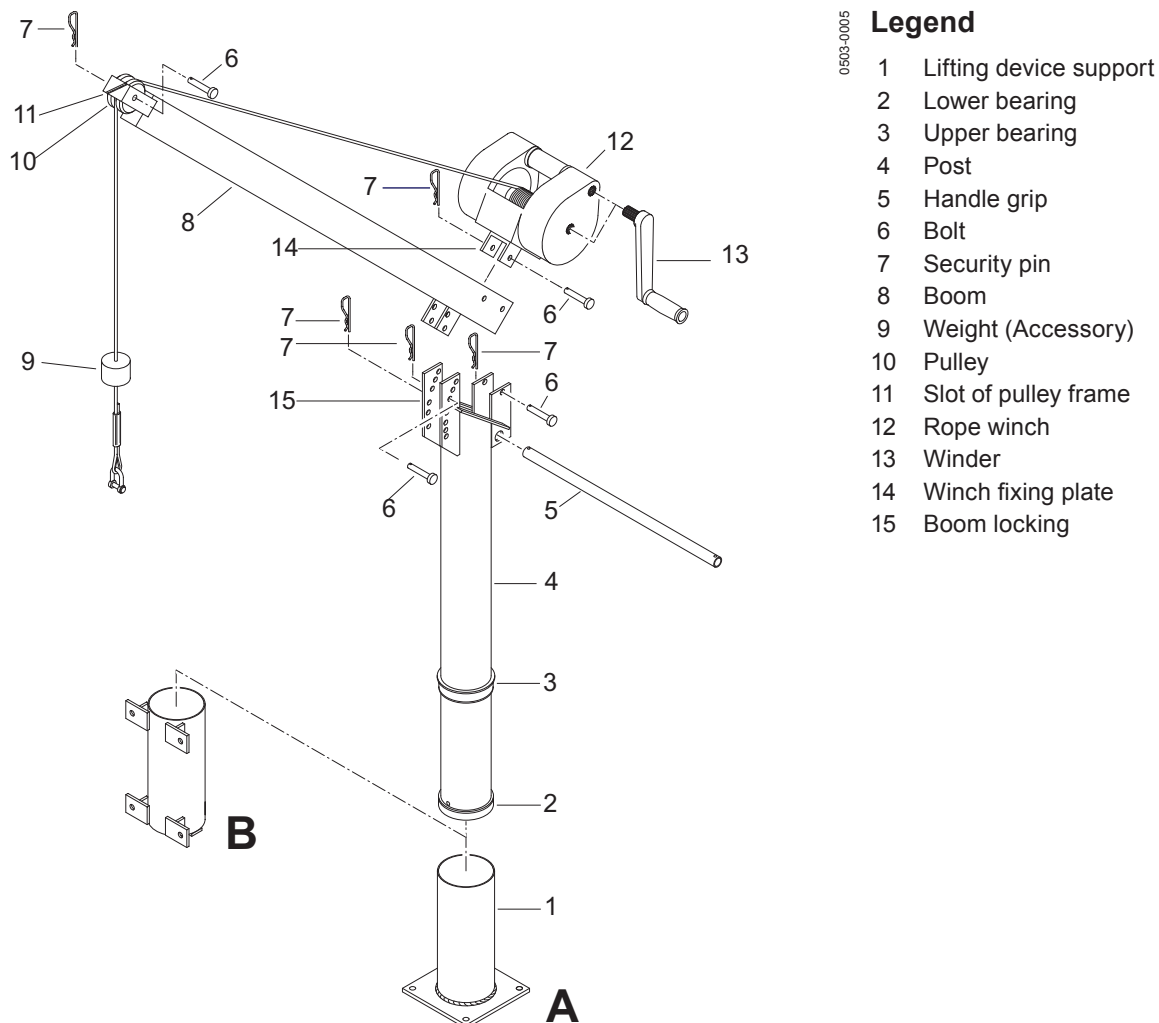
- 1 Hexagon nut DIN 985
- 2 Hexagon nut ISO 4032
- 3 e.g. Anchor rods
- A** Lifting device support, shape A (pedestal mount base)
- B** Lifting device support, shape B (wall mount base)

Figure 3 Options lifting device support

- First check all parts whether they are correct and all available according to the parts list.
- Inspection of the installation site according to the drawings:
 - a. Check the installation site regarding stability (min. B25).
 - b. Check the installation place regarding suitability for the safe operation of the lifting unit.
 - c. To allow the precise alignment of the pedestal base (shape B) and a correct transfer of the load to the building, nuts (3/2) have to be placed below the base plate.
- Take care of correct conditions for anchoring, e.g:
 - Depth of holes
 - Drill diameter
 - Edge spacings
 - Working temperature
 - Expiration date of plastic mortar
 - Curing time
 - Fastening torque of nuts
 - Nut lockings
- Before first operation of the lifting unit the support installation has to be inspected by an expert. A written report on this inspection is required.

4 Assembly and reassembly of the lifting unit

Before first assembly all parts have to be checked whether they are all available and correct according to the parts list. Before first operation of the assembled unit including support it has to be inspected by an expert. A written report on this inspection is required. (See attached check list.)



- 0503-0005
- Legend**
- 1 Lifting device support
 - 2 Lower bearing
 - 3 Upper bearing
 - 4 Post
 - 5 Handle grip
 - 6 Bolt
 - 7 Security pin
 - 8 Boom
 - 9 Weight (Accessory)
 - 10 Pulley
 - 11 Slot of pulley frame
 - 12 Rope winch
 - 13 Winder
 - 14 Winch fixing plate
 - 15 Boom locking

Figure 4 Assembly/reassembly of the lifting unit

Assembly

- Insert the post (4/4) into the lifting device support (4/1).
- Interlock the boom (4/8) with the post (4/4) by inserting and securing the first bolt (4/6) into the lowest drilling of the resp. boom locking with a security pin (4/7).
- Tilt the boom upwards until the second bolt (4/6) can be inserted and secured with a security pin (4/7).
- Connect the winch plate (4/14) with the winch (4/12) according to the instructions of the winch manufacturer.
- Attach the winch to the boom (4/8) with the third bolt (4/7) and secure the bolt with a security pin.
- Connect the wire rope to the winch drum according to the manufacturer's instructions. Pull the wire rope through the slot of the pulley frame (4/11) on to the pulley (4/10). Wind the wire rope tightly on to the winch drum.
- The wire rope has to be long enough to keep at least three turns on the winch drum in the lowest position of the load.
- Adjust the angle of the boom according to the required overhang and load.

Lifting unit type ABS 5 kN



Load max. 300 kg [662 lb] at a max. overhang of 1.30 m [51 in]! (only for boom 1500 mm/59,1 in)



Load max. 300 kg [662 lb] at a max. overhang of 1.75 m [69 in]! (only for boom 2000 mm/78,7 in)



Load max. 500 kg [1103 lb] at a max. overhang of 1.0 m [39 in]!



Load max. 650 kg [1443 lb] at a max. overhang of 0.8 m [31 in]!

- Insert the handle grip (4/5) into the corresponding holes of the post and secure it with the security pin (4/7).
- Check the correct position of the upper bearing ring (4/3). To reduce friction this ring can be lubricated.

Disassembly

Before moving the lifting unit to another lifting device support it can be disassembled working the above steps reversely.

ATTENTION *If the unit will not be operated for longer periods the winch should be disconnected and stored in a sheltered place.*

5 Installation example

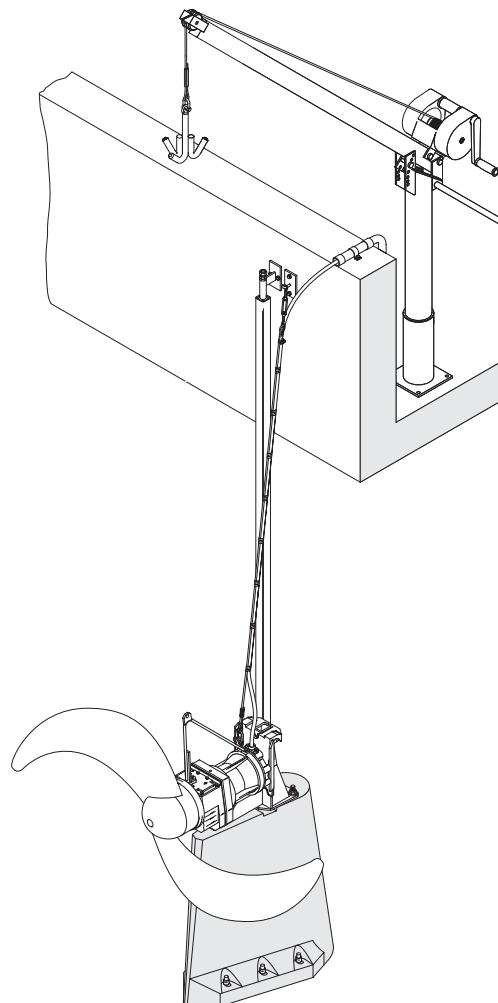


Figure 5 Installation example with ABS flow booster SB 2500

HINT

The lifting hook is not part of the standard delivery!

Lifting unit type ABS 5 kN

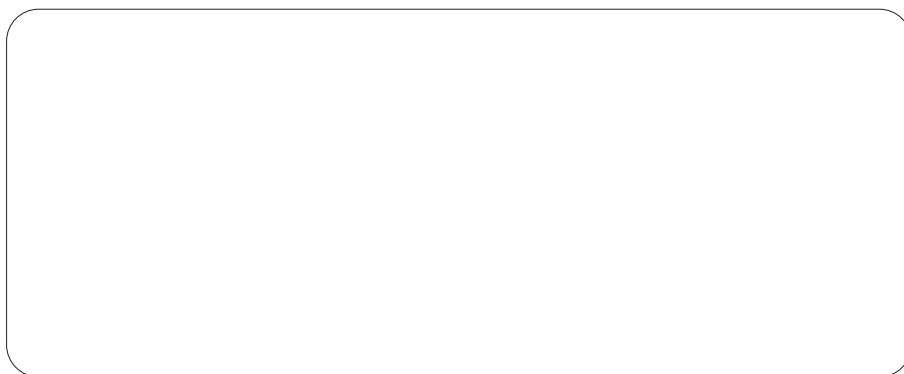
1. Manufacturer: Sulzer Pump Solutions Germany GmbH, Scheiderhöher Str. 30 – 38 D-53797 Lohmar
2. Year of production: _____
3. Serial no.: _____
4. Lifting capacity: _____
5. Manufacturer of rope winch: _____ Type: _____
6. Lifting rope: Diameter: Ø _____ mm Min. breaking load: _____ kN
7. Check before first operation: On: _____ By: _____

Recur checks (at least once a year)

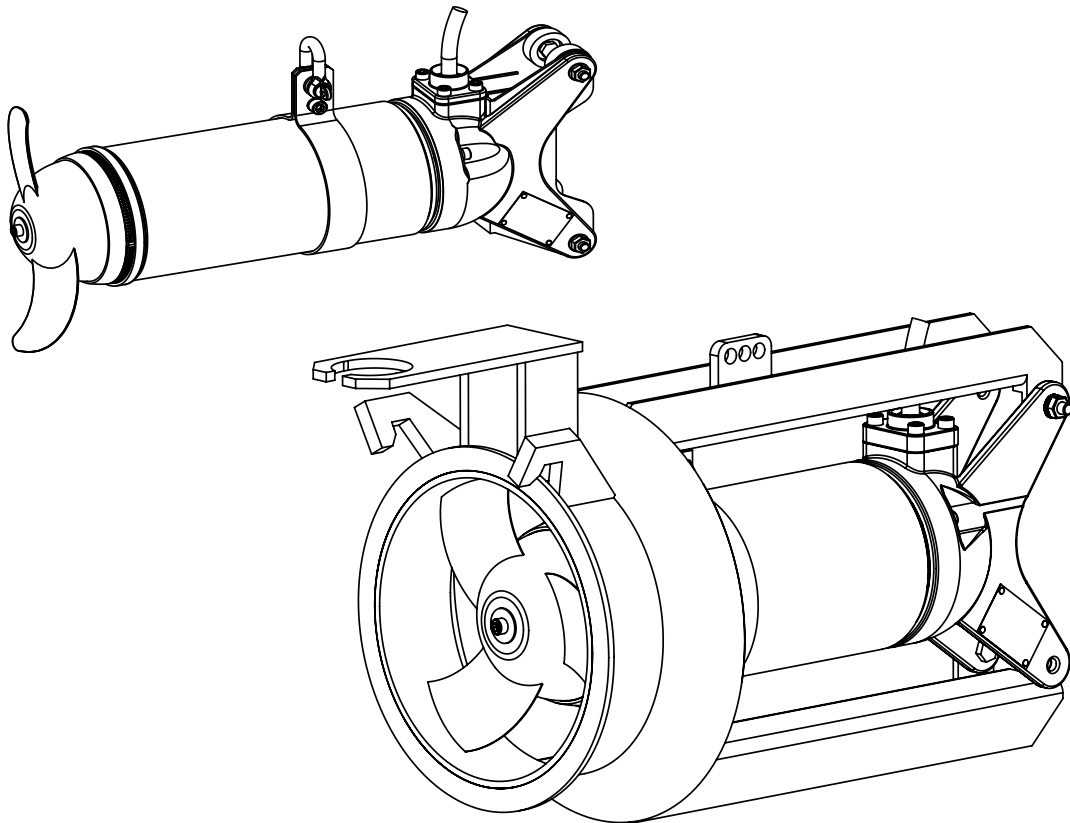
Date	Result	Signature	Repaired	
			On	By

Hints for checks by an expert

1. Are the nameplate, load rating and warning labels complete and readable?
2. Check the post, boom and lifting device supports regarding damages, wear, corrosion and deformation.
3. Check the load bearing elements regarding smooth function (post, pulley).
4. Check all bolts regarding wear and deformation. Are all securing pins in the bolts?
5. Check the wire rope regarding damages, corrosion and correct dimensions.
6. Winch: Inspection according to the instructions of the manufacturer.
7. Installation of the lifting device supports: Check regarding damage on the load bearing parts of the building, corrosion, deformation and tight fastening of the base parts.



Submersible Mixer Type ABS RW 300
Submersible Recirculation Pump Type ABS RCP 250



Installation and Operating Instructions

For Submersible Recirculation Pump RCP 250 and Submersible Mixer RW 300

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1 General

1.1 Introduction

These **Installation and Operating Instructions** and the separate booklet "**Safety Instructions for Sulzer Products Type ABS**" contain basic instructions and safety hints which must be observed during transport, installation and commissioning. For this reason it is essential that they are read by the installing technician as well as by relevant skilled operators or users. They should also be always available where the unit is installed.



Safety Instructions which might cause danger to life in case of non-observance have been specifically highlighted with the general danger symbol.



The presence of a dangerous voltage is identified with this safety symbol.



This symbol indicates the danger of an explosion occurring.

ATTENTION *Appears at safety hints, the non-observance of which could damage the unit or affect its functioning.*

NOTE *Used for important pieces of information.*

Illustrations code; e.g. (3/2). The first digit refers to the figure no. and the second digit to the position in that figure.

1.2 Correct usage of the products

The Sulzer products have been designed and built in accordance with the latest technology and taking into account the relevant safety regulations. However improper usage could cause a danger to life or limb of the user of a third party or cause damage or function impairment to the unit itself and other items of value.

The Sulzer units should only be used if they are in perfect technical condition taking into account all safety requirements and conscious of the need to avoid potentially dangers. The contents **of the installation and operating instructions and the safety hints** must be applied! Any other usage (abnormal usage) or usage beyond that specified will be considered as non-compliance.

The manufacturer/supplier will not accept any responsibility for damage due to this. The risk is borne by the user. In case of doubt the entire scope of the planned application must be approved by **Sulzer Pump Solutions (Kunshan) Co, Ltd.**

In the case of any faults arising, the Sulzer units should immediately be taken out of use and secured. The fault should be immediately rectified, or if necessary, contact your Sulzer Service Centre.

1.3 Application restrictions of RW / RCP

The RW 300 can be supplied both in standard and in explosion-proof versions (ATEX II 2G Ex h db IIB T4 Gb) for 50 Hz according to the standards EN ISO 12100:2010, EN 809:1998 + A1:2009 + AC:2010, EN 60079-0:2012 + A11:2018, EN 60079-1:2014, EN ISO 80079-36, EN ISO 80079-37.

Limitations: The ambient temperature range is 0 °C to + 40 °C (32 °F to 104 °F)
Immersion depth maximum 20 m / (65 ft)

ATTENTION *In special cases an immersion depth greater than 20 m / 65 ft is possible. However, the maximum number of starts according to the motor datasheet may not be exceeded. In order to do this you need the written approval from the manufacturer Sulzer.*



Pumping of flammable or explosive liquids with these pumps is not allowed!



Only explosion-proof executions may be used in hazardous areas!

ATTENTION *Leakage of lubricants could result in pollution of the medium being pumped.*

Operation of RW 300 Ex:

In hazardous areas care must be taken that during switching on and operation of the unit it is submerged or under water. Other types of operation e.g. snore operation or dry running are not allowed!

ATTENTION *RW 300 with Ex h d IIB T4 approval is not equipped with a DI in the oil chamber.!*

The temperature monitoring of the RW 300 Ex has to be carried out by bimetallic temperature limiters or thermistors according to DIN 44 081-150 connected to a suitable release device which is certified in accordance with EC directive 2014/34/EU.

Operation of RW 300 Ex with frequency inverter:

Motors must have direct thermal protection devices fitted. These consist of temperature sensors (PTC DIN 44081-150) embedded in the windings. These must be connected to a suitable release device which is certified in accordance with EC directive 2014/34/EU.

Machines designated as Ex machines may never, without exception, be operated using a mains frequency that is greater than the maximum of 50 Hz or 60 Hz as indicated on the nameplate.

ATTENTION *Repair work on explosion-proof motors may only be carried out in authorized workshops by qualified personnel using original parts supplied by the manufacturer. Otherwise the Ex-approvals are no longer valid. All Ex-relevant components and dimensions can be found in the modular workshop manual and the spare parts list.*

ATTENTION *After repair work in unauthorized workshops by unqualified personnel the Ex approvals are no longer valid. After such repair the unit must not be operated in hazardous areas. The Ex nameplate has to be removed.*



1.4 Application areas

1.4.1 Application areas RW

The ABS submersible mixer RW 300, with a water pressure-tight encapsulated submersible motor, is a high class quality product with the following range of applications in municipal treatment plants, in industry and in agriculture:

- Mixing
- Stirring
- Agitation

1.4.2 Application areas RCP

The ABS submersible recirculation pump RCP 250 is fitted with a water pressure tight encapsulated motors and is a quality product suitable for use in the following areas:

- Pumping and recirculation of active sludge in treatment plants with nitrogen removal (nitrification/denitrification).
- Pumping of rain and surface water.

1.5 Nameplate

We recommend that you record the data from the original nameplate *Figure 1* so that you can refer to the data at any time.

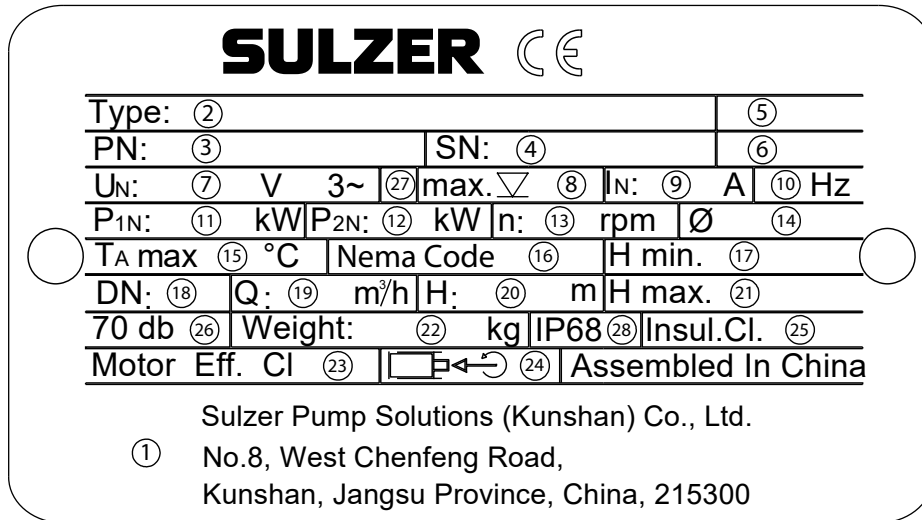


Figure 1: Nameplate

Legend

- | | |
|------------------------------------|---|
| 1 Address | 15 Max. ambient temperature [flexible unit] |
| 2 Type designation | 16 Nema Code Letter (only at 60 Hz) |
| 3 Art. no. | 17 Min. pumping height |
| 4 Serial number | 18 Nominal width |
| 5 Order number | 19 Pumping quantity |
| 6 Year of manufacture [month/year] | 20 Pumping height |
| 7 Nominal voltage | 21 Max. pumping height |
| 8 Max. immersion depth | 22 Weight (without attached parts) |
| 9 Nominal current | 23 Motor efficiency class |
| 10 Frequency | 24 Motor shaft direction of rotation |
| 11 Power (consumption) | 25 Insulation Class |
| 12 Power (output) | 26 Sound level |
| 13 Rotation speed | 27 Phase connection |
| 14 Propeller ∅ | 28 Protection method |

NOTE In all communication please state type of the unit, item and serial number.

1.6 Tightening torque

Tightening torque for Sulzer stainless steel screws A4-70:							
Thread	M6	M8	M10	M12	M16	M20	M24
Tightening torque	6.9 Nm	17 Nm	33 Nm	56 Nm	136 Nm	267 Nm	460 Nm

1.6.1 Fitting position of the Nord-Lock® securing washers

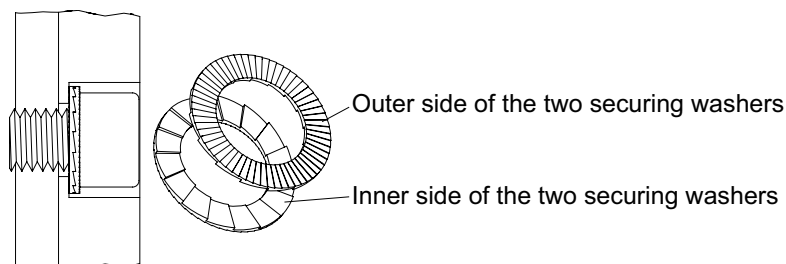


Figure 2: Correct fitting position of the Nord-Lock® securing washers

2.0 Technical data

The maximum noise level of the units of this series is ≤ 70 dB(A). In some types of installation it is possible that the noise level of 70 dB(A) or the measured noise level will be exceeded.

ATTENTION The maximum fluid temperature for continuous operation is 40 °C / 104 °F for a submerged unit.

2.1 Technical data RW 300

	Mixer type	Propeller			Motor type	Motor						Installation					
		Propeller diameter	Speed	Version with flow ring		Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L.)	Starting: Star/Delta	Rated current	Starting current	Temperature monitoring	Seal monitoring	Ex	Guide tube □ 60	Total weight (without flow ring)	Total weight (with flow ring)
		[mm]	[1/min]			[kW]	[kW]			[A]	[A]					[kg]	[kg]
50 Hz 400 V	RW 3021	300	904	○	A 15/6	2.21	1.5	●	-	4.6	16.8	●	●	○	●	47	53
	RW 3022	300	904	○	A 15/6	2.21	1.5	●	-	4.6	16.8	●	●	○	●	47	53
	RW 3031	300	904	○	A 15/6	2.21	1.5	●	-	4.6	16.8	●	●	○	●	47	53
	RW 3032	300	894	○	A 28/6	4.09	2.8	●	-	8.4	30.4	●	●	○	●	51	57
	RW 3033	300	894	○	A 28/6	4.09	2.8	●	-	8.4	30.4	●	●	○	●	51	57
	RW 3034	300	894	○	A 28/6	4.09	2.8	●	-	8.4	30.4	●	●	○	●	51	57
60 Hz 460 V	RW 3021	300	1111	○	A 17/6	2.36	1.7	●	-	4.3	15.5	●	●	-	●	47	53
	RW 3022	300	1111	○	A 17/6	2.36	1.7	●	-	4.3	15.5	●	●	-	●	47	53
	RW 3031	300	1097	○	A 32/6	4.4	3.2	●	-	8.8	24.8	●	●	-	●	51	57
	RW 3032	300	1097	○	A 32/6	4.4	3.2	●	-	8.8	24.8	●	●	-	●	51	57

P₁ = Power input. P₂ = Power output. ● = Standard. ○ = Option. Cable type: 1 x 7G 1.5. 10 m cable with free cable ends as standard.

2.2 Technical data RCP 250

	RCP hydraulics type	Propeller				Motor type	Motor						Total weight (Complete unit)	
		Propeller diameter	Propeller speed	H _{max}	Q _{max}		Rated input power P ₁	Rated motor power P ₂	Starting: Direct (D.O.L.)	Rated current	Starting current	Temperature monitoring		Seal monitoring
		[mm]	[1/min]	[m]	[l/s]		[kW]	[kW]		[A]	[A]			[kg]
50 Hz 400 V	RCP 2533	246	980	1,1	85	A 15/6	2,21	1,5	●	4,6	16,8	●	●	61
	RCP 2534	246	980	1,6	120	A 28/6	4,09	2,8	●	8,4	30,4	●	●	66
	RCP 2535	246	980	1,8	160	A 28/6	4,09	2,8	●	8,4	30,4	●	●	66
60 Hz 460 V	RCP 2533	246	1180	1,1	100	A 17/6	2,36	1,7	●	4,3	15,5	●	●	61
	RCP 2534	246	1180	1,6	145	A 32/6	4,39	3,2	●	8,8	24,8	●	●	66
	RCP 2535	246	1180	1,4	180	A 32/6	4,39	3,2	●	8,8	24,8	●	●	66

P₁ = Power input. P₂ = Power output. ● = Standard. ○ = Option. Cable type: 1 x 7G 1.5. 10 m cable with free cable ends as standard.

NOTE Data applies also for versions with flow ring. Other voltages available on request.

3.0 Dimensions (mm)

3.1 Dimensions RW 300

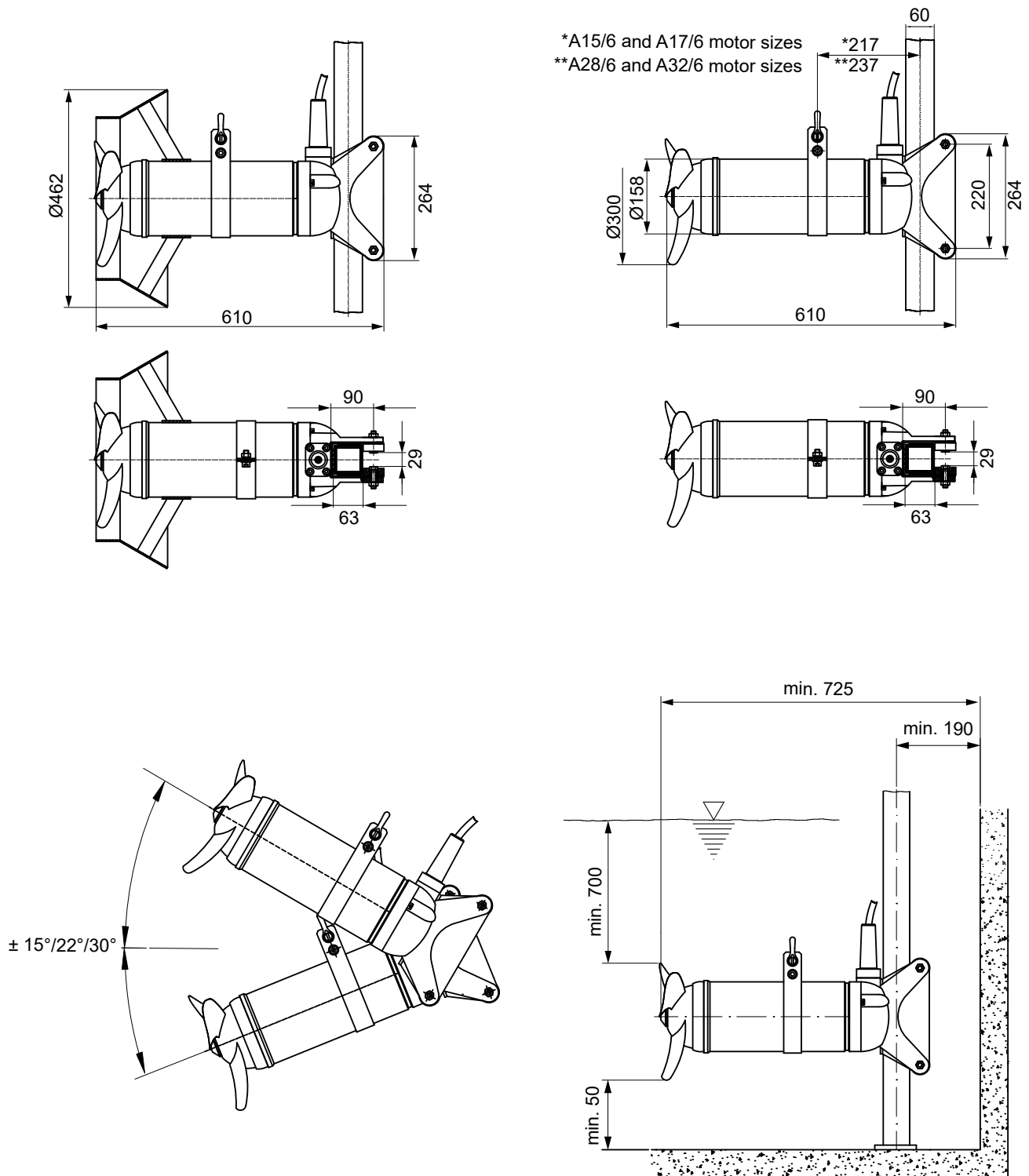


Figure 3: Dimensions RW 300

3.2 Dimension RCP 250

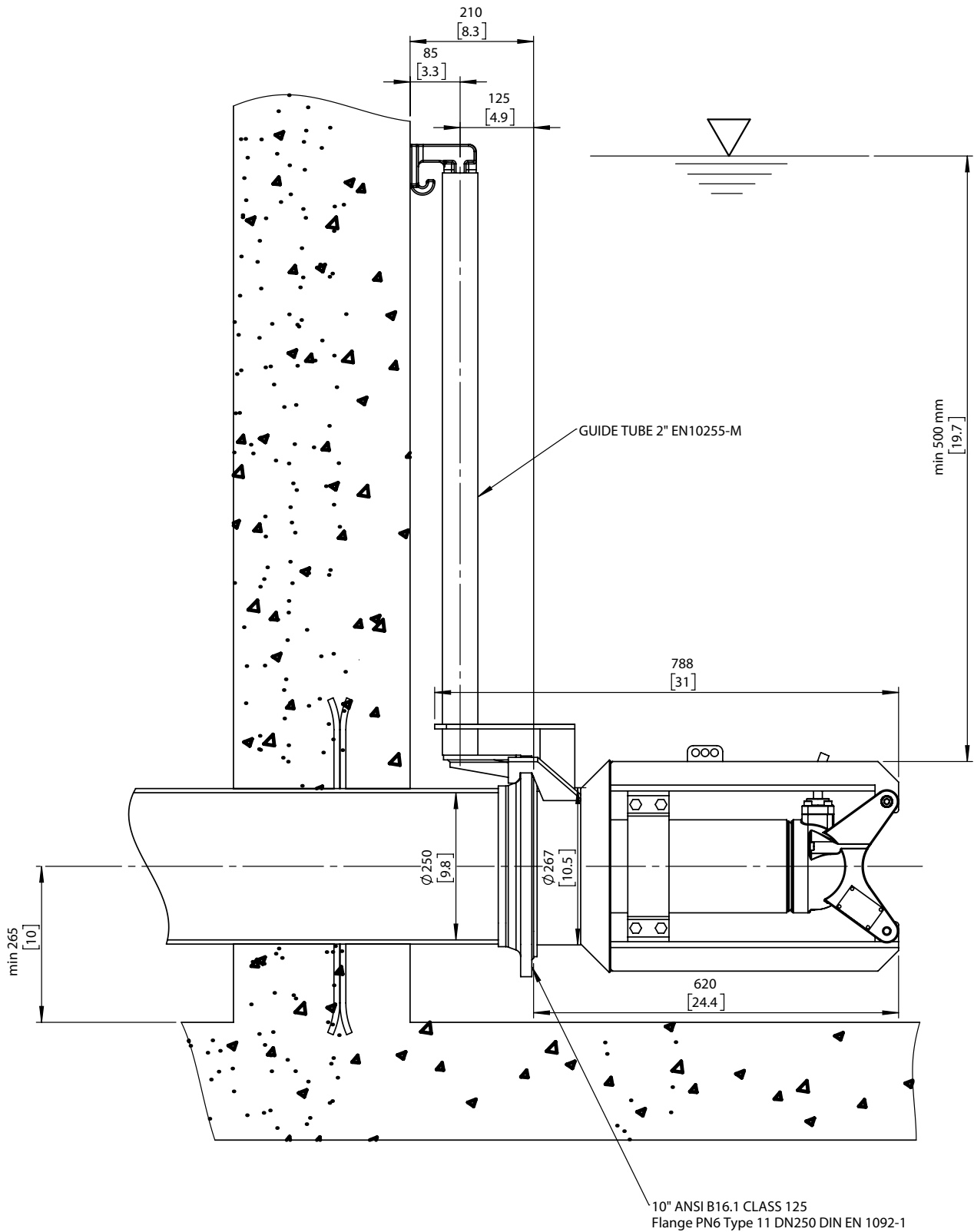


Figure 4: RCP 250

NOTE

The weights of the units can be obtained from the nameplate of the unit or from the tables in Section 2.0 Technical Data.

3.3 Flange dimension check RCP 250 (mm)

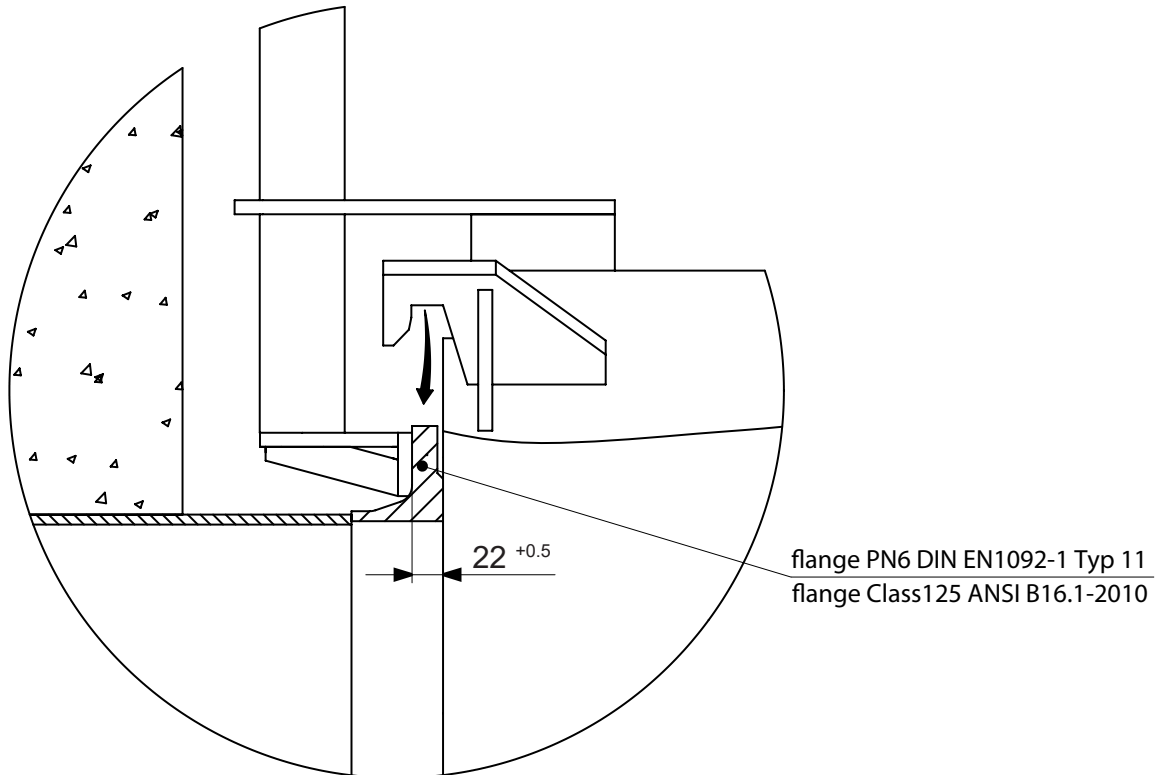


Figure 5: Flange dimensions

ATTENTION Before installing the recirculation pump, check the dimension of the flange. Make sure that the dimension specified in the drawing is adhered to, otherwise the flange will need to be reworked.

4 Safety

The general and specific health and safety hints are described in detail in the separate booklet **Safety Instructions for Sulzer Products Type ABS**. If anything is not clear or you have any questions as to safety make certain to contact the manufacturer Sulzer.

5 Lifting, transport and storage

5.1 Lifting

ATTENTION! *Observe the total weight of the Sulzer units and their attached components! (see nameplate for weight of base unit).*

The duplicate nameplate provided must always be located and visible close to where the pump is installed (e.g. at the terminal boxes / control panel where the pump cables are connected).

NOTE! *Lifting equipment must be used if the total unit weight and attached accessories exceeds local manual lifting safety regulations.*

The total weight of the unit and accessories must be observed when specifying the safe working load of any lifting equipment! The lifting equipment, e.g. crane and chains, must have adequate lifting capacity. The hoist must be adequately dimensioned for the total weight of the Sulzer units (including lifting chains or steel ropes, and all accessories which may be attached). The end user assumes sole responsibility that lifting equipment is certified, in good condition, and inspected regularly by a competent person at intervals in accordance with local regulations. Worn or damaged lifting equipment must not be used and must be properly disposed of. Lifting equipment must also comply with the local safety rules and regulations.

NOTE! *The guidelines for the safe use of chains, ropes and shackles supplied by Sulzer are outlined in the Lifting Equipment manual provided with the items and must be fully adhered to.*



The unit must never be raised by the power cable.

Depending on the version, the units are fitted with a lifting eyelet, to which a chain can be fastened by means of shackles for transportation, installation or removal.



Take note of the entire weight of the unit (see nameplate Figure 1). The hoist and chain must be adequately dimensioned for the weight of the unit and must comply with the current valid safety regulations as well as good technical practice must be observed.



The unit should be protected from rolling over!



The unit is prepared for transportation by placing it on an adequately strong, completely horizontal surface taking care that it cannot topple over.



Do not stay or work in the swivel area of a suspended load!

5.2 Transport securing devices

The motor connection cables are protected against the ingress of moisture along the cable by having the ends sealed at the works with protective covers.

ATTENTION *These protective covers should only be removed immediately prior to connecting the pumps electrically.*

Particular attention is necessary during storage or installation of units in locations, which could fill with water prior to laying and connection of the power cable of the motor. Please note that the cable ends, even where fitted with protective sleeves, cannot be immersed in water.

ATTENTION *These protective covers only provide protection against water spray or similar and are not a water tight seal. The ends of the cables should not be immersed in water, otherwise moisture could enter the connection chamber of the motor.*

NOTE *If there is a possibility of water ingress then the cables should be secured so that the ends are above the maximum possible flood level. Take care not to damage the cable or its insulation when doing this!*

5.3 Storage of the units

ATTENTION *The Sulzer products must be protected from weather influences such as UV from direct sunlight, high humidity, aggressive dust emissions, mechanical damage, frost etc. The Sulzer original packaging with the relevant transport securing devices (where used) ensures optimum protection of the unit. If the units are exposed to temperatures under 0 °C / 32 °F check that there is no water in the hydraulics, cooling system, or other spaces. In the case of heavy frosts, the units and cable should not be moved if possible. When storing under extreme conditions, e.g. in tropical or desert conditions suitable additional protective steps should be taken. We would be glad to advise you further.*

NOTE *Sulzer units do not generally require any particular maintenance during storage. After long storage periods (after approx. one year), the transportation locking device on the motor shaft (not with all versions) should be disassembled. By rotating the shaft several times by hand, new lubricating oil or, depending on the version, a small amount of coolant (which also serves to cool or lubricate the mechanical seals) is applied to the sealing surfaces, thus ensuring perfect operation of the mechanical seals. The bearings supporting the motor shaft are maintenance-free.*

6 Product description

6.1 General description

- Hydraulically optimized propeller with high wear resistance.
- The motor shaft is supported in lubricated-for-life maintenance-free ball bearings.
- The shaft is sealed on the medium side by means of a high quality mechanical seal, which is independent of direction of rotation.
- Oil chamber filled with lubricating oil (oil change not necessary).

Motor

- Three phase squirrel cage motor.
- Rated voltage: 400 V 3~ 50 Hz / 460 V 3~ 60 Hz.
- Other voltages available on request.
- Insulation class F = 155 °C / 311 °F. Protection type IP68.
- Medium temperature for continuous operation: + 40 °C / 104 °F.

Motor monitoring

- All motors are fitted with temperature monitors, which switch off the motor in the case of excessive temperatures. The sensors must be correctly wired into the control panel.

Seal monitoring

- The DI leakage sensor carries out the seal monitoring function and signals the ingress of moisture by means of a special electronic device (option).

Operation with frequency inverters

- When **suitably selected**, can be used with frequency inverters. **Observe the EMC-Directive and the installation and operating instructions of the inverter manufacturer!**

6.2 Structural design RCP 250

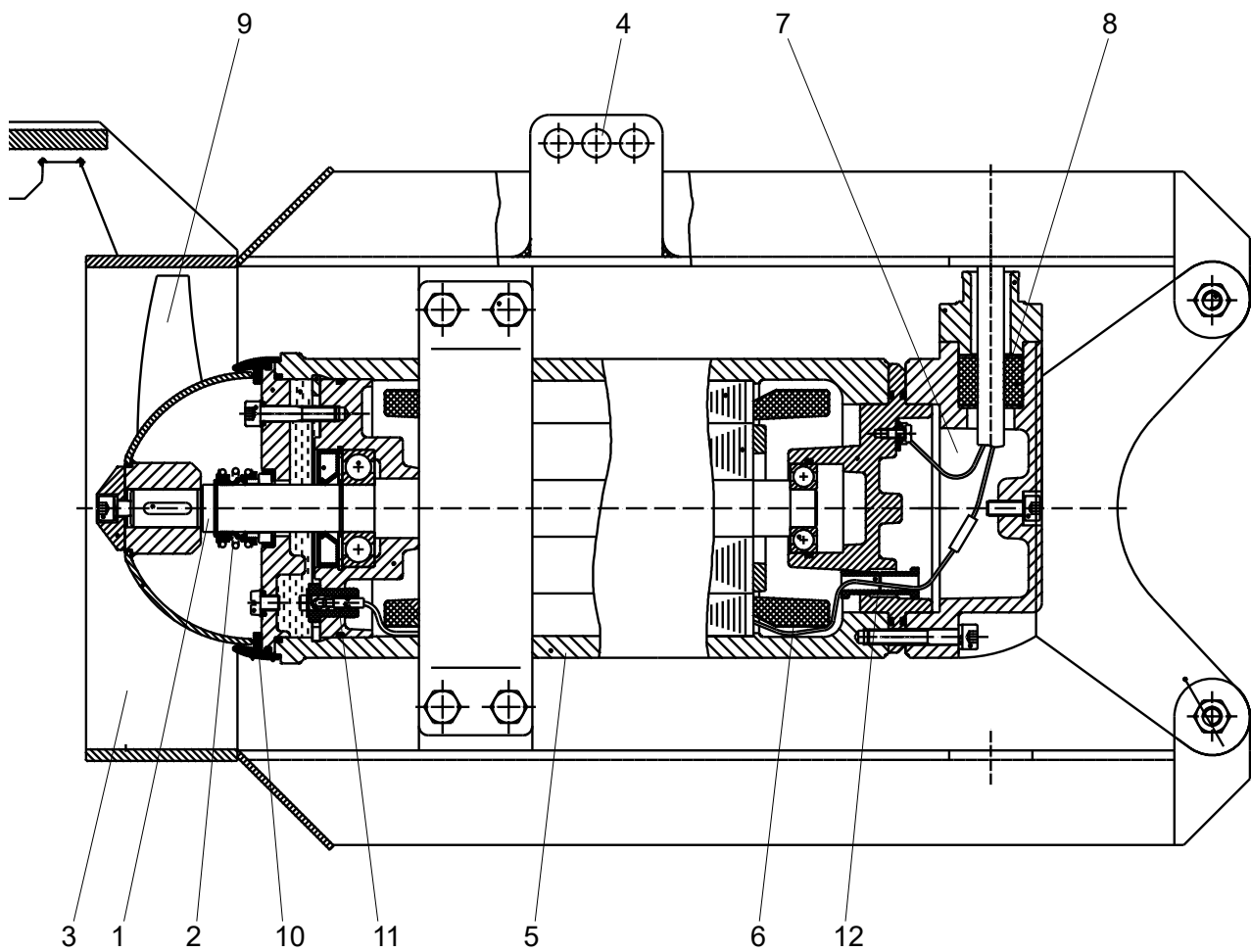


Figure 6: RCP 250

Legend

- | | | | |
|---|------------------------------------|----|-----------------------------|
| 1 | Shaft unit with rotor and bearings | 7 | Connection chamber |
| 2 | Mechanical seal | 8 | Cable inlet |
| 3 | Inlet cone | 9 | Propeller |
| 4 | Lifting eyelet | 10 | SD - ring |
| 5 | Motorhousing | 11 | DI-electrode (seal monitor) |
| 6 | Stator | 12 | Sealing of motor chamber |

6.3 Structural design RW 300

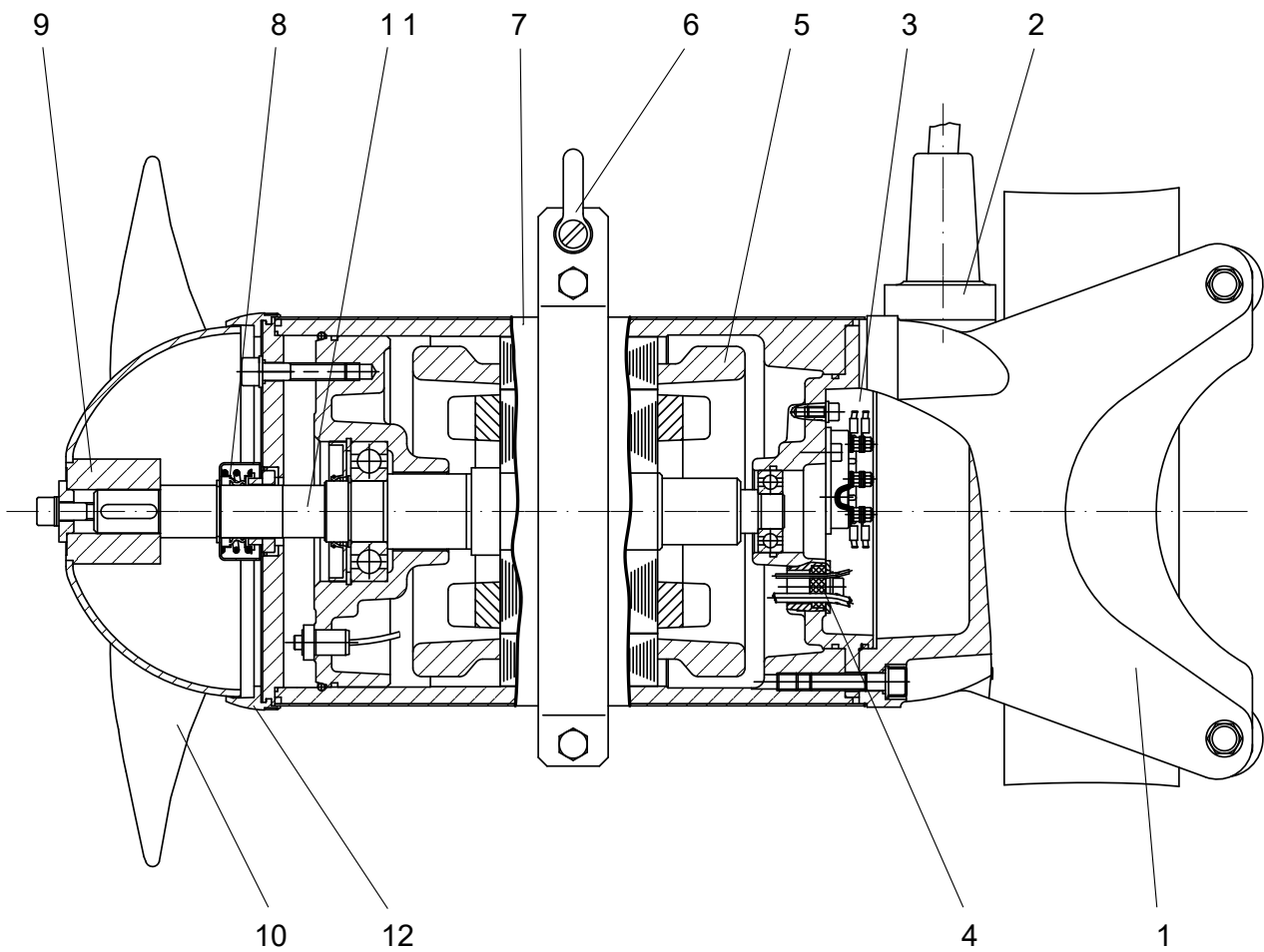


Figure 7: RW 300

Legend

- | | | | |
|---|-----------------------------------|----|------------------------------------|
| 1 | Bracket | 8 | Mechanical seal |
| 2 | Cable inlet | 9 | Propeller boss |
| 3 | Connection chamber | 10 | Propeller |
| 4 | Sealing of the motor chamber | 11 | Shaft unit with rotor and bearings |
| 5 | Stator | 12 | SD - ring |
| 6 | Lifting bracket with shackle | 13 | Gear |
| 7 | Stainless steel covering (option) | | |

7 Installation



The safety hints in the previous sections must be observed!



Care must be taken that the connection cables are positioned that they cannot be caught up in the propeller blades and that they are not subjected to tension.



The electrical connection is carried out in accordance with Section 8 *Electrical connection*.

NOTE

We recommend that Sulzer installation accessories be used for the installation of the RCP recirculation pump and RW mixer.



Particular attention must be paid to the safety regulations covering work in closed areas in sewage plants as well as good general technical practices.

7.1 Installation RCP 250

7.1.1 Installation example with Sulzer lifting unit

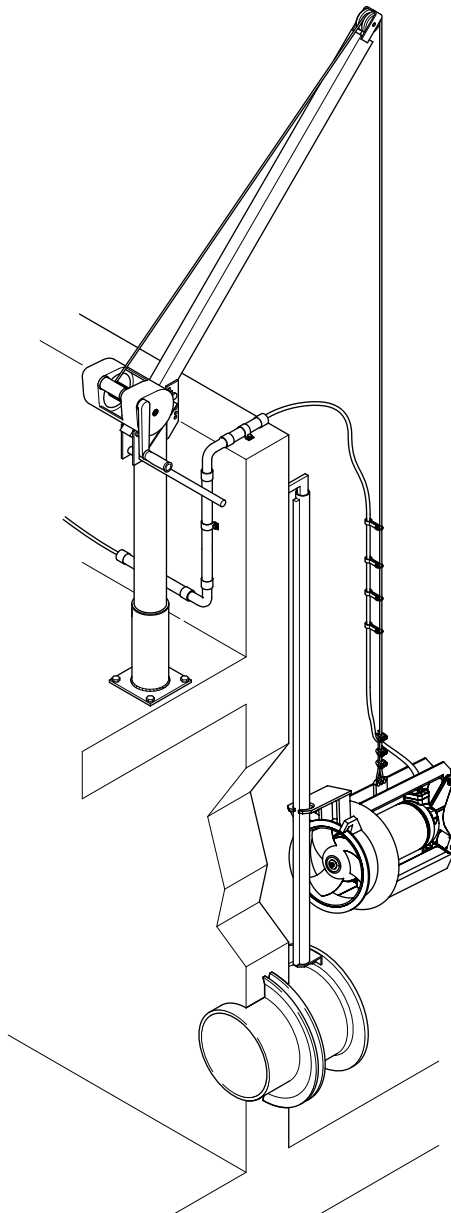


Figure 8: Installation example with Sulzer lifting unit 5 kN

7.1.2 Guide tube installation RCP



The safety hints in the previous sections must be observed!

ATTENTION

The discharge line and the required flange DIN EN 1092-1 PN6 should be installed on site before starting the installation of the guide tube. The DIN-flange should be installed so that none of the holes in the flange are on the axis line but are symmetrically on either side of it. Ensure that the DIN flange is securely fixed in the concrete.

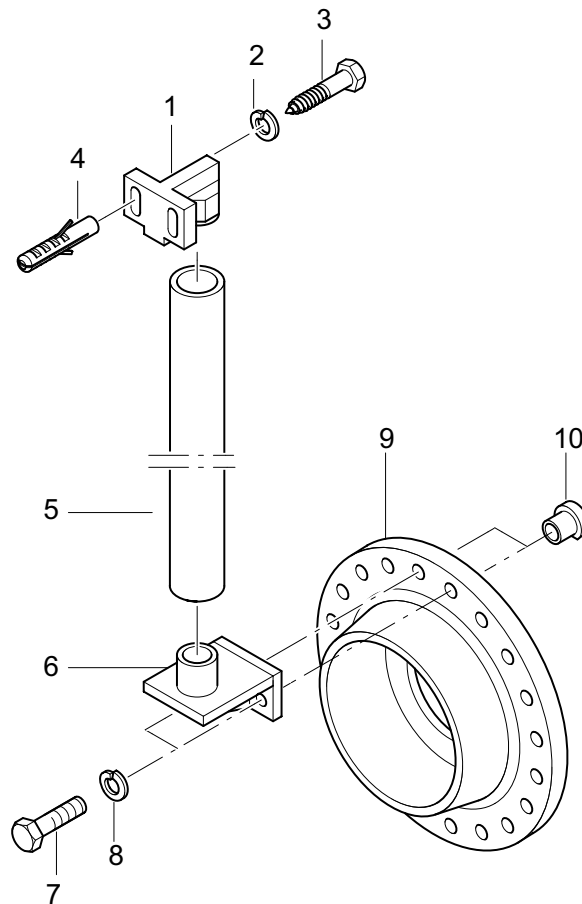


Figure 9: Guide tube installation

- Place bracket (9/6) on the DIN-flange (9/9) and fasten using hex nuts (9/7) together with spring washers (14/8) and the special nuts (9/10).

ATTENTION **The flattened edge of the special nuts (9/10) must point towards the flange centre.**

- Position the tube retainer (9/1) vertically over the bracket (9/6). Mount with the aid of the wall plugs (9/4) but do not tighten yet!
- Place the guide tube (9/5) alongside the conical section of the bracket (9/6) and determine the required length. To do this measure the upper edge of the tube retainer (9/1).
- Cut the guide tube (9/5) to the required length and place it on the conical portion of the bracket (9/6).
- Press the tube retainer (9/1) into the guide tube (9/5), so that no vertical play remains. Now tighten the hex screws (9/3) using the spring washers.

7.1.3 Lowering of the RCP along the guide tube

To ensure the RCP will tilt enough to lower correctly on the guide tube, the angle of the pump created by the lifting hook when suspended by the hoist has to be checked prior to lowering. For this purpose, begin lifting the pump from a horizontal surface and check that the rear end of the fixing support rises 20- to 40- mm from the floor before the front end begins to lift clear (see drawing below).

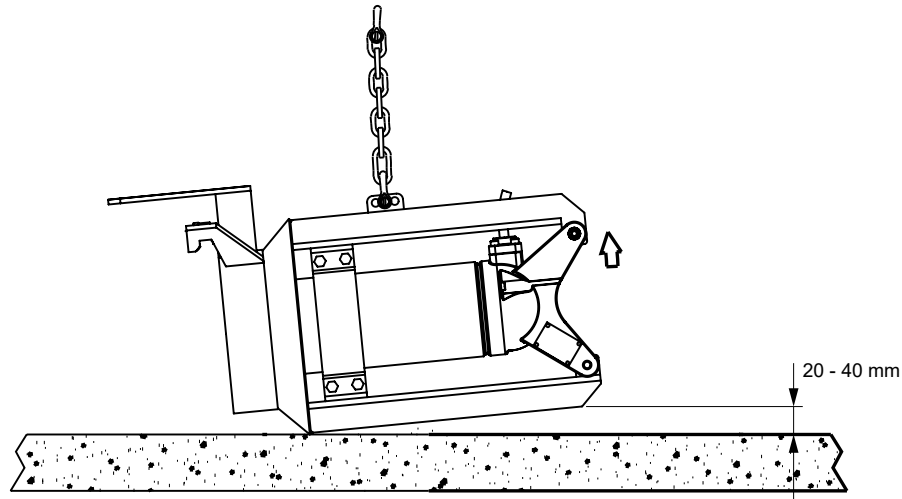


Figure 10: Checking installation angle of pump

The RCP together with the guide piece is connected into the guide tube and lowered along it until it automatically sits in its final position (see drawing below). When doing this carefully feed the power cable downwards at the same time.

ATTENTION *The power cable should be connected to the wire rope or chain in such a manner that it cannot become entangled in the propeller and that it is not subjected to any tension.*

After lowering of the RCP the tension of the wire rope or the chain should be released.

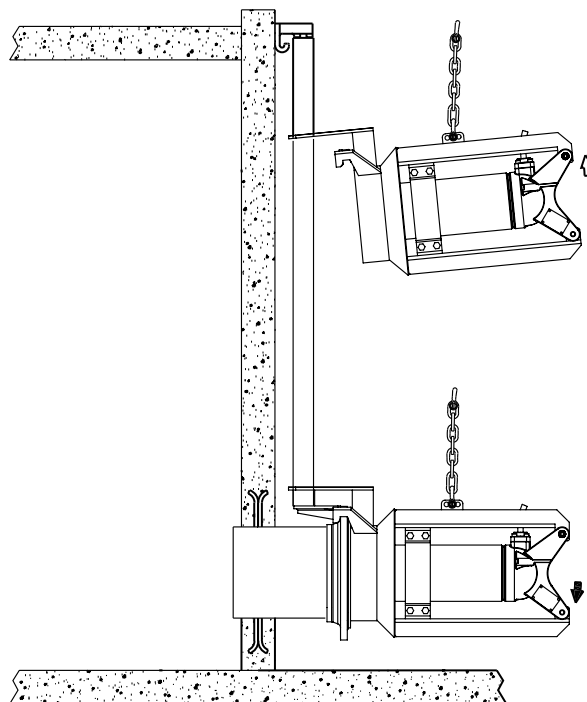


Figure 11: RCP lowering / RCP connected

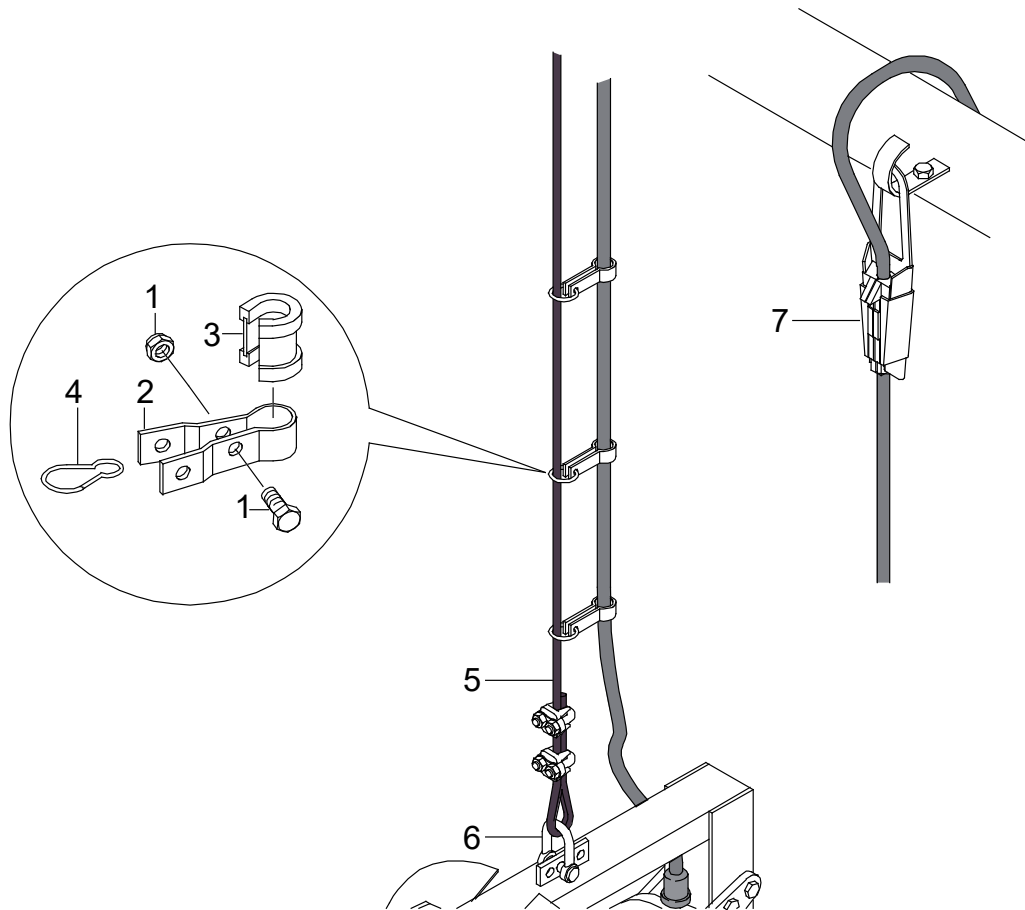
7.1.4 Securing and positioning of the motor connection cables of the RCP

The safety hints in the previous sections must be observed!



NOTE

The cable holders described here are not supplied as part of the standard execution of the RCP.



0551-0027

Figure 12: Securing and positioning of the motor connection cables of the RCP

- Place the cable holder (12/2) with rubber sleeve (12/3) on the connection cable close to the RCP itself and tighten using hex screw (12/1).
- Connect the snap hook (12/4) to the cable holder (12/2) and attach to the wire rope or chain.



Care must be taken that the connection cables are positioned that they cannot be caught up in the propeller blades and that they are not subjected to tension.

- Assemble all other cable holders in a similar manner. The spacing can be increased as the distance from the RCP increases.
- Hang the connection cable into the cable hook using the strain relief (12/7).



The electrical connection is carried out in accordance with Section 8 *Electrical connection*.

7.2 Installation RW 300

We recommend that the closed bracket be used for this type of installation (see Figure 14 closed bracket).

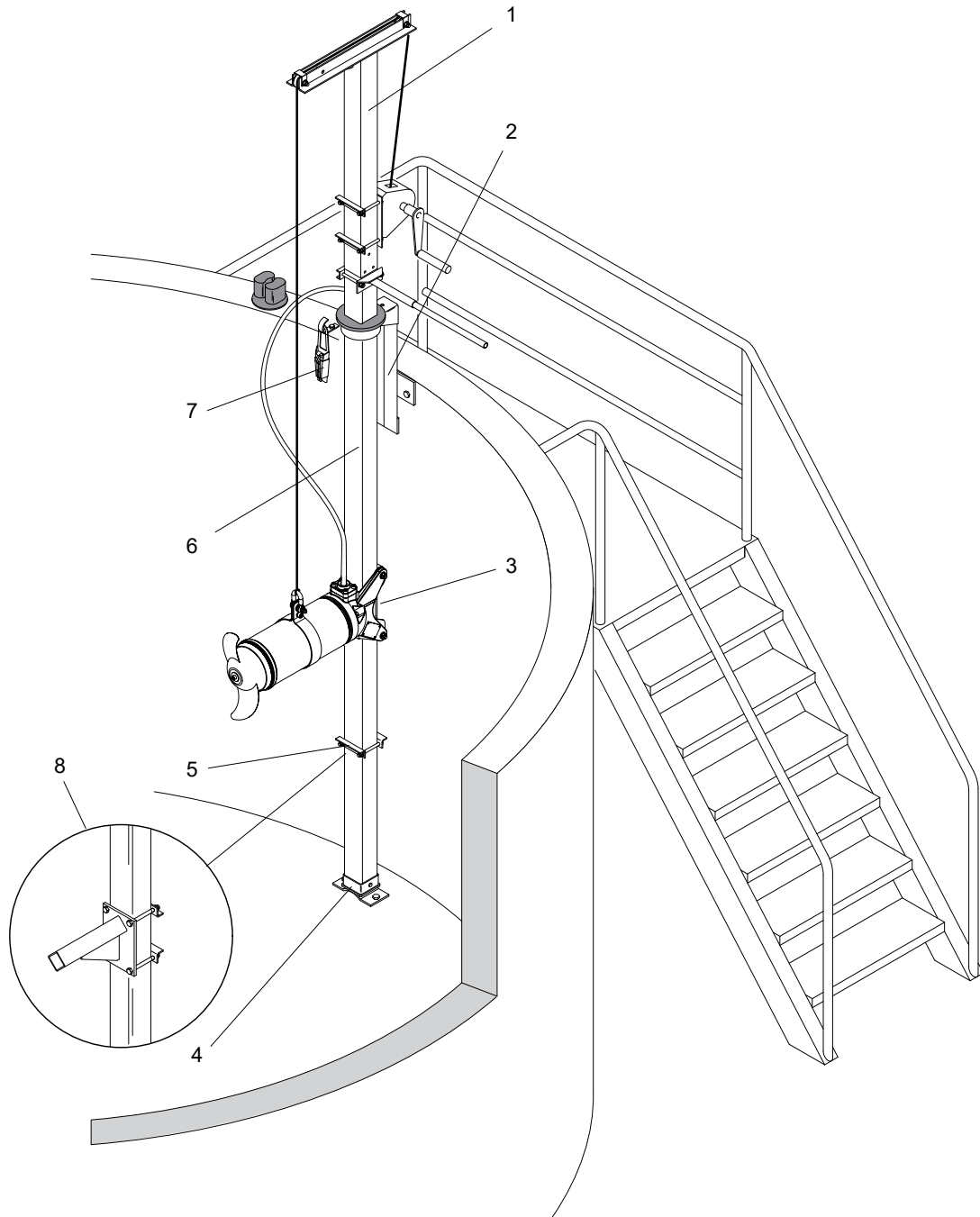


Figure 13: Installation example with existing accessories

Legend

- | | | | |
|---|----------------------------------|---|------------------------------------|
| 1 | Hoist with winch and rope | 5 | Safety stop clamp |
| 2 | Upper bracket with locking plate | 6 | Swivelling square guide tube |
| 3 | Closed bracket | 7 | Cable clamp with cable hook |
| 4 | Bottom plate | 8 | Stop for vibration damper (option) |

ATTENTION *The maximum length of the guide tube is 5 m. This is based on the maximum allowable bending (1/300th) of the length of the guide tube. This value has been determined in clean water of density 1000 kg/m³ for the maximum thrust of the most powerful mixer of the series.*

7.2.1 Brackets RW 300

Brackets which can be swivelled vertically (only optional) are available for both open and closed models of the brackets for all mixers of the series RW 300.



Figure 14: Open bracket/closed bracket

7.2.2 Fitting of the open bracket with vertical swivelling (option)

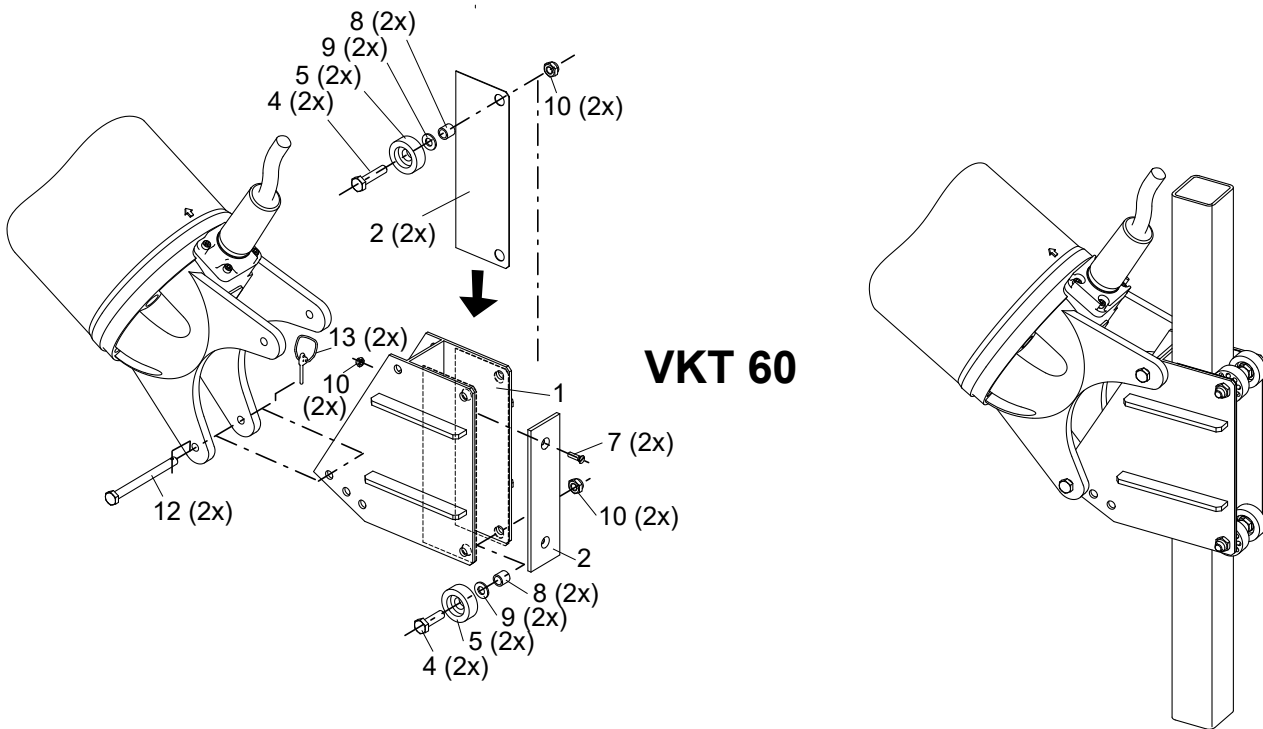


Figure 15: Open bracket with vertical swivelling

Legend

- | | | |
|--------------------|----------------------|--------------|
| 1 Rail bracket | 7 Flat head screw | 13 Linch pin |
| 2 Cladding | 8 Tube | |
| 3 Threaded inserts | 9 Washer | |
| 4 Hex bolts | 10 Hex nut | |
| 5 Roller | 11 Socket head screw | |
| 6 Strap | 12 Hinge bolt | |

7.2.3 Fitting of the closed bracket with vertical swivelling (option)

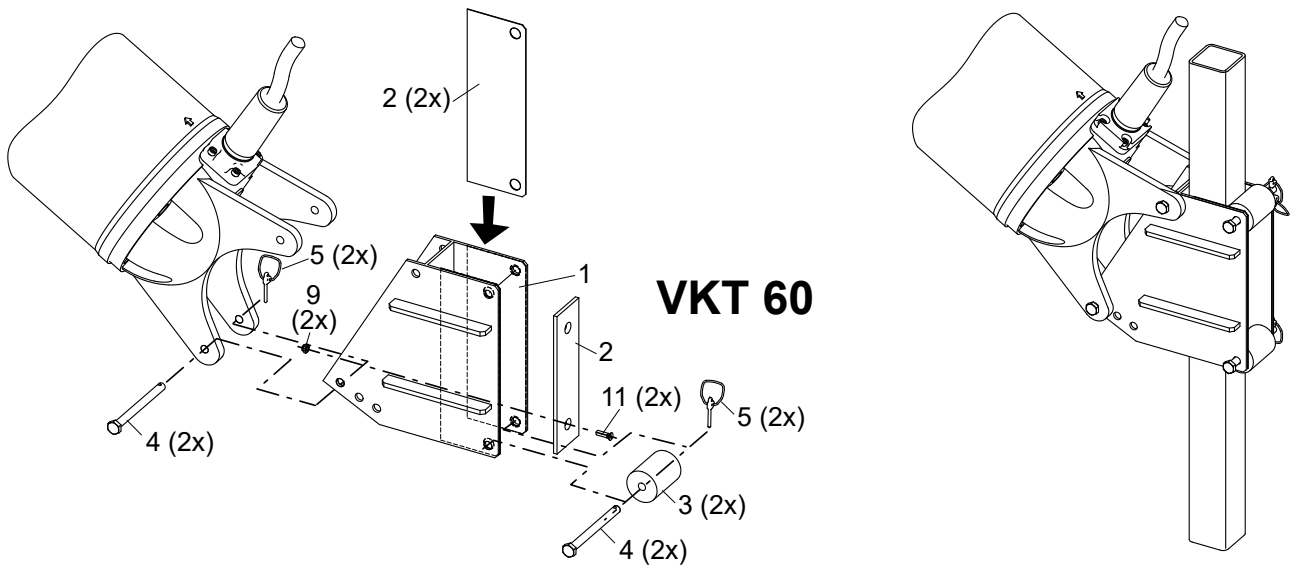


Figure 16: Closed bracket with vertical swivelling

Legend

- | | |
|----------------|----------------------|
| 1 Rail bracket | 7 Bolt long |
| 2 Cladding | 8 Washer |
| 3 Roller | 9 Hex nut |
| 4 Bolt short | 10 Threaded insert |
| 5 Linch pin | 11 Socket head screw |
| 6 Strap | |

7.2.4 Bracket alignment on guide rail

The mixer must be set up freely suspended with the rail bracket fully mounted. The position of the lifting bracket on the mixer should then be adjusted until the rail bracket points vertically towards the ground. This ensures that the mixer can slide up and down easily on the guide rail after it is fitted.

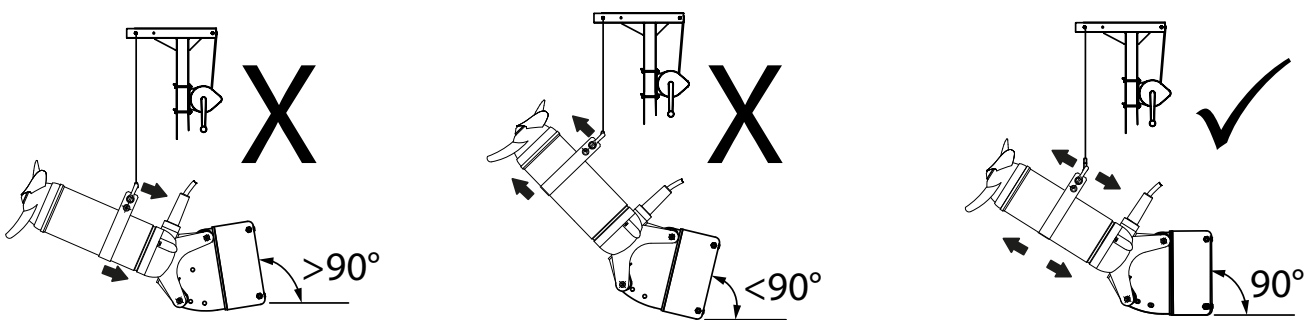


Figure 17: Setting up with fully mounted bracket

7.2.5 Vertical adjustment

The tilt bracket allows for installation of the mixer at various angles on the guide rail between $\pm 30^\circ$. This is depending on the installation/application and can be adjusted on site.

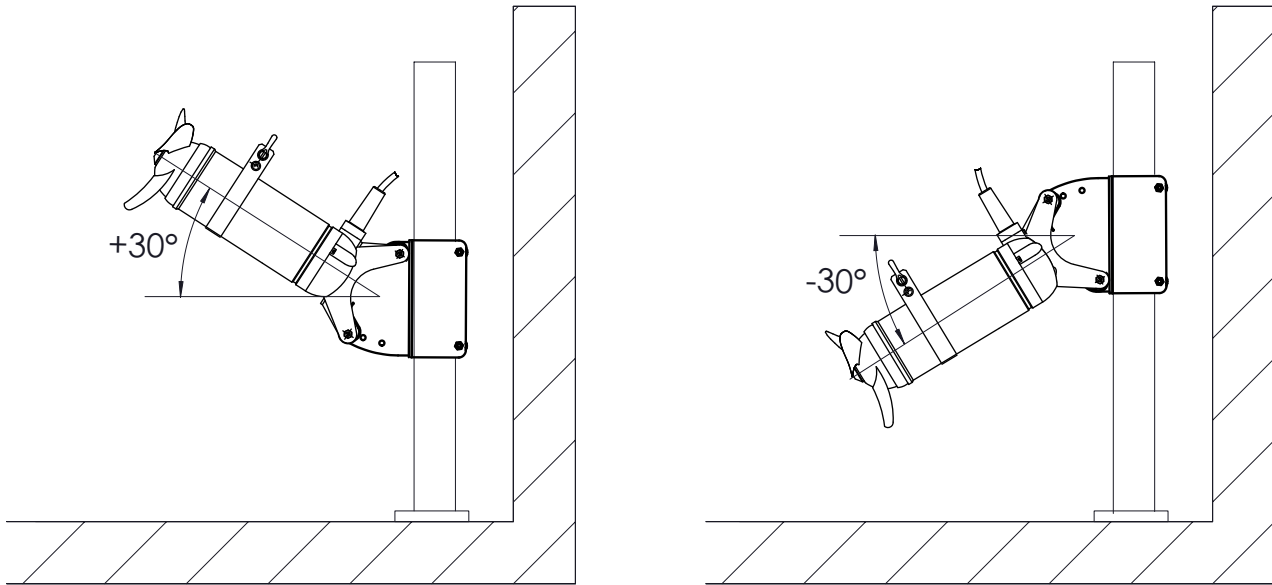


Figure 18: Vertical adjustment on the guide rail

8 Electrical connection



The safety hints in the previous sections must be observed!

Before commissioning an expert should check that one of the necessary electrical protective devices is available. Earthing, neutral, earth leakage circuit breakers, etc. must comply with the regulations of the local electricity supply authority and a qualified person should check that these are in perfect order.

ATTENTION *The power supply system on site must comply with local regulations with regard to cross-sectional area and maximum voltage drop. The voltage stated on the nameplate of the pump must correspond to that of the mains*



The incoming power supply as well as the connection of the unit itself to the terminals on the control panel must comply with the circuit diagram of the control panel as well as the motor connection diagrams and must be carried out by a qualified person.

The power supply cable must be protected by an adequately dimensioned slow-blow fuse corresponding to the rated power of the unit.

In pump stations/tanks, equipotential bonding must be carried out according to EN 60079-14:2014 [Ex] or IEC 60364-5-54 [non-Ex] (Regulations for the installation of pipelines, protective measures in high-voltage systems).

In the case of units supplied with a standard control panel this must be protected from dampness and installed above flood level by means of a correctly fitted CEE earthed socket.

ATTENTION *The only method of starting allowed is that specified in chapter 2.0 Technical data or on the nameplate. If you want to use other starting methods please consult the manufacturer.*

In the case a control panel is not supplied as standard the following applies: The unit must only be operated with a motor protection switch with overload relay and thermal sensors connected.

8.1 Standard connection diagram, mains voltage 380 - 420 V at 50 Hz / 460 V at 60 Hz

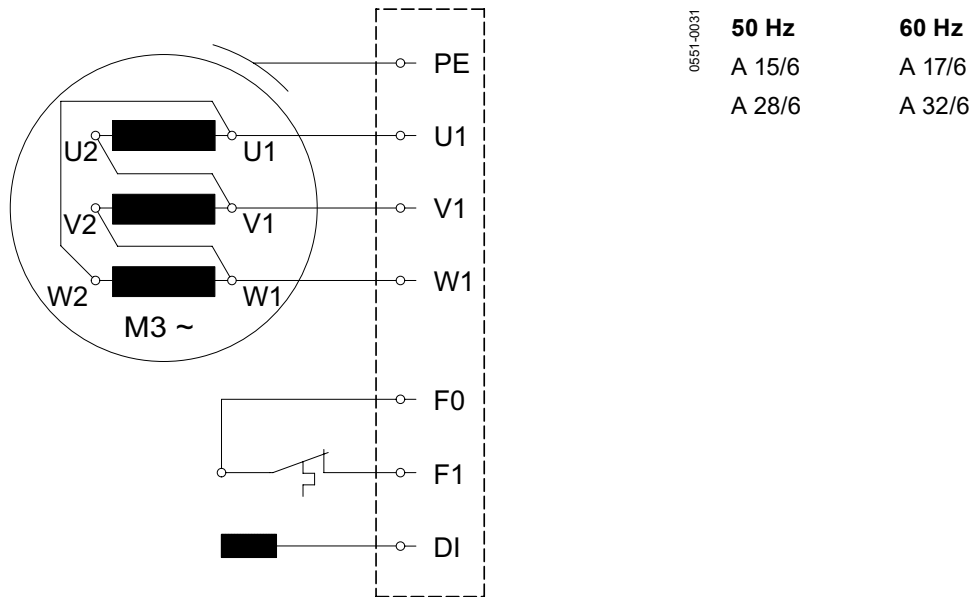


Figure 19: One power cable with integrated control leads (internal connection in the motor only for motor < 3 kW)

8.2 Lead designations

L1	L2	L3	Join	
U1	V1	W1	U2 & V2 & W2	
L1	L2	L3	-	
U1; W2	V1; U2	W1; V2	-	



The thermal monitoring circuit (F1) must be wired into the motor contactors in such a manner that a manual reset is required.

ATTENTION The temperature limiting switches may only be operated as specified by the manufacturer (see following table).

Operating voltage... AC	100 V to 500 V ~
Rated voltage AC	250 V
Rated current AC cos φ = 1.0	2.5 A
Rated current AC cos φ = 0.6	1.6 A
Max. switching current at I_N	5.0 A

8.3 Operation with frequency inverters

The stator design and the insulation grade of the motors from Sulzer means that they suitable for usage with frequency inverters. It is however essential that the following conditions are met:

- The guidelines for EMC (electromagnetic compatibility) are complied with.
- Speed/torque curves for motors driven by frequency inverters can be found in our product selection range.
- Machines that are not designated as Ex machines may only be operated using the mains frequency indicated on the nameplate. Greater frequencies can be used but only after consulting with and receiving permission from the Sulzer manufacturing plant.
- The lowest frequency must be set so that it is not falling below 25 Hz.
- The maximum frequency must be set so the rated power of the motor is not exceeded.

Modern frequency inverters are use higher wave frequencies and a steeper rise on the edge of the voltage wave. This means that motors losses and motor noise is reduced. Unfortunately these inverter output signals cause higher voltage spikes in the stator. Experience has shown that, depending on rated voltage and the length of the cable between the inverter and the motor, these voltage spikes can adversely affect the life of the motor. In order to avoid this, inverters of this type must equipped with sinus filters when used in the critical zone (see *Figure 20*). The sinus filter chosen must be suitable for the inverter with regard to rated voltage, inverter wave frequency, rated current of the inverter and maximum inverter output frequency. Make sure that the rated voltage is supplied to the terminal board of the motor.

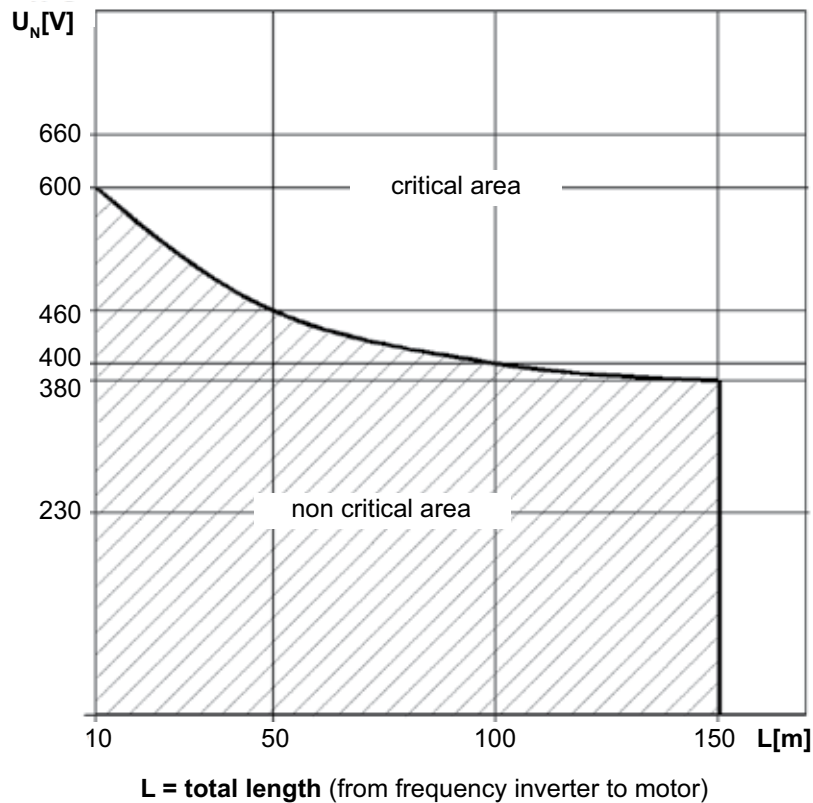


Figure 20: Critical/non critical area

8.4 Connection of the seal monitoring unit to the control panel

The standard versions of the units are fitted as standard with leakage sensors (DI) which monitor the state of the sealing. In order to integrate the seal monitoring function into the control panel it is necessary to fit a Sulzer leakage control module.

ATTENTION *If the leakage sensor is activated the unit must be immediately taken out of service. Please contact your Sulzer service centre.*

NOTE *Running the pump with the thermal and/or leakage sensors disconnected will invalidate related warranty claims.*

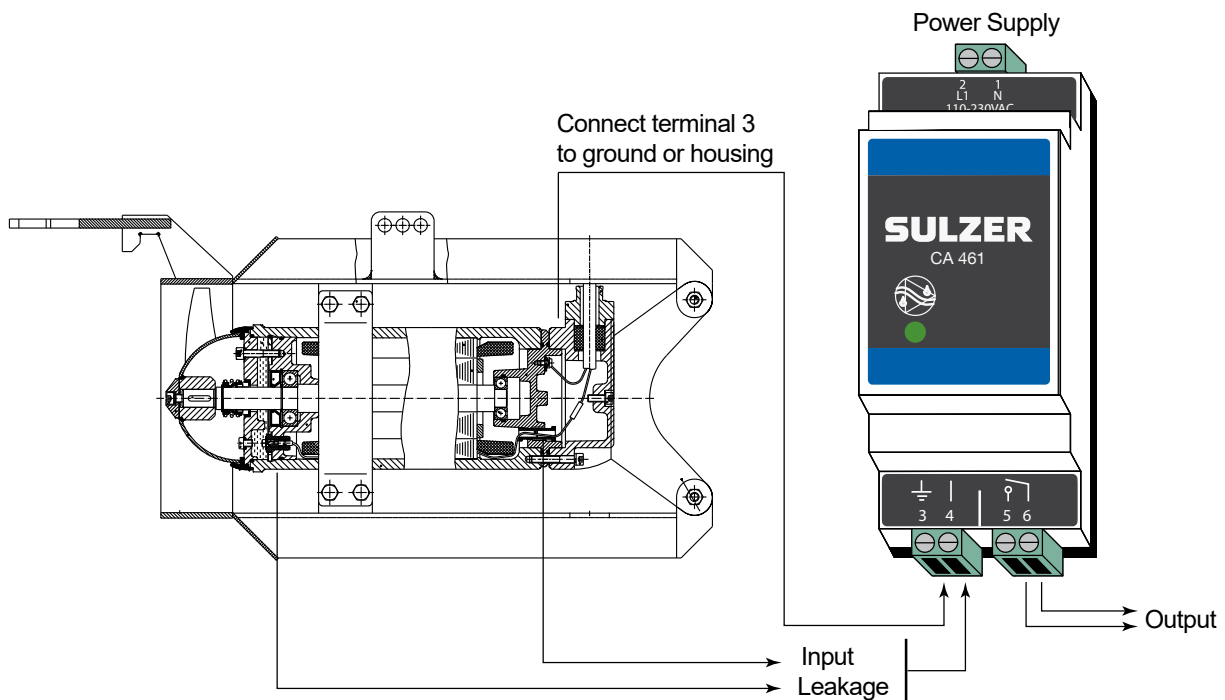


Figure 21: Sulzer leakage control type CA 461

Electronic amplifier for 50/60 Hz
110 - 230 V AC. Part No.: 16907014.

ATTENTION *Maximum relay contact loading: 2 ampere*

ATTENTION *It is very important to note that with the connection example above it is not possible to identify which sensor/alarm is being activated. As an alternative Sulzer highly recommends to use a separate CA 461 module for each sensor/input, to allow not only identification but also to prompt to the appropriate response to the alarm category/severity.*

Multiple-input leakage control modules are also available. Please consult with your local Sulzer representative.

9 Commissioning

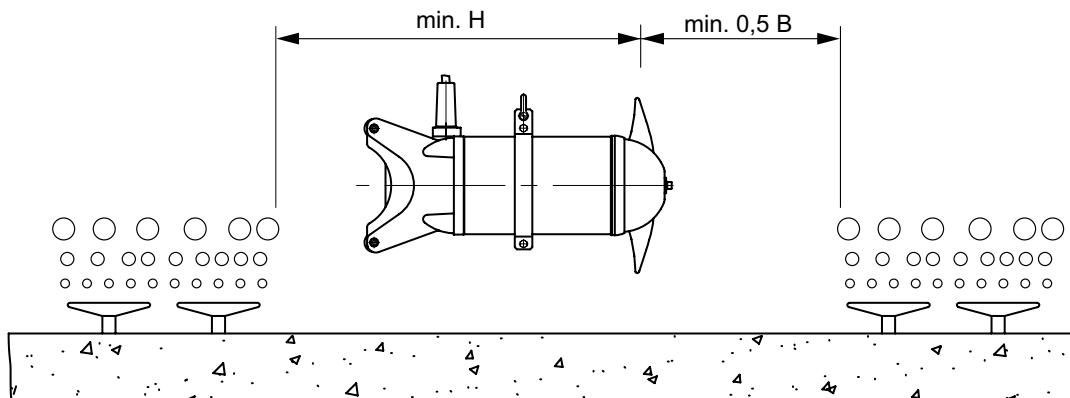


The safety hints in the previous sections must be observed!

Before commissioning, the unit should be checked and a functional test carried out. Particular attention should be paid to the following:

- Have the electrical connections been carried out in accordance with regulations?
- Have the thermal sensors/limiters been connected?
- Is the seal monitoring device correctly installed?
- Is the motor overload switch correctly set?
- Have the power and control circuit cables been correctly fitted?
- Has the motor connection cable been laid in such a manner that it cannot be caught up by the rotating body?
- Has the minimum submergence level been observed? (see Section 3.0).

9.1 Types of operation



B = Tank width; H = Water depth

Figure 22: Installation example with aeration

ATTENTION The illustration is only an example. For the correct installation please contact Sulzer.

ATTENTION Operation within the directly aerated area is not allowed!

ATTENTION The units must work fully submerged in the fluid. During operation no air should be drawn in by the propeller. Ensure that there is a smooth medium flow. The unit should not vibrate heavily when in operation.

Uneven flow formation and vibrations can occur if:

- Over active mixing in small tanks (only for RW).
- Prevention of free inflow or outflow in the area of the flow ring if fitted (only for RW). Changing the position or direction of the mixer may assist.
- Prevention of free inflow or outflow in the area of the guide cone (only for RCP).

9.2 Checking direction of rotation

When the units are being commissioned for the first time and also when used on a new site, the direction of rotation must be carefully checked by a qualified person.

The direction of rotation (propeller rotation) is correct if the propeller when viewed from the rear over the motor housing rotates in a clockwise manner (see arrow).

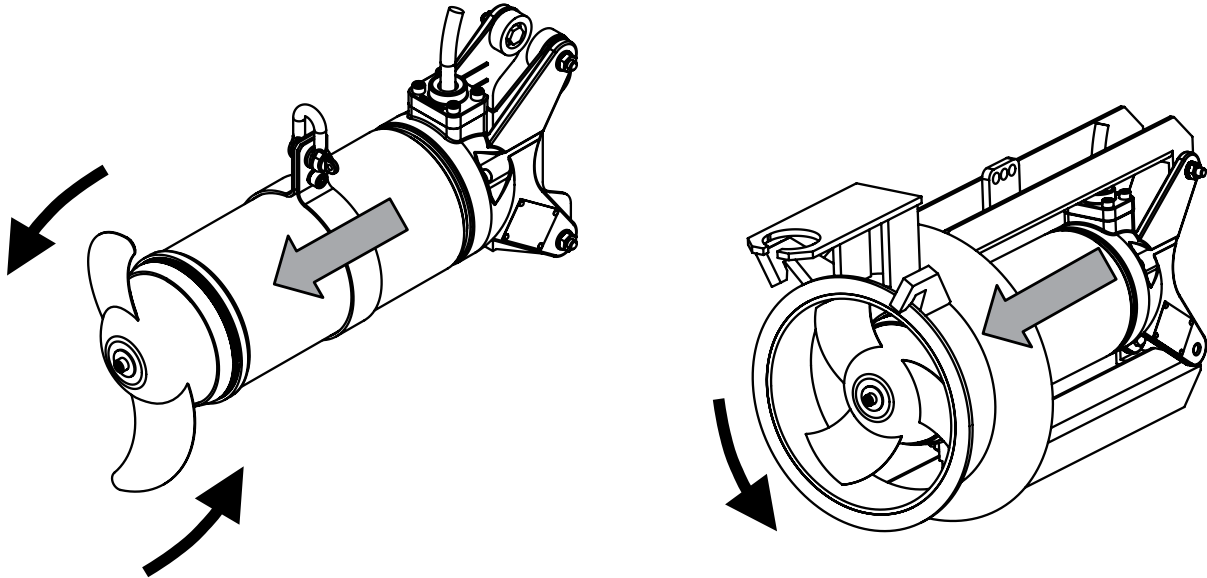


Figure 23: Checking direction of rotation



When checking the direction of rotation take care that no injury can be caused by the rotation of the propeller or the resulting airflow. Do not place a hand or other part of the body near the propeller or the hydraulics!



The direction of rotation should only be altered by a qualified person.



When carrying out the direction of rotation check as well as when starting the unit pay attention to the **START REACTION**. This can be very powerful.

NOTE

If a number of units are connected to a single control panel then each unit must be individually checked.

ATTENTION

The mains supply in the control panel must have a clockwise sense of rotation. If the units are connected in accordance with the wiring diagram and the lead designations the direction of rotation will be correct.

9.3 Changing direction of rotation



The safety hints in the previous sections must be observed!



Changing direction of rotation must only be carried out by a qualified person.

If the direction of rotation is incorrect then this is altered by changing over two phases of the power supply cable in the control panel. The direction of rotation should then be rechecked.

NOTE

The direction of rotation measuring device monitors the direction of rotation of the mains supply or that of an emergency generator.

10 Maintenance



The safety hints in the previous sections must be observed!

In particular, the advice regarding maintenance in *paragraph 3.2* of the separate booklet "Safety Instructions for Sulzer Products Type ABS" are to be observed.

10.1 General maintenance hints



Before commencing any maintenance work the unit should be completely disconnected from the mains by a qualified person and care should be taken that it cannot be inadvertently switched back on.

NOTE *The maintenance hints given here are not designed for "do-it-yourself" repairs as special technical knowledge is required.*

Sulzer units are reliable quality products each being subjected to careful final inspection. Lubricated-for-life ball bearings together with monitoring devices ensure optimum pump reliability provided that the unit has been connected and operated in accordance with the operating instructions.

Should, nevertheless, a malfunction occur, do not improvise but ask your Sulzer customer service department for assistance.

This applies particularly if the unit is continually switched off by the current overload in the control panel, by the thermal sensors/limiters of the thermo-control system or by the seal monitoring system (DI).

The Sulzer service organisation would be pleased to advise you on any applications you may have and to assist you in solving your aerating problems.

NOTE *The Sulzer warranty conditions are only valid provided that any repair work has been carried out in Sulzer approved workshops and where original Sulzer spare parts have been used.*

ATTENTION *Regular checks are highly recommended and other checks are prescribed regulations after specific intervals. This ensures a long life time and trouble-free operation of the units (see section 10.3).*

NOTE *In the case of repair work, „Table 1“ from IEC60079-1 may not be applied. In this case please contact Sulzer after sales service!*

Inspections carried through at regular intervals and preventive maintenance guarantee trouble-free operation. For this reason the complete unit should be cleaned thoroughly on a regular basis, maintained and inspected. For this purpose special care must be taken that all parts of the unit are in good condition and that the operational security is guaranteed. The inspection period is determined by the type of usage of the units, but should however not exceed one year.

The maintenance and inspection work must be carried through corresponding to the subsequent inspection plan. The executed work must be documented in the attached inspection list. In case of non-observance the manufacturer's warranty does not apply!

10.2 Faults

In addition to the maintenance and inspection tasks described in section *10.3 Inspection and maintenance intervals* an urgent check of the unit and installation should be carried out if heavy vibrations develop or uneven flow patterns occur.

Possible causes:

- Minimum liquid coverage of the propeller is not present.
- Aeration in the propeller area.
- Wrong direction of rotation of the propeller.
- Propeller is damaged.
- Restriction to the free inflow or outflow in the area of the RW flow ring.
- Restriction to the free inflow or outflow in the area of the RCP inflow cone.

- Parts of the Installation, such as bracket or coupling parts have become defective or become loose.

In these cases the unit should be immediately switched off and inspected. If no fault can be found or the fault remains after it has apparently been corrected the unit should be left switched off. The same applies also where the current overload in the control panel regularly trips, where the DI leakage sensor or the temperature sensors in the stator are activated. We recommend that in such cases you contact your local Sulzer Service Centre.

10.3 Inspection and maintenance intervals



The safety hints in the previous sections must be observed!

PERIOD OF TIME:	Regulation: once a month
ACTIVITY:	Cleaning and inspection of the power and control circuit cables.
DESCRIPTION:	Once a month (more frequently - for example - in difficult application cases where the medium is heavily polluted with fibrous matter) the power and control circuit cables should be cleaned. In particular fibrous materials must be removed. Part of the regular maintenance is also the inspection of the motor cables. These must be checked for scratches, fissures, bubbles or crushing.
MEASURE:	Damaged power and control circuit cables must be replaced in all cases. Please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Recommendation: once a month
ACTIVITY:	Check the current consumption at the ampere meter.
DESCRIPTION:	With normal operation the current consumption is constant; occasional current fluctuations result from the constitution of the material being mixed.
MEASURE:	If the current consumption is too high for a longer period during normal operation please contact your local Sulzer Service Centre.

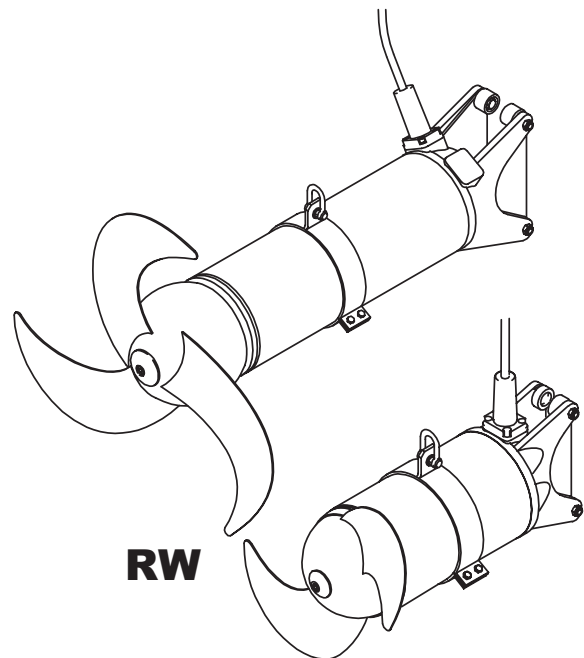
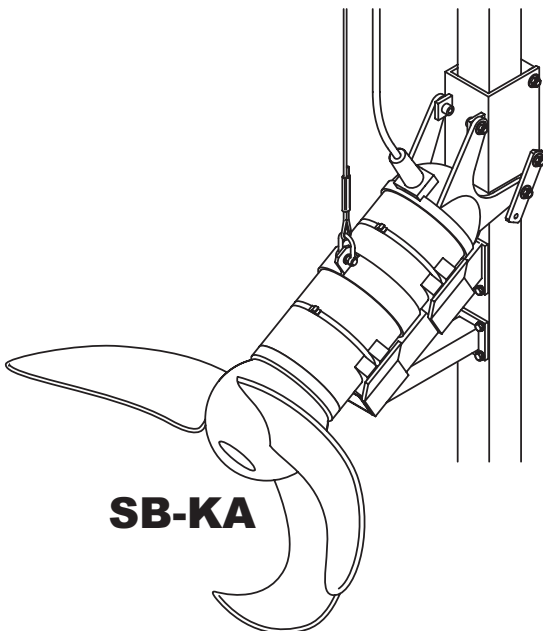
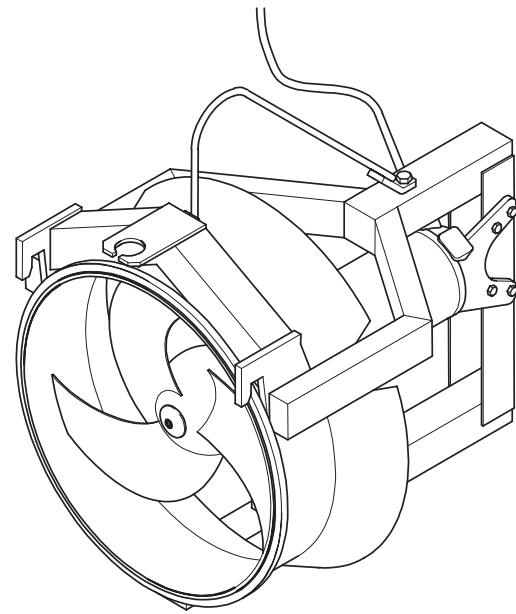
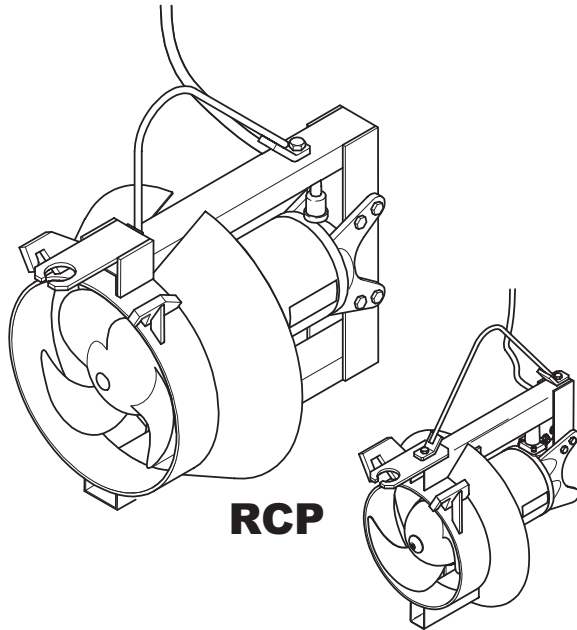
PERIOD OF TIME:	Regulation: every 3 months
ACTIVITY:	Inspection of the propeller and the SD ring (Solids-Deflection-Ring).
DESCRIPTION:	The propeller should be inspected carefully. The propeller might show spots of rupture and wear due to strongly abrasive or aggressive mixing material. In both cases the flow formation is reduced considerably and the propeller must be replaced. The solids-deflection-ring must also be checked. If wear or scoring is visible on the propeller boss these parts must be replaced as well.
MEASURE:	If you find out any cases of the damage described above please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Recommendation: every 6 months
ACTIVITY:	Insulation resistance check.
DESCRIPTION:	Within the scope of the maintenance work the insulation resistance of the motor winding should be measured every 4,000 hours, and/or at least once a year. If the proper insulation resistance level is not reached, moisture might have got into the motor.
MEASURE:	The unit must be taken out of operation and may not be started again. Please contact your local Sulzer Service Centre.
ACTIVITY:	Functional testing of the monitoring devices.
DESCRIPTION:	In the scope of the maintenance measures functional testing of all monitoring devices must be carried through every 4,000 hours and/or at least once a year. For these functional tests the unit must have cooled down to the ambient temperature. The electrical connecting line of the monitoring device must be disconnected at the control box. These measurements must be carried through by means of an ohmmeter at the respective cable ends.
MEASURE:	In any case of any functional problems on the monitoring devices please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Recommendation: once a year
ACTIVITY:	Checking of the tightening torques of the screws and nuts.
DESCRIPTION:	For safety reasons we recommend that all screws are checked for their perfect positioning once a year.
MEASURE:	Tighten screws with correct tightening torques (<i>see Section 1.6</i>).



Submersible Mixer Type ABS RW
Submersible Recirculation Pump Type ABS RCP
Flow Booster Type ABS SB-KA



Installation and Operating Instructions

For submersible mixer,
submersible recirculation pumps and
flow booster SB-KA

RW 300	RW 400	RW 650	RW 900
RW 400 LW	RW 550 DM	RW 650 LW	
RCP 250	RCP 400	RCP 500	RCP 800
SB 1236 KA	SB 1237 KA		

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1 General

1.1 Introduction

These **Installation and Operating Instructions** and the separate booklet **Safety Instructions for Sulzer Products Type ABS** contain basic instructions and safety hints which must be observed during transport, installation and commissioning. For this reason it is essential that they are read by the installing technician as well as by relevant skilled operators or users. They should also be always available where the unit is installed.



Safety Instructions which might cause danger to life in case of non-observance have been specifically highlighted with the general danger symbol.



The presence of a dangerous voltage is identified with this safety symbol.



This symbol indicates the danger of an explosion occurring.

ATTENTION *Appears at safety hints, the non-observance of which could damage the unit or affect its functioning.*

NOTE *Used for important pieces of information.*

Illustrations code; e.g. (3/2). The first digit refers to the figure no. and the second digit to the position in that figure.

1.2 Correct usage of the products

Sulzer products have been designed and built in accordance with the latest technology and taking into account the relevant safety regulations. However improper usage could cause a danger to life or limb of the user of a third party or cause damage or function impairment to the unit itself and other items of value.

Sulzer units should only be used if they are in perfect technical condition taking into account all safety requirements and conscious of the need to avoid potentially dangers. The contents of the installation and operating instructions and the safety hints must be applied! Any other usage (abnormal usage) or usage beyond that specified will be considered as non-compliance.

The manufacturer/supplier will not accept any responsibility for damage due to this. The risk is borne by the user. In case of doubt the entire scope of the planned application must be approved by Sulzer Pump Solutions Ireland.

In the case of any faults arising, the Sulzer units should immediately be taken out of use and secured. The fault should be immediately rectified or, if necessary, contact your Sulzer service centre.

1.3 Application restrictions of RW/RCP/SB-KA

The RW/RCP can be supplied both as standard versions and in explosion-proof execution ATEX II 2G Ex h db IIB T4 Gb for 50 Hz according to the standards EN ISO 12100:2010, EN 809:1998 + A1:2009 + AC:2010, EN 60079-0:2012 + A11:2018, EN 60079-1:2014, EN ISO 80079-36, EN ISO 80079-37 or FM (NEC 500. Class I, Division 1. Group C&D. T3C) approval for 60 Hz.

Limitations: The ambient temperature range is 0 °C to + 40 °C (32 °F to 104 °F)
Immersion depth maximum 20 m / (65 ft)

ATTENTION *If cable length is less than 20 m / 65 ft the max. immersion depth reduces accordingly. In special cases an immersion depth greater than 20 m/65 ft is possible. However, the maximum number of starts according to the motor datasheet may not be exceeded. In order to do this you need the written approval from the manufacturer Sulzer.*



Pumping of flammable or explosive liquids with these pumps is not allowed!



Only explosion-proof executions may be used in hazardous areas!

For the operation of units as explosion-proof execution the following applies:

In hazardous areas care must be taken that during switching on and operation of the unit it is submerged or under water. Other types of operation e.g. snore operation or dry running are not allowed!

ATTENTION *RW/RCP with Ex h db IIB T4 approval are not equipped with a DI in the oil chamber.*

ATTENTION *RW 400/650 and RCP 400/500 with FM approval (NEC 500) can be equipped (as an option) with a special DI in the oil chamber. Due to the design this is not possible in RW 900 and RCP 800.*

For the operation of ex-RW/RCP:

It must be ensured that the motor of the ex-RW/RCP is always fully submerged during start-up and operation!

The temperature monitoring of the ex-RW/RCP has to be carried out by bimetallic temperature limiters or thermistors according to DIN 44 082 connected to a suitable release device which is certified in accordance with EC directive 2014/34/EU.

For the operation of EX-RW/RCP with frequency inverter:

Motors must have direct thermal protection devices fitted. These consist of temperature sensors (PTC DIN 44082) embedded in the windings. These must be connected to a suitable release device which is certified in accordance with EC directive 2014/34/EU.

Machines designated as Ex machines may never, without exception, be operated using a mains frequency that is greater than the maximum of 50 Hz or 60 Hz as indicated on the nameplate.

In the event that the pump is to be operated in explosive atmospheres using a variable speed drive, please contact your local Sulzer representative for technical advice regarding the various approvals and standards concerning thermal overload protection.

ATTENTION *Repair work on explosion-proof motors may only be carried out in authorized workshops by qualified personnel using original parts supplied by the manufacturer. Otherwise the Ex approvals are no longer valid. All Ex-relevant components and dimensions can be found in the modular workshop manual and the spare parts list.*

ATTENTION *After repair work in not authorized workshops by not qualified personnel the Ex approvals are no longer valid. After such repair the unit must not be operated in hazardous areas. The Ex nameplate (see figure 9b, 9c) has to be removed.*

1.4 Application areas

1.4.1 Application areas RW

The ABS submersible mixers (RW 300 to 900) with a water pressure-tight encapsulated submersible motor are high-class quality products with the following range of applications, in municipal treatment plants, in industry and in agriculture:

- Mixing
- Stirring
- Agitation

LW - Version with special propeller for use in agriculture, DM - Version (Drilling Mud) with special propeller for drilling mud.

1.4.2 Application areas RCP

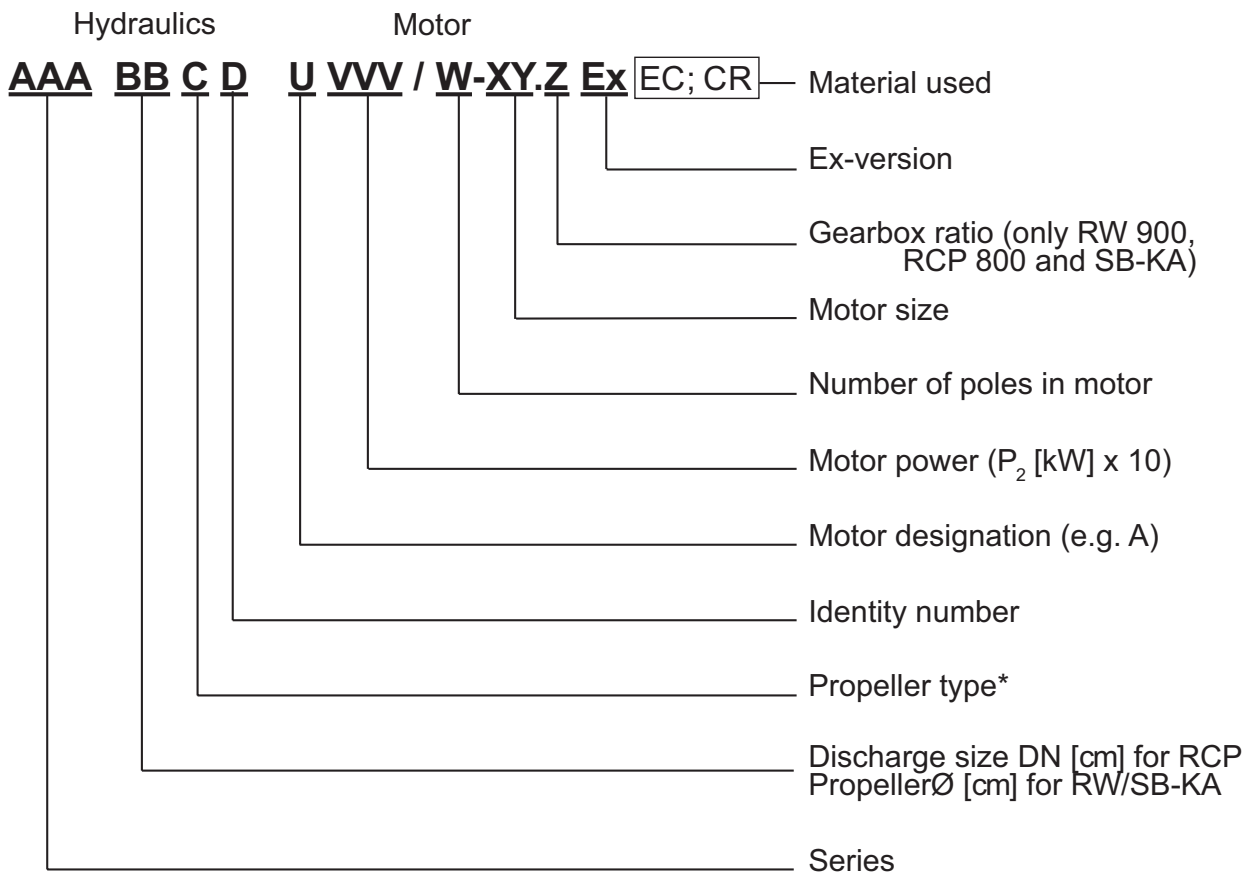
The ABS submersible recirculation pumps RCP (250 to 800) are fitted with water pressure tight encapsulated motors and are quality products suitable for use in the following areas:

- Pumping and recirculation of active sludge in treatment plants with nitrogen removal (nitrification/denitrification).
- Pumping of rain and surface water.

1.4.3 Application areas SB-KA

The SB-KA was developed to meet the specific requirements of those treatment processes in which the biomass is not freely floating in the wastewater as "flakes", but builds a "biofilm" that is bound to the surface by biofilm carriers. One of the successful processes of this nature is the "Moving Bed™" process of the company AnoxKaldnes.

1.5 Identification code



0551-0002

*Propeller type: 1 = Mixing propeller (only without flow ring); 2 = 2-blade trust propeller; 3 = 3-blade trust propeller; 4 = 2-blade trust propeller with flow ring; 5 = 3-blade trust propeller with flow ring; 7 = 3-blade special propeller for biofilm carrier process

Identification code RW/RCP/SB-KA

1.6 Technical data

The maximum noise level of the units of this series is ≤ 70 dB(A). In some types of installation it is possible that the noise level of 70 dB(A) or the measured noise level will be exceeded.

ATTENTION *The maximum fluid temperature for continuous operation is 40 °C / 104 °F for a submerged unit.*

1.6.1 Technical data RW 50 Hz

Mixer type	Propeller			Motor type	Motor (50 Hz/400 V)						Installation							
	Propeller diameter	Speed	Version with flow ring		Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 400 V	Starting current at 400 V	Cable type** (Ex-and standard)	Temperature monitoring	Seal monitoring	Ex h db IIB T4	Guide tube □ 60	Guide tube □ 100	Total weight (without flow ring)	Total weight (with flow ring)
	[mm]	[1/min]			[kW]	[kW]			[A]	[A]						[kg]	[kg]	
RW 3021	300	904	○	A 15/6	2.21	1.5	●		4.6	16.8	1	●	●	○	●		48	54
RW 3022	300	904	○	A 15/6	2.21	1.5	●		4.6	16.8	1	●	●	○	●		48	54
RW 3031	300	904	○	A 15/6	2.21	1.5	●		4.6	16.8	1	●	●	○	●		48	54
RW 3032	300	894	○	A 28/6	4.09	2.8	●		8.4	30.4	1	●	●	○	●		51	57
RW 3033	300	894	○	A 28/6	4.09	2.8	●		8.4	30.4	1	●	●	○	●		51	57
RW 3034	300	894	○	A 28/6	4.09	2.8	●		8.4	30.4	1	●	●	○	●		51	57
RW 4021	400	702	○	A 30/8	4.2	3.0	●		9.3	40	1	●	●	○	●	○	96	102
RW 4022	400	702	○	A 30/8	4.2	3.0	●		9.3	40	1	●	●	○	●	○	96	102
RW 4023	400	702	○	A 30/8	4.2	3.0	●		9.3	40	1	●	●	○	●	○	96	102
RW 4024	400	702	○	A 30/8	4.2	3.0	●		9.3	40	1	●	●	○	●	○	96	102
RW 4031	400	680	○	A 40/8	5.6	4.0		●	10.9	40	2	●	●	○	●	○	96	102
RW 4032	400	680	○	A 40/8	5.6	4.0		●	10.9	40	2	●	●	○	●	○	96	102
RW 4033	400	680	○	A 40/8	5.6	4.0		●	10.9	40	2	●	●	○	●	○	96	102
RW 6521	580	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●	○		●	150	168
RW 6522	580	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●	○		●	150	168
RW 6523	650	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●	○		●	150	168
RW 6524	650	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●	○		●	150	168
RW 6525	650	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●	○		●	150	168
RW 6531	650	462	○	A 75/12	10.3	7.5		●	24.5	54	3	●	●	○		●	180	198
RW 6532	650	462	○	A 75/12	10.3	7.5		●	24.5	54	3	●	●	○		●	180	198
RW 6533	650	470	○	A 100/12	13.3	10.0		●	31.9	91	4	●	●	○		●	200	218
RW 9032	900	238 ¹	○	A 110/4	13.2	11.0		●	22.1	114	2	●	●*	○		●	180	258
RW 9033	900	238 ¹	○	A 110/4	13.2	11.0		●	22.1	114	2	●	●*	○		●	180	258
RW 9034	900	238 ¹	○	A 110/4	13.2	11.0		●	22.1	114	2	●	●*	○		●	180	258
RW 9035	900	238 ¹	○	A 150/4	17.8	15.0		●	31.3	172	3	●	●*	○		●	185	263
RW 9033	900	285 ²	○	A 150/4	17.8	15.0		●	31.3	172	3	●	●*	○		●	185	263
RW 9034	900	285 ²	○	A 220/4	25.8	22.0		●	43.9	242	4	●	●*	○		●	210	288
RW 9035	900	285 ²	○	A 220/4	25.8	22.0		●	43.9	242	4	●	●*	○		●	210	288

P₁ = Power input ; P₂ = Power output

1= Propeller speed with gear ratio i=6; 2= Propeller speed with gear ratio i=5

● = Standard ; ○ = Option; ●* = Moisture ingress monitor in connection chamber instead of oil chamber.

**Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 7G 1.5 ; 2 = 1 x 10G 1.5 ; 3 = 1 x 10 G 2.5 ; 4 = 2 x 4G 4 + 2 x 0.75

NOTE

**Data applies also for versions with flow ring (See section 1.5 Identification code).
Other voltages available on request.**

1.6.2 Technical data RW 60 Hz

Mixer type	Propeller			Motor (60 Hz/460 V)										Installation				
	Propeller diameter	Speed	Version with flow ring	Motor type	Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 460 V	Starting current at 460 V	Cable type** (Ex-and standard)	Temperature monitoring	Seal monitoring	FM (NEC 500)	Guide tube □ 60	Guide tube □ 100	Total weight (without flow ring)	Total weight (with flow ring)
	[mm]	[1/min]			[kW]	[kW]			[A]	[A]							[kg]	[kg]
RW 3021	300	1111	○	A 17/6	2.36	1.7	●		4.3	15.5	1	●	●	○	●		48	54
RW 3022	300	1111	○	A 17/6	2.36	1.7	●		4.3	15.5	1	●	●	○	●		48	54
RW 3031	300	1097	○	A 32/6	4.4	3.2	●		8.8	24.8	1	●	●	○	●		51	57
RW 3032	300	1097	○	A 32/6	4.4	3.2	●		8.8	24.8	1	●	●	○	●		51	57
RW 4021	400	858	○	A 35/8	4.6	3.5	●		8.7	38	1	●	●	○	●	○	96	102
RW 4022	400	858	○	A 35/8	4.6	3.5	●		8.7	38	1	●	●	○	●	○	96	102
RW 4023	400	858	○	A 35/8	4.6	3.5	●		8.7	38	1	●	●	○	●	○	96	102
RW 4024	400	841	○	A 46/8	6.0	4.6		●	10.3	38	2	●	●	○	●	○	96	102
RW 4031	400	841	○	A 46/8	6.0	4.6		●	10.3	38	2	●	●	○	●	○	96	102
RW 6521	580	571	○	A 60/12	8.0	6.0		●	17.5	50	2	●	●	○		●	150	168
RW 6522	580	571	○	A 60/12	8.0	6.0		●	17.5	50	2	●	●	○		●	150	168
RW 6531	650	567	○	A 90/12	11.5	9.0		●	23.9	52	2	●	●	○		●	180	198
RW 6532	650	567	○	A 90/12	11.5	9.0		●	23.9	52	2	●	●	○		●	180	198
RW 6533	650	567	○	A 90/12	11.5	9.0		●	23.9	52	2	●	●	○		●	180	198
RW 6534	650	569	○	A 120/12	15.3	12.0		●	31.4	88	3	●	●	○		●	200	218
RW 6535	650	569	○	A 120/12	15.3	12.0		●	31.4	88	3	●	●	○		●	200	218
RW 9032	900	238 ¹	○	A 130/4	15.3	13.0		●	21.8	109	2	●	●*	○		●	180	258
RW 9033	900	238 ¹	○	A 130/4	15.3	13.0		●	21.8	109	2	●	●*	○		●	180	258
RW 9034	900	238 ¹	○	A 130/4	15.3	13.0		●	21.8	109	2	●	●*	○		●	180	258
RW 9035	900	238 ¹	○	A 170/4	19.8	17.0		●	29.4	165	3	●	●*	○		●	185	263
RW 9033	900	285 ²	○	A 170/4	19.8	17.0		●	29.4	165	3	●	●*	○		●	185	263
RW 9034	900	285 ²	○	A 250/4	28.8	25.0		●	41.7	229	4	●	●*	○		●	210	288
RW 9035	900	285 ²	○	A 250/4	28.8	25.0		●	41.7	229	4	●	●*	○		●	210	288

P₁ = Power input ; P₂ = Power output

1= Propeller speed with gear ratio i=7; 2= Propeller speed with gear ratio i=6

● = Standard ; ○ = Option; ●* = Moisture ingress monitor in connection chamber instead of oil chamber.

**Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 7G 1.5 ; 2 = 1 x 10G 1.5 ; 3 = 1 x 10 G 2.5 ; 4 = 2 x 4G 4 + 2 x 0.75

1.6.3 Technical data RW- special executions

Mixer type	Propeller diameter	Speed	Motor type	Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current	Starting current	Cable type** (Ex-and standard)	Temperature monitoring	Seal monitoring	Ex h db IIB T4	Frequency	Guide tube □ 60	Guide tube □ 100	Total weight
RW 4033 LW	400	680	A 40/8	5.6	4.0	•		10.9/400 V	40/400 V	1	•	•	○	50	•	○	92
RW 6532 LW	650	462	A 75/12	10.3	7.5	•		24.5/400 V	54/400 V	2	•	•	○	50		•	180
RW 6533 LW	650	470	A 100/12	13.3	10.0	•		31.9/400 V	91/400 V	2	•	•	○	50		•	200
RW 5531 DM	550	470	A 100/12	13.3	10.0	•		31.9/400 V	91/400 V	2	•	•	○	50		•	205
RW 5531 DM	550	557	A 120/12	16.0	12.0	•		36.5/440-460 V	97/440-460 V	2	•	•	○	60		•	205
RW 5531 DM	550	569	A 120/12	15.3	12.0	•		20.9/690 V	65/690 V	2	•	•	○	60		•	205

LW - Version with special propeller for use in agriculture; DM - Version (Drilling Mud) with special propeller for drilling mud
P₁ = Power input ; P₂ = Power output; • = Standard ; ○ = Option; **Cable type: 10 m cable with free cable ends as standard: 1 = 1x10G1.5; 2 = 3x6+3x6/3E+3x1.5

1.6.4 Technical data RCP 50 Hz

RCP hydraulics type	Propeller				Motor type	Motor (50 Hz/400 V)										
	Propeller diameter	Propeller speed	H _{max}	Q _{max}		Rated input power P ₁	Rated motor power P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 400 V	Starting current at 400 V	Cable type** (Ex- and standard)	Temperature monitoring	Seal monitoring	Ex d IIB T4	Total weight (Complete unit)
	[mm]	[1/min]	[m]	[l/s]		[kW]	[kW]			[A]	[A]					[kg]
RCP 2533	246	980	1,1	85	A 15/6	2,21	1,5	•		4,6	16,8	1	•	•	•	61
RCP 2534	246	980	1,6	120	A 28/6	4,09	2,8	•		8,4	30,4	1	•	•	•	66
RCP 2535	246	980	1,8	160	A 28/6	4,09	2,8	•		8,4	30,4	1	•	•	•	66
RCP 4022	394	730	1,13	165	A 40/8	5,6	4,0		•	10,9	40	2	•	•	•	118
RCP 4023	394	730	1,35	195	A 40/8	5,6	4,0		•	10,9	40	2	•	•	•	118
RCP 4024	394	730	1,49	215	A 40/8	5,6	4,0		•	10,9	40	2	•	•	•	118
RCP 4031	394	730	1,67	225	A 40/8	5,6	4,0		•	10,9	40	2	•	•	•	118
RCP 4032	394	730	1,40	245	A 40/8	5,6	4,0		•	10,9	40	2	•	•	•	118
RCP 4033	394	730	1,21	280	A 40/8	5,6	4,0		•	10,9	40	2	•	•	•	118
RCP 5031	492	470	1,08	390	A 50/12	7,1	5,0		•	18,2	52	2	•	•	•	215
RCP 5032	492	470	1,30	440	A 75/12	10,3	7,5		•	24,5	54	3	•	•	•	250
RCP 5033	492	470	1,38	500	A 75/12	10,3	7,5		•	24,5	54	3	•	•	•	250
RCP 5034	492	470	1,40	550	A 75/12	10,3	7,5		•	24,5	54	3	•	•	•	250
RCP 5035	492	470	1,45	585	A 100/12	13,3	10,0		•	31,9	91	4	•	•	•	255
RCP 5036	492	470	1,27	655	A 100/12	13,3	10,0		•	31,9	91	4	•	•	•	255
RCP 8031	792	285 ¹	1,4	880	A 110/4	13,0	11,0		•	21,8	103	2	•	•*	•	280
RCP 8031	792	360 ²	1,4	1100	A 150/4	17,9	15,0		•	32,3	172	3	•	•*	•	285
RCP 8031	792	360 ²	1,8	1130	A 220/4	25,8	22,0		•	43,9	242	4	•	•*	•	315
RCP 8032	792	285 ¹	0,9	970	A 110/4	13,0	11,0		•	21,8	103	2	•	•*	•	280
RCP 8032	792	285 ¹	1,25	990	A 150/4	17,9	15,0		•	32,3	172	3	•	•*	•	285
RCP 8032	792	360 ²	1,0	1230	A 220/4	25,8	22,0		•	43,9	242	4	•	•*	•	315

P₁ = Power input ; P₂ = Power output; 1= Propeller speed with gear ratio i=5; 2= Propeller speed with gear ratio i=4
• = Standard ; ○ = Option; •* = Moisture ingress monitor in connection chamber instead of oil chamber.
**Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 7G 1.5 ; 2 = 1 x 10G 1.5 ; 3 = 1 x 10 G 2.5 ; 4 = 2 x 4G 4 + 2 x 0.75

1.6.5 Technical data RCP 60 Hz

RCP hydraulics type	Propeller				Motor type	Motor (60 Hz/460 V)								Total weight (Complete unit)		
	Propeller diameter	Propeller speed	H _{max}	Q _{max}		Rated input power P ₁	Rated motor power P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 460 V	Starting current at 460 V	Cable type** (Ex- and standard)	Temperature monitoring		Seal monitoring	FM (NEC 500)
	[mm]	[1/min]	[m]	[l/s]		[kW]	[kW]			[A]	[A]				[kg]	
RCP 2533	246	1180	1,1	100	A 17/6	2,36	1,7	•		4,3	15,5	1	•	•	•	61
RCP 2534	246	1180	1,6	145	A 32/6	4,39	3,2	•		8,8	24,8	1	•	•	•	66
RCP 2535	246	1180	1,4	180	A 32/6	4,39	3,2	•		8,8	24,8	1	•	•	•	66
RCP 4022	394	841	1,70	200	A 46/8	6,0	4,6		•	10,3	38	2	•	•	•	118
RCP 4023	394	841	1,85	245	A 46/8	6,0	4,6		•	10,3	38	2	•	•	•	118
RCP 4024	394	841	1,62	265	A 46/8	6,0	4,6		•	10,3	38	2	•	•	•	118
RCP 4031	394	841	1,36	275	A 46/8	6,0	4,6		•	10,3	38	2	•	•	•	118
RCP 5031	492	570	1,62	460	A 90/12	11,5	9,0		•	23,9	52	2	•	•	•	250
RCP 5032	492	570	1,52	515	A 120/12	15,3	12,0		•	31,4	88	3	•	•	•	255
RCP 5033	492	570	1,20	590	A 120/12	15,3	12,0		•	31,4	88	3	•	•	•	255
RCP 5034	492	570	1,14	640	A 120/12	15,3	12,0		•	31,4	88	3	•	•	•	255
RCP 8031	792	285 ¹	1,44	900	A 130/4	14,9	13,0		•	21,9	126,8	2	•	•*	•	280
RCP 8031	792	360 ²	1,1	1080	A 130/4	14,9	13,0		•	21,9	126,8	2	•	•*	•	280
RCP 8031	792	360 ²	1,65	1080	A 170/4	19,8	17,0		•	29,4	164,9	4	•	•*	•	285
RCP 8032	792	285 ¹	0,90	990	A 130/4	14,9	13,0		•	27,8	126,8	2	•	•*	•	280
RCP 8032	792	285 ¹	1,3	1010	A 170/4	19,8	17,0		•	37,0	164,9	4	•	•*	•	285
RCP 8032	792	360 ²	0,97	1210	A 250/4	28,8	25,0		•	53,1	229,4	4	•	•*	•	315

P₁ = Power input ; P₂ = Power output; 1= Propeller speed with gear ratio i=6; 2= Propeller speed with gear ratio i=5
 • = Standard ; ◦ = Option; •* = Moisture ingress monitor in connection chamber instead of oil chamber.
 **Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 7G 1.5 ; 2 = 1 x 10G 1.5 ; 3 = 1 x 10 G 2.5 ; 4 = 2 x 4G 4 + 2 x 0.75

1.6.6 Technical data SB-KA

Flow booster type	Propeller			Motor								Weight		
	Propeller diameter	Speed	Motor type	Rated input power P ₁	Rated motor power P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 400 V (50 Hz)/ 460 V (60 Hz)	Starting current 400 V (50 Hz)/ 460 V (60 Hz)	Cable type** (Ex- and standard)	Temperature monitoring		Seal monitoring	EEx dIII BT4
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]					[kg]
SB 1236 KA	925	100 ¹	A 30/8	4.2	3.0	•		9.3/400 V	37/400 V	1	•	•	◦	176
SB 1237 KA	1080	100 ¹	A 40/8	5.6	4.0		•	10.9/400 V	40/400 V	2	•	•	◦	179
SB 1236 KA	925	100 ²	A 35/8	4.6	3.5	•		8.7/460 V	38/460 V	1	•	•	◦	176
SB 1237 KA	1080	100 ²	A 46/8	6.0	4.6		•	10.3/460 V	38/460 V	2	•	•	◦	179

P₁ = Power input ; P₂ = Power output; 1= Propeller speed with gear ratio i=7; 2= Propeller speed with gear ratio i=8
 • = Standard ; ◦ = Option; **Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 7G 1.5 ; 2 = 1 x 10G 1.5

NOTE Other voltages available on request.

1.7 Dimensions and weights

NOTE The weights of the units can be obtained from the nameplate of the unit or from the table in section 1.6 Technical Data.

1.7.1 Dimensions RW

Dimension	RW 300 A15/28 (50 Hz) A17/32 (60 Hz)	RW 400 A30/40 (50 Hz) A35/46 (60 Hz)	RW 650 A50 (50 Hz) A60 (60 Hz)	RW 650 A75 (50 Hz) A90 (60 Hz)	RW 650 A100 (50 Hz) A120 (60 Hz)	RW 900 A110/150 (50 Hz) A130/170 (60 Hz)	RW 900 A220 (50 Hz) A250 (60 Hz)
D_1	ø 300	ø 400	ø 650	ø 650	ø 650	ø 900	ø 900
D_2	ø 462	ø 560	ø 810	ø 810	ø 810	ø 1150	ø 1150
d_1	ø 158	ø 222.5	ø 262.5	ø 262.5	ø 262.5	ø 222.5	ø 222.5
H □ 60	264	262	-	-	-	-	-
H □ 100	-	306	306	306	306	306	306
h_1	700	700	1100	1100	1100	1500	1500
L_1 □ 60	610	665	-	-	-	-	-
L_1 □ 100	-	700	830	970	970	1150	1250
L_2 □ 60	610	685	-	-	-	-	-
L_2 □ 100	-	720	850	990	990	1170	1270
l_1	725	795	925	1065	1065	1240	1340
l_2 □ 60	-	300	-	-	-	-	-
l_2 □ 100	-	300	400	630	530	-	-
X_1 □ 60	230	360	-	-	-	-	-
X_1 □ 100	-	280	320	420	400	470	500
X_2 □ 60	264	300	-	-	-	-	-
X_2 □ 100	-	310	330	430	410	520	550

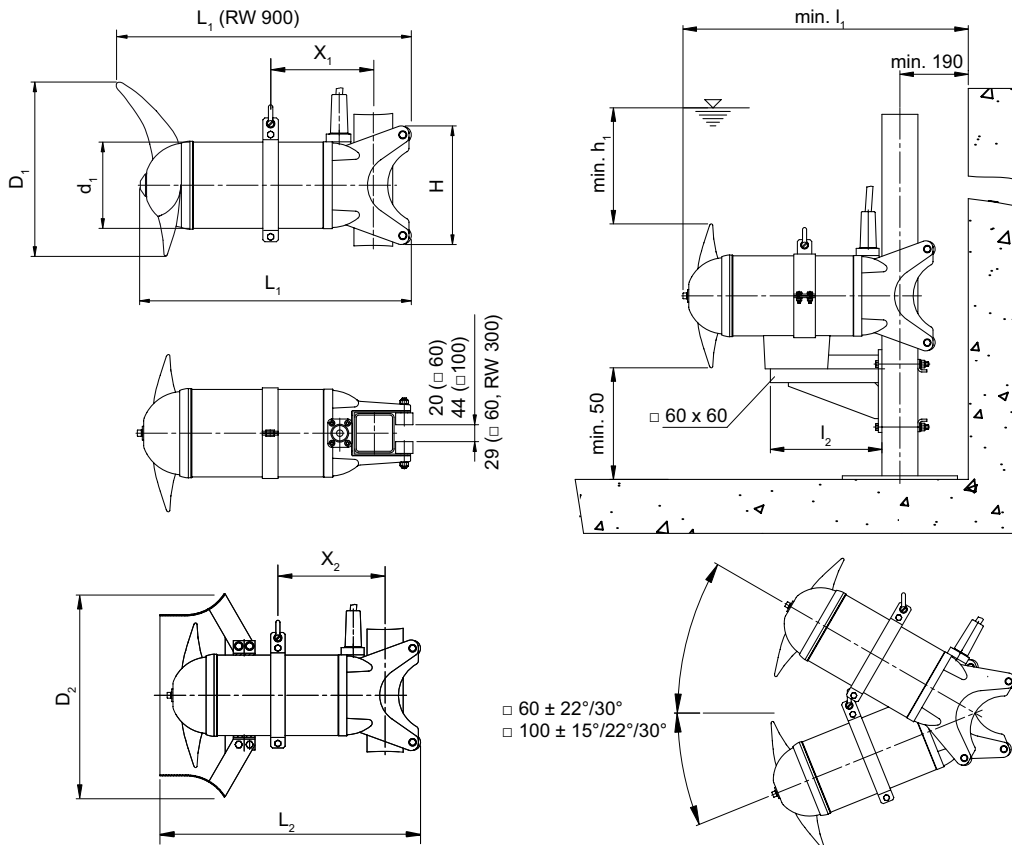


Figure 1 Dimensions RW

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1.7.2 Dimensions RCP

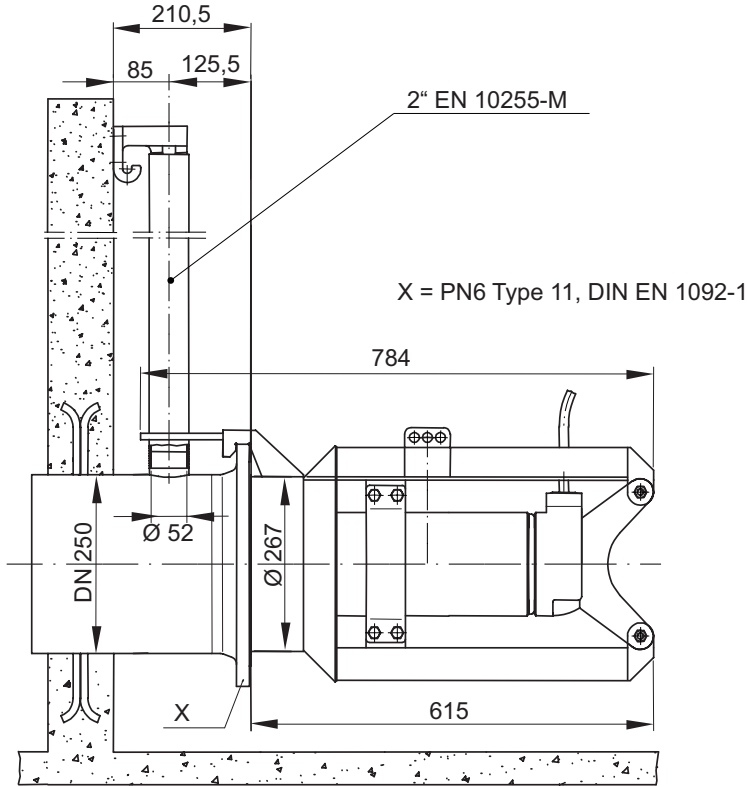


Figure 2 RCP 250

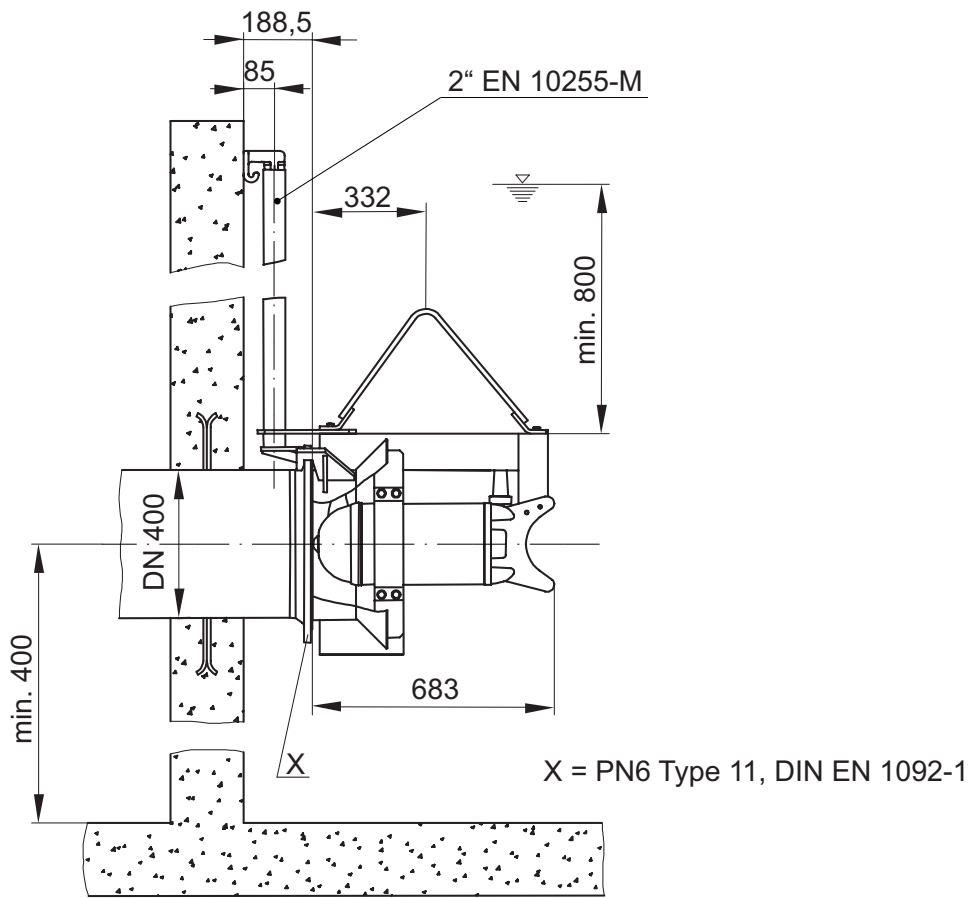


Figure 3 RCP 400

0551-0004

0551-0005

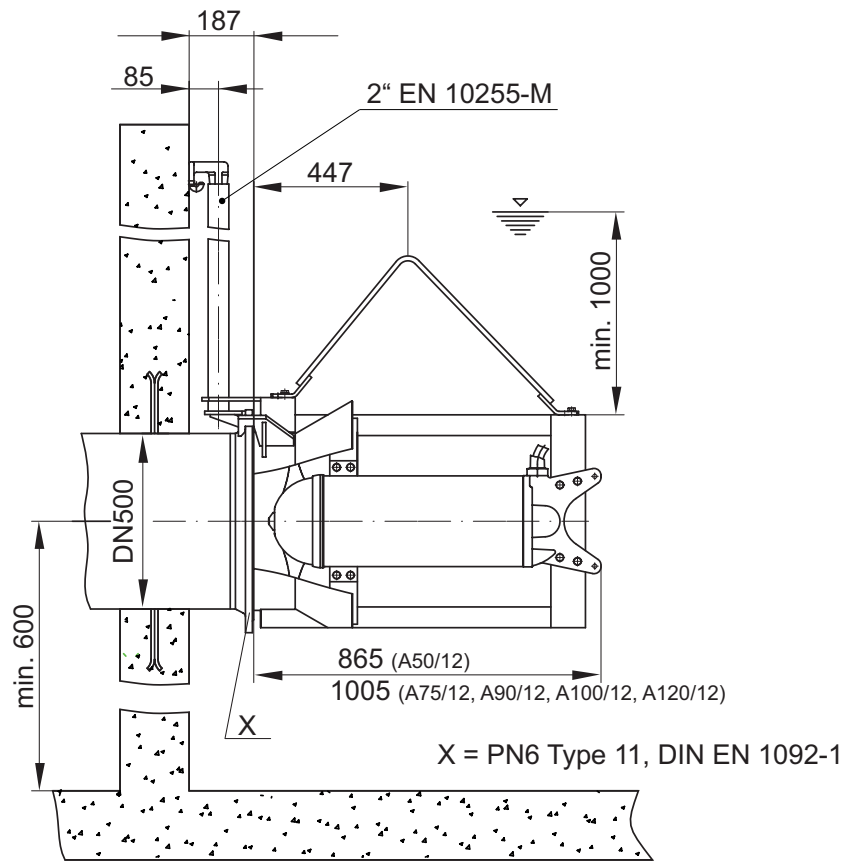


Figure 4 RCP 500

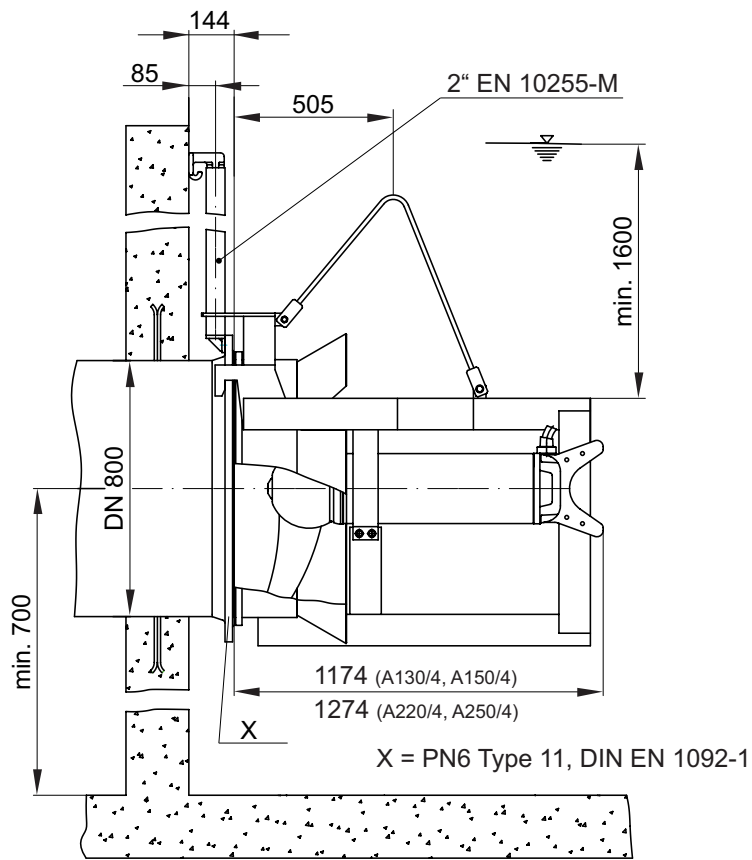
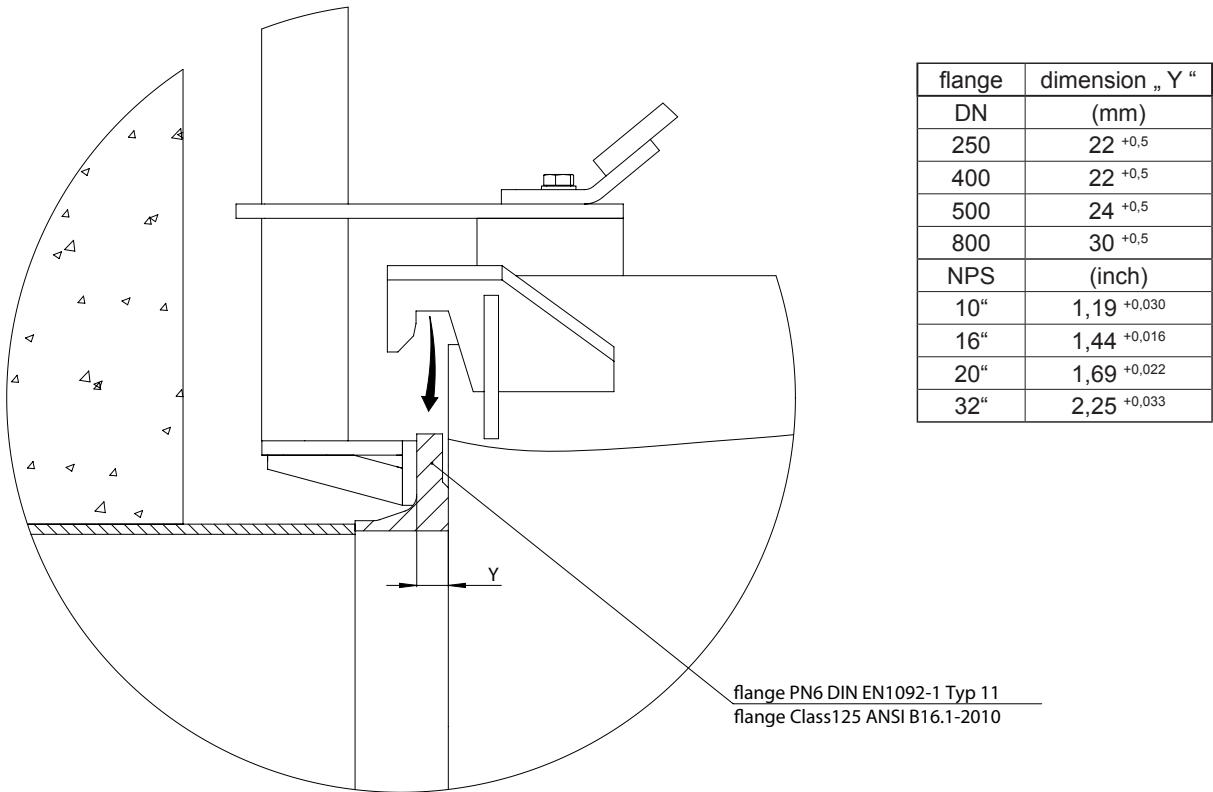


Figure 5 RCP 800

1.7.3 Flange dimension check



2508-0005

Figure 6 Flange dimensions

ATTENTION Before installing the recirculation pump, check the “Y” dimension of the flange. Make sure that the dimensions specified in the table are adhered to, otherwise the flange will need to be reworked.

1.7.4 Dimensions SB-KA

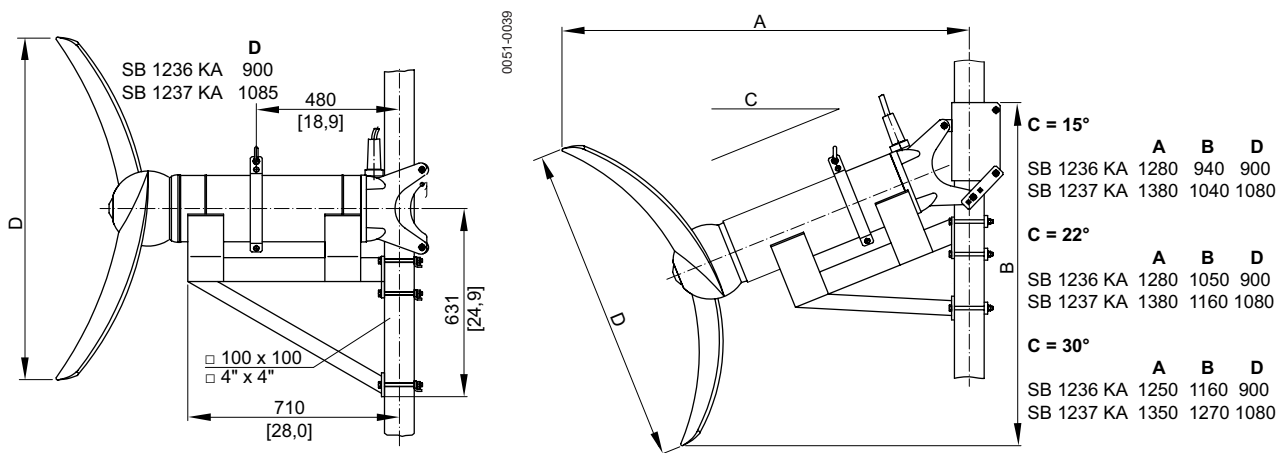


Figure 7 Bracket: Version for fixed angle 0°

Figure 8 Bracket: Version for different angle adjustment

1.8 Nameplate

We recommend that you record the data from the original nameplate *Figure 9a* so that you can refer to the data at any time.



									
Type ②					⑤				
PN ③				SN ④		⑥			
U _N ⑦ V		3~ ⑳		max. ∇ ⑧		I _N ⑨ A		⑩ Hz	
P _{1N} ⑪		P _{2N} ⑫		n ⑬		∅ ⑭			
T _A max. ⑮ °C			Nema Code ⑯			Hmin. ⑰			
DN ⑱		Q ⑲		H ⑳		Hmax. ㉑			
⑳		Weight ㉒		IP68 ㉓		㉔			
Motor Eff. Cl ㉕			 ㉖						
Sulzer Pump Solutions Ireland Ltd. Clonard Road, Wexford. ① Ireland.									

Figure 9a Nameplates

Legend

- | | |
|---|--|
| 1 Address | 15 Max. ambient temperature [flexible unit] |
| 2 Type designation | 16 Nema Code Letter (only at 60 Hz, e.g., H) |
| 3 Art. no. | 17 Min. pumping height [flexible unit] |
| 4 Serial number | 18 Nominal width [flexible unit] |
| 5 Order number | 19 Pumping quantity [flexible unit] |
| 6 Year of manufacture [month/year] | 20 Pumping height [flexible unit] |
| 7 Nominal voltage | 21 Max. pumping height [flexible height] |
| 8 Max. immersion depth [flexible unit] | 22 Weight (without attached parts) [flexible unit] |
| 9 Nominal current | 23 Motor efficiency class |
| 10 Frequency | 24 Motor shaft direction of rotation |
| 11 Power (consumption) [flexible unit] | 25 Continuous Operating Mode |
| 12 Power (output) [flexible unit] | 26 Sound level |
| 13 Rotation speed [flexible unit] | 27 Start-up |
| 14 Impeller/Propeller ∅ [flexible unit] | 28 Protection method |



Figure 9b Nameplate ATEX

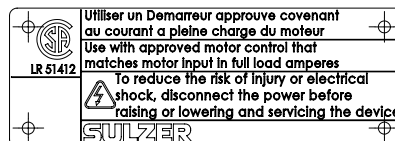


Figure 9c Nameplate CSA / FM

NOTE In all communication please state type of the unit, item and serial number.

NOTE Additional country specific nameplates possible.

2 Safety

The general and specific health and safety hints are described in detail in the separate booklet **Safety Instructions for Sulzer Products Type ABS**. If anything is not clear or you have any questions as to safety make certain to contact the manufacturer Sulzer.

3 Transport and storage

3.1 Transport



The unit must never be raised by the power cable.

Depending on the version, the units are fitted with a lifting hoop/eyelet, to which a chain can be fastened by means of shackles to transportation, installation or removal.



Take note of the entire weight of the unit (*see nameplate Figure 7*). The hoist and chain must be adequately dimensioned for the weight of the unit and must comply with the current valid safety regulations as well as good technical practice must be observed.



The unit should be protected from rolling over!



The unit is prepared for transportation by placing it on an adequately strong, completely horizontal surface taking care that it cannot topple over.



Do not stay or work in the swivel area of a suspended load!



The lifting hook height must take into consideration the entire height of the unit as well as the length of the lifting chain.

3.2 Transport securing devices

3.2.1 Motor connection cable moisture protection

The motor connection cables are protected against the ingress of moisture along the cable by having the ends sealed at the works with protective covers.

ATTENTION *These protective covers should only be removed immediately prior to connecting the pumps electrically.*

Particular attention is necessary during storage or installation of units in locations, which could fill with water prior to laying and connection of the power cable of the motor. Please note that the cable ends, even where fitted with protective sleeves, cannot be immersed in water.

ATTENTION *These protective covers only provide protection against water spray or similar and are not a water tight seal. The ends of the cables should not be immersed in water, otherwise moisture could enter the connection chamber of the motor.*

NOTE *If there is a possibility of water ingress then the cables should be secured so that the ends are above the maximum possible flood level. Take care not to damage the cable or its insulation when doing this!*

3.3 Storage of the units

ATTENTION *The Sulzer products must be protected from weather influences such as UV from direct sunlight, high humidity, aggressive dust emissions, mechanical damage, frost etc. The Sulzer original packaging with the relevant transport securing devices (where used) ensures optimum protection of the unit. If the units are exposed to temperatures under 0 °C/32 °F check that there is no water in the hydraulics, cooling system, or other spaces. In the case of heavy frosts, the units and cable should not be moved if possible. When storing under extreme conditions, e.g. in tropical or desert conditions suitable additional protective steps should be taken. We would be glad to advise you further.*

NOTE *Sulzer units do not generally require any particular maintenance during storage. After long storage periods (after approx. one year), the transportation locking device on the motor shaft (not with all versions) should be disassembled. By rotating the shaft several times by hand, new lubricating oil or, depending on the version, a small amount of coolant (which also serves to cool or lubricate the mechanical seals) is applied to the sealing surfaces, thus ensuring perfect operation of the mechanical seals. The bearings supporting the motor shaft are maintenance-free.*

4 Product description

4.1 General description

- Hydraulically optimized propeller with high wear resistance.
- The motor shaft is supported in lubricated-for-life maintenance-free ball bearings.
- The shaft is sealed on the medium side by means of a high quality mechanical seal, which is independent of direction of rotation.
- Oil chamber filled with lubricating oil (oil change not necessary).

Motor

- Three phase squirrel cage motor.
- Rated voltage: 400 V 3~ 50 Hz / 460 V 3~ 60 Hz.
- Other voltages available on request.
- Insulation class F = 155 °C / 311 °F, Protection type IP68.
- Medium temperature for continuous operation: + 40 °C / 104 °F.

Motor monitoring

- All motors are fitted with temperature monitors, which switch off the motor in the case of excessive temperatures. The sensors must be correctly wired into the control panel.

Seal monitoring

- The DI-electrode carries out the seal monitoring function and signals the ingress of moisture by means of a special electronic device (option).

Operation with frequency inverters

- All RW/RCP/SB-KA, when **suitably selected**, can be used with frequency inverters. **Observe the EMC-Directive and the installation and operating instructions of the inverter manufacturer!**

4.2 Structural design RW/SB-KA

4.2.1 RW 300/400/650

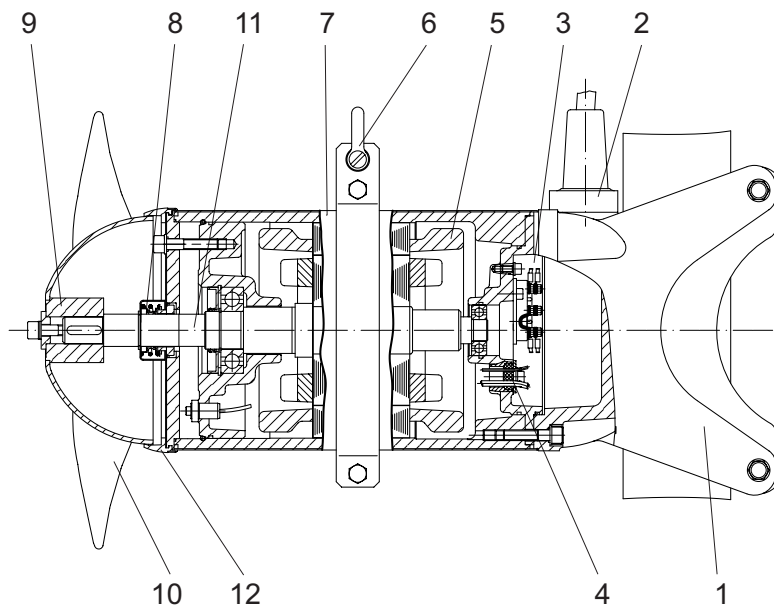


Figure 10 RW 300/400/650

4.2.2 RW 900/SB-KA

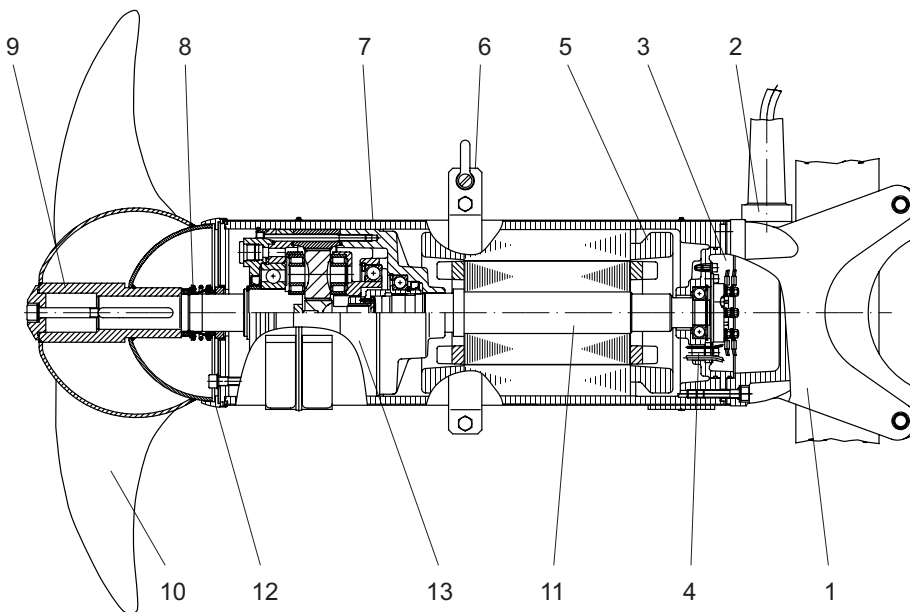


Figure 11 RW 900/SB-KA

Legend

- | | | | |
|---|-----------------------------------|----|------------------------------------|
| 1 | Bracket | 8 | Mechanical seal |
| 2 | Cable inlet | 9 | Propeller boss |
| 3 | Connection chamber | 10 | Propeller |
| 4 | Sealing of the motor chamber | 11 | Shaft unit with rotor and bearings |
| 5 | Stator | 12 | SD - ring |
| 6 | Bracket with shackle | 13 | Gear |
| 7 | Stainless steel covering (Option) | | |

0551-0009

0551-0010

4.3 Rinsing system for mechanical seal (Option)

By connecting a water supply to the unit the mechanical seal can be washed out or rinsed while in operation. This can prevent injurious deposits and premature wear, e.g. due to chemical reactions.

By exchanging the motor cover the rinsing system can be fitted later to the unit.

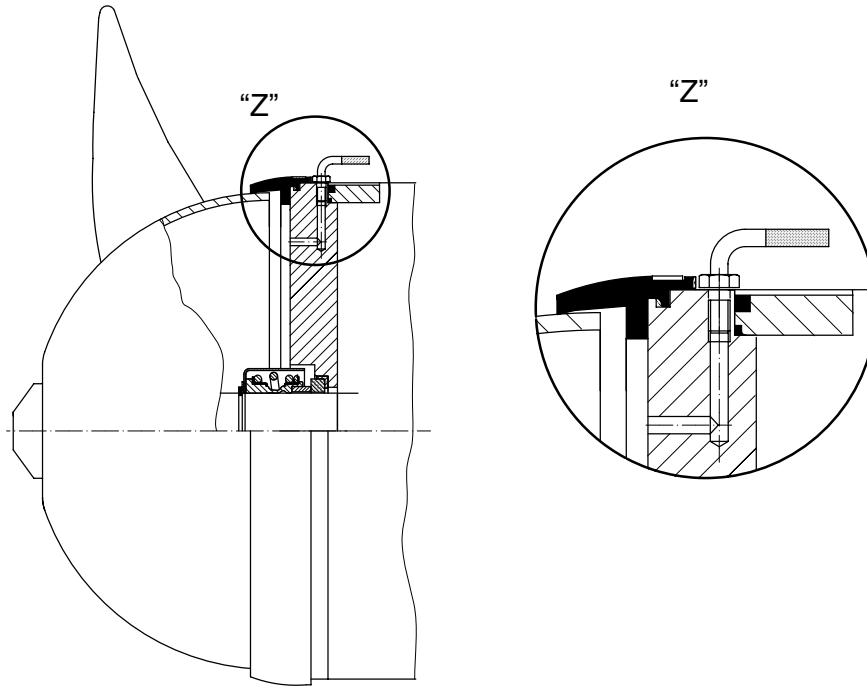


Figure 12 Rinsing system for mechanical seal

4.4 Structural design RCP

4.4.1 RCP 400/500

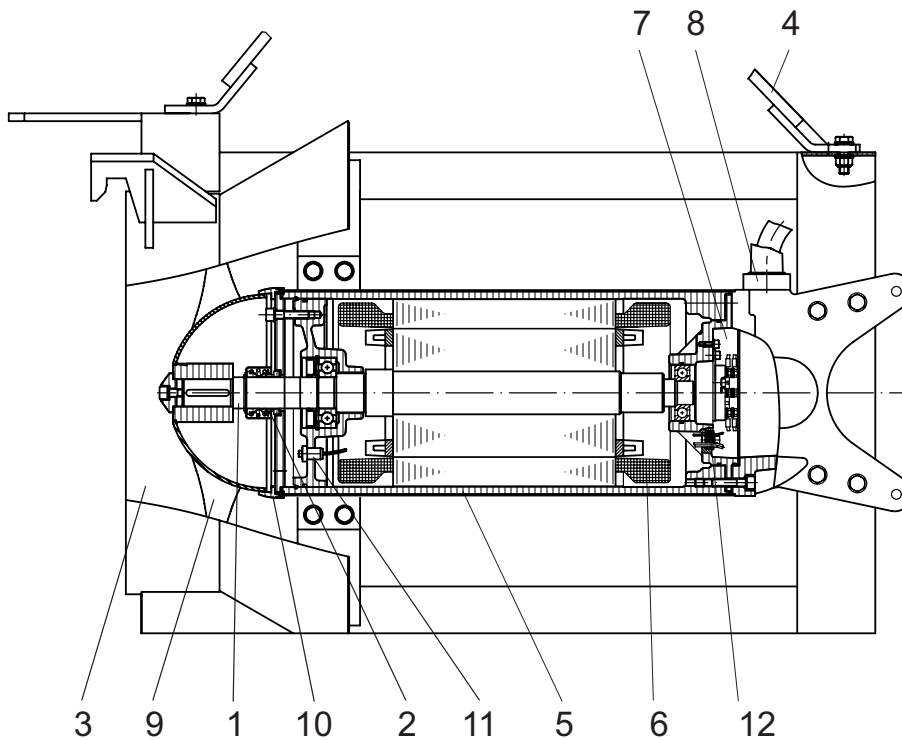
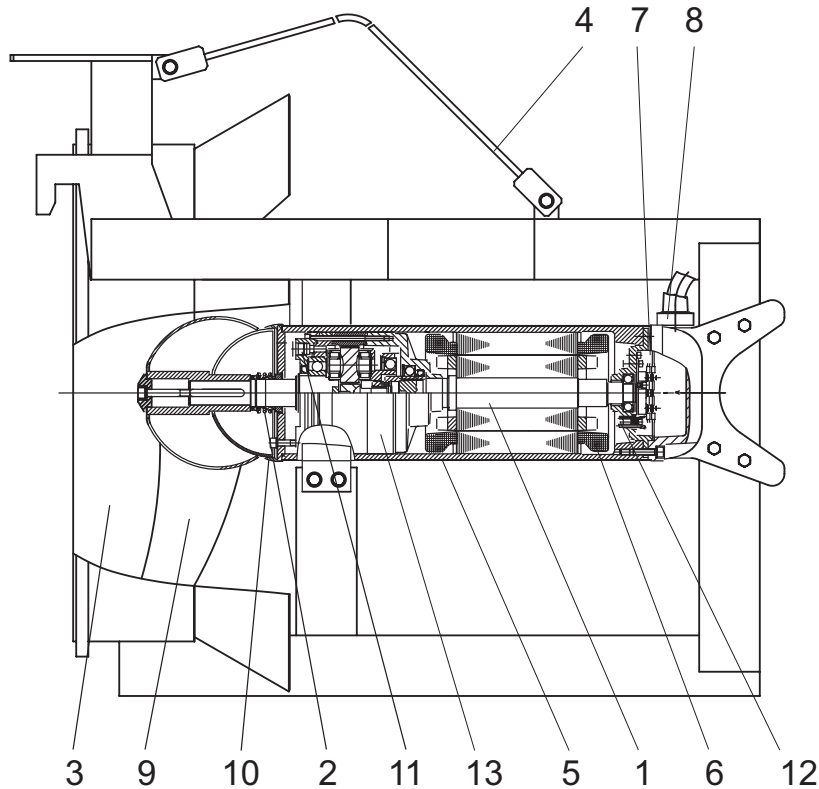


Figure 13 RCP 400/500

4.4.2 RCP 800



0551-0037

Figure 14 RCP 800

Legend

- | | | | |
|---|------------------------------------|----|-----------------------------|
| 1 | Shaft unit with rotor and bearings | 8 | Cable inlet |
| 2 | Mechanical seal | 9 | Propeller |
| 3 | Inlet cone | 10 | SD - ring |
| 4 | Lifting hook | 11 | DI-electrode (seal monitor) |
| 5 | Motorhousing | 12 | Sealing of motor chamber |
| 6 | Stator | 13 | Gear |
| 7 | Connection chamber | | |

4.5 Operation with frequency inverters

The stator design and the insulation grade of the motors from Sulzer means that they are suitable for usage with frequency inverters. It is however essential that the following conditions are met when the motors are used with frequency inverters:

- The guidelines for EMC (electromagnetic compatibility) are complied with.
- Speed/torque curves for motors driven by frequency inverters can be found in our product selection range.
- Explosion-proof motors must be equipped with thermistors (PTC temperature sensors).
- Machines designated as Ex machines may never, without exception, be operated using a mains frequency that is greater than the maximum of 50 or 60 Hz as indicated on the nameplate. Make sure that the rated current specified on the type plate is not exceeded after starting the motors. The maximum number of starts according to the motor datasheet may not be exceeded.
- Machines that are not designated as Ex machines may only be operated using the mains frequency indicated on the nameplate. Greater frequencies can be used but only after consulting with and receiving permission from the Sulzer manufacturing plant.
- For operation of Ex-motors on frequency inverters special requirements in relation to the tripping times of the thermo control elements, must be observed.

- The lowest frequency must be set so that it is not falling below 25 Hz.
- The maximum frequency must be set so the rated power of the motor is not exceeded.

Modern frequency inverters are using higher wave frequencies and a steeper rise on the edges of the voltage wave. This means that motors losses and motor noise is reduced. Unfortunately these inverter output signals cause higher voltage spikes in the stator. Experience has shown that, depending on rated voltage and the length of the cable between the inverter and the motor, these voltage spikes can adversely affect the life of the motor. In order to avoid this, inverters of this type must equipped with sinus filters when used in the critical zone (see Figure 15). The sinus filter chosen must be suitable for the inverter with regard to rated voltage, inverter wave frequency, rated current of the inverter and maximum inverter output frequency. Make sure that the rated voltage is supplied to the terminal board of the motor.

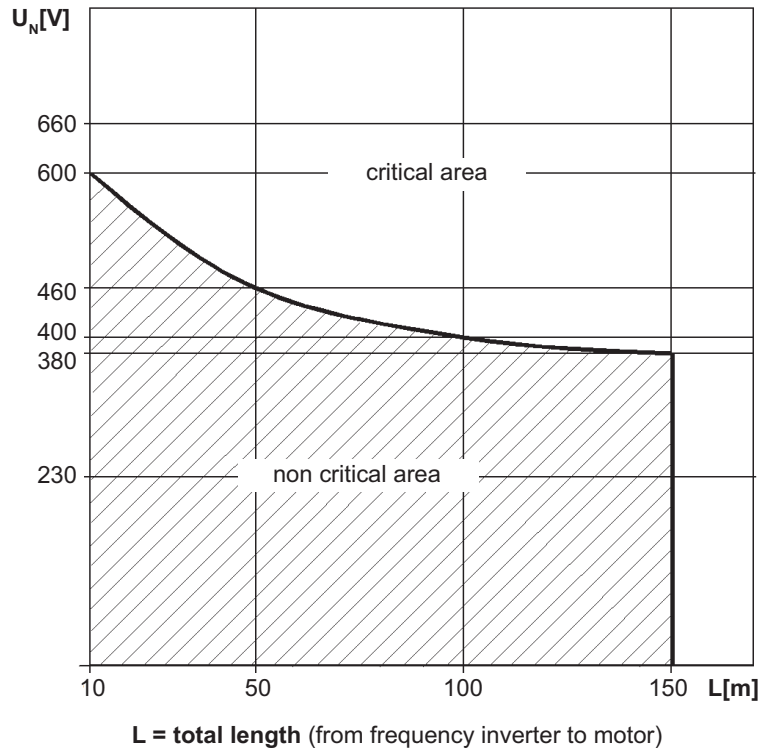


Figure 15 Critical/non critical area

5 Installation



The safety hints in the previous sections must be observed!

5.1 Installation RW/SB-KA



Care must be taken that the connection cables are positioned that they cannot be caught up in the propeller blades and that they are not subjected to tension.



The electrical connection is carried out in accordance with *section 5.8 Electrical connection*.

NOTE

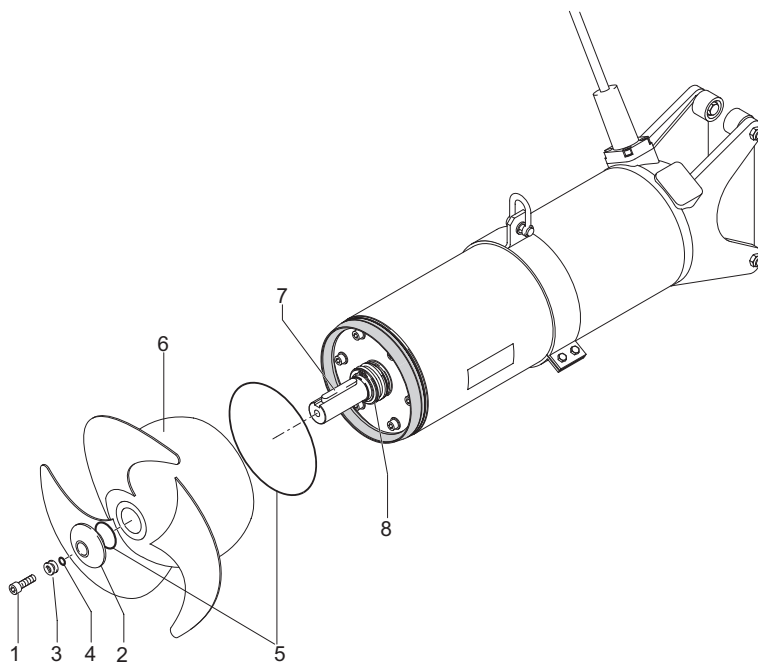
We recommend that Sulzer installation accessories be used for the installation of the RW mixer, RCP recirculation pumps and SB flow booster.

5.2 Propeller assembly (only for RW 900 and SB-KA)

The propellers of the RW mixer RW 900/SB-KA are supplied separately and must be fitted on site in accordance with the instructions below.

ATTENTION Take care that the orientation of the lock washers is correct (Figure 17 Correct fitting position of the securing washers) and that the prescribed tightening torque is used!

1. Lightly grease propeller boss and shaft end.
2. Push on propeller (16/6).
3. Fit O-Ring (16/5).
4. Insert propeller washer (16/2).
5. Fit O-Ring (16/4).
6. Fit lock washers (16/3) taking care that orientation is correct (see Figure 17 Correct fitting position of the Nord-Lock® securing washers).
7. Tighten socket head screw (16/1) with torque of 56 Nm.



0551-0013

Legend

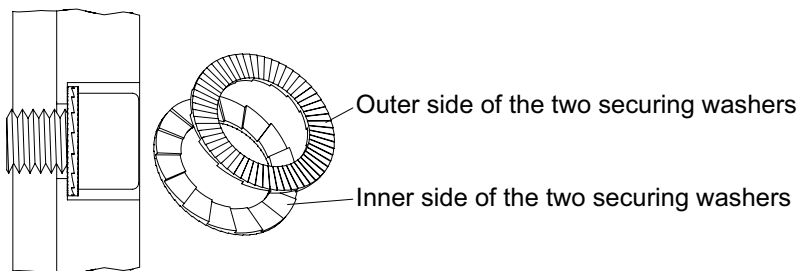
- 1 Socket head screw
- 2 Propeller washer
- 3 Lock washers
- 4 O-Ring
- 5 O-Ring
- 6 Propeller
- 7 Key (already fitted at factory)
- 8 Seal (already fitted at factory)

Figure 16 Propeller assembly

5.3 Tightening torque

Tightening torque for Sulzer stainless steel screws A4-70:							
Thread	M6	M8	M10	M12	M16	M20	M24
Tightening torque	6.9 Nm	17 Nm	33 Nm	56 Nm	136 Nm	267 Nm	460 Nm

5.3.1 Fitting position of the Nord-Lock® securing washers



0562-0009

Figure 17 Correct fitting position of the Nord-Lock® securing washers

5.4 Installation examples RW/SB-KA

5.4.1 Installation example with existing accessories

We recommend that the closed bracket be used for this type of installation (See Figure 23 Closed bracket).

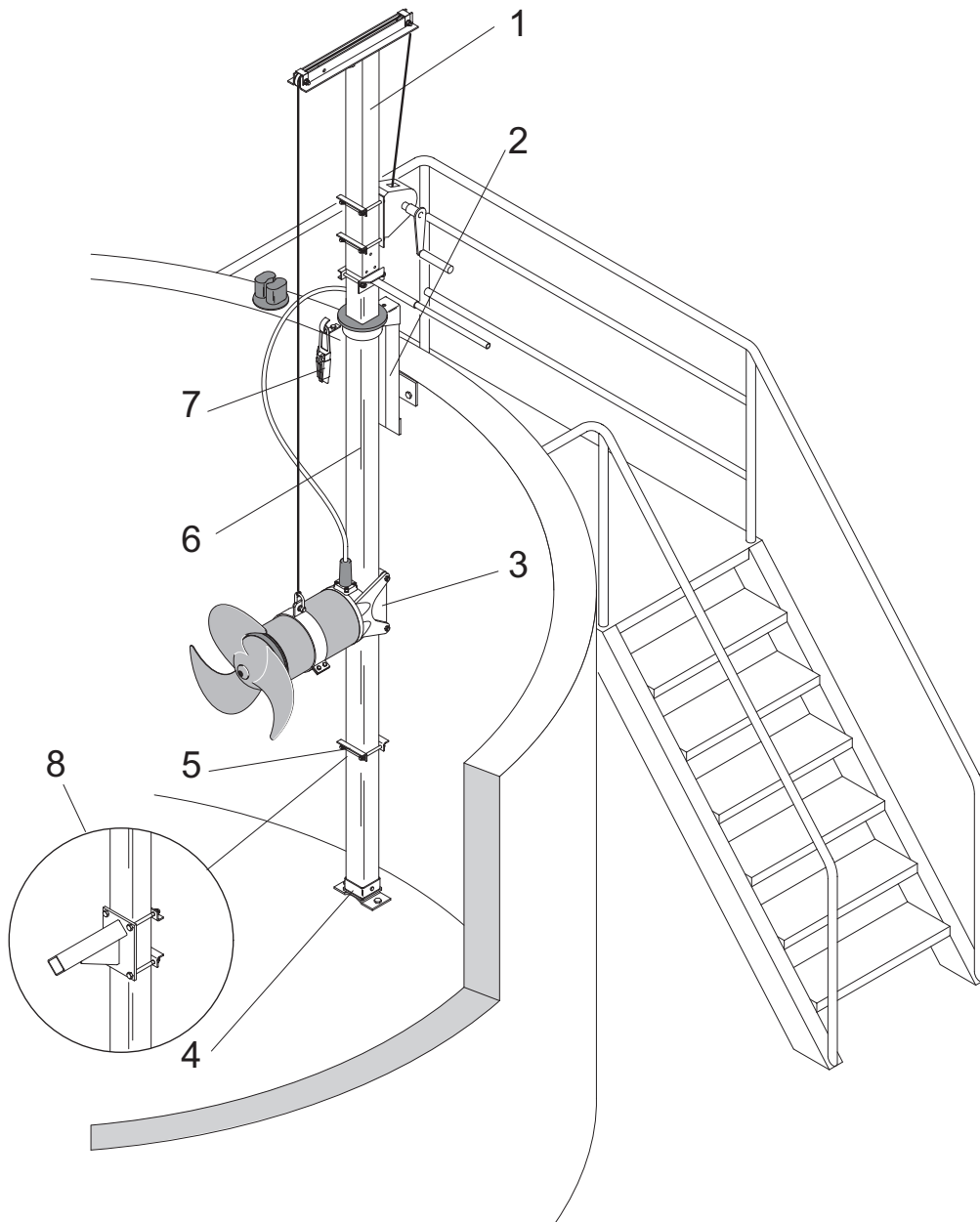


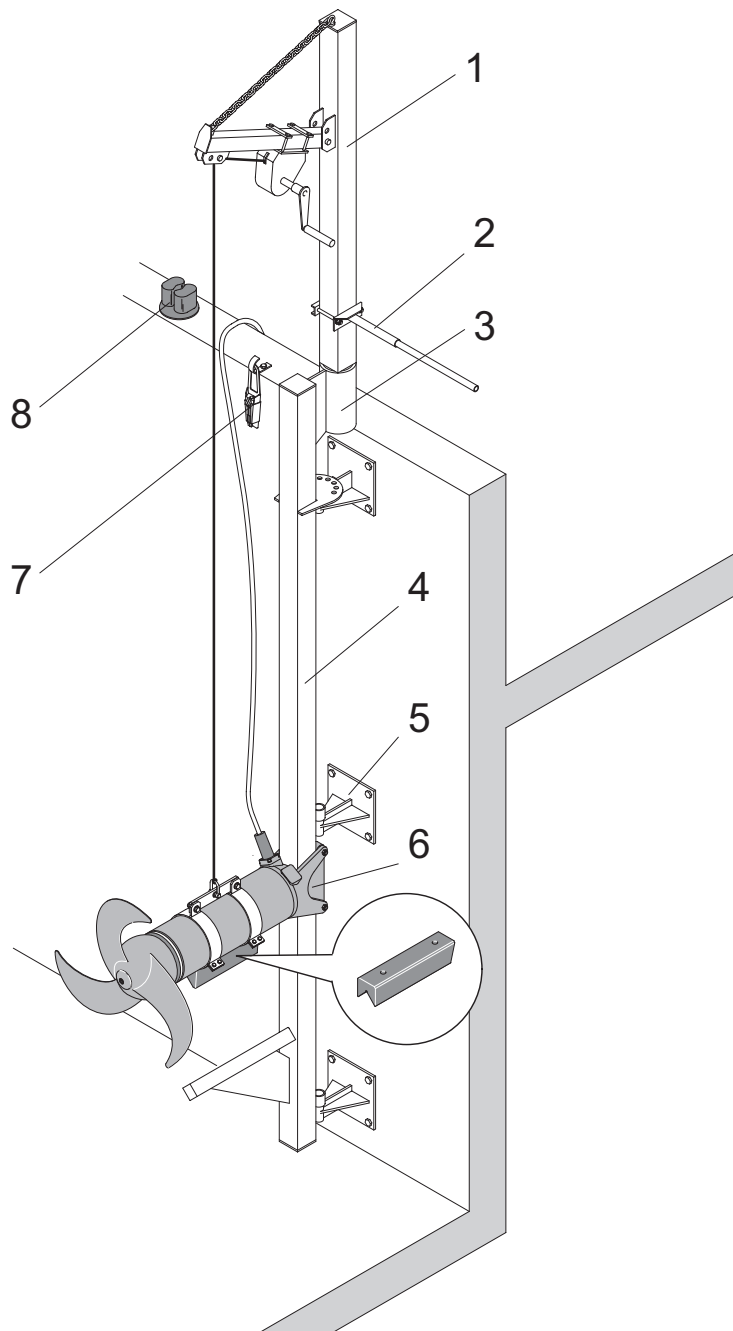
Figure 18 Installation example with existing accessories

Legend

- | | | | |
|---|----------------------------------|---|------------------------------------|
| 1 | Hoist with winch and rope | 5 | Safety stop clamp |
| 2 | Upper bracket with locking plate | 6 | Swivelling square guide tube |
| 3 | Closed bracket | 7 | Cable clamp with cable hook |
| 4 | Bottom plate | 8 | Stop for vibration damper (option) |

5.4.2 Installation example with alternative fixing possibilities

We recommend that the open bracket be used for this type of installation (See Figure 23 Open bracket).



0551-0015

Figure 19 Installation example with alternative fixing possibilities

Legend

- | | | | |
|---|------------------------------|---|---------------------------------|
| 1 | Transportable lifting unit | 5 | Swivelling wall mounted bracket |
| 2 | Swivel handle | 6 | Open bracket |
| 3 | Socket (fixed installed) | 7 | Cable clamp with cable hook |
| 4 | Swivelling square guide tube | 8 | Rope block |

5.4.3 Installation example with fixed installation as flow booster

We recommend that the open bracket be used for this type of installation (See *Figure 23 Open bracket*).

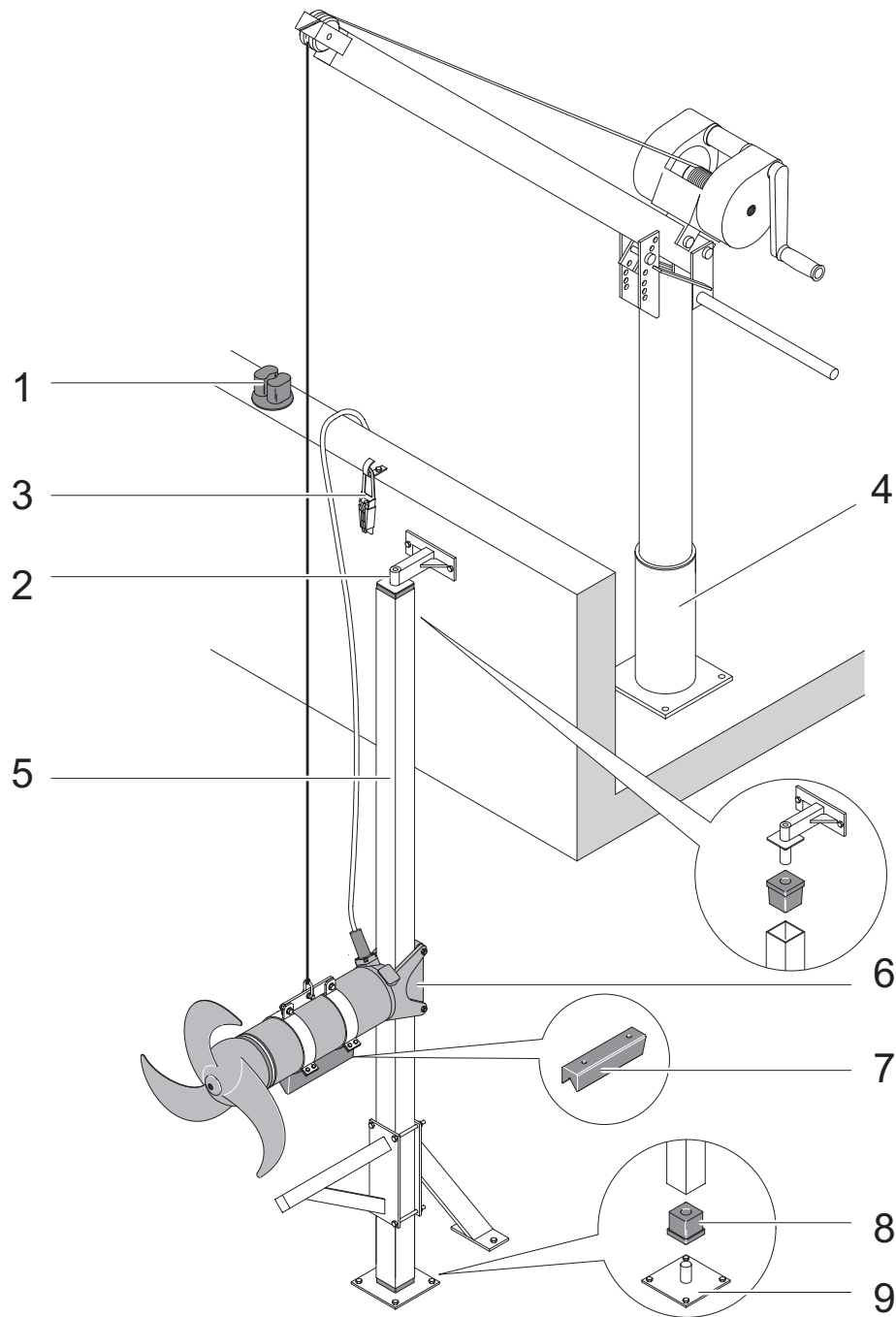


Figure 20 Installation example with fixed installation as flow booster

Legend

- 1 Rope block
- 2 Tube retainer
- 3 Cable clamp with cable hook
- 4 Sulzer lifting unit 5 kN
- 5 Square guide tube
- 6 Open bracket
- 7 Vibration damper
- 8 Tube connector
- 9 Bottom plate

5.4.4 Installation example SB-KA

We recommend that the open bracket be used for this type of installation (See Figure 23 Open bracket).

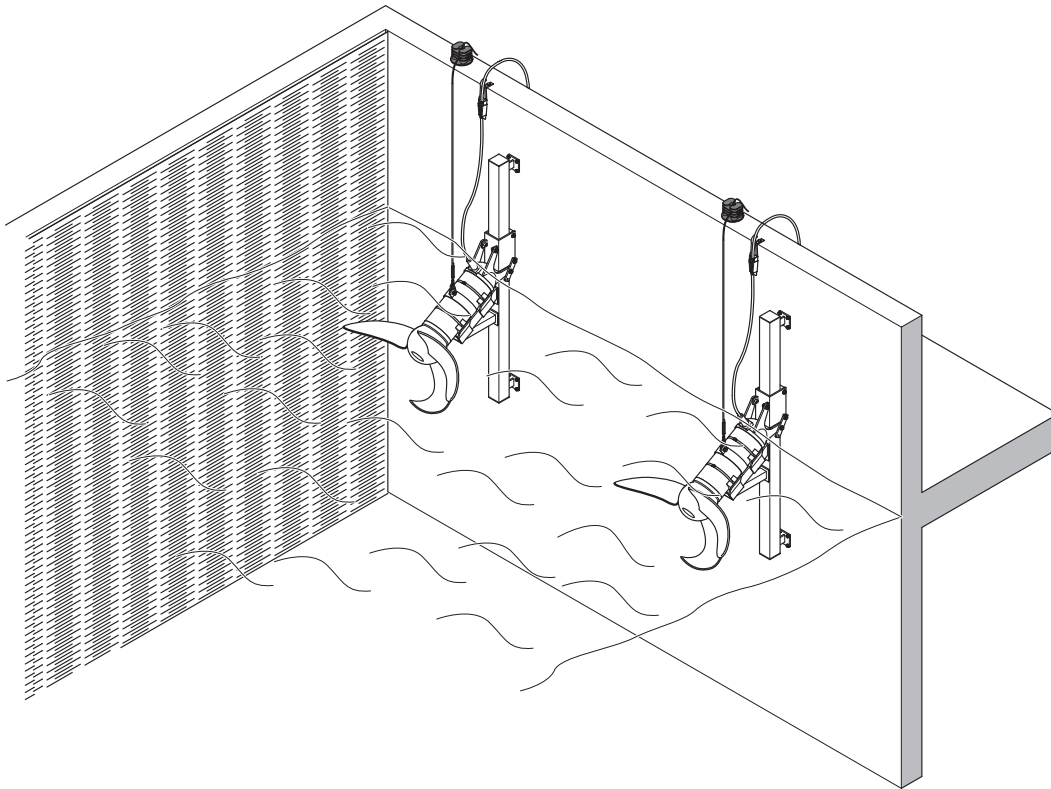


Figure 21 Installation example as flow booster for biofilm carriers.

5.4.5 Fixed installation with vibration damper

If the mixer is to be installed at a fixed point in the tank, then we recommend that the console with the vibration damper be used. In this case a further square tube must be used as a console at the guide tube. The vibration damper for the relevant mixer can be ordered, see table below:

Vibration damper listing

Mixer	Part no.
RW 300	-
RW 400	6 162 0019
RW 650	6 162 0020 (A50/12, A 60/12). 6 162 0027 (A75/12, A 90/12, A100/12, A 120/12)
RW 900/SB-KA	Standard

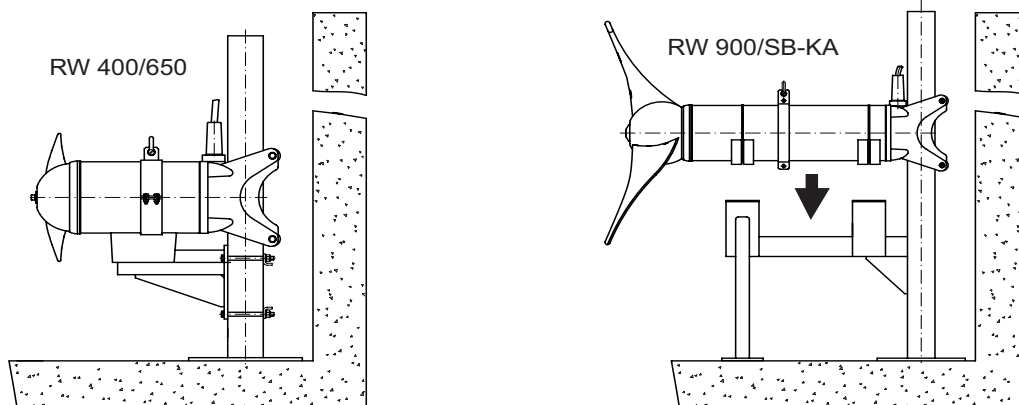


Figure 22 Fixed installation with vibration damper

5.5 Brackets RW/SB-KA

Brackets which can be swivelled vertically (only optional) are available for both open and closed models of the brackets for all mixers of the series RW 300 to 900/SB-KA.



Figure 23 Open bracket/closed bracket

5.5.1 Fitting of the open bracket with vertical swivelling (option)

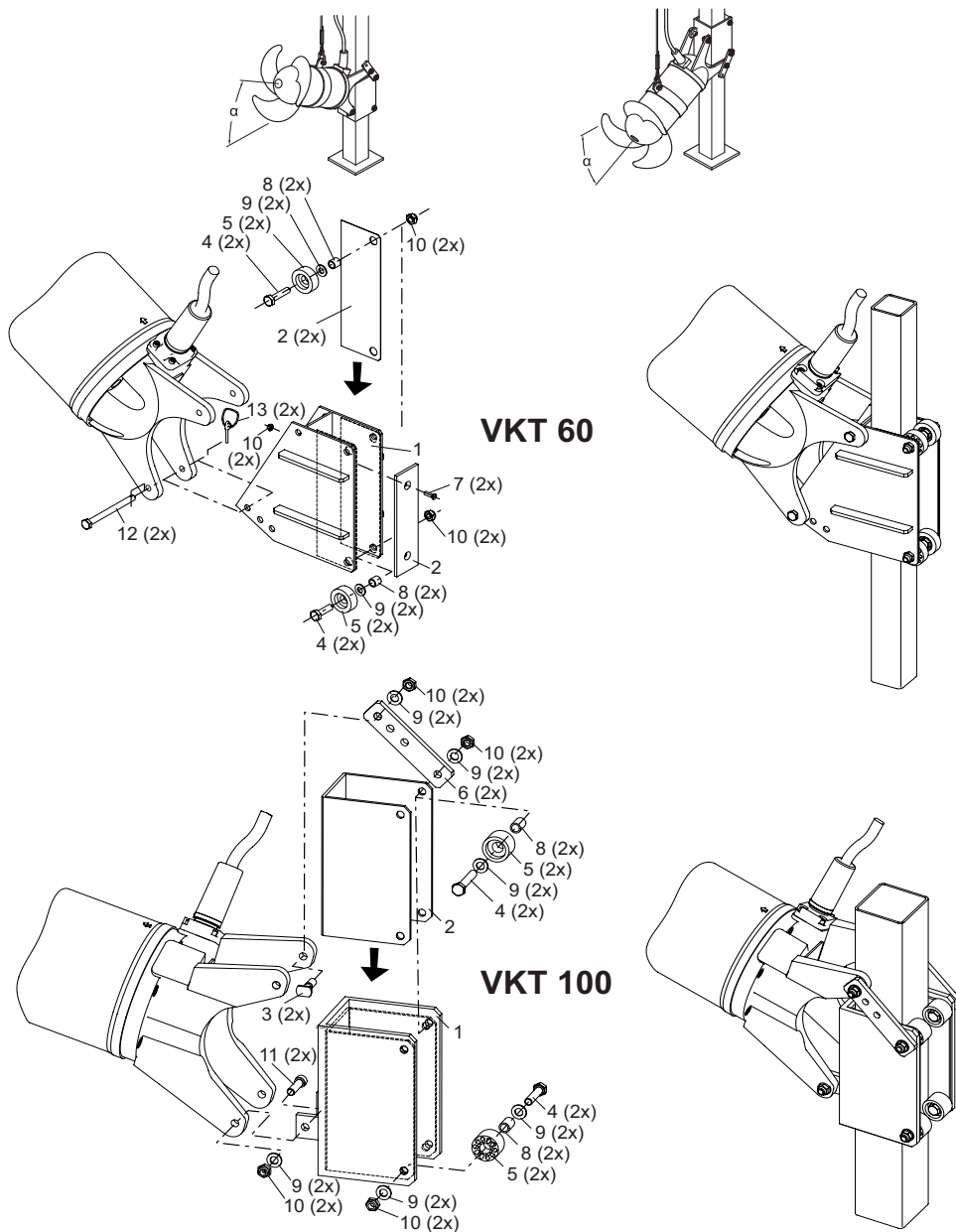


Figure 24 Open bracket with vertical swivelling

0551-0018

0551-0022

Legend

- | | | |
|--------------------|----------------------|--------------|
| 1 Bracket | 7 Flat head screw | 13 Linch pin |
| 2 Cladding | 8 Tube | |
| 3 Threaded inserts | 9 Washer | |
| 4 Hex bolts | 10 Hex nut | |
| 5 Roller | 11 Socket head screw | |
| 6 Strap | 12 Hinge bolt | |

5.5.2 Fitting of the closed bracket with vertical swivelling (option)

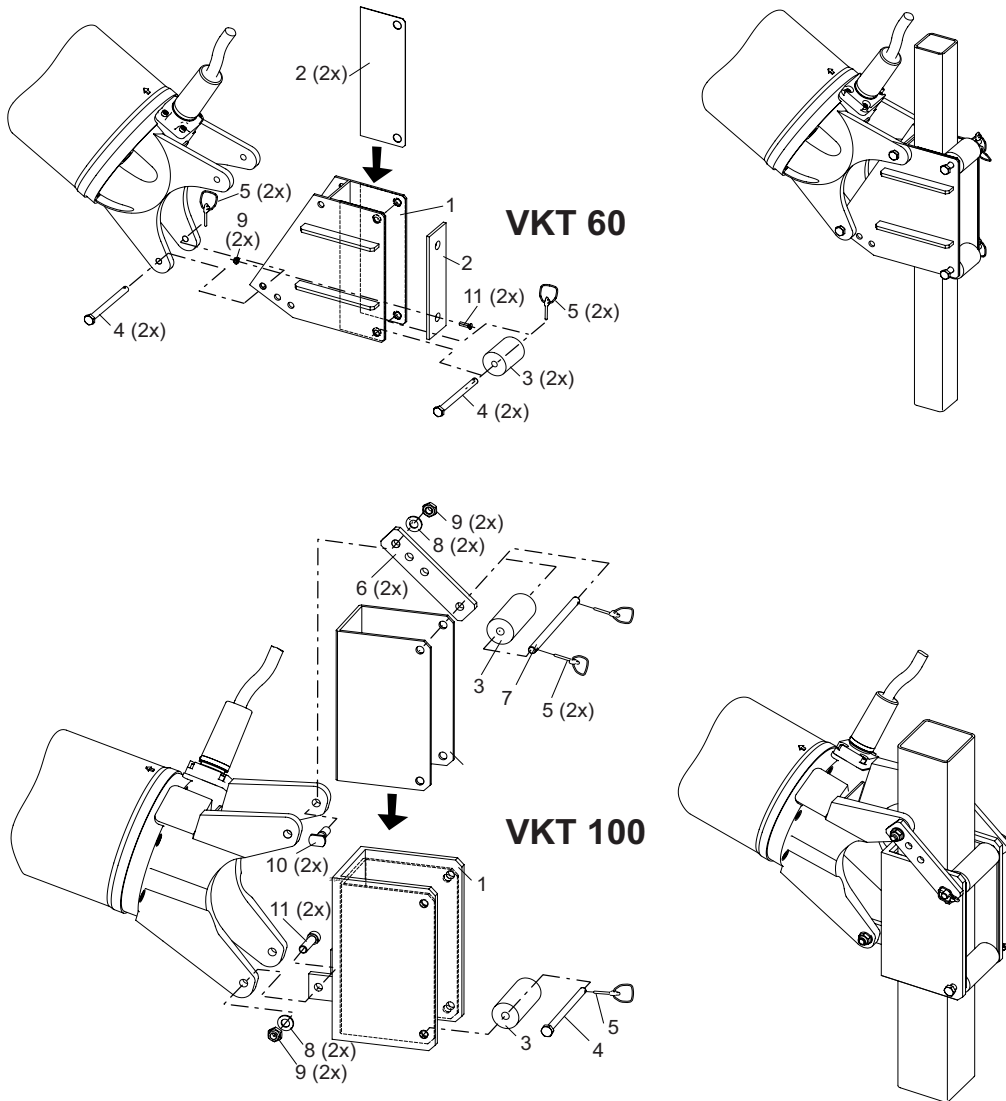


Figure 25 Closed bracket with vertical swivelling

Legend

- | | |
|--------------|----------------------|
| 1 Bracket | 7 Bolt long |
| 2 Cladding | 8 Washer |
| 3 Roller | 9 Hex nut |
| 4 Bolt short | 10 Threaded insert |
| 5 Linch pin | 11 Socket head screw |
| 6 Strap | |

The mixer must be set up freely suspended with bracket fully mounted so that the bracket points vertically towards the ground (See Figure 26). When doing this the clamp of the mixer should be moved until the desired slope of the mixer is achieved (See Figure 26). This ensures that the mixer can slide up and down easily on the guide tube after it is fitted.

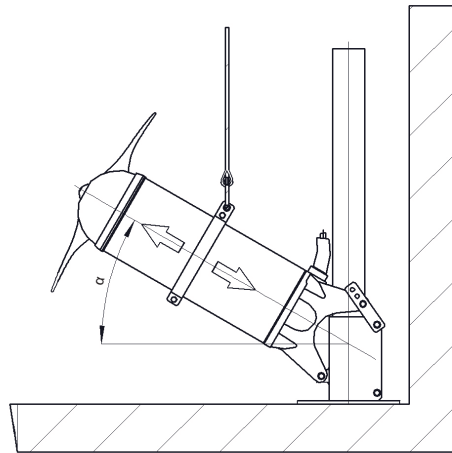
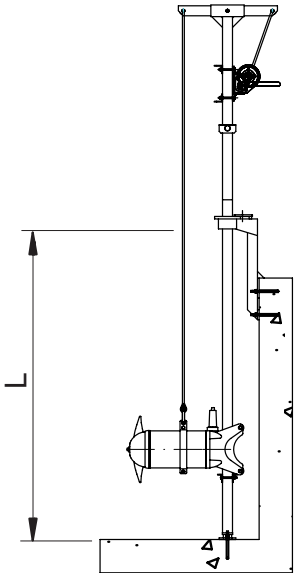
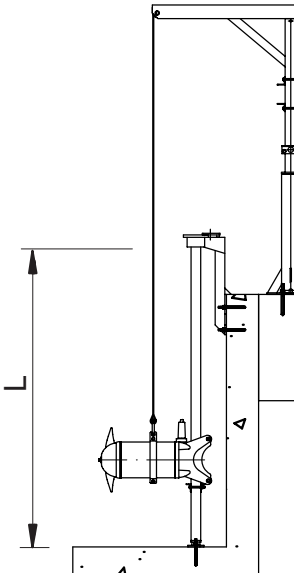
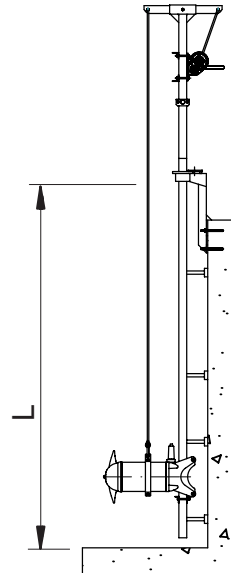


Figure 26 Setting up with fully mounted bracket

The default setting for all SB-KA with adjustable tilt bracket is $\alpha = 30^\circ$. In other settings (15° or 22°), the focus and the mount point changes need to be changed in the field.

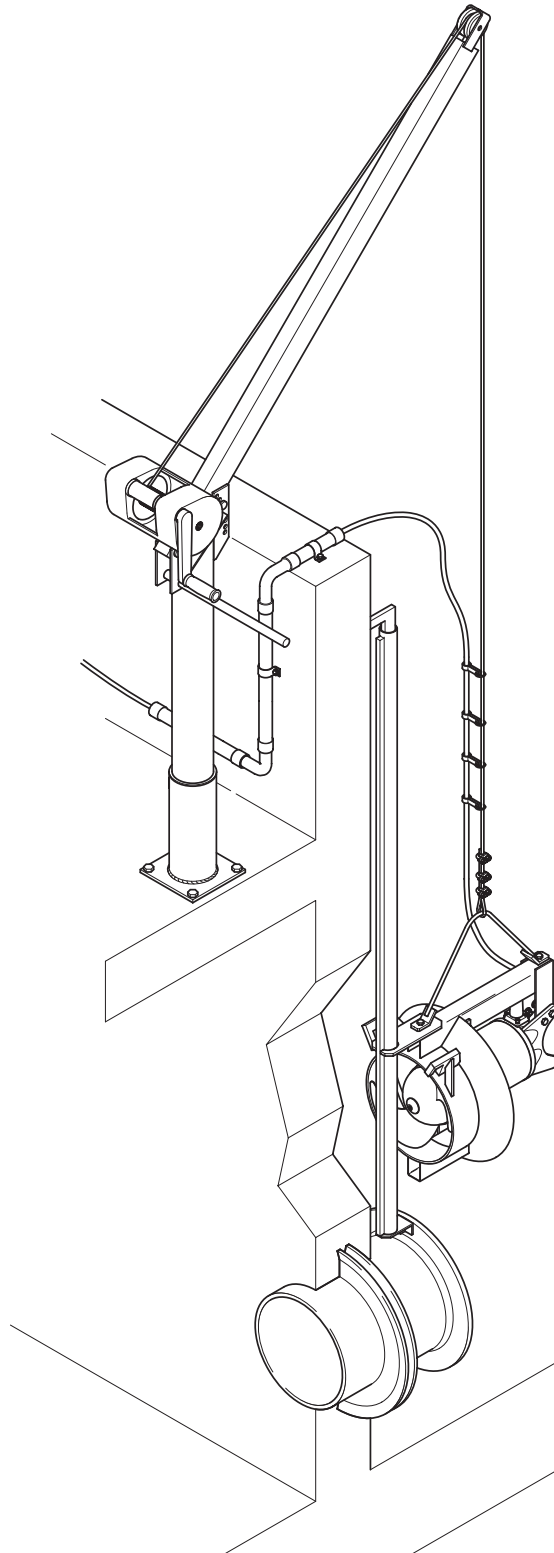
5.6 Guide tube lengths (square tube) RW/SB-KA

The table below shows the maximum lengths of the guide tubes - based on the maximum allowable bending $1/300$ th. of the length of the guide tubes. These values have been determined in clean water of density 1000 kg/m^3 for the maximum trust of the most powerful mixer/flow booster in each series.

Mixer/ Flow booster	Maximum guide tube length (L) for an installation with square guide tube		
	with push in type lifting unit	with separate lifting unit	guide tube with additional wall fixing
	 0551-0019	 0551-0020	 0551-0021
RW 300	□ 2" x 3/16". L ≤ 5 m □ 60 x 60 x 4. L ≤ 5 m	□ 2" x 3/16". L ≤ 5 m □ 60 x 60 x 4. L ≤ 5 m	□ 2" x 3/16". L ≤ 5 m □ 60 x 60 x 4. L ≤ 5 m
RW 400	□ 2" x 3/16". L ≤ 5 m □ 60 x 60 x 4. L ≤ 4 m □ 100 x 100 x 4. L ≤ 9 m	□ 2" x 3/16". L ≤ 5 m □ 60 x 60 x 4. L ≤ 5 m □ 100 x 100 x 4. L ≤ 10 m	□ 2" x 3/16". L ≤ 5 m □ 60 x 60 x 4. L ≤ 5 m □ 100 x 100 x 4. L ≤ 10 m
	□ 100 x 100 x 4. L ≤ 5 m □ 100 x 100 x 6. L ≤ 6 m □ 100 x 100 x 8. L ≤ 7 m	□ 100 x 100 x 4. L ≤ 6 m □ 100 x 100 x 4. L ≤ 7 m □ 100 x 100 x 4. L ≤ 8 m	□ 100 x 100 x 4. L ≤ 6 m □ 100 x 100 x 4. L ≤ 6 m □ 100 x 100 x 4. L ≤ 6 m
RW 900 ≤ 15 kW	□ 100 x 100 x 6. L ≤ 5 m □ 100 x 100 x 10. L ≤ 7 m	□ 100 x 100 x 6. L ≤ 6 m □ 100 x 100 x 10. L ≤ 7 m	□ 100 x 100 x 6. L ≤ 6 m □ 100 x 100 x 6. L ≤ 6 m
RW 900/SB-KA > 15 kW	only with special installation!		

5.7 Installation RCP

5.7.1 Installation example with Sulzer lifting unit



0551-0025

Figure 27 Installation example with Sulzer lifting unit 5 kN

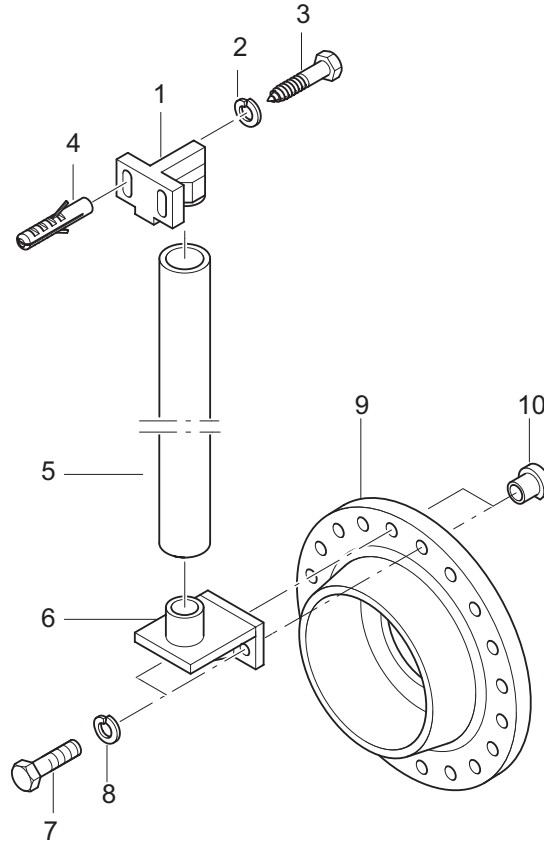
5.7.2 Guide tube installation



The safety hints in the previous sections must be observed!

ATTENTION

The discharge line and the required flange DIN EN 1092-1 PN6 should be installed on site before starting the installation of the guide tube. The DIN-flange should be installed so that none of the holes in the flange are on the axis line but are symmetrically on either side of it. Ensure that the DIN flange is securely fixed in the concrete.



0551-0026

Figure 28 Guide tube installation

- Place bracket (28/6) on the DIN-flange (28/9) and fasten using hex nuts (28/7) together with spring washers (28/8) and the special nuts (28/10).

ATTENTION **The flattened edge of the special nuts (28/10) must point towards the flange centre.**

- Position the tube retainer (28/1) vertically over the bracket (28/6). Mount with the aid of the wall plugs (28/4) but do not tighten yet!
- Place the guide tube (28/5) alongside the conical section of the bracket (28/6) and determine the required length. To do this measure the upper edge of the tube retainer (28/1).
- Cut the guide tube (28/5) to the required length and place it on the conical portion of the bracket (28/6).
- Press the tube retainer (28/1) into the guide tube (28/5), so that no vertical play remains. Now tighten the hex screws (28/3) using the spring washers.

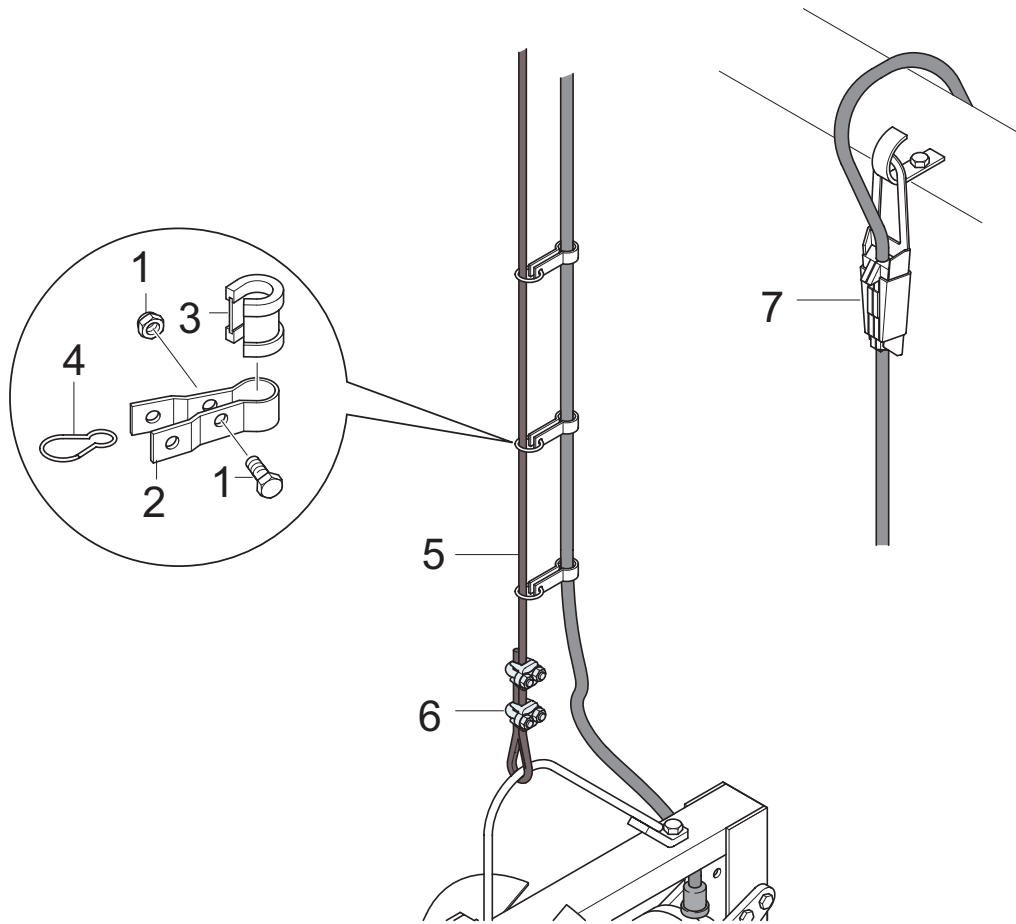
5.7.3 Securing and positioning of the motor connection cables of the RCP



The safety hints in the previous sections must be observed!

NOTE

The cable holders described here are not supplied as part of the standard execution of the RCP.



0551-0027

Figure 29 Securing and positioning of the motor connection cables of the RCP

- Place the cable holder (29/2) with rubber sleeve (29/3) on the connection cable close to the RCP itself and tighten using hex screw (29/1).
- Connect the snap hook (29/4) to the cable holder (29/2) and attach to the wire rope or chain.



Care must be taken that the connection cables are positioned that they cannot be caught up in the propeller blades and that they are not subjected to tension.

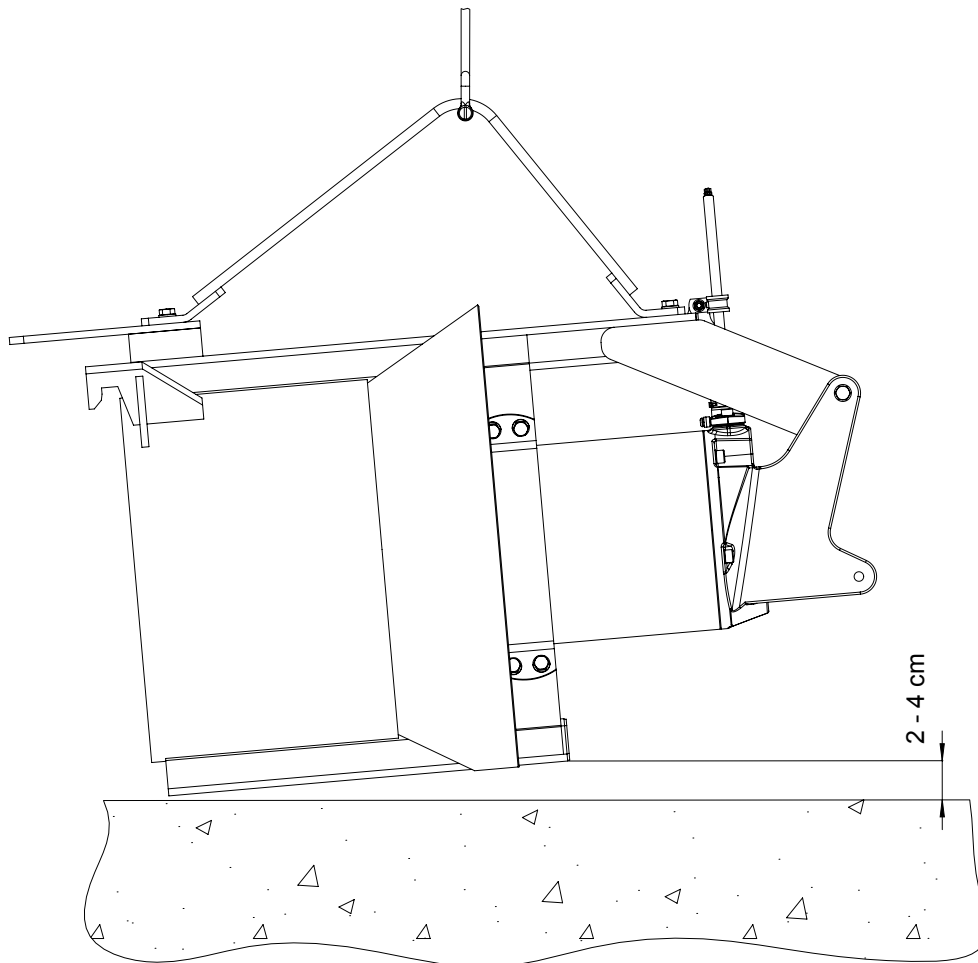
- Assemble all other cable holders in a similar manner. The spacing can be increased as the distance from the RCP increases.
- Hang the connection cable into the cable hook using the strain relief (29/7).



The electrical connection is carried out in accordance with *section 5.8 Electrical connection*.

5.7.4 Preparation of RCP for installation

The wire rope of the recirculation pump has to be checked prior to lowering. For this purpose, the recirculation pump is placed on a horizontal surface and lifted so far until it just touches the ground with a hoist. The recirculation pump must then be removed with your rear stand area about 2 to 4 cm from the floor (see Figure 30).



25108-0020

Figure 30 RCP prepare for draining

5.7.5 Lowering of the RCP along the guide tube



The safety hints in the previous sections must be observed!

The RCP together with the guide piece is connected into the guide tube as *shown in the Figure below* and lowered along it until it automatically sits in its final position. When doing this carefully feed the power cable downwards at the same time.

ATTENTION ***The power cable should be connected to the wire rope or chain in such a manner that it cannot become entangled in the propeller and that it is not subjected to any tension.***

After lowering of the RCP the tension of the wire rope or the chain should be released.

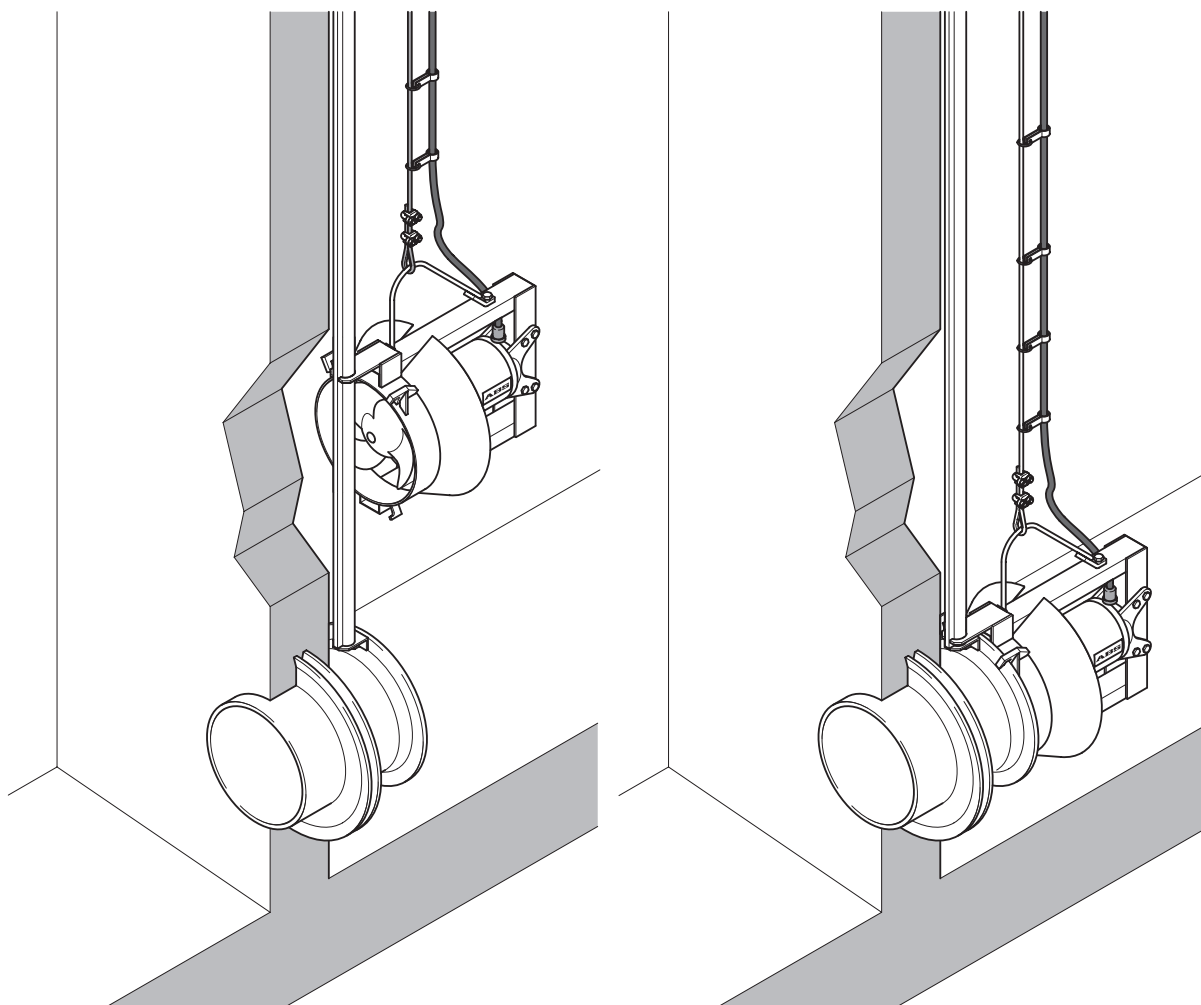


Figure 31 RCP lowering/RCP connected

5.8 Electrical connection



The safety hints in the previous sections must be observed!

Before commissioning an expert should check that one of the necessary electrical protective devices is available. Earthing, neutral, earth leakage circuit breakers, etc. must comply with the regulations of the local electricity supply authority and a qualified person should check that these are in perfect order.

ATTENTION *The power supply system on site must comply with VDE or other local regulations with regard to cross-sectional area and maximum voltage drop. The voltage stated on the nameplate of the pump must correspond to that of the mains*



The incoming power supply as well as the connection of the unit itself to the terminals on the control panel must comply with the circuit diagram of the control panel as well as the motor connection diagrams and must be carried out by a qualified person.

The power supply cable must be protected by an adequately dimensioned slow-blow fuse corresponding to the rated power of the unit.

In pump stations/tanks, equipotential bonding must be carried out according to EN 60079-14:2014 [Ex] or IEC 60364-5-54 [non-Ex] (Regulations for the installation of pipelines, protective measures in high voltage systems).

In the case of units supplied with a standard control panel this must be protected from dampness and installed above flood level by means of a correctly fitted CEE earthed socket.

ATTENTION

The only method of starting allowed is that specified in chapter 1.6 Technical data or on the nameplate. If you want to use other starting methods please consult the manufacturer.

In the case a control panel is not supplied as standard the following applies: The unit must only be operated with a motor protection switch with overload relay and thermal sensors connected.

5.8.1 Standard connection diagrams. mains voltage 380 - 420 V at 50 Hz/460 V at 60 Hz

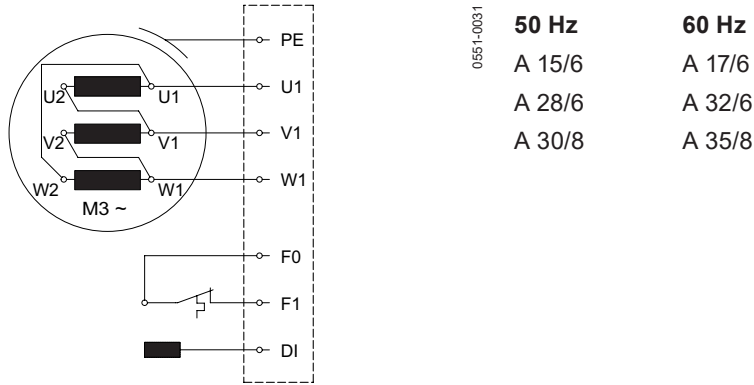


Figure 32 One power cable with integrated control leads (internal connection in the motor only for M or A-motor < 3 kW)

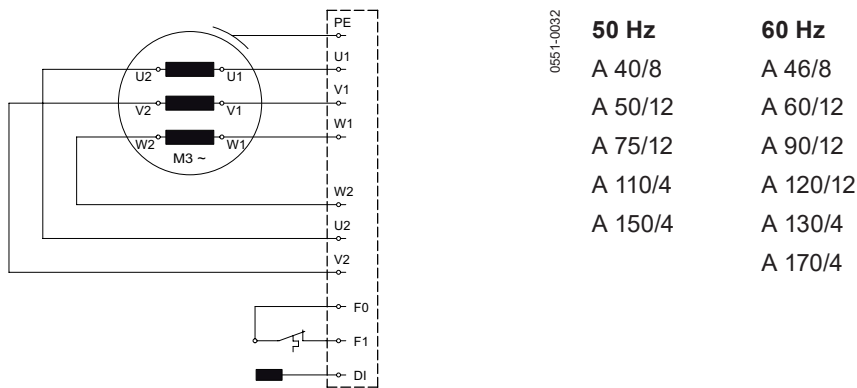


Figure 33 One power cable with integrated control leads

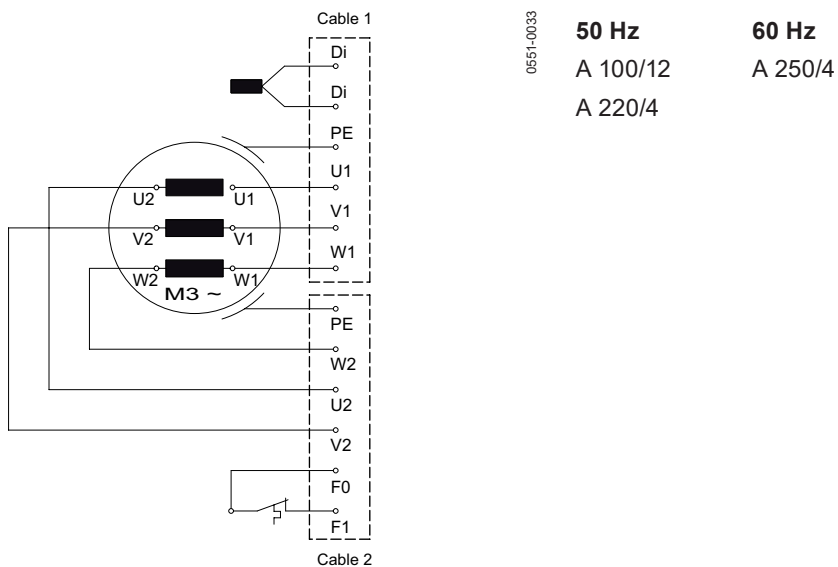
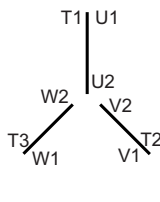
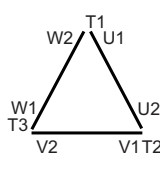


Figure 34 Two power cables with integrated control leads

5.8.2 Lead designations

Direct starting in star					
	L1	L2	L3	Join	
North America	1	2	3	4 & 5 & 6	
Sulzer factory standard	U1	V1	W1	U2 & V2 & W2	
Direct starting in delta					
	L1	L2	L3	-	
North America	1; 6	2; 4	3; 5	-	
Sulzer factory standard	U1; W2	V1; U2	W1; V2	-	



The thermal monitoring circuit (F1) must be wired into the motor contactors in such a manner that a manual reset is required.

ATTENTION The temperature limiting switches may only be operated as specified by the manufacturer (See following table).

Operating voltage...AC	100 V to 500 V ~
Rated voltage AC	250 V
Rated current AC $\cos \varphi = 1.0$	2.5 A
Rated current AC $\cos \varphi = 0.6$	1.6 A
Max. switching current at I_N	5.0 A

5.8.3 Soft starter (Option)

For units > 15 kW we recommend the use of soft starter.

ATTENTION The units must be connected DOL when used with soft starters.

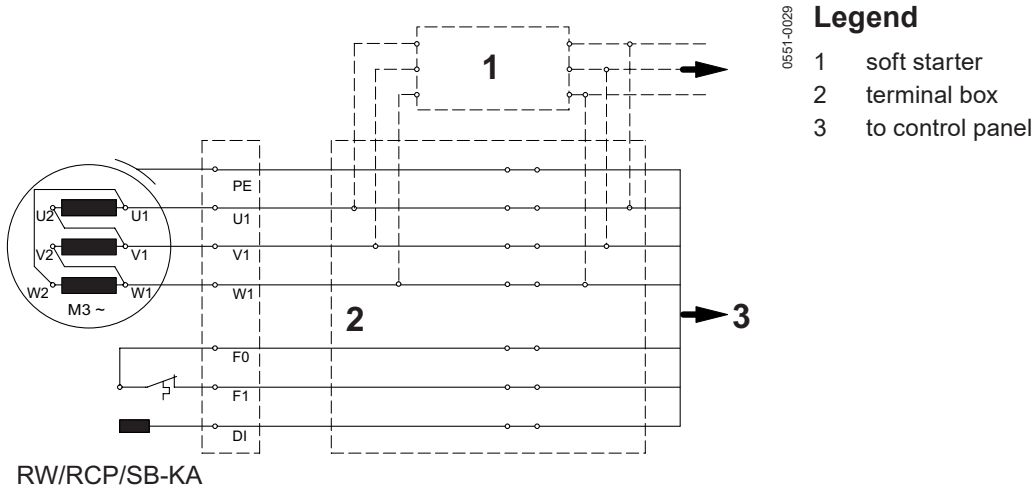


Figure 35 Wiring diagram with soft starter (option)

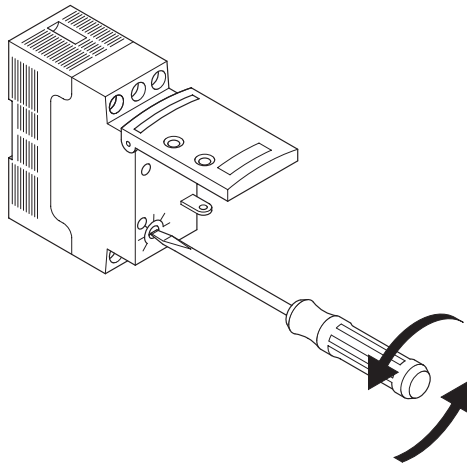


Figure 36 Testing and adjustment of soft starter

Testing and adjustment of soft starter:

ATTENTION For the first test adjust the potentiometer in position **C**.

For further information consult the installation and operating instructions of the soft start manufacturer. These are supplied with the unit.

Test:

- First test with potentiometer setting “C”.

Setting:

- Set to the **lowest possible starting torque** (within the adjustment range possible).
- Set to the **longest possible starting time** (within the adjustment range possible).

5.8.4 Checking direction of rotation

When the units are being commissioned for the first time and also when used on a new site, the direction of rotation must be carefully checked by a qualified person.

The direction of rotation (propeller rotation) is correct if the propeller when viewed from the rear over the motor housing rotates in a clockwise manner (*See arrow*). This applies to all versions of the RW/RCP and SB-KA!

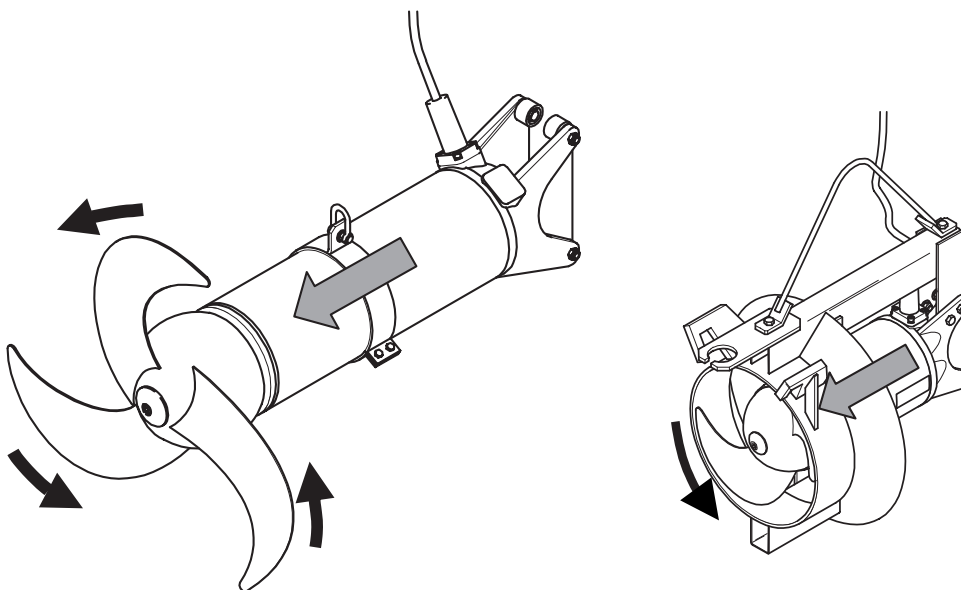


Figure 37 Checking direction of rotation



When checking the direction of rotation take care that no injury can be caused by the rotation of the propeller or the resulting airflow. Do not place a hand or other part of the body near the propeller or the hydraulics!



The direction of rotation should only be altered by a qualified person.



When carrying out the direction of rotation check as well as when starting the unit pay attention to the **Start reaction**. This can be very powerful.

NOTE

If a number of units are connected to a single control panel then each unit must be individually checked.

ATTENTION

The mains supply in the control panel must have a clockwise sense of rotation. If the units are connected in accordance with the wiring diagram and the lead designations the direction of rotation will be correct.

5.8.5 Changing direction of rotation



The safety hints in the previous sections must be observed!



Changing direction of rotation must only be carried out by a qualified person.

If the direction of rotation is incorrect then this is altered by changing over two phases of the power supply cable in the control panel. The direction of rotation should then be rechecked.

NOTE

The direction of rotation measuring device monitors the direction of rotation of the mains supply or that of an emergency generator.

5.8.6 Connection of the seal monitoring unit to the control panel

The standard versions of the units are fitted as standard with DI seal monitors, which monitor the state of the sealing. In order to integrate the DI electrode into the control panel it is necessary to fit an Sulzer DI module and connect it in accordance with the wiring diagrams below.

ATTENTION

If the DI-seal monitoring is activated the unit must be immediately taken out of service. Please contact your Sulzer service centre.

NOTE

Running the pump with the thermal and/or moisture sensors disconnected will invalidate related warranty claims.

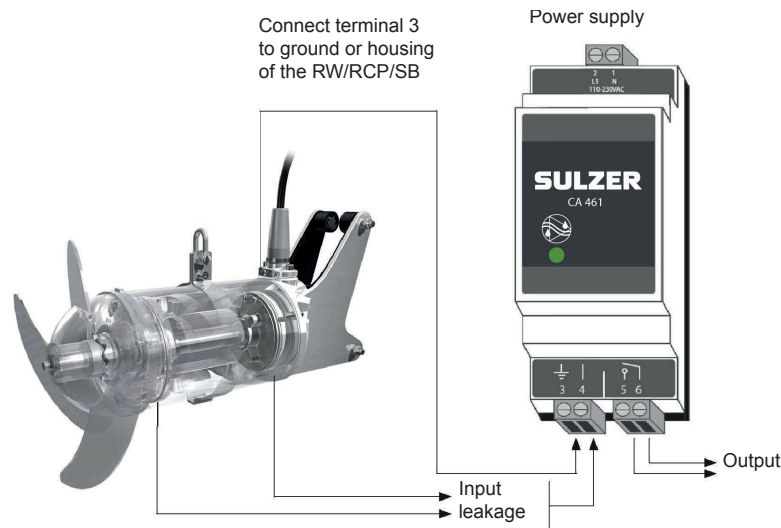


Figure 38 Electronic amplifier with collective signalling

Electronic amplifier for 50/60 Hz

110 - 230 V AC (CSA) (Part No.: 1 690 7010)

18 - 36 V DC (CSA) (Part No.: 1 690 7011)

ATTENTION Maximum relay contact loading: 2 Ampere

6 Commissioning



The safety hints in the previous sections must be observed!

Before commissioning, the unit should be checked and a functional test carried out. Particular attention should be paid to the following:

- Have the electrical connections been carried out in accordance with regulations?
- Have the thermal sensors/limiters been connected?
- Is the seal monitoring device (where fitted) correctly installed?
- Is the motor overload switch correctly set?
- Have the power and control circuit cables been correctly fitted?
- Has the motor connection cable been laid in such a manner that it cannot be caught up by the rotating body?
- Has the minimum submergence level been observed? (See Section 1.7 Dimensions and weights).

6.1 Types of operation

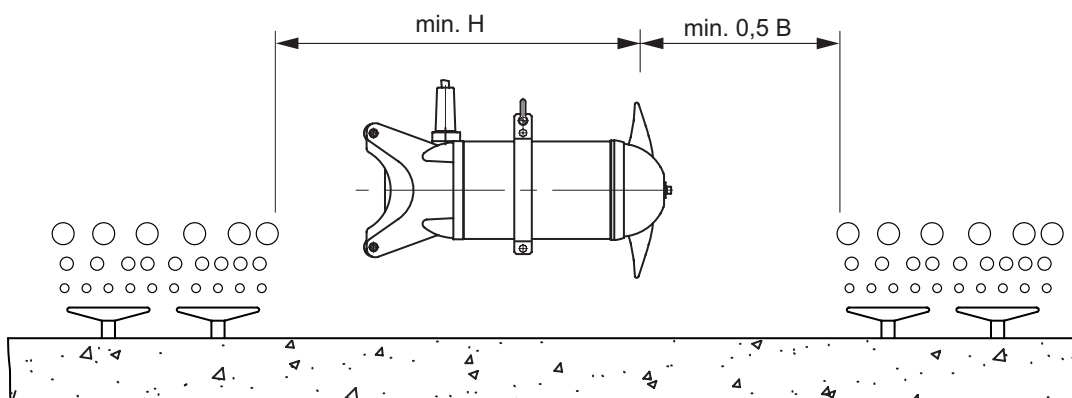


Figure 39 Installation example with aeration

ATTENTION *The illustration is only an example. For the correct installation please contact Sulzer.*

ATTENTION *Operation within the directly aerated area is not allowed!*

ATTENTION *The units must work fully submerged in the fluid. During operation no air should be drawn in by the propeller. Ensure that there is a smooth medium flow. The unit should not vibrate heavily when in operation.*

Uneven flow formation and vibrations can occur if:

- Over active mixing in small tanks (only for RW/SB-KA).
- Prevention of free inflow or outflow in the area of the flow ring if fitted (only for RW). Changing the position or direction of the mixer may assist.
- Prevention of free inflow or outflow in the area of the guide cone (only for RCP).

7 Maintenance



The safety hints in the previous sections must be observed!

In particular, the advice regarding maintenance in *paragraph 3.2* of the separate booklet Safety Instructions are to be observed.

7.1 General maintenance hints



Before commencing any maintenance work the unit should be completely disconnected from the mains by a qualified person and care should be taken that it cannot be inadvertently switched back on.

NOTE *The maintenance hints given here are not designed for “do-it-yourself” repairs as special technical knowledge is required.*



Repair work on explosion-proof motors may only be carried out in approved workshops by approved personnel using original parts supplied by the manufacturer. Otherwise the ex-approvals no longer apply.

Sulzer units are reliable quality products each being subjected to careful final inspection. Lubricated-for-life ball bearings together with monitoring devices ensure optimum pump reliability provided that the unit has been connected and operated in accordance with the operating instructions.

Should, nevertheless, a malfunction occur, do not improvise but ask your Sulzer customer service department for assistance.

This applies particularly if the unit is continually switched off by the current overload in the control panel, by the thermal sensors/limiters of the thermo-control system or by the seal monitoring system (DI).

ATTENTION *The lifting tools such as chains and shackles should be visually checked in regular intervals (approx. every 3-month) for wear and corrosion. These parts should be replaced if required!*

The Sulzer service organisation would be pleased to advise you on any applications you may have and to assist you in solving your aerating problems.

NOTE *The Sulzer warranty conditions are only valid provided that any repair work has been carried out in Sulzer approved workshops and where original Sulzer spare parts have been used.*

ATTENTION *Regular checks are highly recommended and other checks are prescribed regulations after specific intervals. This ensures a long life time and trouble-free operation of the units (see section 7.2 Maintenance RW/RCP and SB-KA).*

NOTE *In the case of repair work, „Table 1“ from IEC60079-1 may not be applied. In this case please contact Sulzer after sales service!*

7.2 **Maintenance RW/RCP and SB-KA**



The safety hints in the previous sections must be observed!

Inspections carried through at regular intervals and preventive maintenance guarantee trouble-free operation. For this reason the complete unit should be cleaned thoroughly on a regular basis, maintained and inspected. For this purpose one has to take special care that all parts of the unit are in a good condition and that the operational security is guaranteed. The inspection period is determined by the type of usage of the units, but should however not exceed one year.

The maintenance and inspection work must be carried through corresponding to the subsequent inspection plan. The executed work must be documented in the attached inspection list. In case of non-observance the manufacturer's warranty does not apply!

7.2.1 **Faults**

In addition to the maintenance and inspection tasks described in section 7.3 *Inspection and maintenance intervals for RW/RCP and SB-KA* an urgent check of the unit and installation should be carried out if heavy vibrations develop or uneven flow patterns occur.

Possible causes:

- Minimum liquid coverage of the propeller is not present.
- Aeration in the propeller area.
- Wrong direction of rotation of the propeller.
- Propeller is damaged.
- Restriction to the free inflow or outflow in the area of the RW flow ring.
- Restriction to the free inflow or outflow in the area of the RCP inflow cone.
- Parts of the Installation, such as bracket or coupling parts have become defective or become loose.

In these cases the unit should be immediately switched off and inspected. If no fault can be found or the fault remains after it has apparently been corrected the unit should be left switched off. The same applies also where the current overload in the control panel regularly trips where the DI seal monitor or the temperature sensors in the stator are activated. We recommend that in such cases you contact the local Sulzer Service Centre.

7.3 **Inspection and maintenance intervals for RW/RCP and SB-KA**



The safety hints in the previous sections must be observed!

PERIOD OF TIME:	Regulation: once a month
ACTIVITY:	Cleaning and inspection of the power and control circuit cables.
DESCRIPTION:	Once a month (more frequently - for example - in difficult application cases where the medium is heavily polluted with fibrous matter) the power and control circuit cables should be cleaned. In particular fibrous materials must be removed. Part of the regular maintenance is also the inspection of the motor cables. These must be checked for scratches, fissures, bubbles or crushing.
MEASURE:	Damaged power and control circuit cables must be replaced in all cases. Please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Recommendation: once a month
ACTIVITY:	Check the current consumption at the ampere meter.
DESCRIPTION:	With normal operation the current consumption is constant; occasional current fluctuations result from the constitution of the material being mixed.
MEASURE:	If the current consumption is too high for a longer period during normal operation please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Regulation: every 3 months
ACTIVITY:	Cleaning and inspection of the shackles and the lifting equipment.
DESCRIPTION:	Lift the unit out of the tank and clean it. Lifting equipment like hoists, shackles, wire ropes and wire clamps etc. must undergo a visual examination at regular intervals for wear and corrosion.
MEASURE:	Worn or damaged parts should be replaced. Please contact your local Sulzer Service Centre.
ACTIVITY:	Inspection of the propeller and the SD ring (Solids-Deflection-Ring).
DESCRIPTION:	The propeller should be inspected carefully. The propeller might show spots of rupture and wear due to strongly abrasive or aggressive mixing material. In both cases the flow formation is reduced considerably and the propeller must be replaced. The solids-deflection-ring must also be checked. If wear of scoring is visible on the propeller boss these parts must be replaced as well.
MEASURE:	If you find out any cases of the damage described above please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Recommendation: every 6 months
ACTIVITY:	Insulation resistance check.
DESCRIPTION:	Within the scope of the maintenance work the insulation resistance of the motor winding should be measured every 4,000 hours, and/or at least once a year. If the proper insulation resistance level is not reached, moisture might have got into the motor.
MEASURE:	The unit must be taken out of operation and may not be started again. Please contact your local Sulzer Service Centre.
ACTIVITY:	Functional testing of the monitoring devices.
DESCRIPTION:	In the scope of the maintenance measures functional testing of all monitoring devices must be carried through every 4,000 hours and/or at least once a year. For these functional tests the unit must have cooled down to the ambient temperature. The electrical connecting line of the monitoring device must be disconnected at the control box. These measurements must be carried through by means of an ohmmeter at the respective cable ends.
MEASURE:	In any case of any functional problems on the monitoring devices please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Recommendation: once a year
ACTIVITY:	Checking of the tightening torques of the screws and nuts.
DESCRIPTION:	For safety reasons we recommend that all screws are checked for their perfect positioning once a year.
MEASURE:	Tighten screws with correct tightening torques (see 5.3).



Submersible Mixer Type ABS RW 300

SULZER

The compact submersible mixers have been designed for a wide range of applications. The units are suitable to achieve a flow pattern in large tanks and open waters for mixing and stirring applications.

Construction

The submersible mixer is designed as a compact, water-pressure-tight unit including propeller and integrally casted installation bracket for the attachment on the square guide tube. Different versions with a bracket for vertical angle adjustment or a flow ring can be chosen.

The mixers are available in two standard material versions:

EC = cast iron version, CR = stainless steel version.

Maximum allowable temperature of the medium for continuous operation is 40 °C.

Propeller

Technically optimized, axially operating 2- or 3-blade propellers with very good self-cleaning effect for vibration-free operation. The propellers are designed to achieve high thrusts and therefore a high flow capacity in axial direction.

Solids deflection ring

The patented solids deflection ring protects the mechanical seal from damage by ingress of solid or fibrous matter.

Bearings

All bearings are lubricated-for-life and maintenance-free, with a calculated life time of more than 100 000 h.

Shaft sealing

Mechanical seal: Silicon carbide / Silicon carbide.

O-Rings and lip seals: NBR.

Seal monitoring

DI-system with a sensor in the oil chamber (not in Ex version) and connection chamber.

Temperature monitoring

Thermo Control System (TCS) with thermal sensors in the stator which open at 140 °C.

Cable

10 m sewage resistant CSM material. Type: HO7RN.

Options

Explosion-proof version, flow ring, seals in viton, cable protection sleeve, PTC or PT 100 in the stator.

Accessories

Lifting bracket, vertical angle adjustment, vortex shield, vibration damper.

Weight

Without flow ring: 48 / 51 kg.

With flow ring: 54 / 57 kg.

Materials

Part	EC (cast iron)	CR (stainless steel)
Motor housing	EN-GJL-250, painted	Stainless steel 1.4404 (AISI 316L)
Sliding bracket	EN-GJL-250/EN-GJS-400-18 painted, polyamide	Stainless steel 1.4408 / polyamide (CF-8M)
Motor shaft	Stainless steel 1.4021 (AISI 420)	Stainless steel 1.4404 (AISI 316L)
Propeller	Stainless steel 1.4460 (AISI 329)	Stainless steel 1.4460 (AISI 329)
Fasteners	Stainless steel 1.4401 (AISI 316)	Stainless steel 1.4401 (AISI 316)

50 Hz



Motor

Squirrel cage, 3-phase, 6-pole 50 Hz, insulation class F (155 °C),

Motor data

Motor	A 15/6	A 28/6
Rated power [kW]	1.5	2.8
Rated current at 400 V [A]	4.6	8.4
Speed [min ⁻¹]	904	894
Motor efficiency [%]	68	69
Power factor	0.70	0.70

Mixer performance

Hydraulic No.	Mixer power [P _p in kW]	Motor [kW]
3021	0.7	1.5
3022	0.9	1.5
3031	1.0	1.5
3032	1.5	2.8
3033	2.0	2.8
3034	2.5	2.8
3041*	0.5	1.5
3042*	0.7	1.5
3051*	0.8	1.5
3052*	1.2	2.8
3053*	1.6	2.8
3054*	2.0	2.8

* with flow ring

No: M-14.0174 - 03

Dat/Nam.: 14.11.2016 / J.Beste

Cad Code: M_140174

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □100

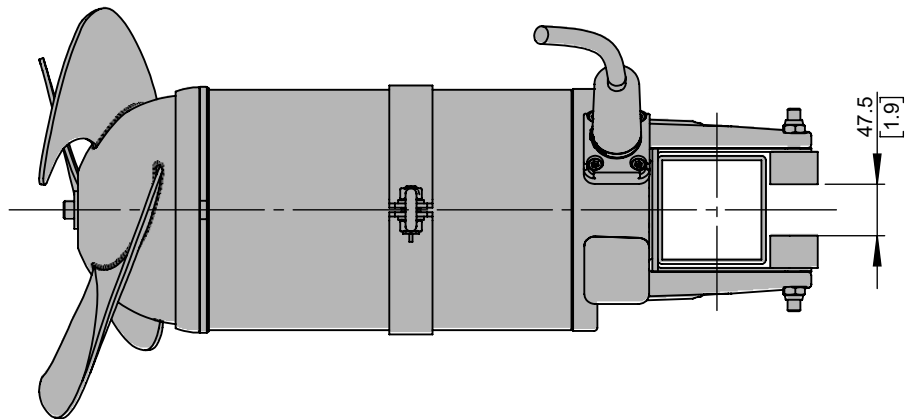
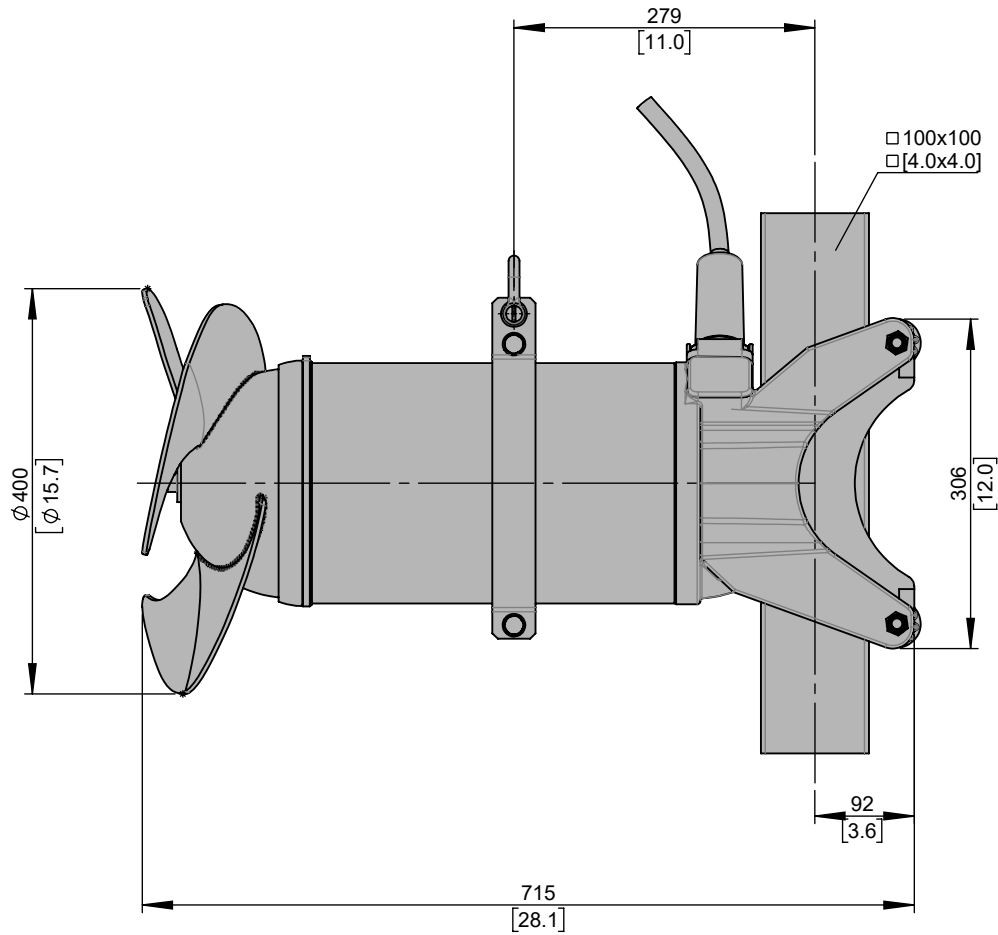
Maßblatt RW400 □100

Plan d'encombrement RW400 □100

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
		92	203
A 30/8	A 35/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm]
[inch]

No: M-14.0175 - 03

Dat/Nam.: 14.08.2015 / P. Ruckszio

Cad Code: M_140175

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with Flow Ring

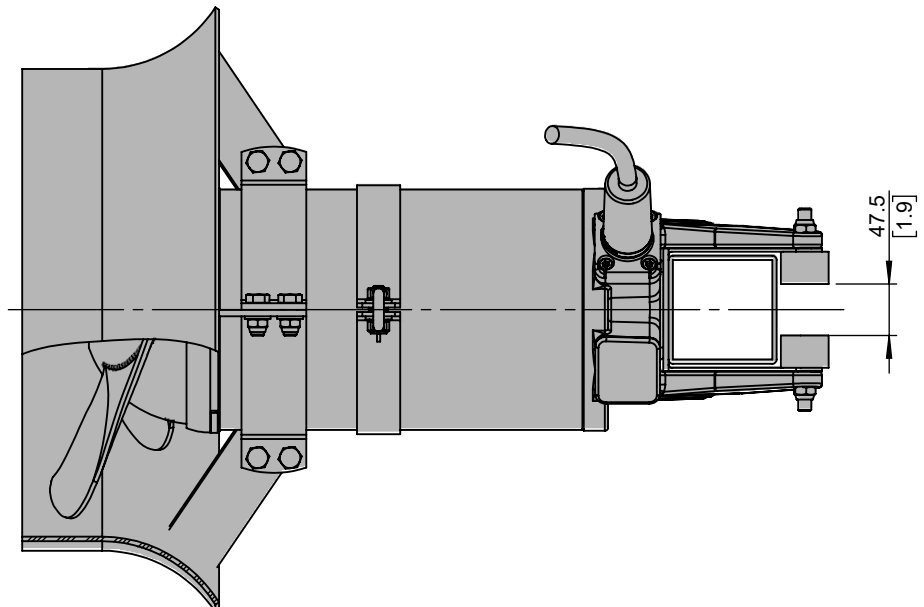
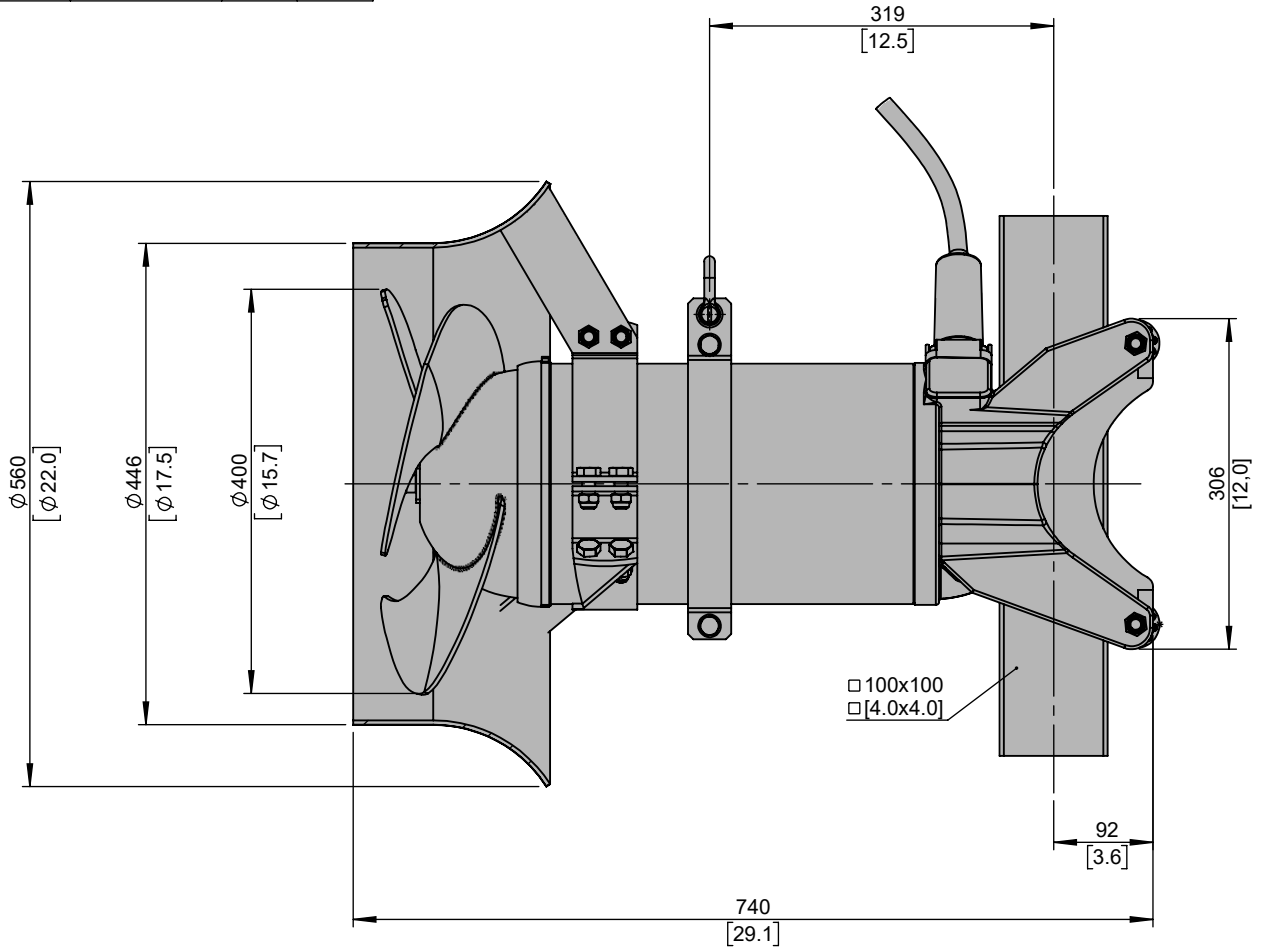
Maßblatt RW400 □ 100 mit Strömungsring

Plan d'encombrement RW400 □ 100 avec concentrateur de flux

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	106	234
	A 30/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

No: M-14.0178 - 03

Dat/Nam.:14.08.2015 / P. Ruckszio

Cad Code: M_140178

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with support bracket

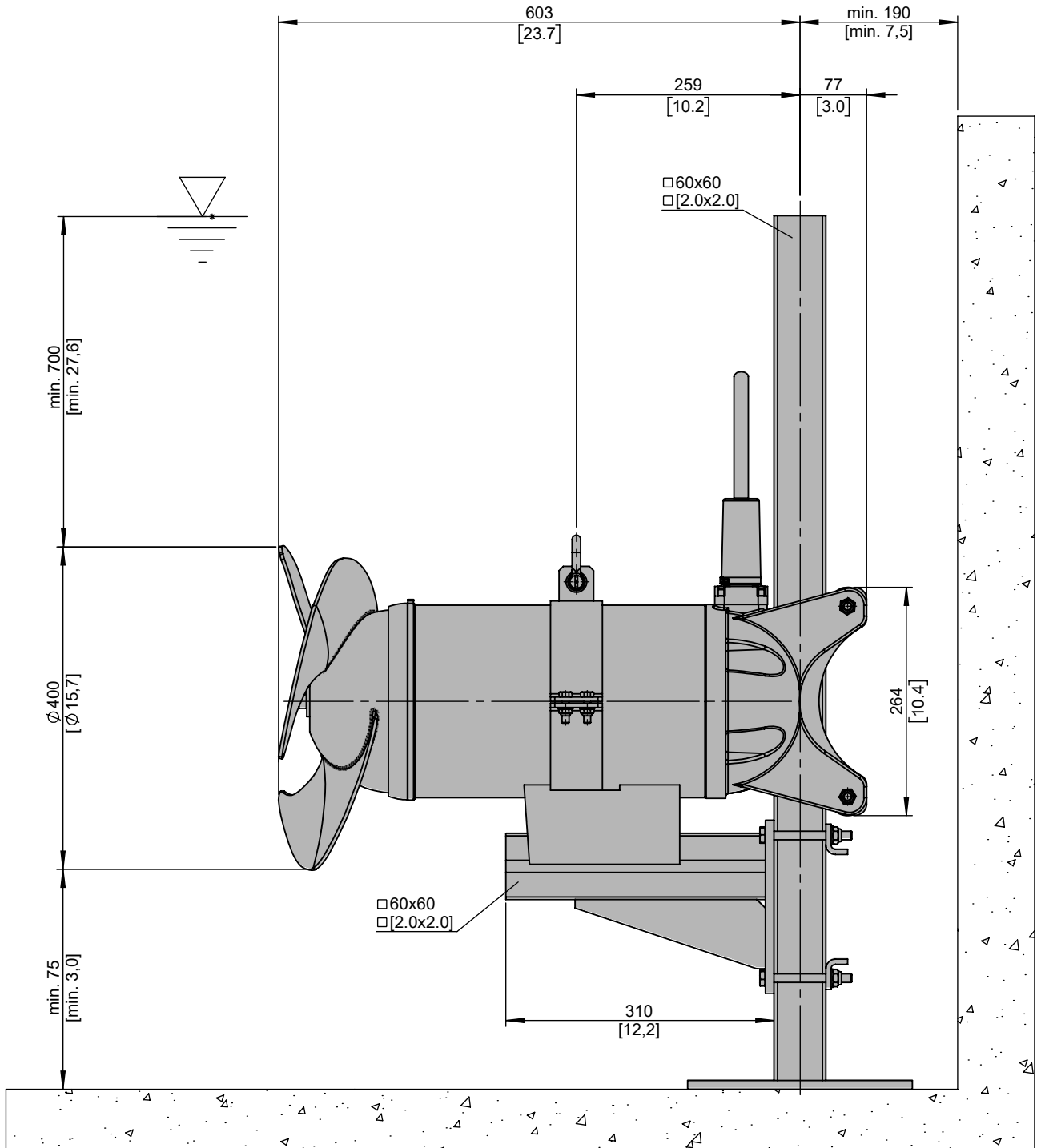
Maßblatt RW400 □60 mit Anschlag und Vibrationsdämfer

Plan d'encombrement RW400 □60 avec support

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	A 30/8	88	194
	A 40/8		
60Hz	A 35/8	88	194
	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

No: M-14.0179 - 03

Dat/Nam.:14.08.2015 / P. Ruckszio

Cad Code: M_140179

Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW400

Dimension sheet RW400 □60

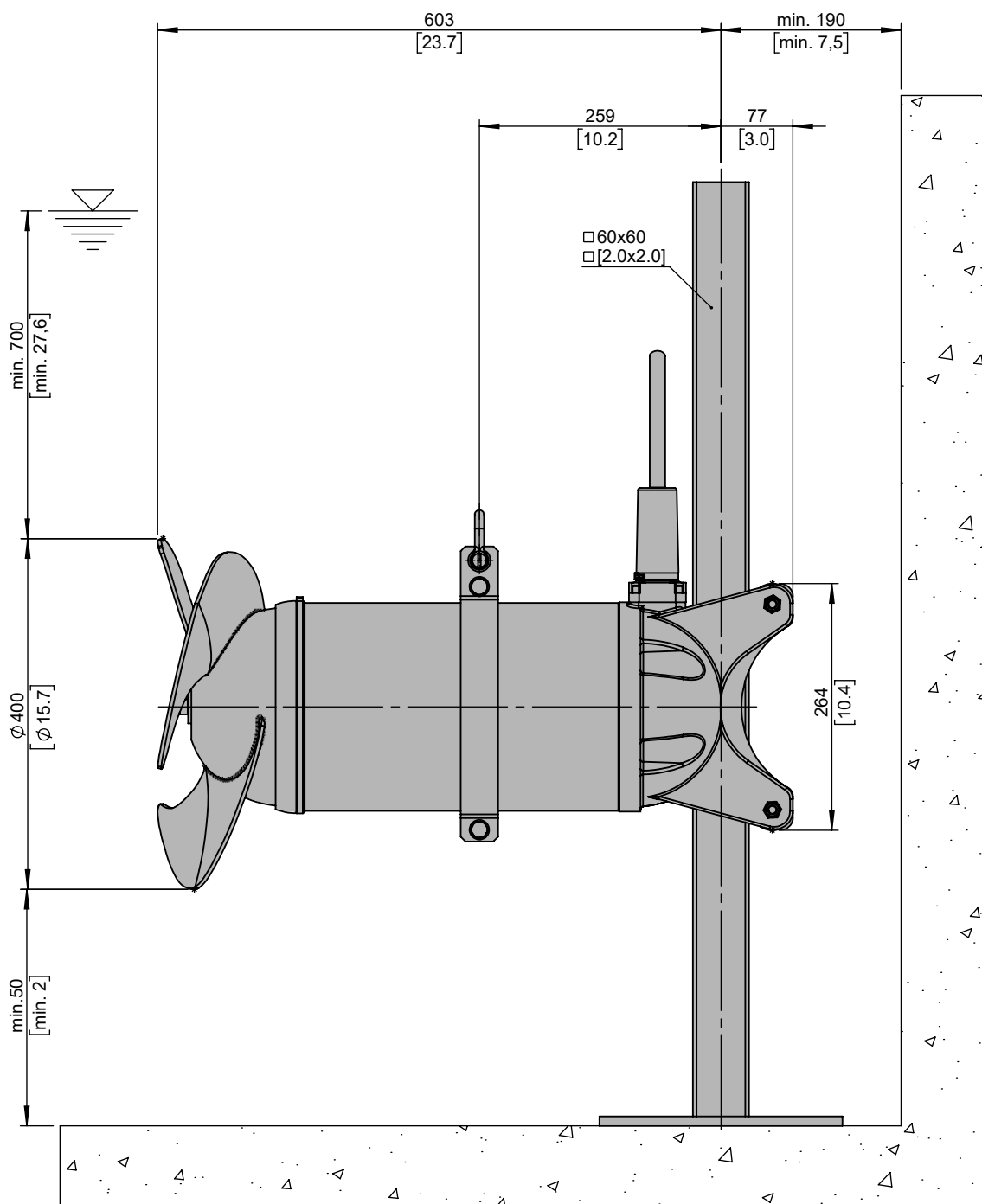
Maßblatt RW400 □60

Plan d'encombrement RW400 □60



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	86	190
A 30/8	A 35/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0180 - 02

Dat/Nam.: 14.11.2016 / J.Beste

Cad Code: M_140180

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with support bracket and flow ring

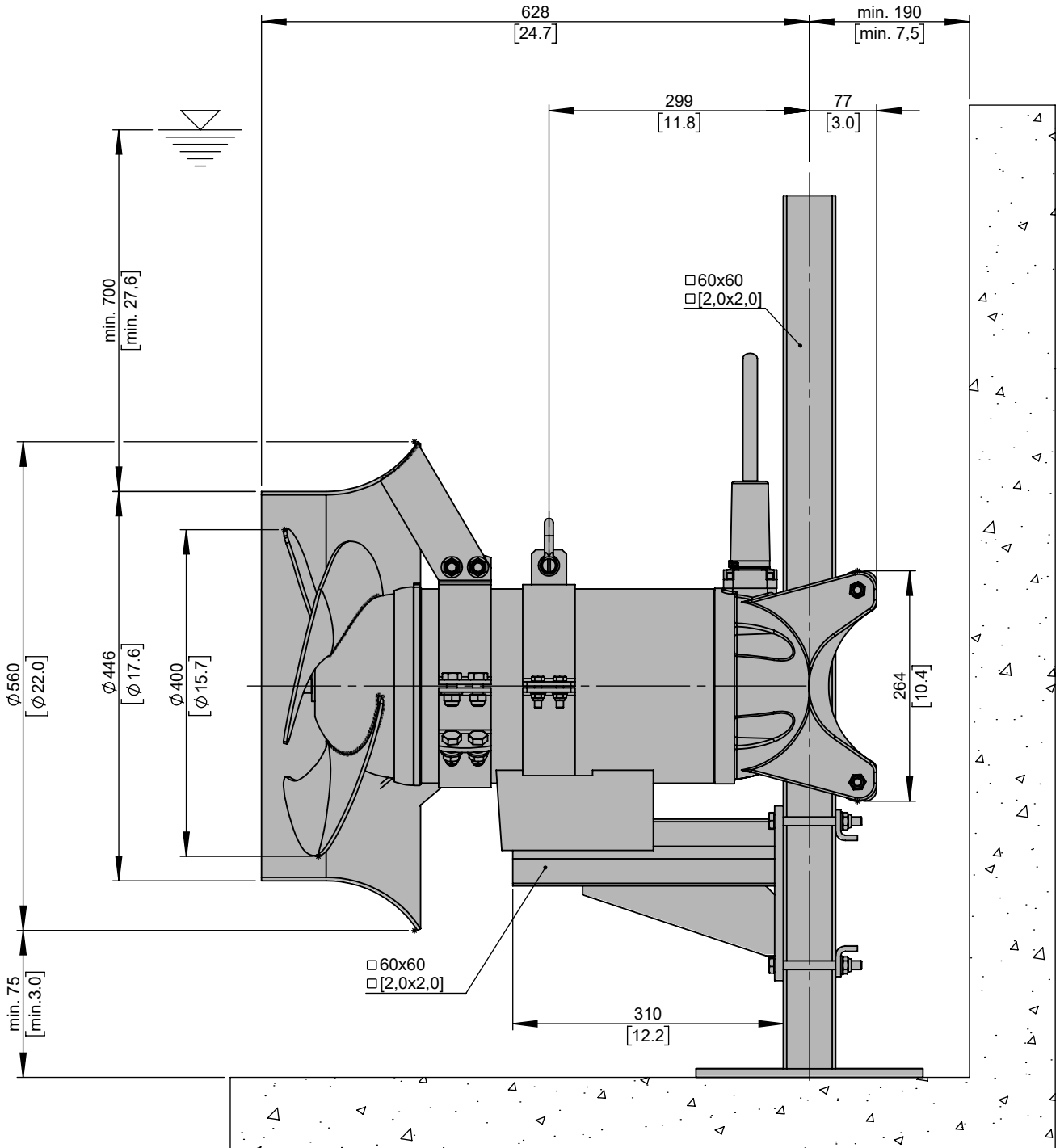
Maßblatt RW400 □60 mit Anschlag, Vibrationsdämfer und Strömungsring

Plan d'encombrement RW400 □60 avec support et concentrateur de flux

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	102	225
A 30/8	A 35/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

No: M-14.0247 - 03

Dat/Nam.:14.08.2015 / P. Ruckszio

Cad Code: M_140247

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with vertical angle adjustment

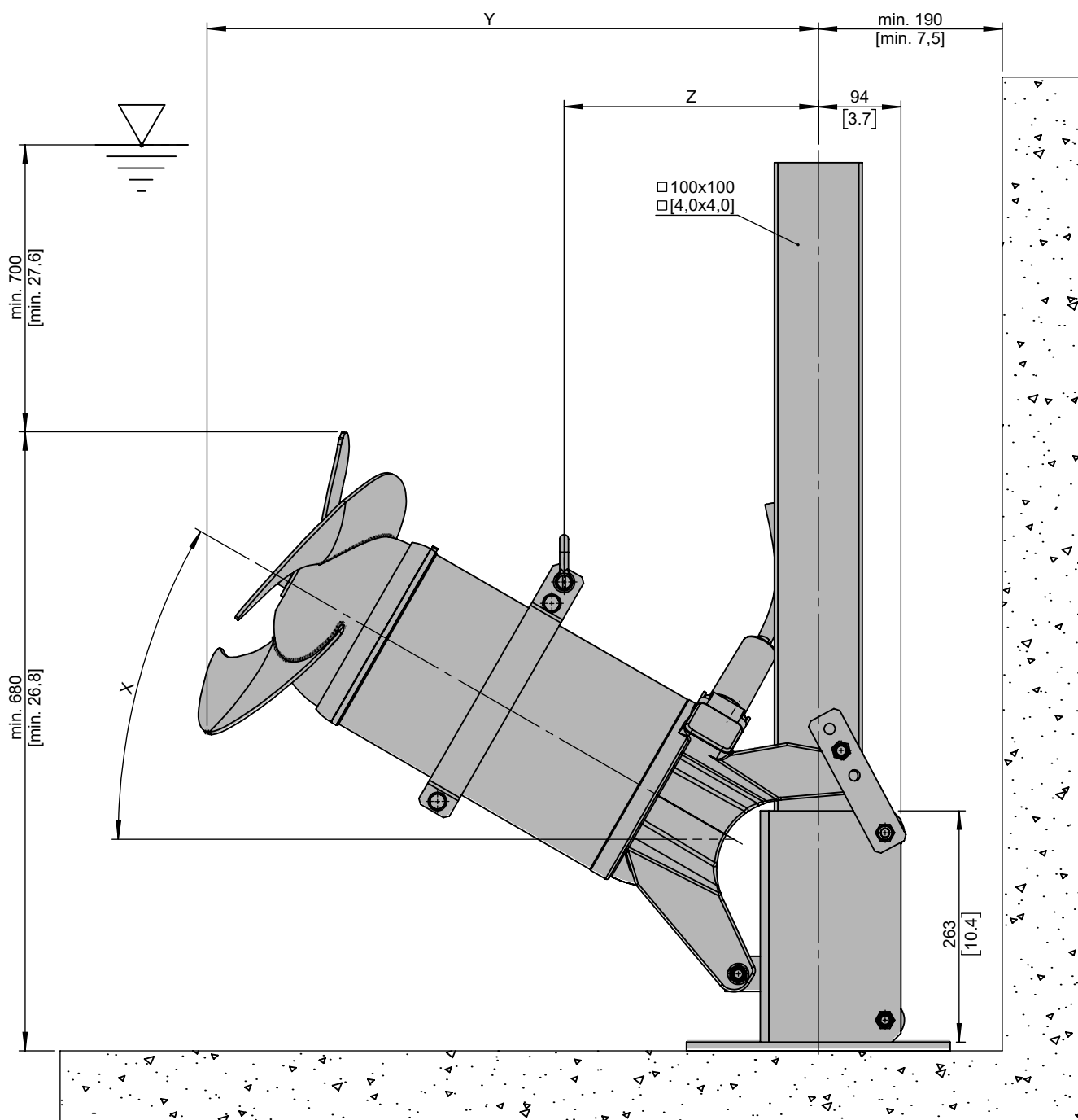
Maßblatt RW400 □ 100 mit neigungsverstellbare Halterung

Plan d'encombrement RW400 □ 100 avec réglage angulaire



Type Typ Type	Type Typ Type	Weight Gewicht Poids			X				X		
		(~kg)	(~lb)		15°	22°	30°		15°	22°	30°
A 30/8	A 35/8	92	203	(mm) Y	745	730	695	(mm) Z	390	340	280
A 40/8	A 46/8	92	203	(in) Y	29.3	28.7	27.4	(in) Z	15.4	13.4	11.0

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0248 - 03

Dat/Nam.:14.08.2015 / P. Ruckszio

Cad Code: M_140248

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with vertical angle adjustment and flow ring

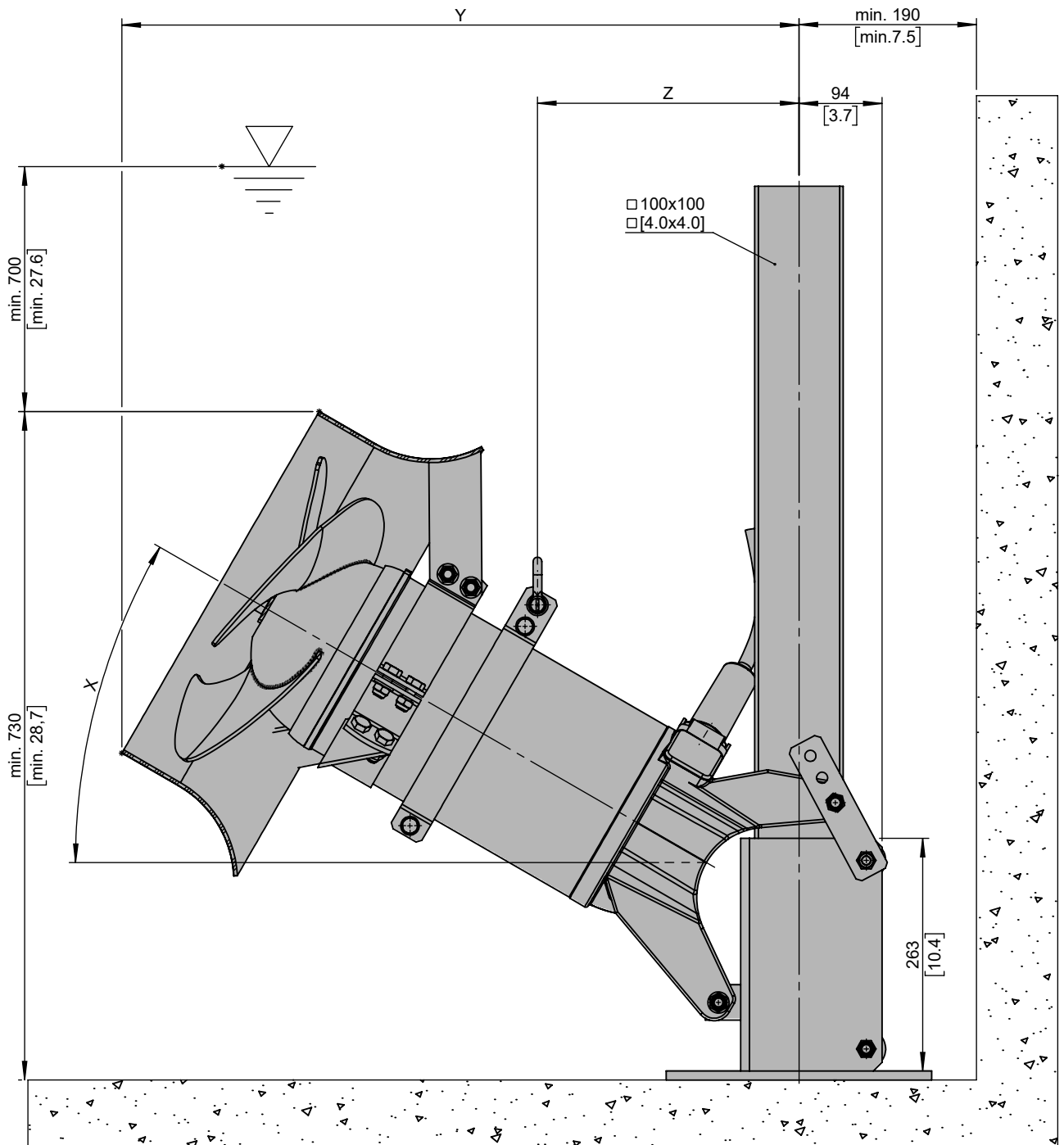
Maßblatt RW400 □ 100 mit neigungsverstellbare Halterung und Strömungsring

Plan d'encombrement RW400 □ 100 avec réglage angulaire et concentrateur de flux



Type Typ Type	Type Typ Type	Weight Gewicht Poids			X				X		
		(~kg)	(~lb)		15°	22°	30°		15°	22°	30°
A 30/8	A 35/8	113	249	(mm) Y	810	790	760	(mm) Z	355	330	295
A 40/8	A 46/8	113	249	(in) Y	31.9	31.1	29.9	(in) Z	14.0	13.0	11.6

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0249 - 03

Dat/Nam.: 21.07.2015 / J.Beste

Cad Code: M_140249

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with vertical angle adjustment

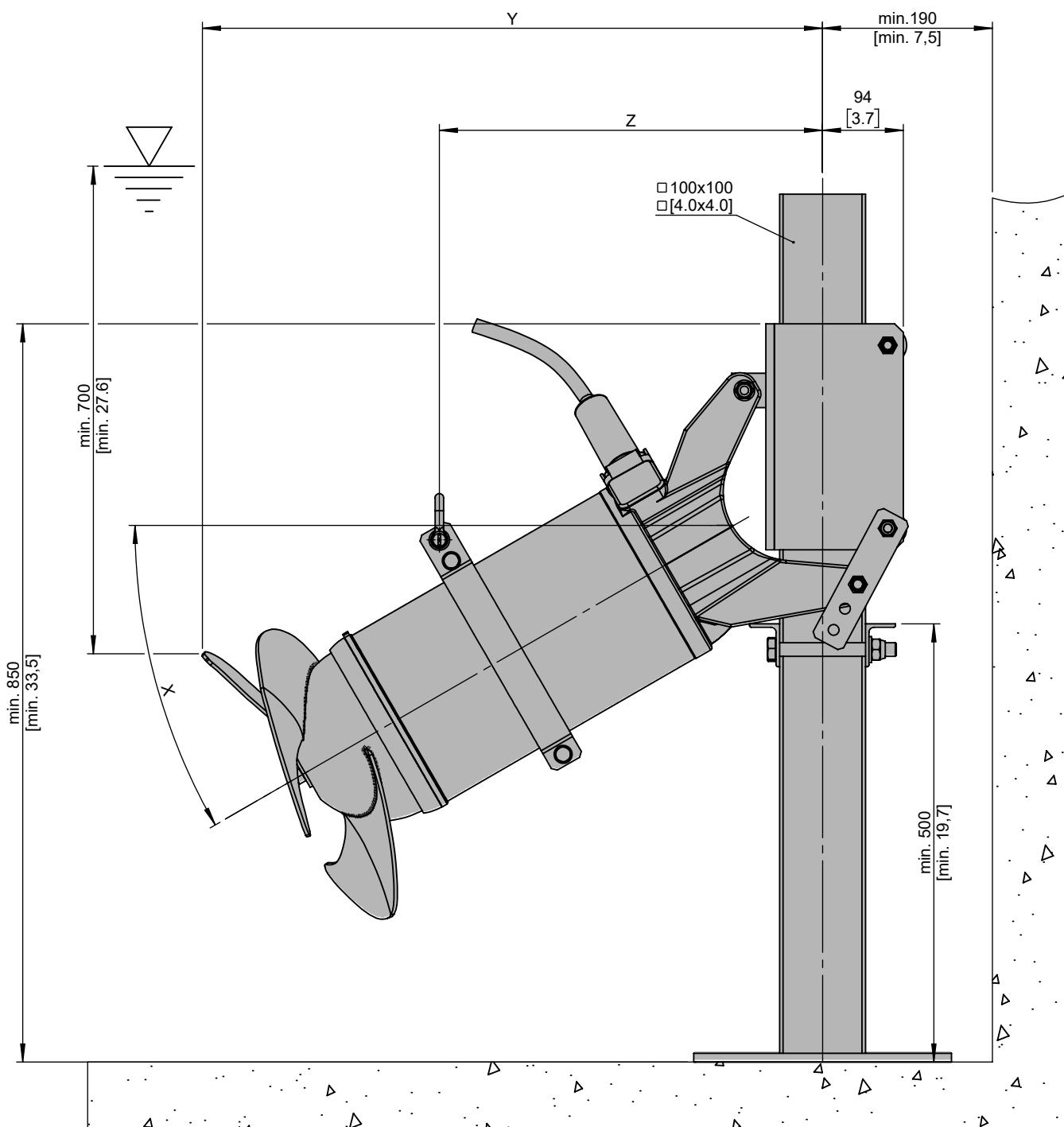
Maßblatt RW400 □ 100 mit neigungsverstellbare Halterung

Plan d'encombrement RW400 □ 100 avec réglage angulaire



Type Typ Type	Type Typ Type	Weight Gewicht Poids			X				X		
		(~kg)	(~lb)		15°	22°	30°		15°	22°	30°
A 30/8	A 35/8	92	203	(mm) Y	780	760	720	(mm) Z	480	465	445
A 40/8	A 46/8	92	203	(in) Y	30.7	29.9	28.3	(in) Z	18.9	18.3	17.5

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

No: M-14.0250 - 03

Dat/Nam.: 14.11.2016 / J.Beste

Cad Code: M_140250

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with vertical angle adjustment and flow ring

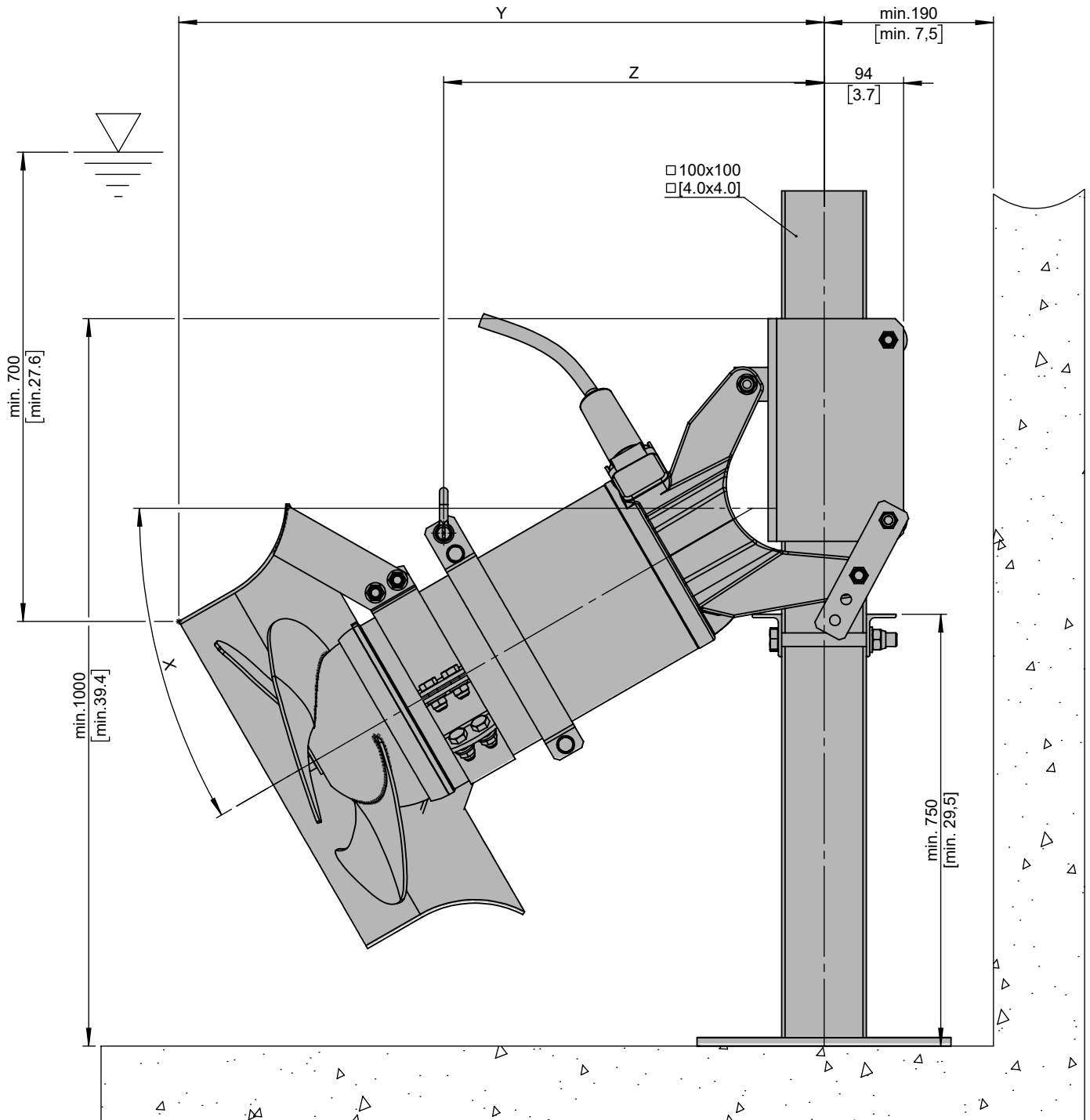
Maßblatt RW400 □ 100 mit neigungsverstellbare Halterung und Strömungsring

Plan d'encombrement RW400 □ 100 avec réglage angulaire et concentrateur de flux



Type Typ Type	Type Typ Type	Weight Gewicht Poids			X				X		
		(~kg)	(~lb)		15°	22°	30°		15°	22°	30°
50Hz	60Hz										
A 30/8	A 35/8	113	249	(mm) Y	810	790	760	(mm) Z	480	470	450
A 40/8	A 46/8	113	249	(in)	31.9	31.1	29.9	(in)	18.9	18.5	17.7

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm]
[inch]

No: M-14.0299 - 02

Dat/Nam.: 14.11.2016 / J.Beste

Cad Code: M_140299

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with Vortex breaker

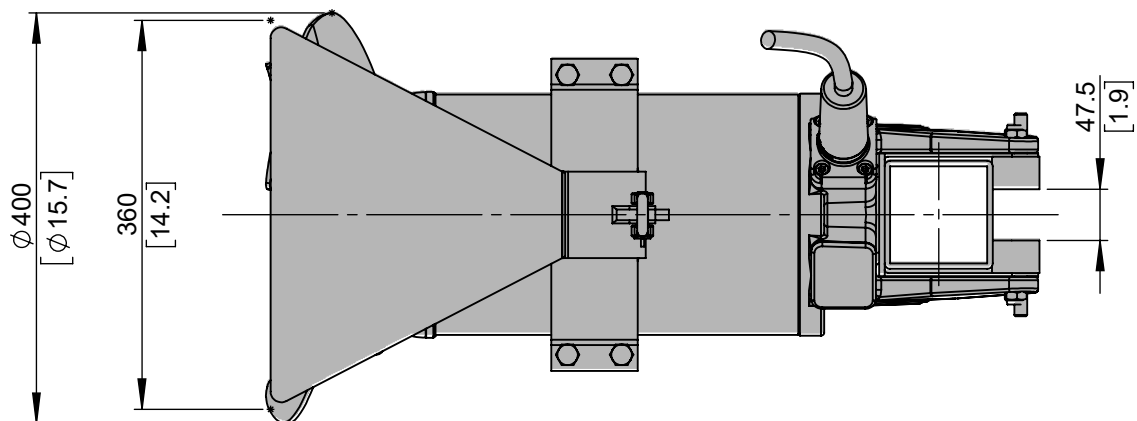
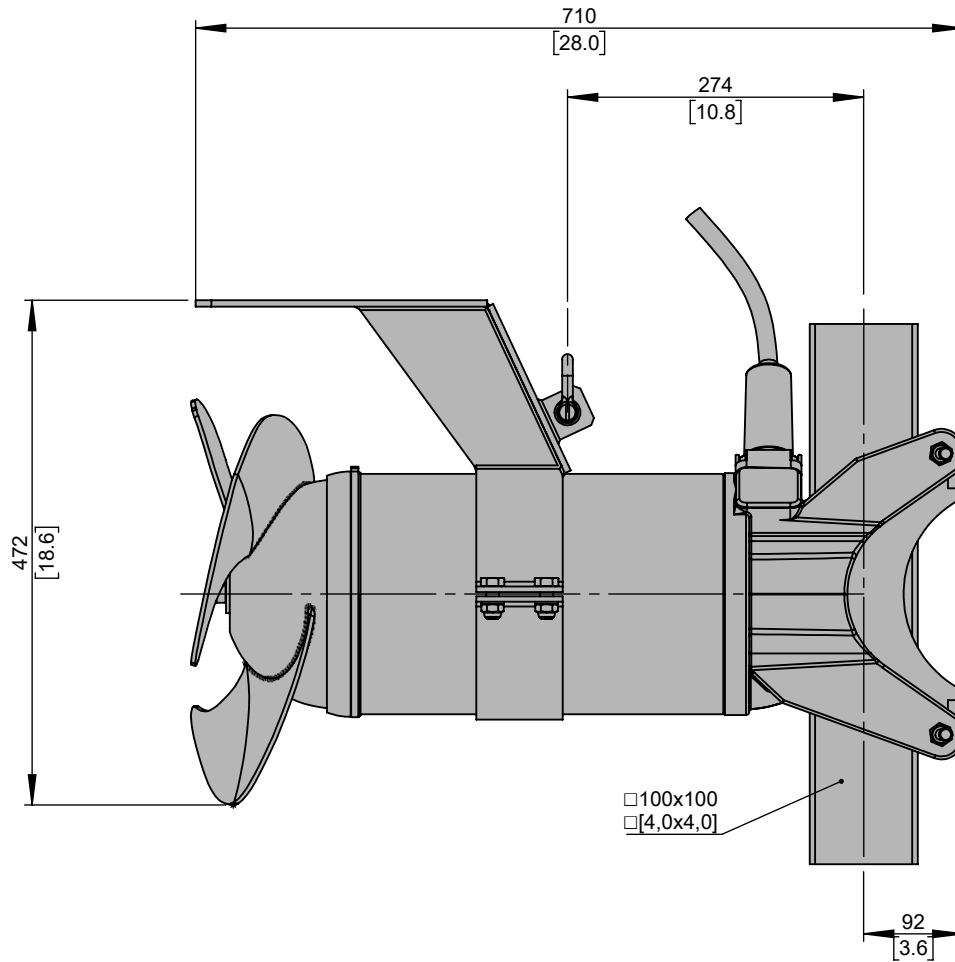
Maßblatt RW400 □ 100 mit Vortexbrecher

Plan d'encombrement RW400 □ 100 avec anti vortex

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	A 30/8	A 35/8
		A 40/8	A 46/8
		102	225

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

No: M-14.0300 - 02
 Dat/Nam.:14.08.2015 / P. Ruckszio
 Cad Code: M_140300
 Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with Vortex breaker

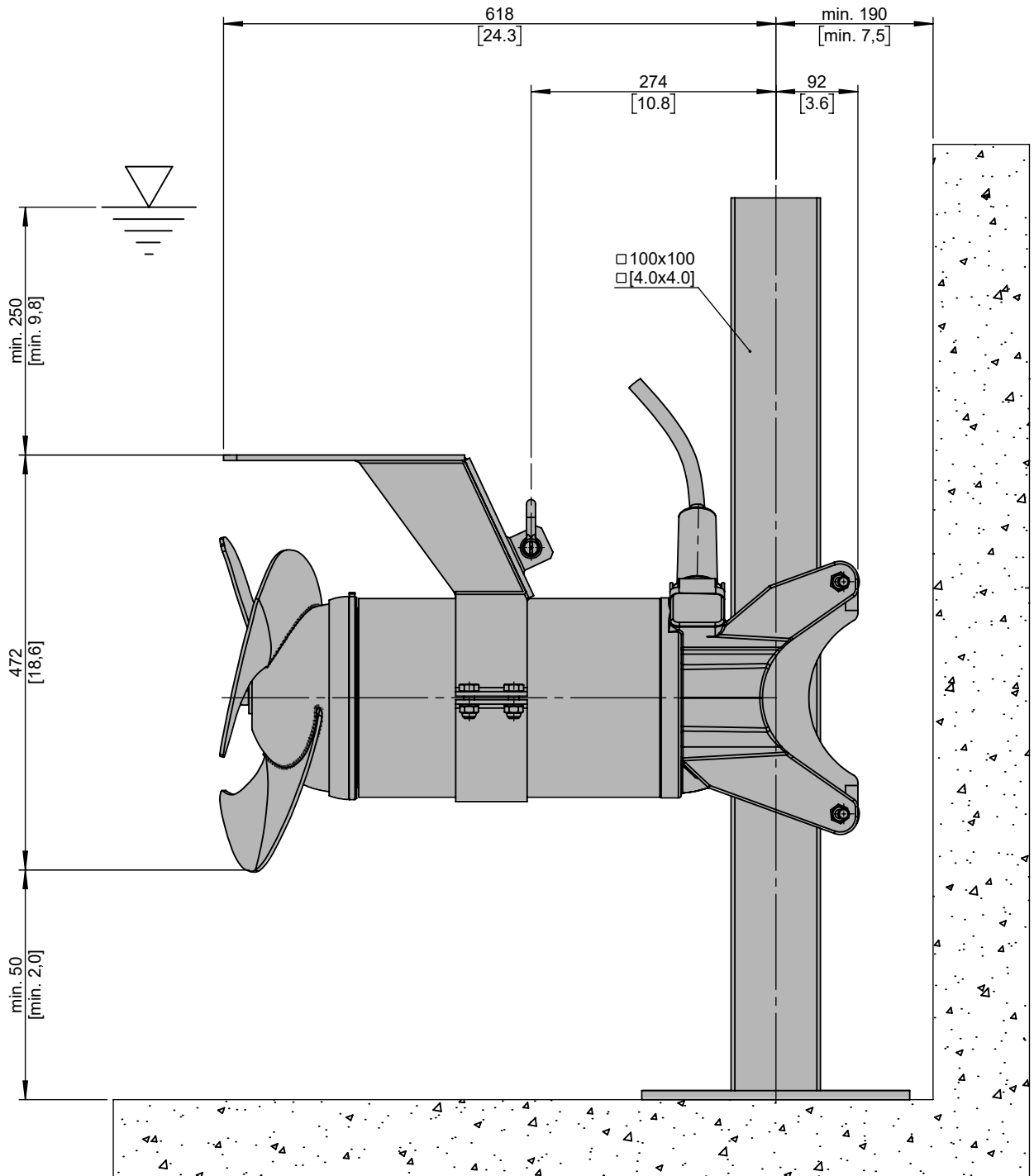
Maßblatt RW400 □ 100 mit Vortexbrecher

Plan d'encombrement RW400 □ 100 avec anti vortex



Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 30/8	A 35/8	102	225
A 40/8	A 46/8		



[mm
[inch]

* Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

No: M-14.0411 - 01

Dat/Nam.: 14.11.2016 / J.Beste

Cad Code: M_140411

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60

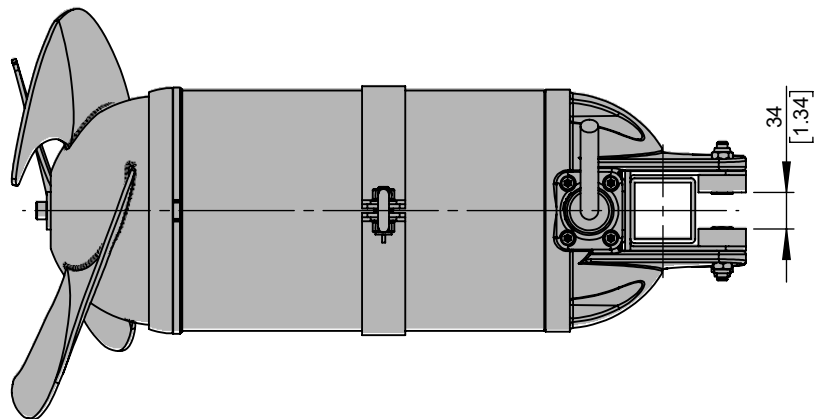
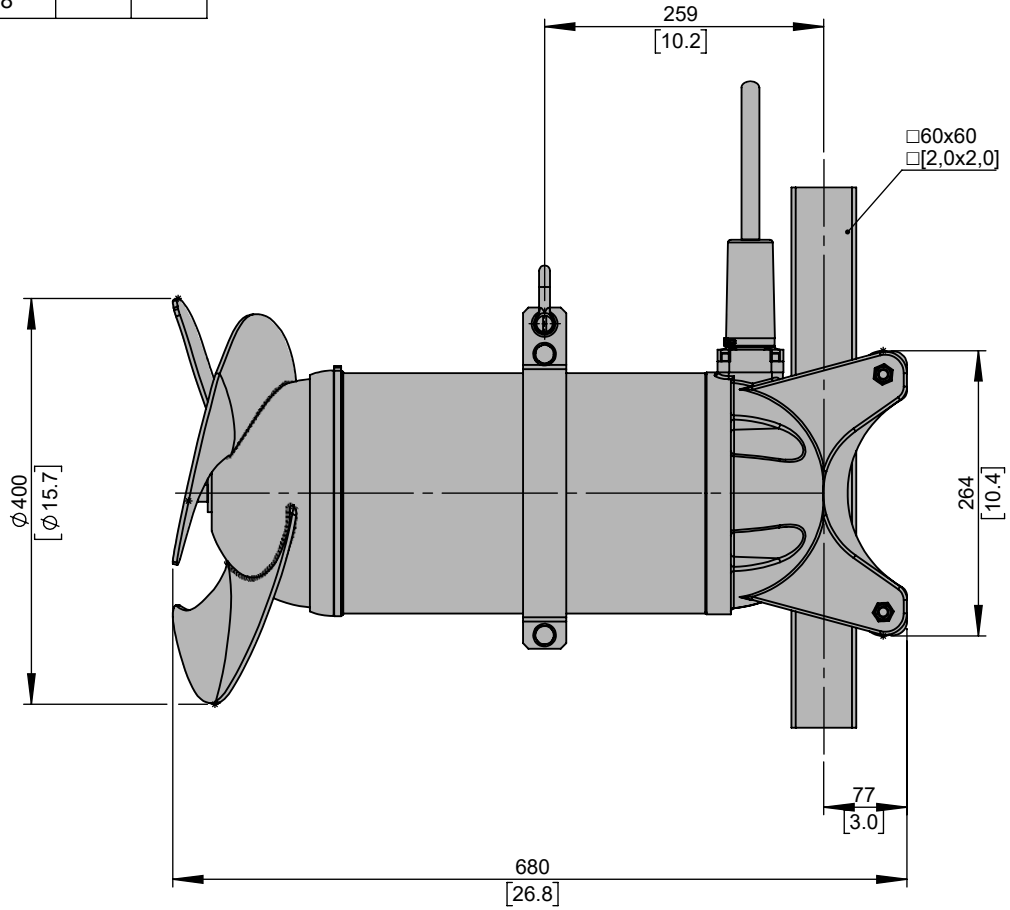
Maßblatt RW400 □60

Plan d'encombrement RW400 □60

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
		86	190
A 30/8	A 35/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm]
[inch]

No: M-14.0412 - 01

Dat/Nam.: 14.11.2016 / J.Beste

Cad Code: M_140412

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with Flow Ring

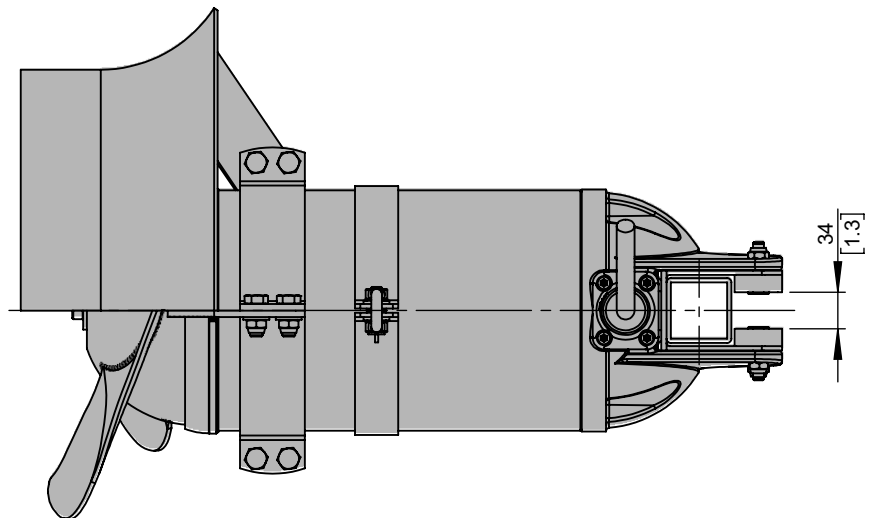
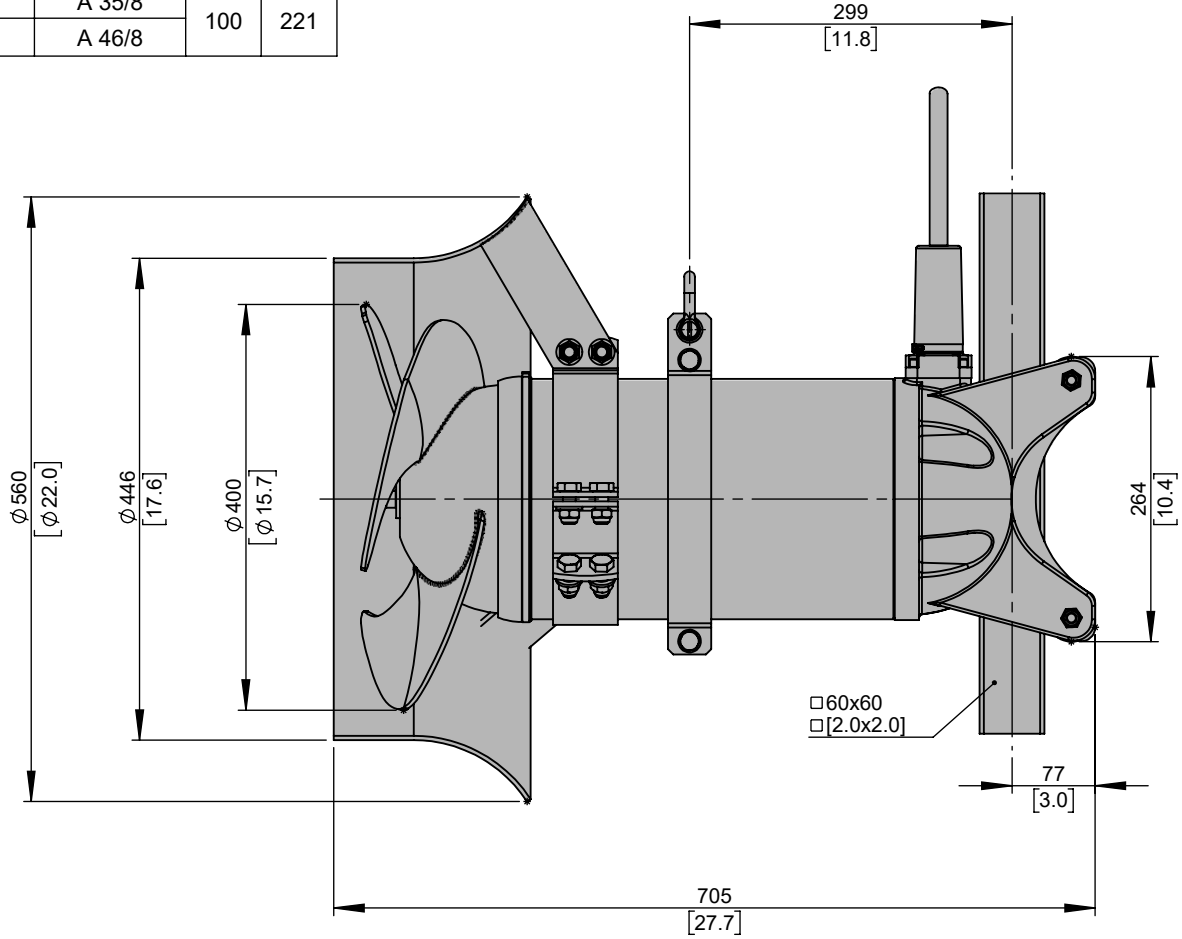
Maßblatt RW400 □60 mit Strömungsring

Plan d'encombrement RW400 □60 avec concentrateur de flux

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	100	221
A 30/8	A 35/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

No: M-14.0413 - 01

Dat/Nam.: 15.11.2016 / J.Beste

Cad Code: M_140413

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with support bracket

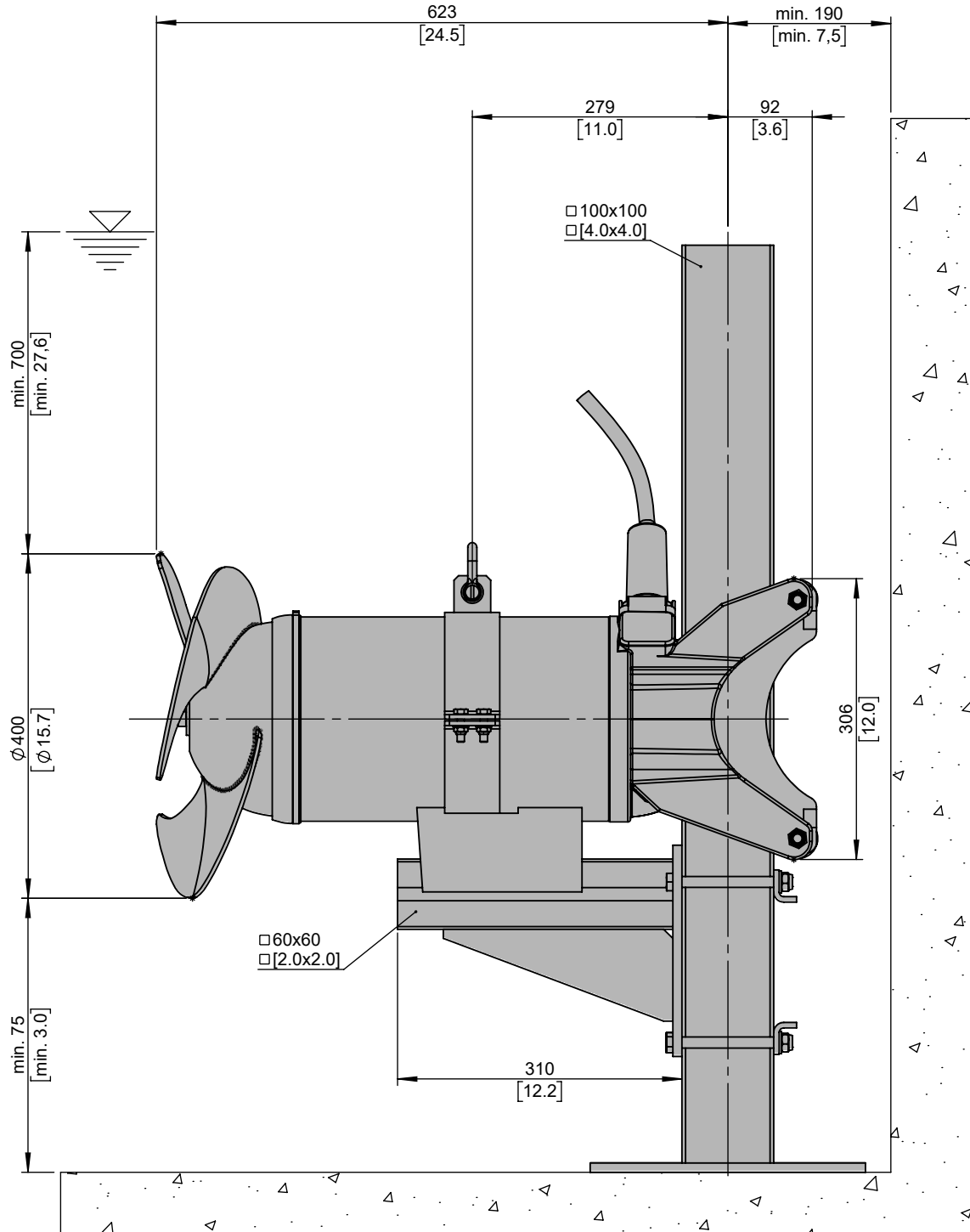
Maßblatt RW400 □ 100 mit Anschlag und Vibrationsdämfer

Plan d'encombrement RW400 □ 100 avec support

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	95	209
A 30/8	A 35/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0414 - 01
 Dat/Nam.:14.08.2015 / P. Ruckszio
 Cad Code: M_140414
 Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW400

Dimension sheet RW400 □100

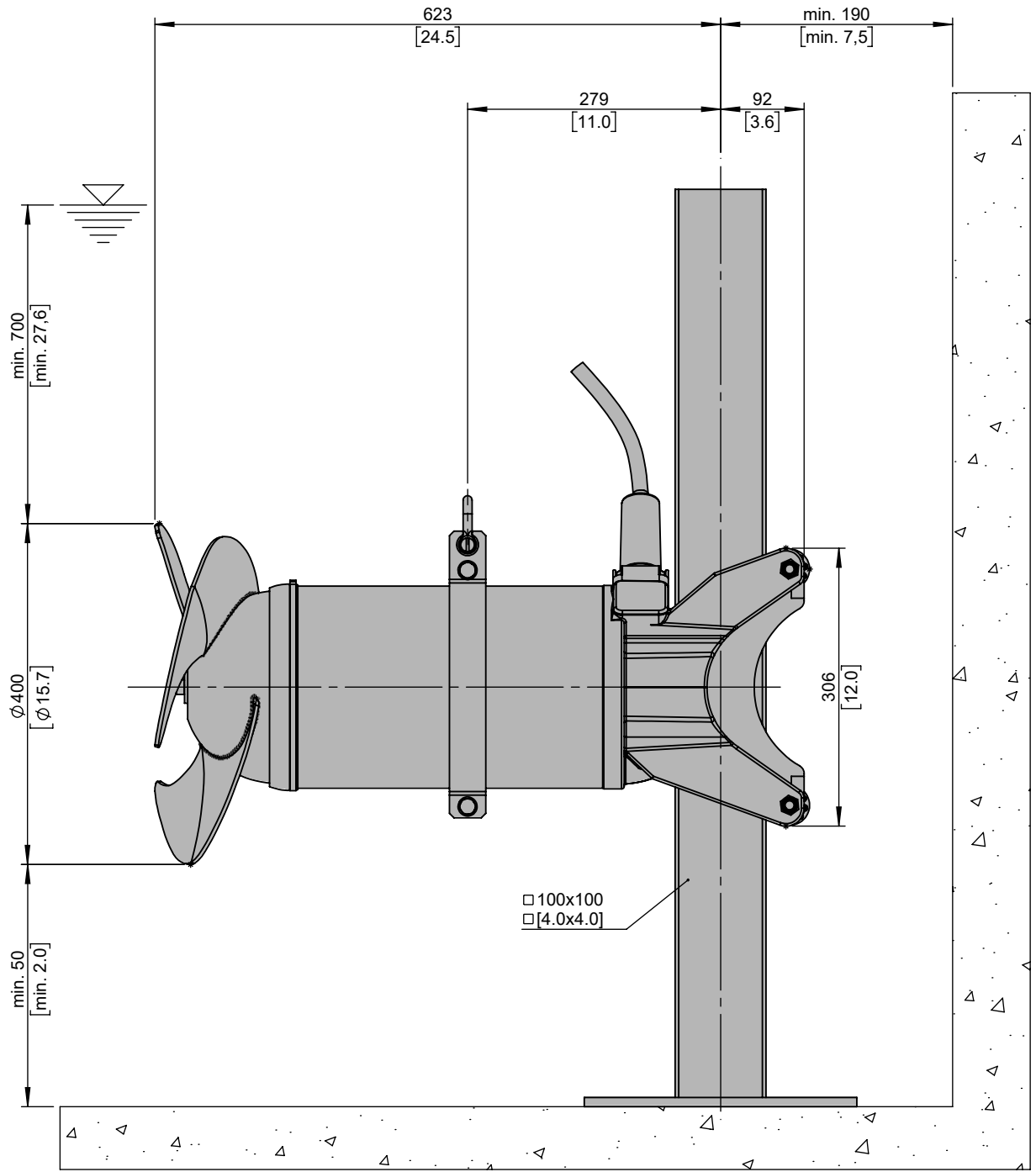
Maßblatt RW400 □100

Plan d'encombrent RW400 □100



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 30/8	A 35/8	92	203
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0415 - 01

Dat/Nam.: 15.11.2016 / J.Beste

Cad Code: M_140415

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

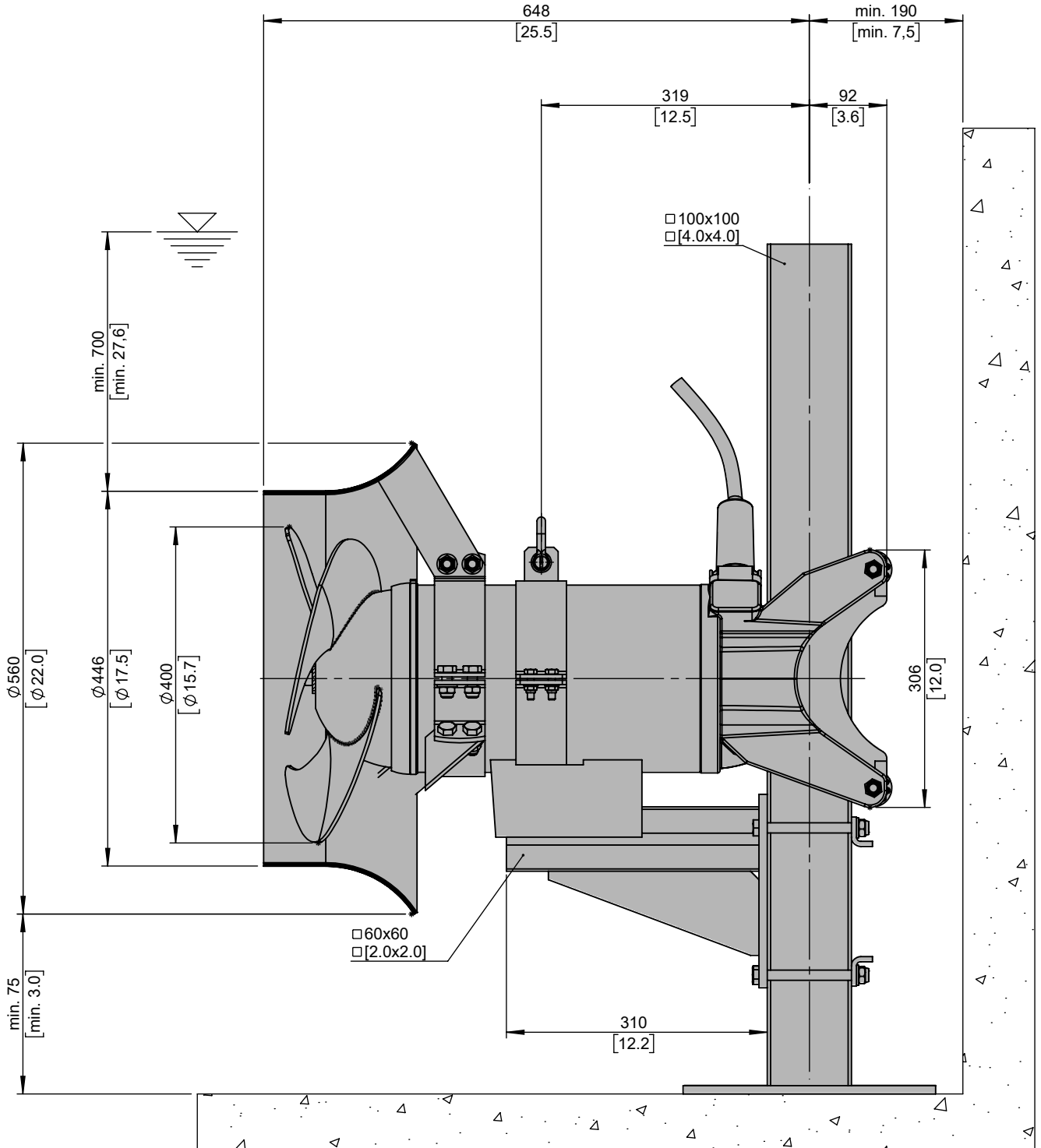
Dimension sheet RW400 □100 with support bracket and flow ring

Maßblatt RW400 □100 mit Anschlag, Vibrationsdämfer und Strömungsring

Plan d'encombrement RW400 □100 avec support et concentrateur de flux

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	109	240
A 30/8	A 35/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0416 - 01

Dat/Nam.: 14.11.2016 / J.Beste

Cad Code: M_140416

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with Vortex breaker

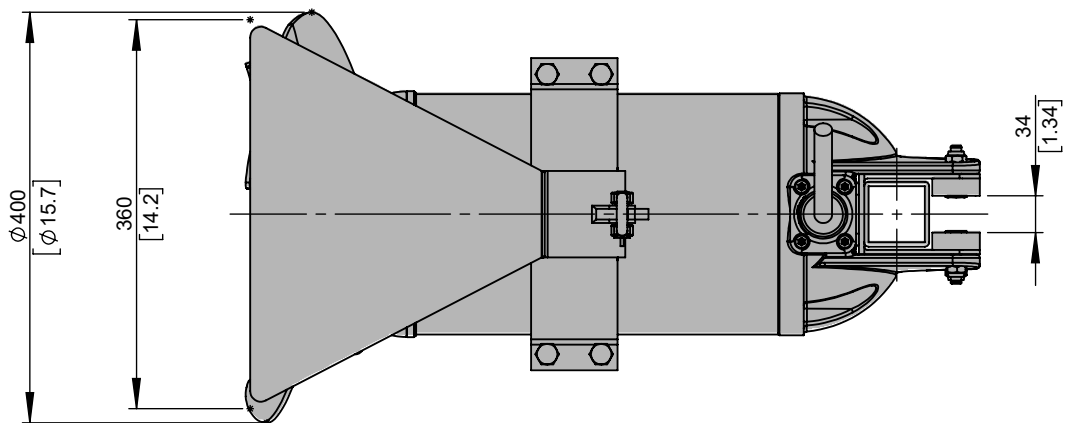
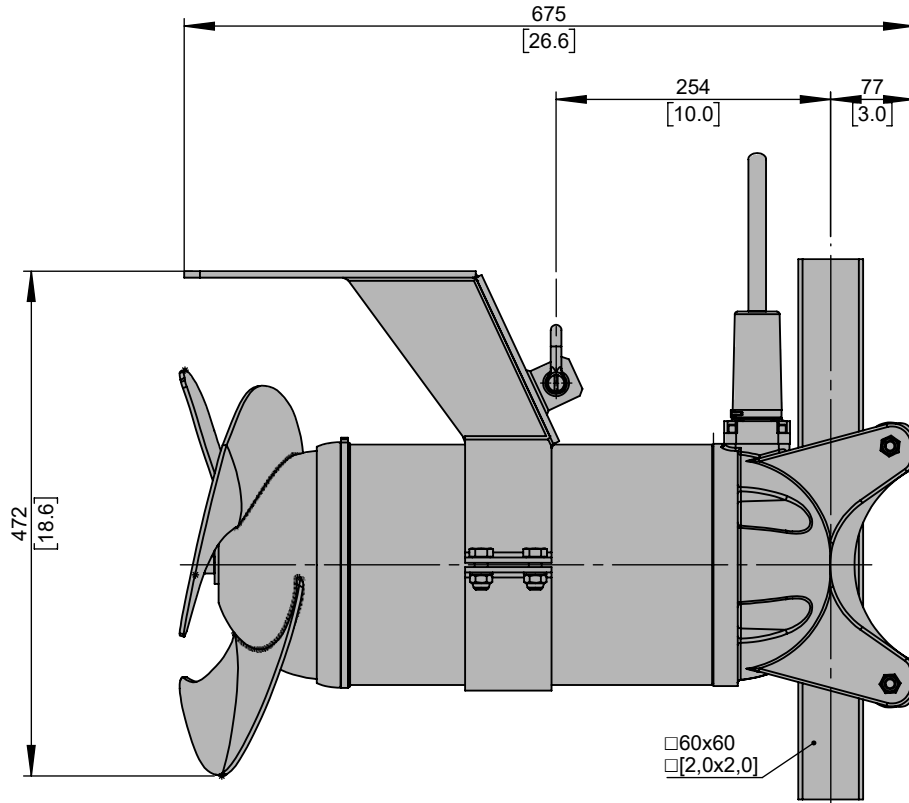
Maßblatt RW400 □60 mit Vortexbrecher

Plan d'encombrement RW400 □60 avec anti vortex

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	A 30/8	A 35/8
		A 40/8	A 46/8
		96	212

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

No: M-14.0417 - 00

Dat/Nam.:14.11.2016 / J.Beste

Cad Code: M_140417

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with Vortex breaker

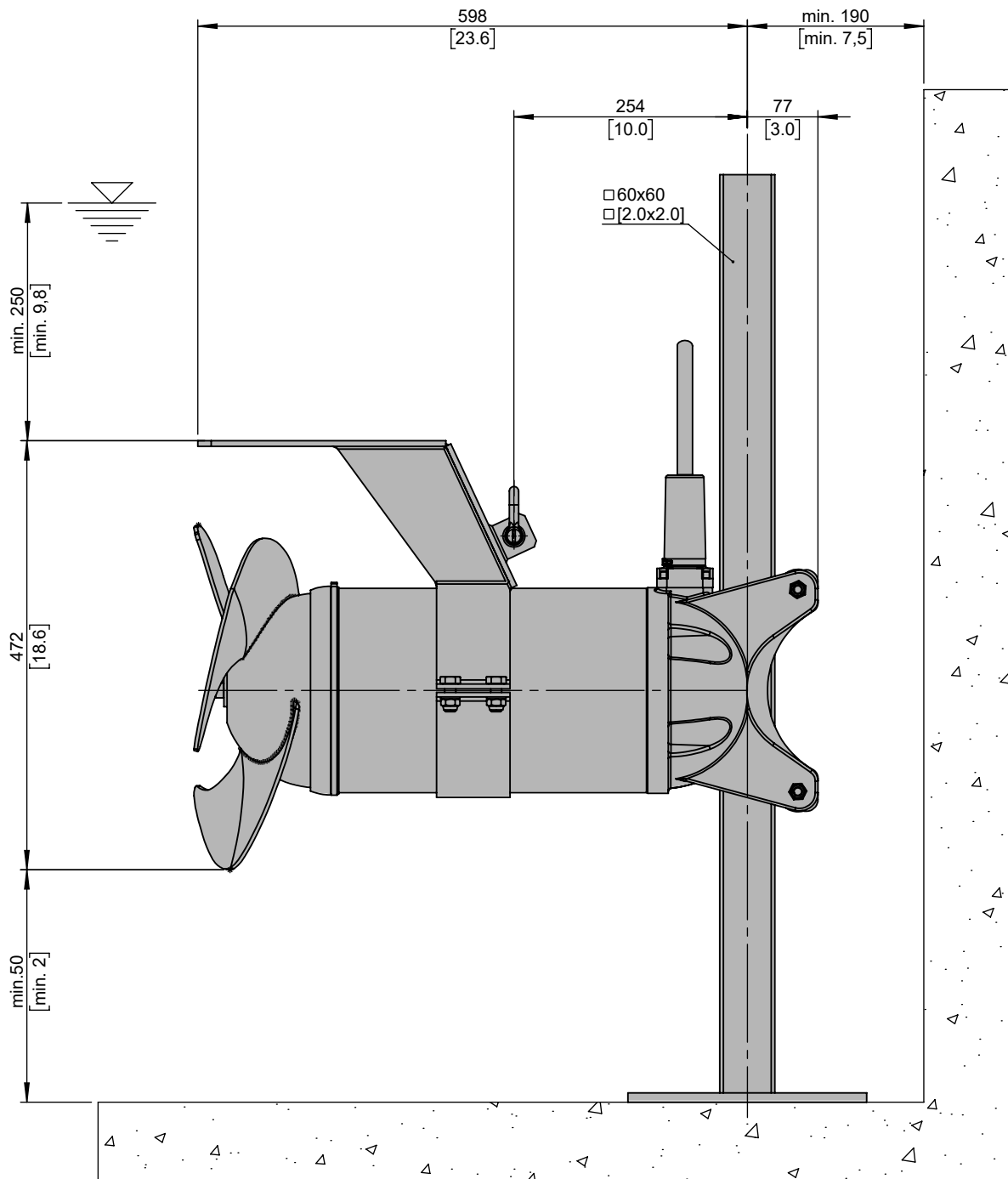
Maßblatt RW400 □60 mit Vortexbrecher

Plan d'encombrement RW400 □60 avec anti vortex

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
50Hz	60Hz	(~kg)	(~lb)
A 30/8	A 35/8	96	212
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guideline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0656 - 00

Dat/Nam.: 13.09.2022 / A. Gole

Cad Code: M_140656

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with lifting bracket

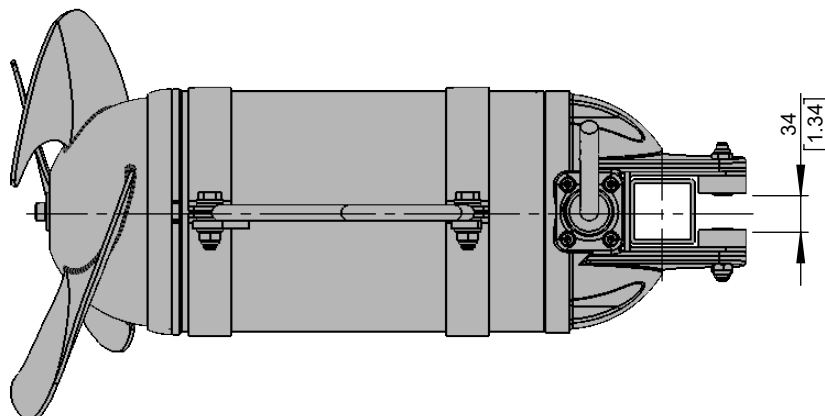
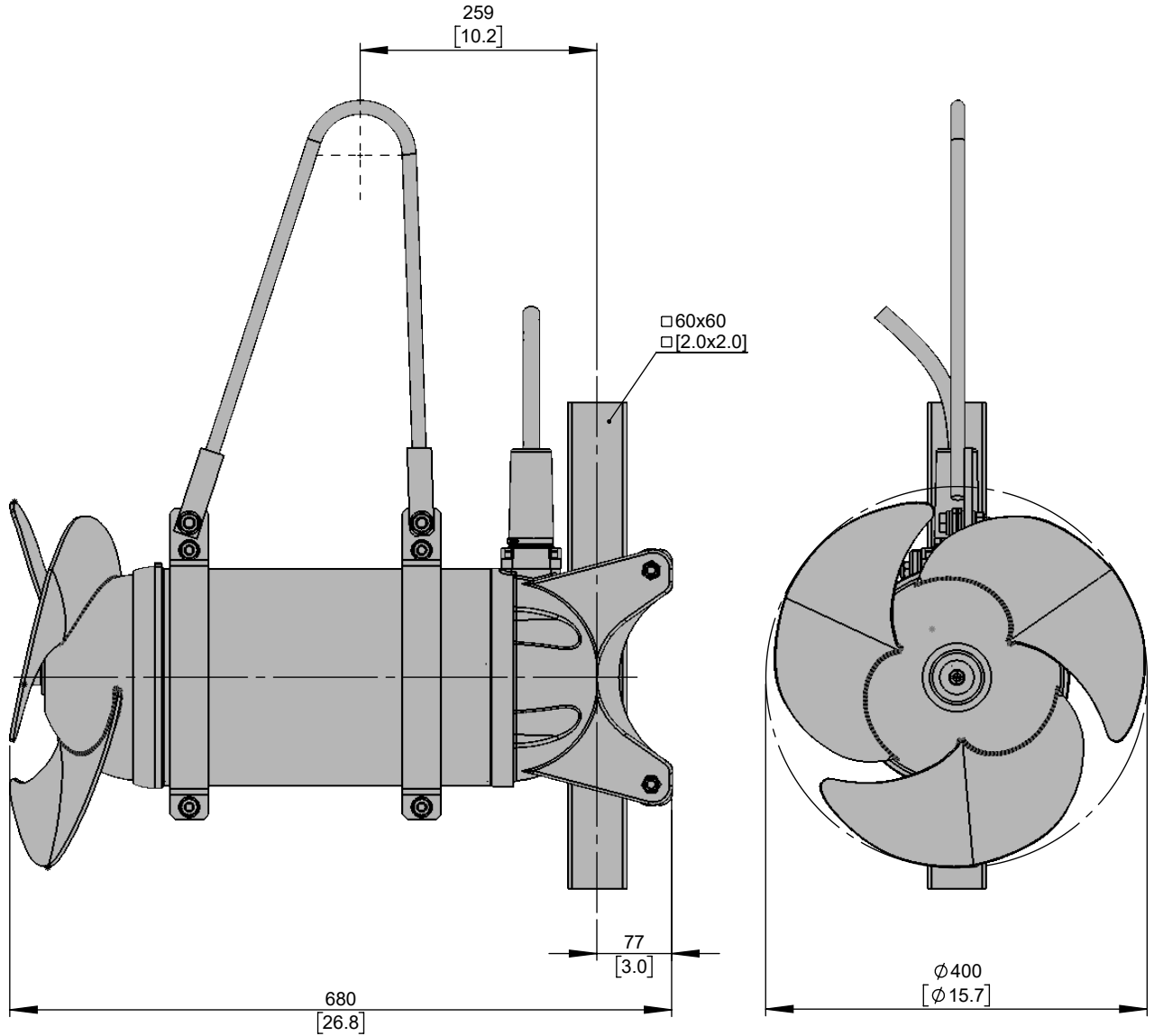
Maßblatt RW400 □60 mit Fangbügel

Plan d'encombrement RW400 □60 avec étrier de sûreté



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	A 30/8	A 35/8
		A 40/8	A 46/8
		86	190

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

No: M-14.0657 - 00

Dat/Nam.:16.09.2022 / A. Gole

Cad Code: M_140657

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with lifting bracket

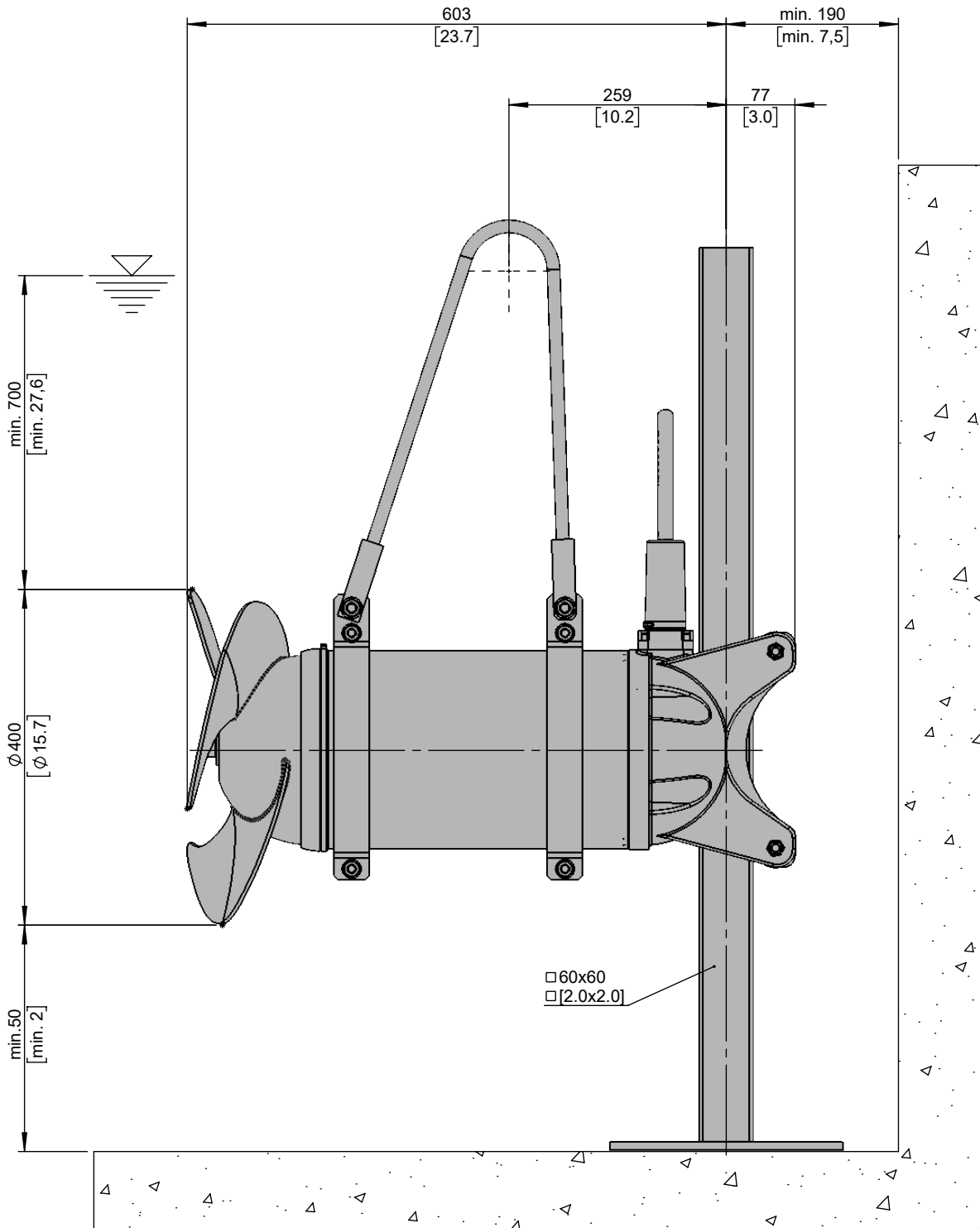
Maßblatt RW400 □60 mit Fangbügel

Plan d'encombrement RW400 □60avec étrier de sûreté

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
50Hz	60Hz	(~kg)	(~lb)
A 30/8	A 35/8	86	190
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.658 - 00

Dat/Nam.:19.09.2022 / A. Gole

Cad Code: M_140658

Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with support bracket and lifting bracket

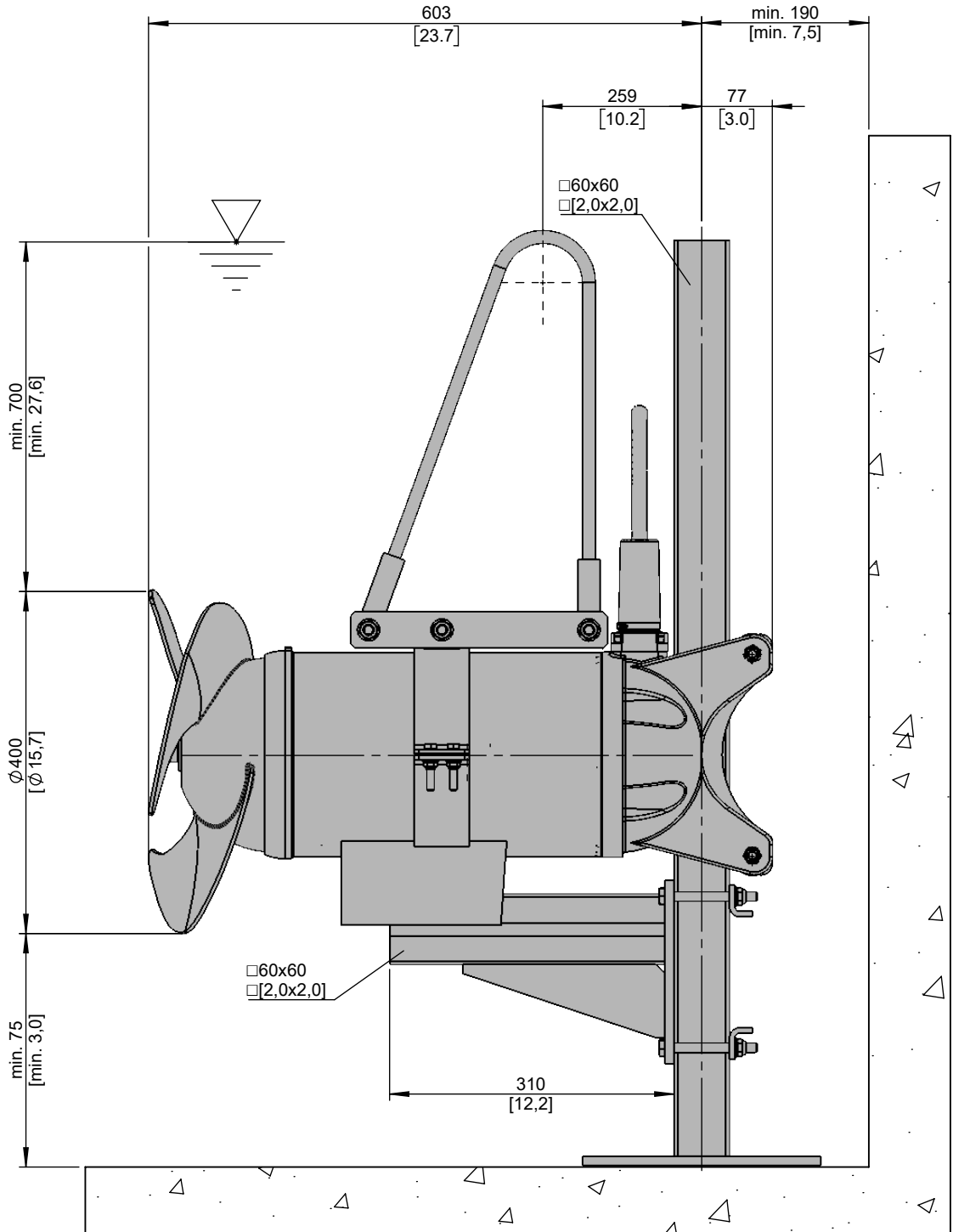
Maßblatt RW400 □60 mit Anschlag, Vibrationsdämpfer und Fangbügel

Plan d'encombrement RW400 □60 avec support et étrier de sûreté



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
50Hz	60Hz	(~kg)	(~lb)
A 30/8	A 35/8	88	194
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



* Guideline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0659 - 00

Dat/Nam.:08.09.2022 / A. Gole

Cad Code: M_140659

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 ,□60 with Vertical Angle Adjustment

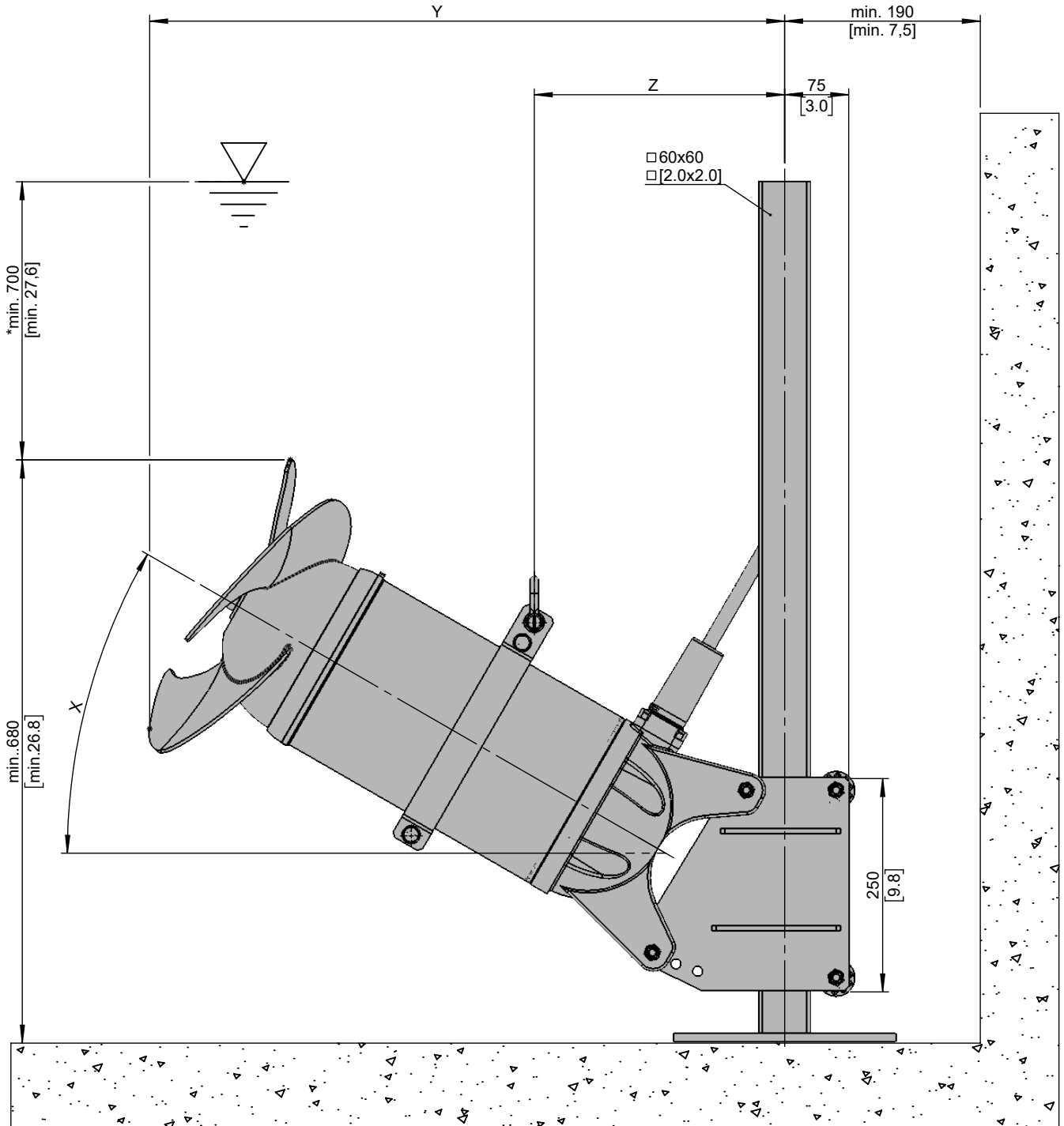
Maßblatt RW400, □60 mit neigungsverstellbare Halterung

Plan d'encombement RW400,□60 avec réglage angulaire

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids			X				X		
		(~kg)	(~lb)		15°	22°	30°		15°	22°	30°
50Hz	60Hz			(mm) Y (in)				(mm) Z (in)			
A 30/8	A 35/8	91	201		735	745	740		335	320	290
A 40/8	A 46/8	91	201		28.9	29.3	29.1		13.2	12.6	11.4

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0660 - 00

Dat/Nam.: 08.09.2022 / A. Gole

Cad Code: M_140660

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

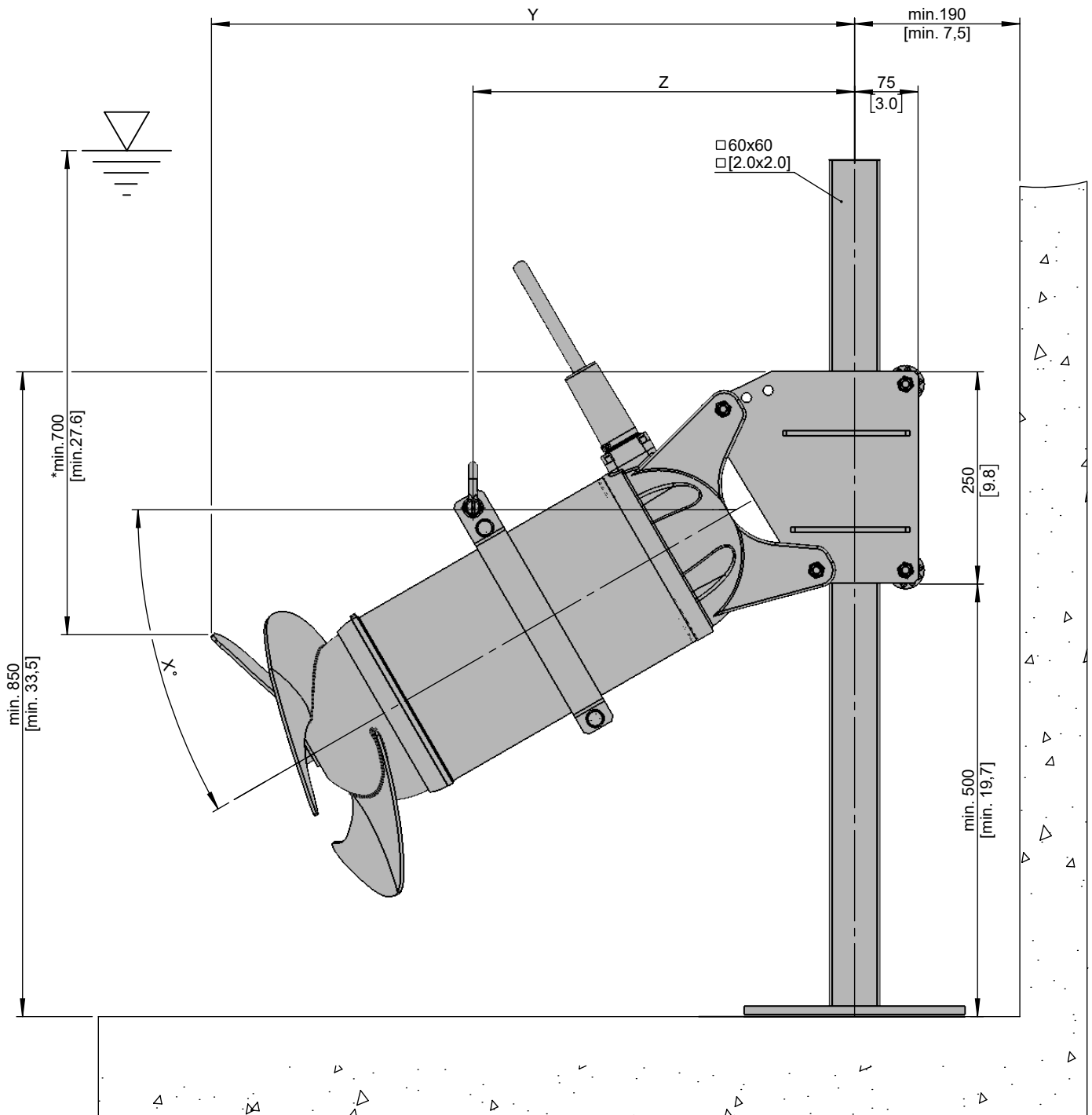
Dimension sheet RW400, □60 with Vertical Angle Adjustment

Maßblatt RW400, □60 mit neigungsverstellbare Halterung

Plan d'encombement RW400, □60 avec réglage angulaire

Type Typ Type	Type Typ Type	Weight Gewicht Poids			X				X		
		(~kg)	(~lb)		15°	22°	30°		15°	22°	30°
50Hz	60Hz			(mm) Y				(mm) Z			
A 30/8	A 35/8	91	201	(in)	755	765	760	(in)	415	435	450
A 40/8	A 46/8	91	201		29.7	30.1	29.9		16.3	17.1	17.7

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



mm [inch]

 * Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

No: M-14.0661 - 00

Dat/Nam.:08.09.2022 / A. Gole

Cad Code: M_140661

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

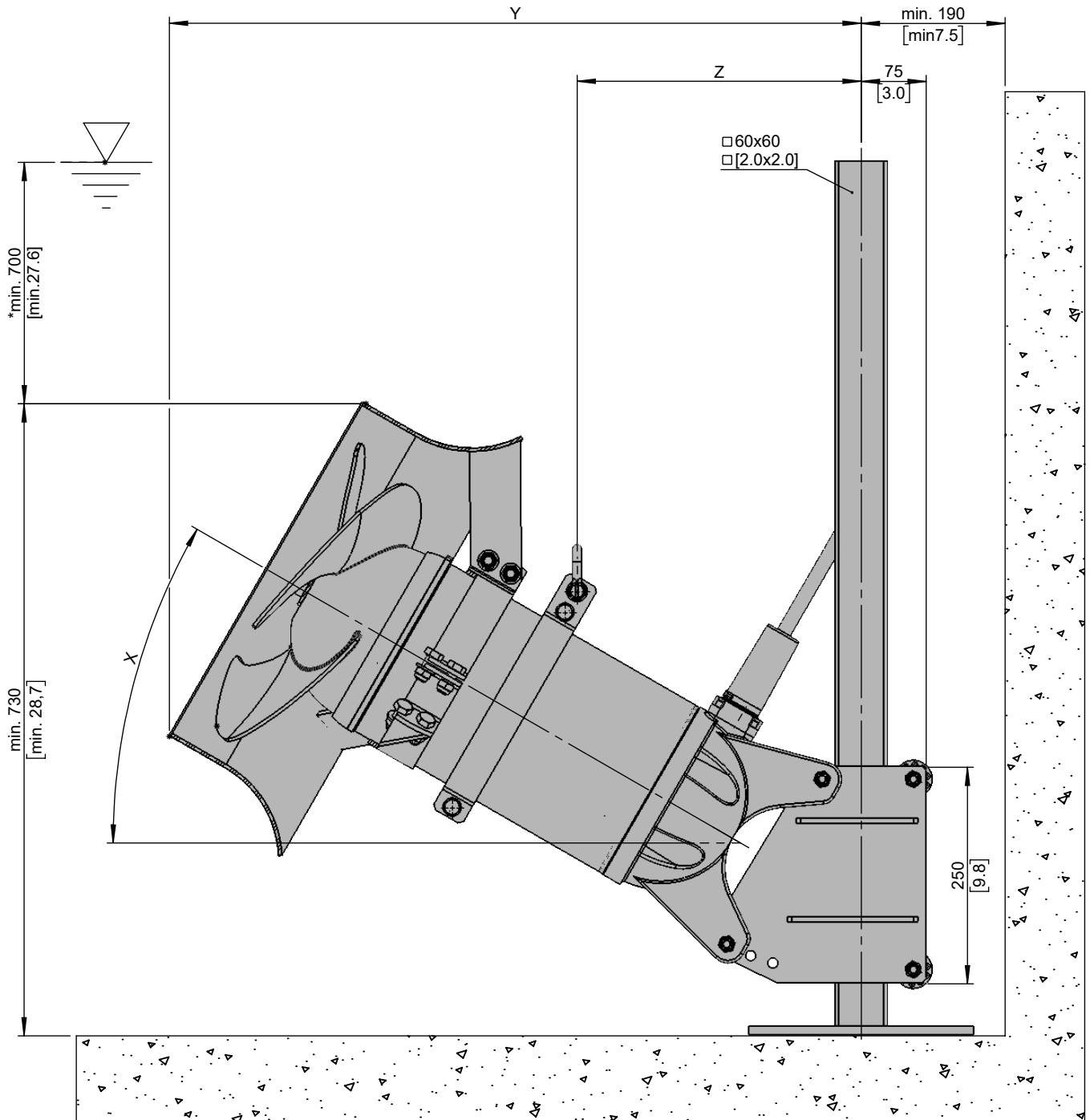
Dimension sheet RW400, □60 with Vertical Angle Adjustment

Maßblatt RW400, □60 mit neigungsverstellbare Halterung

Plan d'encombement RW400,□60 avec réglage angulaire

Type Typ Type	Type Typ Type	Weight Gewicht Poids			X				X		
		(~kg)	(~lb)		15°	22°	30°		15°	22°	30°
50Hz	60Hz										
A 30/8	A 35/8	106	234	(mm) Y	785	795	800	(mm) Z	375	355	325
A 40/8	A 46/8	106	234	(in)	30.9	31.3	31.5	(in)	14.8	14.0	12.8

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

No: M-14.0662 - 00

Dat/Nam.: 08.09.2022 / A. Gole

Cad Code: M_140662

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400, □60 with Flow Ring and Vertical Angle Adjustment

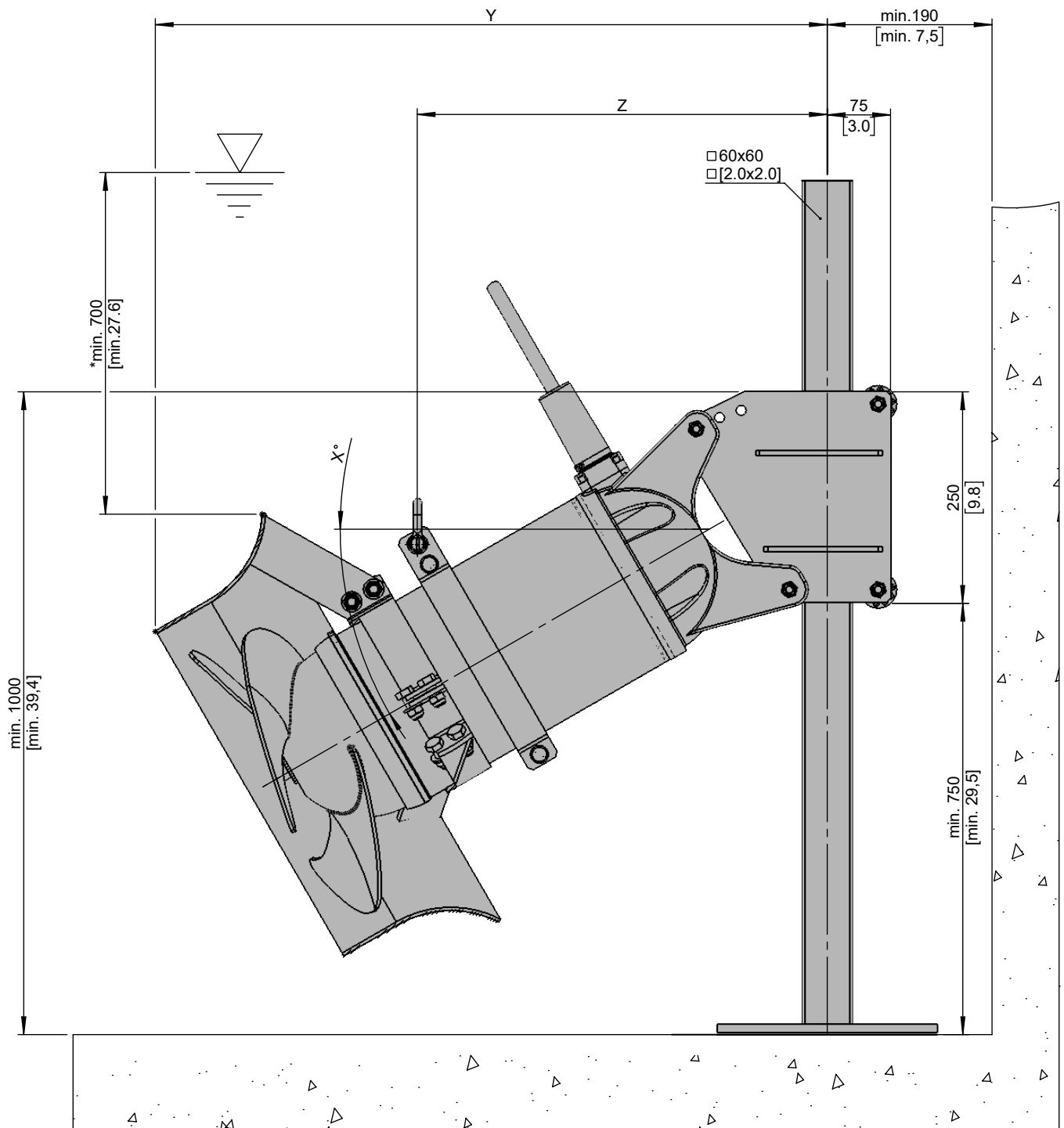
Maßblatt RW400, □60 mit Strömungsring und neigungsverstellbare Halterung

Plan d'encombrement RW400, □60 avec concentrateur de flux et réglage angulaire

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids			X				X		
		(~kg)	(~lb)		15°	22°	30°		15°	22°	30°
50Hz	60Hz			(mm) Y	15°	22°	30°	(mm) Z	15°	22°	30°
A 30/8	A 35/8	106	234	(in)	785	795	800	(in)	455	470	485
A 40/8	A 46/8	106	234		30.9	31.3	31.5		17.9	18.5	19.1

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

No: M-14.0663 - 00

Dat/Nam.:19.09.2022 / A. Gole

Cad Code: M_140663

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □60 with support bracket and vortex breaker

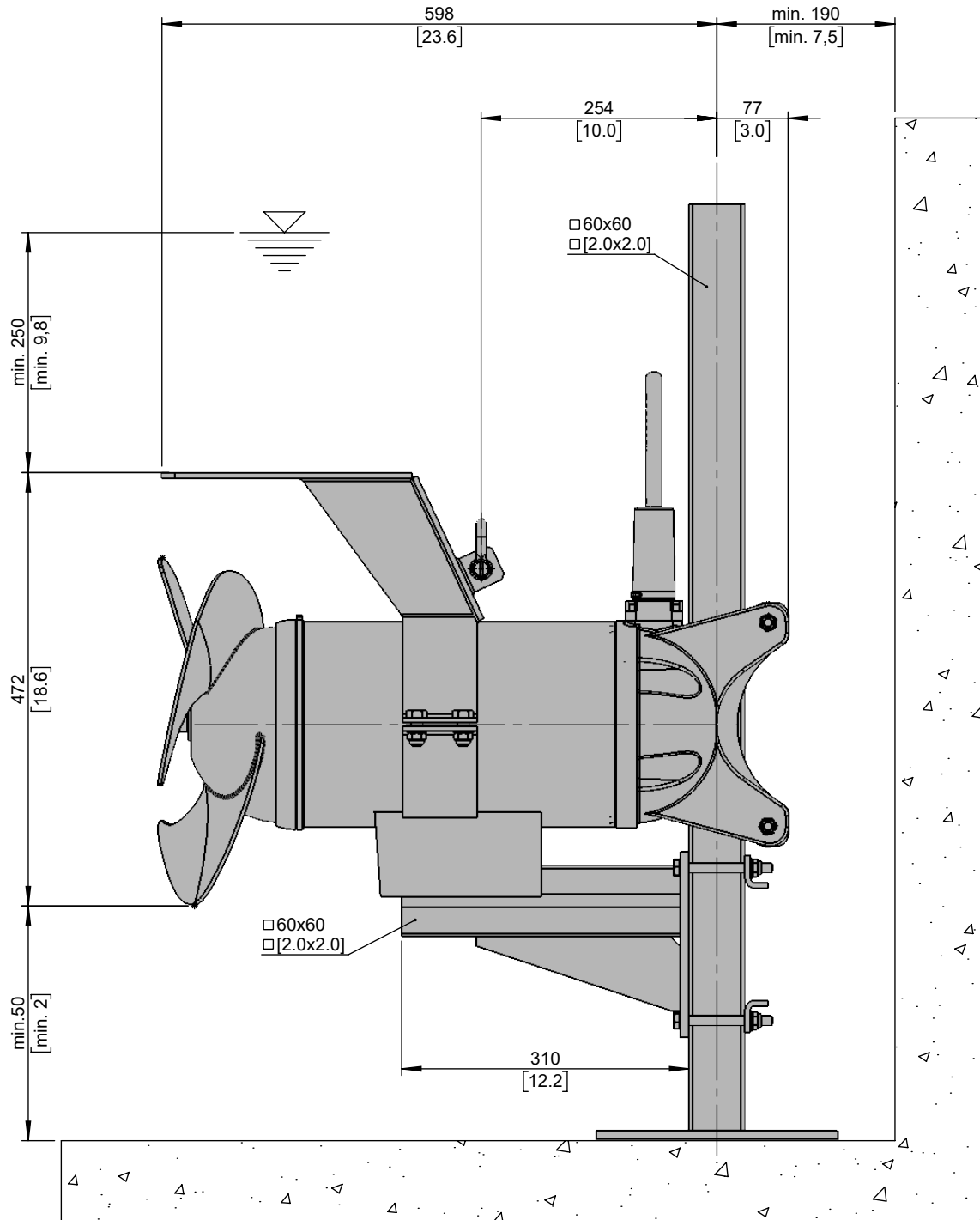
Maßblatt RW400 □60 mit Anschlag, Vibrationsdämfer und Vortex Brecher

Plan d'encombrement RW400 □60 avec support et anti vortex



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
50Hz	60Hz	(~kg)	(~lb)
A 30/8	A 35/8	101	223
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0664 - 00

Dat/Nam.: 21.09.2022 / A. Gole

Cad Code: M_140664

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with lifting bracket

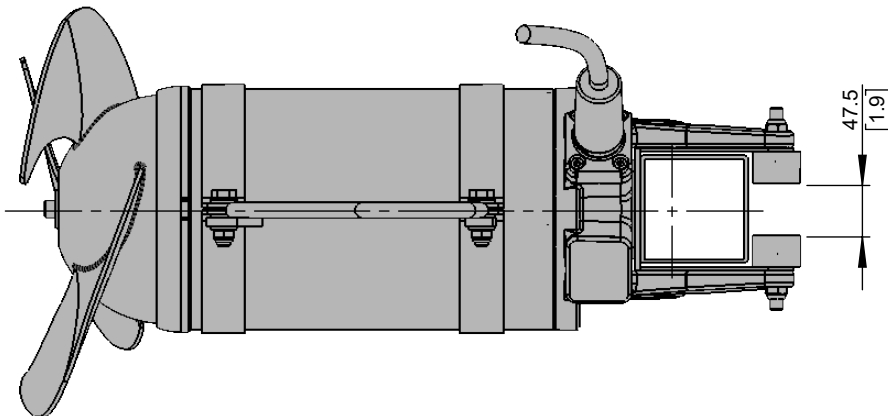
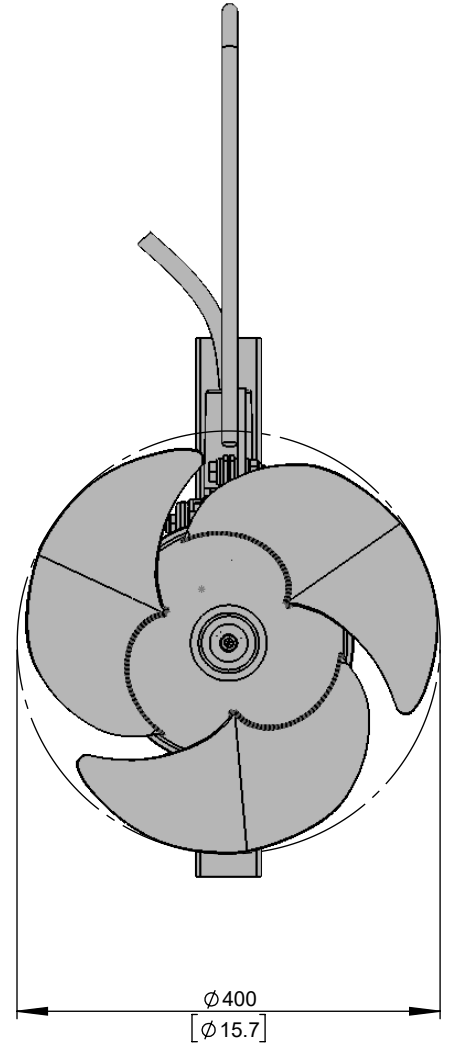
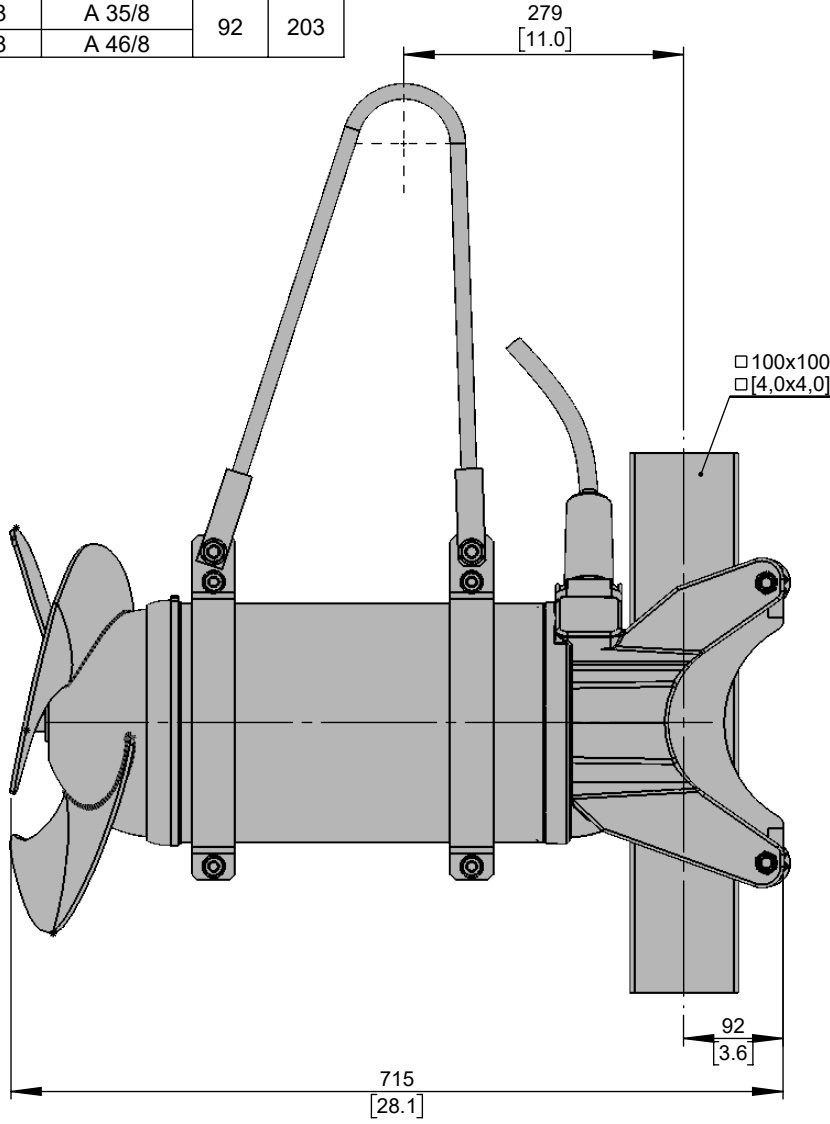
Maßblatt RW400 □ 100 mit Fangbügel

Plan d'encombrement RW400 □ 100 avec étrier de sûreté



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz		
A 30/8	A 35/8	92	203
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm
[inch]

No: M-14.0665 - 00

Dat/Nam.:21.09.2022 / A. Gole

Cad Code: M_140665

Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW400

Dimension sheet RW400 □100 with lifting bracket

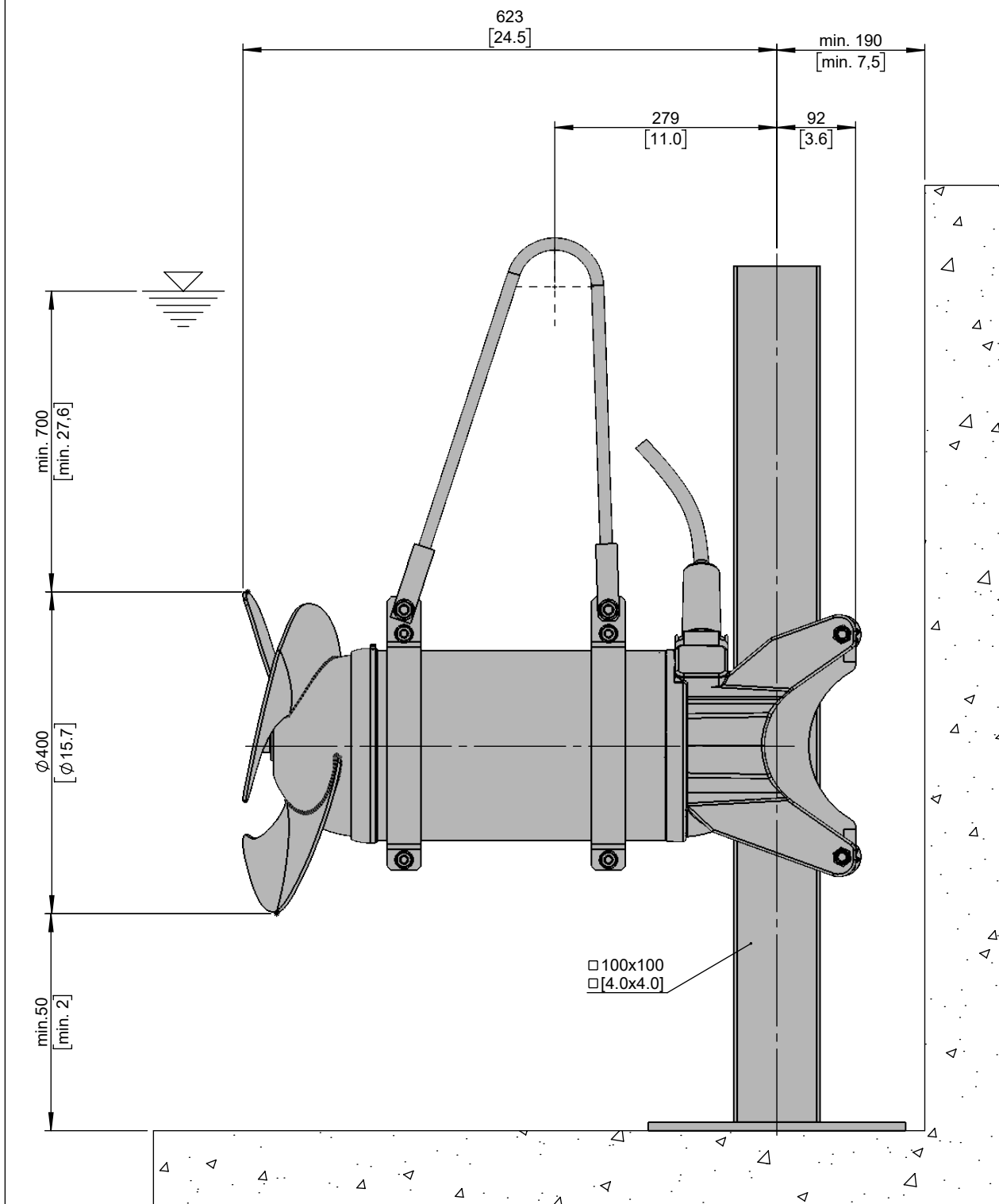
Maßblatt RW400 □100 mit Fangbügel

Plan d'encombrement RW400 □100avec étrier de sûreté



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	A 30/8	92	203
	A 40/8		
60Hz	A 35/8	92	203
	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0666 - 00

Dat/Nam.: 21.09.2022 / A. Gole

Cad Code: M_140666

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with support bracket and lifting bracket

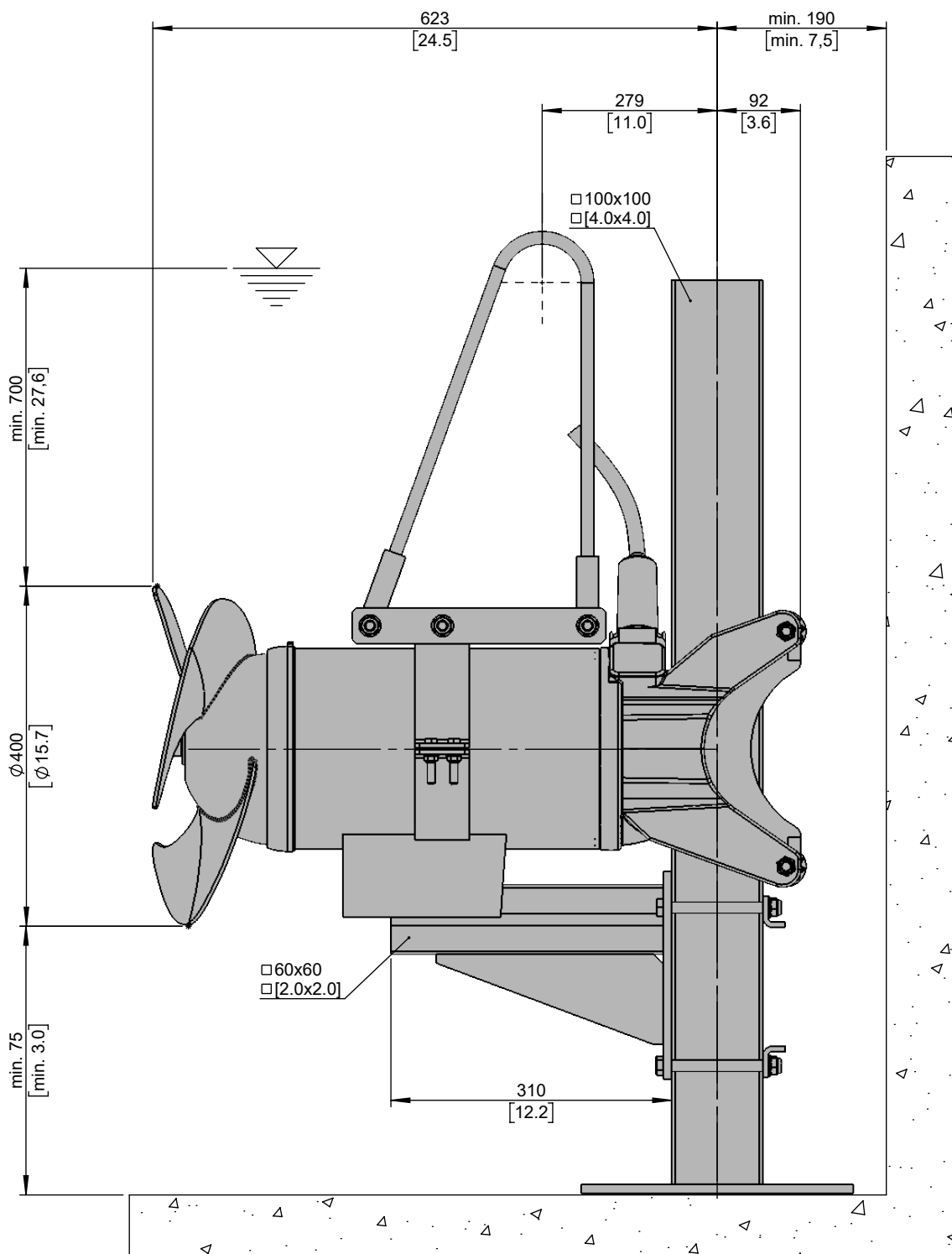
Maßblatt RW400 □ 100 mit Anschlag, Vibrationsdämpfer und Fangbügel

Plan d'encombrement RW400 □ 100 avec support et étrier de sûreté

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	A 30/8	95	209
	A 40/8		
60Hz	A 35/8	95	209
	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guideline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0667 - 00

Dat/Nam.:21.09.2022 / A. Gole

Cad Code: M_140667

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

Dimension sheet RW400 □ 100 with support bracket and vortex breaker

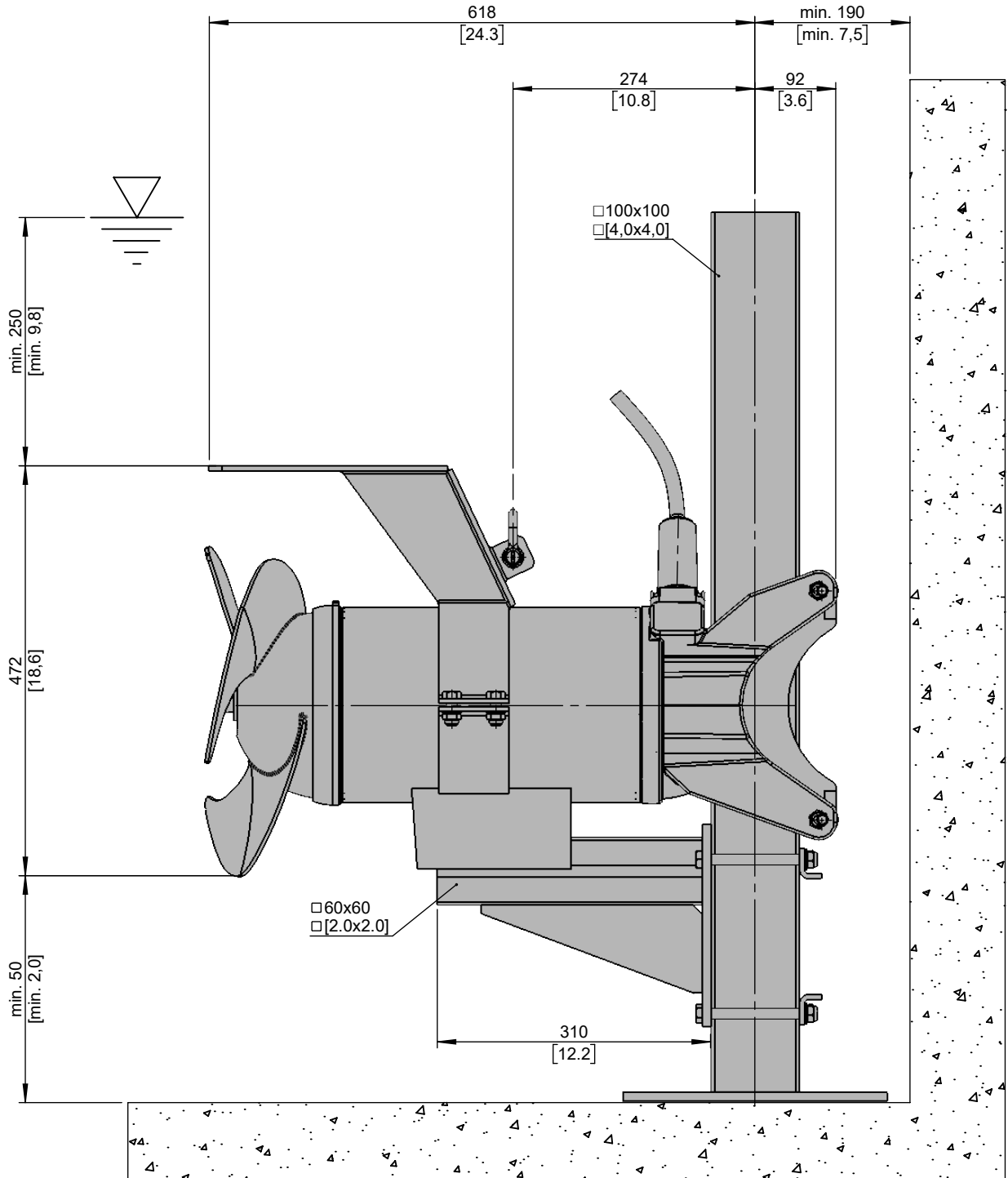
Maßblatt RW400 □ 100 mit Anschlag, Vibrationsdämfer und Vortex Brecher

Plan d'encombrement RW400 □ 100 avec support et anti vortex

SULZER

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	108	238
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



[mm]
[inch]

* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

No: M-14.0675 - 00

Dat/Nam.:03.10.2022 / A. Gole

Cad Code: M_140675

Technical changes reserved
Änderungen vorbehalten
Sous réserve de modifications

RW400

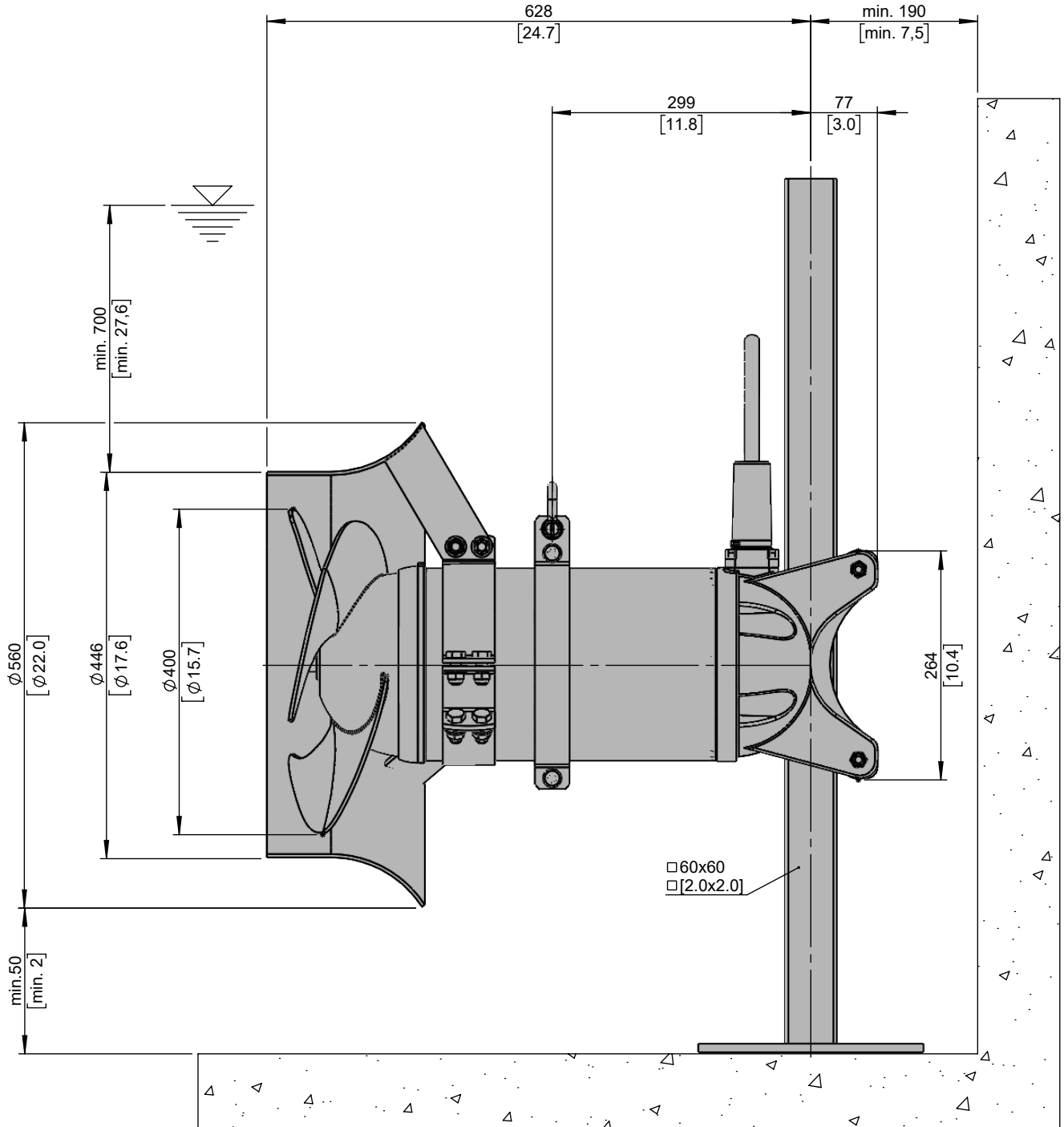
Dimension sheet RW400 □60 with flow ring

Maßblatt RW400 □60 mit Strömungsring

Plan d'encombrement RW400 □60 avec concentrateur de flux

Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	60Hz	100	221
A 30/8	A 35/8		
A 40/8	A 46/8		

Weight: Includes pump, slider bracket and 10m cable
Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
Poids: Pompe, coulisseau et 10m de câble



* Guidline value: Minimum submergence can be lower
Richtwert: Die Mindestüberdeckung kann geringer sein
Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

No: M-14.0676 - 00

Dat/Nam.:03.10.2022 / A. Gole

Cad Code: M_140676

Technical changes reserved
 Änderungen vorbehalten
 Sous réserve de modifications

RW400

Dimension sheet RW400 □100 with flow ring

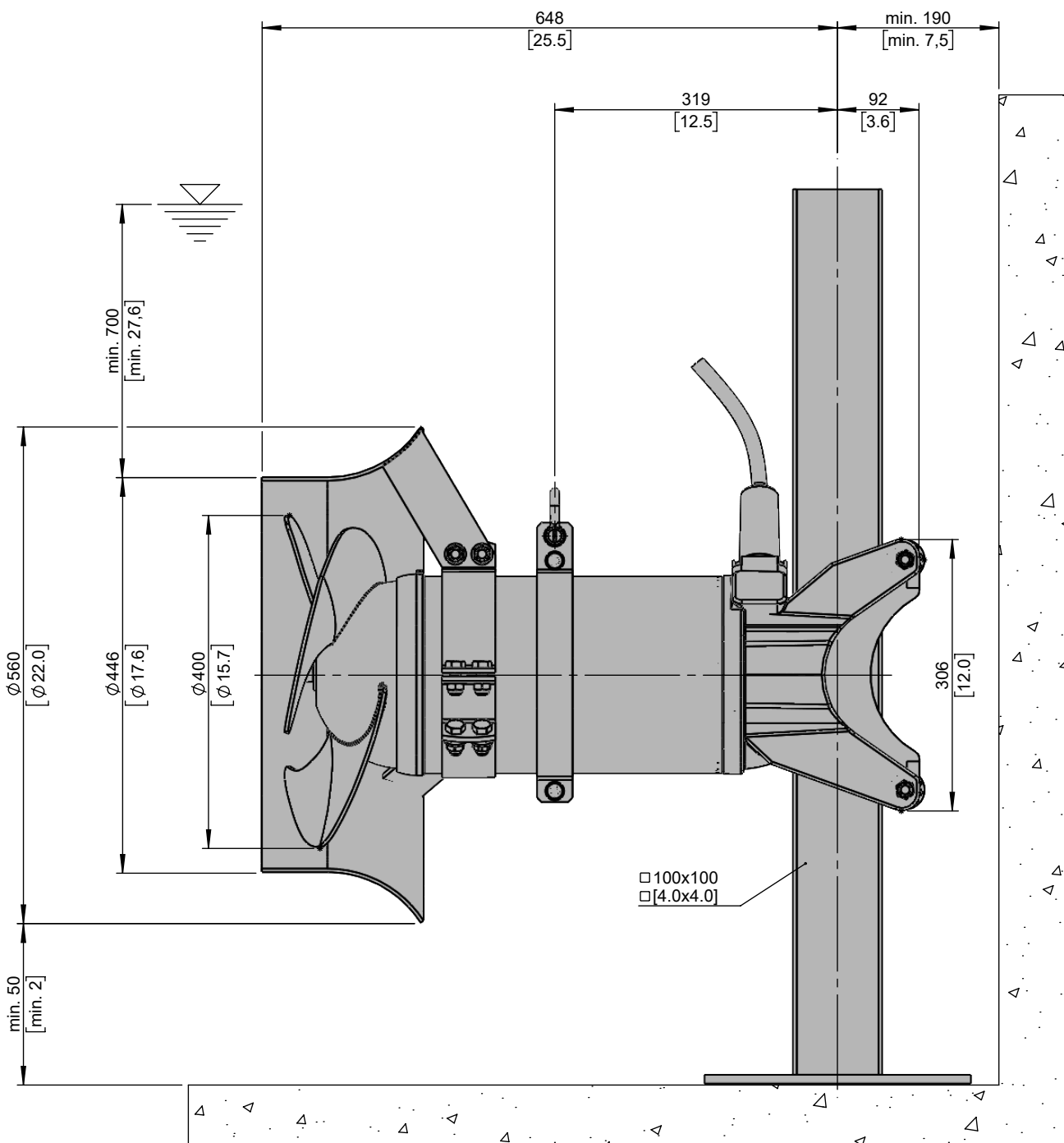
Maßblatt RW400 □100 mit Strömungsring

Plan d'encombrement RW400 □100avec concentrateur de flux



Type Typ Type	Type Typ Type	Weight Gewicht Poids	
		(~kg)	(~lb)
50Hz	A 30/8	106	234
	A 40/8		
60Hz	A 35/8	106	234
	A 46/8		

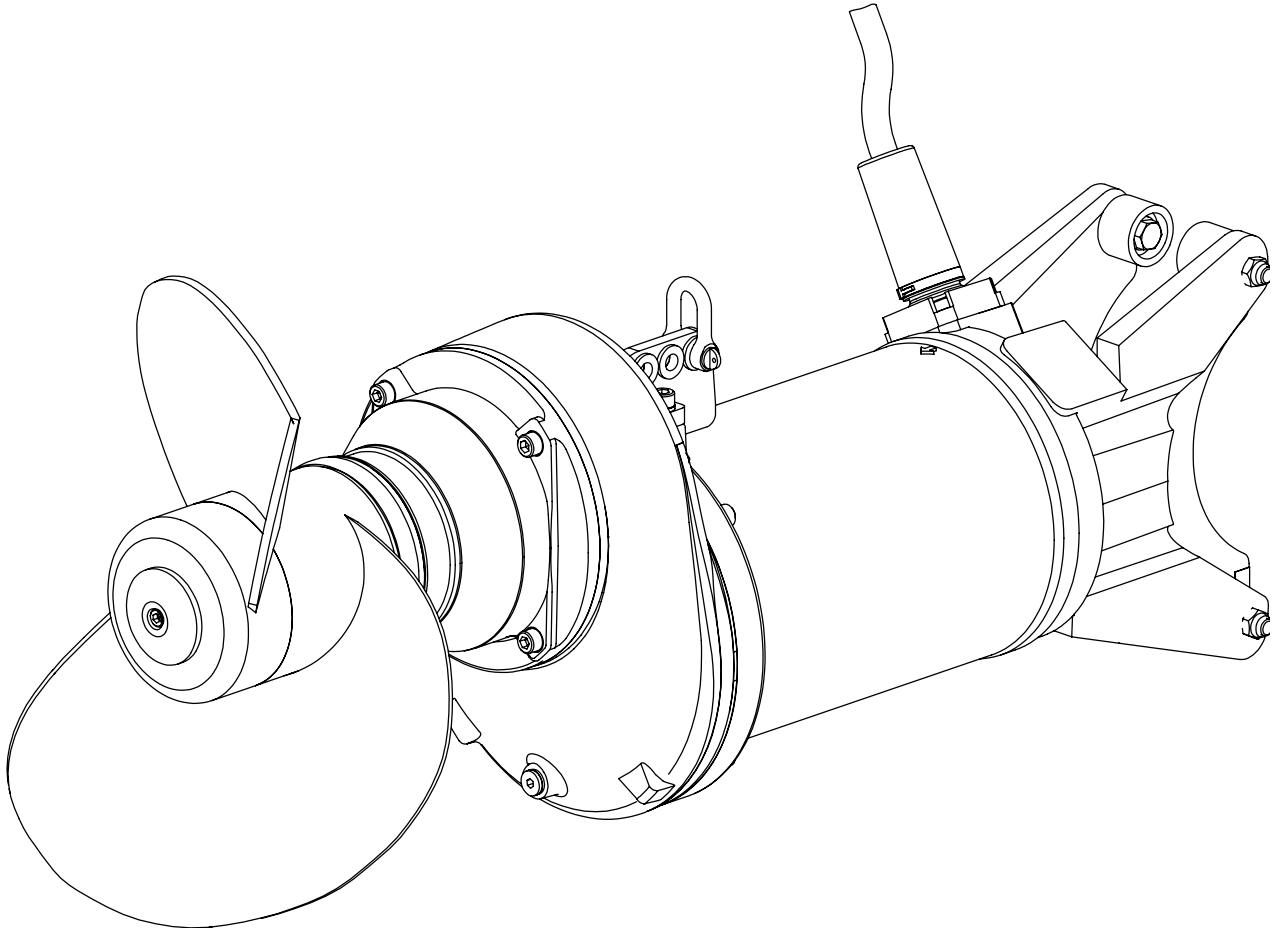
Weight: Includes pump, slider bracket and 10m cable
 Gewicht: Beinhaltet Pumpe, Halterung und 10m Kabel
 Poids: Pompe, coulisseau et 10m de câble



* Guideline value: Minimum submergence can be lower
 Richtwert: Die Mindestüberdeckung kann geringer sein
 Valeur indiquée: la submergence minimale peut s'avérer inférieure en pratique

[mm
[inch]

Submersible Mixer Type ABS RW 480



6006184 01_2022

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1 Allgemeines

Grundsätzlich ist die Einbau- und Betriebsanleitung mit Art.-Nr. 6006183 / 6005672 (ABS Tauchmotorrührwerke RW) in großen Teilen auch für das **RW 480** gültig. Dies gilt auch für den sachgemäßen Anschluss und den sicheren Betrieb der Ex-Ausführung des RW 480. Gleiches gilt für die **Sicherheitshinweise**. Diese sind in dem separaten Heft mit der Art.-Nr. 6005591 enthalten und sind vor der Installation und Inbetriebnahme sorgfältig zu studieren!

In dieser „Zusatz“-Einbau- und Betriebsanleitung für das **ABS Tauchmotorrührwerk RW 480** sind daher nur Querverweise bzw. die abweichenden, zusätzlichen und produktspezifischen Informationen enthalten.

1.1 - 1.3 Einführung; Bestimmungsgemäße Verwendung; Einsatzgrenzen

Siehe Kapitel 1.1 - 1.3 der Einbau- und Betriebsanleitung 6006183 / 6005672.

1.4 Einsatzbereiche

Das Tauchmotorrührwerk RW 480 dient zum Mischen, Rühren und Umwälzen von zähen, feststoffhaltigen Fluiden in Kläranlagen, in der Industrie und in der Landwirtschaft. Es ist besonders für die speziellen Anforderungen bei der Homogenisierung von Schlamm und Kofermenten ausgelegt.

1.5 Typenschlüssel

Siehe Kapitel 1.5 der Einbau- und Betriebsanleitung 6006183 / 6005672. *Propellertyp = 2-Blatt-Spezialpropeller für Schlamm und Kofermente.

1.6 Technische Daten

Siehe Kapitel 1.6 der Einbau- und Betriebsanleitung 6006183 / 6005672.

1.6.1 Technische Daten RW 480, 50 Hz

Rührwerkstyp	Propellerdurchmesser	Drehzahl / Getriebeunter- setzung	Motortyp	Nennleistungs- aufnahme P ₁	Motornennlei- stung P ₂	Startart: Direkt (D.O.L)	Startart: Stern/ Dreieck	Nennstrom bei 400 V	Anlaufstrom bei 400 V	Kabeltyp** (Ex- und Standard)	Temperatu- rüberwachung	Dichtungsü- berwachung	Ex dII BT4	Führungsrohr □ 100	Gesamtge- wicht
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Technische Daten RW 480, 60 Hz

Rührwerkstyp	Propellerdurchmesser	Drehzahl / Getriebeunter- setzung	Motortyp	Nennleistungs- aufnahme P ₁	Motornennlei- stung P ₂	Startart: Direkt (D.O.L)	Startart: Stern/ Dreieck	Nennstrom bei 460 V	Anlaufstrom bei 460 V	Kabeltyp** (Ex- und Standard)	Temperatu- rüberwachung	Dichtungsü- berwachung	Ex dII BT4	Führungsrohr □ 100	Gesamtge- wicht
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Leistungsaufnahme; P₂ = Leistungsabgabe; • = Standard; ○ = Option; **Kabeltyp: 10 m Kabel mit freiem Kabelende sind Standardlieferumfang; 2 = 1 x 10G x 1.5

1.7 Abmessungen und Gewichte

Siehe Kapitel 1.7 der Einbau- und Betriebsanleitung 6006183 / 6005672.

1.7.1 Baumaße RW 480

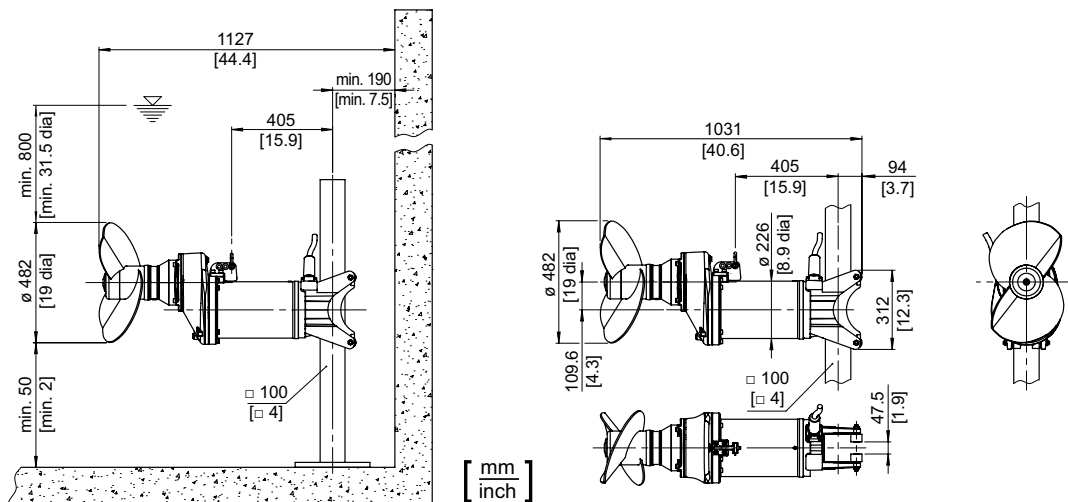


Bild 1 Baumaße RW 480

0551-0042

1.8 Typenschild

Siehe Kapitel 1.8 der Einbau- und Betriebsanleitung 6006183 / 6005672.

2 - 3 Sicherheit; Transport und Lagerung

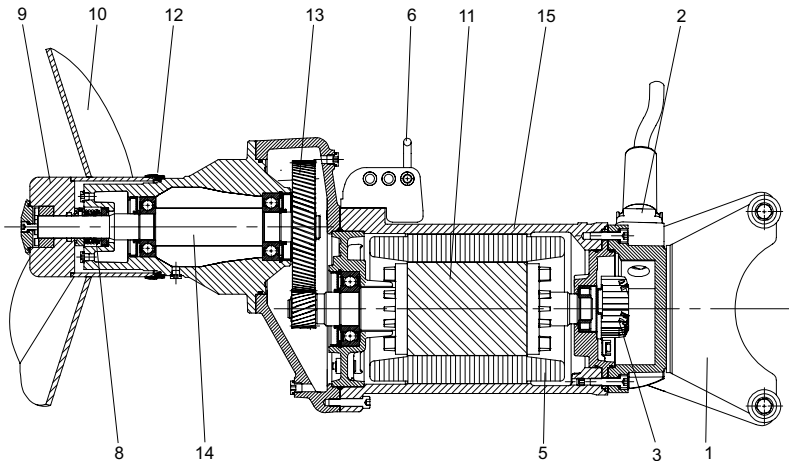
Siehe Kapitel 2 - 3 der Einbau- und Betriebsanleitung 6006183 / 6005672.

4 Produktbeschreibung

4.1 Beschreibung allgemein

Siehe Kapitel 4.1 der Einbau- und Betriebsanleitung 6006183 / 6005672.

4.2 Konstruktiver Aufbau RW 480



0551-0043

Legende

- 1 Halterung
- 2 Kabeleinführung
- 3 Anschlußraum
- 4 Propellerwelle
- 5 Motorwicklung
- 6 Halterung mit Schäkel
- 7 Motorgehäuse
- 8 Gleitringdichtung
- 9 Propellernabe / Propeller
- 10 Getriebe
- 11 Welleneinheit mit Rotor und Lagern
- 12 SD - Ring

Bild 2 RW 480

4.3 Betrieb an Frequenzumrichtern

Siehe Kapitel 4.5 der Einbau- und Betriebsanleitung 6006183 / 6005672.

5 Installation

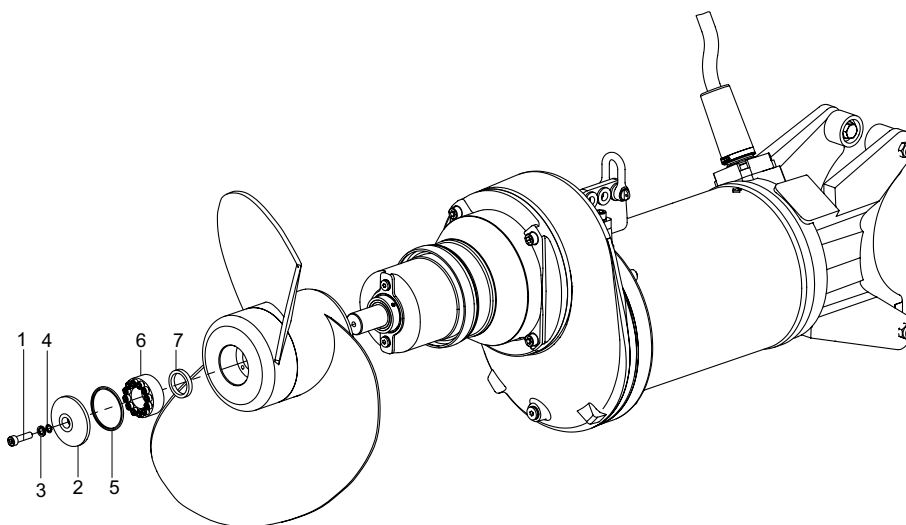
Siehe Kapitel 5 der Einbau- und Betriebsanleitung 6006183 / 6005672.

5.1 Installation RW 480

Siehe Kapitel 5.1 der Einbau- und Betriebsanleitung 6006183 / 6005672.

5.2 Propellermontage RW 480

Konstruktionsbedingt unterscheidet sich die Propellerbefestigung von den anderen Aggregaten der RW/RCP bzw. SB-KA Baureihe. Der Propeller der RW 480 ist mit einem gekapselten Spannsatz befestigt.



0551-0044

Legende

- 1 Zylinderschraube
- 2 Propellerscheibe
- 3 Sicherungsscheiben
- 4 O-Ring (Zylinderschraube)
- 5 O-Ring (Propellerscheibe)
- 6 Spannsatz
- 7 O-Ring (Nabe)

Bild 3 Propellermontage/-demontage

Demontage

- Zylinderschraube (3/1) mit Sicherungsscheiben (3/3), O-Ring (3/4), Propellerscheibe (3/2) und O-Ring (3/5) demontieren.
- Schrauben des Spannsatzes (3/6) lösen und Propeller zusammen mit dem Spannsatz abziehen. O-Ring (3/7) aus der Nut entfernen.

Montage

- Welle und Nabe reinigen. Neuen O-Ring (3/7) in die Nut der Nabe einsetzen, Welle und Spannsatz (3/6) leicht ölen.

ACHTUNG Keine Öle verwenden, die Molybdän-Schwefelkohlenstoff enthalten!

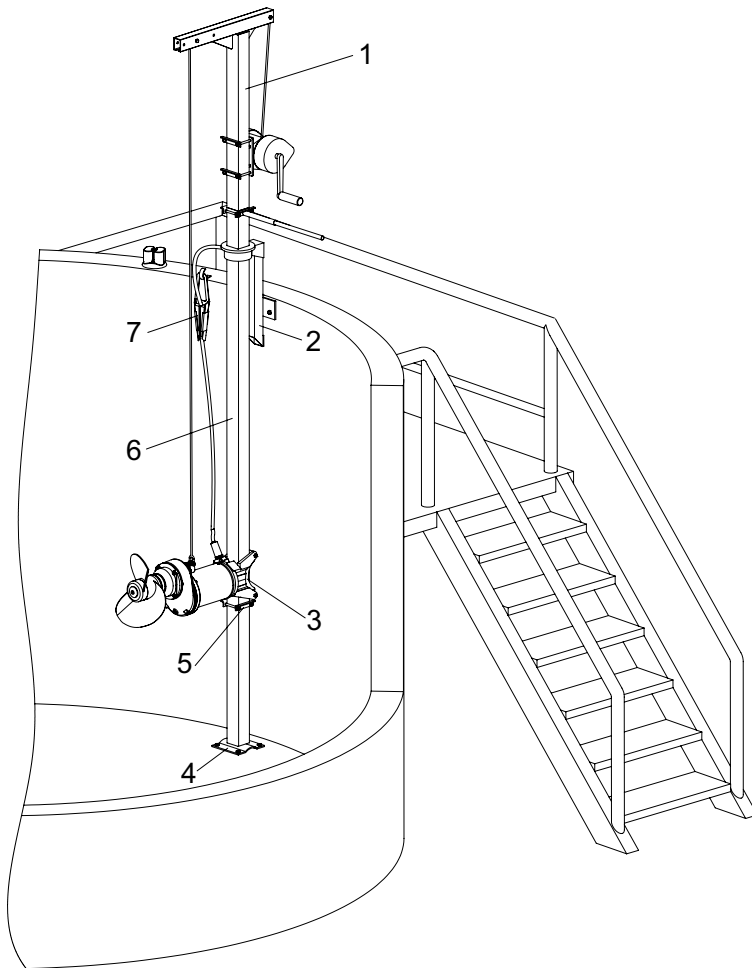
- Schraube des Spannsatzes erst über Kreuz leicht anziehen.
- Schrauben des Spannsatzes über Kreuz mit **16 Nm** festziehen. Anschließend Anzugsmoment im Uhrzeigersinn umlaufend überprüfen.
- Sicherungsscheiben (3/3) zusammen mit O-Ring (3/4), Propellerscheibe (3/2) und O-Ring (3/5) auf Zylinderschraube (3/1) stecken und mit **17 Nm** anziehen.

5.3 Anzugsmomente

Siehe Kapitel 5.3 der Einbau- und Betriebsanleitung 6006183 / 6005672.

5.4 Installationsbeispiel RW 480

Für diese Installation wird empfohlen, die geschlossene Halterung zu verwenden.



0551-0045

Legende

- 1 Hebegalgen
- 2 Oberer Haltebock
- 3 Halterung geschlossen
- 4 Bodenlager
- 5 Sicherheitsklemmanschlag
- 6 Drehbares Vierkantleitrohr
- 7 Abspannklemme mit Kabelhaken

Bild 4 Installationsbeispiel RW 480

5.5 Halterungen RW/SB-KA

Siehe Kapitel 5.5 der Einbau- und Betriebsanleitung 6006183 / 6005672.

5.6 Führungsrohrängen (Vierkantleitrohr) RW/SB-KA

Siehe Kapitel 5.6 der Einbau- und Betriebsanleitung 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Elektrischer Anschluß

Siehe Kapitel 5.8 der Einbau- und Betriebsanleitung 6006183 / 6005672. Siehe Bild 33. Kapitel 5.8.3 ist nicht relevant für RW 480.

6 - 7 Inbetriebnahme; Wartung

Siehe Kapitel 6 - 7 der Einbau- und Betriebsanleitung 6006183 / 6005672.

1 General

Basically the main parts of the installation and operating instructions with part no. 6006183 / 6005672 (ABS submersible mixer RW) are also valid for **RW 480**. This also applies if the RW 480 model Ex is connected correctly and operated in safe mode. Same applies for the **Safety instructions**. These are included in the separate booklet 6005591 and have to be studied carefully before installation and commissioning!

These additional installation and operating instructions for ABS submersible mixer RW 480 contain only cross-references e.g. the differing, additional and product-specific information.

1.1 - 1.3 Introduction; Correct usage of the product; Application restrictions

See chapter 1.1 - 1.3 of the Installation and Operating Instructions 6006183 / 6005672.

1.4 Application areas

The submersible mixer RW 480 is used for mixing, stirring and agitating of viscous fluids containing solids in sewage treatment plants, industry, and agriculture. It is specifically designed for the major mixing functions during homogenization of sludge and coenzymes.

1.5 Identification code

See chapter 1.5 of the Installation and Operating Instructions 6006183 / 6005672. *Propeller type = 2-blade special propeller for sludge and coenzymes.

1.6 Technical data

See chapter 1.6 of the Installation and Operating Instructions 6006183 / 6005672.

1.6.1 Technical data RW 480, 50 Hz

Mixer type	Propeller diameter	Speed / Gear ratio	Motor type	Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 400 V	Starting current at 400 V	Cable type** (Ex- and standard)	Temperature monitoring	Seal monitoring	Ex dII BT4	Guide tube 100	Total weight
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3.3	A 75/4	8.66	7.5		•	14.84	93.9	2	•	•	○	•	163
RW 4812	480	467/3.1	A 75/4	8.66	7.5		•	14.84	93.9	2	•	•	○	•	163
RW 4813	480	493/3.0	A 75/4	8.66	7.5		•	14.84	93.9	2	•	•	○	•	163
RW 4814	480	517/2.8	A 110/4	13.0	11.0		•	21.85	103.4	2	•	•	○	•	169
RW 4815	480	554/2.6	A 110/4	13.0	11.0		•	21.85	103.4	2	•	•	○	•	169

1.6.2 Technical data RW 480, 60 Hz

Mixer type	Propeller diameter	Speed / Gear ratio	Motor type	Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 460 V	Starting current at 460 V	Cable type** (Ex- and standard)	Temperature monitoring	Seal monitoring	Ex dII BT4	Guide tube 100	Total weight
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	503/3.5	A 90/4	10.2	9.0		•	15.32	103	2	•	•		•	163
RW 4812	480	535/3.3	A 90/4	10.2	9.0		•	15.32	103	2	•	•		•	163
RW 4813	480	561/3.1	A 130/4	15.0	13.0		•	21.88	119.9	2	•	•		•	169

P₁ = Power input; P₂ = Power output; • = Standard; ○ = Option; **Cable type: 10 m cable with free ends as standard; 2 = 1 x 10G x 1.5

1.7 Dimensions and weights

See chapter 1.7 of the Installation and Operating Instructions 6006183 / 6005672.

1.7.1 Dimensions RW 480

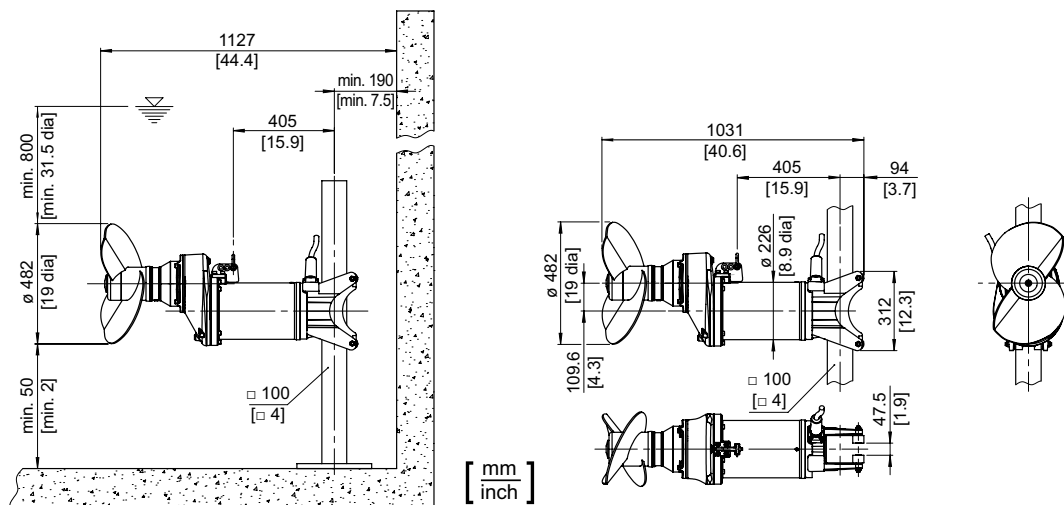


Figure 1 Dimensions RW 480

1.8 Nameplate

See chapter 1.8 of the Installation and Operating Instructions 6006183 / 6005672.

2 - 3 Safety; Transport and storage

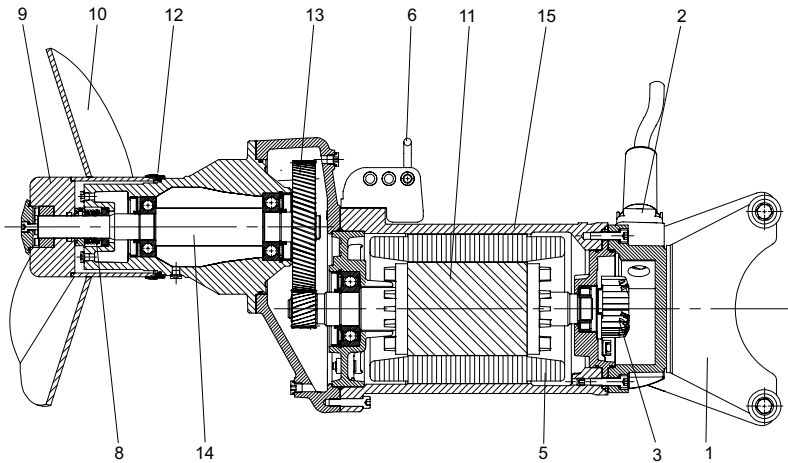
See chapter 2 - 3 of the Installation and Operating Instructions 6006183 / 6005672.

4 Product description

4.1 General description

See chapter 4.1 of the Installation and Operating Instructions 6006183 / 6005672.

4.2 Structural design RW 480



- 0551-0043
- Legend**
- 1 Bracket
 - 2 Cable inlet
 - 3 Connection chamber
 - 4 Propeller shaft
 - 5 Stator
 - 6 Bracket with shackle
 - 7 Motor housing
 - 8 Mechanical seal
 - 9 Propeller boss / Propeller
 - 10 Gear
 - 11 Shaft unit with rotor and bearings
 - 12 SD - ring

Figure 2 RW 480

4.3 Operation with frequency inverters

See chapter 4.5 of the Installation and Operating Instructions 6006183 / 6005672.

5 Installation

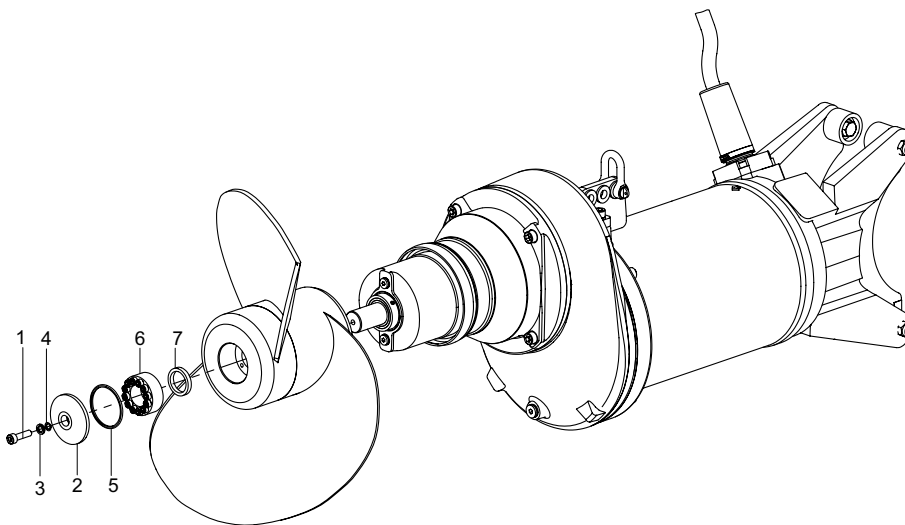
See chapter 5 of the Installation and Operating Instructions 6006183 / 6005672.

5.1 Installation RW 480

See chapter 5.1 of the Installation and Operating Instructions 6006183 / 6005672.

5.2 Propeller assembly RW 480

The propeller fixing differs from all other units of RW/RCP and SB-KA series due to design. The propeller of the RW 480 is fixed with an encapsulated clamping element.



- 0551-0044
- Legend**
- 1 Socket head screw
 - 2 Propeller washer
 - 3 Lock washers
 - 4 O-ring (socket head screw)
 - 5 O-ring (propeller washer)
 - 6 Clamping element
 - 7 O-ring (boss)

Figure 3 Propeller assembly / dismantling

Dismantling

- Dismantle socket head screw (3/1) with lock washers (3/3), o-ring (3/4), propeller washer (3/2) and o-ring (3/5).

- Loosen the screws of the clamping element (3/6) and withdraw the propeller together with the clamping element. Remove o-ring (3/7) out of groove.

Assembly

- Clean carefully the shaft and boss. Insert new o-ring (3/7) into the boss groove and lightly oil the shaft and clamping element (3/6).

ATTENTION **Do not use any products containing molybdenum disulphide!**

- Evenly / slightly tighten the screws of the clamping element in a crosswise sequence.
- Finally tighten fully going from side to side with a tightening torque of **16 Nm**. Then check tightening torque in a crosswise sequence.
- Put lock washers (3/3) together with o-ring (3/4), propeller washer (3/2) and o-ring (3/5) on socket head screw (3/1) and tighten with **17 Nm**.

5.3 **Tightening torque**

See chapter 5.3 of the Installation and Operating Instructions 6006183 / 6005672.

5.4 **Installation example RW 480**

We recommend that the closed bracket be used for this type of installation

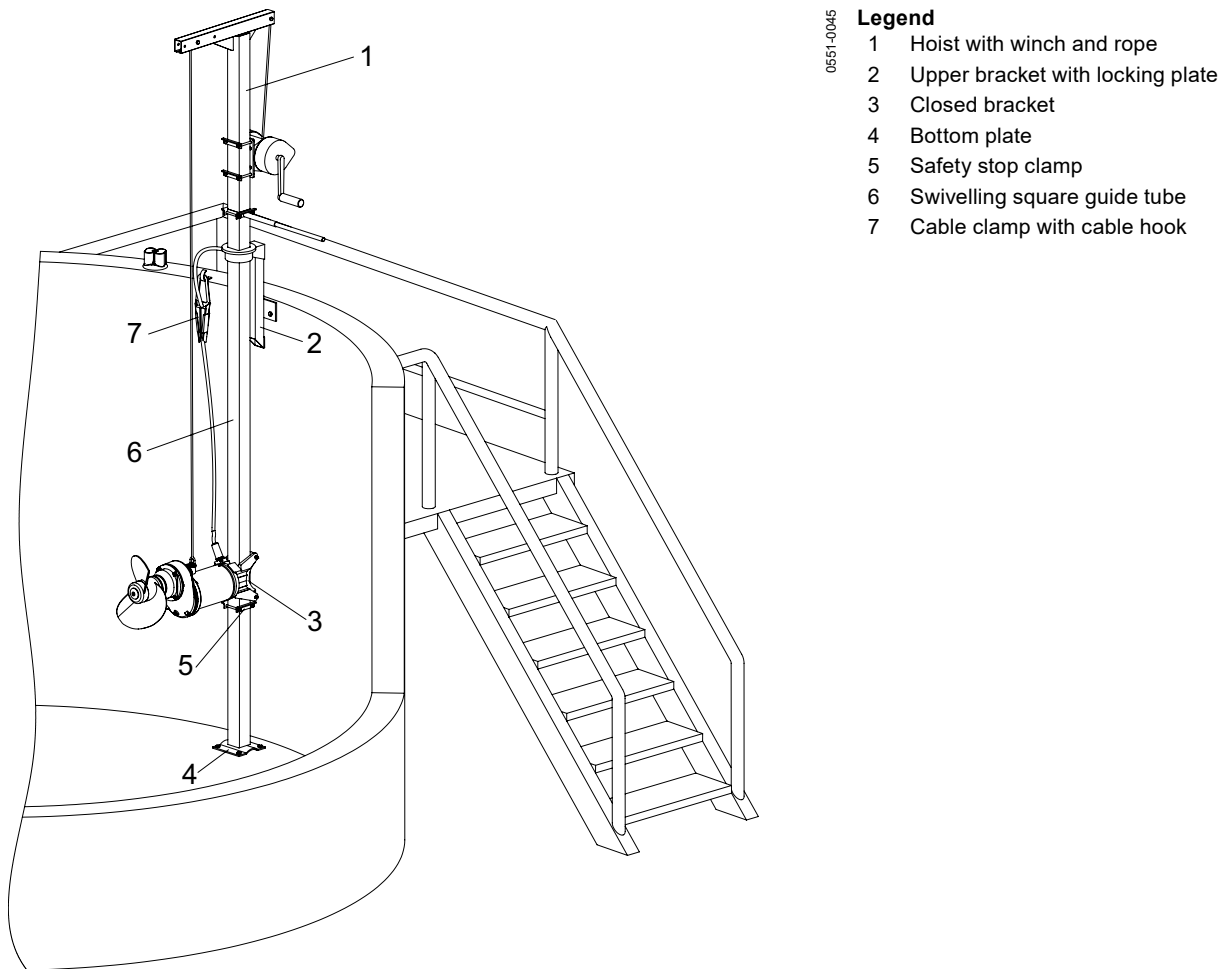


Figure 4 Installation example RW 480

5.5 **Brackets RW/SB-KA**

See chapter 5.5 of the Installation and Operating Instructions 6006183 / 6005672.

5.6 **Guide tube lengths (square tube) RW/SB-KA**

See chapter 5.6 of the Installation and Operating Instructions 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 **Electrical connection**

See chapter 5.8 of the Installation and Operating Instructions 6006183 / 6005672. See figure 33. Chapter 5.8.3 is not relevant to RW 480.

6 - 7 **Commisioning; Maintenance**

See chapter 6 - 7 of the Installation and Operating Instructions 6006183 / 6005672.

1 Généralités

De manière générale, la notice de montage et d'utilisation, réf. 6006183 / 6005672 (ABS agitateurs à moteur submersible RW) est également valable pour le modèle **RW 480**. Ceci vaut également pour le raccordement conforme et le fonctionnement sûr du modèle Ex du RW 480. Il en est de même pour les **consignes de sécurité**. Celles-ci figurent dans un document séparé, réf. 6005591, et doivent être soigneusement étudiées avant l'installation et la mise en service !

Cette **notice de montage et d'utilisation « supplémentaire » pour l'agitateur à moteur submersible ABS RW 480** comprend en outre uniquement des références croisées ou des informations dérivées, supplémentaires et spécifiques au produit.

1.1 - 1.3 Introduction; Utilisation conforme; Limites d'utilisation des unités

Voir Chapitre 1.1 - 1.3 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

1.4 Domaines d'application

L'agitateur à moteur submersible RW 480 sert à mélanger, agiter et brasser les fluides visqueux et solides dans les stations d'épuration, dans l'industrie et dans l'agriculture. Il a été spécialement conçu pour les exigences spéciales en matière d'homogénéisation de la boue et des co-ferments/co-substrats.

1.5 Codes de types

Voir Chapitre 1.5 de l'Instructions de montage et d'utilisation 6006183 / 6005672. *Type d'hélice = Hélice spéciale 2-pales pour la boue et les co-ferments/co-substrats.

1.6 Caractéristiques techniques

Voir Chapitre 1.6 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

1.6.1 Caractéristiques techniques RW 480, 50 Hz

Type d'agitateur	Diamètre d'hélice	Vitesse / Réducteur	Type de moteur	Puissance nominale absorbée P ₁	Puissance nominale du moteur P ₂	Type de démarrage : direct (D.O.L)	Type de démarrage : étoile / triangle	Courant nominal à 400 V	Courant de démarrage à 400 V	Type de câble** (Ex-et standard)	Contrôle de température	Contrôle de l'étanchéité	Ex dII BT4	Tube de guidage □ 100	Poids total
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Caractéristiques techniques RW 480, 60 Hz

Type d'agitateur	Diamètre d'hélice	Vitesse / Réducteur	Type de moteur	Puissance nominale absorbée P ₁	Puissance nominale du moteur P ₂	Type de démarrage : direct (D.O.L)	Type de démarrage : étoile / triangle	Courant nominal à 460 V	Courant de démarrage à 460 V	Type de câble** (Ex-et standard)	Contrôle de température	Contrôle de l'étanchéité	Ex dII BT4	Tube de guidage □ 100	Poids total
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Puissance absorbée; P₂ = Puissance débitée; • = Standard; ○ = Option; **Type de câble: 10 m de câble avec extrémité libre font partie de la fourniture standard: 2 = 1 x 10G x 1.5

1.7 Dimensions et poids

Voir Chapitre 1.7 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

1.7.1 Dimensions RW 480

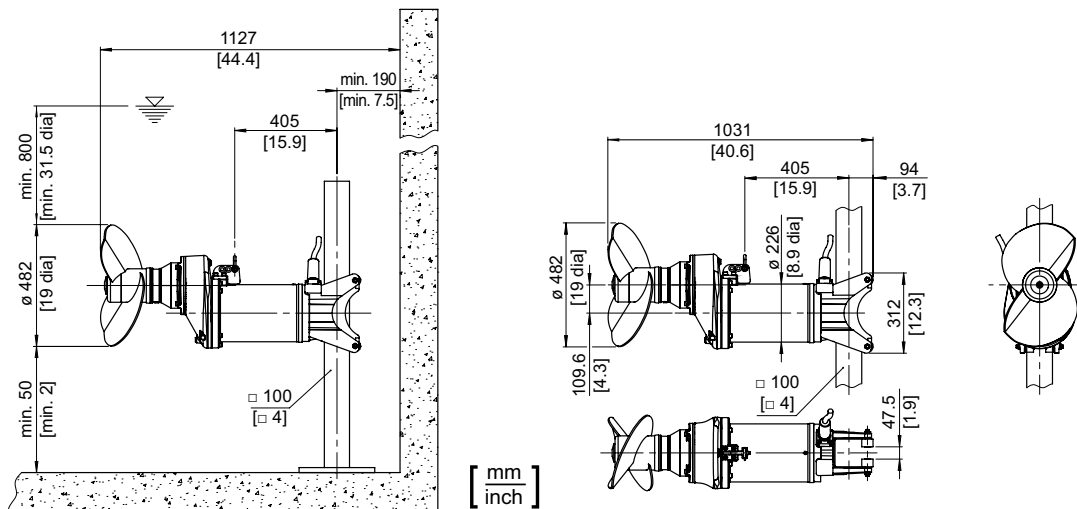


Figure 1 Dimensions RW 480

1.8 Plaque signalétique de type

Voir Chapitre 1.8 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

2 - 3 Sécurité; Transport et mise en place

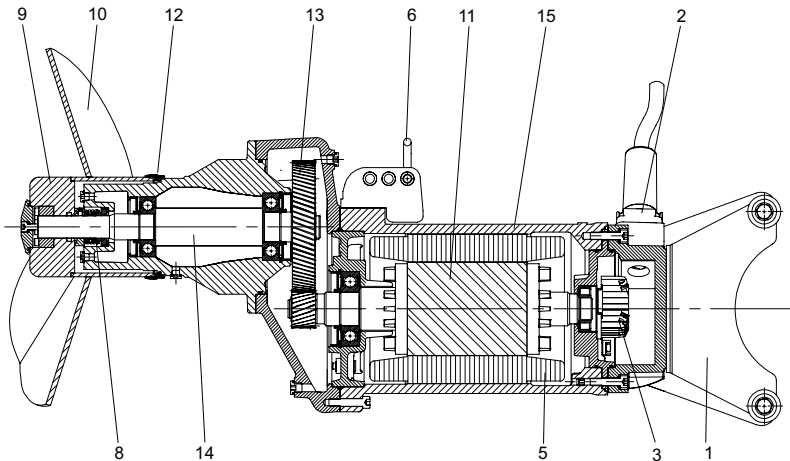
Voir Chapitre 2 - 3 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

4 Description du produit

4.1 Description générale

Voir Chapitre 4.1 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

4.2 Conception RW 480



0551-0043

Légende

- 1 Fixation
- 2 Entrée de câble
- 3 Logement de raccordement
- 4 Arbre de propulseur
- 5 Bobine de moteur
- 6 Support avec manille
- 7 Carter-moteur
- 8 Garniture mécanique
- 9 Moyeu d'hélice / Hélice
- 10 Engrenage
- 11 Unité d'arbre avec rotor et paliers
- 12 Bague SD

Figure 2 RW 480

4.3 Fonctionnement avec convertisseurs de fréquence

Voir Chapitre 4.5 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

5 Installation

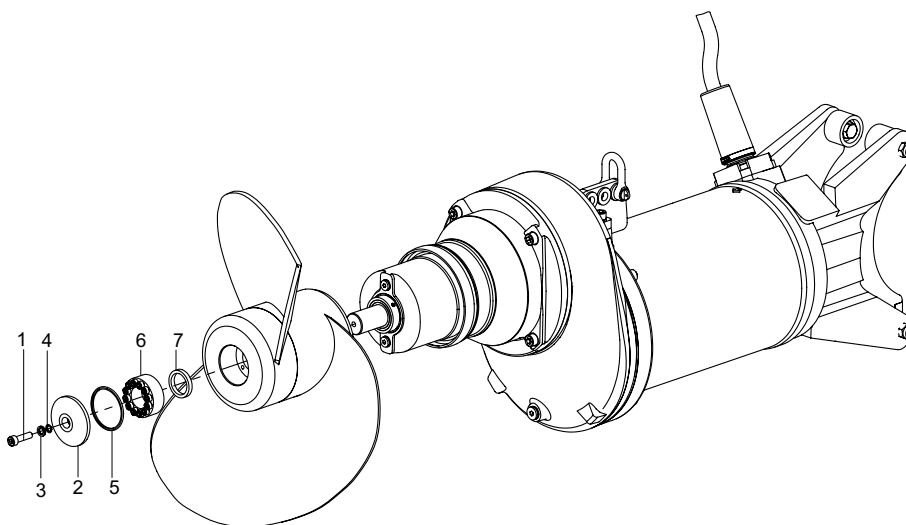
Voir Chapitre 5 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

5.1 Installation RW 480

Voir Chapitre 5.1 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

5.2 Montage de l'hélice RW 480

Selon la construction, la fixation de l'hélice se différencie des autres groupes de la série RW/RCP ou SB-KA. L'hélice de RW 480 est fixée à l'aide d'un manchon de serrage encapsulé.



0551-0044

Légende

- 1 Vis à tête
- 2 Rondelle de l'hélice
- 3 Rondelles d'arrêt
- 4 Joint torique (Vis à tête)
- 5 Joint torique (Rondelle de l'hélice)
- 6 Manchon de serrage
- 7 Joint torique (Moyeu)

Figure 3 Montage / Démontage de l'hélice

Démontage

- Desserrer la vis à tête cylindrique (3/1) avec les rondelles d'arrêt (3/3), le joint torique (3/4), la rondelle de l'hélice (3/2) et le joint torique (3/5).

- Desserrer les vis du manchon de serrage (3/6) et retirer l'hélice avec le manchon de serrage. Retirer le joint torique (3/7) de l'écrou.

ATTENTION *N'utiliser aucune huile contenant du sulfure de carbone au molybdène !*

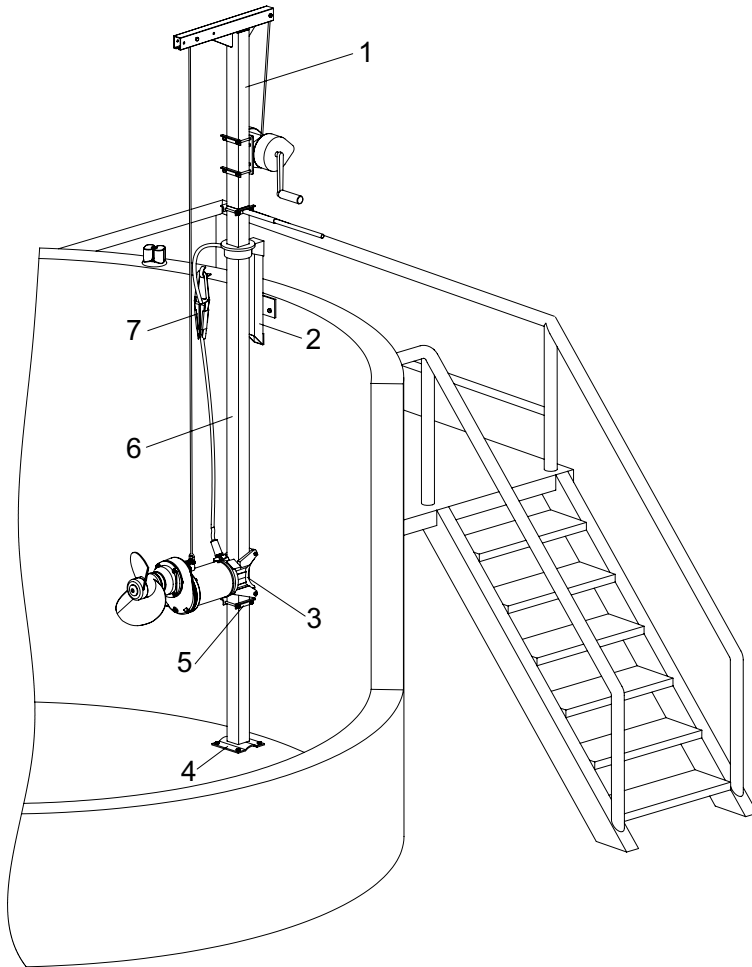
- Serrer légèrement la vis du manchon de serrage en croix.
- Serrer les vis du manchon de serrage en croix selon une force de **16 Nm**. Puis, vérifier que le serrage a lieu dans le sens des aiguilles d'une montre.
- Placer les rondelles d'arrêt (3/3) avec le joint torique (3/4), la rondelle de l'hélice (3/2) et le joint torique (3/5) sur la vis à tête cylindrique (3/1) et serrer selon un couple de **17 Nm**.

5.3 Couple des serrage

Voir paragraphe 5.3 d'Instructions de montage et d'utilisation 6006183 / 6005672.

5.4 Exemple d'installation RW 480

Pour ce type d'installation nous recommandons d'utiliser la fixation fermée



Légende

- 1 Potence de levage avec treuil et câble
- 2 Support de fixation supérieur
- 3 Fixation fermée
- 4 Logement inférieur
- 5 Butée de serrage de sécurité
- 6 Tube de guidage carré orientable
- 7 Pince d'extrémité avec crochet de câble

0551-0045

Figure 4 Exemple d'installation RW 480

5.5 Fixations RW/SB-KA

Voir Chapitre 5.5 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

5.6 Longueurs des tubes de guidage (tube de guidage carré) RW/SB-KA

Voir Chapitre 5.6 de l'Instructions de montage et d'utilisation 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Connexions électriques

Voir Chapitre 5.8 de l'Instructions de montage et d'utilisation 6006183 / 6005672. Voir figure 33. Le Chapitre 5.8.3 ne s'applique pas au RW 480.

6 - 7 Mise en service; Entretien

Voir Chapitre 6 - 7 de l'Instructions de montage et d'utilisation 6006183 / 6005672.

1 Informazioni generali

Sostanzialmente le istruzioni di montaggio e d'uso dell'Art. Nr. 6006183 / 6005672 (ABS agitatori a motore sommerso RW) valgono in gran parte anche per l'agitatore **RW 480**. Lo stesso vale per il corretto collegamento e il funzionamento sicuro dell'RW 480 in esecuzione per atmosfere a rischio di esplosione. Lo stesso dicasi per le **avvertenze di sicurezza**. Queste sono contenute in un opuscolo separato con l'Art. Nr. 6005591 e debbono essere lette e studiate attentamente prima dell'installazione e della messa in funzione!

Nel presente "**Supplemento**" delle istruzioni montaggio e d'uso per l' **ABS agitatori a motore sommerso RW 480** sono quindi contenuti solo rimandi nonché informazioni supplementari e specifiche del prodotto.

1.1 - 1.3 Introduzione; Utilizzo conforme; Limiti d'impiego

Vedere capitolo 1.1 - 1.3 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

1.4 Campi d'applicazione

L'agitatore a motore sommerso RW 480 serve per mescolare, girare e rimestare fluidi densi contenenti sostanze solide presenti negli impianti di depurazione, in uso nell'industria e nell'agricoltura. Esso è stato progettato appositamente per soddisfare le particolari richieste di omogenizzazione di fanghi e cofermenti/substrati.

1.5 Codici identificativi

Vedere capitolo 1.5 delle istruzioni di montaggio e d'uso 1 597 0832-EU/0833-EU. *Tipo elica = Elica speciale a 2 pale per fanghi e cofermenti/substrati.

1.6 Dati tecnici

Vedere capitolo 1.6 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

1.6.1 Dati tecnici RW 480, 50 Hz

Tipo miscelatore	Diametro elica	Numero di giri / Riduzione	Tipo motore	Assorbimento di potenza nominale P ₁	Potenza nominale motore P ₂	Tipo di avviamento: Diretto (D.O.L.)	Tipo di avviamento: stella/triangolo	Corrente nominale a 400 V	Corrente di avviamento a 400 V	Tipo di cavo** (antideflagrante e standard)	Monitoraggio temperatura	Monitoraggio tenuta stagna	Ex dII BT4	Guida tubolare □ 100	Peso complessivo
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5	•	•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5	•	•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5	•	•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0	•	•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0	•	•	21,85	103,4	2	•	•	○	•	169

1.6.2 Dati tecnici RW 480, 60 Hz

RW 4811	480	503/3,5	A 90/4	10,2	9,0	•	•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0	•	•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0	•	•	21,88	119,9	2	•	•		•	169

P₁ = Potenza assorbita; P₂ = Potenza erogata; • = Standard; ○ = Optional; **Tipo di cavo: la dotazione standard prevede cavi da 10 m con estremità cavo libera: 2 = 1 x 10G x 1.5

1.7 Dimensione e peso

Vedere capitolo 1.7 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

1.7.1 Dimensioni RW 480

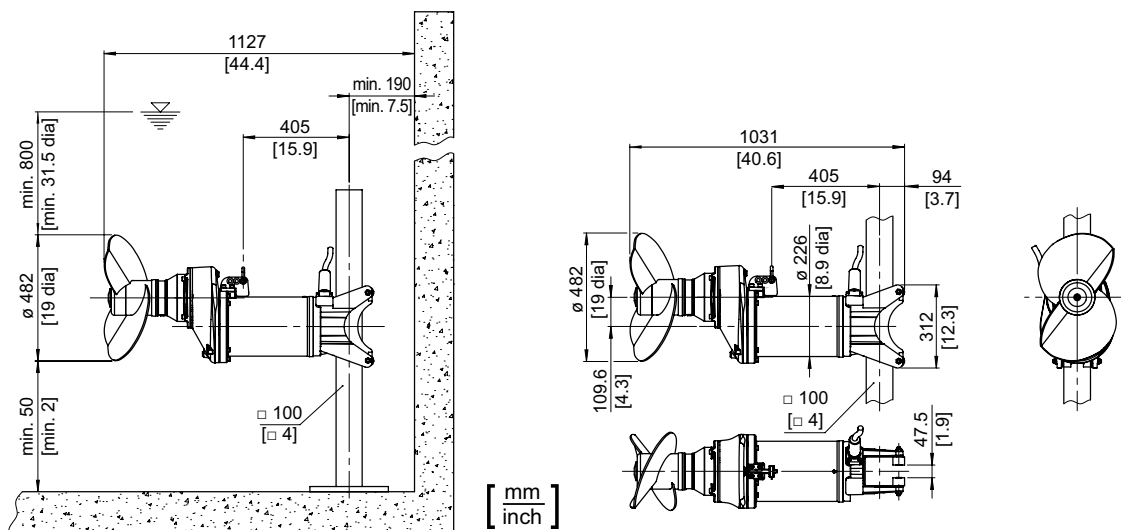


Fig. 1 Dimensioni RW 480

1.8 Targhetta identificativa

Vedere capitolo 1.8 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

2 - 3 Sicurezza; Trasporto e immagazzinaggio

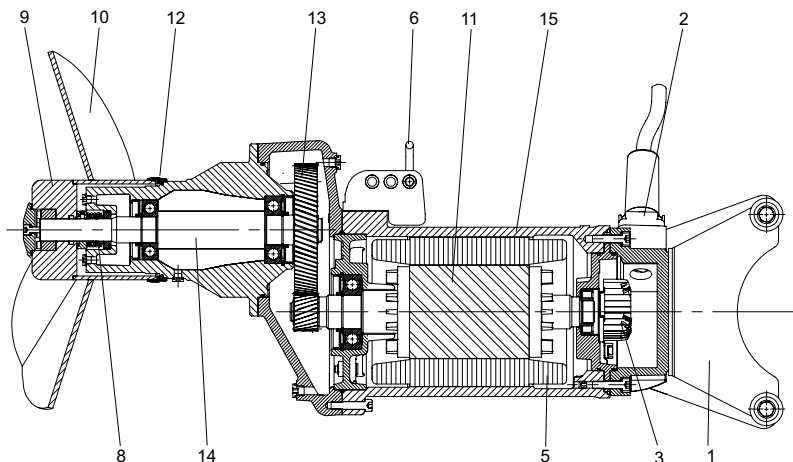
Vedere capitolo 2 - 3 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

4 Descrizione del prodotto

4.1 Descrizione in genere

Vedere capitolo 4.1 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

4.2 Struttura costruttiva RW 480



0551-0043

Legenda

- 1 Supporto
- 2 Introduzione cavo
- 3 Zona di collegamento
- 4 Albero elica
- 5 Avvolgimento motore
- 6 Supporto con maniglia
- 7 Corpo motore
- 8 Guarnizione ad anello scorrevole
- 9 Mozzo dell'elica / Elica
- 10 Riduzione
- 11 Unità albero con rotore e cuscinetti
- 12 Anello SD

Fig. 2 RW 480

4.3 Esercizio su convertitori di frequenza

Vedere capitolo 4.5 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

5 Installazione

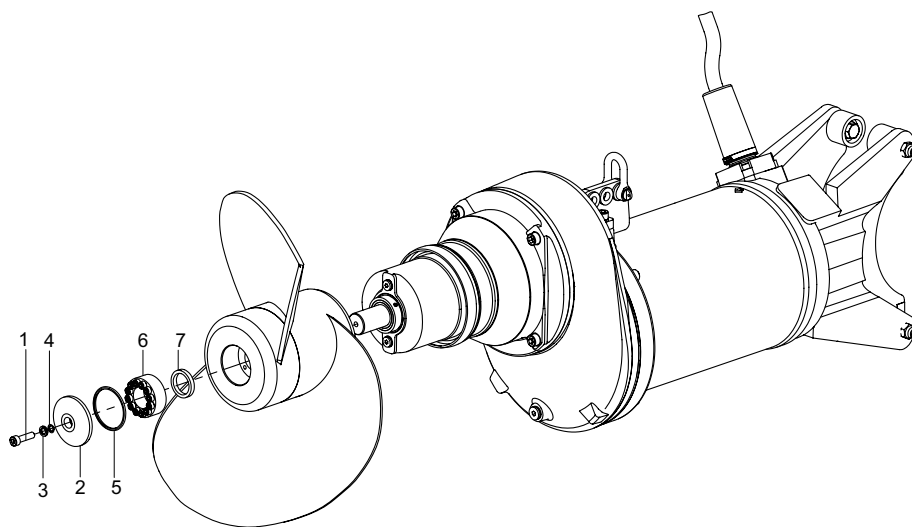
Vedere capitolo 5 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

5.1 Installazione RW 480

Vedere capitolo 5.1 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

5.2 Montaggio dell'elica RW 480

Per esigenze costruttive il fissaggio dell'elica si distingue dagli altri gruppi motore della serie RW/RCP e SB-KA. L'elica del RW 480 è fissata per mezzo di una ghiera incapsulata.



0551-0044

Legenda

- 1 Vite a testa cilindrica
- 2 Disco dell'elica
- 3 Rondelle di sicurezza
- 4 O-Ring (vite a testa cilindrica)
- 5 O-Ring (disco dell'elica)
- 6 Ghiera
- 7 O-Ring (mozzo)

Fig. 3 Montaggio e smontaggio dell'elica

Smontaggio

- Smontare la vite a testa cilindrica (3/1) con rosette di sicurezza (3/3), O-ring (3/4), rondella dell'elica (3/2) e O-ring (3/5).
- Allentare del viti della ghiera (3/6) e sfilare l'elica con la ghiera. Rimuovere l' O-ring (3/7) dalla scanalatura.

Montaggio

- Pulire l'albero e il mozzo. Inserire un nuovo O-ring (3/7) nella scanalatura, oliare leggermente albero e ghiera (3/6).

ATTENZIONE Non usare oli contenenti molibdeno e zolfo!

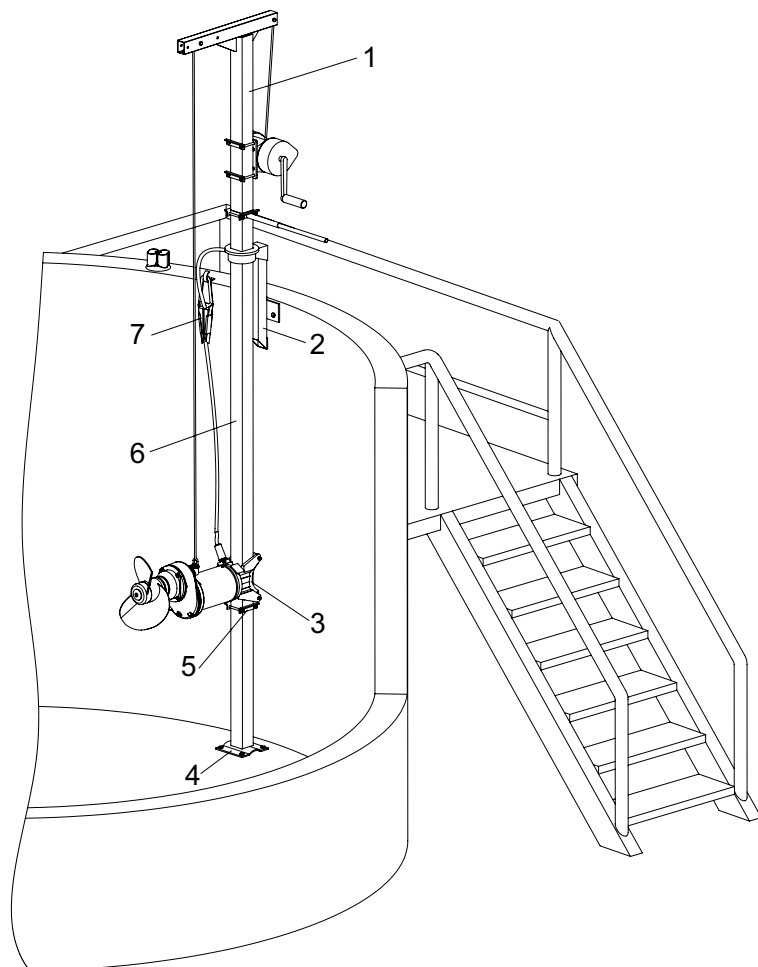
- Prima stringere leggermente le viti della ghiera procedendo a croce.
- Stringere poi le viti della ghiera applicando **16 Nm** sempre procedendo a croce. Infine controllare la coppia di serraggio procedendo in senso orario.
- Infilare le rosette di sicurezza (3/3) insieme con O-ring (3/4), rondella dell'elica (3/2) e O-ring (3/5) sulla vite a testa cilindrica (3/1) e serrare applicando **17 Nm**.

5.3 Coppie di serraggio

Vedere capitolo 5.3 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

5.4 Esempi di installazione RW 480

Per questo tipo di installazione si suggerisce di utilizzare il supporto chiuso.



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Legenda

- 1 „Braccio“ da sollevamento con verricello e cavo
- 2 Cavalletto di supporto superiore
- 3 Supporto chiuso
- 4 Cuscinetti pavimento
- 5 Finecorsa di fissaggio di sicurezza
- 6 Tubazione quadra girevole
- 7 Dispositivo di ancoraggio con cavo e gancio

Fig. 4 Esempi di installazione RW 480

5.5 Supporti RW/SB-KA

Vedere capitolo 5.5 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

5.6 Lunghezze delle guide tubolari (tubazioni quadre) RW/SB-KA

Vedere capitolo 5.6 delle istruzioni di montaggio e d'uso 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Collegamento elettrico

Vedere capitolo 5.8 delle istruzioni di montaggio e d'uso 6006183 / 6005672. Vedere Fig.33. Il capitolo 5.8.3 non è rilevante l'agitatore RW 480.

6 - 7 Messa in esercizio; Manutenzione

Vedere capitolo 6 - 7 delle istruzioni di montaggio e d'uso 6006183 / 6005672.

1 Generalidades

El manual de instrucciones de instalación y funcionamiento con nº de referencia 6006183 / 6005672 (ABS agitador sumergible RW) es también válido para los componentes principales del agitador modelo **RW 480**. Esto vale también para la conexión adecuada y el funcionamiento seguro de la variante Ex del RW 480, al igual que las **Instrucciones generales de Seguridad** cuyo documento con nº de referencia 6005591 debe estudiarse atentamente antes de la instalación y la puesta en marcha del equipo.

Estas **instrucciones "adicionales" para el agitador sumergible RW 480** corresponden a referencias cruzadas relacionada con información que sea específica, adicional o diferente para este equipo en concreto.

1.1 - 1.3 Introducción; Uso adecuado; Limitaciones

Ver apartado 1.1 - 1.3 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

1.4 Áreas de aplicación

El agitador sumergible RW 480 es idóneo para la mezcla y agitación de fluidos viscosos con contenidos sólidos en plantas de tratamiento de aguas residuales, así como en la industria y en la agricultura. Está especialmente diseñado para las principales funciones de agitación durante el proceso de homogeneización de lodos y coencimas.

1.5 Código de identificación

Ver apartado 1.5 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672. *Tipo de hélice = Hélice especial de 2 álabes para lodos y coencimas.

1.6 Datos técnicos

Ver apartado 1.6 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

1.6.1 Datos técnicos RW 480, 50 Hz

Modelo agitador	Diámetro hélice [mm]	Velocidad / Desmultiplicación [1/min]	Tipo de motor	Potencia absorbida P ₁ [kW]	Potencia en el eje P ₂ [kW]	Arranque: Directo (D.O.L.)	Arranque: Estrella/Triángul	Intensidad nominal a 400 V [A]	Intensidad de arranque a 400 V [A]	Tipo de cable** (Ex- y Standard)	Control de temperatura	Detector de humedad	Ex dII BT4	Tubo guía □ 100	Peso total [kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5	•	•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5	•	•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5	•	•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0	•	•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0	•	•	21,85	103,4	2	•	•	○	•	169

1.6.2 Datos técnicos RW 480, 60 Hz

Modelo agitador	Diámetro hélice [mm]	Velocidad / Desmultiplicación [1/min]	Tipo de motor	Potencia absorbida P ₁ [kW]	Potencia en el eje P ₂ [kW]	Arranque: Directo (D.O.L.)	Arranque: Estrella/Triángul	Intensidad nominal a 460 V [A]	Intensidad de arranque a 460 V [A]	Tipo de cable** (Ex- y Standard)	Control de temperatura	Detector de humedad	Ex dII BT4	Tubo guía □ 100	Peso total [kg]
RW 4811	480	503/3,5	A 90/4	10,2	9,0	•	•	15,32	103	2	•	•	○	•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0	•	•	15,32	103	2	•	•	○	•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0	•	•	21,88	119,9	2	•	•	○	•	169

P₁ = Potencia absorbida; P₂ = Potencia en el eje; • = Standard; ○ = Opcional; **Tipo de cable: 10 m de cable con los extremos libres incluido en el suministro standard: 2 = 1 x 10G x 1.5

1.7 Dimensiones y pesos

Ver apartado 1.7 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

1.7.1 Dimensiones RW 480

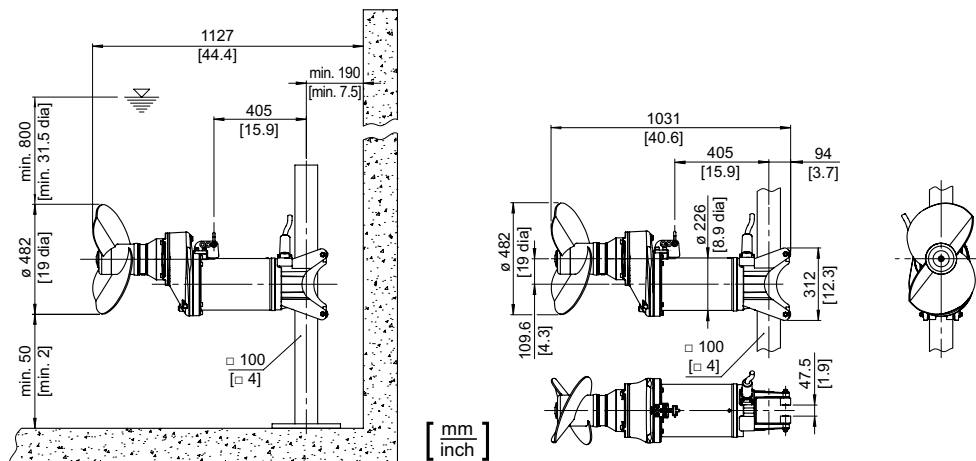


Fig. 1 Dimensiones RW 480

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1.8 Placa de características

Ver apartado 1.8 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

2 - 3 Seguridad; Transporte y almacenamiento

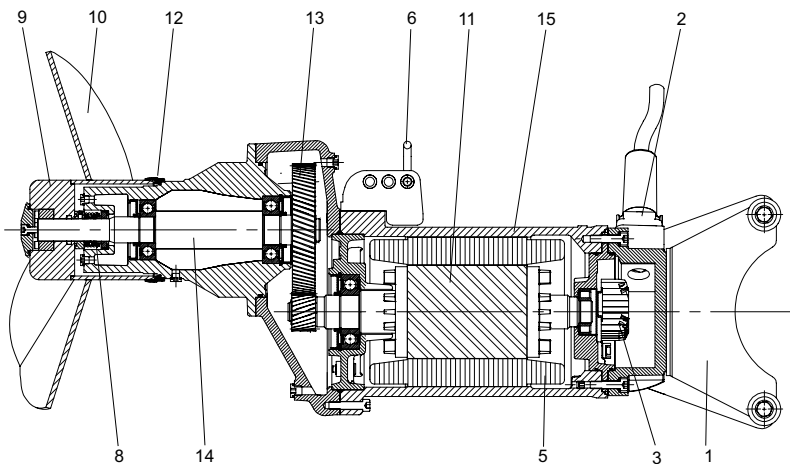
Ver apartado 2 - 3 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

4 Descripción del equipo

4.1 Descripción general

Ver apartado 4.1 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

4.2 Diseño de RW 480



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Leyenda

- 1 Soporte guía
- 2 Entrada de cable
- 3 Cámara de conexiones
- 4 Eje de la hélice
- 5 Estator
- 6 Soporte con grillete
- 7 Alojamiento del motor
- 8 Junta mecánica
- 9 Protector tornillo de la hélice / hélice
- 10 Engranaje
- 11 Eje + Rotor y rodamientos
- 12 Anillo deflector (SD)

Fig. 2 RW 480

4.3 Funcionamiento con variadores de frecuencia

Ver apartado 4.5 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672

5 Instalación

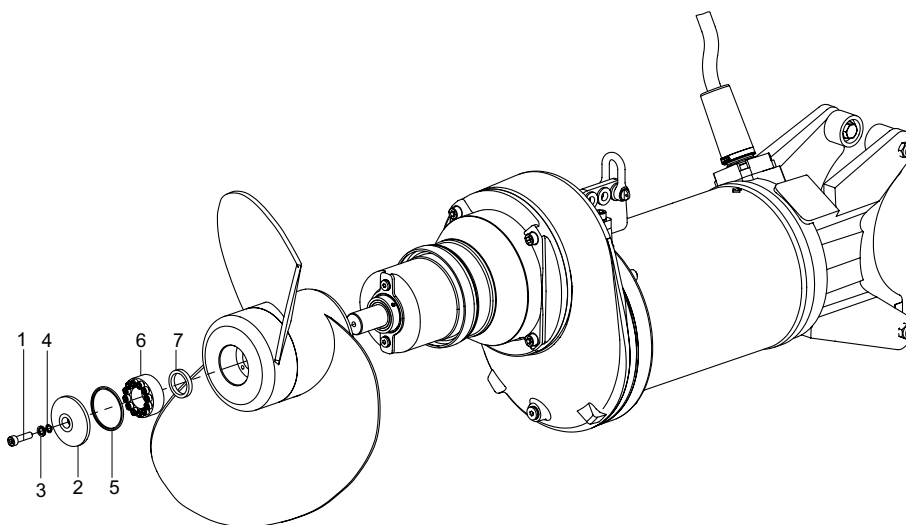
Ver apartado 5 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

5.1 Instalación RW 480

Ver apartado 5.1 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

5.2 Montaje de la hélice RW 480

Debido a su diseño de construcción, la colocación de la hélice de este modelo difiere del resto de equipos de las series RW/RCP y SB-KA. La hélice del RW 480 está asegurada con un elemento de presión encapsulado.



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Leyenda

- 1 Tornillo de cabeza hueca
- 2 Arandela de la hélice
- 3 Arandelas de bloqueo
- 4 Anillo tórico (Tornillo de cabeza hueca)
- 5 Anillo tórico (Arandelas de bloqueo)
- 6 Elemento de presión
- 7 Anillo tórico (Punta del eje)

Fig. 3 Montaje/desmontaje de la hélice

Desmontaje

- Retirar el tornillo de cabeza hueca (3/1) con las arandelas de bloqueo (3/3), el anillo tórico (3/4), la arandela de la hélice (3/2) y el anillo tórico (3/5).

- Aflojar los tornillos del elemento de presión (3/6) y extraer la hélice junto con el elemento de presión. Sacar el anillo tórico (3/7) de la hendidura.

Montaje

- Limpiar con cuidado el eje y la punta. Colocar un anillo tórico nuevo (3/7) en la hendidura y engrasar ligeramente el eje y el elemento de presión (3/6).

ATENCIÓN **¡No utilizar ningún producto que contenga bisulfuro de molibdeno!**

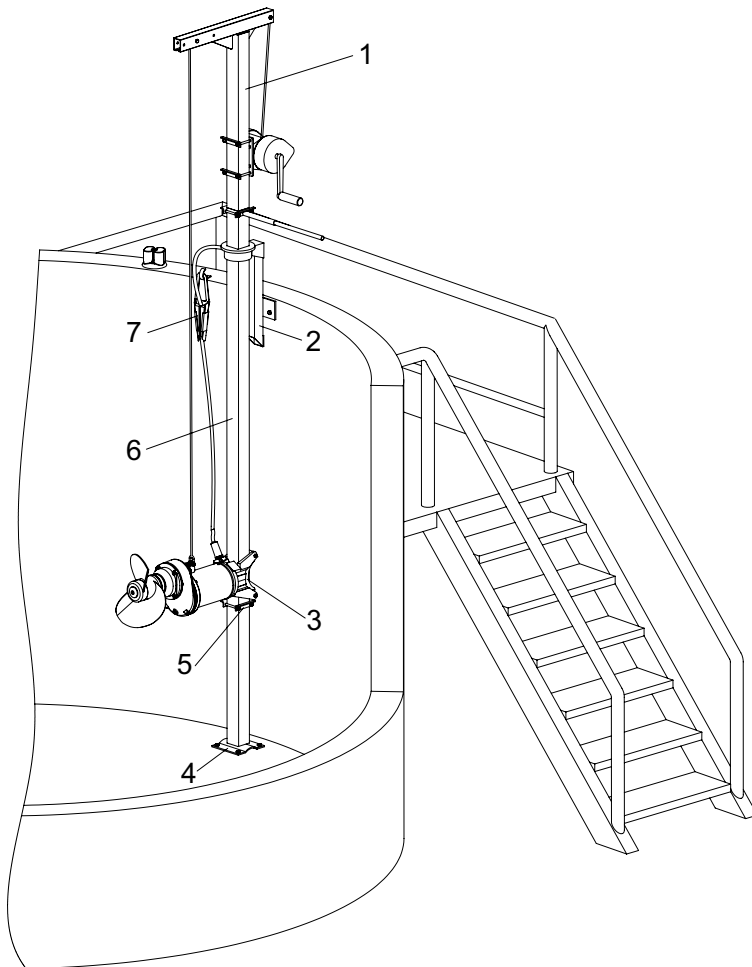
- Apretar un poco los tornillos del elemento de presión en cruz.
- Finalmente apretar fuertemente yendo de lado a lado con un par de apriete de **16 Nm**. Después, comprobar el par de apriete en cruz.
- Colocar las arandelas de bloqueo (3/3) con el anillo tórico (3/4), la arandela de la hélice (3/2) y el anillo tórico (3/5) en el tornillo de cabeza hueca (3/1) y apretar a **17 Nm**.

5.3 Pares de apriete

Ver apartado 5.3 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

5.4 Ejemplo de instalación de RW 480

Para este tipo de instalación, recomendamos la utilización del soporte guía cerrado.



0551-0045

Leyenda

- 1 Elemento de elevación con tornillo mural y cable
- 2 Soporte superior con placa de bloqueo
- 3 Soporte guía cerrado
- 4 Placa de anclaje
- 5 Tope de seguridad
- 6 Tubo guía cuadrado giratorio
- 7 Abrazadera y gancho para el cable

Fig. 4 Ejemplo de instalación de RW 480

5.5 Soportes guía para RW/SB-KA

Ver apartado 5.5 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

5.6 Longitud de los tubos guía (forma cuadrada) RW/SB-KA

Ver apartado 5.6 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Conexión eléctrica

Ver apartado 5.8 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672. Ver fig. 33. El apartado 5.8.3 no procede para el RW 480.

6 - 7 Puesta en servicio; Mantenimiento

Ver apartado 6 - 7 de las Instrucciones de Instalación y Funcionamiento – Ref. 6006183 / 6005672.

1 Allmänt

I princip gäller inmonterings- och bruksanvisning med art.-Nr. 6006183 / 6005672 (ABS dränkbar pump-omrörare RW) itill största delen också för **RW 480**. Detta gäller också för den korrekta anslutningen och säker drift av Ex-utförandet av RW 480. Det samma gäller också för **Säkerhetsanvisningarna**. Dessa finns i ett separat häfte med art.-Nr. 6005591 och ska studeras noga innan installation och idriftsättning!

I denna "Tillsats"-monterings- och bruksanvisning för **ABS dränkbar pump-omrörare RW 480** finns därför bara referenshänvisningar resp. avvikande, kompletterande och produktspecifika informationer.

1.1 - 1.3 Inledning; Avsedd användning; Användningsbegränsningar

Se kapitel 1.1 - 1.3 i monterings- och bruksanvisning 6006183 / 6005672.

1.4 Användningsområden

Dränkmotoromröringsverk RW 480 tjänar till blandning, omröring och cirkulation av sega, fasta medier i reningsanläggningar, inom industri och lantbruk. Det är speciellt konstruerat för de speciella kraven vid homogenisering av slamm och kofermenter/kosubstrater.

1.5 Typnyckel

Se kapitel 1.5 i monterings- och bruksanvisning 6006183 / 6005672. *Propellertyp = 2-blads specialpropeller för slamm och kofermenter/kosubstrater.

1.6 Tekniska data

Se kapitel 1.6 i monterings- och bruksanvisning 6006183 / 6005672.

1.6.1 Tekniska data RW 480, 50 Hz

Omrörartyp	Propellerdiameter	Varvtal / Dri- vutväxling	Motortyp	Angiven effekt- förbrukning P ₁	Angiven mo- toreffekt P ₂	Startsätt Direkt (D.O.L)	Startsätt: Stjär- na/triangel	Angiven ströms- tyrka vid 400 V	Startströmstyr- ka vid 400 V	Kabeltyp** (Ex- och standard)	Temperaturö- vervakning	Tätningsover- vakning	Ex dII BT4	Gejdrör □ 100	Totalvikt
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Tekniska data RW 480, 60 Hz

RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = uppmätt effektförbrukning; P₂ = effekttuttag; • = standard; ○ = tillval; **Kabeltyp: 10 m kabel med fria ändar i standardutförande: 2 = 1 x 10G x 1.5

1.7 Mått och vikter

Se kapitel 1.7 i monterings- och bruksanvisning 6006183 / 6005672.

1.7.1 Måttdata RW 480

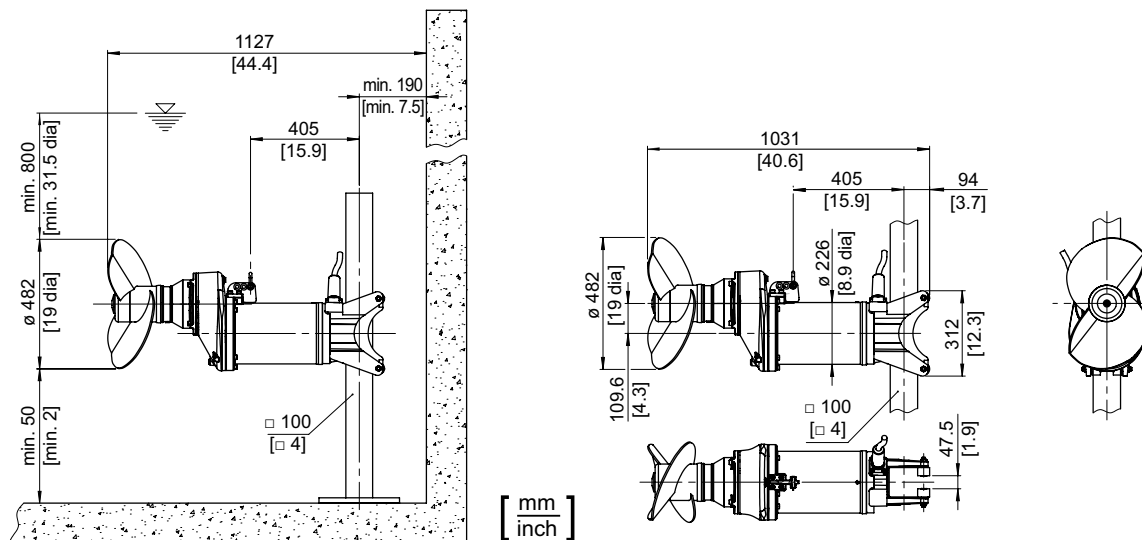


Bild 1 Måttdata RW 480

1.8 Typskylt

Se kapitel 1.8 i monterings- och bruksanvisning 6006183 / 6005672.

2 - 3 Säkerhet; Transport och lagring

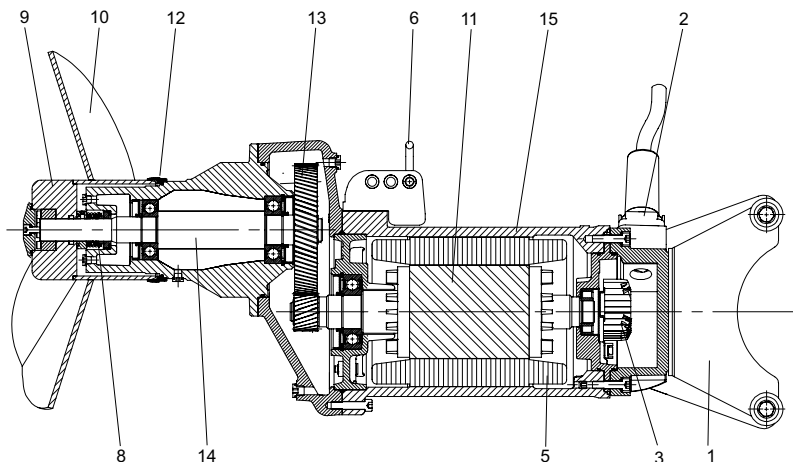
Se kapitel 2- 3 i monterings- och bruksanvisning 6006183 / 6005672.

4 Produktbeskrivning

4.1 Generell beskrivning

Se kapitel 4.1 i monterings- och bruksanvisning 6006183 / 6005672.

4.2 Konstruktion för RW 480



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Teckenförklaring

- 1 Fäste
- 2 Kabelgenomföring
- 3 Anslutningsutrymme
- 4 Propelleraxel
- 5 Motorlindning
- 6 Hållare med schackel
- 7 Motorghus
- 8 Glidringstättning
- 9 Propellernav / Propeller
- 10 Gear
- 11 Axelenhet med rotor och lager
- 12 SD - ring

Bild 2 RW 480

4.3 Drift med frekvensomformare

Se kapitel 4.5 i monterings- och bruksanvisning 6006183 / 6005672.

5 Installation

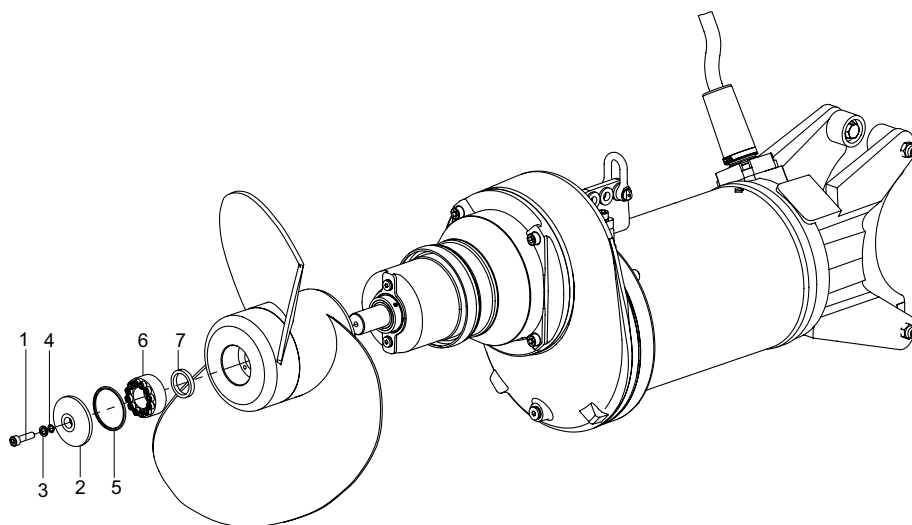
Se kapitel 5 i monterings- och bruksanvisning 6006183 / 6005672.

5.1 Installation av RW 480

Se kapitel 5.1 i monterings- och bruksanvisning 6006183 / 6005672.

5.2 Propellermontering RW 480

Beroende på konstruktionen skiljer sig propellerinfästningen sig från andra aggregat i RW/RCP resp. SB-KA serien. Propellern i RW 480 är fastsatt med en inkaplad spänningsats.



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Teckenförklaring

- 1 Cylinderskruv
- 2 Propellerplatta
- 3 Låsbrickor
- 4 O-ring (Cylinderskruv)
- 5 O-ring (Propellerplatta)
- 6 Spänningsats
- 7 O-Ring (Nav)

Bild 3 Propellermontage/-demontage

Demontage

- Demontera cylinderskruv (3/1) med Låsbrickor (3/3), O-Ring (3/4), propellerplatta (3/2) och O-Ring (3/5).
- Lossa skruvarna i spänningsats (3/6) och dra av propellern tillsammans med spänningsatsen. Ta bort O-Ring (3/7) från spåret.

Montage

- Rengör axel och nav. Sätt in ny O-ring (3/7) i spåret och olja in axel och spänsats (3/6) lätt.

OBSERVERA **Använd inga oljor som innehåller molybden-svavelkolämnerna!**

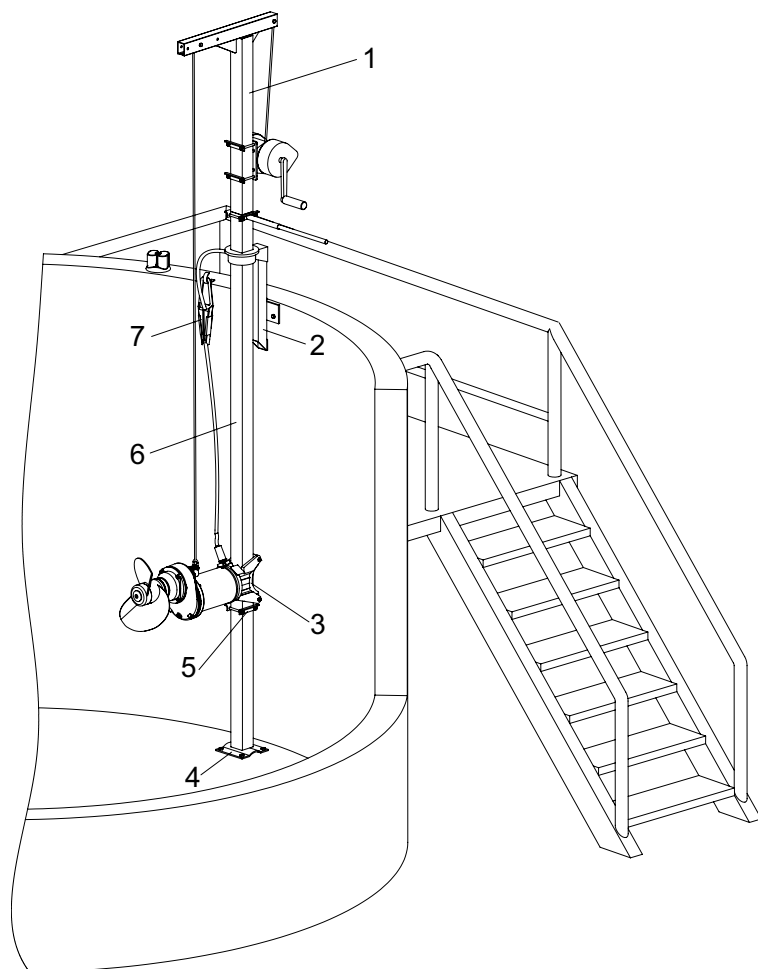
- Dra först fast skruvarna lätt i spänsatsen, korsvis.
- Dra fast skruvarna i spänsatsen korsvis med **16 Nm**. Kontrollera sen åtdragningsmomenten runt om medurs.
- Stick på låsbrickorna (3/3) tillsammans med O-Ring (3/4), propellerplatta (3/2) och O-Ring (3/5) på cylinderskruv (3/1) och dra åt med **17 Nm**.

5.3 **Åtdragningsmoment**

Se kapitel 5.3 i monterings- och bruksanvisning 6006183 / 6005672.

5.4 **Installationsexempel RW 480**

För denna installationstyp rekommenderar vi att det slutna fästet används.



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Teckenförklaring

- 1 Lyft med talja och rep
- 2 Övre bock
- 3 Slutet fäste
- 4 Golvstöd
- 5 Säkerhetsklämma
- 6 Vridbart fyrkantsrör
- 7 Spännklämma med kabelhakar

Bild 4 Installationsexempel RW 480

5.5 **Fästen RW/SB-KA**

Se kapitel 5.5 i monterings- och bruksanvisning 6006183 / 6005672.

5.6 **Gejdrör (fyrkantsledrör) RW/SB-KA**

Se kapitel 5.6 i monterings- och bruksanvisning 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 **Elektrisk anslutning**

Se kapitel 5.8 i monterings- och bruksanvisning 6006183 / 6005672. Se Bild 33. Kapitel 5.8.3 är inte relevant för RW 480.

6 - 7 **Idrifttagande; Underhåll**

Se kapitel 6 - 7 i monterings- och bruksanvisning 6006183 / 6005672.

1 Generelt

Principielt er en stor del af monterings- og betjeningsvejledning med art.-nr. 6006183 / 6005672 (ABS omrørere med undervandsmotor RW) også relevant for **RW 480**. Det gælder også for den passende tilslutning og sikre drift af Ex-udgaven fra RW 480. Det samme gælder for **sikkerhedsanvisningerne**. De findes i et separat hæfte med art.-nr. 6005591 og skal læses omhyggeligt igennem inden installation og ibrugtagning!

I denne "ekstra" monterings- og betjeningsvejledning for (ABS omrørere med undervandsmotor RW) 480 findes derfor kun krydshenvisninger eller yderligere informationer, der er enten afvigende eller specifikke for produktet.

1.1 - 1.3 Introduktion; Bestemmelsesmæssig anvendelse; Anvendelsesområder

Se kapitel 1.1 - 1.3 i monterings- og betjeningsvejledning 6006183 / 6005672.

1.4 Anvendelsesområder

Omrørere med undervandsmotor RW 480 bruges til blanding, omrøring og cirkulering af sejt, fastflydende medium i renseanlæg til både industri og landbrug. Det er beregnet specielt til de krav, der stilles til homogenisering af slam og coenzymmer.

1.5 Typekoder

Se kapitel 1.5 i monterings- og betjeningsvejledning 1 597 0832-EU/0833-EU. *Propeltype = 2-blad specialpropel beregnet til slam og coenzymmer.

1.6 Tekniske data

Se kapitel 1.6 i monterings- og betjeningsvejledning 6006183 / 6005672.

1.6.1 Tekniske data RW 480, 50 Hz

Omrørertype	Propeldiameter	Omdrejnings- tal / Gearre- duktion	Motortype	Nominal ind- gangseffekt P ₁	Motorens nomi- nelle effekt P ₂	Startmåde: direkte (D.O.L)	Startmåde: stjerne/trekant	Nominal strøm ved 400 V	Startstrøm ved 400 V	Kabeltype** (Ex- og Standard)	Temperatu- rervægning	Tætningsover- vægning	Ex dII BT4	Guiderør □ 100	Totalvægt
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Tekniske data RW 480, 60 Hz

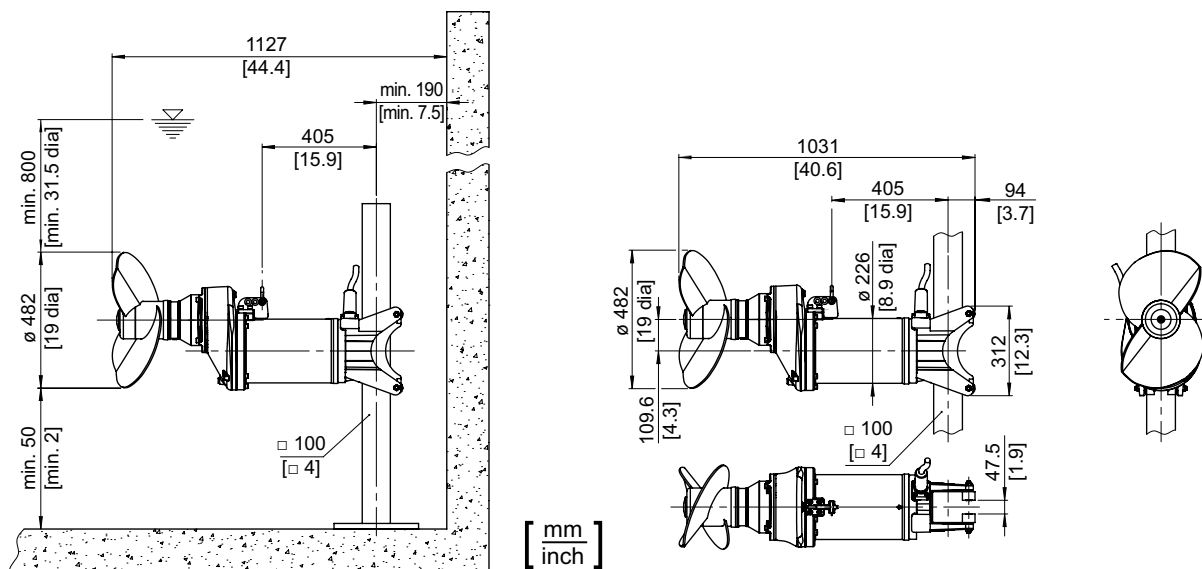
								460 V	460 V						
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Indgangseffekt; P₂ = Udgangseffekt; • = Standard; ○ = Ekstratilbehør; **Kabeltype: 10 m kabler med fri kabelende er del af standardleveringsomfanget: 2 = 1 x 10G x 1.5

1.7 Dimensioner og vægte

Se kapitel 1.7 i monterings- og betjeningsvejledning 6006183 / 6005672.

1.7.1 Konstruktionsmål RW 480



Figur 1 Konstruktionsmål RW 480

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1.8 Typeskilt

Se kapitel 1.8 i monterings- og betjeningsvejledning 6006183 / 6005672.

2 - 3 Sikkerhed; Transport og opbevaring

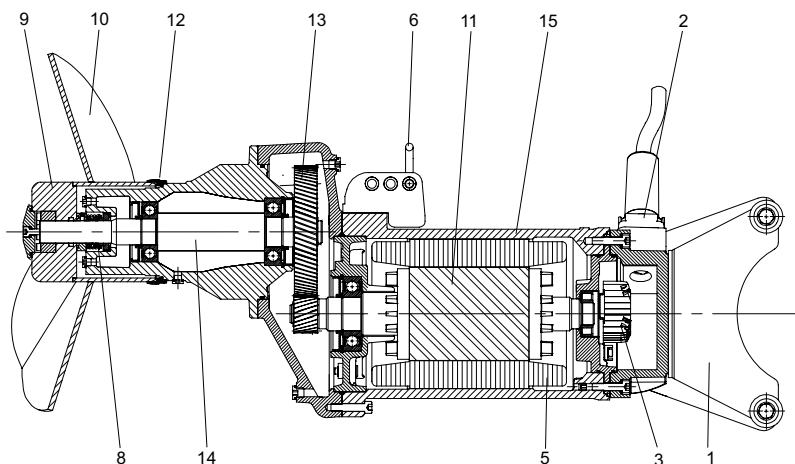
Se kapitel 2 - 3 i monterings- og betjeningsvejledning 6006183 / 6005672.

4 Produktbeskrivelse

4.1 Generel beskrivelse

Se kapitel 4.1 i monterings- og betjeningsvejledning 6006183 / 6005672.

4.2 Konstruktiver Aufbau RW 480



0551-0043

Forklaring

- 1 Holder
- 2 Kabelindføring
- 3 Tilslutningsrum
- 4 Propelakse
- 5 Motorvikling
- 6 Holder med sjækel
- 7 Motorhus
- 8 Mekanisk akseltætning
- 9 Propelnav / Propel
- 10 Gear
- 11 Aksel med rotor og lejer
- 12 SD - ring

Figur 2 RW 480

4.3 Drift på frekvensomformere

Se kapitel 4.5 i monterings- og betjeningsvejledning 6006183 / 6005672.

5 Installation

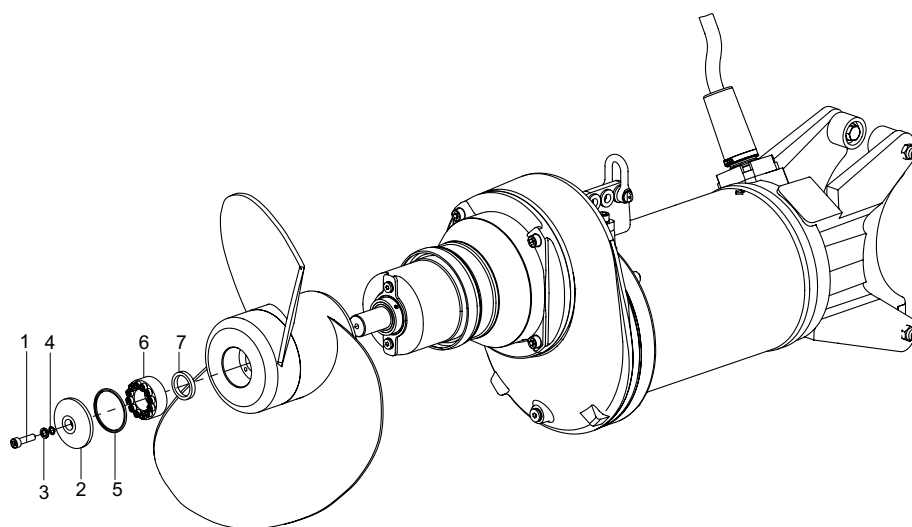
Se kapitel 5 i monterings- og betjeningsvejledning 6006183 / 6005672.

5.1 Installation RW 480

Se kapitel 5.1 i monterings- og betjeningsvejledning 6006183 / 6005672.

5.2 Montering af propel RW 480

Konstruktionsbetinget er propelfastgørelsen forskellig fra andre aggregater i RW/RCP hhv. SB-KA serien. RW 480 propellen er fastgjort med et kapslet remsæt.



0551-0044

Forklaring

- 1 Cylinderskrue
- 2 Propelskive
- 3 Sikringsskiver
- 4 O-ring (cylinderskrue)
- 5 O-ring (propelskive)
- 6 Remsæt
- 7 O-ring (nav)

Figur 3 Propelmantering/-afmontering

Afmontering

- Afmonter cylinderskruen (3/1) med sikringsskivern (3/3), o-ringen (3/4), propelskiven (3/2) og o-ringen (3/5).
- Remsættets skruer (3/6) løsnes og propellen trækkes af sammen med remsættet. O-ringen (3/7) fjernes fra noten.

Montering

- Akse og nav renses. Sæt en ny o-ring (3/7) ind i navets not, smør akse og remsættet (3/6) lidt med olie.

VIGTIGT

Anvend ikke olie, som indeholder molybdæn-svovl!

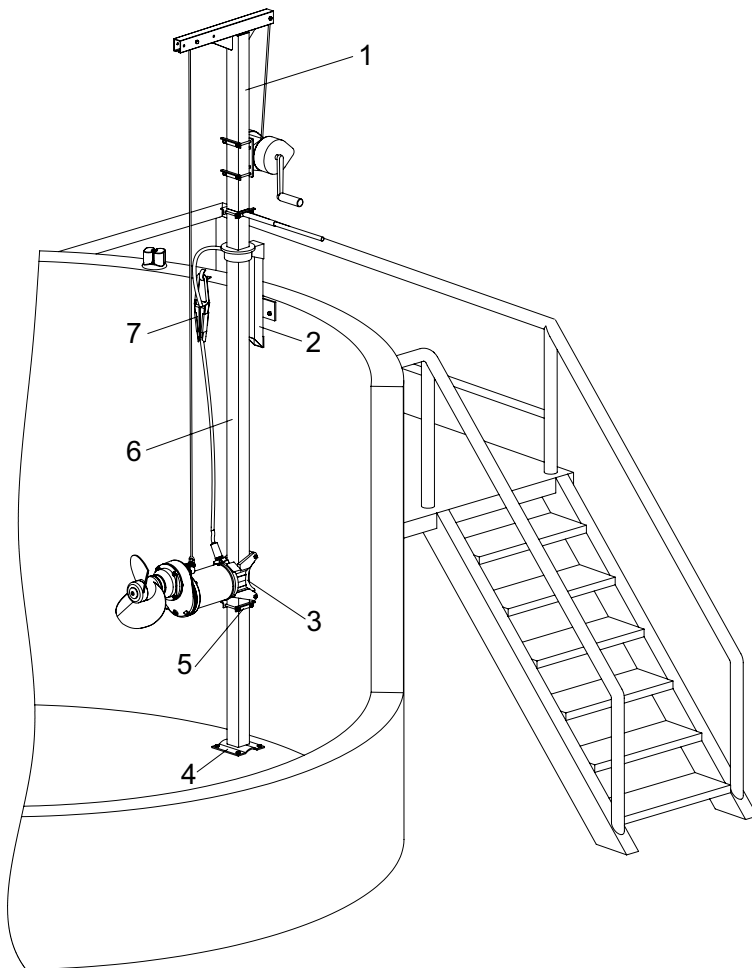
- Spænd først remsættets skrue lidt over kors.
- Spænd remsættets skrue over kors med **16 Nm**. Kontroller derefter tilspændingsmomentet hele vejen rundt med uret.
- Sikringsskiven (3/3) sættes på cylinderskruen (3/1) sammen med o-ringen (3/4), propelskiven (3/2) og o-ringen (3/5) og spændes med **17 Nm**.

5.3 Tilspændingsmomenter

Se kapitel 5.3 i monterings- og betjeningsvejledning 6006183 / 6005672.

5.4 Installationseksempler RW 480

I forbindelse med denne form for installation anbefales det at bruge den lukkede holder.



0551-0045

Forklaring

- 1 Løftegalge med spil og wire
- 2 Øverste holdebuk
- 3 Holder, lukket
- 4 Bundleje
- 5 Sikkerhedsanslag
- 6 Drejeligt firkantet guiderør
- 7 Afspændingsklemme med kabelhage

Figur 4 Installationseksempler RW 480

5.5 Holdere RW/SB-KA

Se kapitel 5.5 i monterings- og betjeningsvejledning 6006183 / 6005672.

5.6 Guiderørlængder (firkantet guiderør) RW/SB-KA

Se kapitel 5.6 i monterings- og betjeningsvejledning 6006183 / 6005672. RW 480 \triangle RW 900.

5.7 Elektrisk tilslutning

Se kapitel 5.8 i monterings- og betjeningsvejledning 6006183 / 6005672. Se figur 33. Kapitel 5.8.3 er ikke relevant for RW 480.

6 - 7 Ibrugtagning; Ibrugtagning

Se kapitel 6 - 7 i monterings- og betjeningsvejledning 6006183 / 6005672.

1 Yleistä

Asennus- ja käyttöohje, tuotenro 6006183 / 6005672 (ABS upposekoitin RW), on suurilta osin voimassa myös sekoittimelle **RW 480**. Tämä koskee myös asianmukaista liitintää ja RW 480:n Ex-version turvallista käyttöä. Sama koskee **turvallisuusohjeita**. Ne löytyvät erillisestä lehdistä, tuotenro 6005591, ja ne on luettava huolellisesti ennen asennusta ja käyttöönottoa!

Tämä (**ABS upposekoitin RW 480**) "**lisä**"-asennus- ja käyttöohje sisältää siksi vain ristiviittauksia tai poikkeavia ja tuotekohtaisia lisätietoja.

1.1 - 1.3 Johdanto; Määräysten mukainen käyttö; Käyttörajoitukset

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 1.1 - 1.3.

1.4 Käyttöalueet

ABS upposekoitin RW 480 käytetään sitkeiden, kiinteitä aineita sisältävien nesteiden sekoittamiseen, hämmentämiseen ja pyörittämiseen jätevedenpuhdistamoissa, teollisuudessa ja maataloudessa. Se on suunniteltu etenkin lietteen ja kofermenttien/kosubstraattien homogenisoinnin erityisvaatimuksiin.

1.5 Tyyppiavain

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 1.5.*Potkurin tyyppi: = 2-lapainen erikoispotkuri lietteelle ja kofermenteille/ko-substraateille.

1.6 Tekniset tiedot

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 1.6.

1.6.1 Tekniset tiedot RW 480, 50 Hz

Sekoittimen tyyppi	Potkurin halkaisija	Kierros- / alennusvälyksellä	Moottorin tyyppi	Nimellistehon kulutus P ₁	Moottorin nimellisteho P ₂	Käynnistystapa: suora (D.O.L)	Käynnistystapa: tähti / kolmio	Nimellisvirta 400 V:ssä	Käynnistysvirta 400 V:ssä	Johtotyyppi** (Ex- ja vakio)	Lämpötilan vaivonta	Tiivistyksen vaivonta	Ex dII BT4	Ohjausputki □ 100	Kokonaispaino
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Tekniset tiedot RW 480, 60 Hz

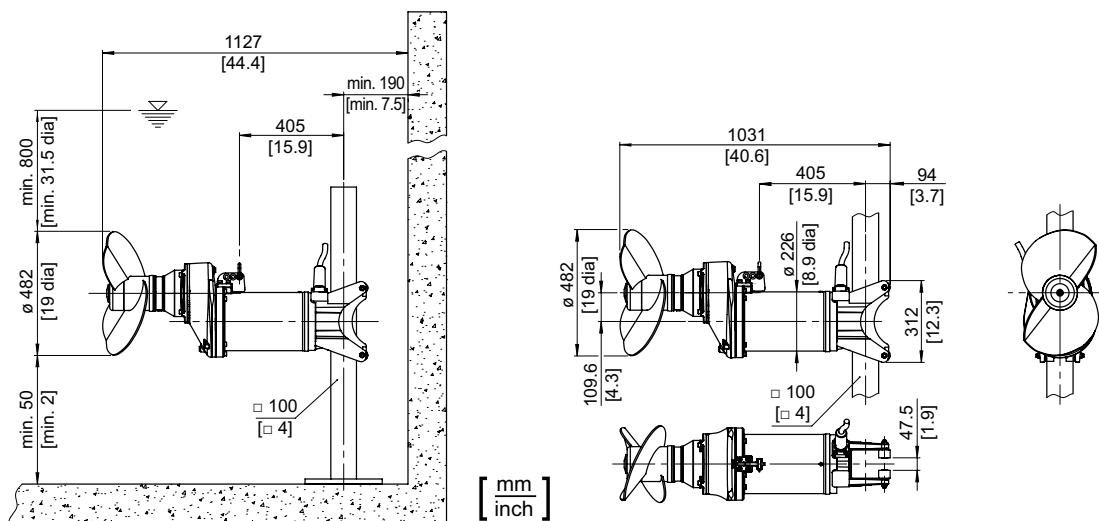
								460 V	460 V						
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Tehonotto; P₂ = Tehonanto; • = Vakio; ○ = Optio; **Johtotyyppi: 10 m johto vapaalla kaapelipäällä on vakio toimituslaajuus: 2 = 1 x 10G x 1.5

1.7 Mitat ja painot.

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 1.7.

1.7.1 Rakennemitat RW 480



Kuva 1 Rakennemitat RW 480

1.8 Tyypikilpi

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 1.8.

2 - 3 Turvallisuus; Kuljetus ja varastointi

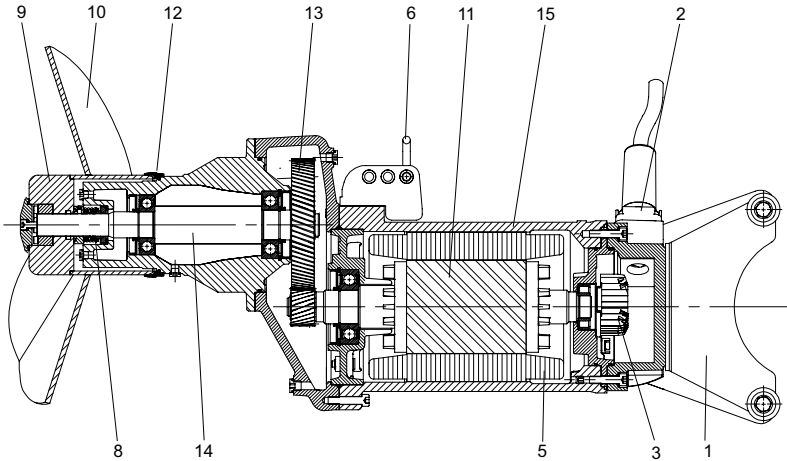
Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 2 - 3.

4 Tuotokuvaus

4.1 Yleiskuvaus

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 4.1.

4.2 Rakenteellinen rakenne RW 480



0551-0043

kuvateksti

- 1 tuki
- 2 kaapelin sisäänvienti
- 3 liitântätilä
- 4 Potkurin akseli
- 5 moottorin käämitys
- 6 Kiinnitin ja sakkelit
- 7 Moottorin kotelo
- 8 liukurenkaan tiiviste
- 9 potkurin napa / potkuri
- 10 vaihteisto
- 11 akselyksikkö roottorilla ja laakereilla
- 12 SD - rengas

Kuva 2 RW 480

4.3 Käyttö taajuudenmuuntimissa

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 4.5.

5 Asennus

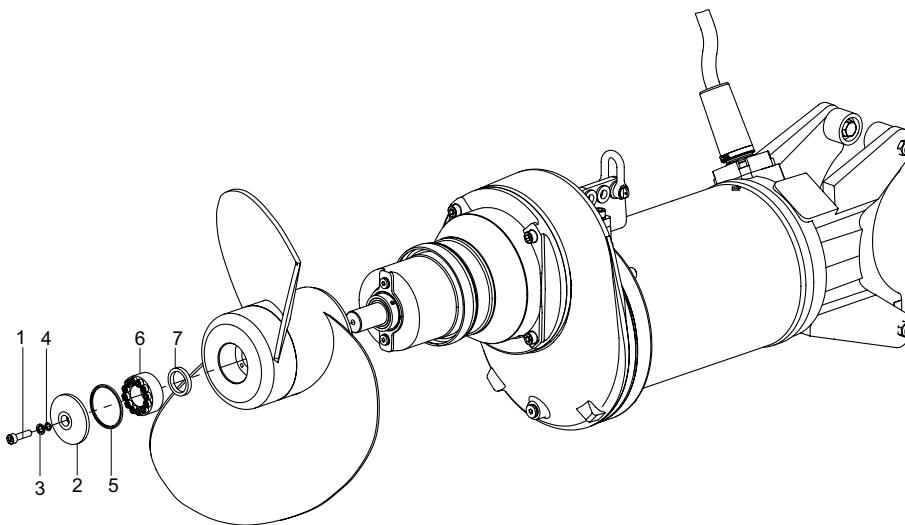
Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 5.

5.1 Asennus RW 480

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 5.1.

5.2 Potkurin asennus RW 480

Potkurin kiinnitys eroaa rakenteeltaan muista RW/RCP- tai SB-KA-valmistussarjan koneistoista. RW 480:n potkuri on kiinnitetty kotelo-idulla kiinnityssarjalla.



0551-0044

kuvateksti

- 1 lieriöruuvi
- 2 potkurin laatta
- 3 lukkolaatat
- 4 O-rengas (lieriöruuvi)
- 5 O-rengas (potkurin laatta)
- 6 Kiinnityssarja
- 7 O-rengas (napa)

Kuva 3 Potkurin asennus/purkaminen

Purkaminen

- Irrota lieriöruuvi (3/1) ja lukkolaatat (3/3), O-rengas (3/4), potkurilaatta (3/2) sekä O-rengas (3/5).
- Avaa kiinnityssarjan (3/6) ruuvit ja irrota potkuri ja kiinnityssarja. Poista O-rengas (3/7) urasta.

Asennus

- Puhdista akseli ja napa. Aseta uusi O-renkas (3/7) navan uraan, voitele akseli ja kiinnityssarja (3/6) kevyesti.

HUOMIO Älä käytä molybdeeni-rikkihiiltä sisältäviä öljyjä!

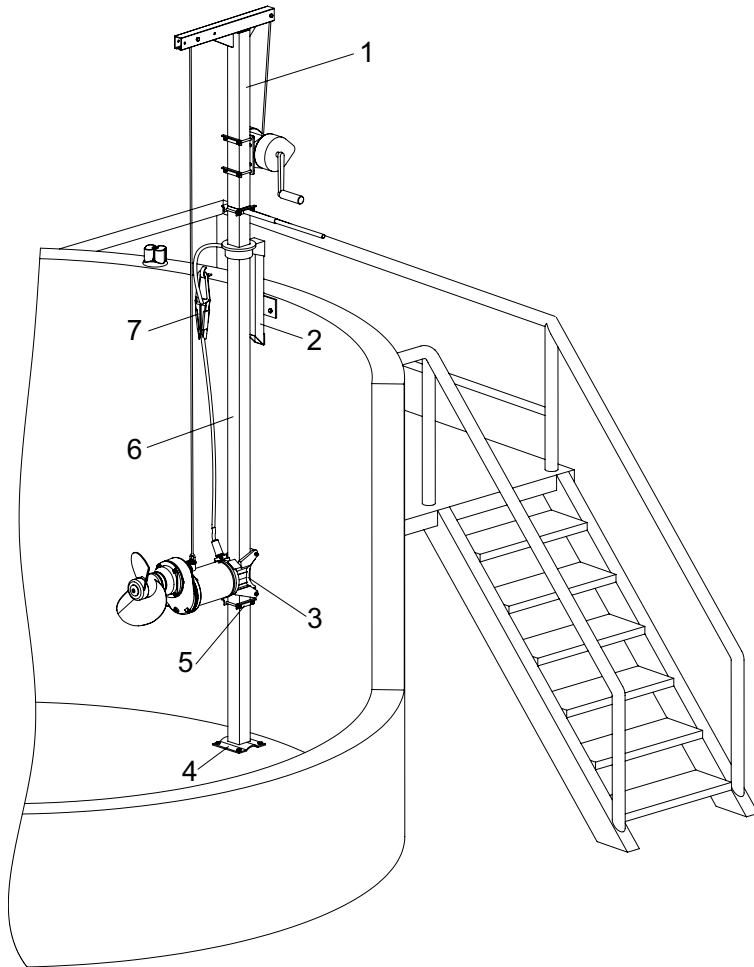
- Kiristä kiinnityssarjan ruuveja ensin kevyesti ristiin.
- Kiristä kiinnityssarjan ruuvit ristiin **16 Nm** momentilla. Tarkasta lopuksi vääntömomentti myötäpäivään kiertäen.
- Aseta lukkolaatat (3/3) sekä O-renkas (3/4), potkurilaatta (3/2) ja O-renkas (3/5) lieriöruuviin (3/1) ja kiristä **17 Nm** momentilla.

5.3 Kiristysmomentit

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 5.3.

5.4 Asennusesimerkkejä RW 480

Tällaiselle asennukselle suositellaan suljetun tuen käyttämistä.



0651-0045

kuvateksti

- 1 nostopukki vintturilla ja köydellä
- 2 ylä pidätinpukki
- 3 suljettu tuki
- 4 pohjalaakeri
- 5 turvapuristusvaste
- 6 käännettävä nelikantajohtoputki
- 7 kiristyspinne johdon pidikkeellä

Kuva 4 Asennusesimerkkejä RW 480

5.5 Tuet RW/SB-KA

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 5.5.

5.6 Ohjausputken pituudet (nelikantajohtoputki) RW/SB-KA

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 5.6. RW 480 \triangleq RW 900.

5.7 Sähköliitäntä

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 5.8. Ks. kuva 33. Luku 5.8.3 ei koske sekoitinta RW 480.

6 - 7 Käyttöönotto; Huolto

Katso asennus- ja käyttöohjeen 6006183 / 6005672 luvut 6 - 7.

1 Γενικά

Ουσιαστικά, οι οδηγίες εγκατάστασης και χρήσης με Κωδ. Πρ. 6006183 / 6005672 (ABS - βυθιζόμενοι αναδευτήρες RW) ισχύουν κατά ένα μεγάλο μέρος και για το **RW 480**. Αυτό ισχύει επίσης και για την κατάλληλη σύνδεση και την ασφαλή λειτουργία της έκδοσης Ex του RW 480. Το ίδιο ισχύει και για τις **Υποδείξεις ασφαλείας**. Οι υποδείξεις αυτές περιλαμβάνονται στο ξεχωριστό βιβλίο με Κωδ. Πρ. 6005591 και πρέπει να διαβάζονται προσεκτικά πριν την εγκατάσταση και θέση σε λειτουργία!

Στις παρούσες „Πρόσθετες“ οδηγίες εγκατάστασης και χρήσης για τον βυθιζόμενοι αναδευτήρες **ABS RW 480** περιλαμβάνονται, ως εκ τούτου, μόνο παραπομπές και αποκλίνουσες, πρόσθετες και συγκεκριμένες επί του προϊόντος πληροφορίες.

1.1 - 1.3 Εισαγωγή; Σωστή χρήση των προϊόντων; Περιορισμοί εφαρμογής

Βλ. Κεφάλαιο 1.1 - 1.3 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

1.4 Περιοχές εφαρμογής

Ο ηλεκτροκινούμενος βυθιζόμενος αναδευτήρας RW 480 χρησιμεύει στην ανάμιξη, ανάδευση και κυκλοφορία ιξωδών ρευστών, που περιέχουν στερεά, σε σταθμούς επεξεργασίας λυμάτων, στη βιομηχανία και τη γεωργία. Είναι ειδικά σχεδιασμένος για τις ιδιαίτερες απαιτήσεις κατά την ομογενοποίηση λάσπης και συνενζύμων.

1.5 Κωδικός αναγνώρισης τύπου

Βλ. Κεφάλαιο 1.5 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672. *Τύπος προπέλας = Ειδικός έλικας 2 πτερυγίων για λάσπη και συνένζυμα.

1.6 Τεχνικά στοιχεία

Βλ. Κεφάλαιο 1.6 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

1.6.1 Τεχνικά δεδομένα RW 480, 50 Hz

Τύπος αναδευτήρα	Διάμετρος προπέλας	Στροφές / Getriebeuntersetzung	Τύπος κινητήρα	Ονομαστική κατανάλωση ισχύος P ₁	Ονομαστική ισχύς κινητήρα P ₂	Τύπος εκκίνησης: Απ' ευθείας (D.O.L)	Τύπος εκκίνησης: Αστέρα/Τριγώνου	Ονομαστικό ρεύμα στα 400 V	Ρεύμα εκκίνησης στα 400 V	Τύπος καλωδίου** (EX- και Στάνταρ)	Επιτήρηση θερμοκρασίας	Επιτήρηση στεγανότητας	Ex dII BT4	Οδηγός σωλήνας □ 100	Συνολικό βάρος
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Τεχνικά δεδομένα RW 480, 60 Hz

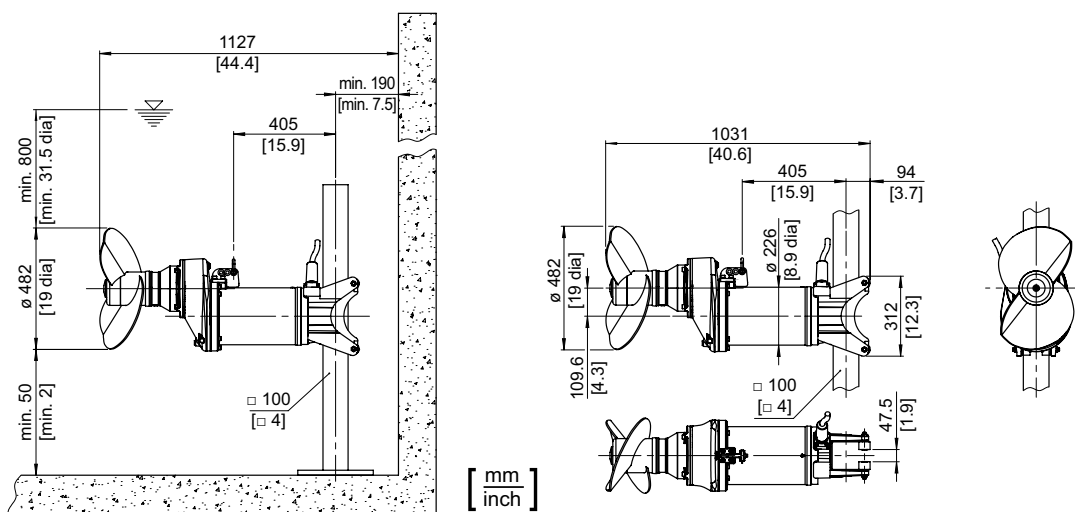
Τύπος αναδευτήρα	Διάμετρος προπέλας	Στροφές / Getriebeuntersetzung	Τύπος κινητήρα	Ονομαστική κατανάλωση ισχύος P ₁	Ονομαστική ισχύς κινητήρα P ₂	Τύπος εκκίνησης: Απ' ευθείας (D.O.L)	Τύπος εκκίνησης: Αστέρα/Τριγώνου	Ονομαστικό ρεύμα στα 460 V	Ρεύμα εκκίνησης στα 460 V	Τύπος καλωδίου** (EX- και Στάνταρ)	Επιτήρηση θερμοκρασίας	Επιτήρηση στεγανότητας	Ex dII BT4	Οδηγός σωλήνας □ 100	Συνολικό βάρος
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Κατανάλωση ισχύος; P₂ = Απόδοση ισχύος; • = στάνταρ; ○ = προαιρ; **Τύπος καλωδίου: καλώδιο 10 m με ελεύθερο άκρο καλωδίου σαν στάνταρ: 2 = 1 x 10G x 1.5

1.7 Διαστάσεις και βάρη

Βλ. Κεφάλαιο 1.7 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

1.7.1 Διαστάσεις κατασκευής RW 480



Εικ. 1 Διαστάσεις κατασκευής 480

1.8 Πινακίδα τύπου

Βλ. Κεφάλαιο 1.8 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

2 - 3 Ασφάλεια; Μεταφορά και αποθήκευση

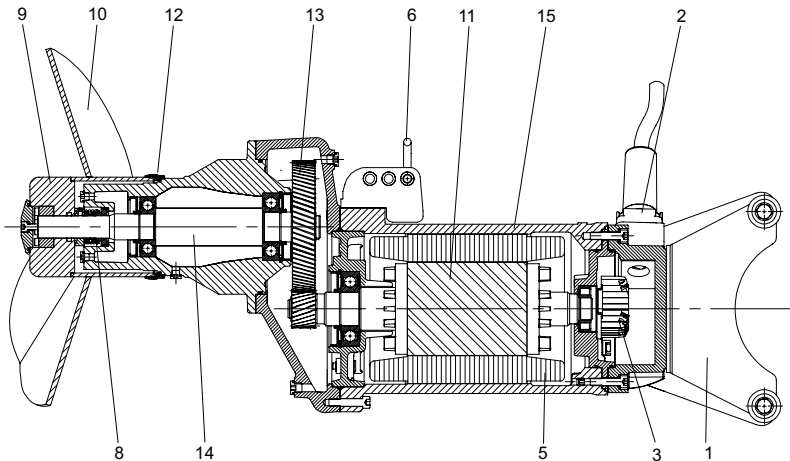
Βλ. Κεφάλαιο 2 - 3 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

4 Περιγραφή προϊόντος

4.1 Γενική περιγραφή

Βλ. Κεφάλαιο 4.1 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

4.2 Δομική κατασκευή των RW 480



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Λεζάντα

- 1 Βάση στήριξης
- 2 Είσοδος καλωδίου
- 3 Χώρος σύνδεσης
- 4 Ελικοφόρος άξονας
- 5 Περιέλιξη του κινητήρα
- 6 Στήριγμα με αγκύλιο
- 7 Περιβλήμα κινητήρα
- 8 Στεγανοποιητικός δακτύλιος ολίσθησης
- 9 Πλήμνη προπέλας / Προπέλα
- 10 Μηχανισμός μετάδοσης κίνησης
- 11 Μονάδα άξονα με ρότορα και έδρανα
- 12 Δακτύλιος SD (εκτροπής στερεών)

Εικ. 2 RW 480

4.3 Λειτουργία με ρυθμιστές συχνότητας

Βλ. Κεφάλαιο 4.5 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

5 Εγκατάσταση

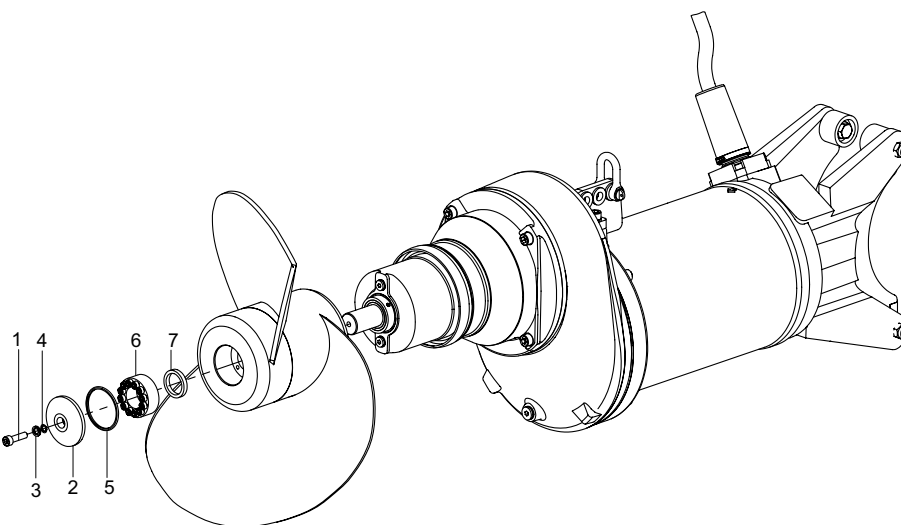
Βλ. Κεφάλαιο 5 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

5.1 Εγκατάσταση των RW 480

Βλ. Κεφάλαιο 5.1 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

5.2 Εγκατάσταση προπελών RW 480

Λόγω κατασκευής, η στερέωση του έλικα διαφέρει από τα λοιπά συγκροτήματα του RW/RCP ή της σειράς κατασκευής SB-KA. Ο έλικας του RW 480 είναι στερεωμένος με ένα στεγανό στοιχείο σύσφιξης.



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Λεζάντα

- 1 Βίδα με κεφαλή εσωτερικού εξαγώνου
- 2 Ροδέλα προπέλας
- 3 Ροδέλες ασφαλείας
- 4 Δακτύλιος σχήματος O (Βίδα με κεφαλή εσωτερικού εξαγώνου)
- 5 Δακτύλιος σχήματος O (Ροδέλες ασφαλείας)
- 6 Στοιχείο σύσφιξης
- 7 Δακτύλιος κυκλικής διατομής (δακτύλιος)

Εικ. 3 Συναρμολόγηση/αποσυναρμολόγηση έλικα

Αποσυναρμολόγηση

- Αφαιρέστε τον κυλινδρικό κοχλία (3/1) με τις ροδέλες ασφαλείας (3/3), τον δακτύλιο κυκλικής διατομής (3/4), τον δίσκο του έλικα (3/2) και τον δακτύλιο κυκλικής διατομής (3/5).

- Λύστε τους κοχλίες του στοιχείου σύσφιξης (3/6) και αφαιρέστε τον έλικα μαζί με το στοιχείο σύσφιξης. Αφαιρέστε τον δακτύλιο κυκλικής διατομής (3/7) από την εγκοπή.

Συναρμολόγηση

- Καθαρίστε τον άξονα και τον δακτύλιο. Τοποθετήστε στην εγκοπή του δακτυλίου καινούριο δακτύλιο κυκλικής διατομής (3/7) και λαδώστε ελαφρά τον άξονα και το στοιχείο σύσφιξης (3/6).

ΠΡΟΣΟΧΗ Μην χρησιμοποιείτε λάδια, τα οποία περιέχουν μολυβδαίνιο-διθειούχο άνθρακα!

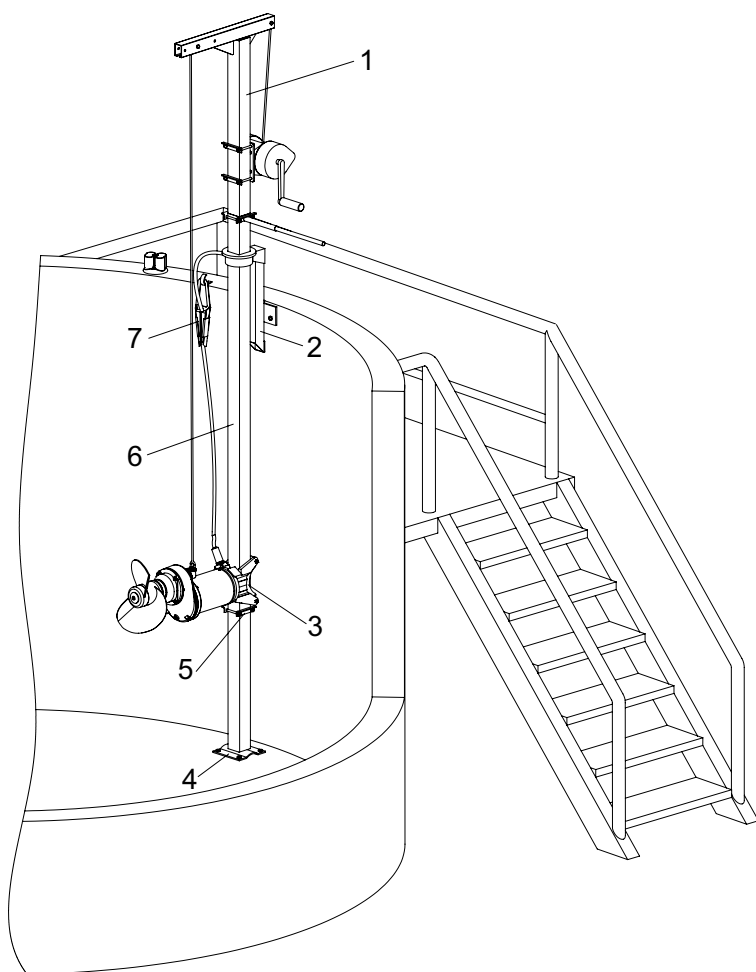
- Αρχικά συσφίξτε ελαφρά τον κοχλία του στοιχείου σύσφιξης με σταυροκατσάβιδο.
- Συσφίξτε τους κοχλίες του στοιχείου σύσφιξης με σταυροκατσάβιδο με ροπή **16 Nm**. Στη συνέχεια, ελέγξτε τη ροπή σύσφιξης δεξιόστροφα κυκλικά.
- Εισάγετε τις ροδέλες ασφαλείας (3/3) μαζί με τον δακτύλιο κυκλικής διατομής (3/4), τον δίσκο του έλικα (3/2) και τον δακτύλιο κυκλικής διατομής (3/5) στον κυλινδρικό κοχλία (3/1) και συσφίξτε με ροπή **17 Nm**.

5.3 Ροπές σύσφιξης

Βλ. Κεφάλαιο 5.3 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

5.4 Παραδείγματα εγκατάστασης των RW 480

Για αυτόν τον τρόπο εγκατάστασης συνιστάται να χρησιμοποιείται η κλειστή βάση στήριξης.



0551-0045

Λεζάντα

- 1 Υποστάτης ανύψωσης με βαρούλκο και σχοινί
- 2 Πάνω στήριγμα
- 3 Κλειστή βάση στήριξης
- 4 Πλάκα έδρασης
- 5 Σφιγκτήρας τερματισμού ασφαλείας
- 6 Στρεφόμενος οδηγός σωλήνας τετραγωνικής διατομής
- 7 Σφιγκτήρας καλωδίου με άγκιστρο καλωδίου

Εικ. 4 Παραδείγματα εγκατάστασης των RW 480

5.5 Βάσεις στήριξης των RW/SB-KA

Βλ. Κεφάλαιο 5.5 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

5.6 Μήκη οδηγού σωλήνα (τετραγωνικής διατομής) για RW/SB-KA

Βλ. Κεφάλαιο 5.6 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Ηλεκτρολογική σύνδεση

Βλ. Κεφάλαιο 5.8 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672. Βλέπε Εικ. 33. Το Κεφάλαιο 5.8.3 δεν αφορά το RW 480.

6 - 7 Θέση σε λειτουργία; Συντήρηση

Βλ. Κεφάλαιο 6 - 7 των οδηγιών εγκατάστασης και χρήσης 6006183 / 6005672.

1 Algemeen

1 Algemeen

In principe is de inbouw- en gebruikshandleiding met art.-nr. 6006183 / 6005672 (ABS dompelmotorroerwerken RW) grotendeels ook geldig voor de **RW 480**. Dit geldt ook voor de vakkundige aansluiting en de veilige werking van de Ex-uitvoering van de RW 480. Hetzelfde geldt voor de **Veiligheidsaanwijzingen**. Deze zijn opgenomen in de separate map met art.-nr. 6005591 en moeten vóór het installeren en in bedrijf nemen zorgvuldig worden bestudeerd!

In deze "Aanvullende inbouw- en gebruikshandleiding voor het ABS dompelmotorroerwerk RW 480" zijn daarom alleen kruisverwijzingen, resp. de afwijkende, aanvullende en productspecifieke informatie opgenomen.

1.1 - 1.3 Inleiding; Gebruik volgens de bestemming; Gebruiksgrenzen

Zie hoofdstuk 1.1 - 1.3 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

1.4 Toepassingsgebieden

Het dompelmotorroerwerk RW 480 dient voor het mengen, roeren en rondpompen van taai, fluïde vaste stoffen in zuiveringsinstallaties, in de industrie en landbouw. Dit roerwerk is vooral voor de speciale eisen bij het homogeniseren van slib en co-enzymen/co-substraten ontworpen.

1.5 Typesleutel

Zie hoofdstuk 1.5 van de inbouw- en gebruikshandleiding 6006183 / 6005672. *Propellertype = 2-blad Speciale propeller voor slib en co-enzymen/co-substraten.

1.6 Technische gegevens

Zie hoofdstuk 1.6 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

1.6.1 Technische gegevens RW 480, 50 Hz

Roerwerktype	Propellerdiameter	Toerental / Reductiedriverswerk	Motortype	Nominaal opgenomen vermogen P ₁	Nominaal vermogen motor P ₂	Starttype: direct (D.O.L.)	Starttype: ster/driehoek	Nominale stroom bij 400 V	Aanloopstroom bij 400 V	Kabeltype** (Ex- en standaard)	Temperatuurbewaking	Dichtingsbe-waking	Ex dII BT4	Geleidingsbuis □ 100	Totaal gewicht
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Technische gegevens RW 480, 60 Hz

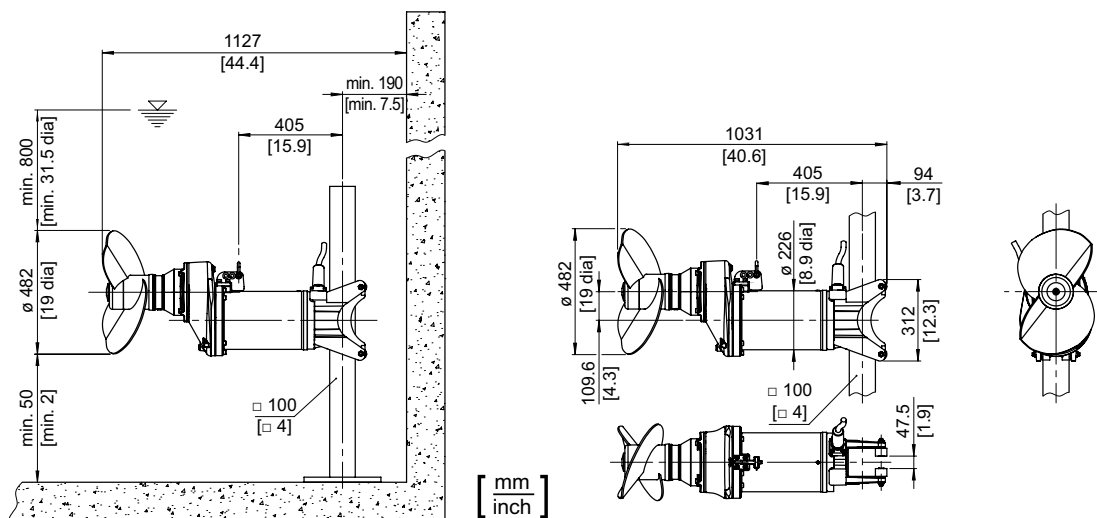
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Opgenomen vermogen; P₂ = Afgegeven vermogen; • = Standaard; ○ = Optie; **Kabeltype: 10 m kabel met vrij kabeleinde is standaard bijgeleverd: 2 = 1 x 10G x 1.5

1.7 Afmetingen en gewichten

Zie hoofdstuk 1.7 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

1.7.1 Bouwmaten RW 480



Afbeelding 1 Bouwmaten RW 480

1.8 Typeplaatje

Zie hoofdstuk 1.8 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

2 - 3 Veiligheid; Transport en opslag

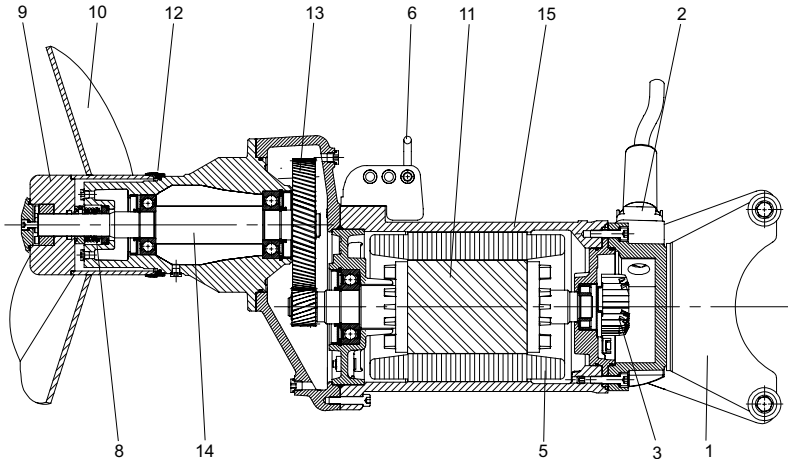
Zie hoofdstuk 2 - 3 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

4 Productbeschrijving

4.1 Algemene beschrijving

Zie hoofdstuk 4.1 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

4.2 Constructieve opbouw RW 480



0551-0043

Legenda

- 1 Houder
- 2 Kabelinvoer
- 3 Aansluitruimte
- 4 Propelleras
- 5 Motorwikkeling
- 6 Steun met koppelschakel
- 7 Motorhuis
- 8 Glijringafdichting
- 9 Propellernaaf / Propeller
- 10 Drijfwerk
- 11 Aseenheid met rotor en lagers
- 12 SD - ring

Afbeelding 2 RW 480

4.3 Gebruik met frequentieomvormers

Zie hoofdstuk 4.5 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

5 Installatie

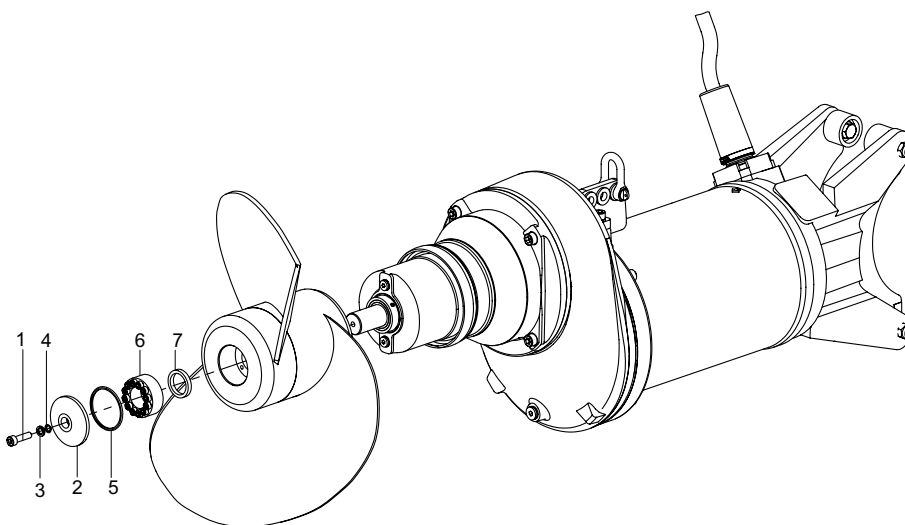
Zie hoofdstuk 5 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

5.1 Installatie RW 480

Zie hoofdstuk 5.1 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

5.2 Propellermontage RW 480

Constructief onderscheidt de propellerbevestiging zich van de andere aggregaten uit de RW/RCP resp. SB-KA serie. De propeller van de RW 480 is bevestigd via een ingekapselde spanset.



0551-0044

Legenda

- 1 Cilinderkopschroef
- 2 Propellerschijf
- 3 Borgschijven
- 4 O-ring (Cilinderkopschroef)
- 5 O-ring (Propellerschijf)
- 6 Spanset
- 7 O-Ring (naaf)

Afbeelding 3 Propellermontage/-demontage

Demontage

- Cilinderkopschroef (3/1) met borgschijven (3/3), o-ring (3/4), propellerschijf (3/2) en o-ring (3/5) demonteren.
- Schroeven van de spanset (3/6) losdraaien en propeller samen met spanset eraf trekken. O-ring (3/7) verwijderen uit de groef.

Montage

- As en naaf reinigen. Nieuwe o-Ring (3/7) in de groef in de naaf plaatsen, as en spanset (3/6) licht oliën.

ATTENTIE **Geen oliesoorten gebruiken die molybdeensulfiden bevatten!**

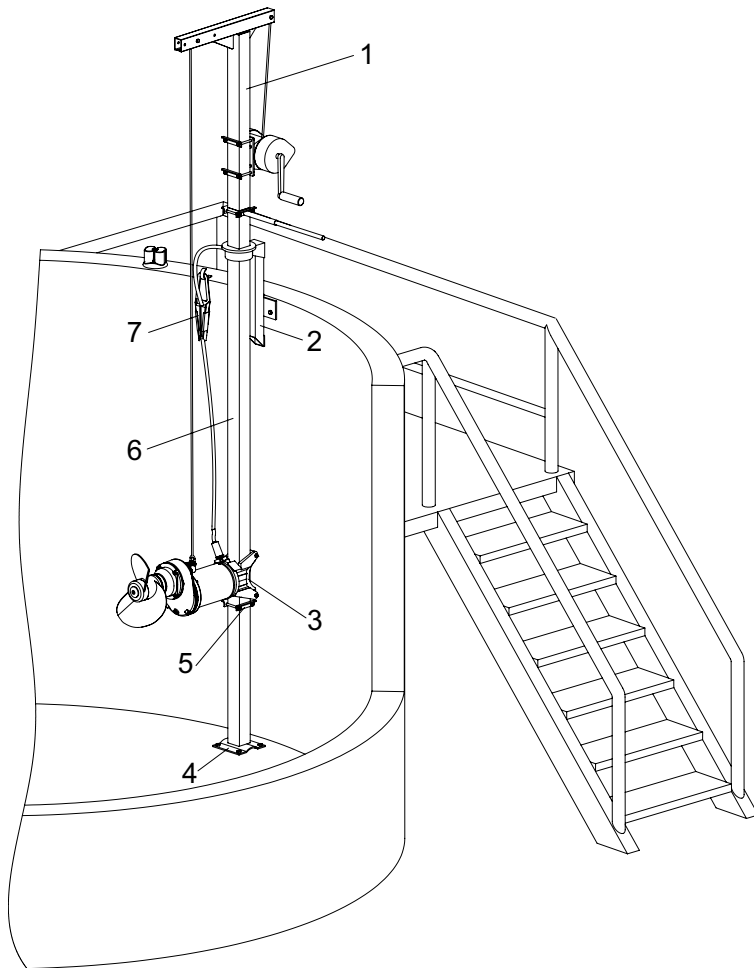
- Schroeven van de spanset licht kruislings aantrekken.
- Schroeven van de spanset kruislings vastdraaien met **16 Nm**. Aansluitend aanhaalmoment rechtsom rond de hele omtrek controleren.
- Borgschijven (3/3) samen met o-ring (3/4), propellerschijf (3/2) und o-ring (3/5) op de cilinderkopschroef (3/1) steken en aanhalen met **17 Nm**.

5.3 Aanhaalmomenten

Zie hoofdstuk 5.3 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

5.4 Installatievoorbeeld RW 480

Voor deze manier van installatie raden we u aan om de gesloten houder te gebruiken.



0651-0045

Legenda

- 1 Hijsgalg met lier en kabel
- 2 Bovenste bevestigingsblok
- 3 Houder gesloten
- 4 Bodemlager
- 5 Veiligheidsklemaanslag
- 6 Draaibare vierkanteibuis
- 7 Afspanklem met kabelhaak

Afbeelding 4 Installatievoorbeeld RW 480

5.5 Houders RW/SB-KA

Zie hoofdstuk 5.5 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

5.6 Geleidingsbuislengtes (vierkanteibuis) RW/SB-KA

Zie hoofdstuk 5.6 van de inbouw- en gebruikshandleiding 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Elektrische aansluiting

Zie hoofdstuk 5.8 van de inbouw- en gebruikshandleiding 6006183 / 6005672. Zie afbeelding 33. Hoofdstuk 5.8.3 is niet van toepassing voor de RW 480.

6 - 7 Ingebruikneming; Onderhoud

Zie hoofdstuk 6 - 7 van de inbouw- en gebruikshandleiding 6006183 / 6005672.

1 Generalidades

Em princípio, as instruções de montagem e de operação do Artigo com o N.º. 6006183 / 6005672 (agitadores de motor submersível ABS RW) também são válidas, em grande parte, para o **RW 480**. Isto também é válido para a ligação correcta e o funcionamento seguro da versão Ex do RW 480. O mesmo é válido para as **Advertências de segurança**. Estas encontram-se num manual em separado com o Art. N.º. 6005591 e devem ser cuidadosamente lidas e estudadas antes da instalação e colocação em funcionamento!

Nestas **instruções de montagem e de operação "adicionais" para o agitador com motor submersível ABS RW 480** apenas se encontram, portanto, referências cruzadas ou então as informações diferentes, adicionais, específicas do produto.

1.1 - 1.3 Introdução; Utilização conforme as disposições; Limites de aplicação

Consulte o capítulo 1.1 a 1.3 das instruções de montagem e de utilização 6006183 / 6005672.

1.4 Áreas de aplicação

O agitador de motor submersível RW 480 serve para agitar, misturar e revolver fluidos rígidos que contenham matérias sólidas em estações de tratamento de águas residuais, tanta na indústria como na agricultura. Foi especialmente construído para as exigências especiais da homogeneização de lamas e coenzimas/co-substratos.

1.5 Código de identificação

Consulte o capítulo 1.5 das instruções de montagem e de utilização 6006183 / 6005672. *Tipo de hélice = Hélice especial de 2 pás para lamas e coenzimas/co-substratos.

1.6 Dados técnicos

Consulte o capítulo 1.6 das instruções de montagem e de utilização 6006183 / 6005672.

1.6.1 Dados técnicos RW 480, 50 Hz

Tipo de agitador	Diâmetro da hélice	Número de rotações /caixa de engrenagens	Tipo de motor	Consumo nominal de energia P ₁	Potência nominal do motor P ₂	Tipo de arranque: directo (D.O.L.)	Tipo de arranque: estrela/triângulo	Corrente nominal a 400 V	Corrente de arranque a 400 V	Tipo de cabo** (Ex. e padrão)	Monitorização de temperatura	Controlo da estanquidade	Ex dII BT4	Tubo guia □ 100	Peso total
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Dados técnicos RW 480, 60 Hz

Tipo de agitador	Diâmetro da hélice	Número de rotações /caixa de engrenagens	Tipo de motor	Consumo nominal de energia P ₁	Potência nominal do motor P ₂	Tipo de arranque: directo (D.O.L.)	Tipo de arranque: estrela/triângulo	Corrente nominal a 460 V	Corrente de arranque a 460 V	Tipo de cabo** (Ex. e padrão)	Monitorização de temperatura	Controlo da estanquidade	Ex dII BT4	Tubo guia □ 100	Peso total
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Consumo de energia; P₂ = Débito de potência; • = Padrão; ○ = Opção; **Tipo de cabo: 10 m de cabo com extremidade livre fazem parte do âmbito de fornecimento padrão: 2 = 1 x 10G x 1.5

1.7 Pesos e medidas

Consulte o capítulo 1.7 das instruções de montagem e de utilização 6006183 / 6005672.

1.7.1 Dimensões RW 480

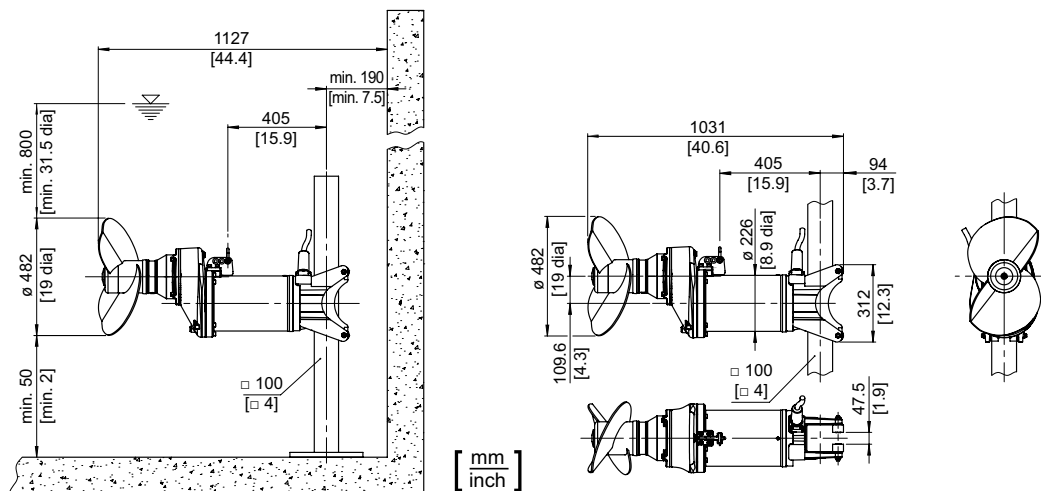


Imagem 1 Dimensões RW 480

0551-0042

1.8 Placa de características

Consulte o capítulo 1.8 das instruções de montagem e de utilização 6006183 / 6005672.

2 - 3 Segurança; Transporte e armazenamento

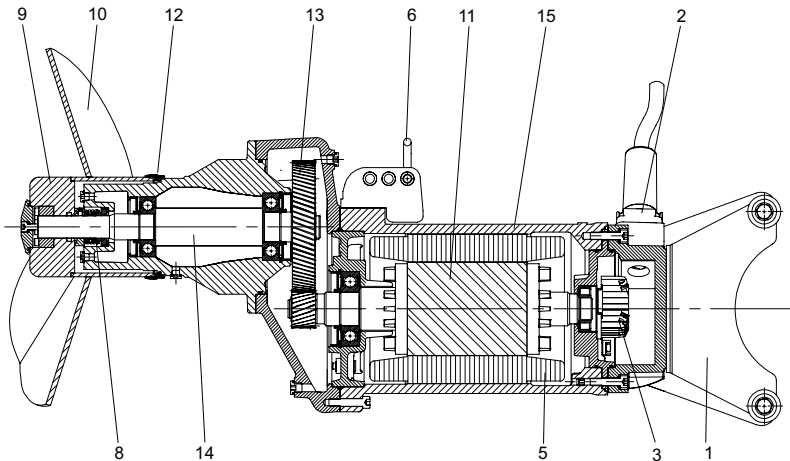
Consulte o capítulo 2 - 3 das instruções de montagem e de utilização 6006183 / 6005672.

4 Descrição do produto

4.1 Descrição geral

Consulte o capítulo 4.1 das instruções de montagem e de utilização 6006183 / 6005672.

4.2 Configuração construtiva RW 480



0551-0043

Legenda

- 1 Suporte
- 2 Entrada de cabos
- 3 Espaço de ligações
- 4 Eixo da hélice
- 5 Enrolamento do motor
- 6 Suporte com manilha
- 7 Carcaça do motor
- 8 Vedação de anel deslizante
- 9 Cubo da hélice / Hélice
- 10 Caixa de engrenagens
- 11 Veio com rotor e apoios
- 12 Anel SD

Imagem 2 RW 480

4.3 Operação com conversores de frequência

Consulte o capítulo 4.5 das instruções de montagem e de utilização 6006183 / 6005672.

5 Instalação

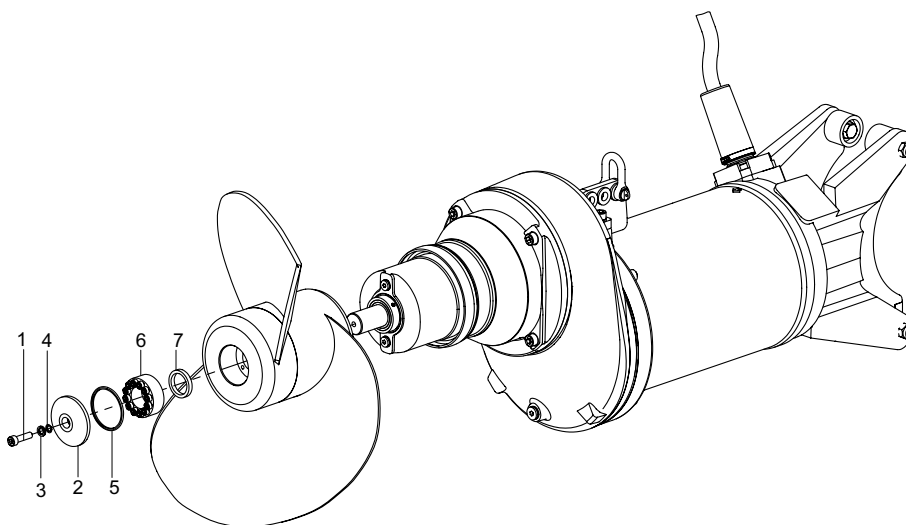
Consulte o capítulo 5 das instruções de montagem e de utilização 6006183 / 6005672.

5.1 Instalação RW 480

Consulte o capítulo 5.1 das instruções de montagem e de utilização 6006183 / 6005672.

5.2 Montagem da hélice RW 480

Dependendo da construção, as fixações da hélice distinguem-se dos outros agregados da série RW/RCP ou SB-KA. A hélice do modelo RW 480 é fixa com um sistema de aperto encapsulado.



0551-0044

Legenda

- 1 Parafuso de cabeça cilíndrica
- 2 Anilha da hélice
- 3 Anilhas de retenção
- 4 O-Ring (Parafuso de cabeça cilíndrica)
- 5 O-Ring (Anilha da hélice)
- 6 Conjunto de aperto
- 7 O-Ring (cubo)

Imagem 3 Montagem da hélice/-demontagem

Desmontagem

- Desmontar o parafuso de cabeça cilíndrica (3/1) com anilhas de retenção (3/3), o o-ring (3/4), a anilha da hélice (3/2) e o o-ring (3/5).
- Soltar os parafusos do conjunto de aperto (3/6) e retirar a hélice juntamente com o conjunto de aperto. Retirar o o-ring (3/7) da ranhura.

Montagem

- Limpar o eixo e o cubo. Colocar um o-ring (3/7) novo na ranhura do cubo, lubrificar ligeiramente o eixo e o conjunto de aperto (3/6).

ATENÇÃO Não usar óleos que contenham molibdénio ou sulfureto de carbono!

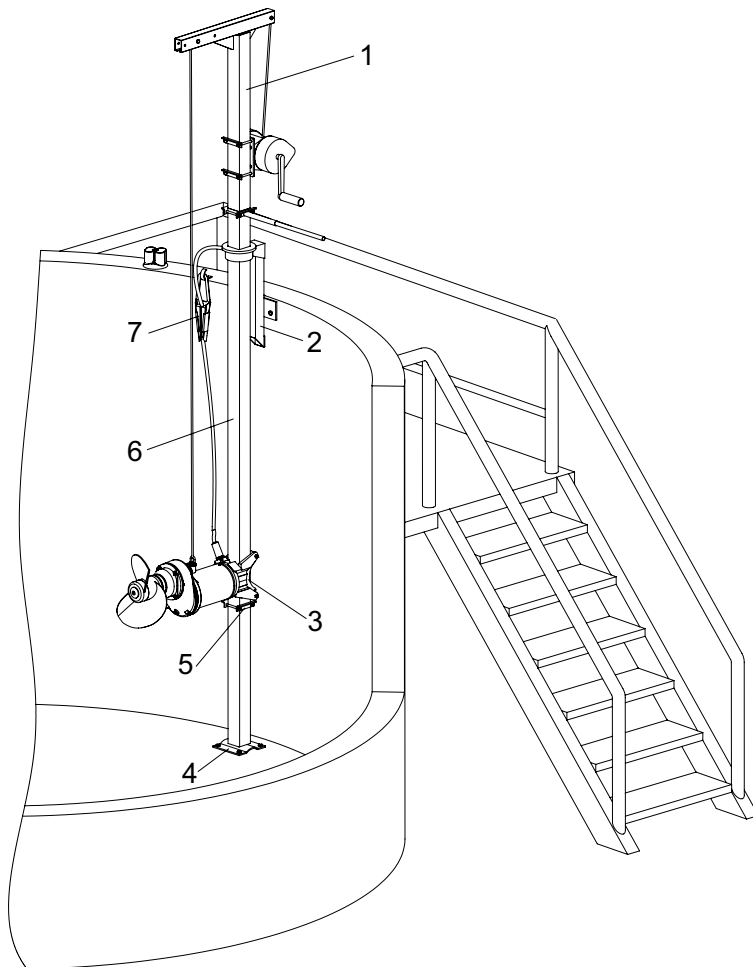
- Começar por apertar ligeiramente e em cruz o parafuso do conjunto de aperto.
- Apertar em cruz os parafusos do conjunto de aperto com **16 Nm**. Finalmente deverá verificar-se o binário de aperto no sentido dos ponteiros do relógio.
- Encaixar as anilhas de retenção (3/3) juntamente com o o-ring (3/4), a anilha da hélice (3/2) e o o-ring (3/5) no parafuso de cabeça cilíndrica (3/1) e apertar com **17 Nm**.

5.3 Binários de aperto

Consulte o capítulo 5.3 das instruções de montagem e de utilização 6006183 / 6005672.

5.4 Exemplo de instalação RW 480

Para esta instalação recomenda-se a utilização de um suporte fechado.



0651-0045

Legenda

- 1 Cavalete de elevação com molinete e cabo
- 2 Suporte superior de fixação
- 3 Suporte fechado
- 4 Apoio do chão
- 5 Batente de aperto de segurança
- 6 Tubo guia quadrangular giratório
- 7 Fixador de ancoragem com gancho para cabo

Imagem 4 Exemplo de instalação RW 480

5.5 Suportes RW/SB-KA

Consulte o capítulo 5.5 das instruções de montagem e de utilização 6006183 / 6005672.

5.6 Comprimento dos tubos guia (tubo quadrangular) RW/SB-KA

Consulte o capítulo 5.6 das instruções de montagem e de utilização 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Ligação eléctrica

Consulte o capítulo 5.8 das instruções de montagem e de utilização 6006183 / 6005672. Ver imagem 33. O capítulo 5.8.3 não é relevante para o modelo RW 480.

6 - 7 Colocação em funcionamento; Manutenção

Consulte o capítulo 6 - 7 das instruções de montagem e de utilização 6006183 / 6005672.

1 Generelt

I prinsippet er monterings- og bruksanvisningen med art.nr. 6006183 / 6005672 (ABS dykkmotor-røreverk RW) for en stor del også gyldig for **RW 480**. Dette gjelder også for riktig tilkobling og sikker drift av Ex-utførelsen til RW 480. Det samme gjelder for **sikkerhetsanvisningene**. Disse finner du i det separate heftet med art.nr. 6005591, og må leses nøye før installasjon og igangsetting!

I denne "Tillegg" - **Monterings- og bruksanvisning for ABS dykkmotor-røreverk RW 480** er derfor kun kryssreferanser og avvikende, tilleggs- og produktspesifikk informasjon beskrevet.

1.1 - 1.3 Innledning; Forskriftsmessig bruk; Begrensninger for bruk

Se kapittel 1.1 - 1.3 i monterings- og bruksanvisningen 6006183 / 6005672.

1.4 Bruksområder

Dykkmotor-røreverket RW 480 brukes til blanding, røring og sirkulering av seige væsker som inneholder faste stoffer i renselanlegg, industri og jordbruk. Den er spesielt konstruert for de spesielle kravene ved homogenisering av slam og ko-fermenter/ko-substrater.

1.5 Typekode

Se kapittel 1.5 i monterings- og bruksanvisningen 6006183 / 6005672. *Propelltype = 2-bladed spesialpropell for for slam og ko-fermenter/ko-substrater.

1.6 Tekniske spesifikasjoner

Se kapittel 1.6 i monterings- og bruksanvisningen 6006183 / 6005672.

1.6.1 Tekniske data for RW 480, 50 Hz

Type røreverk	Propellens diameter	Turtall / Transmisjonsreduksjon	Motortype	Nominell inngangseffekt P ₁	Motorens nominelle effekt P ₂	Starttype: Direkte (D.O.L)	Starttype: Stjerne/trekant	Nominell strøm ved 400 V	Startstrøm ved 400 V	Kabeltype** (Ex- og standard)	Temperaturværing	Tetningsovervåking	Ex dII BT4	Styrerør □ 100	Totalvekt
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Tekniske data for RW 480, 60 Hz

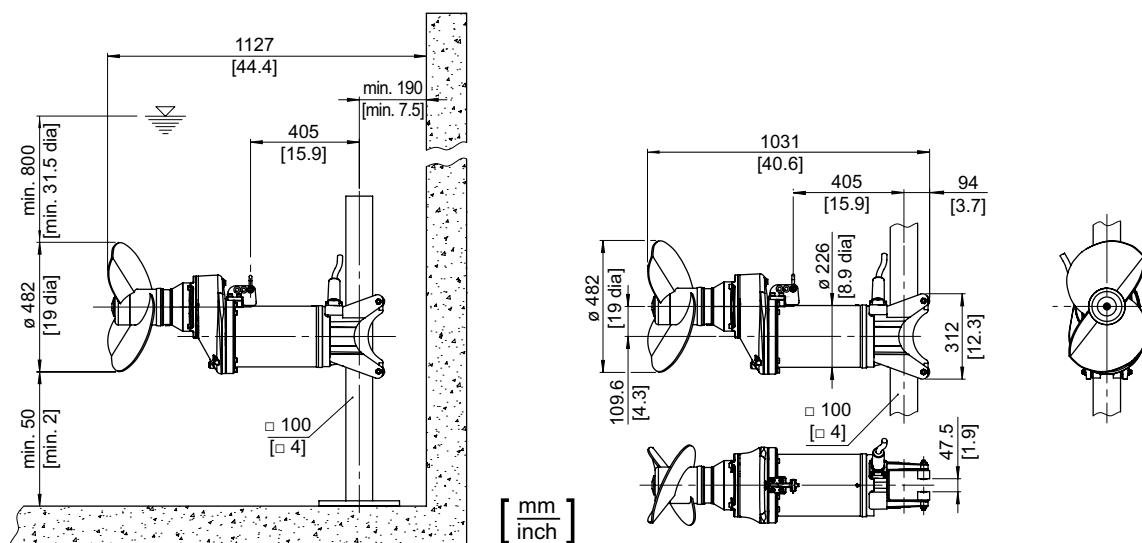
Type røreverk	Propellens diameter	Turtall / Transmisjonsreduksjon	Motortype	Nominell inngangseffekt P ₁	Motorens nominelle effekt P ₂	Starttype: Direkte (D.O.L)	Starttype: Stjerne/trekant	Nominell strøm ved 460 V	Startstrøm ved 460 V	Kabeltype** (Ex- og standard)	Temperaturværing	Tetningsovervåking	Ex dII BT4	Styrerør □ 100	Totalvekt
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Inngangseffekt; P₂ = Utgangseffekt; • = Standard; ○ = Tilleggsutstyr; **Kabeltype: 10 m kabel med fri kabelende er standardutstyr: 2 = 1 x 10G x 1.5

1.7 Mål og vekt

Se kapittel 1.7 i monterings- og bruksanvisningen 6006183 / 6005672.

1.7.1 Dimensjoner RW 480



Figur 1 Dimensjoner RW 480

1.8 Typeskilt

Se kapittel 1.8 i monterings- og bruksanvisningen 6006183 / 6005672.

2 - 3 Sikkerhet; Transport og lagring

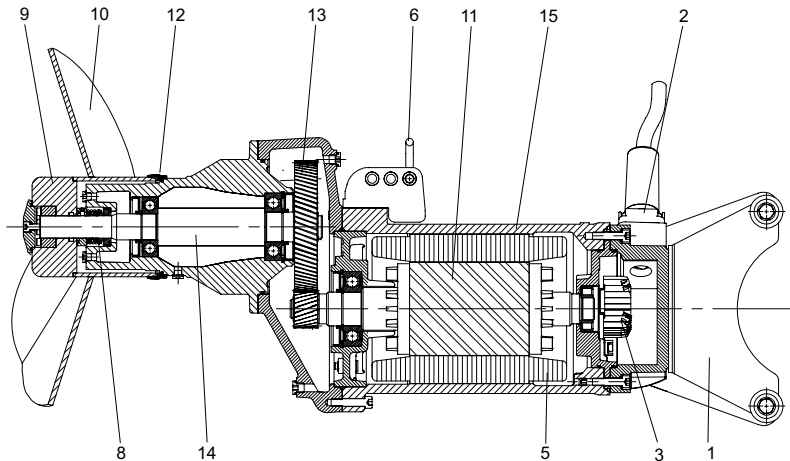
Se kapittel 2 - 3 i monterings- og bruksanvisningen 6006183 / 6005672.

4 Produktbeskrivelse

4.1 Generell beskrivelse

Se kapittel 4.1 i monterings- og bruksanvisningen 6006183 / 6005672.

4.2 Oppbyggingen av RW 480



0551-0043

Forklaring

- 1 Holder
- 2 Kabelinnføring
- 3 Koblingsrom
- 4 Propellaksling
- 5 Motorvikling
- 6 Feste med sjakkell
- 7 Motorhus
- 8 Glideringspakning
- 9 Propellnav / Propell
- 10 Drev
- 11 Akselenhet med rotor og lagre
- 12 SD - ring

Figur 2 RW 480

4.3 Bruk på frekvensomformere

Se kapittel 4.5 i monterings- og bruksanvisningen 6006183 / 6005672.

5 Installering

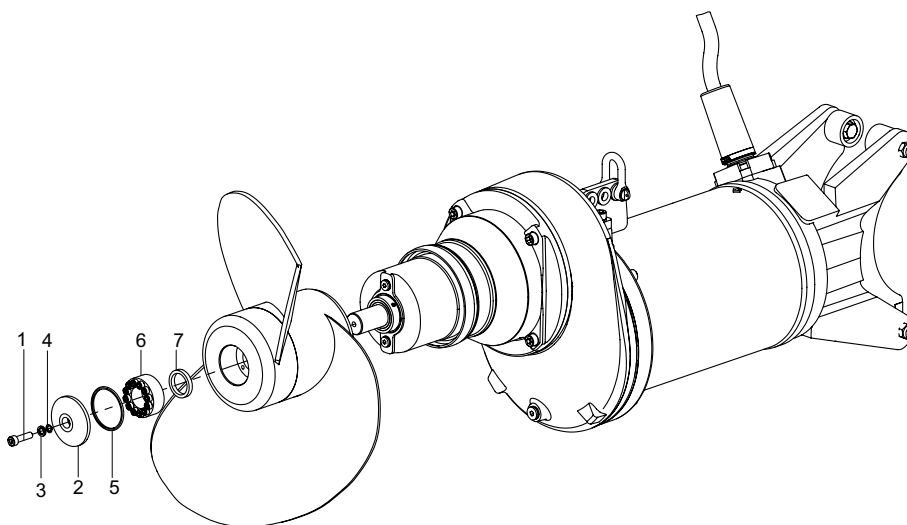
Se kapittel 5 i monterings- og bruksanvisningen 6006183 / 6005672.

5.1 Installering RW 480

Se kapittel 5.1 i monterings- og bruksanvisningen 6006183 / 6005672.

5.2 Montering av propell RW 480

Konstruksjonsmessig skiller propellfestet seg fra de andre aggregatene i RW/RCP- hhv. SB-KA-serien. Propellen på RW 480 er festet med et innkapslet fastspenningsett.



0551-0044

Forklaring

- 1 Sylinderskrue
- 2 Propellskive
- 3 Låseskiver
- 4 O-ring (Sylinderskrue)
- 5 O-ring (Propellskive)
- 6 Fastspenningsett
- 7 O-Ring (nav)

Figur 3 Montering/demontering av propell

Demontering

- Demonter sylinderskrue (3/1) med låseskiver (3/3), O-ring (3/4), propellskive (3/2) og O-ring (3/5).
- Løsne skruene på fastspenningsettet (3/6) og ta av propellen sammen med fastspenningsettet. Ta O-ringen (3/7) ut av sporet.

Montering

- Rengjør aksling og nav. Sett ny O-ring (3/7) inn i sporet på navet, påfør litt olje på aksling og fastspenningssett (3/6).

OBS

Ikke bruk olje som inneholder molybden-svovelkarbon!

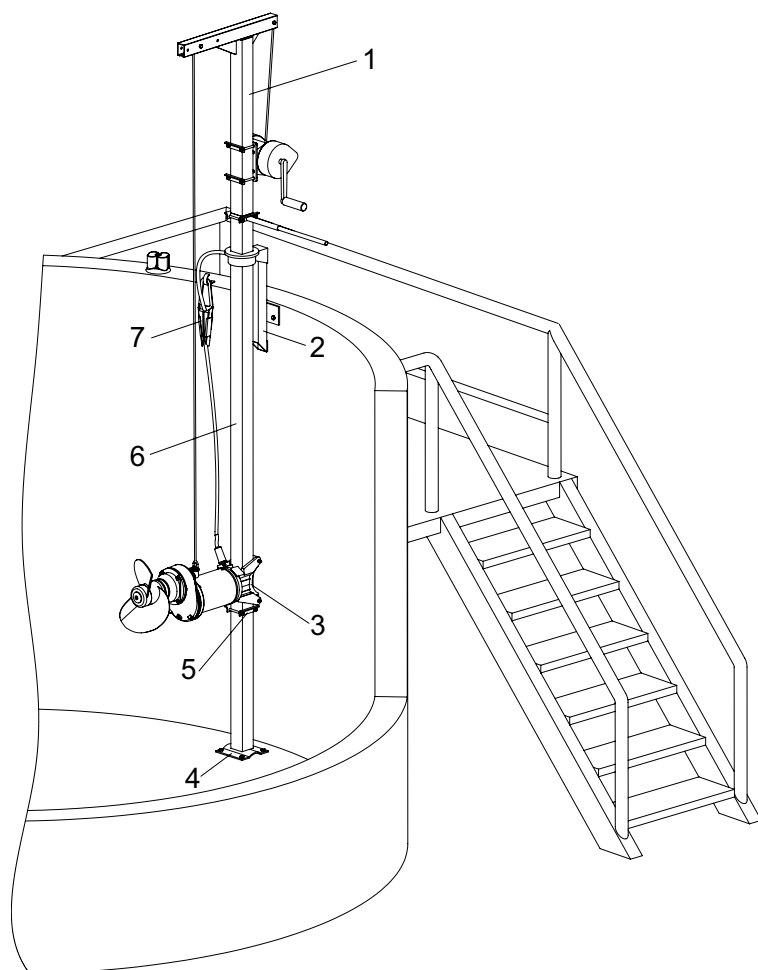
- Stram først lett til skruene på fastspenningssettet diagonalt.
- Stram til skruene på fastspenningssettet diagonalt med **16 Nm**. Kontroller deretter tiltrekingsmomentet ved å dreie med urviseren.
- Sett låseskiver (3/3) sammen med O-ring (3/4), propellskive (3/2) og O-ring (3/5) på sylinderskruen (3/1) og stram til med **17 Nm**.

5.3 Tiltrekingsmomenter

Se kapittel 5.3 i monterings- og bruksanvisningen 6006183 / 6005672.

5.4 Eksempler på installasjon av RW 480

For denne typen installasjon anbefaler vi bruk av lukket holder.



0651-0045

Forklaring

- 1 Løftegalge med vinsj og wire
- 2 Øvre festebrakett
- 3 Lukket holder
- 4 Gulvlager
- 5 Sikkerhetsklemme
- 6 Dreibart firkantrør
- 7 Avspenningsklemme med kabelkrok

Figur 4 Eksempler på installasjon av RW 480

5.5 Stativ RW/SB-KA

Se kapittel 5.5 i monterings- og bruksanvisningen 6006183 / 6005672.

5.6 Lengder for styrerør (firkantrør) RW/SB-KA

Se kapittel 5.6 i monterings- og bruksanvisningen 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Elektrisk tilkobling

Se kapittel 5.8 i monterings- og bruksanvisningen 6006183 / 6005672. Se figur 33. Kapittel 5.8.3 er ikke relevant for RW 480.

6 - 7 Ta i bruk; Vedlikehold

Se kapittel 6 - 7 i monterings- og bruksanvisningen 6006183 / 6005672.

1 Uwagi ogólne

Zasadniczo instrukcja montażu i obsługi o numerze art. 6006183 / 6005672 (Mieszadła z silnikami zanurzeniowymi ABS RW) są w dużej mierze zgodne również z **RW 480**. Dotyczy to również prawidłowego podłączenia i bezpiecznej eksploatacji RW 480 w wersji Ex. Dotyczy to również **wskazówek dotyczących bezpieczeństwa**. Są one zawarte w osobnej książce o numerze art. 6005591; należy się z nimi dokładnie zapoznać przed rozpoczęciem instalacji i uruchomieniem!

Dlatego też w niniejszej „**Dodatkowej**” instrukcji montażu i obsługi mieszadła z silnikiem zanurzeniowym **ABS RW 480** zawarte są wyłącznie odsyłacze lub informacje różniące się, dodatkowe i specyficzne dla produktu.

1.1 - 1.3 Wprowadzenie; Zastosowanie zgodne z przeznaczeniem; Granice zastosowania

Patrz rozdziale 1.1 – 1.3 instrukcji montażu i obsługi 6006183 / 6005672.

1.4 Zakres zastosowania

Mieszadło z silnikiem zanurzeniowym RW 480 służy do mieszania i przetwarzania lepkich płynów z zawartością ciał stałych w oczyszczalniach ścieków, stosowanych w przemyśle i rolnictwie. Jest ono przeznaczone zwłaszcza do homogenizacji szlamu i kofermentów/kosubstratów.

1.5 Klucz kodu oznaczenia typu urządzenia

Patrz rozdziale 1.5 instrukcji montażu i obsługi 1 597 0832-EU/0833-EU. *Typ śmigła = Specjalne śmigło dwupłatowe do szlamu i kofermentów/kosubstratów.

1.6 Dane techniczne

Patrz rozdziale 1.6 instrukcji montażu i obsługi 6006183 / 6005672.

1.6.1 Dane techniczne RW 480, 50 Hz

Typ mieszadła	Średnica śmigła	Prędkość obrotowa/przekładnią redukcyjną	Typ silnika	Znamionowy pobór mocy P ₁	Znamionowy moc silnika P ₂	Rodzaj rozruchu: bezpośredni (D.O.L)	Rodzaj rozruchu: gwiazda/trójkąt	Prąd znamionowy przy 400 V	Prąd rozruchowy przy 400 V	Typ przewodu** (w wersji Ex i standardowej)	Kontrola temperatury	Kontrola szczelności	Ex dII BT4	Rura prowadząca □ 100	Masa całkowita
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Dane techniczne RW 480, 60 Hz

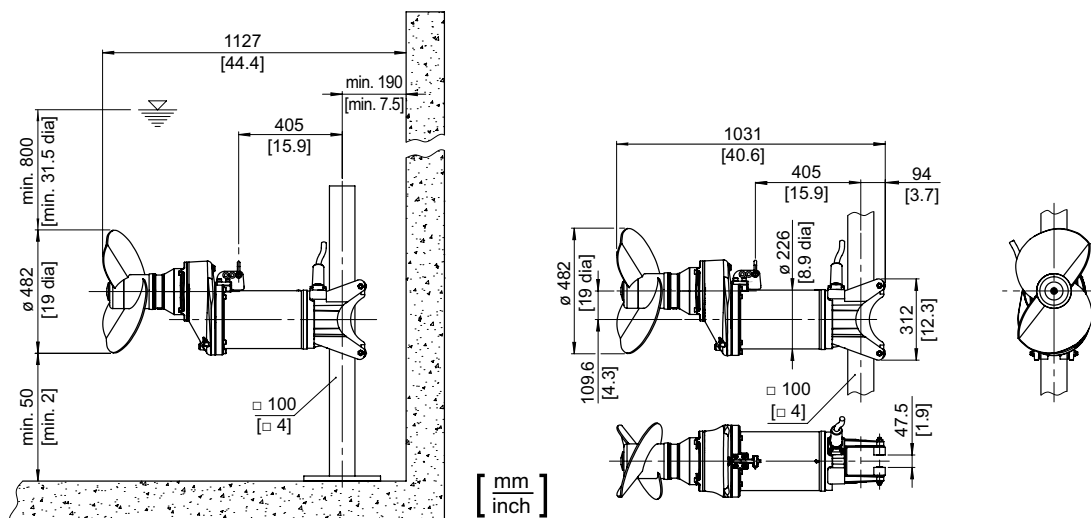
								460 V	460 V						
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Pobór mocy; P₂ = Moc oddawana; • = Standard; ○ = Opcja; **Typ przewodu: przewód 10 m z wolnym końcem to standardowy zakres dostawy; 2 = 1 x 10G x 1.5

1.7 Wymiary i masa

Patrz rozdziale 1.7 instrukcji montażu i obsługi 6006183 / 6005672.

1.7.1 Wymiary konstrukcyjne RW 480



Rys. 1 Wymiary konstrukcyjne RW 480

0551-0042

1.8 Tabliczka znamionowa

Patrz rozdziale 1.8 instrukcji montażu i obsługi 6006183 / 6005672.

2 - 3 Bezpieczeństwo; Transport i składowanie

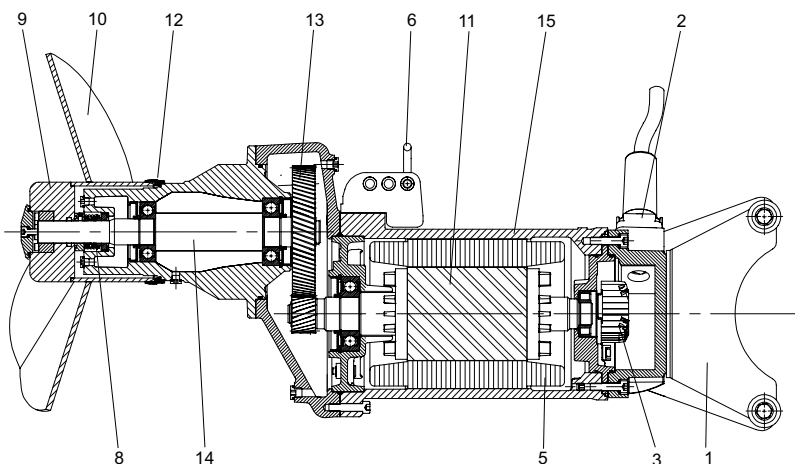
Patrz rozdziale 2 - 3 instrukcji montażu i obsługi 6006183 / 6005672.

4 Opis urządzenia

4.1 Ogólny opis

Patrz rozdziale 4.1 instrukcji montażu i obsługi 6006183 / 6005672.

4.2 Budowa konstrukcyjna RW 480



0551-0043

Legenda

- 1 Uchwyt
- 2 Wlot kabla
- 3 Komora przyłączeniowa
- 4 Wał śmigła
- 5 Motorwicklung
- 6 Mocowanie z pałąkiem
- 7 Obudowa silnika
- 8 Uszczelnienie mechaniczne
- 9 Piasta śmigła / śmigło
- 10 Przekładnia
- 11 Zespół wałka z wirnikiem i łożyskami
- 12 Pierścień SD

Rys. 2 RW 480

4.3 Eksploatacja przy przetwornicach częstotliwości

Patrz rozdziale 4.5 instrukcji montażu i obsługi 6006183 / 6005672.

5 Instalacja

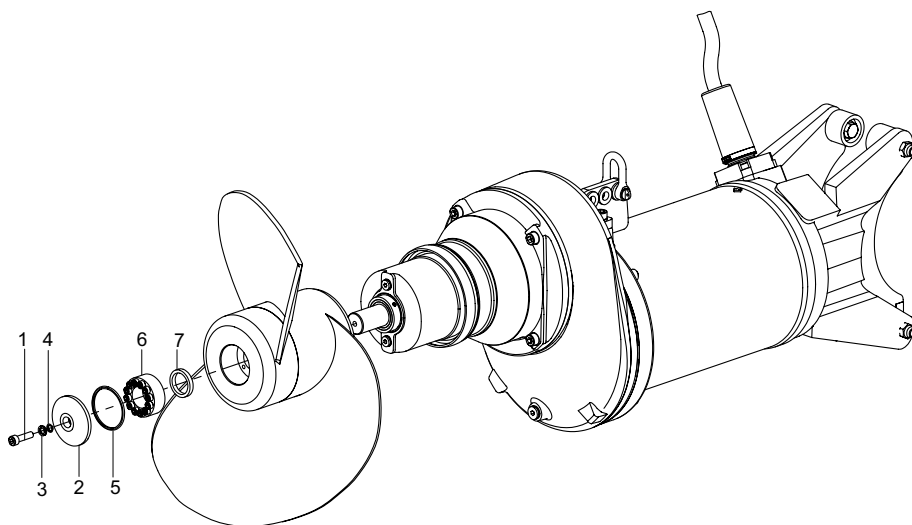
Patrz rozdziale 5 instrukcji montażu i obsługi 6006183 / 6005672.

5.1 Instalacja RW 480

Patrz rozdziale 5.1 instrukcji montażu i obsługi 6006183 / 6005672.

5.2 Montaż śmigła RW 480

Ze względu na konstrukcję, mocowanie śmigła różni się od innych agregatów z serii RW/RCP lub SB-KA. W modelu RW 480 śmigło jest przymocowane za pomocą zamkniętego zespołu mocującego.



0551-0044

Legenda

- 1 Śruba cylindryczna
- 2 Tarcza śmigła
- 3 Podkładki zabezpieczające
- 4 Pierścień uszczelniający (Śruba cylindryczna)
- 5 Pierścień uszczelniający (Tarcza śmigła)
- 6 Zespół mocujący
- 7 Pierścień samouszczelniający (piasta)

Rys. 3 Montaż/demontaż śmigła

Demontaż

- Zdemonstować śrubę z łbem walcowym (3/1) z podkładkami zabezpieczającymi (3/3), pierścień samouszczelniający (3/2), tarczę śmigła (3/2) i pierścień samouszczelniający (3/5).

- Odkręcić śruby zespołu mocującego (3/6) i zdjąć śmigło razem z zespołem. Usunąć pierścień samouszczelniający (3/7) z rowka.

Montaż

- Wyczyścić wałek i piastę. Włożyć nowy pierścień samouszczelniający (3/7) w rowek piasty, lekko naoliwić wałek i zespół mocujący (3/6).

UWAGA **Nie używać olejów zawierających molibdenowy dwusiarczek węgla!**

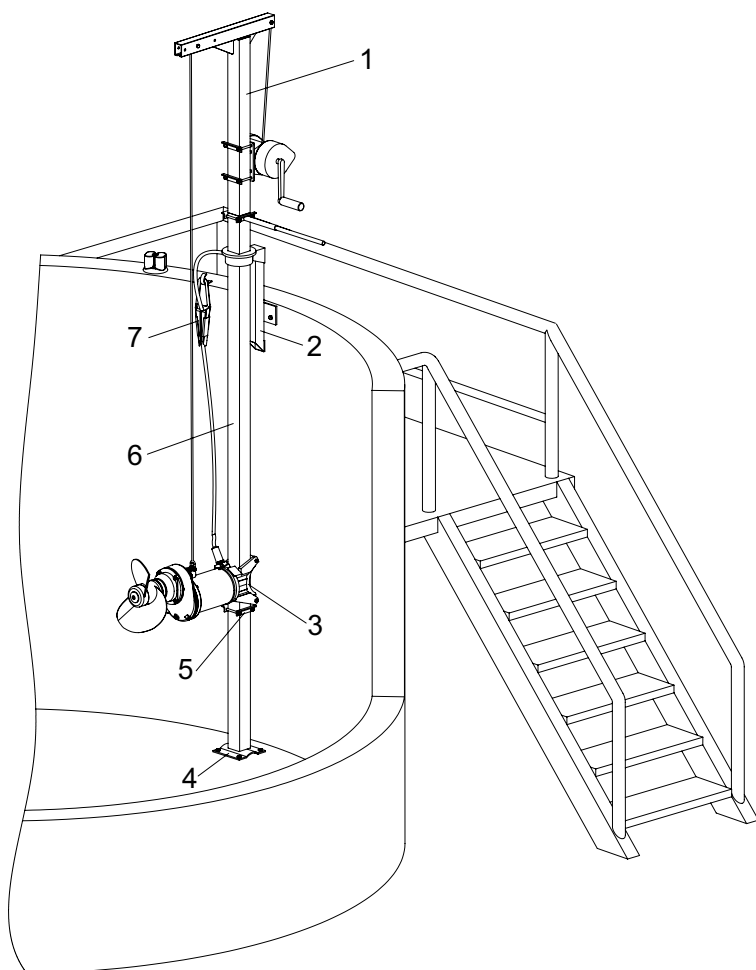
- Najpierw lekko przykręcić na krzyż śrubę zespołu mocującego.
- Dokręcić śruby zespołu mocującego na krzyż momentem **16 Nm**. Następnie kolejno sprawdzić moment dokręcenia w kierunku zgodnym z ruchem wskazówek zegara.
- Założyć podkładki zabezpieczające (3/3) z pierścieniem samouszczelniającym (3/4), tarczą śmigła (3/2) i pierścieniem samouszczelniającym (3/5) na śrubę z łbem walcowym (3/1) i dokręcić momentem **17 Nm**.

5.3 Momenty dokręcające

Patrz rozdziale 5.3 instrukcji montażu i obsługi 6006183 / 6005672.

5.4 Przykłady instalacji RW 480

Dla tego typu instalacji zaleca się wykorzystanie zamkniętego uchwytu.



0551-0045

Legenda

- 1 Wysięgnik podnośnikowy z kołowrotem i liną
- 2 Górny koziół mocujący
- 3 Uchwyt zamknięty
- 4 Podpora dolna
- 5 Zaciskowy ogranicznik bezpieczeństwa
- 6 Obrotowa czworokątna rura przewodnikowa
- 7 Zacisk odciągowy z hakiem kablowym

Rys. 4 Przykłady instalacji RW 480

5.5 Uchwyty RW/SB-KA

Patrz rozdziale 5.5 instrukcji montażu i obsługi 6006183 / 6005672.

5.6 Długości rur przewodniczych (czworokątna rura przewodnikowa) RW/SB-KA

Patrz rozdziale 5.6 instrukcji montażu i obsługi 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Przyłącze elektryczne

Patrz rozdziale 5.8 instrukcji montażu i obsługi 6006183 / 6005672. *Zob. rys. 33.* Rozdział 5.8.3 nie obowiązuje dla modelu RW 480.

6 - 7 Pierwsze uruchomienie; Konservacja

Patrz rozdziale 6 - 7 instrukcji montażu i obsługi 6006183 / 6005672.

1 Üldist

Põhimõtteliselt kehtib paigaldus- ja kasutusjuhend art.-nr. 6006183 / 6005672 (ABS sukelmootoriga segamismehhanismid RW) suures osas ka **RW 480** puhul. See kehtib ka RW 480 Ex-mudeli asjakohase ühendamise ja ohutu käitamise kohta. Sama kehtib ka **ohutusjuhiste** kohta. Need sisalduvad eraldi vihikus art.-nr. 6005591 ja tuleb enne installeerimist ning käikuvõtmist hoolikalt läbi lugeda!

Käesolevas „Lisa“-paigaldus- ja kasutusjuhendis **ABS sukelmootoriga segamismehhanismidele RW 480** sisalduvad seetõttu üksnes ristviited või vastavalt kõrvalekalduv, täiendav ja tootespetsiifiline informatsioon.

1.1 - 1.3 Sissejuhatus; Sihipärane kasutamine; Kasutuspiirangud

Vt. peatükk 1.1 - 1.3 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

1.4 Kasutusala

Sukelmootoriga segamismehhanism RW 480 on ette nähtud tööstuslikes ja põllumajanduslikes puhastusseadmetes tihkete, tahkeid aineid sisaldavate vedelike ringisegamiseks. Mehhanism on välja töötatud täitmaks spetsiaalseid nõudmisi muda ja kofermentide/kosubstraatide homogeniseerimisel.

1.5 Tüübikood

Vt. peatükk 1.5 paigaldus- ja kasutusjuhendis 6006183 / 6005672. *Propelleri tüüp = 2-leht spetsiaalne propeller muda ja kofermentide/kosubstraatide jaoks.

1.6 Tehnilised andmed

Vt. peatükk 1.6 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

1.6.1 RW 480 tehnilised andmed 50 Hz

Seguri tüüp	Propelleri läbimõõt	Pöörde arv / reduktoriga	Mootori tüüp	Nimitarbimisvõimsus P ₁	Mootori nimivõimsus P ₂	Käivituse liik: otse- käivituse (D.O.L)	Käivituse liik: täht/ kolmnurkkäivitus	Nimivool 400 V juures	Käivitusvool 400 V juures	Kaabli tüüp** (Ex- ja standard)	Temperatuurikontroll	Tihendikontroll	Ex dII BT4	Juhttoru □ 100	Kogukaal
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 RW 480 tehnilised andmed 60 Hz

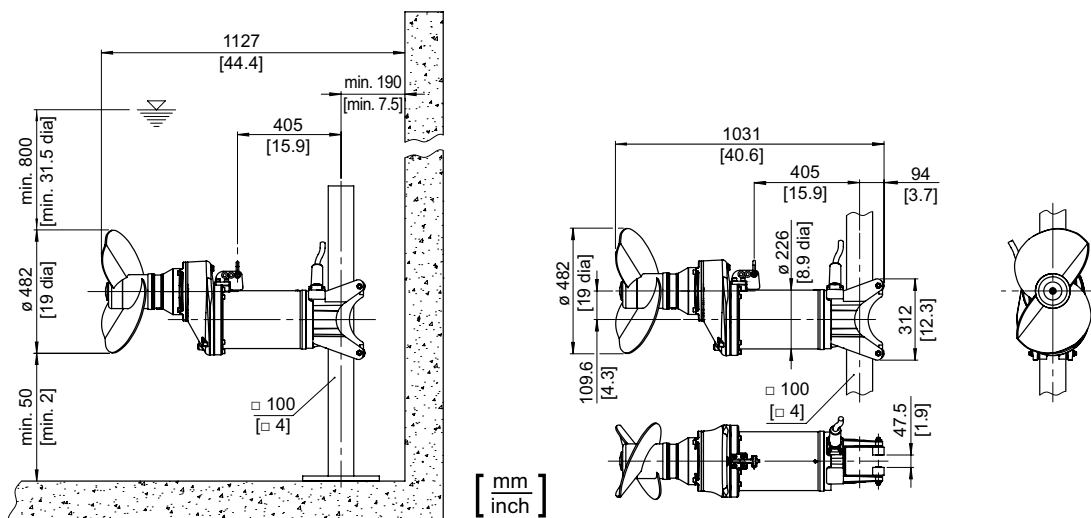
								460 V	460 V						
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = tarbimisvõimsus; P₂ = kasulik võimsus; • = Standard; ○ = lisavarustus; **Kaabli tüüp: 10 m kaabel vaba kaabliotsaga kuulub standardvarustusse: 2 = 1 x 10G x 1.5

1.7 Mõõdud ja kaal

Vt. peatükk 1.7 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

1.7.1 RW 480 gabariidid



Joonis 1 RW 480 gabariidid

1.8 Tüübisilt

Vt. peatükk 1.8 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

2 - 3 Ohutus; Transport ja ladustamine

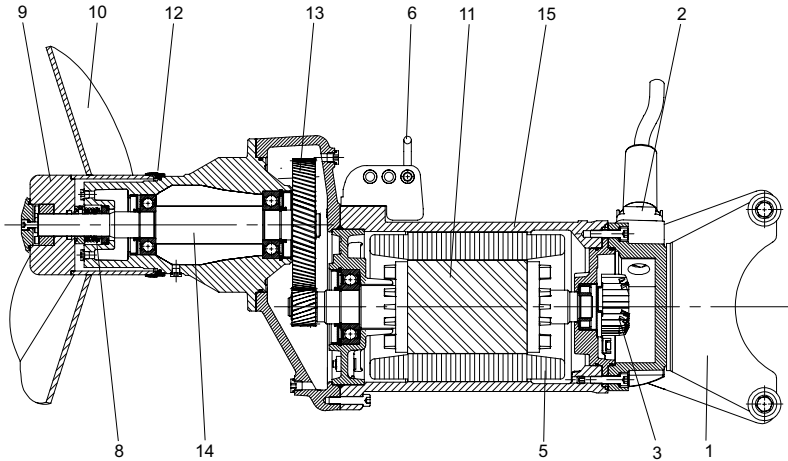
Vt. peatükk 2 - 3 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

4 Tootekirjeldus

4.1 Üldkirjeldus

Vt. peatükk 4.1 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

4.2 RW 480 ehitus



0551-0043

Legend

- 1 Kinnitus
- 2 Kaabli sisseeviik
- 3 Ühendusruum
- 4 Propellerivõll
- 5 Mootori mähis
- 6 Haagiga hoidik
- 7 Mootori korpus
- 8 Liugrõnga tihend
- 9 Propelleripuks / Propeller
- 10 Ajam
- 11 Võll rootori ja laagritega
- 12 SD - rõngas

Joonis 2 RW 480

4.3 Töö sagedusmuunduriga

Vt. peatükk 4.5 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

5 Paigaldamine

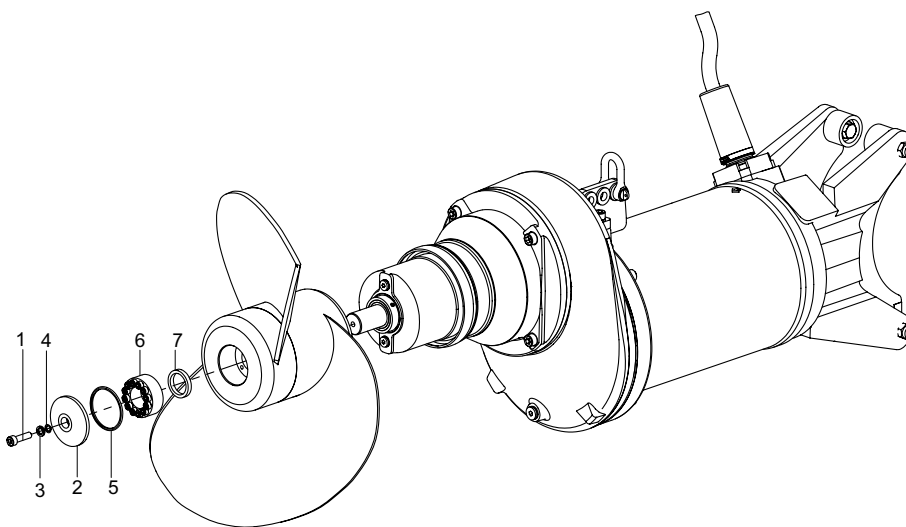
Vt. peatükk 5 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

5.1 RW 480 paigaldamine

Vt. peatükk 5.1 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

5.2 Propelleri paigaldamine RW 480

Konstruksioonilistel põhjustel erineb propelleri kinnitus RW/RCP või SB-KA koosteseeria teistest agregaatidest. RW 480 propeller on kinnitatud kapseldatud pingutuskomplektiga.



0551-0044

Legend

- 1 Silindrikrugi
- 2 Propelleriseib
- 3 Kindlustusseib
- 4 O-rõngas (Silindrikrugi)
- 5 O-rõngas (Propelleriseib)
- 6 Pingutuskomplekt
- 7 O-rõngas (rumm)

Joonis 3 Propelleri montaaž/demontaaž

Demontaaž

- Demonteerige silindrikrugi (3/1) koos kindlustusseibide (3/3), O-rõnga (3/4), propelleriseibi (3/2) ja O-rõngaga (3/5).
- Vabastage pingutuskomplekti (3/6) kruvid ja tõmmake propeller koos pingutuskomplektiga pealt maha. Eemaldage soonest O-rõngas (3/7).

Montaaž

- Puhastage völli ja rummu. Pange rummu soonde uus O-rõngas (3/7), õlitage völli ja pingutuskomplekt (3/6) kergelt sisse.

TÄHELEPANU Ärge kasutage õlisid, mis sisaldavad molübdeen-väävelsüsinikku!

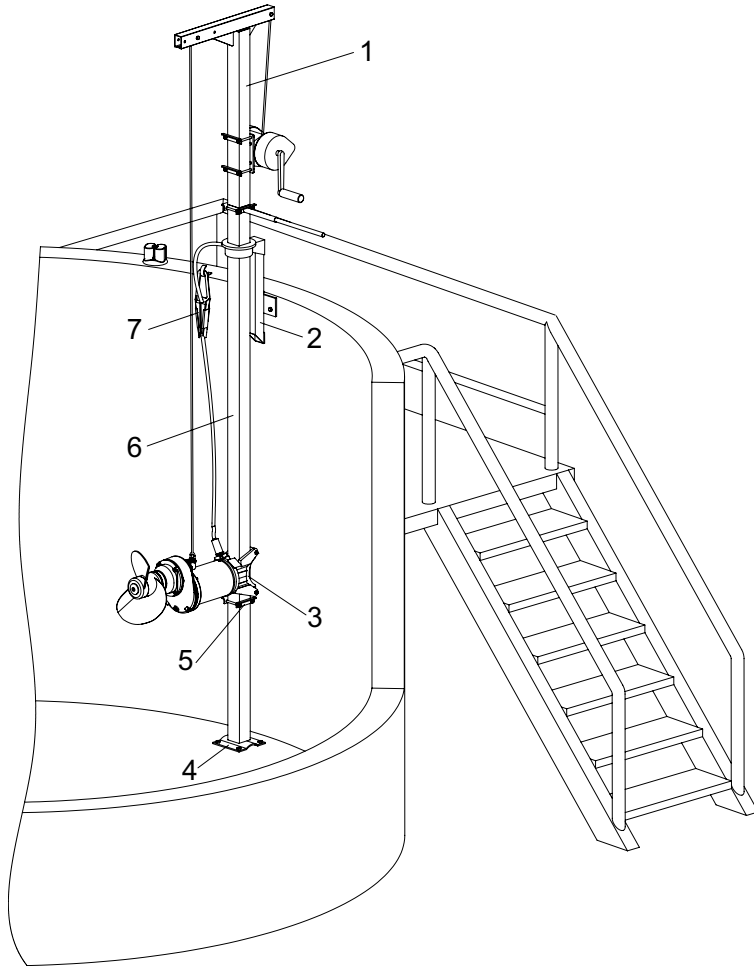
- Tõmmake pingutuskomplekti kruvid esmalt kergelt ristküjuliselt kinni.
- Tõmmake pingutuskomplekti kruvid ristküjuliselt **16 Nm**-ga kinni. Seejärel kontrollige päripäeva ümber liikudes pingutusmoment üle.
- Pistke kindlustusseibid (3/3) koos O-rõnga (3/4), propelleriseibi (3/2) ja O-rõngaga (3/5) silinderpeakruvi (3/1) peale ning tõmmake **17 Nm**-ga kinni.

5.3 Pingutusmomendid

Vt. peatükk 5.3 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

5.4 RW 480 paigalduse näited

Sellise paigalduse soovitame kasutada lukustatud kinnitust



0551-0045

Legend

- 1 Tõstetalad vintsi ja nõõriga
- 2 Ülemine kinnitusklots
- 3 Kinnitus lukustatud
- 4 Põhjakinnitus
- 5 Turvaklamber
- 6 Pöõratav nelikantjuhttoru
- 7 Pingutusklamber kaablikonksuga

Joonis 4 RW 480 paigalduse näited

5.5 RW/SB-KA kinnitused

Vt. peatükk 5.5 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

5.6 RW/SB-KA juhttoru pikkus (nelikantjuhttoru)

Vt. peatükk 5.6 paigaldus- ja kasutusjuhendis 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Elektriühendus

Vt. peatükk 5.8 paigaldus- ja kasutusjuhendis 6006183 / 6005672. Vaata joonist 33. Peatükk 5.8.3 ei oma RW 480 jaoks tähtsust.

6 - 7 Töölepanek; Hooldus

Vt. peatükk 6 - 7 paigaldus- ja kasutusjuhendis 6006183 / 6005672.

1 Általános tudnivalók

Alapvetően a 6006183 / 6005672 cikkszámú termék (ABS RW merülőmotoros keverőszerkezet) beszerelési és használati útmutatója nagyrészt az **RW 480** termékre is érvényes. Ez érvényes az RW 480 robbanásbiztos kivitelű berendezés szakszerű csatlakoztatására és biztonságos üzemeltetésére is. Ugyanez igaz a **biztonsági utasításokra**. Ezek külön, a 6005591 cikkszámú füzetben található, amiket a felszerelés és üzembe helyezés előtt gondosan tanulmányozni kell!

Ebben az **ABS RW 480 merülőmotoros keverőszerkezet „kiegészítő” beszerelési és használati útmutatójában** ezért csak keresztutalások vannak ill. az eltérések, kiegészítések és termékspecifikus információk.

1.1 - 1.3 Bevezető; Rendeltetésszerű használat; Az alkalmazás korlátai

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 1.1 - 1.3 fejezetét.

1.4 Alkalmazási területei

Az RW 480 merülőmotoros keverőszerkezettel sűrű, szilárdanyag-tartalmú folyadékokat lehet keverni, mozgatni és forgatni víztisztító berendezésekben, az iparban és a mezőgazdaságban. A készülék kifejezetten a szennyiszap és a fermentáló/hordozóanyagok keverésének különleges követelményeihez készült.

1.5 Típus kódok

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 1.5 fejezetét. *A propeller típusa = 2 lapátos különleges propeller szennyiszaphoz és fermentáló/hordozóanyaghoz.

1.6 Műszaki adatok

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 1.6 fejezetét.

1.6.1 Műszaki adatok RW 480, 50 Hz

A keverőmű típusa	A propeller átmérője	Fordulatszám / áttétel	A motor típusa	Névleges teljesítményfelvétel P ₁	A motor névleges teljesítménye P ₂	Indítási mód: közvetlen (D.O.L)	Indítási mód: csillag-delta	Névleges áram 400 V mellett	Indítási áram 400 V mellett	A vezeték típusa** (Ex- és standard)	Hőmérséklet-felügyelet	Tömítettség-ellenőrzés	Ex dII BT4	Vezetőcső □ 100	Össztömeg
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Műszaki adatok RW 480, 60 Hz

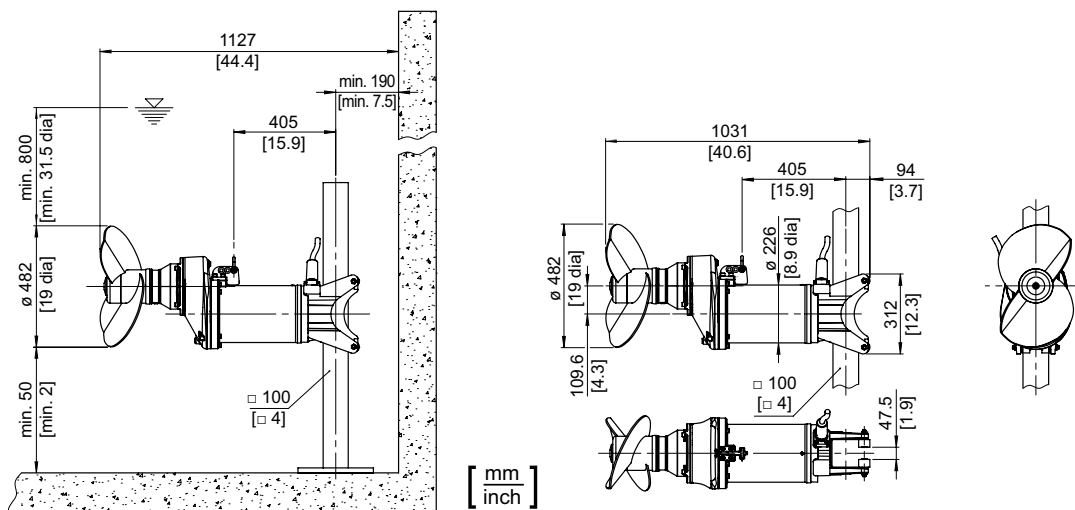
								460 V	460 V						
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Teljesítményfelvétel; P₂ = Teljesítményleadás; • = Standard; ○ = Opció; **A vezeték típusa: 10 m vezeték szabad vezetékkel a standard szállítás része: 2 = 1 x 10G x 1.5

1.7 Méretek és tömegek

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 1.7 fejezetét.

1.7.1 Gyártási méretek RW 480



1. ábra Gyártási méretek RW 480

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1.8 Típustábla

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 1.8 fejezetét.

2 - 3 Biztonság; Szállítás és tárolás

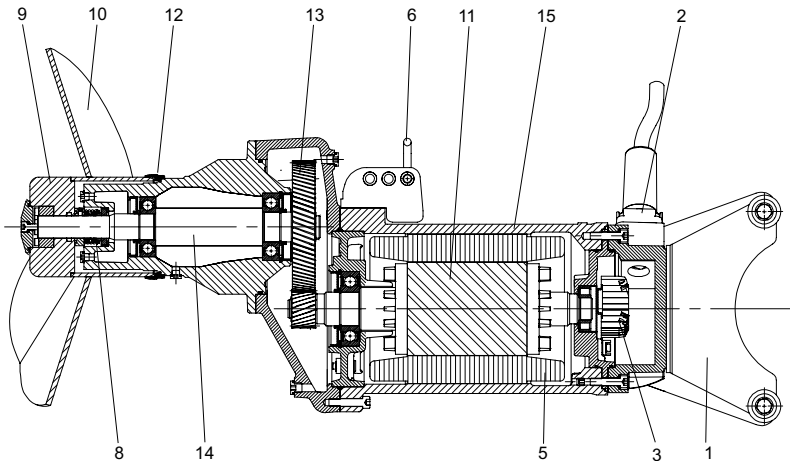
Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 2 - 3 fejezetét.

4 Termékleírás

4.1 Általános leírás

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 4.1 fejezetét.

4.2 Szerkezeti felépítés RW 480



0551-0043

Jelmagyarázat

- 1 Tartó
- 2 Kábelbevezetés
- 3 Bekötési tér
- 4 Propellertengely
- 5 Motortekercs
- 6 Füles tartó
- 7 Motorház
- 8 Csúszógyűrűs tömítés
- 9 Propelleragy / Propeller
- 10 Hajtómű
- 11 Tengelyegység rotorral és csapágyakkal
- 12 SD - gyűrű

2. ábra RW 480

4.3 Üzemeltetés frekvenciaváltóval

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 4.5 fejezetét.

5 Telepítés

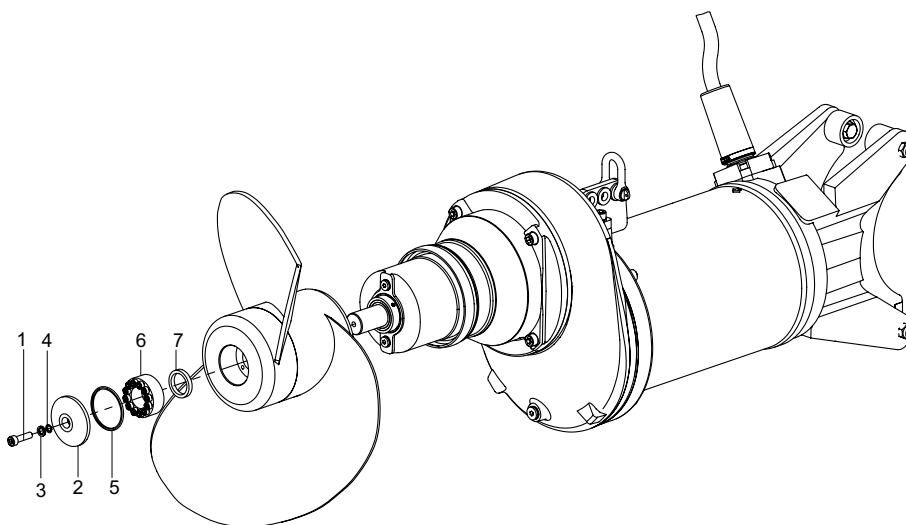
Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 5 fejezetét.

5.1 Telepítés RW 480

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 5.1 fejezetét.

5.2 A propeller felszerelése RW 480

Felépítésében a propeller rögzítése különbözik a RW/RCP ill. SB-KA gyártási sorozat többi gépegységétől. Az RW 480 propellerét egy tokozott befogószerkezet rögzíti.



0551-0044

Jelmagyarázat

- 1 Hengeres fejű csavar
- 2 Propellertárcsa
- 3 Biztosító alátétek
- 4 O-gyűrű (Hengeres fejű csavar)
- 5 O-gyűrű (Propellertárcsa)
- 6 Befogószerkezet
- 7 O-gyűrű (agy)

3. ábra Propeller fel-/leszerelése

Leszerelés

- Szerelje le a (3/1) hengercsavarokat a (3/3) biztosító alátétekkel együtt, a (3/4) O-gyűrűt, a (3/2) propeller alátétet és a (3/5) O-gyűrűt.
- Oldja ki a (3/6) befogószerkezet csavarjait, és húzza le a propellert és a befogószerkezetet. Vegye ki a (3/7) O-gyűrűt a horonyból.

Összeszerelés

- Tisztítsa meg a tengelyt és az agyat. Az agy hornyába helyezze be az új (3/7) O-gyűrűt, a tengelyt és a (3/6) befogószerkezetet enyhén olajozza meg.

FIGYELEM *Ne használjon molibdén-széndiszulfid tartalmú olajakat!*

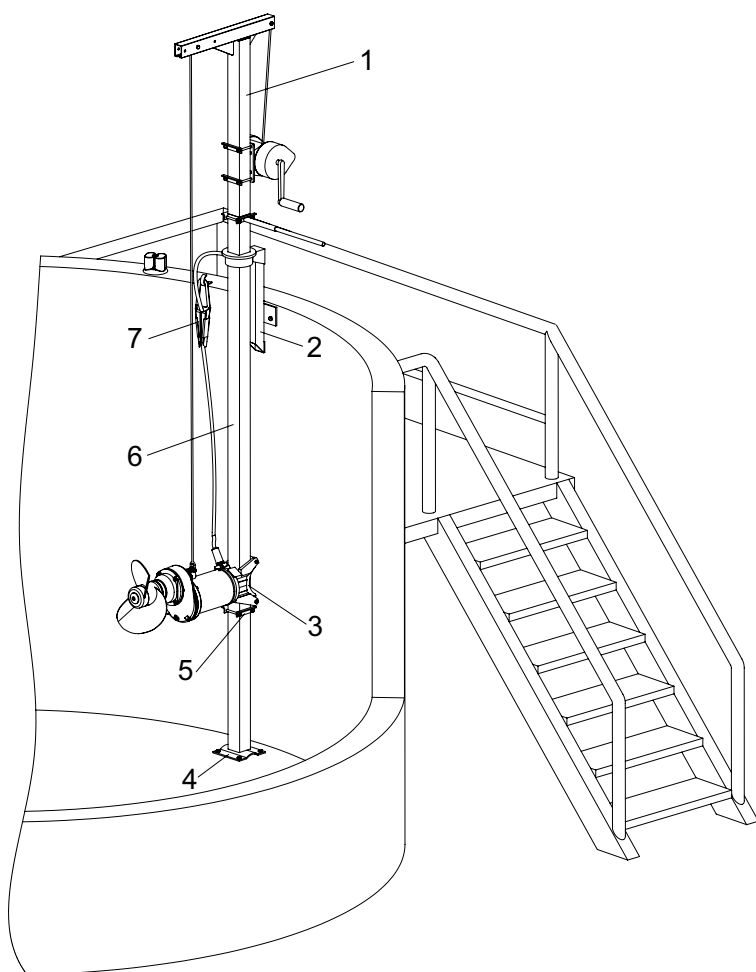
- A befogószerkezet csavarjait csak keresztirányban finoman húzza meg.
- A befogószerkezet csavarját keresztirányban **16 Nm** forgatónyomatékkal húzza meg. Ezután a meghúzási nyomatékot jobbra forgatva ellenőrizze.
- Helyezze rá a (3/1) hengercsavarra a (3/3) biztosító alátéteket, a (3/4) O-gyűrűt, a (3/2) propellertárcsát és a (3/5) O-gyűrűt, és **17 Nm** forgatónyomatékkal húzza meg.

5.3 Meghúzási nyomatékok

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 5.3 fejezetét.

5.4 Telepítési példa RW 480

Ilyen jellegű telepítésnél javasolt a zárt tartó alkalmazása.



0551-0045

Jelmagyarázat

- 1 Bakállvány csörlővel és kötéllel
- 2 Felső tartóbak
- 3 Zárt tartó
- 4 Talp
- 5 Biztonsági szorítóútköző
- 6 Forgatható négyzetszelvény-vezetőcső
- 7 Szorítóbilincs vezetékhorggal

4. ábra Telepítési példa RW 480

5.5 Tartók RW/SB-KA

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 5.5 fejezetét.

5.6 Vezetőcsőhosszak (négyzetszelvény-vezetőcső) RW/SB-KA

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 5.6 fejezetét. RW 480 \triangle RW 900.

5.7 Villamos csatlakoztatás

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 5.8 fejezetét. *Lásd: 33. ábra.* Az 5.8.3. fejezet nem mérvadó az RW 480 gép esetében.

6 - 7 Üzembe helyezés; Karbantartás

Lásd az 6006183 / 6005672 számú beszerelési és használati útmutató 6 - 7 fejezetét.

1 Všeobecné

Návod k vestavbě a obsluze s č. sort. pol. 6006183 / 6005672 (ABS ponorná míchadla RW) v zásadě ve velkých částech platí i pro **RW 480**. Platí to i pro odborné připojení a pro bezpečný provoz Ex-provedení RW 480. Totéž platí i pro **bezpečnostní pokyny**. Tyto pokyny jsou uvedeny ve zvláštním sešitě s č. sort. pol. 6005591 a je třeba je před instalací a uvedením do provozu pečlivě prostudovat!

V tomto "doplňkovém" návodu k vestavbě a obsluze pro ponorné motorové míchací zařízení **ABS RW 480** jsou tudíž obsaženy pouze křížové odkazy popř. odchýlné, doplňující a pro daný výrobek specifické informace.

1.1 - 1.3 Úvod; Správné použití míchadel; Limity

Vizte kap. 1.1 - 1.3 návodu k vestavbě a obsluze 6006183 / 6005672.

1.4 Oblasti použití

Ponorné motorové míchací zařízení RW 480 slouží ke směšování, míchání a obíhání viskózních tekutin s obsahem pevných látek v čistíčkách odpadních vod, v průmyslu a zemědělství. Je dimenzováno především pro speciální požadavky při homogenizaci kalů a kofermentů/kosubstrátů.

1.5 Identifikační kód

Vizte kap. 1.5 návodu k vestavbě a obsluze 1 597 0832-EU/0833-EU. *Typ vrtule = Speciální 2-listová vrtule pro kaly a kofermenty/kosubstráty.

1.6 Technické údaje

Vizte kap. 1.6 návodu k vestavbě a obsluze 6006183 / 6005672.

1.6.1 Technické údaje RW 480, 50 Hz

Typ míchadla	Průměr vrtule	Otáčky / převodem	Typ motoru	Příkon motoru P ₁	Výkon motoru P ₂	Spouštění: Přímé (D.O.L.)	Spouštění: Hvězda/trojúhelník	Jmenovitý proud při 400 V	Rozběhový proud při 400 V	Typ kabelu** (ex- a standard)	Tepelná čidla	Čidlo průsaku ucpávkou	Ex dII BT4	Vodící tyč □ 100	Celková hmotnost
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Technické údaje RW 480, 60 Hz

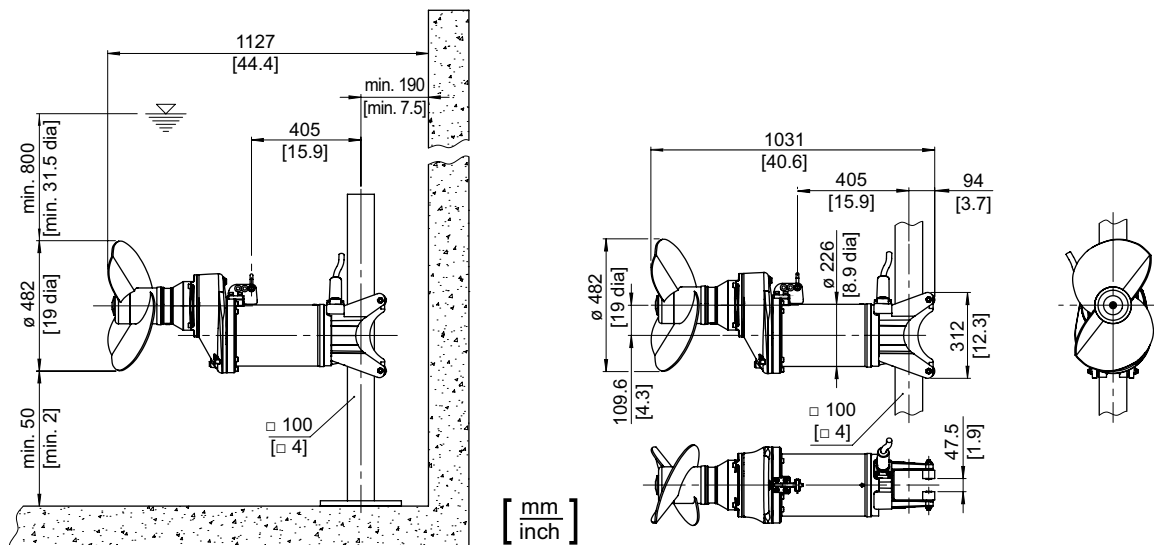
Typ míchadla	Průměr vrtule	Otáčky / převodem	Typ motoru	Příkon motoru P ₁	Výkon motoru P ₂	Spouštění: Přímé (D.O.L.)	Spouštění: Hvězda/trojúhelník	Jmenovitý proud při 460 V	Rozběhový proud při 460 V	Typ kabelu** (ex- a standard)	Tepelná čidla	Čidlo průsaku ucpávkou	Ex dII BT4	Vodící tyč □ 100	Celková hmotnost
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Příkon; P₂ = Výkon; • = Standard; ○ = Volitelné; **Typ kabelu: Kabel 10 m s volnými kabelovými konci jako standard: 2 = 1 x 10G x 1.5

1.7 Rozměry a hmotnosti

Vizte kap. 1.7 návodu k vestavbě a obsluze 6006183 / 6005672.

1.7.1 Rozměry RW 480



Obrázek 1 Rozměry RW 480

1.8 Typový štítek

Vizte kap. 1.8 návodu k vestavbě a obsluze 6006183 / 6005672.

2 - 3 Bezpečnost; Doprava a skladování.

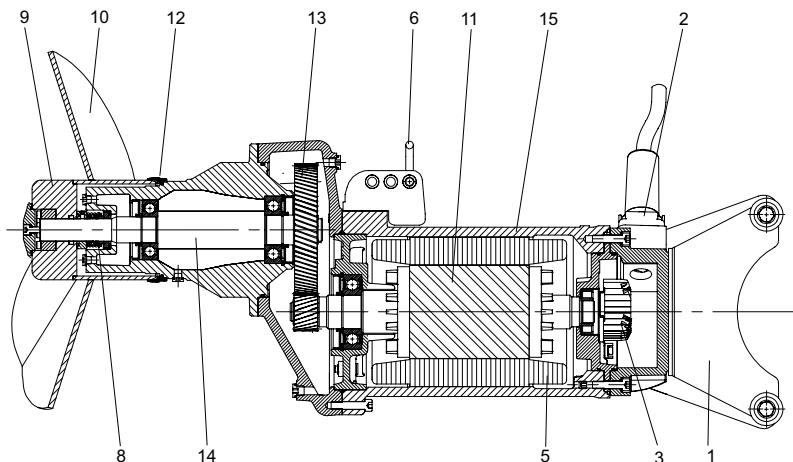
Vizte kap. 2 - 3 návodu k vestavbě a obsluze 6006183 / 6005672.

4 Popis výrobku

4.1 Všeobecný popis

Vizte kap. 4.1 návodu k vestavbě a obsluze 6006183 / 6005672.

4.2 Výkres RW 480



0551-0043

Legenda

- 1 Vodící konzola
- 2 Vstup kabelu
- 3 Spojovací komora
- 4 Hřídel vrtule
- 5 Stator
- 6 Držák se závěsným lanem
- 7 Motorová skříň
- 8 Mechanická ucpávka
- 9 Náboj vrtule / Vrtule
- 10 Převodovka
- 11 Hřídel s rotorem a ložisky
- 12 SD - kroužek

Obrázek 2 RW 480

4.3 Provoz s frekvenčním měničem

Vizte kap. 4.5 návodu k vestavbě a obsluze 6006183 / 6005672.

5 Instalace

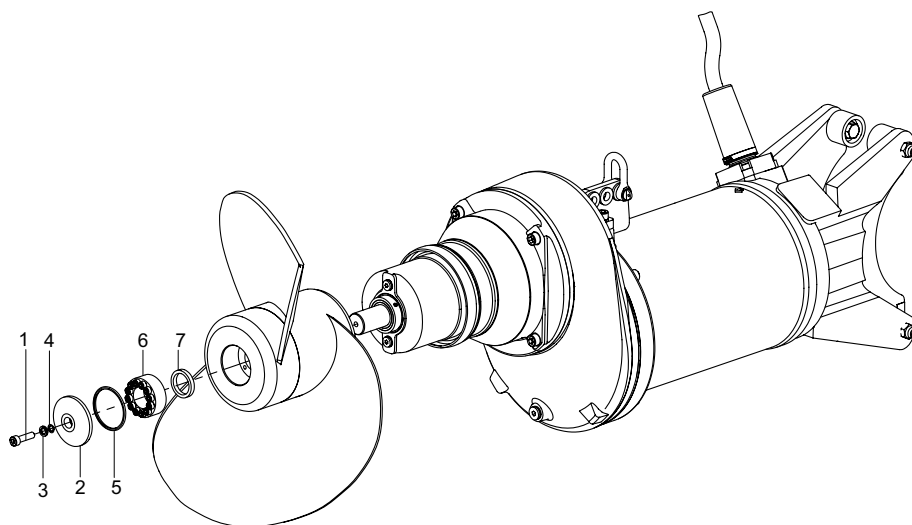
Vizte kap. 5 návodu k vestavbě a obsluze 6006183 / 6005672.

5.1 Instalace RW 480

Vizte kap. 5.1 návodu k vestavbě a obsluze 6006183 / 6005672.

5.2 Montáž vrtule RW 480

Konstrukčním uspořádáním se odlišuje upevnění vrtule od jiných agregátů konstrukčních řad RW/RCP popř. SB-KA. Vrtule míchacího zařízení RW 480 je upevněna hermeticky uzavřeným upínacím ústrojím.



0832-EU / 0833-EU-0044

Legenda

- 1 Čelní šroub
- 2 Podložka vrtule
- 3 Zajišťovací podložka
- 4 O kroužek (Čelní šroub)
- 5 O kroužek (Podložka vrtule)
- 6 Upínací ústrojí
- 7 O-kroužek (náboj)

Obrázek 3 Montáž a demontáž vrtule

Demontáž

- Odmontujte inbusový šroub (3/1) s pojistnými podložkami (3/3), O-kroužek (3/4), kotouč vrtule (3/2) a O-kroužek (3/5).
- Povolte šrouby upínacího ústrojí (3/6) a vrtuli společně s upínacím ústrojím vytáhněte. Vyndejte O-kroužek (3/7) z drážky.

Montáž

- Vyčistěte hřídel a náboj. Do drážky náboje nasadte nový O-kroužek (3/7), lehce naolejujte hřídel a upínací ústrojí (3/6).

POZOR *Nepoužívejte oleje, které obsahují molybden se sirouhlíkem!*

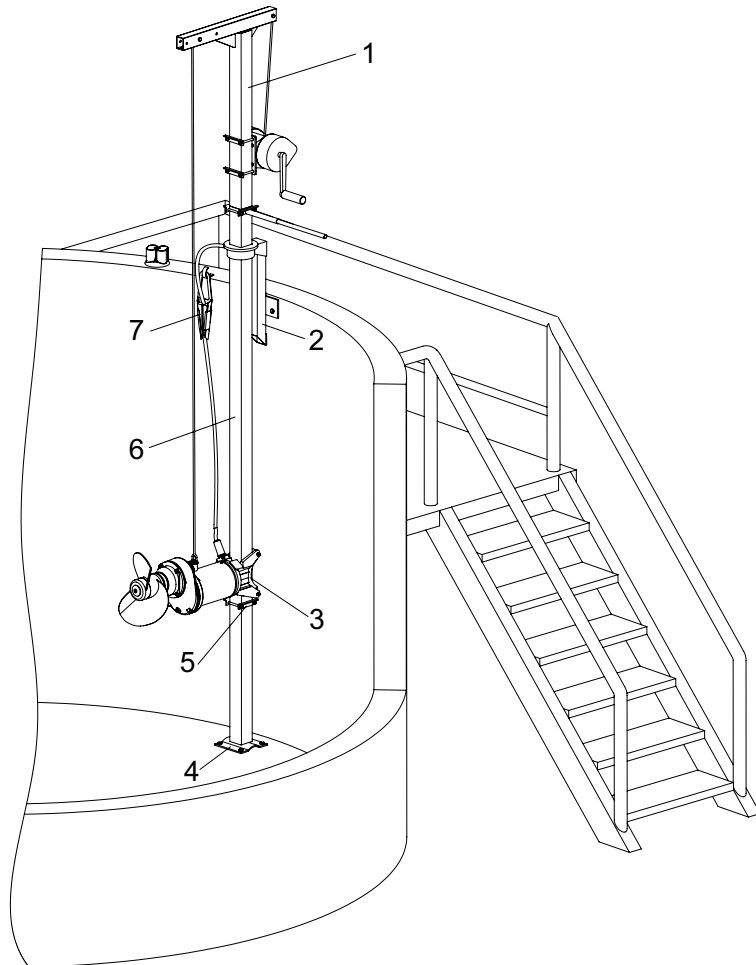
- Šroub upínacího ústrojí nejprve přes kříž lehce utáhněte.
- Šroub upínacího ústrojí pak přes kříž pevně utáhněte s momentem **16 Nm**. Poté utahovací moment přezkoušejte dokola ve směru hodinových ručiček.
- Pojistné podložky (3/3) spolu s O-kroužkem (3/4), kotoučem vrtule (3/2) a O-kroužkem (3/5) nasadte na inbusový šroub (3/1) a utáhněte s momentem **17 Nm**.

5.3 Utahovací moment

Vizte kap. 5.3 návodu k vestavbě a obsluze 6006183 / 6005672.

5.4 Příklady instalace RW 480

Pro tento typ instalace doporučujeme uzavřenou vodící konzolu.



0551-0045

Legenda

- 1 Zdvihací zařízení s navijákem a lanem
- 2 Horní držák s konzolou
- 3 Uzavřená vodící konzola
- 4 Spodní deska
- 5 Bezpečnostní zarážka
- 6 Otočná vodící tyč čtvercového průřezu
- 7 Kabelová spojka a hák pro kabel

Obrázek 4 Příklady instalace RW 480

5.5 Vodící konzoly RW/SB-KA

Vizte kap. 5.5 návodu k vestavbě a obsluze 6006183 / 6005672.

5.6 Délka vodící tyče (čtvercový průřez) RW/SB-KA

Vizte kap. 5.6 návodu k vestavbě a obsluze 6006183 / 6005672. RW 480 \triangle RW 900.

5.7 Elektrické připojení

Vizte kap. 5.8 návodu k vestavbě a obsluze 6006183 / 6005672. Viz. Obrázek 33. Kapitola 5.8.3 se na RW 480 nevztahuje.

6 - 7 Uvedení do provozu; Údržba

Vizte kap. 6 - 7 návodu k vestavbě a obsluze 6006183 / 6005672.

1 Общи положения

По принцип Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672 (ABS бъркачни механизми с потопяем двигател RW) в голямата си част е валидно и за **RW 480**. Това важи и за правилното свързване и безопасната експлоатация на Ex-изпълнението на RW 480. Същото важи и за **Указанията за безопасност**. Същите са на разположение като отделна книжка с каталожен номер 6005591 и трябва внимателно да се прочетат преди монтажа и пускането в експлоатация!

Поради тази причина настоящото „допълнително“ Ръководство за монтаж и експлоатация на **ABS бъркачните механизми с потопяем двигател RW 480** съдържа само препратки, респ. различна, допълнителна информация, отнасяща се до продукта.

1.1 - 1.3 Въведение; Използване по предназначение; Експлоатационни граници

Виж глава 1.1 - 1.3 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

1.4 Области на приложение

Бъркачният механизъм с потопяем двигател RW 480 служи за смесване, разбъркване и циркулация на гъсти, съдържащи твърди частици течности в комунално-битовите пречиствателни съоръжения, промишлеността и селското стопанство. Той е създаден за специални изисквания при хомогенизирането на тиня и коферменти/косубстрати.

1.5 Разшифроване на типовите обозначения

Виж глава 1.5 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672. *Тип на перката: = 2-лопаткова специална перка за тиня и коферменти/косубстрати.

1.6 Технически данни

Виж глава 1.6 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

1.6.1 Технически данни на RW 480, 50 Hz

Тип на бъркачния механизъм	Диаметър на перката	Обороти / Getriebeunter- setzung	Тип на двигателя	Номинална консумирана мощност P ₁	Номинална мощност на двигателя P ₂	Тип пускане: директно (D.O.L)	Тип пускане: звезда/тригълник	Номинален ток при 400 V	Пусков ток при 400 V	Тип кабел** (Ex и стандартен)	Регулиране на температурата	Регулиране на налягането на помпата	Ex dII BT4	Направляваща тръба □ 100	Общо тегло
	[мм]	[1/мин]		[kW]	[kW]			[A]	[A]						[кг]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Технически данни на RW 480, 60 Hz

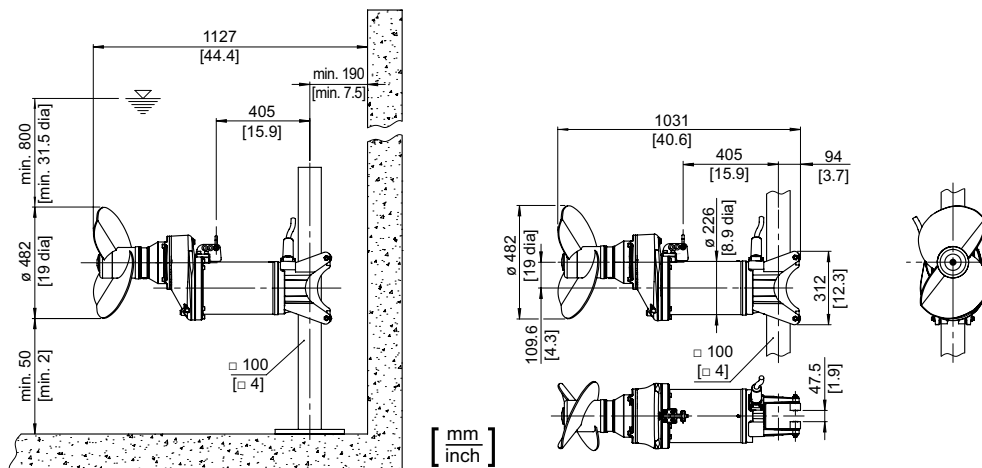
								460 V	460 V						
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Консумирана мощност ; P₂ = Отдадена мощност; • = Стандарт ; ○ = Опция; **Тип кабел: Стандартната доставка включва немонтиран 10-метров кабел: 2 = 1 x 10G x 1.5

1.7 Размери и тегла

Виж глава 1.7 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

1.7.1 Габаритен размер RW 480



Фигура 1 Габаритен размер RW 480

1.8 Фирмена табелка

Виж глава 1.8 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

2 - 3 Безопасност; Транспортиране и складиране

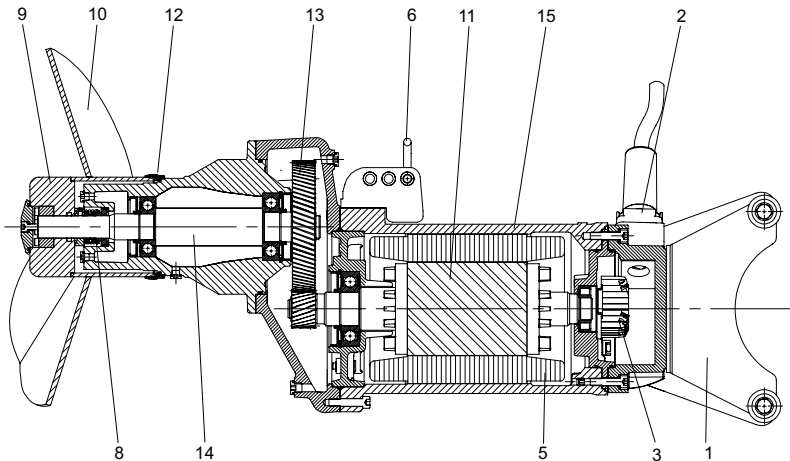
Виж глава 2 - 3 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

4 Описание на продукта

4.1 Общо описание

Виж глава 4.1 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

4.2 Конструкция RW 480



0551-0043

Легенда

- 1 Държач
- 2 Кабелен вход
- 3 Клемна кутия
- 4 Вал на перката
- 5 Намотка на двигателя
- 6 Държач с болт-скоба
- 7 Кожух на двигателя
- 8 Контактен уплътнителен пръстен
- 9 Главина на перката / Перка
- 10 Редуктор
- 11 Вал с ротор и лагери
- 12 SD - пръстен

Фигура 2 RW 480

4.3 Работа на честотните преобразуватели

Виж глава 4.5 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

5 Монтаж

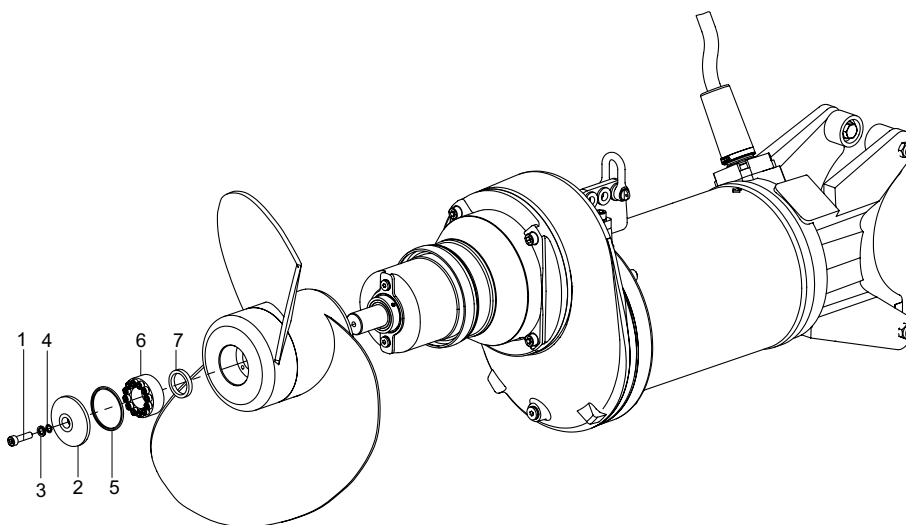
Виж глава 5 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

5.1 Монтаж RW 480

Виж глава 5.1 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

5.2 Монтаж на перката RW 480

Поради конструктивни особености захващането на перката се различава от останалите агрегати от серията RW/RCP, респ. SB-КА. Перката на бъркачния механизъм с потопяем двигател RW 480 се захваща с капсуловано стягащо съединение.



0551-0044

Легенда

- 1 Винт на цилиндъра
- 2 Диск на перката
- 3 Фиксиращи пръстени
- 4 О-пръстен (Винт на цилиндъра)
- 5 О-пръстен (Диск на перката)
- 6 Стягащо съединение
- 7 О-пръстен (главина)

Фигура 3 Монтаж/Демонтаж на перката

Демонтаж

- Демонтирайте винта на цилиндъра (3/1) с фиксиращи винтове (3/3), О-пръстена (3/4), диска на перката (3/2) и О-пръстена (3/5).

- Развийте винтовете на стягащото съединение (3/6) и издърпайте перката заедно със стягащото съединение. Издърпайте О-пръстена (3/7) от канала.

Монтаж

- Почистете вала и главината. Поставете нов О-Ring (3/7) в канала на главината; леко смажете вала и стягащото съединение (3/6).

ВНИМАНИЕ Не използвайте масла, които съдържат молибден-серовъглерод!

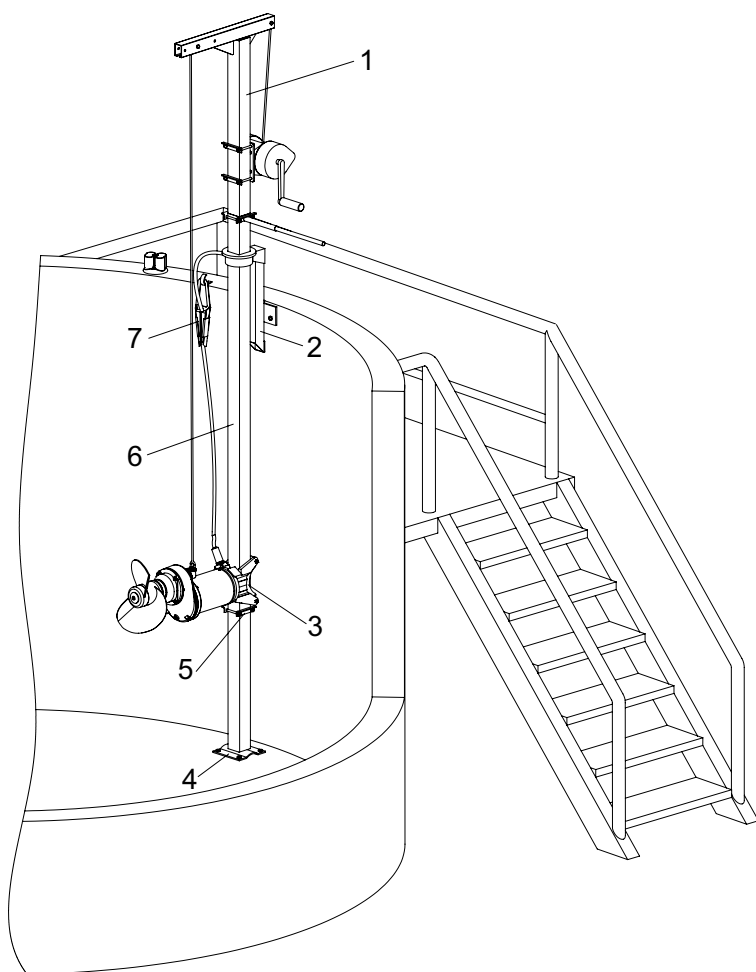
- Леко затегнете винта на стягащото съединение на кръст.
- Затегнете винтовете на стягащото съединение на кръст с **16 Nm**. Най-накрая проверете затегнатостта на винтовете по посока на часовниковата стрелка.
- Поставете фиксиращите винтове (3/3) заедно с О-пръстена (3/4), диска на перката (3/2) и О-пръстена (3/5) на винта на цилиндъра (3/1) и затегнете с **17 Nm**.

5.3 Моменти на затягане

Виж глава 5.3 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

5.4 Примери за монтаж на RW 480

За този вид монтаж Ви препоръчваме да използвате затворен държач.



0551-0045

Легенда

- 1 Повдигаща стойка с лебедка и въже
- 2 Горен блок
- 3 Затворен държач
- 4 Фиксатор за пода
- 5 Предпазен регулируем ограничител
- 6 Въртяща се четиристенна тръба
- 7 Обтегателна клема с кабелна кука

Фигура 4 Примери за монтаж на RW 480

5.5 Държачи RW/SB-КА

Виж глава 5.5 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

5.6 Дължини на водещата тръба (четиристенна тръба) RW/SB-КА

Виж глава 5.6 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Присъединяване към електрическата мрежа

Виж глава 5.8 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672. виж Фигура 33. Глава 5.8.3 не е валидна за RW 480.

6 - 7 Пускане в експлоатация; Поддръжка

Виж глава 6 - 7 на Ръководството за монтаж и експлоатация с каталожен номер 6006183 / 6005672.

1 Generalități

În principiu este valabil și manualul de montare și de funcționare cu numărul de articol 6006183 / 6005672 (ABS malaxoare cu motor submersibil RW) în mare parte și pentru dispozitivul **RW 480**. Acest lucru este valabil și pentru racordarea corespunzătoare și funcționarea în condiții de siguranță în modul de execuție cu protecție contra exploziilor a aparatului RW 480. Același lucru este valabil pentru **Indicațiile de siguranță**. Acestea sunt conținute în manualul separat cu numărul de articol 6005591 și trebuie studiate cu atenție înainte de instalare și de punerea în funcțiune!

În acest manual „suplimentar“ pentru montare și funcționare pentru malaxorul ABS cu motor submersibil RW 480 sunt conținute numai trimerterile, respectiv informațiile diferite, suplimentare și specifice produsului.

1.1 - 1.3 Introducere; Utilizarea conformă cu destinația; Limitele de utilizare

Vezi capitolul 1.1 - 1.3 al manualului de montare și de funcționare 6006183 / 6005672.

1.4 Domeniile de utilizare

Malaxorul cu motor submersibil RW 480 este utilizat pentru amestecarea, rotirea și recircularea unor fluide vâscoase, cu conținut de materiale solide în instalații de epurare, în industrie și în agricultură. Acesta este conceput în special pentru cerințele speciale de la omogenizarea noroiului și a cofermenților / cosubstanțelor.

1.5 Codul de tip

Vezi capitolul 1.5 al manualului de montare și de funcționare 1 597 0832-EU/0833-EU. *Tipul de elice = Elice specială cu 2 pale pentru noroi și cofermenți / cosubstanțe.

1.6 Date tehnice

Vezi capitolul 1.6 al manualului de montare și de funcționare 6006183 / 6005672.

1.6.1 Datele tehnice ale agregatului RW 480, 50 Hz

Tipul de agitator	Diametrul elicei	Turația / angrenaj demultiplicator al transmisiei	Tipul motorului	Puterea nominală consumată P ₁	Puterea nominală a motorului P ₂	Tipul de pornire: Directă (D.O.L)	Tipul de pornire: Stea/triunghi	Curentul nominal la 400 V	Curentul de pornire la 400 V	Tipul de cablu** (Ex și Standard)	Sistemul de supraveghere a temperaturii	Sistemul de supraveghere a garniturii	Ex dII BT4	Tub de ghidaj □ 100	Masa totală
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	446/3,3	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4812	480	467/3,1	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4813	480	493/3,0	A 75/4	8,66	7,5		•	14,84	93,9	2	•	•	○	•	163
RW 4814	480	517/2,8	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169
RW 4815	480	554/2,6	A 110/4	13,0	11,0		•	21,85	103,4	2	•	•	○	•	169

1.6.2 Datele tehnice ale agregatului RW 480, 60 Hz

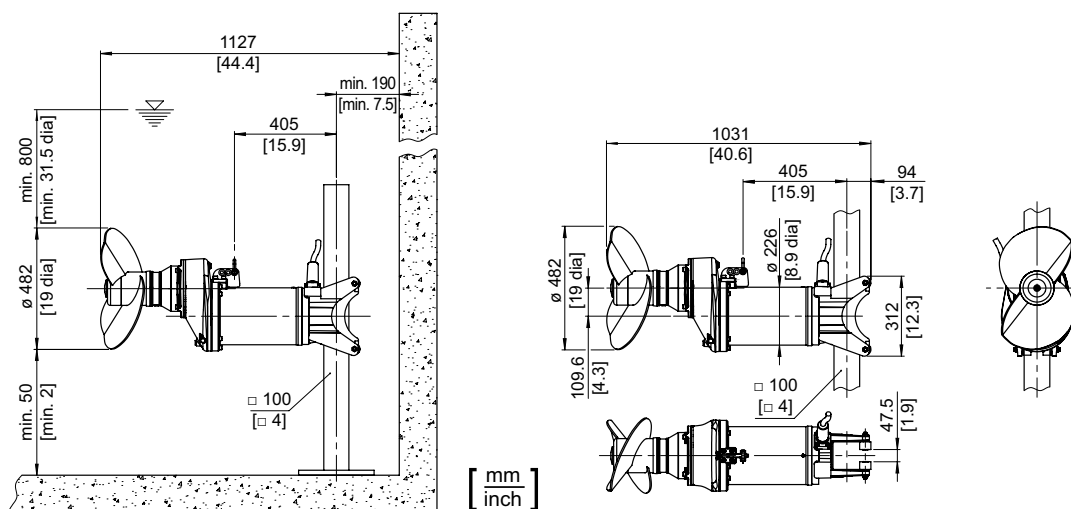
Tipul de agitator	Diametrul elicei	Turația / angrenaj demultiplicator al transmisiei	Tipul motorului	P ₁	P ₂	Tipul de pornire: Directă (D.O.L)	Tipul de pornire: Stea/triunghi	Curentul nominal la 460 V	Curentul de pornire la 460 V	Tipul de cablu** (Ex și Standard)	Sistemul de supraveghere a temperaturii	Sistemul de supraveghere a garniturii	Ex dII BT4	Tub de ghidaj □ 100	Masa totală
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 4811	480	503/3,5	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4812	480	535/3,3	A 90/4	10,2	9,0		•	15,32	103	2	•	•		•	163
RW 4813	480	561/3,1	A 130/4	15,0	13,0		•	21,88	119,9	2	•	•		•	169

P₁ = Puterea consumată; P₂ = Puterea debitată; • = Standard ; ○ = Opțiune; **Tipul de cablu: Cablurile de 10 m cu capăt de cablu liber sunt în volumul de livrare standard: 2 = 1 x 10G x 1.5

1.7 Dimensiunile și masele

Vezi capitolul 1.7 al manualului de montare și de funcționare 6006183 / 6005672.

1.7.1 Dimensiunile constructive ale agregatului RW 480



Imaginea 1 Dimensiunile constructive ale agregatului RW 480

1.8 Plăcuța de fabricație

Vezi capitolul 1.8 al manualului de montare și de funcționare 6006183 / 6005672.

2 - 3 Securitatea; Transportul și depozitarea

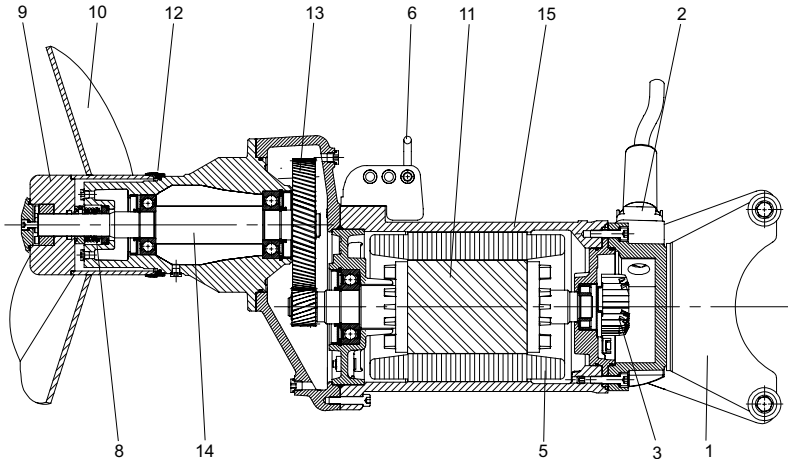
Vezi capitolul 2 - 3 al manualului de montare și de funcționare 6006183 / 6005672.

4 Descrierea produsului

4.1 Descrierea generală

Vezi capitolul 4.1 al manualului de montare și de funcționare 6006183 / 6005672.

4.2 Structura constructivă RW 480



0551-0043

Legendă

- 1 Dispozitiv de prindere
- 2 Ghidaj de intrare a cablului
- 3 Cutie de conexiuni
- 4 Arborele elicei
- 5 Înfășurare motor
- 6 Suport cu ochete
- 7 Carcasa motorului
- 8 Garnitură cu inel de fricțiune
- 9 Butuc elice / Elice
- 10 Transmisie
- 11 Unitate de ax cu rotor și lagăre
- 12 Inel SD

Imaginea 2 RW 480

4.3 Funcționarea la invertoare de frecvență

Vezi capitolul 4.5 al manualului de montare și de funcționare 6006183 / 6005672.

5 Instalarea

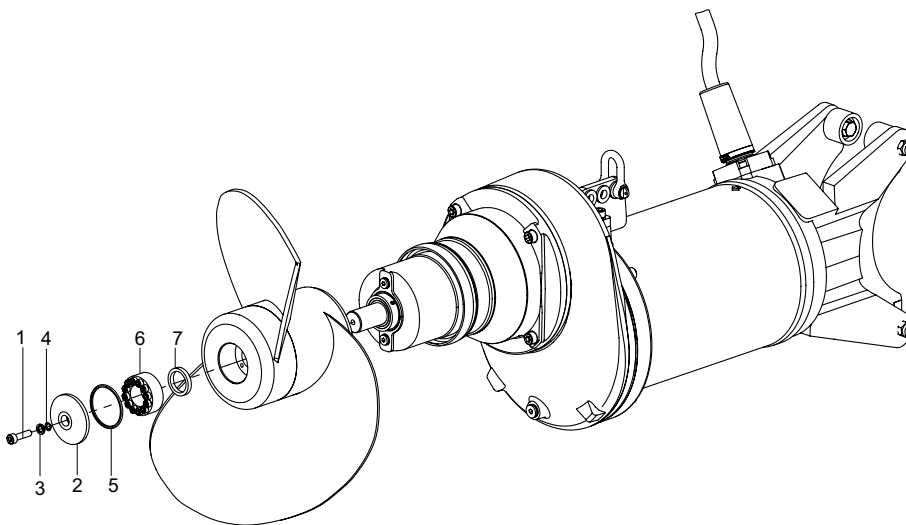
Vezi capitolul 5 al manualului de montare și de funcționare 6006183 / 6005672.

5.1 Instalarea RW 480

Vezi capitolul 5.1 al manualului de montare și de funcționare 6006183 / 6005672.

5.2 Montarea elicei RW 480

În funcție de modul de construcție se deosebește fixarea elicei de alte agregate ale dispozitivului RW/RCP, respectiv de seria de construcție SB-KA. Elicea dispozitivului RW 480 este fixată cu un set capsulat de fixare.



0551-0044

Legendă

- 1 Șurub cilindric
- 2 Șaibă elice
- 3 Șaibe de siguranță
- 4 Inel O (Șurub cilindric)
- 5 Inel O (Șaibă elice)
- 6 Set de fixare
- 7 Inel de etanșare (butuc)

Imaginea 3 Montarea / demontarea elicei

Demontare

- Demontați șurubul cilindric (3/1) cu garniturile de siguranță (3/3), inelul de etanșare (3/4), garnitura elicei (3/2) și inelul de etanșare (3/5).
- Slăbiți șuruburile setului de fixare (3/6) și scoateți elicea împreună cu setul de fixare. Scoateți inelul de etanșare (3/7) din canelură.

Montare

- Curățați arborele și butucul. Introduceți noul inel de etanșare (3/7) în canelura butucului, ungeți cu puțin ulei setul de fixare (3/6).

ATENȚIE Nu utilizați uleiuri care conțin sulfură de carbon cu molibden!

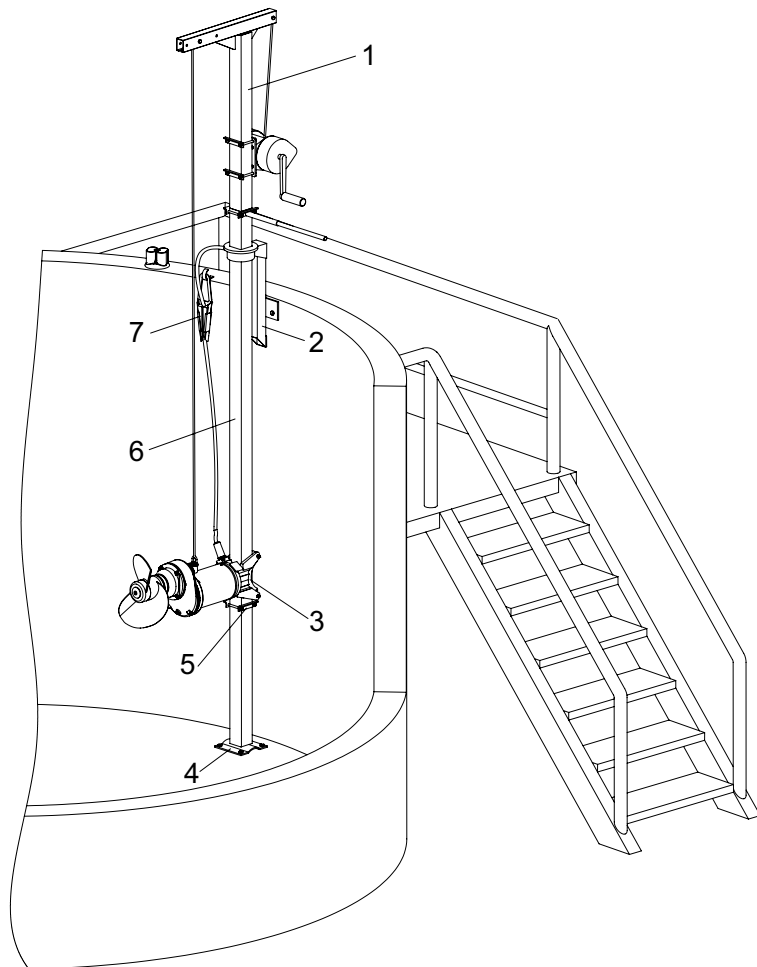
- Strângeți ușor șurubul setului de fixare prima dată în cruce.
- Strângeți în cruce șuruburile setului de fixare cu **16 Nm**. În continuare verificați în mod continuu momentul de strângere în sensul acelor de ceasornic.
- Inserați garniturile de siguranță (3/3) împreună cu inelul de etanșare (3/4), garnitura elicei (3/2) și inelul de etanșare (3/5) pe șurubul cilindric (3/1) și strângeți cu **17 Nm**.

5.3 Cupluri de strângere

Vezi capitolul 5.3 al manualului de montare și de funcționare 6006183 / 6005672.

5.4 Exemple de instalații RW 480

Pentru acest tip de instalație se recomandă utilizarea dispozitivului de prindere închis.



0551-0045

Legendă

- 1 Dispozitiv de ridicat cu consolă cu troliu și cablu
- 2 Bloc de susținere superior
- 3 Dispozitiv de prindere închis
- 4 Suport pardoseală
- 5 Oprit de siguranță
- 6 Țeavă pătrată rotativă
- 7 Clemă de întindere cu cârlig pentru cablu

Imaginea 4 Exemple de instalații RW 480

5.5 Dispozitivele de prindere RW/SB-KA

Vezi capitolul 5.5 al manualului de montare și de funcționare 6006183 / 6005672.

5.6 Lungimile țevelor conducătoare (țeavă pătrată) RW/SB-KA

Vezi capitolul 5.6 al manualului de montare și de funcționare 6006183 / 6005672. RW 480 \triangleq RW 900.

5.7 Branșamentul electric

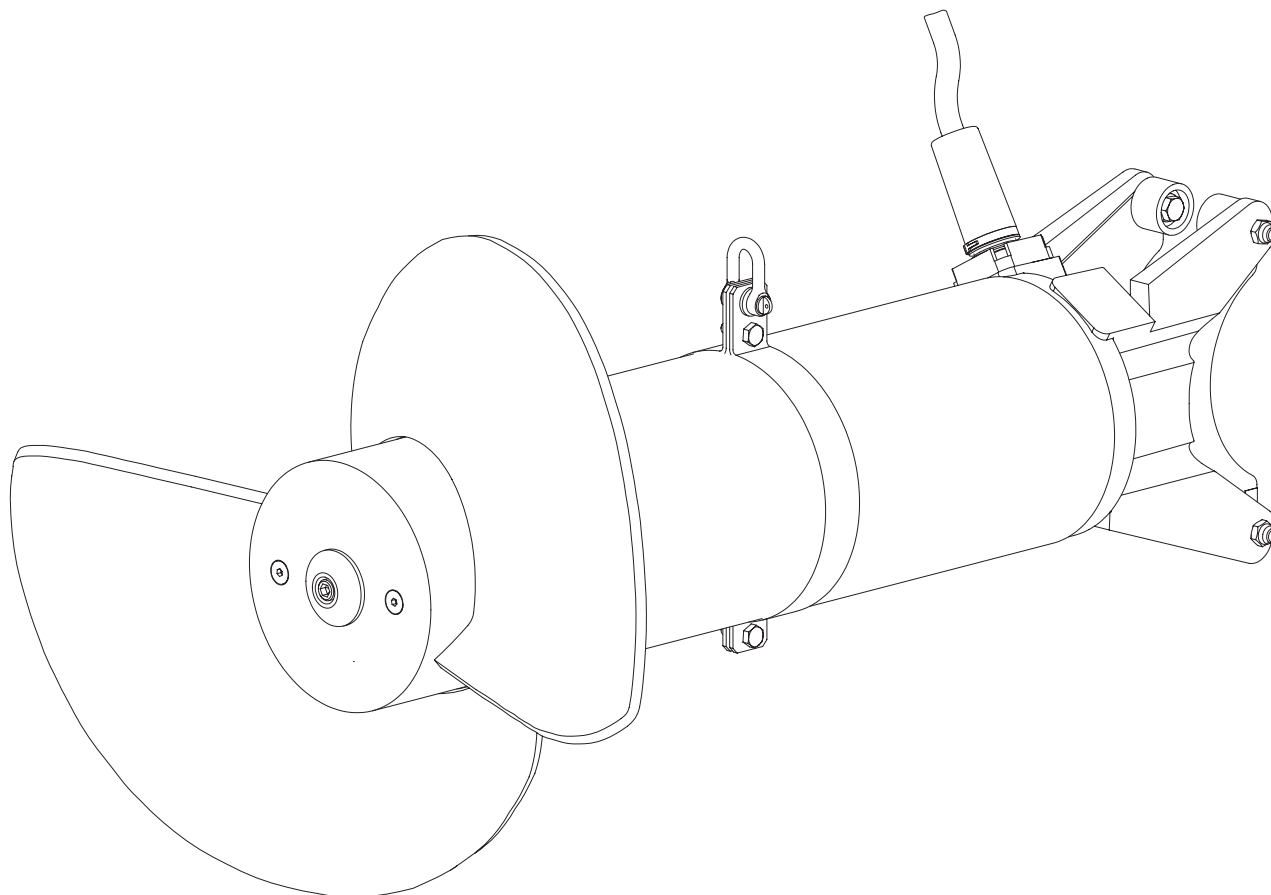
Vezi capitolul 5.8 al manualului de montare și de funcționare 6006183 / 6005672. *Vezi Imaginea 33.* Capitolul 5.8.3 nu este relevant pentru RW 480.

6 - 7 Punerea în funcțiune; Întreținerea

Vezi capitolul 6 - 7 al manualului de montare și de funcționare 6006183 / 6005672.



Submersible Mixer Type ABS RW 7511



1 597 1581 EU 02.2016

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RW 7511

1 Allgemeines

Grundsätzlich ist die Einbau- und Betriebsanleitung mit Art.-Nr. 15970832-EU/0833-EU (ABS Tauchmotorrührwerke RW) in großen Teilen auch für das **RW 7511** gültig. Dies gilt auch für den sachgemäßen Anschluss und den sicheren Betrieb der Ex-Ausführung des RW 7511. Gleiches gilt für die **Sicherheitshinweise**. Diese sind in dem separaten Heft mit der Art.-Nr. 1 597 0799 enthalten und sind vor der Installation und Inbetriebnahme sorgfältig zu studieren!

In dieser „Zusatz“-Einbau- und Betriebsanleitung für das **ABS Tauchmotorrührwerk RW 7511** sind daher nur Querverweise bzw. die abweichenden, zusätzlichen und produktspezifischen Informationen enthalten.

1.1 - 1.3 Einführung; Bestimmungsgemäße Verwendung; Einsatzgrenzen

Siehe Kapitel 1.1 - 1.3 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

1.4 Einsatzbereiche

Das Tauchmotorrührwerk RW 7511 dient zum Mischen, Rühren und Umwälzen von zähen, feststoffhaltigen Fluiden in Kläranlagen, in der Industrie und in der Landwirtschaft. Es ist besonders für die speziellen Anforderungen bei der Homogenisierung von Schlamm und Kofermenten ausgelegt.

1.5 Typenschlüssel

Siehe Kapitel 1.5 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU. *Propellertyp = 2-Blatt-Spezialpropeller für Schlamm und Kofermente.

1.6 Technische Daten

Siehe Kapitel 1.6 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

1.6.1 Technische Daten RW 7511, 50 Hz

Rührwerkstyp	Propeller- durchmesser	Drehzahl / Getriebeunter- setzung	Motortyp	Nennleistungs- aufnahme P ₁	Motornennleis- tung P ₂	Startart: Direkt (D.O.L.)	Startart: Stern/ Dreieck	Nennstrom bei 400 V	Anlaufstrom bei 400 V	Kabeltyp** (Ex- und Standard)	Temperaturü- berwachung	Dichtungsü- berwachung	Ex dII BT4	Führungsrohr □ 100	Gesamtge- wicht
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	285 ²	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Technische Daten RW 7511, 60 Hz

RW 7511	750	285 ¹	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
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P₁ = Leistungsaufnahme ; P₂ = Leistungsabgabe

1 = Propellerdrehzahl mit Getriebeuntersetzung i=6; 2= Propellerdrehzahl mit Getriebeuntersetzung i=5

• = Standard ; ○ = Option ; * = Dichtungsüberwachung im Anschlußraum anstelle von Ölkammer.

**Kabeltyp: 10 m Kabel mit freiem Kabelende sind Standardlieferumfang: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Abmessungen und Gewichte

Siehe Kapitel 1.7 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

1.7.1 Baumaße RW 7511

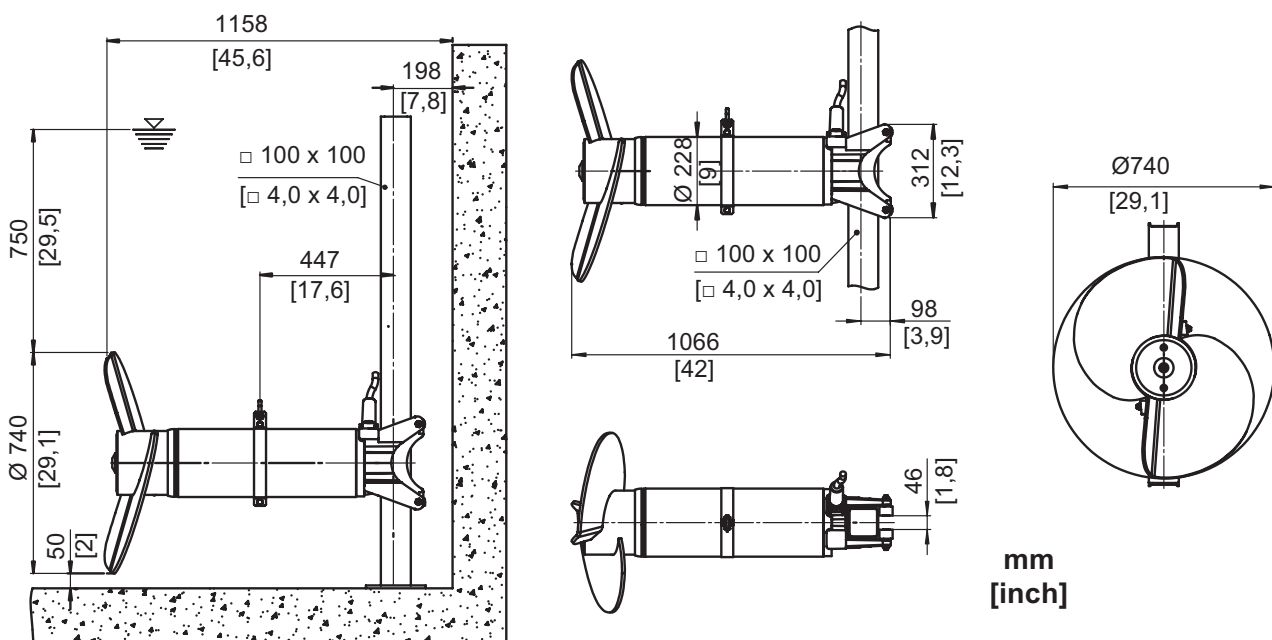


Bild 1 Baumaße RW 7511

RW 7511

1.8 Typenschild

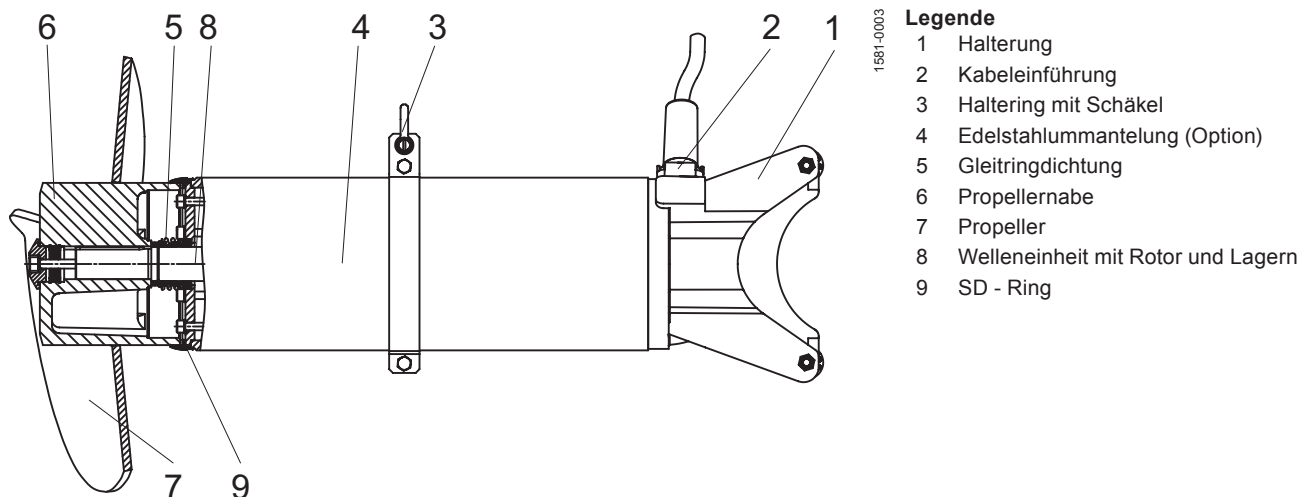
Siehe Kapitel 1.8 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

2 - 3 Sicherheit; Transport und Lagerung

Siehe Kapitel 2 - 3 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

4 Produktbeschreibung**4.1 Beschreibung allgemein**

Siehe Kapitel 4.1 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

4.2 Konstruktiver Aufbau RW 7511

1581-0003

Legende

- 1 Halterung
- 2 Kabeleinführung
- 3 Haltering mit Schäkel
- 4 Edelstahlummantelung (Option)
- 5 Gleitringdichtung
- 6 Propellernabe
- 7 Propeller
- 8 Welleneinheit mit Rotor und Lagern
- 9 SD - Ring

Bild 2 RW 7511

4.3 Betrieb an Frequenzumrichtern

Siehe Kapitel 4.5 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

5 Installation

Siehe Kapitel 5 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

5.1 Installation RW 7511

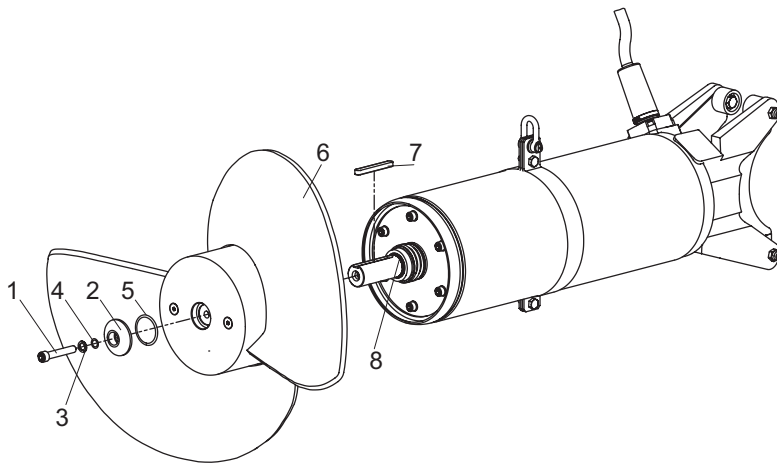
Siehe Kapitel 5.1 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

5.2 Propellermontage

Die Propeller der Rührwerke RW 7511 werden separat geliefert und sind bauseits gem. der nachstehenden Anweisung zu montieren.

ACHTUNG *Die korrekte Einbaulage der Sicherungsscheiben (Bild 17 Einbaulage der Sicherungsscheiben Kapitel 5.3 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU) und das vorgeschriebene Anzugsmoment sind zu beachten!*

1. Propellernabe und Wellenstumpf leicht einfetten.
2. Propeller aufschieben (3/6).
3. O-Ring (3/5) einsetzen.
4. Propellerscheibe (3/2) einsetzen.
5. O-Ring (3/4) einsetzen.
6. Sicherungsscheiben (3/3) einlegen und Einbaulage beachten.
7. Zylinderschraube (3/1) mit einem Anzugsmoment von 56 Nm anziehen.



1581-0004

Legende

- 1 Zylinderschraube
- 2 Propellerscheibe
- 3 Sicherungsscheiben
- 4 O-Ring
- 5 O-Ring
- 6 Propeller
- 7 Paßfeder (bereits werkseitig montiert)
- 8 Dichtung (bereits werkseitig montiert)

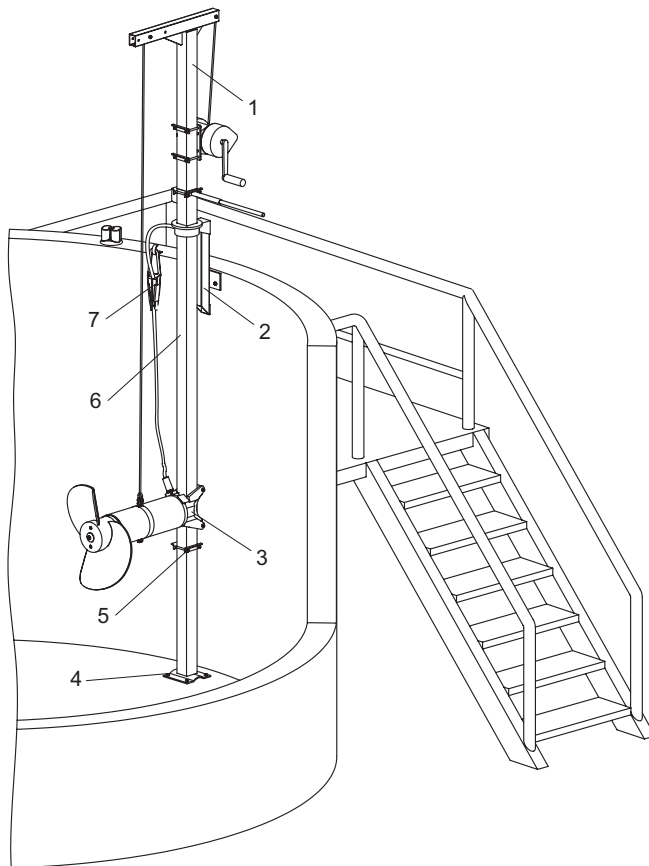
Bild 3 Propellermontage

5.3 Anzugsmomente

Siehe Kapitel 5.3 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

5.4 Installationsbeispiel RW 7511

Für diese Installation wird empfohlen, die geschlossene Halterung zu verwenden.



1581-0005

Legende

- 1 Hebegalgen
- 2 Oberer Haltebock
- 3 Halterung geschlossen
- 4 Bodenlager
- 5 Sicherheitsklemmanschlag
- 6 Drehbares Vierkantleitrohr
- 7 Abspannklemme mit Kabelhaken

Bild 4 Installationsbeispiel RW 7511

5.5 Halterungen RW 7511

Siehe Kapitel 5.5 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

5.6 Führungsrohrängen (Vierkantleitrohr) RW 7511

Siehe Kapitel 5.6 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Elektrischer Anschluß

Siehe Kapitel 5.8 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

6 - 7 Inbetriebnahme; Wartung

Siehe Kapitel 6 - 7 der Einbau- und Betriebsanleitung 15970832-EU/0833-EU.

RW 7511

1 General

Basically the main parts of the installation and operating instructions with part no. 15970832-EU/0833-EU (ABS submersible mixer RW) are also valid for **RW 7511**. This also applies if the RW 7511 model Ex is connected correctly and operated in safe mode. Same applies for the **Safety instructions**. These are included in the separate booklet 1 597 0799 and have to be studied carefully before installation and commissioning!

These “**additional**” installation and operating instructions for **ABS submersible mixer RW 7511** contain only cross-references e.g. the differing, additional and product specific information.

1.1 - 1.3 Introduction; Corrects usage of the product; Application restrictions

See chapter 1.1 - 1.3 of the Installation and Operating Instructions 15970832-EU/0833-EU.

1.4 Application areas

The submersible mixer RW 7511 is used for mixing, stirring and agitating of viscous fluids containing solids in sewage treatment plants, industry as well as agriculture. It is specifically designed for the major mixing functions during homogenization of sludge and coenzymes.

1.5 Identification code

See chapter 1.5 of the Installation and Operating Instructions 15970832-EU/0833-EU. *Propeller type = 2-blade special propeller for sludge and coenzymes.

1.6 Technical data

See chapter 1.6 of the Installation and Operating Instructions 15970832-EU/0833-EU.

1.6.1 Technical data RW 7511, 50 Hz

Mixer type	Propeller diameter	Speed / Gear ratio	Motor type	Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 400 V	Starting current at 400 V	Cable type** (EX- and standard)	Temperature monitoring	Seal monitoring	Ex dII BT4	Guide tube 100	Total weight
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	285 ²	A 150/4	17.8	15.0		•	31.3	172	4	•	•	○	•	202

1.6.2 Technical data RW 7511, 60 Hz

RW 7511	750	285 ¹	A 130/4	15.3	13.0		•	21.8	109	4	•	•		•	202
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P₁ = Power input ; P₂ = Power output

1 = Propeller speed with gear ratio i=6; 2= Propeller speed with gear ratio i=5

• = Standard ; ○ = Option; * =Moisture ingress monitor in connection chamber instead of oil chamber

**Cable type: 10 m cable with free ends as standard: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Dimensions and weights

See chapter 1.7 of the Installation and Operating Instructions 15970832-EU/0833-EU.

1.7.1 Dimensions RW 7511

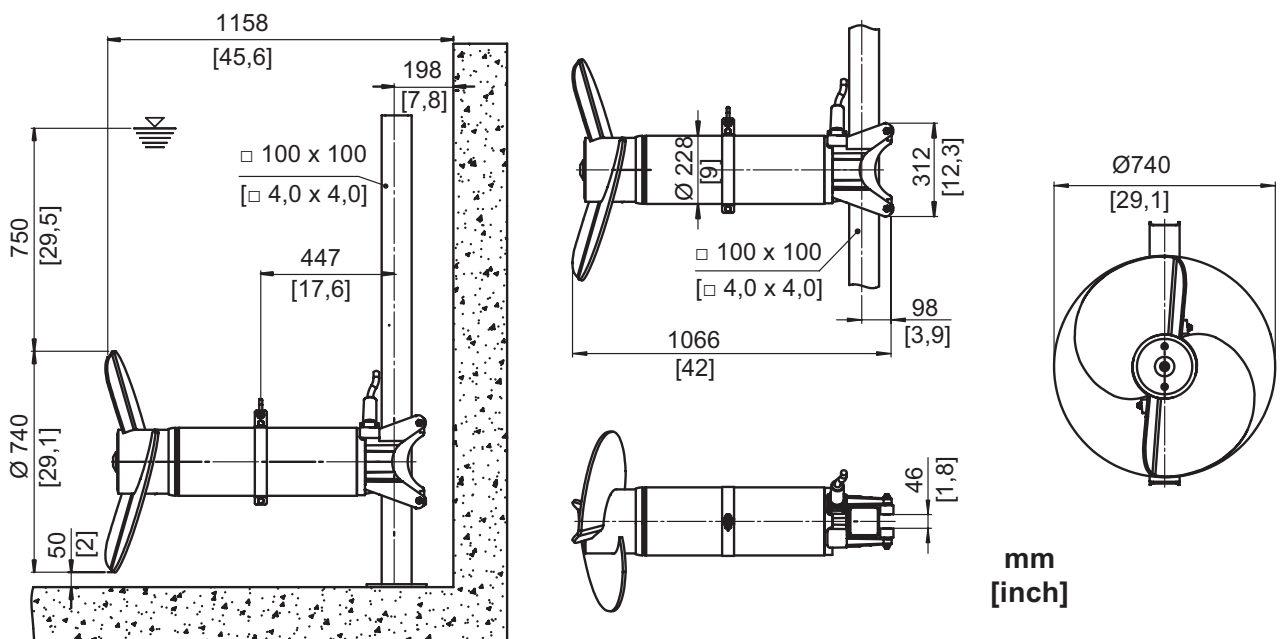


Figure 1 Dimensions RW 7511

RW 7511

1.8 Nameplate

See chapter 1.8 of the Installation and Operating Instructions 15970832-EU/0833-EU.

2 - 3 Safety; Transport and storage

See chapter 2 - 3 of the Installation and Operating Instructions 15970832-EU/0833-EU.

4 Product description

4.1 General description

See chapter 4.1 of the Installation and Operating Instructions 15970832-EU/0833-EU.

4.2 Structural design RW 7511

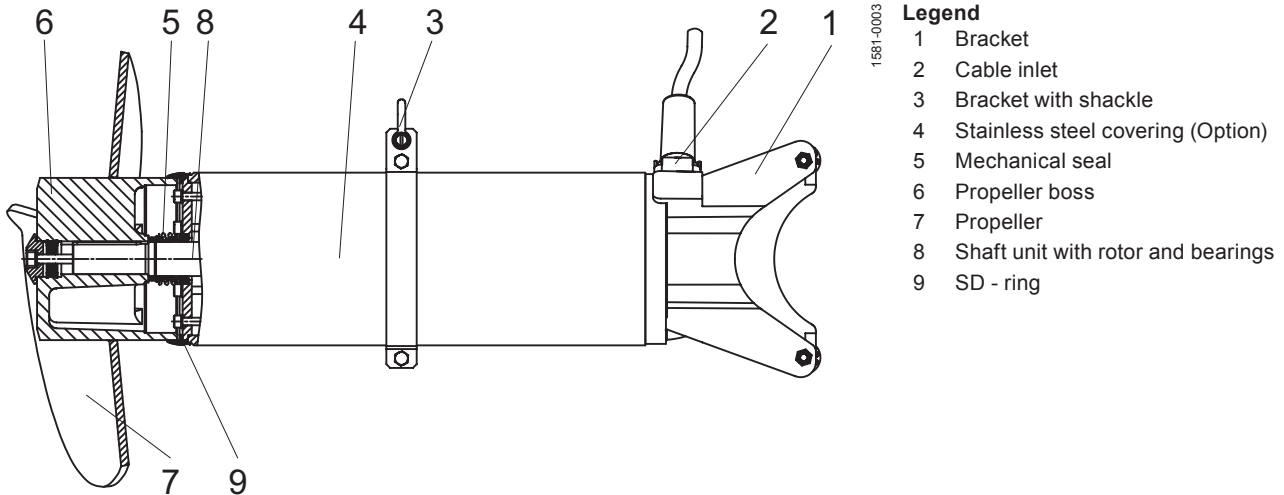


Figure 2 RW 7511

4.3 Operation with frequency inverters

See chapter 4.5 of the Installation and Operating Instructions 15970832-EU/0833-EU.

5 Installation

See chapter 5 of the Installation and Operating Instructions 15970832-EU/0833-EU.

5.1 Installation RW 7511

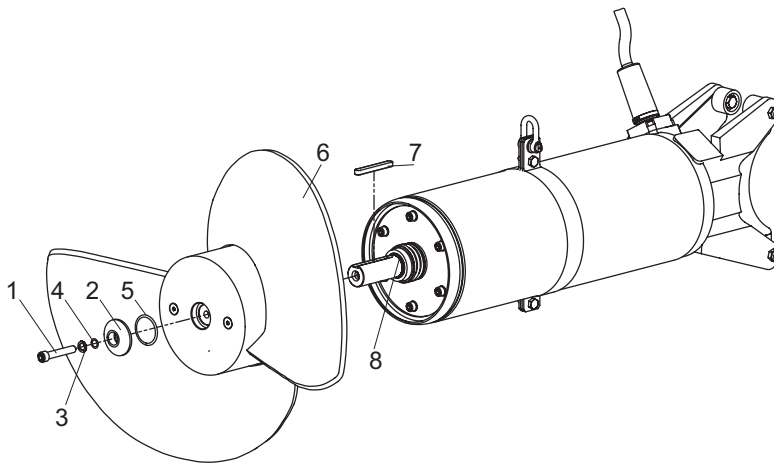
See chapter 5.1 of the Installation and Operating Instructions 15970832-EU/0833-EU.

5.2 Propeller assembly RW 7511

The propellers of the RW 7511 are supplied separately and must be fitted on site in accordance with the instructions below.

ATTENTION *Take care that the orientation of the lock washers is correct (Figure 17 Correct fitting position of the securing washers in chapter 5.3 of the installation and Operating Instructions 15970832-EU/0833-EU) and that the prescribed tightening torque is used!*

1. Lightly grease propeller boss and shaft end.
2. Push on propeller (3/6).
3. Fit O-Ring (3/5).
4. Insert propeller washer (3/2).
5. Fit O-Ring (3/4).
6. Fit lock washers (3/3) taking care that orientation is correct
7. Tighten socket head screw (3/1) with torque of 56 Nm.



1581-0004

Legend

- 1 Socket head screw
- 2 Propeller washer
- 3 Lock washers
- 4 O-Ring
- 5 O-Ring
- 6 Propeller
- 7 Key (already fitted at factory)
- 8 Seal (already fitted at factory))

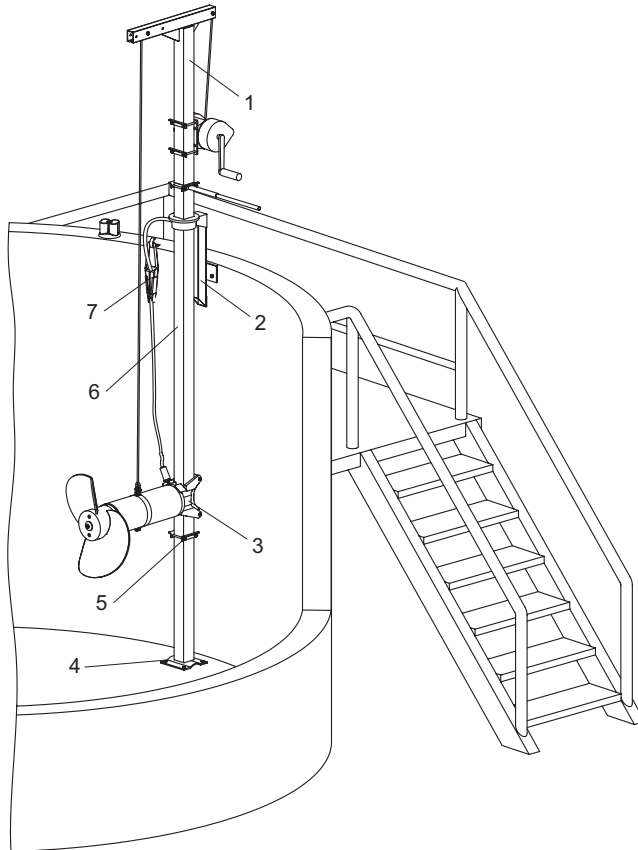
Figure 3 Propeller assembly

5.3 Tightening torque

See chapter 5.3 of the Installation and Operating Instructions 15970832-EU/0833-EU.

5.4 Installation example RW 7511

We recommend that the closed bracket be used for this type of installation.



1581-0005

Legend

- 1 Hoist with winch and rope
- 2 Upper bracket with locking plate
- 3 Closed bracket
- 4 Bottom plate
- 5 Safety stop clamp
- 6 Swivelling square guide tube
- 7 Cable clamp with cable hook

Figure 4 Installation example RW 7511

5.5 Brackets RW/SB-KA

See chapter 5.5 of the Installation and Operating Instructions 15970832-EU/0833-EU.

5.6 Guide tube lengths (square tube) RW/SB-KA

See chapter 5.6 of the Installation and Operating Instructions 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Electrical connection

See chapter 5.8 of the Installation and Operating Instructions 15970832-EU/0833-EU.

6 - 7 Commisioning; Maintenance

See chapter 6 - 7 of the Installation and Operating Instructions 15970832-EU/0833-EU.

RW 7511

1 Généralités

En principe, les instructions de montage et d'utilisation réf. art. 15970832-EU/0833-EU (ABS agitateurs à moteur submersible RW) sont en grandes parties également valables pour le **RW 7511**. Cela vaut également pour le raccordement conforme et l'utilisation en toute sécurité de la version pour les atmosphères explosives du RW 7511. Cela est également le cas pour les **consignes de sécurité**. Celles-ci sont incluses dans le livret séparé avec réf. art. 1 597 0799 et doivent être scrupuleusement étudiées avant la mise en service!

Ces instructions de montage et d'utilisation "additionnelles" pour l'agitateur à moteur submersible RW 7511 contiennent uniquement des références croisées et des informations différentes, supplémentaires ou spécifiques au produit.

1.1 - 1.3 Introduction; utilisation conforme; limites d'utilisation

Voir chapitres 1.1 - 1.3 des instructions de montage et d'utilisation 15970832-EU/0833-EU

1.4 Domaines d'utilisation

L'agitateur à moteur submersible RW 7511 sert à mélanger, à malaxer et à brasser des fluides visqueux contenant des matières solides dans les stations d'épuration, l'industrie et l'agriculture. Il est tout particulièrement conçu pour les exigences spéciales durant l'homogénéisation des boues et des coenzymes.

1.5 Code d'identification

Voir chapitre 1.5 des instructions de montage et d'utilisation 15970832-EU/0833-EU. *Type d'hélice = hélice spéciale 2 pales pour la boue et les coenzymes.

1.6 Caractéristiques techniques

Voir chapitres 1.6 des instructions de montage et d'utilisation 15970832-EU/0833-EU

1.6.1 Caractéristiques techniques RW 7511, 50 Hz

Type d'agitateur	Diamètre des hélices	Vitesse / réducteur	Type de moteur	Puissance nominale absorbée P ₁	Puissance nominale du moteur P ₂	Type de démarrage : direct (D.O.L)	Type de démarrage : étoile/delta	Courant nominal à 400 V	Courant de démarrage à 400 V	Type de câble** (ADF et standard)	Contrôle de la température	Surveillance d'étanchéité	Ex dII BT4	Tube de guidage □ 100	Poids total
	[mm]	[tr/mn]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	2852	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Caractéristiques techniques RW 7511, 60 Hz

RW 7511	750	2581	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
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P₁ = puissance absorbée ; P₂ = puissance débitée

1 = Vitesse de l'hélice avec réducteur i=6; 2= Vitesse de l'hélice avec réducteur i=5

• = Standard ; ○ = Option ; •* = Contrôle de l'étanchéité dans logement de raccordement au lieu de la chambre d'huile.

**Type de câble: fourniture standard câble de 10 m avec extrémité de câble dénudée: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Dimensions et poids

Voir chapitre 1.7 des instructions de montage et d'utilisation 15970832-EU/0833-EU

1.7.1 Dimensions RW 7511

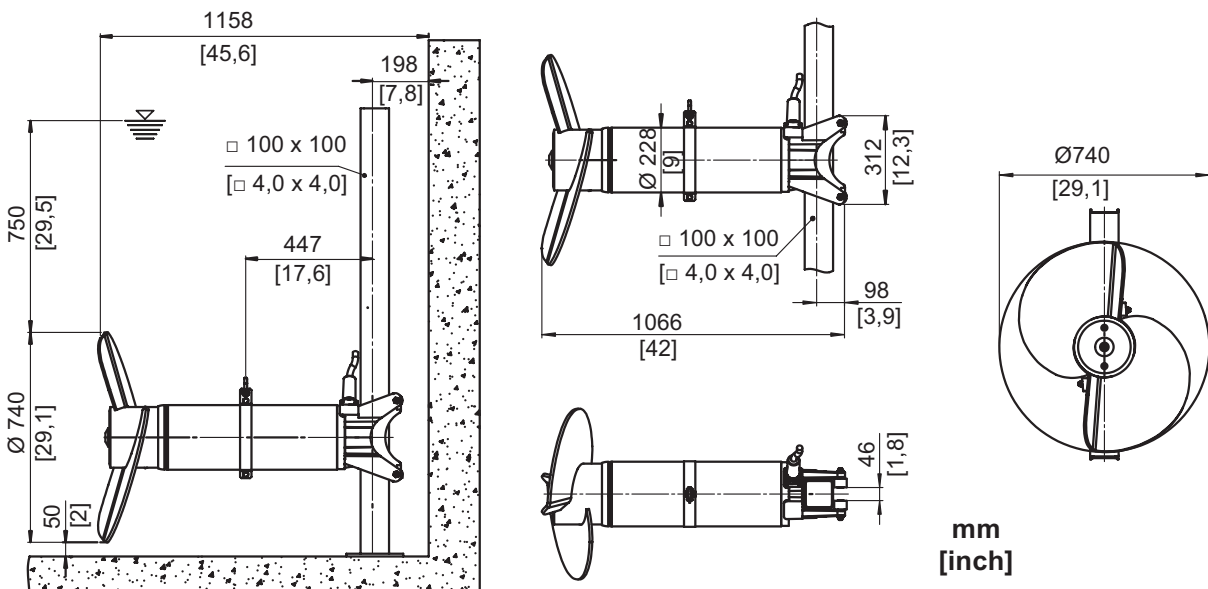


Figure 1 Dimensions RW 7511

1581-0002

RW 7511

1.8 Plaque signalétique

Voir chapitre 1.8 des instructions de montage et d'utilisation 15970832-EU/0833-EU

2 - 3 Sécurité; transport et stockage

Voir chapitres 2 - 3 des instructions de montage et d'utilisation 15970832-EU/0833-EU

4 Description du produit**4.1 Description générale**

Voir chapitre 4.1 des instructions de montage et d'utilisation 15970832-EU/0833-EU

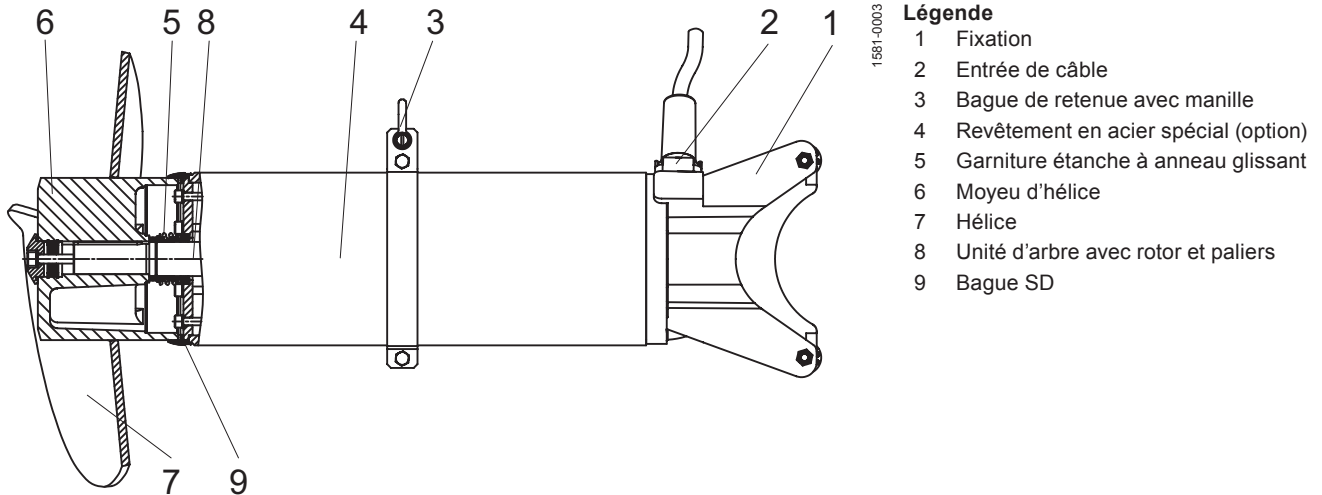
4.2 Conception RW 7511

Figure 1 RW 7511

4.3 Fonctionnement avec convertisseurs de fréquence

Voir chapitre 4.5 des instructions de montage et d'utilisation 15970832-EU/0833-EU

5 Installation

Voir chapitre 5 des instructions de montage et d'utilisation 15970832-EU/0833-EU

5.1 Installation RW 7511

Voir chapitre 5.1 des instructions de montage et d'utilisation 15970832-EU/0833-EU

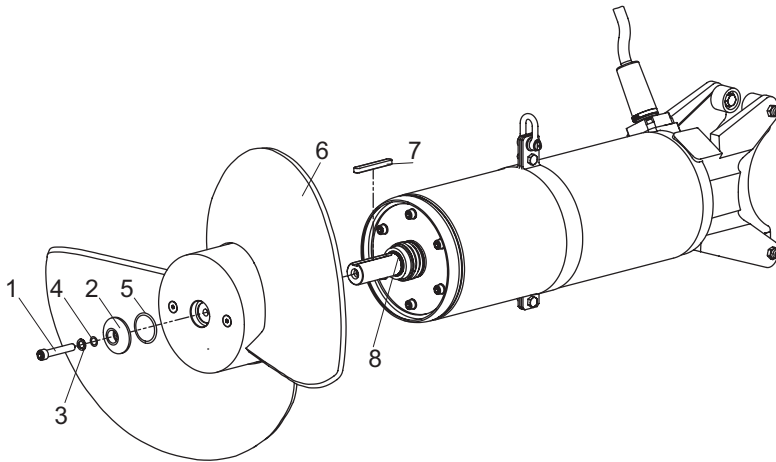
5.2 Montage de l'hélice

Les hélices de l'agitateur RW 7511 sont livrées séparément et doivent être montées sur le chantier conformément aux instructions ci-dessous.

ATTENTION *Respectez impérativement la position de montage des rondelles d'arrêt (image 17 position des rondelles d'arrêt chapitre 5.3 des instructions de montage et d'utilisation 15970832-EU/0833-EU) et le couple de serrage prescrit !*

1. Graisser légèrement le moyeu de l'hélice et le bout d'arbre.
2. Glisser l'hélice (3/6).
3. Insérer le joint torique (3/5).
4. Mettre en place la rondelle d'hélice (3/2).
5. Insérer le joint torique (3/4).
6. Mettre les rondelles d'arrêt (3/3) et respecter la position de montage.
7. Serrer la vis à tête cylindrique (3/1) avec un couple de serrage de 56 Nm

RW 7511



1581-0004

Légende

- 1 Vis à tête cylindrique
- 2 Rondelle de l'hélice
- 3 Rondelles d'arrêt
- 4 Joint torique
- 5 Joint torique
- 6 Hélice
- 7 Clavette (déjà installée en usine)
- 8 Joint (déjà installé en usine)

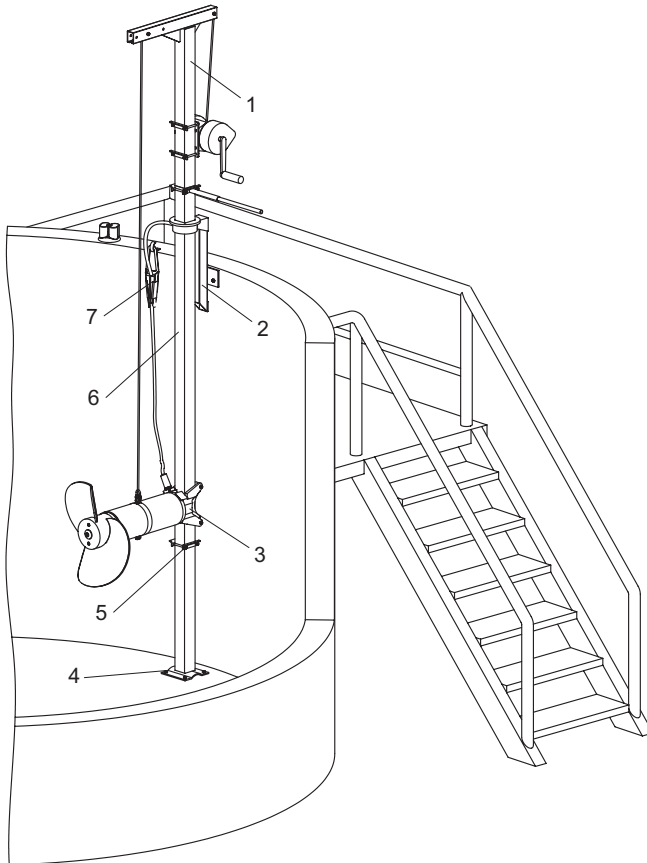
Figure 3 Montage de l'hélice

5.3 Couple de serrage

Voir chapitre 5.3 des instructions de montage et d'utilisation 15970832-EU/0833-EU

5.4 Exemple d'installation RW 7511

Pour cette installation, nous recommandons d'utiliser la fixation fermée.



1581-0005

Légende

- 1 Potence de levage
- 2 Support de fixation supérieur
- 3 Fixation fermée
- 4 Support au sol
- 5 Butée de blocage de sécurité
- 6 Tube de guidage carré orientable
- 7 Pince d'extrémité avec crochet de câble

Figure 4 Exemple d'installation RW 7511

5.5 Fixations RW 7511

Voir chapitre 5.5 des instructions de montage et d'utilisation 15970832-EU/0833-EU

5.6 Longueurs des tubes de guidage (tube de guidage carré) RW 7511

Voir chapitre 5.6 des instructions de montage et d'utilisation 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Raccordement électrique

Voir chapitre 5.8 des instructions de montage et d'utilisation 15970832-EU/0833-EU

6 - 7 Mise en marche; entretien

Voir chapitres 6 - 7 des instructions de montage et d'utilisation 15970832-EU/0833-EU.

RW 7511

1 Algemeen

Principieel is de montage- en gebruiksaanwijzing met art.nr. 15970832-EU/0833-EU (ABS dompelmotor roerwerken RW) voor een groot gedeelte ook op de **RW 7511** van toepassing. Dit geldt ook voor de deskundige aansluiting en de veilige werking van de ex-uitvoering van de RW 7511. Hetzelfde geldt voor de **veiligheidsinstructies**. Deze staan in het aparte boekje met art.nr. 1 597 0799 en moeten vóór de installatie en de inbedrijfstelling zorgvuldig worden doorgenomen!

In deze „Extra“ montage en gebruiksaanwijzing voor het **ABS dompelmotor roerwerk RW 7511** zijn daarom alleen dwarsverwijzingen resp. de afwijkende, extra en productspecifieke informatie opgenomen.

1.1 - 1.3 Inleiding; Reglementair gebruik; toepassingsgrenzen

Zie hoofdstuk 1.1 - 1.3 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

1.4 Toepassingsgebieden

Het dompelmotor roerwerk RW 7511 is voor het mengen, roeren en circuleren van taai, vaste stoffen bevattende vloeistoffen in zuiveringsinstallaties in industrie en landbouw. Het is vooral voor de speciale eisen bij de homogenisering van slib en co-fermenten ontworpen.

1.5 Typecode

Zie hoofdstuk 1.5 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU. *Propellertype = 2-blad speciale propeller voor slib en cofermenten.

1.6 Technische gegevens

Zie hoofdstuk 1.6 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

1.6.1 Technische gegevens RW 7511, 50 Hz

Roerwerktype	Propellerdiameter	Toerental / transmissieondersteuning	Motortype	Nominale vermogensopname P ₁	Nominale motorvermogen P ₂	Startmanier: direct (D.O.L)	Startmanier: ster/driehoek	Nominale stroom bij 400 V	Opstartstroom bij 400 V	Kabeltype** (Ex- en standdaard)	Temperatuurbewaking	Afdichtingsbewaking	Ex dII BT4	Geleidepijp □ 100	Totaal gewicht
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	2852	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Technische gegevens RW 7511, 60 Hz

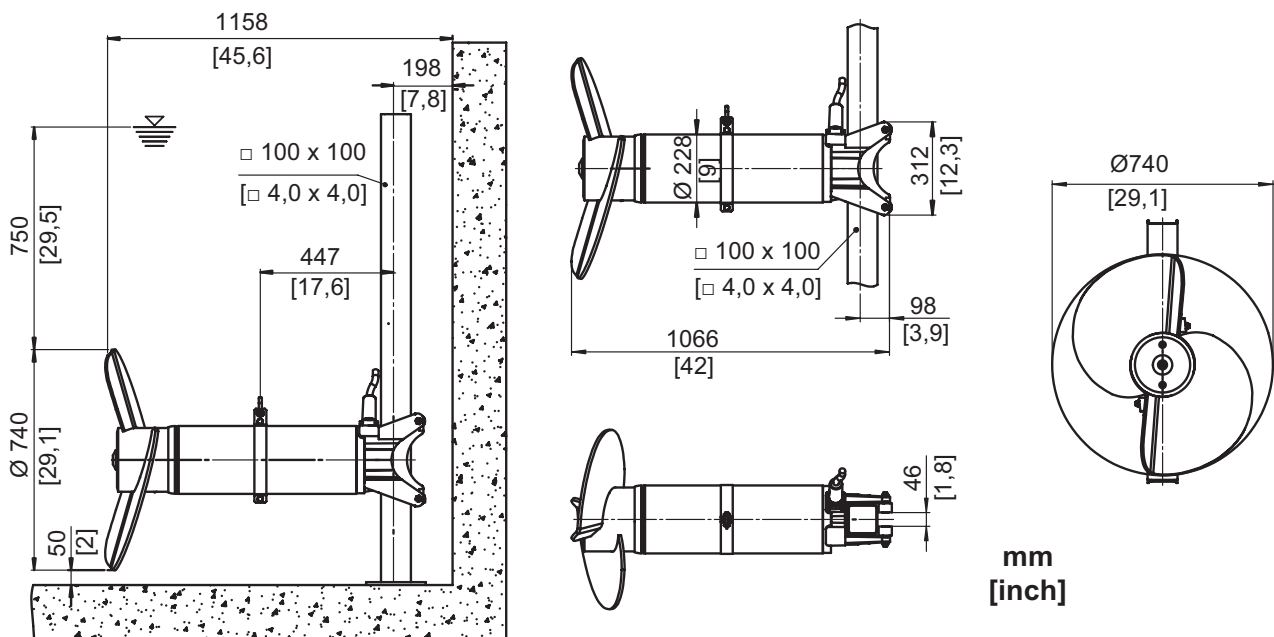
RW 7511	750	2851	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = vermogensopname ; P₂ = vermogensafgifte
 1 = propellertoerental met transmissieondersteuning i=6; 2= propellertoerental met transmissieondersteuning i=5
 • = standaard ; ○ = optie ; * = afdichtingsbewaking in de buitenruimte i.p.v. oliekamer.
 **Kabeltype: 10 m kabel met vrij kabeluiteinde zijn standaard leveringsomvang: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Afmetingen en gewichten

Zie hoofdstuk 1.7 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

1.7.1 Afmetingen RW 7511



Afbeelding 1 Afmetingen RW 7511

RW 7511

1.8 Typeplaatje

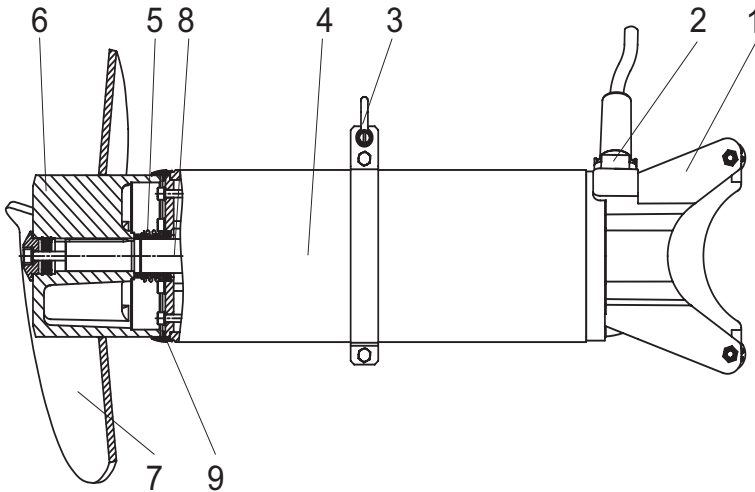
Zie hoofdstuk 1.8 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

2 - 3 Veiligheid; transport en opslag

Zie hoofdstuk 2 - 3 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

4 Productbeschrijving**4.1 Beschrijving algemeen**

Zie hoofdstuk 4.1 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

4.2 Constructieve opbouw RW 7511

1581-0003

Legenda

- 1 Houder
- 2 Kabelingang
- 3 Borgring met ankersluiting
- 4 RVS ommanteling (optie)
- 5 Glijringpakking
- 6 Propellernaaf
- 7 Propeller
- 8 As-unit met rotor en lagers
- 9 SD - ring

Afbeelding 2 RW 7511

4.3 Werking aan frequentieomvormers

Zie hoofdstuk 4.5 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU

5 Installation

Zie hoofdstuk 5 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

5.1 Installation RW 7511

Zie hoofdstuk 5.1 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

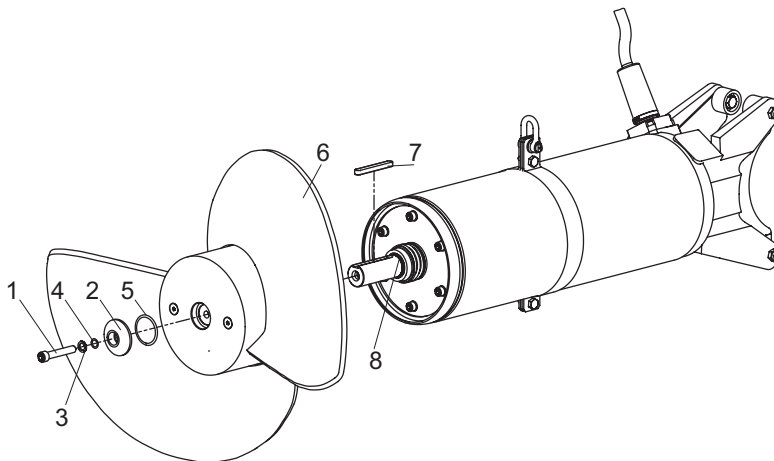
5.2 Propellermontage

De propellers van de roerwerken RW 7511 worden apart aangeleverd en moeten in het gebouw conform de instructies hierna worden gemonteerd.

LET OP

De juiste montagepositie van de borgschijven (afbeelding 17 montagepositie van de borgschijven hoofdstuk 5.3 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU) en het voorgeschreven aandraaimoment moeten in acht worden genomen!

1. Propellernaaf en asstomp iets invetten.
2. Propeller opschuiven (3/6).
3. O-Ring (3/5) plaatsen.
4. Propellerschijf (3/2) plaatsen.
5. O-Ring (3/4) plaatsen.
6. Borgschijven (3/3) plaatsen en montagepositie in acht nemen.
7. Cilinderbout (3/1) met een aandraaimoment van 56 Nm aandraaien.



1581-0004

Legenda

- 1 Cilinderbout
- 2 Propellerschijf
- 3 Borgschijven
- 4 O-ring
- 5 O-ring
- 6 Propeller
- 7 Pasveer (al af fabriek gemonteerd)
- 8 Pakking (al af fabriek gemonteerd)

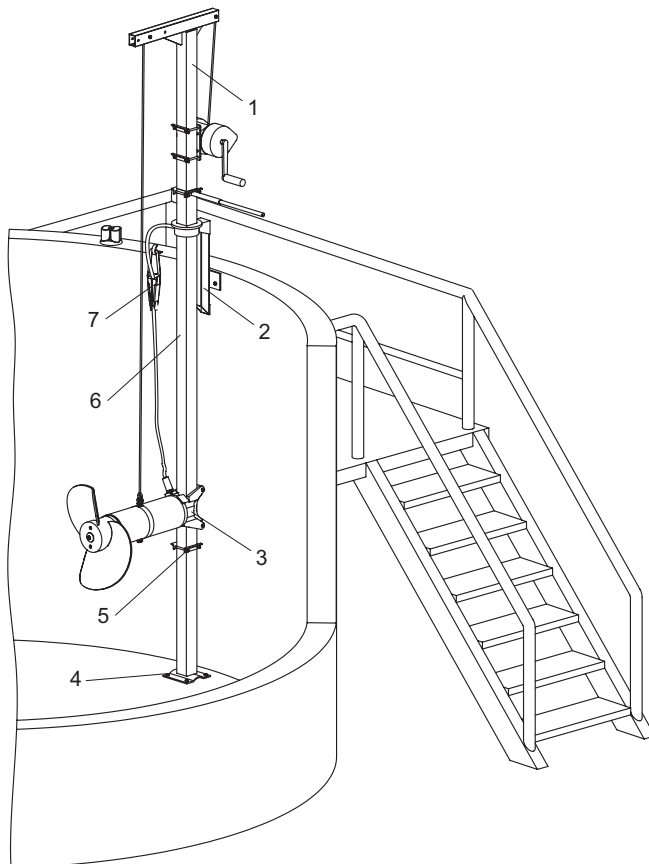
Afbeelding 3 Propellermontage

5.3 Aandraaimomenten

Zie hoofdstuk 5.3 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

5.4 Installatievoorbeeld RW 7511

Voor deze installatie wordt er aanbevolen om de gesloten houder te gebruiken.



1581-0005

Legenda

- 1 Hijsstrop
- 2 Bovenste houdbok
- 3 Houder gesloten
- 4 Bodemlager
- 5 Veiligheidsklemaanslag
- 6 Draaibare vierkant geleidepijp
- 7 Spanklem met kabelhaak

Afbeelding 4 Installatievoorbeeld RW 7511

5.5 Houders RW 7511

Zie hoofdstuk 5.5 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

5.6 Geleidepijplengtes (vierkante geleidepijp) RW 7511

Zie hoofdstuk 5.6 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Elektrische aansluiting

Zie hoofdstuk 5.8 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU

6 - 7 Inbedrijfstelling, onderhoud

Zie hoofdstuk 6 - 7 van de montage- en gebruiksaanwijzing 15970832-EU/0833-EU.

RW 7511

1 Informazioni generali

Le istruzioni d'installazione e d'uso con il n. articolo 15970832-EU/0833-EU (miscelatori sommersi ABS RW) sono in gran parte valide anche per **RW 7511**. Ciò vale anche per il collegamento regolare e l'uso sicuro della versione per atmosfera esplosiva di RW 7511. Lo stesso vale per le **Avvertenze per la sicurezza**, riportate nel libretto separato con il n. articolo 1 597 0799, che devono essere studiate con attenzione prima dell'installazione e della messa in servizio!

In queste **Istruzioni per d'installazione e d'uso "addizionali" per il miscelatore ABS RW 7511** sono perciò solo contenuti rinvii incrociati e informazioni divergenti, addizionali e specifiche per il prodotto.

1.1 - 1.3 Introduzione; Utilizzo conforme; Limiti d'impiego

Vedi paragrafi 1.1 - 1.3 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

1.4 Campi d'applicazione

Il miscelatore sommerso RW 7511 serve per miscelazione, agitazione e ricircolazione di fluidi densi e contenenti parti solide in impianti di depurazione, nell'industria e nell'agricoltura ed è realizzato appositamente per le speciali esigenze nell'omogenizzazione di fanghi e confermenti.

1.5 Codici identificativi

Vedi il paragrafo 1.5 delle istruzioni d'installazione e uso 15970832-EU/0833-EU. *Tipo di elica = elica speciale a 2 pale per fanghi e cofermenti.

1.6 Dati tecnici

Vedi paragrafo 1.6 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

1.6.1 Dati tecnici RW 7511, 50 Hz

Tipo di miscelatore	Diametro elica	Numero di giri / riduzione	Tipo di motore	Absorbimento di potenza nominale P ₁	Potenza nominale motore P ₂	Tipo di avviamento: diretto (D.O.L.)	Tipo di avviamento: stella/triangolo	Corrente nominale a 400 V	Corrente di avviamento a 400 V	Tipo di cavo** (antideflagrante e standard)	Monitoraggio temperatura	Monitoraggio tenuta stagna	Ex dII BT4	Guida tubolare □ 100	Peso complessivo
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	285 ²	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Dati tecnici RW 7511, 60 Hz

RW 7511	750	285 ¹	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------------------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = potenza assorbita; P₂ = potenza erogata

1 = n. giri elica con riduzione i=6; 2 = n. giri elica con riduzione i=5

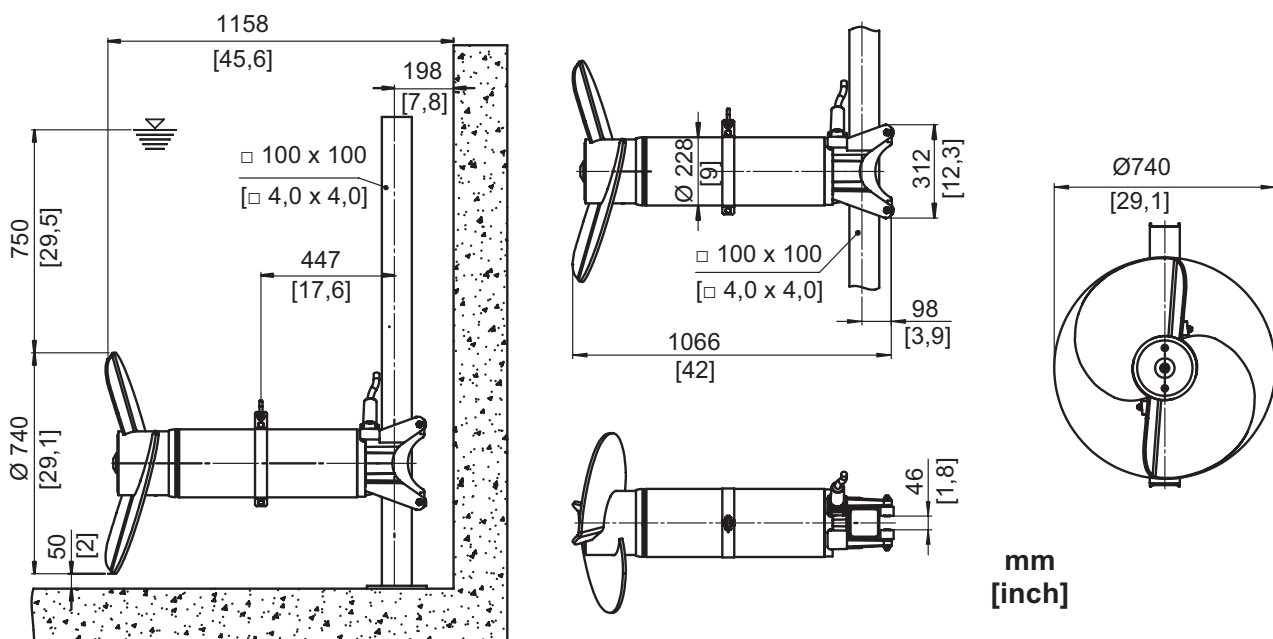
• = standard; ○ = optional; •* = monitoraggio tenuta stagna nella zona di connessione in luogo della camera dell'olio.

**Tipo di cavo: la dotazione standard prevede cavi da 10 m con estremità libera: 1 = 1 x 7G x 1,5; 2 = 1 x 10G x 1,5; 3 = 1 x 10 x G x 2,5; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Dimensioni e peso

Vedi paragrafo 1.7 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

1.7.1 Dimensioni RW 7511



1581-0002

Fig. 1 Dimensioni RW 7511

RW 7511

1.8 Targhetta identificativa

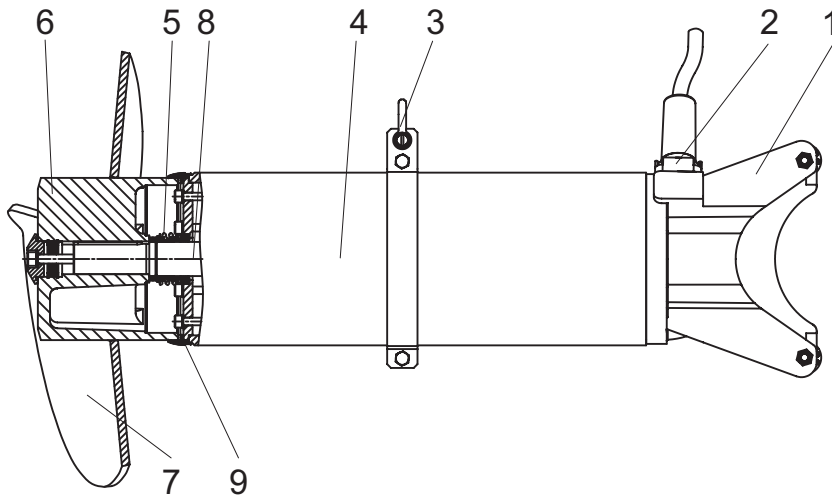
Vedi paragrafo 1.8 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

2 - 3 Sicurezza, trasporto e magazzinaggio

Vedi capitoli 2 - 3 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

4 Descrizione del prodotto**4.1 Descrizione generale**

Vedi paragrafo 4.1 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

4.2 Struttura costruttiva RW 7511**Legenda**

- 1 Supporto
- 2 Introduzione cavo
- 3 Anello di fissaggio con maniglia
- 4 Rivestimento in acciaio legato (optional)
- 5 Guarnizione ad anello scorrevole
- 6 Mozzo dell'elica
- 7 Elica
- 8 Unità albero con rotore e cuscinetti
- 9 Anello SD

Figura 2 RW 7511

4.3 Esercizio su convertitori di frequenza

Vedi paragrafo 4.5 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

5 Installazione

Vedi capitolo 5 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

5.1 Installazione RW 7511

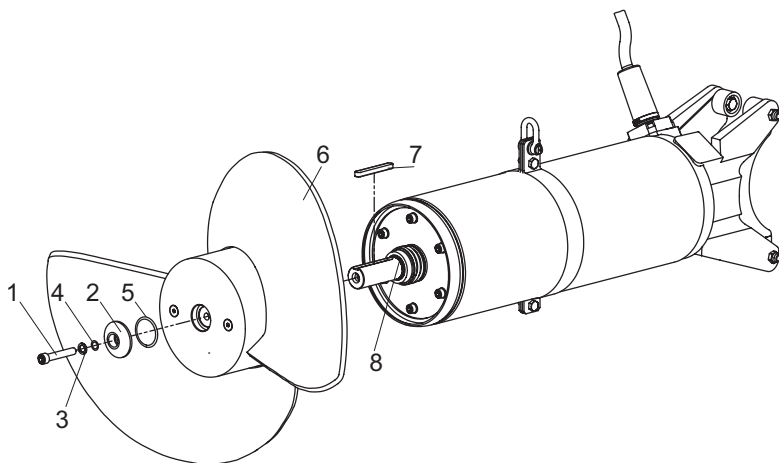
Vedi paragrafo 5.1 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

5.2 Montaggio dell'elica

Le eliche dei miscelatori RW 7511 vengono fornite separatamente e devono essere montate secondo le seguenti istruzioni.

ATTENZIONE *Rispettare la corretta posizione di montaggio delle rondelle autobloccanti di sicurezza (fig. 17 Posizione di montaggio delle rondelle di sicurezza, paragrafo 5.3 delle istruzioni d'installazione e uso 15970832-EU/0833-EU) e la coppia di serraggio prescritta.*

1. Ingrassare leggermente il mozzo dell'elica ed il ceppo dell'albero.
2. Inserire l'elica (3/6).
3. Introdurre l'O-ring (3/5).
4. Inserire il disco dell'elica (3/2).
5. Introdurre l'O-ring (3/4).
6. Introdurre le rondelle autobloccanti (3/3) rispettando la posizione di montaggio.
7. Serrare la vite a testa cilindrica (3/1) con una coppia di serraggio pari a 56 Nm.



1581-0004

Legenda

- 1 Vite a testa cilindrica
- 2 Disco dell'elica
- 3 Rondelle autobloccanti di sicurezza
- 4 O-ring
- 5 O-ring
- 6 Elica
- 7 Linguetta di aggiustamento (già montata dal produttore)
- 8 Guarnizione (già montata dal produttore)

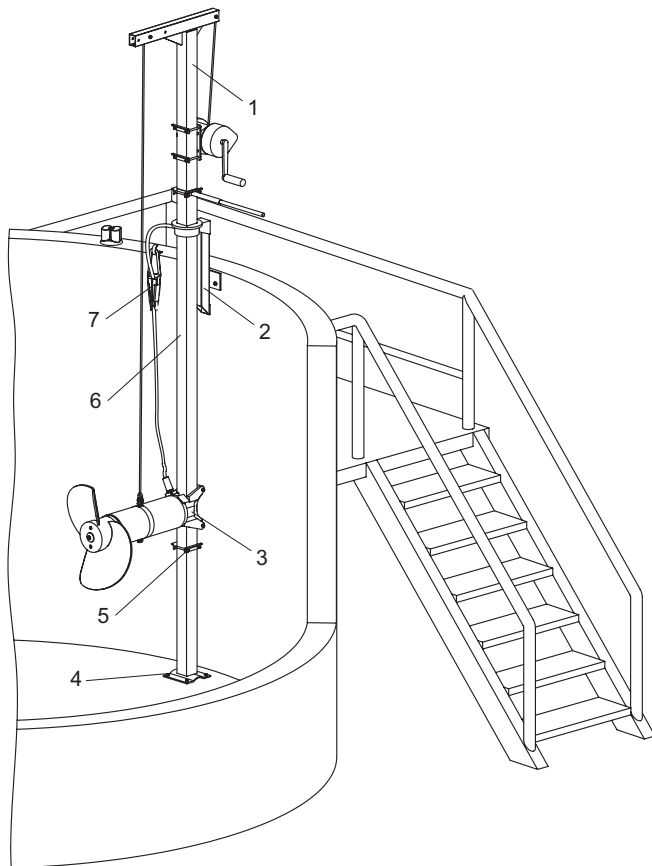
Figura 3 Montaggio dell'elica

5.3 Coppie di serraggio

Vedi paragrafo 5.3 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

5.4 Esempio installazione RW 7511

Per questo tipo d'installazione si suggerisce di utilizzare il supporto chiuso.



1581-0005

Legenda

- 1 Braccio di sollevamento con verricello e cavo
- 2 Cavalletto di supporto superiore
- 3 Supporto chiuso
- 4 Sistema di collegamento a pavimento
- 5 Finecorsa di fissaggio di sicurezza
- 6 Tubazione quadra girevole
- 7 Dispositivo di ancoraggio con cavo e gancio

Figura 4 Esempio installazione RW 7511

5.5 Supporti RW 7511

Vedi paragrafo 5.5 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

5.6 Lunghezze delle guide tubolari (tubazioni quadre) RW 7511

Vedi paragrafo 5.6 delle istruzioni d'installazione e uso 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Collegamento elettrico

Vedi paragrafo 5.8 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

6 - 7 Messa in servizio; Manutenzione

Vedi capitoli 6 - 7 delle istruzioni d'installazione e uso 15970832-EU/0833-EU.

RW 7511

1 Generalidades

Por regla general las instrucciones de instalación y de operación con N° Art. 15970832-EU/0833-EU (Mezclador de inversión ABS RW) en gran parte son válidas también para el RW 7511. También es aplicable para la conexión correcta y funcionamiento seguro del modelo Ex del RW 7511. También es aplicable para las Instrucciones de seguridad. ¡Estas van contenidas en folleto aparte con el N° Art. 1 597 0799 y deben ser estudiadas esmeradamente antes de la instalación y puesta en servicio!

En este „Suplemento“ **Instrucciones de montaje y operación para el mezclador de inmersión a motor ABS RW 7511** van contenidos sólo las referencias cruzadas obien las informaciones complementarias adicionales, divergenes o específicas del producto.

1.1 - 1.3 Introducción; Uso conforme al previsto; Límites de aplicación

Véase capítulo 1.1 - 1.3 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

1.4 Campos de aplicación

El mezclador de inmersión a motor RW 7511 sirve para mezclar, agitar y recircular fluidos muy viscosos con componentes sólidos en depuradoras, en la industria y en la agricultura. Esta diseñado especialmente para los requisitos particulares en la homogeneización de lodo y coenzimas.

1.5 Clave de tipos

Véase capítulo 1.5 de las instrucciones de montaje y operación 15970832-EU/0833-EU. *Tipo de hélice = 2 alaves hélice especial para lodo y coenzimas.

1.6 Datos técnicos

Véase capítulo 1.6 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

1.6.1 Datos técnicos RW 7511, 50 Hz

Tipo de mezclador	Diámetro de hélice	Revoluciones / reducción de engranajes	Tipo de motor	Potencia nominal absorbida P ₁	Potencia nominal del motor P ₂	Tipo de arranque: Directo (D.O.L.)	Tipo de arranque: Estrella/triángulo	Corriente nominal a 400 V	Corriente de arranque a 400 V	Tipo de cable** (Ex y estándar)	Control de temperatura	Control de sellado	Ex dII BT4	Tubo guía 100	Peso total
	[mm]	r.p.m.		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	2852	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Datos técnicos RW 7511, 60 Hz

RW 7511	750	2851	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = Consumo de potencia ; P₂ = Potencia suministrada

1 = Revoluciones de hélice con reducción de engranajes i=6; 2= Revoluciones de hélice con reducción de engranajes i=5

• = Estándar; ○ = Opción; •* = Control de sellado en la sala de conexión en vez de la cámara de aceite.

**Tipo de cable: 10 m de cable con extremo de cable libre forman parte del suministro estándar: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Medidas y pesos

Véase capítulo 1.7 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

1.7.1 Medidas constructivas RW 7511

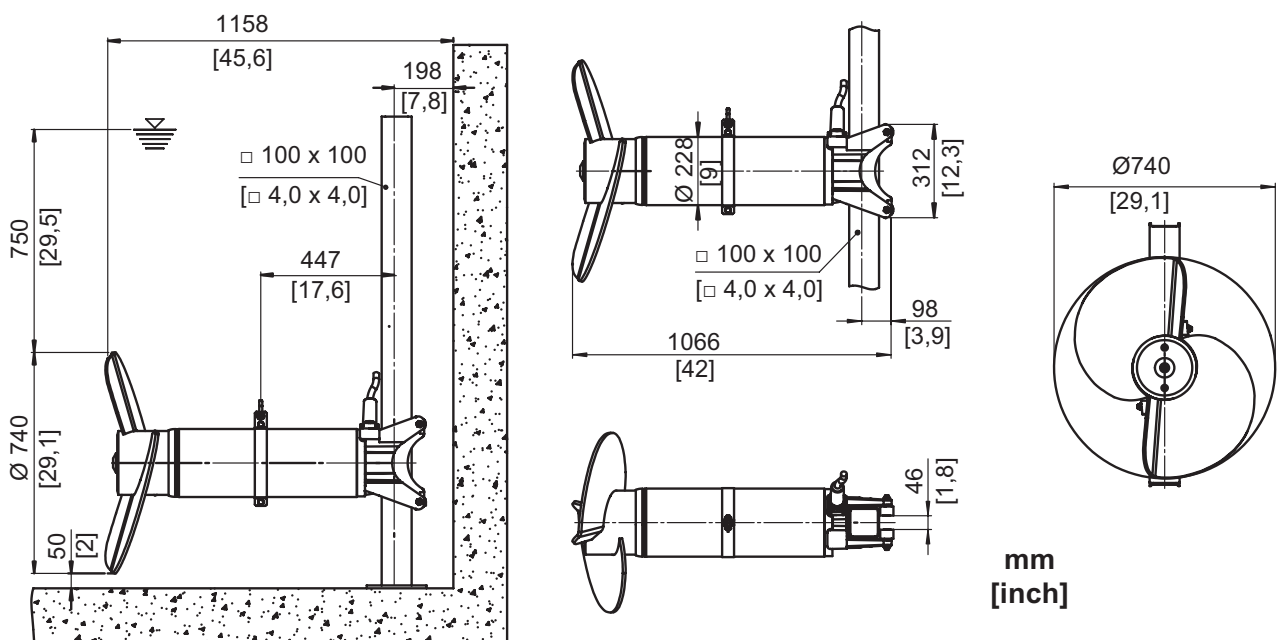


Figura 1 Medidas constructivas RW 7511

RW 7511

1.8 Placa de características

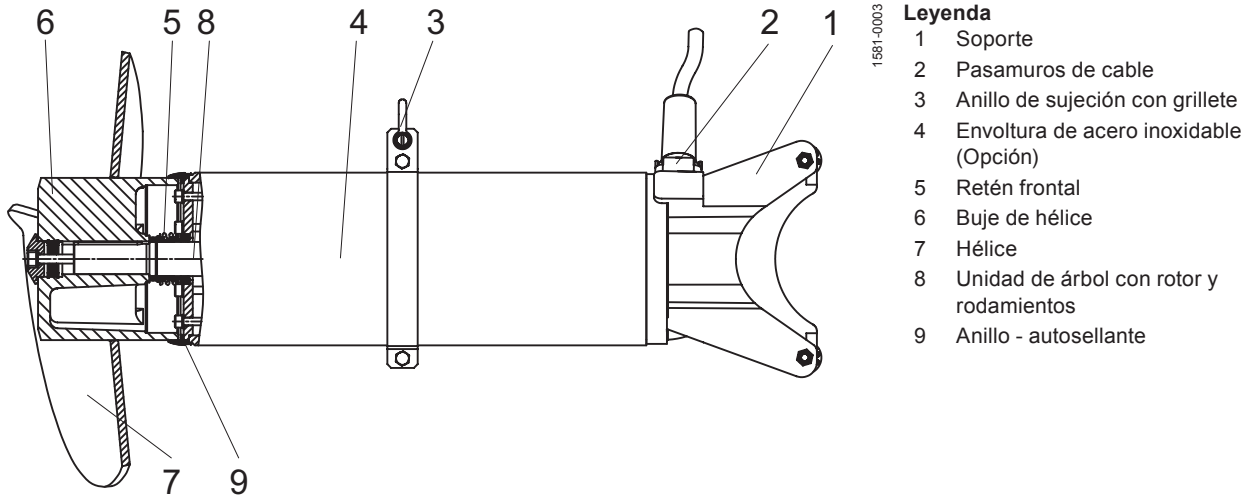
Véase capítulo 1.8 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

2 - 3 Seguridad; Transporte y almacenamiento

Véase capítulo 2 - 3 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

4 Descripción del producto**4.1 Descripción en general**

Véase capítulo 4.1 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

4.2 Estructura constructiva RW 7511

1581-0003

Leyenda

- 1 Soporte
- 2 Pasamuros de cable
- 3 Anillo de sujeción con grillete
- 4 Envoltura de acero inoxidable (Opción)
- 5 Retén frontal
- 6 Buje de hélice
- 7 Hélice
- 8 Unidad de árbol con rotor y rodamientos
- 9 Anillo - autosellante

Figura 2 RW 7511

4.3 Funcionamiento con un convertidor de frecuencias

Véase capítulo 4.5 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

5 Instalación

Véase capítulo 5 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

5.1 Instalación RW 7511

Véase capítulo 5.1 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

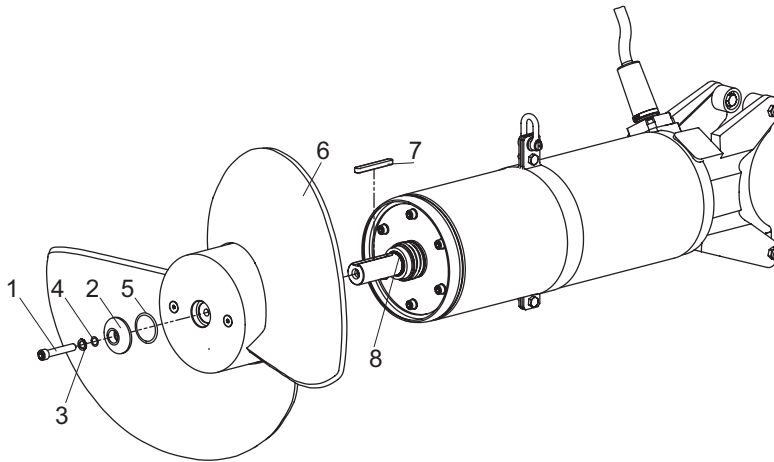
5.2 Montaje de hélice

Las hélices del mezclador RW 7511 son suministradas por separado y se han de montar de lado obra según las instrucciones siguientes.

ATENCIÓN

La posición de montaje correcta de los circlips (Figura 17 Se ha de tener en cuenta la posición de montaje de los circlips Capítulo 5.3 de las instrucciones de montaje y operación 15970832-EU/0833-EU) y el par de apriete prescrito!

1. Engrasar ligeramente el buje de hélice y el muñon del árbol.
2. Deslizar el hélice encima (3/5).
3. Insertar la junta tórica (3/5).
4. Insertar el disco de hélice (3/2).
5. Insertar la junta tórica (3/4).
6. Insertar los circlips (3/3) y observar la posición de montaje.
7. Apretar el tornillo allen (3/1) con un par de apriete de 56 Nm.



1581-0004

Leyenda

- 1 Tornillo allen
- 2 Disco de hélice
- 3 Circlips
- 4 Junta tórica
- 5 Junta tórica
- 6 Hélice
- 7 Chaveta (montada de fábrica)
- 8 Junta (montada de fábrica)

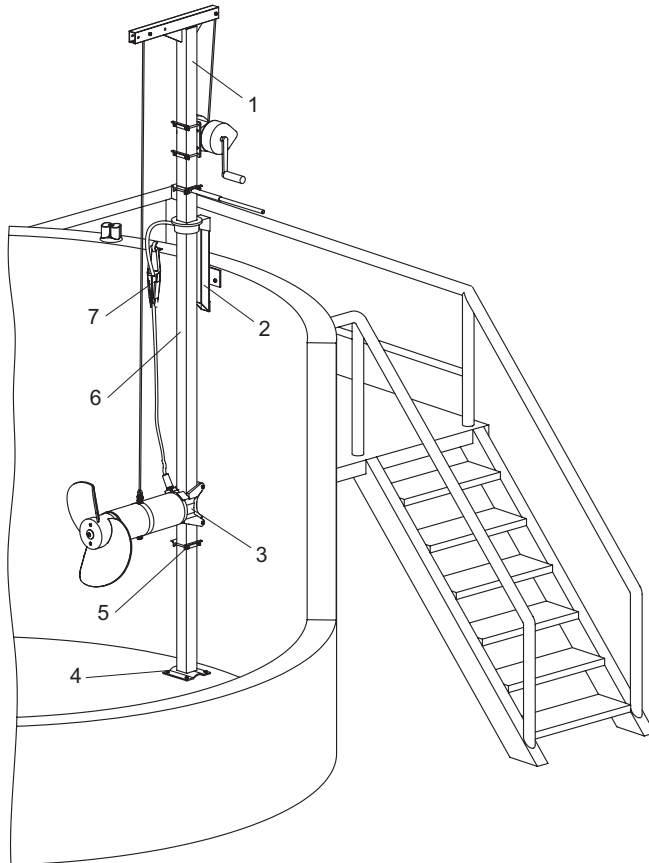
Figura 3 Montaje de hélice

5.3 Pares de apriete

Véase capítulo 5.3 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

5.4 Ejemplo de instalación RW 7511

Para esta instalación se recomienda usar soportes cerrados.



1581-0005

Leyenda

- 1 Galgas de elevación
- 2 Caballete de sujeción superior
- 3 Soporte cerrado
- 4 Apoyo de arco
- 5 Tope de apriete de seguridad
- 6 Tubo guía cuadrado girable
- 7 Pinza terminal con gancho de cable

Figura 4 Ejemplo de instalación RW 7511

5.5 Soportes RW 7511

Véase capítulo 5.5 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

5.6 Longitudes de tubos guía (tubo guía cuadrado) RW 7511

Véase capítulo 5.6 de las instrucciones de montaje y operación 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Conexión eléctrica

Véase capítulo 5.8 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

6 - 7 Puesta en servicio; Mantenimiento

Véase capítulo 6 - 7 de las instrucciones de montaje y operación 15970832-EU/0833-EU.

RW 7511

1 Γενικά

Οι οδηγίες εγκατάστασης και χρήσης με αριθ. προϊόντος 15970832-EU/0833-EU (υποβρύχιοι μηχανοκίνητοι αναδευτήρες ABS RW) ισχύουν γενικά σε μεγάλο βαθμό και για τον αναδευτήρα RW 7511. Το αυτό ισχύει επίσης για τη σύνδεση σύμφωνα με τις προδιαγραφές και την ασφαλή λειτουργία της έκδοσης του αναδευτήρα RW 7511 με αντιεκρηκτική προστασία. Το ίδιο ισχύει για τις υποδείξεις ασφαλείας. Αυτές περιλαμβάνονται σε ξεχωριστό φυλλάδιο με αριθ. προϊόντος 1 597 0799 και πρέπει να μελετώνται επιμελώς πριν από την εγκατάσταση και τη θέση σε λειτουργία!

Στο παρόν «πρόσθετο» χειριρίδιο οδηγιών εγκατάστασης και χρήσης του υποβρύχιοι μηχανοκίνητου αναδευτήρα ABS RW 7511 περιλαμβάνονται συνεπώς μόνο διαπαραπομπές ή οι αποκλίνοσες, πρόσθετες και ειδικές για το προϊόν πληροφορίες.

1.1 - 1.3 Εισαγωγή. Προβλεπόμενη χρήση. Όρια χρήσης

Βλ. κεφάλαια 1.1 - 1.3 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

1.4 Πεδία εφαρμογής

Ο υποβρύχιοι μηχανοκίνητης αναδευτήρας RW 7511 εξυπηρετεί την ανάμειξη, την ανάδευση και την κυκλοφορία παχύρρευστων υγρών που περιέχουν στερεά, σε εγκαταστάσεις επεξεργασίας λυμάτων, στη βιομηχανία και στον τομέα της γεωργίας. Είναι ειδικά σχεδιασμένος για τις ειδικές απαιτήσεις της ομογενοποίησης της ιλύος και υλικών συνδυασμένης ζύμωσης.

1.5 Κωδικός τύπου

Βλ. κεφάλαιο 1.5 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU. *Τύπος έλικας = ειδική έλικα 2 πτερυγίων για ιλύ και υλικά συνδυασμένης ζύμωσης.

1.6 Τεχνικά χαρακτηριστικά

Βλ. κεφάλαιο 1.6 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

1.6.1 Τεχνικά χαρακτηριστικά RW 7511, 50 Hz

Τύπος αναδευτήρα	Διάμετρος έλικας	Αριθμός στροφών/Σχέση μετάδοσης	Τύπος κινητήρα	Ονομαστική απορροφούμενη ισχύς P ₁	Ονομαστική ισχύς κινητήρα P ₂	Τύπος εκκίνησης: απευθείας (D.O.L)	Τύπος εκκίνησης: αστέρα/τριγώνου	Ονομαστικό ρεύμα στα 400 V	Ρεύμα εκκίνησης στα 400 V	Τύπος καλωδίου** (αντικερκτικής προστασίας και βασικό)	Επιτήρηση θερμοκρασίας	Επιτήρηση στεγανοποίησης	Ex dII BT4	Σωλήνας οδηγός 100	Συνολικό βάρος
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	2852	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Τεχνικά χαρακτηριστικά RW 7511, 60 Hz

RW 7511	750	2851	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = απορροφούμενη ισχύς, P₂ = αποδιδόμενη ισχύς

1 = αριθμός στροφών έλικας με σχέση μετάδοσης i=6, 2 = αριθμός στροφών έλικας με σχέση μετάδοσης i=5

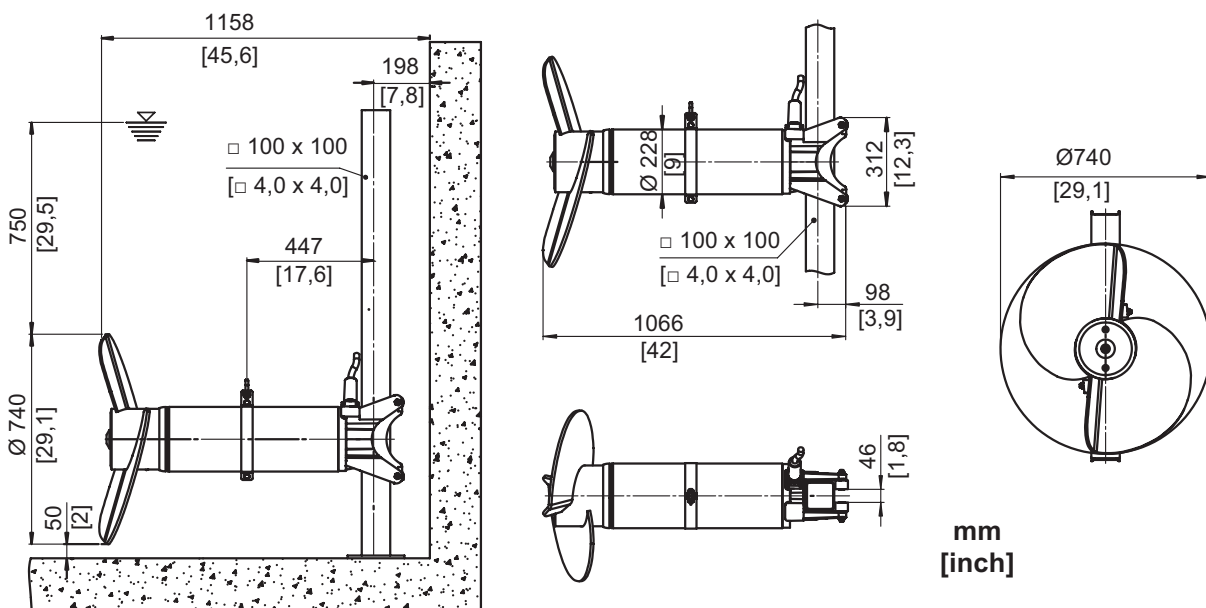
• = βασικός εξοπλισμός, ○ = προαιρετικός εξοπλισμός, * = επιτήρηση στεγανοποίησης στο χώρο σύνδεσης αντί θαλάμου λαδιού.

**Τύπος καλωδίου: καλώδια 10 m με ελεύθερο άκρο καλωδίου περιλαμβάνονται στο βασικό παραδοτέο εξοπλισμό: 1 = 1 x 7G x 1,5, 2 = 1 x 10G x 1,5, 3 = 1 x 10 x G x 2,5, 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Διαστάσεις και βάρη

Βλ. κεφάλαιο 1.7 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

1.7.1 Διαστάσεις κατασκευής RW 7511



Εικόνα 1 Διαστάσεις κατασκευής RW 7511

RW 7511

1.8 Πινακίδα τύπου

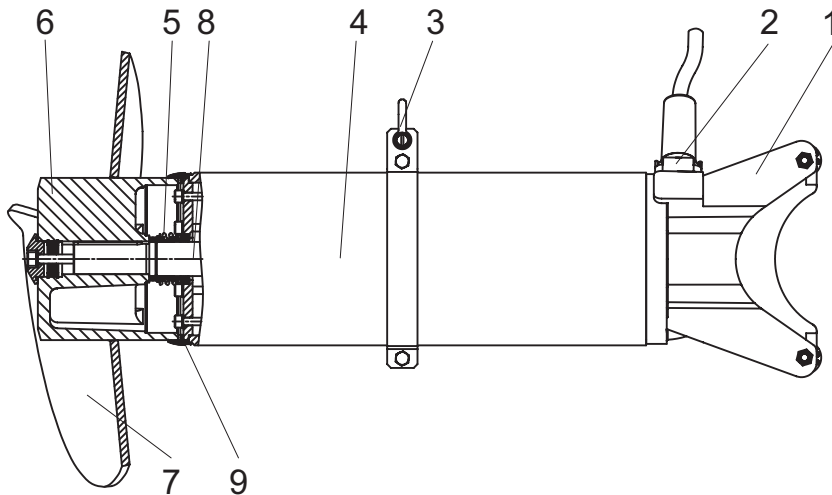
Βλ. κεφάλαιο 1.8 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

2 - 3 Ασφάλεια, μεταφορά και αποθήκευση

Βλ. κεφάλαιο 2 - 3 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

4 Περιγραφή προϊόντος**4.1 Γενική περιγραφή**

Βλ. κεφάλαιο 4.1 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

4.2 Δομή κατασκευής RW 7511

1581-0003

Υπόμνημα

- 1 Συγκρατητήρας
- 2 Είσοδος καλωδίου
- 3 Δακτύλιος συγκράτησης με κρίκο
- 4 Περίβλημα από ανοξείδωτο χάλυβα (προαιρετική επιλογή)
- 5 Μηχανικός στυπιοθλίπτης
- 6 Πλήμνη έλικας
- 7 Έλικα
- 8 Μονάδα άξονα με ρότορα και έδρανα
- 9 Δακτύλιος SD

Εικόνα 2 RW 7511

4.3 Λειτουργία σε μετατροπείς συχνότητας

Βλ. κεφάλαιο 4.5 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

5 Εγκατάσταση

Βλ. κεφάλαιο 5 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

5.1 Εγκατάσταση RW 7511

Βλ. κεφάλαιο 5.1 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

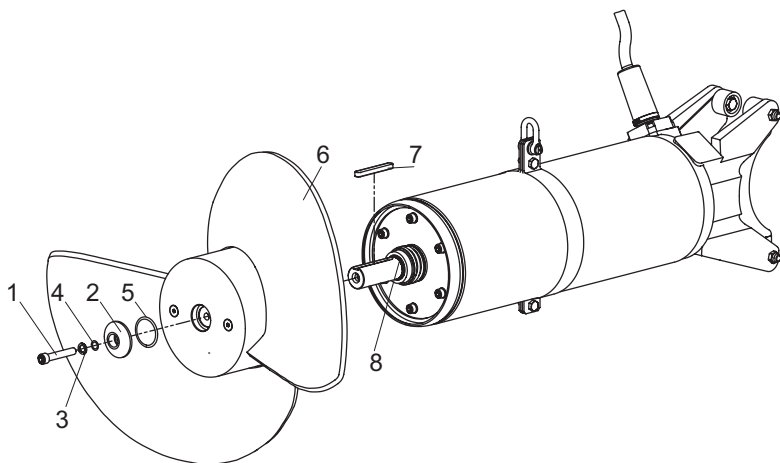
5.2 Συναρμολόγηση έλικας

Οι έλικες των αναδευτήρων RW 7511 παραδίδονται ξεχωριστά και πρέπει να συναρμολογούνται επιτόπου σύμφωνα με τις παρακάτω οδηγίες.

ΠΡΟΣΟΧΗ

Πρέπει να εξασφαλίζεται η σωστή θέση εγκατάστασης των ασφαλιστικών ροδελών (εικόνα 17 Θέση εγκατάστασης των ασφαλιστικών ροδελών, κεφάλαιο 5.3 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU) και η προβλεπόμενη ροπή σύσφιξης!

1. Γρασάρετε ελαφρά την πλήμνη της έλικας και το άκρο του άξονα.
2. Τοποθετήστε την έλικα (3/6).
3. Εγκαταστήστε το στεγανοποιητικό δακτύλιο (3/5).
4. Εγκαταστήστε το δίσκο της έλικας (3/2).
5. Εγκαταστήστε το στεγανοποιητικό δακτύλιο (3/4).
6. Τοποθετήστε τις ασφαλιστικές ροδέλες (3/3) και λάβετε υπόψη τη θέση εγκατάστασης.
7. Σφίξτε τη βίδα κυλινδρικής κεφαλής (3/1) με ροπή σύσφιξης 56 Nm.



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Υπόμνημα

- 1 Βίδα κυλινδρικής κεφαλής
- 2 Δίσκος έλικας
- 3 Ασφαλιστικές ροδέλες
- 4 Στεγανωτικός δακτύλιος
- 5 Στεγανωτικός δακτύλιος
- 6 Έλικα
- 7 Σφήνα
(εγκαταστημένη από το εργοστάσιο)
- 8 Στεγανοποίηση
(εγκαταστημένη από το εργοστάσιο)

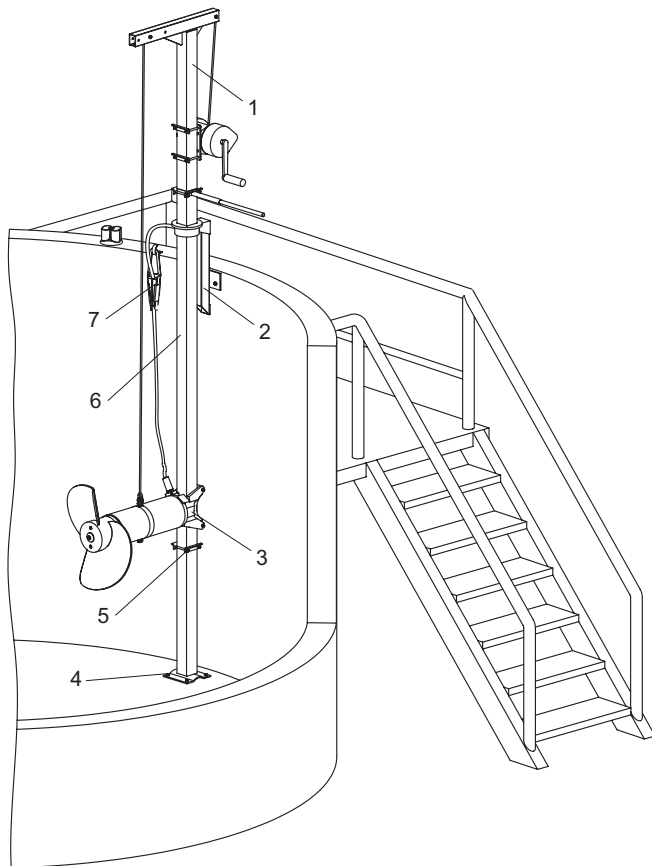
Εικόνα 3 Συναρμολόγηση έλικας

5.3 Ροπές σύσφιξης

Βλ. κεφάλαιο 5.3 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

5.4 Υπόδειγμα εγκατάστασης RW 7511

Για τη συγκεκριμένη εγκατάσταση συνιστάται η χρήση του κλειστού συγκρατητήρα.



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Υπόμνημα

- 1 Ικρίωμα ανύψωσης
- 2 Επάνω βάση στήριξης
- 3 Κλειστός συγκρατητήρας
- 4 Έδρανο δαπέδου
- 5 Συσφιγγόμενος θερματικός αναστολέας
- 6 Περιστρεφόμενος τετράγωνος σωλήνας οδηγός
- 7 Σφιγκτήρας στερέωσης με άγκιστρο συρματοσχοινού

Εικόνα 4 Υπόδειγμα εγκατάστασης RW 7511

5.5 Συγκρατητήρες RW 7511

Βλ. κεφάλαιο 5.5 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

5.6 Μήκη σωλήνα οδηγού (τετράγωνοι σωλήνες οδηγοί) RW 7511

Βλ. κεφάλαιο 5.6 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Ηλεκτρική σύνδεση

Βλ. κεφάλαιο 5.8 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

6 - 7 Θέση σε λειτουργία, συντήρηση

Βλ. κεφάλαιο 6 - 7 των οδηγιών εγκατάστασης και χρήσης 15970832-EU/0833-EU.

RW 7511

1 Generelt

Principielt gælder montage- og driftsvejledning med best. nr. 15970832-EU/0833-EU (ABS dykpumpe-røreværk RW) stort set også for RW 7511. Dette gælder også for den korrekte tilslutning og den sikre drift af Ex-udgaven af RW 7511. Det samme gælder for Sikkerhedsvejledningen. Denne er indeholdt i et separat hæfte med best. nr. 1 597 0799 og skal læses omhyggeligt inden instalering og ibrugtagning!

I denne „supplerende“-montage- og driftsvejledning for ABS-dykpumperøreværk RW 7511 findes der derfor kun krydshenvisninger eller de afvigende ekstra og produktspecifikke informationer.

1.1 - 1.3 Indledning; Korrekt brug; brugsgrenser

Se 1.1 - 1.3 Montage og driftsvejledning 15970832-EU/0833-EU.

1.4 Anvendelsesområde

Dykpumperøreværket RW 7511 tjener til blanding, røring og cirkulation af seje, faststofholdige væsker i renseanlæg, i industrien og i landbruget. Det er konstrueret især i henblik til kravene ved homogenisering af slam og kofermenter.

1.2 Typenøgle

Se 1.5 Montage og driftsvejledning 15970832-EU/0833-EU. * Propeltype = 2-vinge specialpropel til slam og kofermenter.

1.6 Tekniske data

Se kapitel 1.6 Montage og driftsvejledning 15970832-EU/0833-EU.

1.6.1 Tekniske data RW 7511, 50 Hz

Røreværkstype	Propeldiameter	Omdrejningstal / kraftoverførsel	Motortype	Nom. effektforbrug P1	Nom. motoreffekt P2	Starttype: direkte (D.O.L)	Starttype: stjerne/trekant	Mærkestrøm ved 400 V	Startstrøm ved 400 V.	Kabeltype** (Ex og standard)	Temperaturovervågning	Pakningsovervågning	Ex dII BT4	Styrerør □ 100	Samlet vægt
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	285 ²	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Tekniske data RW 7511, 60 Hz

RW 7511	750	285 ¹	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------------------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = effektforbrug ; P₂ = udgangseffekt

1 = propelomdrejningstal med kraftoverførsel i=6; 2= propelomdrejningstal med kraftoverførsel i=5

• = standard ; ○ = valgfrit ; * = pakningsovervågning i tilslutningskammer i stedet for olie-kammer.

**kabeltype: 10 m kabel fri kabelende er omfattet af standardlevering: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Mål og vægt

Se kapitel 1.7 Montage- og driftsvejledning 15970832-EU/0833-EU.

1.7.1 Konstruktionsmål RW 7511

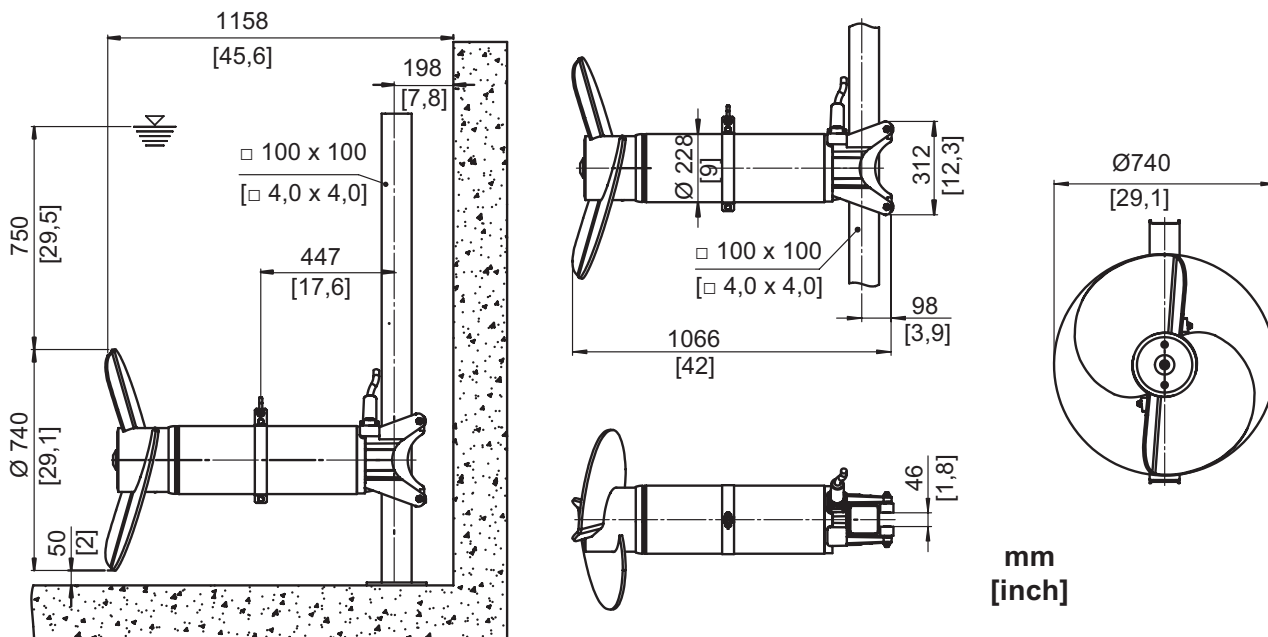


Fig 1 Konstruktionsmål RW 7511

RW 7511

1.8 Typeskilt

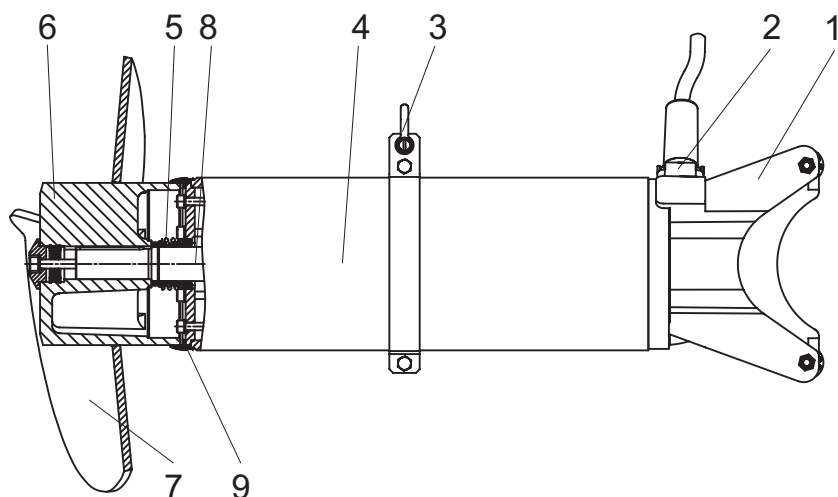
Se kapitel 1.8 Montage- og driftsvejledning 15970832-EU/0833-EU.

2 - 3 Sikkerhed, transport og opbevaring

Se kapitel 2 - 3 Montage- og driftsvejledning 15970832-EU/0833-EU.

4 Produktbeskrivelse**4.1 Generel beskrivelse**

Se kapitel 4.1 Montage- og driftsvejledning 15970832-EU/0833-EU.

4.2 Konstruktiv opbygning RW 7511**Billedforklaring**

- 1 holder
- 2 kabelindgang
- 3 holder med sjækel
- 4 stålcappe (valgfrit)
- 5 glideringpakning
- 6 propelnav
- 7 propel
- 8 Akselenhed med rotor og lejer
- 9 SD - ring

Fig. 2 RW 7511

4.3 Drift på frekvensomrettere

Se kapitel 4.5 Montage- og driftsvejledning 15970832-EU/0833-EU.

5 Installation

Se kapitel 5. Montage- og driftsvejledning 15970832-EU/0833-EU.

5.1 Installering RW 7511

Se kapitel 5.1 Montage- og driftsvejledning 15970832-EU/0833-EU.

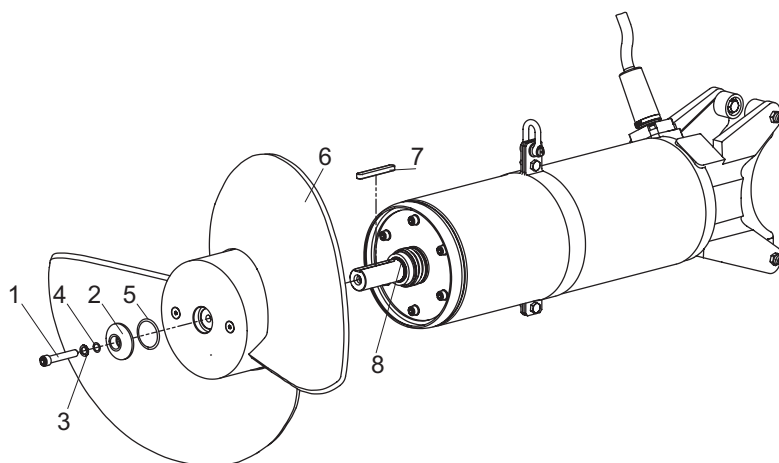
5.2 Propelmontage

Propellerne på røreværket RW 7511 leveres separat og skal monteres på stedet iht., nedenstående vejledning.

OBS

Låseskivernes korrekte monteringsposition (Fig. 17 Låseskivernes monteringsposition Kapitel 5.3 i Montage- og driftsvejledning 15970832-EU/0833-EU) og det foreskrevne tilspændingsmoment skal overholdes.

1. Propelnav og akseltap skal smøres let.
2. Skub propellen på (3/6)
3. Sæt ringen (3/5) ind.
4. Sæt propelskiven (3/2) ind.
5. Sæt ringen (3/4) ind.
6. Læg låseskiverne (3/3) i og overhold monteringspositionen.
7. Spænd cylindreskrien (3/1) med tilspændingsmoment 56 Nm.



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Billedforklaring

- 1 cylinderskrue
- 2 propelskive
- 3 låseskiver
- 4 O-ring
- 5 O-ring
- 6 propel
- 7 pasfjeder
- 8 pakning
(allerede monteret på fabrikken)

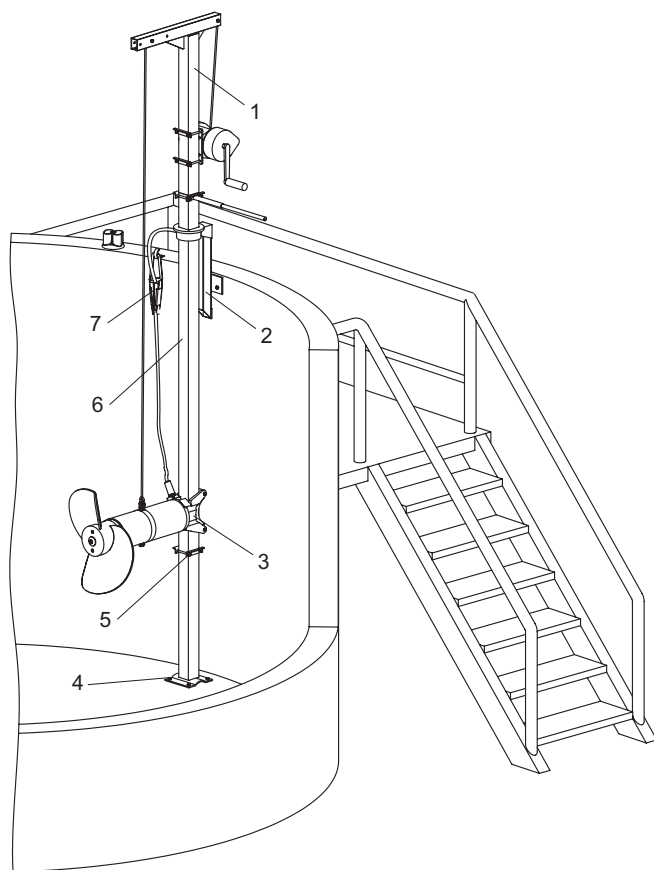
Fig. 3 Propelmontage

5.3 Tilspændingsmomenter

Se kapitel 5.3 Montage og driftsvejledning 15970832-EU/0833-EU.

5.4 Installeringsseksempel RW 7511

Det anbefales anvende den lukkede holder til installering.



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Billedforklaring

- 1 løftegalge
- 2 øverste holdebuk
- 3 holder lukket
- 4 bundleje
- 5 låseklemmeanslag
- 6 drejeligt firkantrør
- 7 afspændingsklemme med kabelkrog

Fig. 4 Installeringsseksempel RW 7511

5.5 Holdere RW 7511

Se kapitel 5.5 Montage og driftsvejledning 15970832-EU/0833-EU.

5.6 Styrerørlængder (firkantstyrerør) RW 7511

Se kapitel 5.6 Montage og driftsvejledning 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 EI-tilslutning

Se kapitel 5.8 Montage og driftsvejledning 15970832-EU/0833-EU.

6 - 7 Ibrugtagning, vedligeholdelse

Se kapitel 6 - 7 Montage og driftsvejledning 15970832-EU/0833-EU.

RW 7511

Yleistä

Periaatteessa asennus- ja käyttöohje tuote-numerolla 15970832-EU/0833-EU (ABS uppomoottorisekoitin RW) pätee suurelta osin myös RW 7511:lle. Tämä pätee myös RW 7511:n räjähdysuojatun mallin asianmukaiseen liitântään ja turvalliseen käyttöön. Ne sisältyvät erilliseen vihkoon, tuote-nro 1 597 0799, ja on luettava huolellisesti ennen asennusta ja käyttöönottoa!

Tästä syystä tämä ABS uppomoottorisekoittimen RW 7511 "lisä"-asennus- ja käyttöohje sisältää vain ristiviitteitä tai poikkeavia, lisä- ja tuotekohtaisia tietoja.

1.1 - 1.3 Johdanto; Tarkoituksenmukainen käyttö; Käyttörajat

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 1.1 - 1.3.

1.4 Käyttöalueet

Uppomoottorisekoitin RW 7511 on tarkoitettu tahmeiden, kiintoainepitoisten nesteiden sekoittamiseen ja kierrättämiseen vedenpuhdistuslaitoksissa, teollisuudessa ja maataloudessa. Se on suunniteltu erityisesti erikoisia vaatimuksia varten lietteen ja koentsyymien homogoinnissa.

1.5 Tyypikoodi

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 1.5 *Potkurityyppi = 2-siipi-erikoisputkuri lietteelle ja koentsyymeille.

1.6 Tekniset tiedot

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 1.6.

1.6.1 Tekniset tiedot RW 7511, 50 Hz

Sekoitintyyppi	Potkurin läpimitta	Kierros-luku/vaihteen redusointi	Moottorityyppi	Nimellistehonotto P ₁	Moottorin nimellisteho P ₂	Käynnistystapa: suoraan (D.O.L.)	Käynnistystapa: tähti/kolmio	Nimellisvirta 400V:ssä	Käynnistysvirta 400 V:ssä	Kaapelityyppi** (räjähdysuojattu ja vakio)	Lämpötilanvalvonta	Tiivisteenvälvonta	Ex dII BT4	Ohjausputki □ 100	Kokonaispaino
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	2852	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

Tekniset tiedot RW 7511, 50 Hz

RW 7511	750	2851	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = tehonotto; P₂ = tehonanto

1 = potkurin kierros-luku vaihteen redusoinnilla i=6; 2 = potkurin kierros-luku vaihteen redusoinnilla i=5

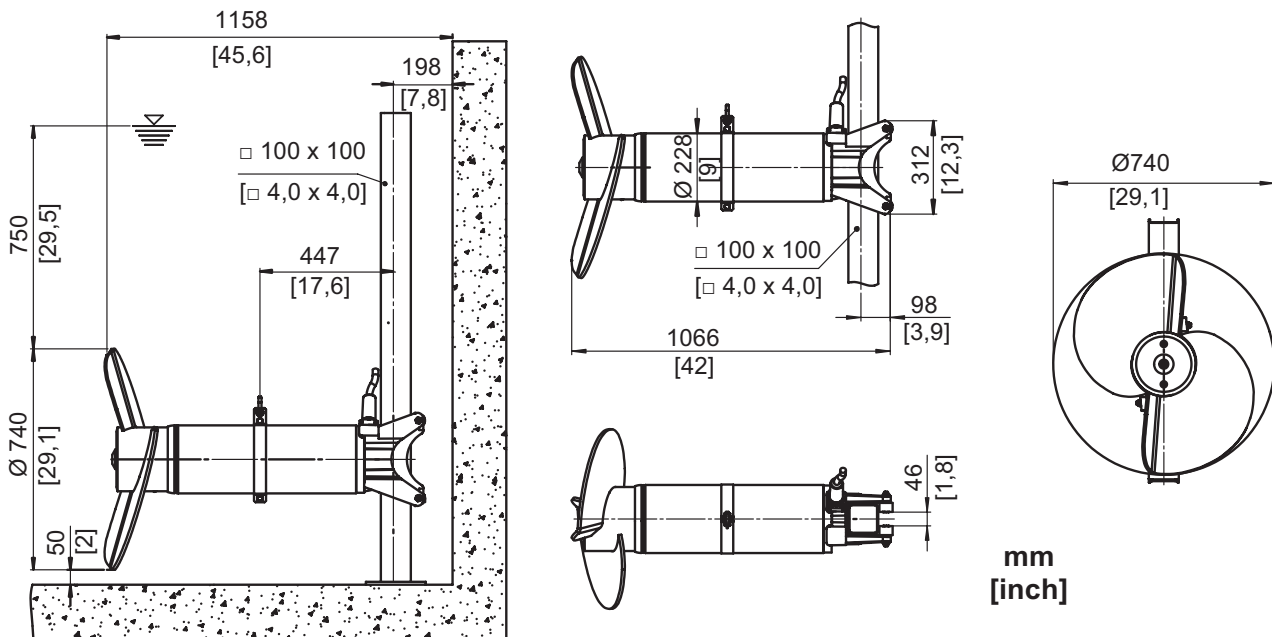
• = vakio; ○ = optio; •* = tiivisteenvälvonta öljykammion asemesta liitântätilassa.

**Kaapelityyppi: 10 m kaapeli vapaalla kaapelipäällä kuuluu vakioitoimitukseen: 1 = 1 x 7G x 1.5; 2 = 1 x 10G x 1.5; 3 = 1 x 10 x G x 2.5; 4 = 2 x 4G x 4 + 2 x 0,75

Mitat ja painot

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 1.7.

Rakennemitat RW 7511



Kuva 1 Rakennemitat RW 7511

RW 7511

1.8 Tyypikilpi

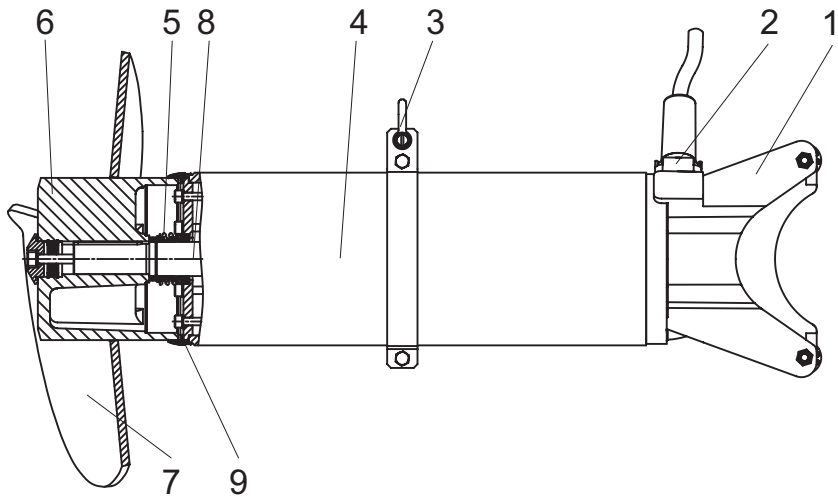
Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 1.8.

2 - 3 Turvallisuus, kuljetus ja varastointi

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 2 - 3.

4 Tuoteselostus**4.1 Yleisselostus**

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 4.1.

4.2 Rakenne RW 7511

1581-0003

Selitys

- 1 Kiinnitin
- 2 Kaapelin sisäänvienti
- 3 Pitorengas sakkellilla
- 4 Jaloteräsvaippa (optio)
- 5 Liukurengastiiviste
- 6 Potkurinnapa
- 7 Potkuri
- 8 Akseliyksikkö roottorilla ja laakereilla
- 9 SD-rengas

Kuva 2 RW 7511

4.3 Toiminta taajuusmuuttajissa

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 4.5.

5 Asennus

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 5.

5.1 Asennus RW 7511

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 5.1.

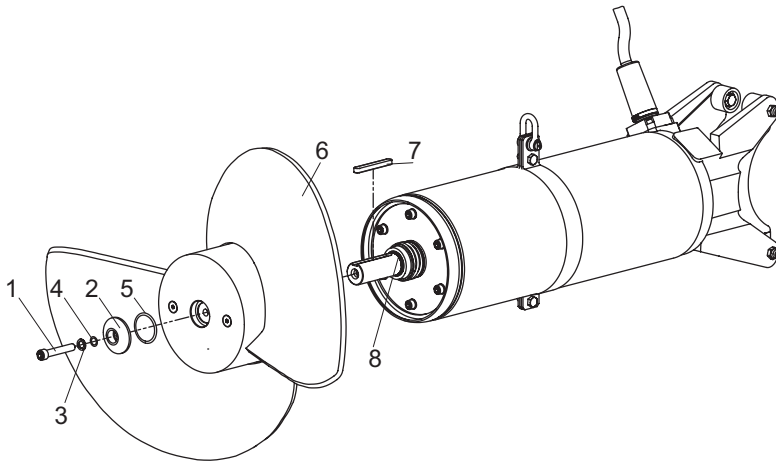
5.2 Potkurin asennus

Sekoittimien RW 7511 potkurit toimitetaan erikseen ja ne on asennettava seuraavan ohjeen mukaan.

HUOMIO

Varmistuslevyjen asianmukainen asennusasento (kuva 17 Varmistuslevyjen asennusasento, asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 5.3) ja määrätty vääntömomentti on huomioitava!

1. Rasvaa potkurinnapa ja akselisegmentti kevyesti.
2. Työnnä potkuri paikoilleen (3/6).
3. Asenna O-rengas (3/5).
4. Asenna potkurilevy (3/2).
5. Asenna O-rengas (3/4).
6. Asenna varmistuslevyt (3/3) ja huomioi asennusasento.
7. Kiristä lieriöruuvi (3/1) vääntömomentilla 56 Nm.



1581-0004

Selitys

- 1 Lieriöruuvi
- 2 Potkurilevy
- 3 Varmistuslevyt
- 4 O-rengas
- 5 O-rengas
- 6 Potkuri
- 7 Sovitekiila (jo tehtaalla asennettu)
- 8 Tiiviste (jo tehtaalla asennettu)

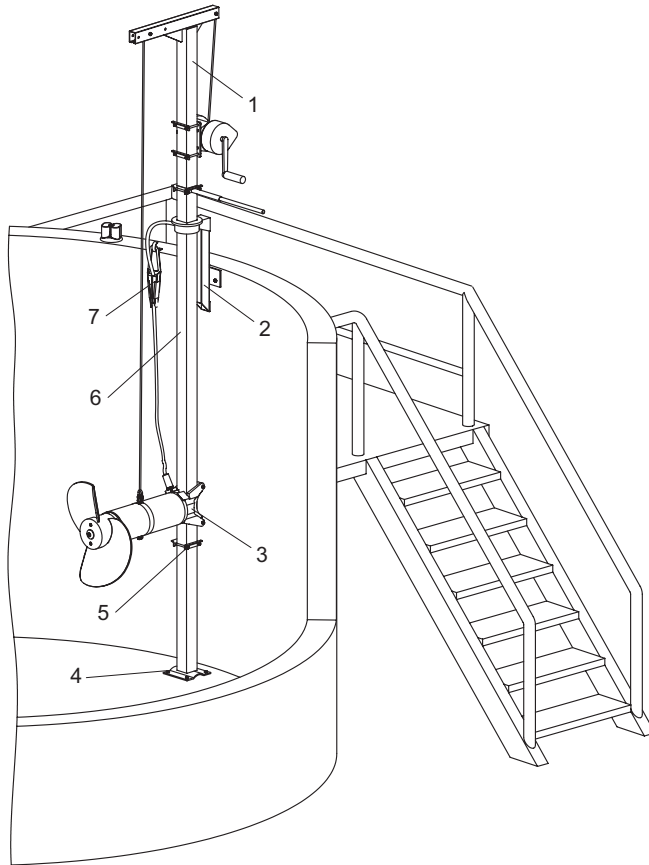
Kuva 3 Potkurin asennus

5.3 Väjäntömomentit

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 5.3.

5.4 Asennusesimerkki RW 7511

Tätä asennusta varten suositellaan käyttämään suljettua kiinnintä.



1581-0005

Selitys

- 1 Nostopuomi
- 2 Ylempi pitopukki
- 3 Kiinnitin kiinni
- 4 Pohjalaakeri
- 5 Varmuuspihtivaste
- 6 Käännettävä nelikantaohjausputki
- 7 Kiristyspidike kaapelikoukulla

Kuva 4 Asennusesimerkki RW 7511

5.5 Kiinnittimet RW 7511

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 5.5.

5.6 Ohjausputken pituudet (nelikantaohjausputki) RW 7511

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 5.6. RW 7511 = RW 900.

5.7 Sähköliitäntä

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 5.8.

6 - 7 Käyttöönotto, huolto

Katso asennus- ja käyttöohjeen 15970832-EU/0833-EU luku 6 - 7.

RW 7511

1 Allmänt

Principiellt är monterings- och drifvanvisning artikelnr 15970832-EU/0833-EU (ABS sänkbara motoromrörare RW) i stort sett även gällande för **RW 7511**. Detta gäller också för sakkunnig anslutning och säker drift av RW 7511-Ex-utföranden. Samma gäller även för **säkerhetsanvisningarna**. Dessa finner du i ett separat häfte med artikelnr 1 597 0799 vilka skall läsas noggrant före installation och idrifttagning!

I denna "extra" **Monterings- och drifvanvisning för ABS sänkbara motoromrörare RW 7511** finner du därför endast hänvisningar resp avvikande, kompletterande och produktspecifik information.

1.1 - 1.3 Inledning; Ändamålsenlig användning; Begränsad användning

Se kapitel 1.1 - 1.3 i monterings- och drifvanvisning 15970832-EU/0833-EU.

1.4 Användningsområden

Den sänkbara motoromröraren RW 7511 används för blandning, omrörning och omstjälpning av seiga fluider med fasta partiklar i reningsverk, i industrin och i lantbruk. Den är särskilt användbar för de speciella krav som ställs vid homogenisering av slam och ensilage.

1.5 Typnyckel

Se kapitel 1.5 i monterings- och drifvanvisning 15970832-EU/0833-EU. *Propellertyp = 2-blads specialpropeller för slam och ensilage.

1.6 Tekniska data

Se kapitel 1.6 i monterings- och drifvanvisning 15970832-EU/0833-EU.

1.6.1 Tekniska data RW 7511, 50 Hz

Typ av omrörare	Propellerens diameter	Varvtal / utväxling	Motortyp	Nominell effektförbrukning P ₁	Motorns märkeffekt P ₂	Startsätt: Direkt (D.O.L)	Startsätt: Stjärna/triangel	Märkström vid 400 V	Startström vid 400 V	Kabeltyp** (Ex och standard)	Temperaturövervakning	Tätningsovervakning	Ex dII BT4	Styrrör □ 100	Total vikt
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	285 ²	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Tekniska data RW 7511, 60 Hz

RW 7511	750	285 ¹	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------------------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = Effektförbrukning; P₂ = Uteffekt

1 = Propellervarvtal med utväxling i=6; 2= Propellervarvtal med utväxling i=5

• = Standard ; ○ = Tillval; •* = Tätningsovervakning i anslutningsutrymmet istället för oljekammare.

**Kabeltyp: 10 m kabel med fri kabelände ingår standardmässigt i leveransen: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Mått och vikt

Se kapitel 1.7 i monterings- och drifvanvisning 15970832-EU/0833-EU.

1.7.1 Byggnadsmått RW 7511

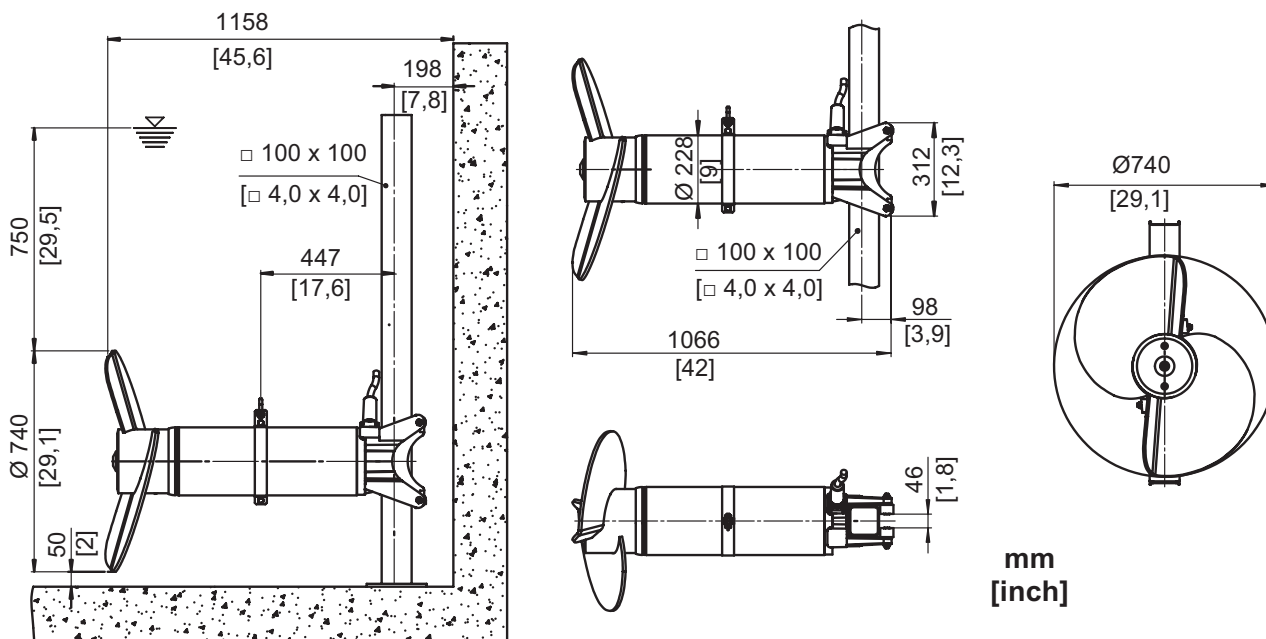


Bild 1 Byggnadsmått RW 7511

1581-0002

RW 7511

1.8 Märkskylt

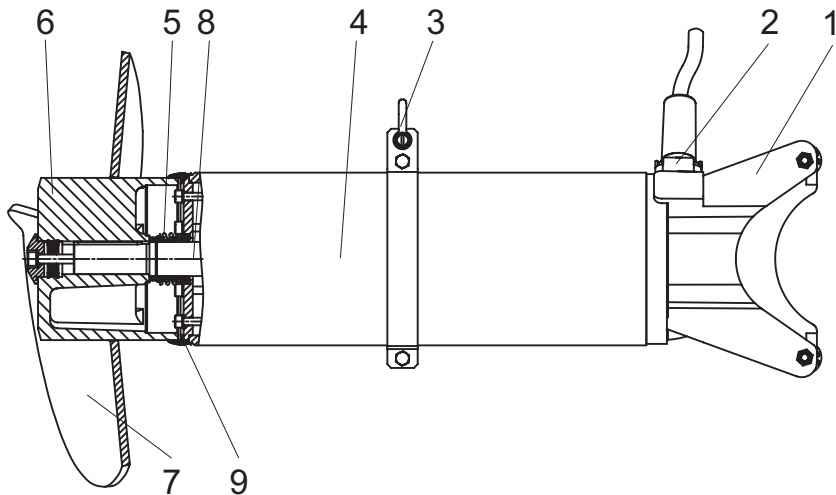
Se kapitel 1.8 i monterings- och driftanvisning 15970832-EU/0833-EU.

2 - 3 Säkerhet; transport och lagring

Se kapitel 2 - 3 i monterings- och driftanvisning 15970832-EU/0833-EU.

4 Produktbeskrivning**4.1 Beskrivning allmänt**

Se kapitel 4.1 i monterings- och driftanvisning 15970832-EU/0833-EU.

4.2 Konstruktiv uppbyggnad RW 7511

1581-0003

Förklaring

- 1 Fäste
- 2 Kabelinföring
- 3 Fästring med schackel
- 4 Mantel i rostfritt stål (tillval)
- 5 Glidringstätning
- 6 Propellernav
- 7 Propeller
- 8 Axelenhet med rotor och lager
- 9 SD - ring

Bild 2 RW 7511

4.3 Drift med frekvensomformare

Se kapitel 4.5 i monterings- och driftanvisning 15970832-EU/0833-EU.

5 Installation

Se kapitel 5 i monterings- och driftanvisning 15970832-EU/0833-EU.

5.1 Installation RW 7511

Se kapitel 5.1 i monterings- och driftanvisning 15970832-EU/0833-EU.

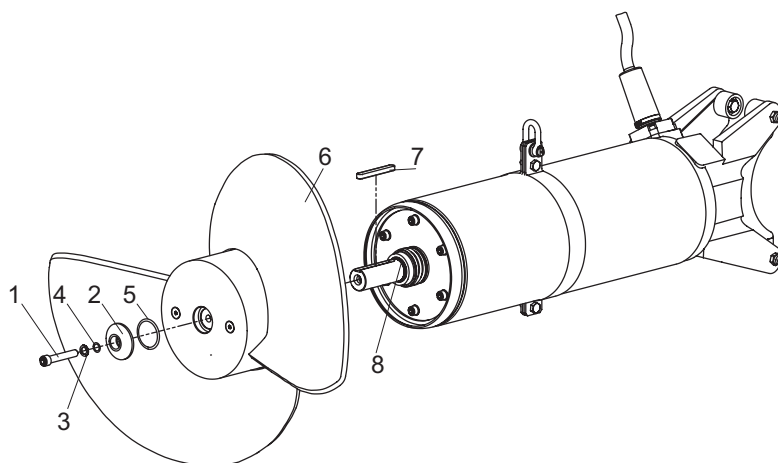
5.2 Propellermontage

Propellrar till omrörare RW 7511 levereras separat och skall monteras på plats enligt följande anvisningar.

OBS!

Korrekt monteringsposition för säkringsskivorna (bild 17 Säkringsskivornas monteringsposition kapitel 5.3 i monterings- och driftanvisning 15970832-EU/0833-EU) och föreskrivet åtdragningsmoment måste observeras!

1. Smörj på lite fett på propellernav och axelände.
2. Skjut på propellern (3/6).
3. Sätt på O-ringen (3/5).
4. Montera propellerskivan (3/2).
5. Sätt på O-ringen (3/4).
6. Lägg i säkringsskivorna (3/3) i rätt monteringsposition.
7. Dra åt cylinderskruven (3/1) med ett åtdragningsmoment på 56 Nm.



1581-0004

Förklaring

- 1 Cylinderskruv
- 2 Propellerskiva
- 3 Säkringsskivor
- 4 O-ring
- 5 O-ring
- 6 Propeller
- 7 Passkil (har monterats på fabriken)
- 8 Tätning (har monterats på fabriken)

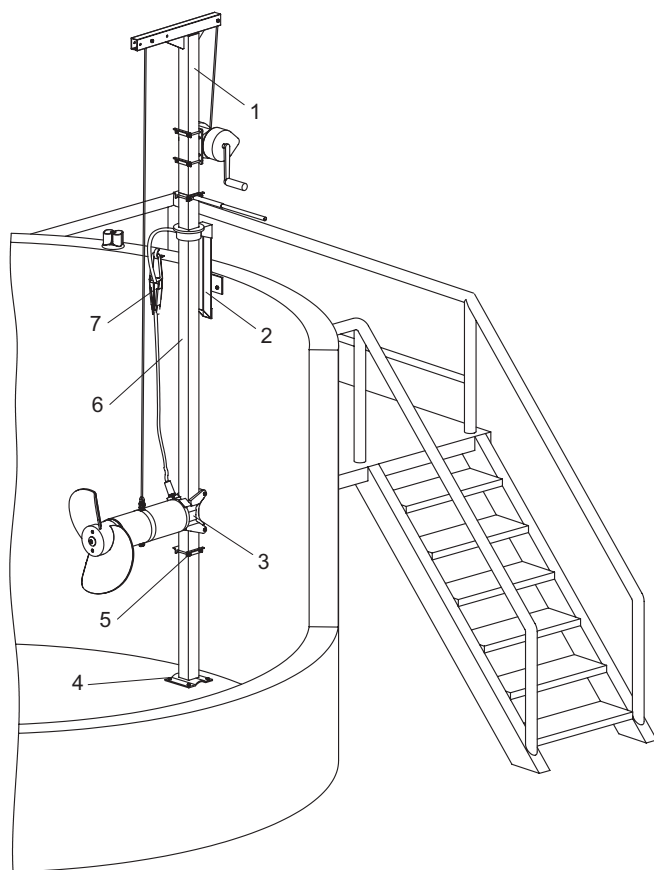
Bild 3 Propellermontage

5.3 Åtdragningsmoment

Se kapitel 5.3 i monterings- och driftanvisning 15970832-EU/0833-EU.

5.4 Monteringsexempel RW 7511

För denna installation rekommenderar vi att använda det slutna fästet .



1581-0005

Förklaring

- 1 Lyftanordning
- 2 Övre fästankning
- 3 Fäste slutet
- 4 Bottenlager
- 5 Säkerhetsanslag
- 6 Vridbart fyrkantsrör
- 7 Spännklämma med kabelhakar

Bild 4 monterings exempel RW 7511

5.5 Fästen RW 7511

Se kapitel 5.5 i monterings- och driftanvisning 15970832-EU/0833-EU.

5.6 Styrrörlängder (fyrkantsrör) RW 7511

Se kapitel 5.6 i monterings- och driftanvisning 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Elanslutning

Se kapitel 5.8 i monterings- och driftanvisning 15970832-EU/0833-EU.

6 - 7 Idrifttagning; Underhåll

Se kapitel 6 - 7 i monterings- och driftanvisning 15970832-EU/0833-EU.

RW 7511

1 Informacje ogólne

Zasadniczo instrukcja montażu i obsługi o numerze art. 15970832-EU/0833-EU (Mieszadła z silnikami zanurzeniowymi ABS typu RW) obowiązuje w znacznej części również dla urządzeń typu **RW 7511**. Dotyczy to m. in. prawidłowego podłączenia, bezpiecznej eksploatacji urządzeń RW 7511 w wersji Ex, a także **wskazówek bezpieczeństwa**. Zostały one zawarte w oddzielnej instrukcji o nr art. 1 597 0799. Należy się z nimi dokładnie zapoznać przed instalacją i uruchomieniem urządzenia!

W niniejszej „**dodatkowej**” instrukcji montażu i obsługi mieszadła z silnikiem zanurzeniowym ABS typu RW 7511 zawarte są wyłącznie odsyłacze lub informacje dodatkowe i specyficzne dla urządzenia.

1.1 - 1.3 Wprowadzenie; zastosowanie zgodne z przeznaczeniem; zakres zastosowania

Patrz rozdział 1.1 - 1.3 instrukcji montażu i obsługi 15970832-EU/0833-EU.

1.4 Zakres zastosowania

Mieszadło z silnikiem zanurzeniowym typu RW 7511 służy do homogenizacji, mieszania i cyrkulacji lepkich cieczy zanieczyszczonych domieszkami stałymi w oczyszczalniach ścieków stosowanych w przemyśle i rolnictwie. Jest ono polecane szczególnie do homogenizacji szlamu i kofermentów.

1.5 Klucz do oznaczania typu urządzenia

Patrz rozdział 1.5 instrukcji montażu i obsługi 15970832-EU/0833-EU. *Typ śmigła = specjalne 2-płatowe śmigło do szlamu i kofermentów.

1.6 Dane techniczne

Patrz rozdział 1.6 instrukcji montażu i obsługi 15970832-EU/0833-EU.

1.6.1 Dane techniczne RW 7511, 50 Hz

Typ mieszadła	Średnica śmigła	Prędkość obrotowa / przekładnia redukcyjna	Typ silnika	Znamionowy pobór mocy P ₁	Znamionowa moc silnika P ₂	Rodzaj rozruchu: bezpośredni (D.O.L.)	Rodzaj rozruchu: układ gwiazda/trójkąt	Prąd znamionowy przy 400 V	Prąd rozruchowy przy 400 V	Typ kabla** (wersja Ex i Standard)	Kontrola temperatury	Kontrola szczelności	Ex dII BT4	Rura prowadząca □ 100	Masa całkowita
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	2852	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Dane techniczne RW 7511, 60 Hz

RW 7511	750	2851	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = Pobór mocy ; P₂ = Moc użyteczna

1 = Prędkość obrotowa śmigła z przełożeniem redukcyjnym i=6; 2= Prędkość obrotowa śmigła z przełożeniem redukcyjnym i=5

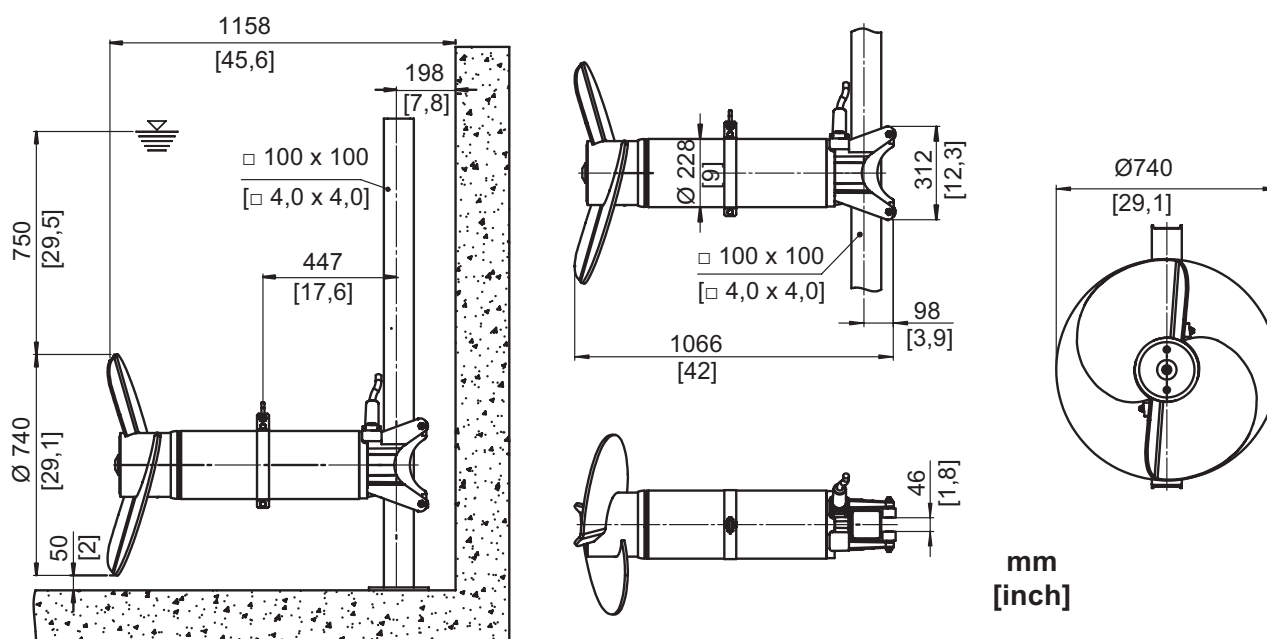
• = Standard ; ○ = Opcja; •* = Kontrola szczelności w komorze przyłączeniowej zamiast w komorze olejowej.

**Typ kabla: kabel o długości 10 m z wolnym końcem w standardowym zakresie dostawy: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Wymiary i waga

Patrz rozdział 1.7 instrukcji montażu i obsługi 15970832-EU/0833-EU.

1.7.1 Wymiary konstrukcyjne RW 7511



Rys. 1 Wymiary konstrukcyjne RW 7511

RW 7511

1.8 Tabliczka znamionowa

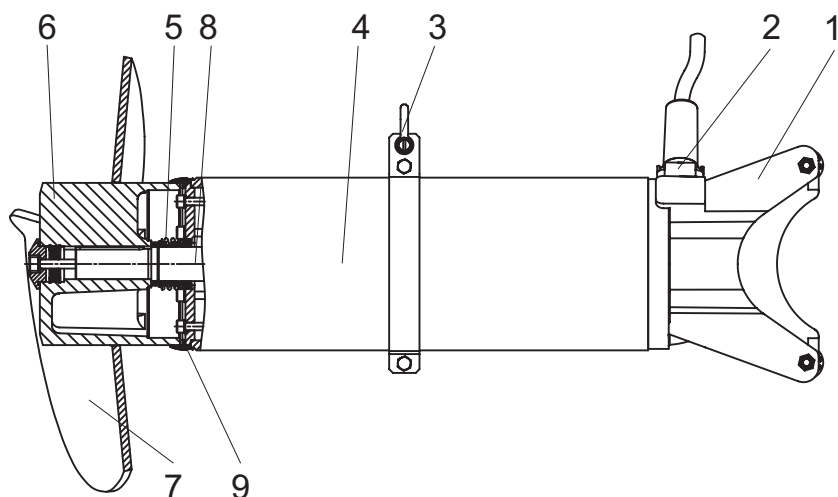
Patrz rozdział 1.8 instrukcji montażu i obsługi 15970832-EU/0833-EU.

2 - 3 Bezpieczeństwo; transport i składowanie

Patrz rozdział 2 - 3 instrukcji montażu i obsługi 15970832-EU/0833-EU.

4 Opis urządzenia**4.1 Ogólny opis urządzenia**

Patrz rozdział 4.1 instrukcji montażu i obsługi 15970832-EU/0833-EU.

4.2 Konstrukcja RW 7511

1581-0003

Legenda

- 1 Uchwyt
- 2 Wlot kabla
- 3 Mocowanie z pałąkiem
- 4 Osłona ze stali szlachetnej (opcja)
- 5 Uszczelnienie pierścieniem ślizgowym
- 6 Piasta śmigła
- 7 Śmigło
- 8 Zespół wału z wirnikiem i łożyskami
- 9 Pierścień samuszczelniający

Rys. 2 RW 7511

4.3 Eksploatacja z przetwornicą częstotliwości

Patrz rozdział 4.5 instrukcji montażu i obsługi 15970832-EU/0833-EU.

5 Instalacja

Patrz rozdział 5 instrukcji montażu i obsługi 15970832-EU/0833-EU.

5.1 Instalacja RW 7511

Patrz rozdział 5.1 instrukcji montażu i obsługi 15970832-EU/0833-EU.

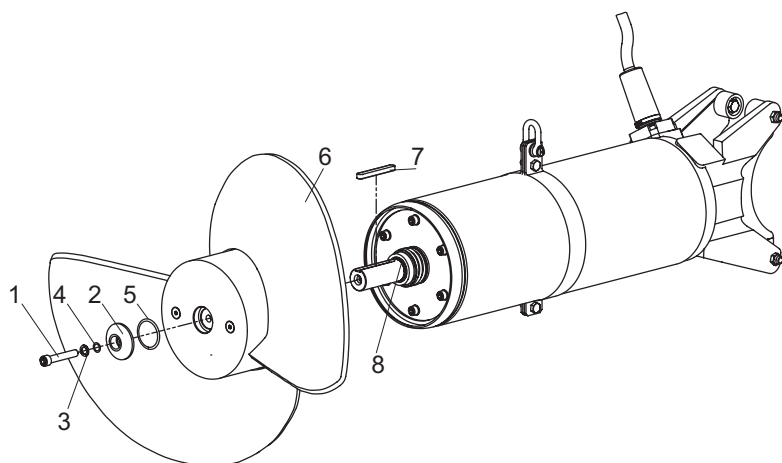
5.2 Montaż śmigła

Śmigła mieszadła typu RW 7511 są dostarczane oddzielnie i należy je zamontować w miejscu instalacji zgodnie z poniższą instrukcją.

UWAGA

Należy zwrócić szczególną uwagę na prawidłowy montaż podkładek zabezpieczających (rys. 17 Pozycja montażowa podkładek zabezpieczających - patrz rozdział 5.3 instrukcji montażu i obsługi 15970832-EU/0833-EU) oraz przestrzegać zalecanego momentu dokręcającego!

1. Lekko przesmarować piastę śmigła i czop wału.
2. Nałożyć śmigło (3/6).
3. Zamontować pierścień uszczelniający (3/5).
4. Zamontować tarczę śmigła (3/2).
5. Zamontować pierścień uszczelniający (3/4).
6. Zamontować prawidłowo podkładki zabezpieczające (3/3).
7. Dokręcić śrubę z łbem walcowym (3/1) momentem 56 Nm.



1581-0004

Legenda

- 1 Śruba z łbem walcowym
- 2 Tarcza śmigła
- 3 Podkładki zabezpieczające
- 4 Pierścień uszczelniający
- 5 Pierścień uszczelniający
- 6 Śmigło
- 7 Wpust pasowany (zamontowany fabrycznie)
- 8 Uszczelka (zamontowana fabrycznie)

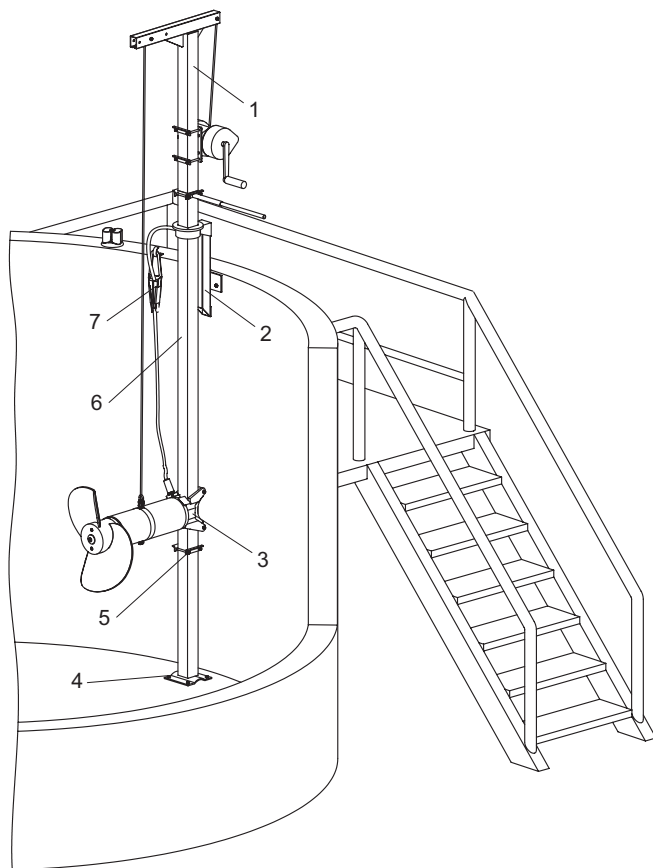
Rys. 3 Montaż śmigła

5.3 Momenty dokręcające

Patrz rozdział 5.3 instrukcji montażu i obsługi 15970832-EU/0833-EU.

5.4 Przykład instalacji RW 7511

Dla tego typu instalacji zaleca się zastosowanie uchwyty zamkniętego.



1581-0005

Legenda

- 1 Wysięgnik
- 2 Górny koziół mocujący
- 3 Uchwyt zamknięty
- 4 Podpora dolna
- 5 Zaciskowy ogranicznik bezpieczeństwa
- 6 Obrotowa czworokątna rura prowadząca
- 7 Uchwyt odciągowy z hakiem kablowym

Rys. 4 Przykład instalacji RW 7511

5.5 Uchwyty RW 7511

Patrz rozdział 5.5 instrukcji montażu i obsługi 15970832-EU/0833-EU.

5.6 Długość rury prowadzącej (rura czworokątna) RW 7511

Patrz rozdział 5.6 instrukcji montażu i obsługi 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Przyłącze elektryczne

Patrz rozdział 5.8 instrukcji montażu i obsługi 15970832-EU/0833-EU.

6 - 7 Pierwsze uruchomienie, konserwacja

Patrz rozdział 6 - 7 instrukcji montażu i obsługi 15970832-EU/0833-EU.

RW 7511

1 Všeobecně

Návod k montáži a provozu s objednacím číslem 15970832-EU/0833-EU (ABS ponorná motorová míchadla RW) platí z valné části také pro zařízení **RW 7511**. To platí i pro správné připojení a bezpečný provoz provedení míchadla RW 7511 do výbušných prostředí. Totéž platí také pro Bezpečnostní pokyny. Ty jsou uvedeny v samostatné brožůře s objednacím číslem 1 597 0799 a je nutné si je před instalací a uvedením zařízení do provozu pozorně prostudovat!

V tomto „doplňkovém“ návodu k montáži a provozu ponorného motorového míchadla ABS RW 7511 jsou proto obsaženy jen křížové odkazy resp. odlišné a doplňkové informace a údaje specifické pro daný produkt.

1.1 - 1.3 Úvod; Použití v souladu s určením; meze

Viz kapitolu 1.1 - 1.3 návodu k montáži a provozu 15970832-EU/0833-EU.

1.4 Oblasti použití

Ponorné motorové míchadlo RW 7511 slouží k míchání, promíchávání a cirkulaci viskózních kapalin v čistírnách odpadních vod, v průmyslu i v zemědělství. Je konstruováno pro speciální požadavky při homogenizaci kalů a kofermentů.

1.5 Kód typu

Viz kapitolu 1.5 návodu k montáži a provozu 15970832-EU/0833-EU. *Typ vrtule míchadla = 2listová speciální vrtule na kaly a kofermenty.

1.6 Technické údaje

Viz kapitolu 1.6 - 1.3 návodu k montáži a provozu 15970832-EU/0833-EU.

1.6.1 Technické údaje RW 7511, 50 Hz

Typ míchadla	Průměr vrtule míchadla	Počet otáček / redukce převodovky	Typ motoru	Jmenovitý příkon P ₁	Jmenovitý výkon motoru P ₂	Typ startu: přímý (D.O.L)	Typ startu: hvězda / trojúhelník	Jmenovitý proud 400 V	Proud při náběhu 400 V	Typ kabelu** (provedení do výbušných prostředí a standardní provedení)	Sledování teploty	Sledování těsnění	Ex dII BT4	Vodící trubka □ 100	Celková hmotnost
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	2852	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Technické údaje RW 7511, 60 Hz

RW 7511	750	2851	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
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P₁ = příkon ; P₂ = výkon

1 = počet otáček vrtule míchadla s redukcí převodovky i=6; 2= počet otáček vrtule míchadla s redukcí převodovky i=5

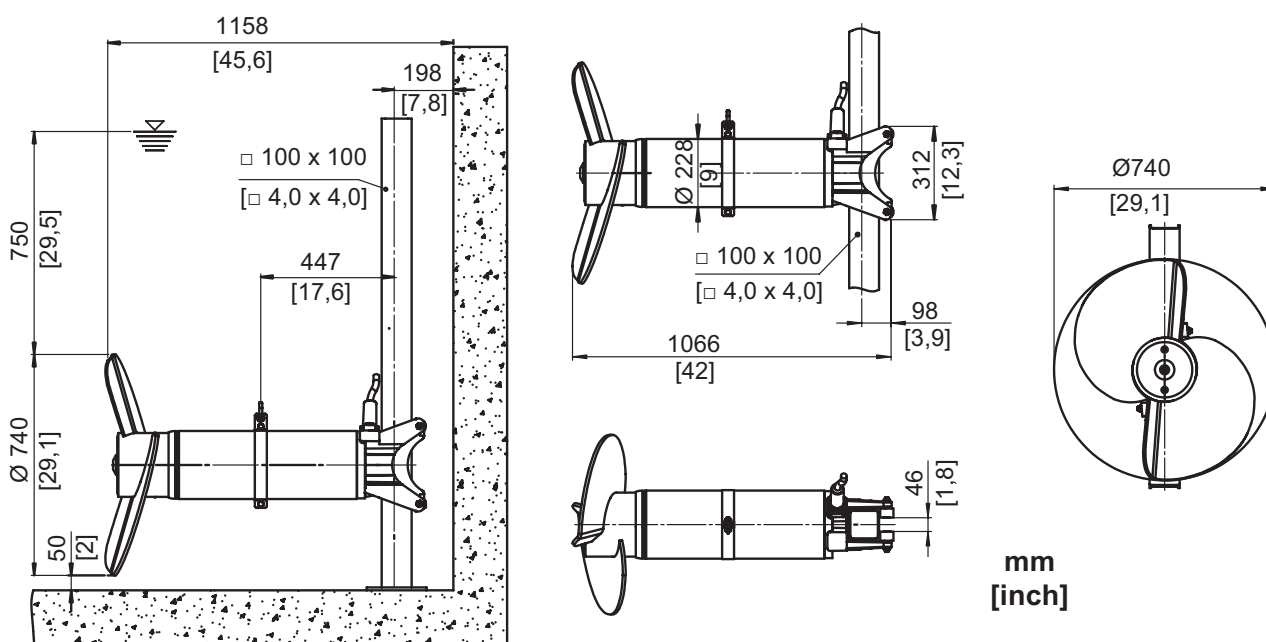
• = standardně ; ○ = volitelné ; * = sledování těsnění v připojovacím prostoru namísto olejové komory.

**Typ kabelu: 10 m kabelu s volným koncem kabelu je standardní součástí dodávky: 1 = 1 x 7G x 1.5 ; 2 = 1 x 10G x 1.5 ; 3 = 1 x 10 x G x 2.5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Rozměry a hmotnosti

Viz kapitolu 1.7 návodu k montáži a provozu 15970832-EU/0833-EU.

1.7.1 Konstrukční rozměry RW 7511



Obrázek 1 Konstrukční rozměry RW 7511

RW 7511

1.8 Typový štítek

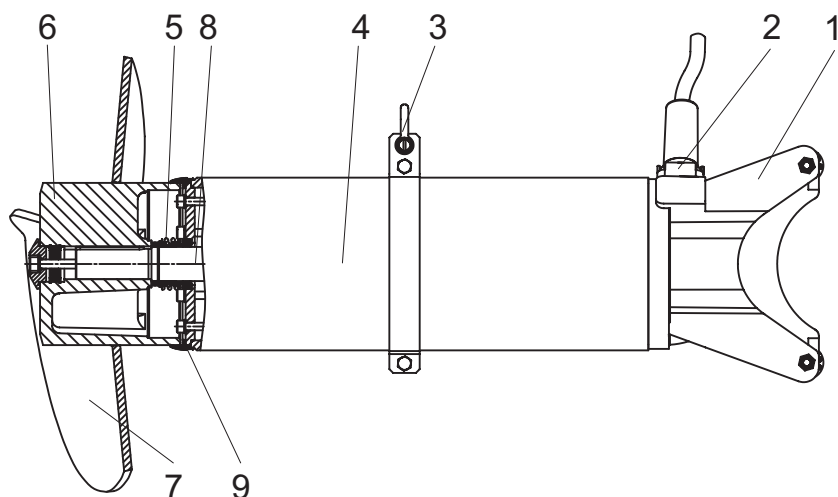
Viz kapitolu 1.8 návodu k montáži a provozu 15970832-EU/0833-EU.

2 - 3 Bezpečnost; doprava a skladování

Viz kapitolu 2 - 3 návodu k montáži a provozu 15970832-EU/0833-EU.

4 Popis produktu**4.1 Popis všeobecně**

Viz kapitolu 4.1 návodu k montáži a provozu 15970832-EU/0833-EU.

4.2 Konstrukční provedení RW 7511

1581-0003

Legenda

- 1 Držák
- 2 Přívod kabelu
- 3 Přidržovací kroužek se závěsem
- 4 Plášť z nerezové oceli (volitelně)
- 5 Těsnění s kluzným kroužkem
- 6 Náboj vrtule míchadla
- 7 Vrtule míchadla
- 8 Jednotka hřídele s rotorem a ložisky
- 9 SD kroužek

Obr. 2 RW 7511

4.3 Provoz s frekvenčními měniči

Viz kapitolu 4.5 návodu k montáži a provozu 15970832-EU/0833-EU.

5 Instalace

Viz kapitolu 5 návodu k montáži a provozu 15970832-EU/0833-EU.

5.1 Instalace RW 7511

Viz kapitolu 5.1 návodu k montáži a provozu 15970832-EU/0833-EU.

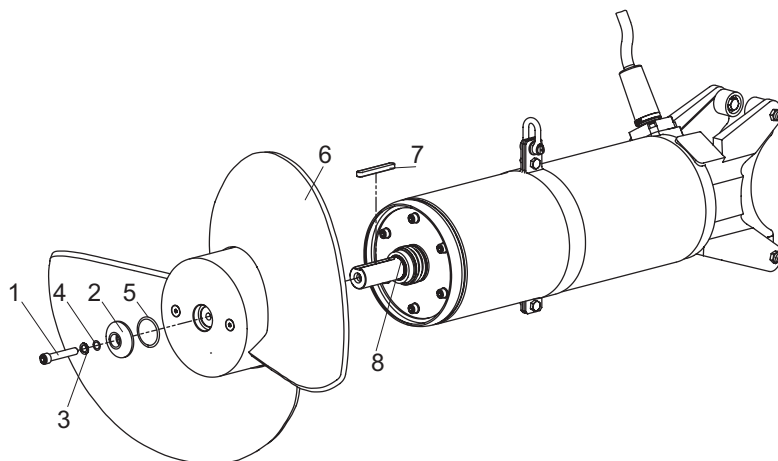
5.2 Montáž vrtule míchadla

Vrtule míchadel RW 7511 se dodávají samostatně a v místě instalace je nutné je namontovat podle následujícího návodu.

POZOR

Respektujte správnou polohu pojistných podložek při montáži (obr. 17 Poloha pojistných podložek – kapitola 5.3 návodu k montáži a provozu 15970832-EU/0833-EU) a předepsaný utahovací moment!

1. Náboj vrtule míchadla a čep hřídele lehce namažte tukem.
2. Vrtuli míchadla nasuňte (3/6).
3. Nasadte těsnicí O-kroužek (3/5).
4. Vsadte podložku vrtule míchadla (3/2).
5. Nasadte těsnicí O-kroužek (3/4).
6. Vložte pojistné podložky (3/3) a respektujte správnou polohu při montáži.
7. Šroub s válcovou hlavou (3/1) utáhněte utahovacím momentem 56 Nm.



1581-0004

Legenda

- 1 Šroub s válcovou hlavou
- 2 Podložka vrtule míchadla
- 3 Pojistné podložky
- 4 Těsnicí O-kroužek
- 5 Těsnicí O-kroužek
- 6 Vrtule míchadla
- 7 Lícované pero
(namontováno již ve výrobě)
- 8 Těsnění (namontováno již ve výrobě)

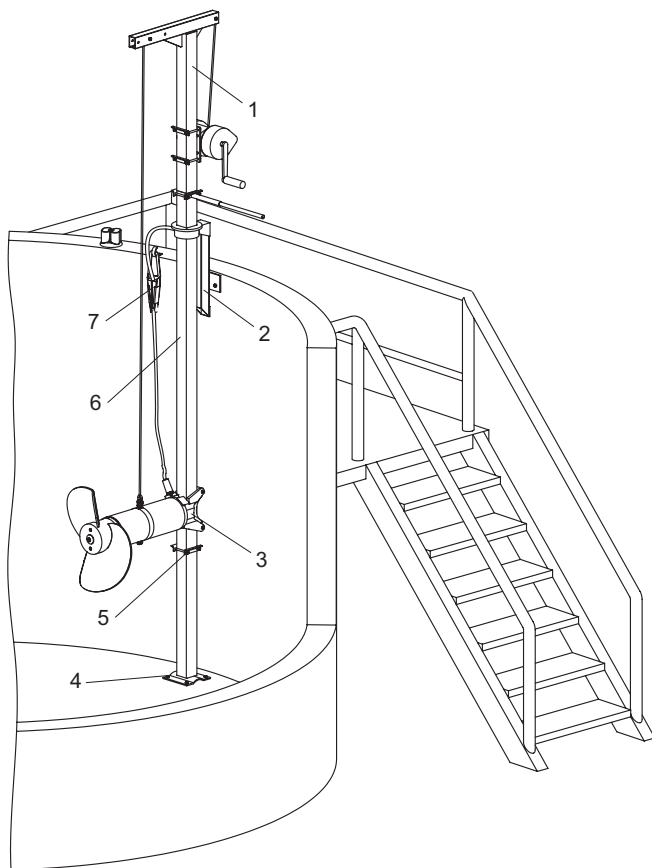
Obr. 3 Montáž vrtule míchadla

5.3 Utahovací momenty

Viz kapitolu 5.3 návodu k montáži a provozu 15970832-EU/0833-EU.

5.4 Příklad instalace míchadla RW 7511

Pro tuto instalaci doporučujeme použít uzavřený držák.



1581-0005

Legenda

- 1 Zdvhací zařízení
- 2 Horní podstavec
- 3 Držák uzavřený
- 4 Dolní ložisko
- 5 Bezpečnostní svěrný doraz
- 6 Otočná čtyřhranná vodicí trubka
- 7 Rozpojovací svorka s kabelovým hákem

Obr. 4 Příklad instalace míchadla RW 7511

5.5 Držáky RW 7511

Viz kapitolu 5.5 návodu k montáži a provozu 15970832-EU/0833-EU.

5.6 Délky vodicí trubky (čtyřhranná vodicí trubka) RW 7511

Viz kapitolu 5.6 návodu k montáži a provozu 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Elektrické připojení

Viz kapitolu 5.8 návodu k montáži a provozu 15970832-EU/0833-EU.

6 - 7 Uvedení do provozu; údržba

Viz kapitoly 6 - 7 návodu k montáži a provozu 15970832-EU/0833-EU.

RW 7511

1 Všeobecné

V zásade sú všetky časti návodu na montáž a obsluhu č. 15970832-EU/0833-EU (ABS ponorná miešačka RW) z veľkej časti platné aj pre RW 7511. Platí to aj pre správne pripojenie a bezpečnú prevádzku modelu Ex RW 7511. To isté sa vzťahuje na bezpečnostné pokyny. Tie sú zahrnuté v osobitnom letáku č. 1 597 0799 a treba si ich pred montážou a uvedením do prevádzky pozorne preštudovať!

V tomto „dodatčom“ návode na montáž a obsluhu ABS ponornej miešačky RW 7511 sú preto zahrnuté len vzájomné odkazy, respektíve informácie odlišné, dodatočné alebo špecifické pre tento výrobok.

1.1 - 1.3 Úvod; Správne používanie výrobku; Obmedzenia týkajúce sa použitia výrobku

Vid' kapitola 1.1 - 1.3 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

1.4 Aplikačné oblasti

Ponorná miešačka RW 7511 slúži na miešanie, premiešavanie a cirkuláciu viskózných kvapalín s obsahom tuhých častíc v čističkách odpadových vôd, priemysle a poľnohospodárstve. Je navrhnutá pre špeciálne požiadavky pri homogenizácii kalov a koenzýmov.

1.5 Typový kód

Vid' kapitola 1.5 pokynov na inštaláciu a obsluhu 15970832-EU/0833-EU.*Typ vrtule = dvojlistá špeciálna vrtuľa na kaly a koenzýmy.

1.6 Technické údaje

Vid' kapitola 1.6 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

1.6.1 Technické údaje RW 7511, 50 Hz

Typ miešačky	Priemer vrtule	Pomer rýchlosti / prevodu	Typ motora	Menovitý príkon P ₁	Menovitý výkon P ₂	Štartovanie: priame (D.O.L)	Štartovanie: hviezdička/troj-uholník	Menovitý prúd pri 400 V	Spúšťači prúd pri 400 V	Typ kábla** (Ex a štandard)	Monitorovanie teploty	Monitorovanie tesnenia	Ex dII BT4	Vodiaca rúrka □ 100	Celková hmotnosť
	[mm]	[1/min]		[kW]	[kW]			[A]	[A]						[kg]
RW 7511	750	2852	A 150/4	17,8	15,0		•	31,3	172	4	•	•*	○	•	202

1.6.2 Technické údaje RW 7511, 60 Hz

RW 7511	750	2851	A 130/4	15,3	13,0		•	21,8	109	4	•	•		•	202
---------	-----	------	---------	------	------	--	---	------	-----	---	---	---	--	---	-----

P₁ = príkon ; P₂ = výkon

1 = pomer rýchlosti vrtule voči prevodu i=6; 2 = pomer rýchlosti vrtule voči prevodu i=5

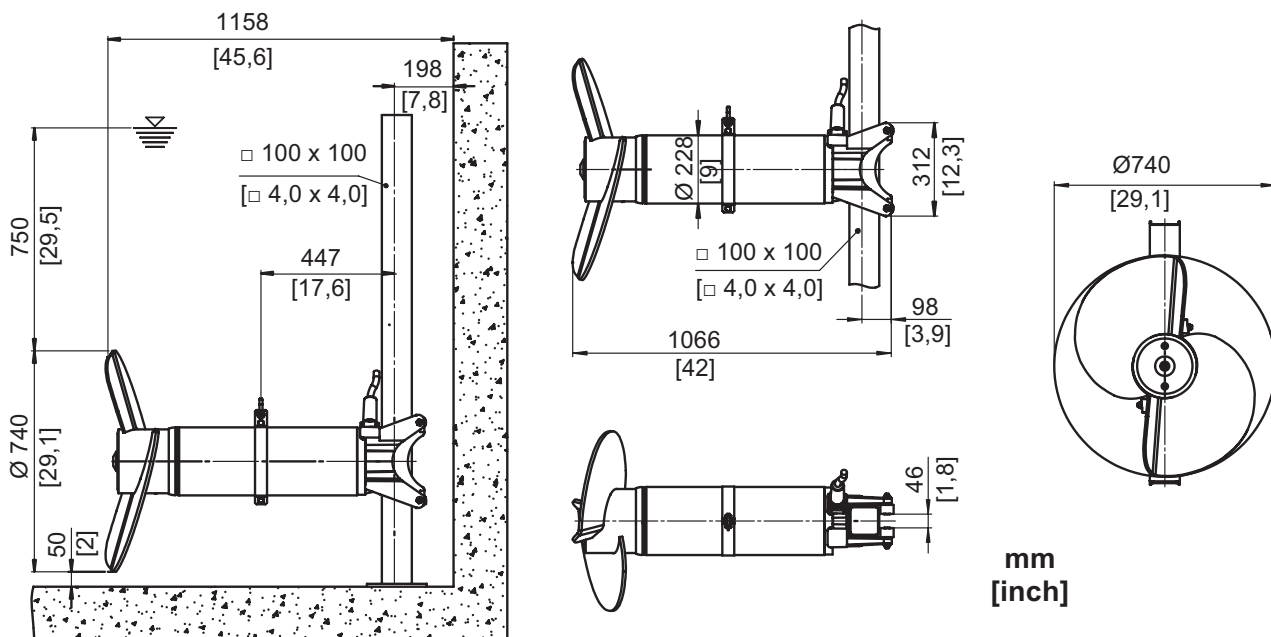
• = štandardný; ○ = možný; •* = monitor prenikania vlhkosti do spojovacej komory namiesto olejovej komory.

**Typ kábla: 10 metrové káble s voľným koncom sú dodávané v štandardných rozmeroch: 1 = 1 x 7G x 1,5 ; 2 = 1 x 10G x 1,5 ; 3 = 1 x 10 x G x 2,5 ; 4 = 2 x 4G x 4 + 2 x 0,75

1.7 Rozmery a hmotnosti

Vid' kapitola 1.7 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

1.7.1 Rozmery RW 7511



Obrázok 1 Rozmery RW 7511

RW 7511

1.8 Typový štítok

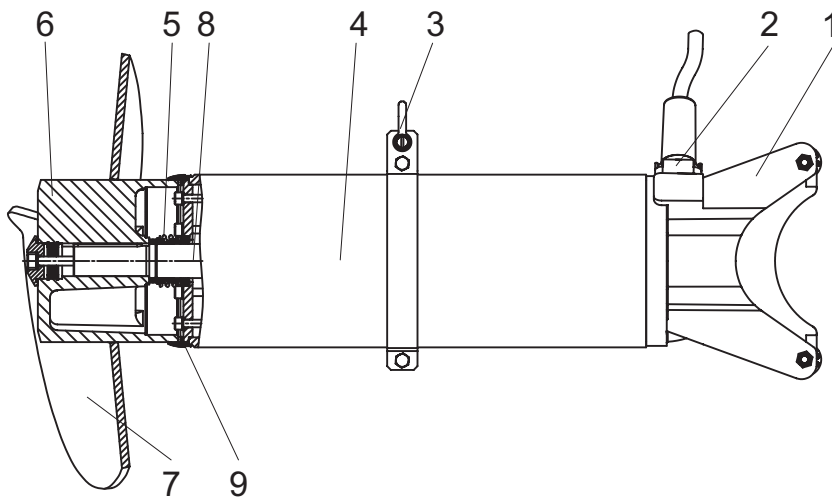
Viď kapitola 1.8 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

2 - 3 Bezpečnosť; Doprava a uskladnenie

Viď kapitoly 2 - 3 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

4 Opis výrobku**4.1 Všeobecný popis**

Viď kapitola 4.1 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

4.2 Konštrukčné vyhotovenie RW 7511

1581-0003

Vysvetlivky

- 1 uchyťavacie zariadenie
- 2 káblový prívod
- 3 upínadlo s kovovou sponou
- 4 plášť z nerezovej ocele (možnosť)
- 5 samonastaviteľné tesnenie hriadeľa
- 6 hlava vrtule
- 7 vrtuľa
- 8 jednotka hriadeľa s rotorom a ložiskami
- 9 SD krúžok

Obrázok 2 RW 7511

4.3 Prevádzka pri meničoch frekvencie

Viď kapitola 5.8 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

5 Montáž

Viď kapitola 5 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

5.1 Montáž RW 7511

Viď kapitola 5.1 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

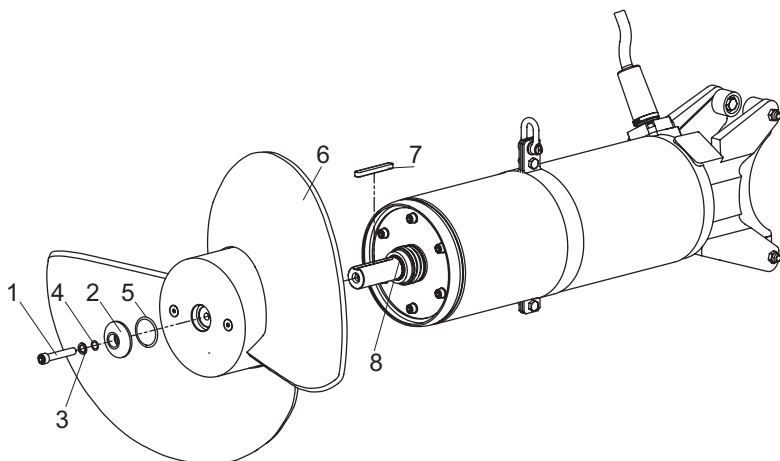
5.2 Zloženie vrtule

Vrtule miešačky RW 7511 budú dodané osobitne a musia sa montovať na mieste v súlade s nižšie uvedenými pokynmi.

POZOR

Treba dať pozor na dodržanie správnej polohy poistných podložiek (obrázok 17 Poloha poistných podložiek pri montáži v kapitole 5.3 Návodu na montáž a obsluhu 15970832-EU/0833-EU) a predpísaného uťahovacieho momentu!

1. Zľahka premastíte hlavu vrtule a voľný koniec hriadeľa.
2. Zatlačte na vrtuľu. (3/6).
3. Nasadte tesniaci krúžok (3/5).
4. Nasadte hlavu vrtule (3/2).
5. Nasadte tesniaci krúžok (3/4).
6. Namontujte poistné podložky (3/3) a dajte pritom pozor na správnu polohu.
7. Uťahnite skrutku s valcovou hlavou (3/1) uťahovacím momentom 56 Nm.



1581-0004

Vysvetlivky

- 1 skrutka s valcovou hlavou
- 2 podložka vrtule
- 3 poistné podložky
- 4 tesniaci krúžok
- 5 tesniaci krúžok
- 6 vrtuľa
- 7 tesné pero
(namontované už vo výrobe)
- 8 tesnenie (namontované už vo výrobe)

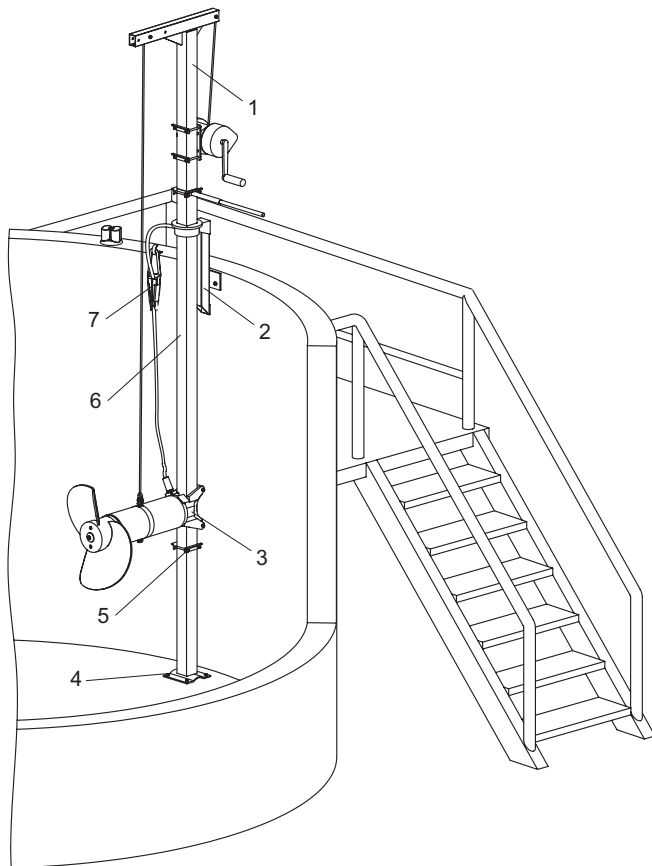
Obrázok 3 Montáž vrtule

5.3 Úťahovací moment

Vid' kapitola 5.3 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

5.4 Príklad montáže RW 7511

Pri takejto montáži sa odporúča použiť uzavreté upínadlá.



1581-0005

Vysvetlivky

- 1 zdvíhacie zariadenie s lanovým systémom
- 2 horná podpera
- 3 zavreté uchytávacie zariadenie
- 4 spodná podložka
- 5 bezpečnostný nárazník
- 6 otočná vodiaca rúrka so štvorcovým prierezom
- 7 káblová svorka s hákom

Obrázok 4 Príklad montáže RW 7511

5.5 Upínadlá RW 7511

Vid' kapitola 5.5 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

5.6 Dĺžka vodiacich rúrok (rúrka so štvorcovým prierezom) RW 7511

Vid' kapitola 5.6 Návodu na montáž a obsluhu 15970832-EU/0833-EU. RW 7511 = RW 900.

5.7 Elektrická prípojka

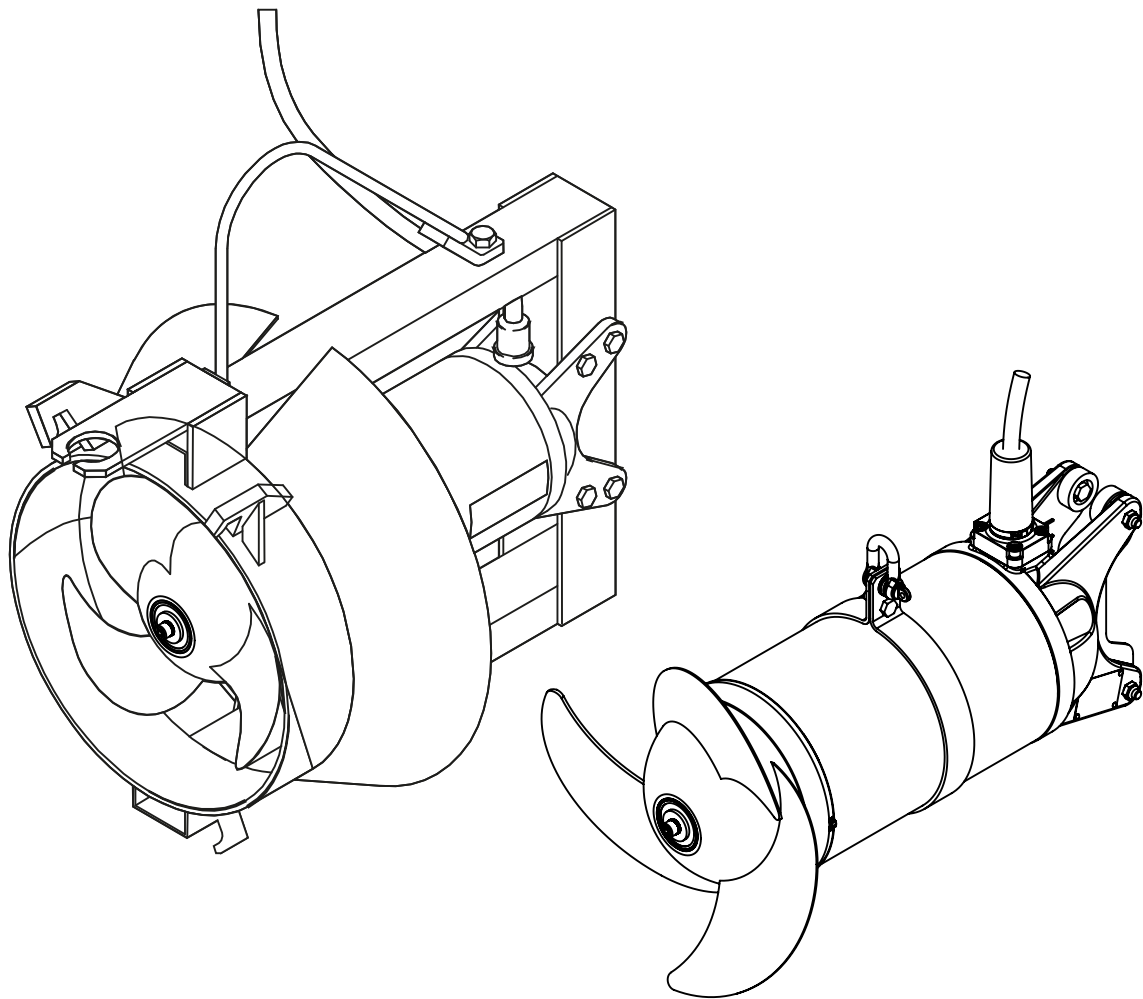
Vid' kapitola 5.8 Návodu na montáž a obsluhu 15970832-EU/0833-EU.

6 - 7 Spustenie prevádzky; Údržba

Vid' kapitoly 6 - 7 Návodu na montáž a obsluhu 15970832-EU/0833-EU.



Submersible Mixer Type ABS RW 400 and 650 [NG] Submersible Recirculation Pump Type ABS RCP 400 and 500 [NG]



1549-01

Installation and Operating Instructions (Original Instructions)

Submersible mixer RW [NG] and submersible recirculation pump RCP [NG]

RW 400 RW 650
RCP 400 RCP 500

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1 General

1.1 Introduction

These **Installation and Operating Instructions** and the separate booklet **Safety Instructions for Sulzer Products Type ABS** contain basic instructions and safety hints which must be observed during transport, installation and commissioning. For this reason it is essential that they are read by the installing technician as well as by relevant skilled operators or users. They should also be always available where the unit is installed.



Safety instructions which might cause danger to life in case of non-observance have been specifically highlighted with the general danger symbol.



The presence of a dangerous voltage is identified with this safety symbol.



This symbol indicates the danger of an explosion occurring.

ATTENTION *Appears at safety instructions, the non-observance of which could damage the unit or affect its functioning.*

NOTE *Used for important pieces of information.*

1.2 Correct usage of the products

Sulzer products have been designed and built in accordance with the latest technology and taking into account the relevant safety regulations. However, improper usage could cause a danger to life or limb of the user or a third party, or cause damage or function impairment to the unit itself and other items of value.

Sulzer units should only be used if they are in perfect technical condition, taking into account all safety requirements and conscious of the need to avoid potential dangers. The contents of the **Installation and Operating Instructions** and the **Safety Instructions for Sulzer Products Type ABS** must be applied! Any other usage (abnormal usage) or usage beyond that specified will be considered as non-compliance. The manufacturer/supplier will not accept any responsibility for damage due to this. The risk is borne by the user. In case of doubt the entire scope of the planned application must be approved by **Sulzer Pump Solutions Ireland Ltd.** (in the following called Sulzer).

In the case of any faults arising, Sulzer units should immediately be taken out of use and secured. The fault should be immediately rectified, or if necessary, contact your Sulzer Service Centre.

1.3 Application restrictions of RW / RCP

The RW / RCP can be supplied both in standard versions and in explosion-proof execution (ATEX II 2G Ex db IIB T4 Gb) for 50 Hz according to the standards EN ISO 12100:2010, EN 809:1998 + A1:2009 + AC:2010, EN 60079-0:2012 + A11:2018, EN 60079-1:2014, EN 80038-36:2016, or FM approval for 60 Hz (NEC 500. Class I, Division 1. Group C&D. T3C).

Limitations: The ambient temperature range is 0 °C to + 40 °C (32 °F to 104 °F)
Immersion depth maximum 20 m / (65 ft)

ATTENTION *If cable length is less than 20 m / 65 ft, the max. immersion depth reduces accordingly. In special cases an immersion depth greater than 20 m / 65 ft is possible. However, the maximum number of starts according to the motor datasheet may not be exceeded. In order to do this you need written approval from the manufacturer Sulzer.*



Pumping of flammable or explosive liquids with these pumps is not allowed!



Only explosion-proof executions may be used in hazardous areas!

For the operation of units as explosion-proof execution the following applies:

In hazardous areas care must be taken that during switching on and operation of the unit it is submerged or under water. Other types of operation e.g. snore operation or dry running are not allowed!

ATTENTION *RW / RCP mixers with Ex d IIB T4 approval are not equipped with a DI in the oil chamber.*

ATTENTION *RW 400 / 650 and RCP 400/500 with FM approval (NEC 500) are equipped with a DI in the oil chamber.*

For the operation of RW / RCP Ex the following applies:

It must be ensured that the motor of the RW / RCP Ex is always fully submerged during start-up and operation!

The temperature monitoring of the RW / RCP Ex has to be carried out by bimetallic temperature limiters or thermistors according to DIN 44 082 connected to a suitable release device which is certified in accordance with EC directive 2014/34/EU and FM 3650.

For the operation of RW / RCP Ex with frequency inverter the following applies:

Motors must have direct thermal protection devices fitted. These consist of temperature sensors (PTC DIN 44082) embedded in the windings. These must be connected to a suitable release device which is certified in accordance with EC directive 2014/34/EU and FM 3650.

Machines designated as Ex machines may never, without exception, be operated using a mains frequency that is greater than the maximum of 50 Hz or 60 Hz as indicated on the nameplate.

In the event that the pump is to be operated in explosive atmospheres using a variable speed drive, please contact your local Sulzer representative for technical advice regarding the various approvals and standards concerning thermal overload protection.

ATTENTION *Repair work on explosion-proof motors may only be carried out in authorized workshops by qualified personnel using original parts supplied by the manufacturer. Otherwise the Ex approvals are no longer valid. All Ex-relevant components and dimensions can be found in the modular workshop manual and the spare parts list.*

ATTENTION *If repair work is carried out in an unauthorized workshop and by unqualified personnel the Ex approvals are no longer valid. After such repair the unit must not be operated in hazardous areas. The Ex nameplate (see figures 7 and 8) has to be removed.*

1.4 Application areas

1.4.1 Application areas RW

The ABS submersible mixers RW 400 and 650, with a water pressure-tight encapsulated submersible motor, are high class quality products with the following range of applications in municipal treatment plants, in industry and in agriculture:

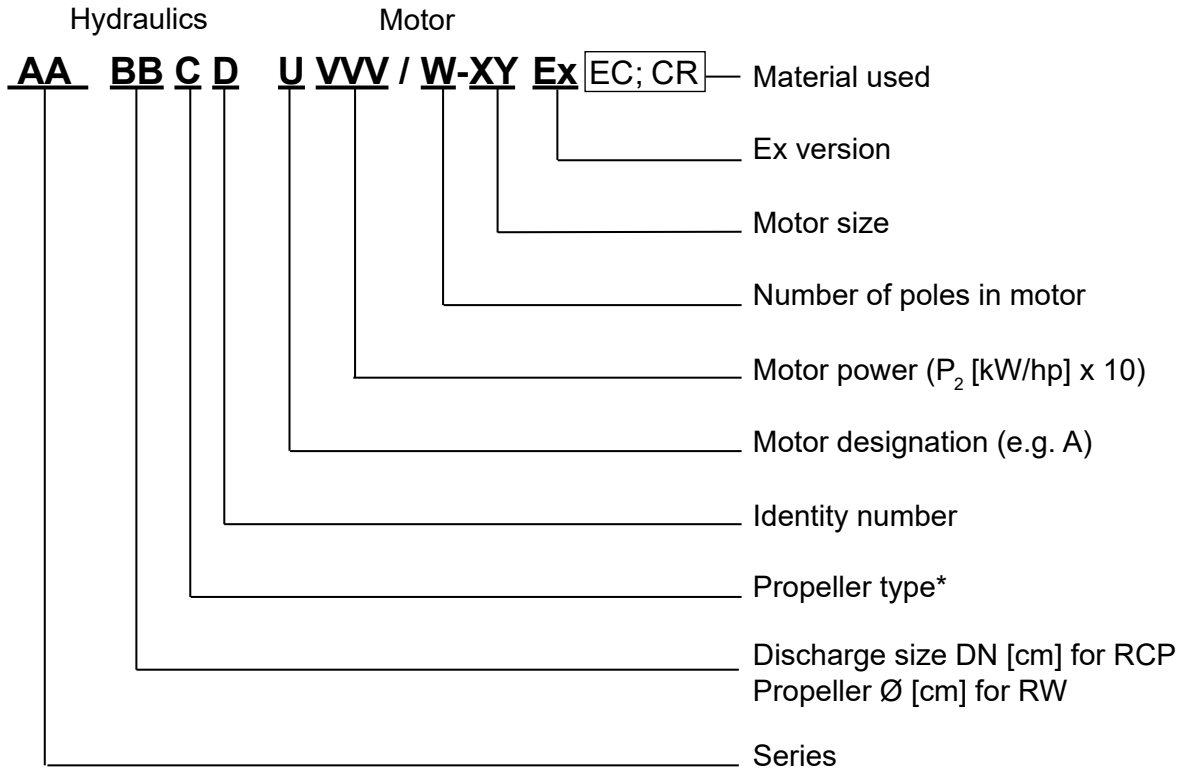
- Mixing
- Stirring
- Agitation

1.4.2 Application areas RCP

The ABS submersible recirculation pumps RCP 400 and 500 are fitted with water-pressure-tight encapsulated motors and are quality products suitable for use in the following areas:

- Pumping and recirculation of active sludge in treatment plants with nitrogen removal (nitrification/denitrification).
- Pumping of rain and surface water.

1.5 Identification code



0551-0003

*Propeller type: 1 = Mixing propeller (only without flow ring); 2 = 2-blade thrust propeller; 3 = 3-blade thrust propeller; 4 = 2-blade thrust propeller with flow ring; 5 = 3-blade thrust propeller with flow ring; 7 = 3-blade special propeller for biofilm carrier process

1.6 Technical data

The maximum noise level of the units of this series is ≤ 70 dB(A). In some types of installation it is possible that the noise level of 70 dB(A) or the measured noise level will be exceeded.

ATTENTION *The maximum fluid temperature for continuous operation is 40 °C / 104 °F for a submerged unit.*

1.6.1 Technical data RW 50 Hz

Mixer type	Propeller			Motor (50 Hz/400 V)								Installation						
	Propeller diameter	Speed	Version with flow ring	Motor type	Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 400 V	Starting current at 400 V	Cable type** (Ex and standard)	Temperature monitoring	Seal monitoring	Ex d IIB T4	Guide tube □ 60	Guide tube □ 100	Total weight (without flow ring)	Total weight (with flow ring)
	[mm]	[1/min]			[kW]	[kW]			[A]	[A]						[kg]	[kg]	
RW 4021	400	702	○	A 30/8	4.2	3.0	●		9.3	40	1	●	●		●	○	96	107
RW 4022	400	702	○	A 30/8	4.2	3.0	●		9.3	40	1	●	●		●	○	96	107
RW 4023	400	702	○	A 30/8	4.2	3.0	●		9.3	40	1	●	●		●	○	96	107
RW 4024	400	702	○	A 30/8	4.2	3.0	●		9.3	40	1	●	●		●	○	96	107
RW 4031	400	680	○	A 40/8	5.6	4.0		●	10.9	40	2	●	●		●	○	96	107
RW 4032	400	680	○	A 40/8	5.6	4.0		●	10.9	40	2	●	●		●	○	96	107
RW 4033	400	680	○	A 40/8	5.6	4.0		●	10.9	40	2	●	●		●	○	96	107
RW 6521	580	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●			●	155	173
RW 6522	580	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●			●	155	173
RW 6523	650	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●			●	155	173
RW 6524	650	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●			●	155	173
RW 6525	650	470	○	A 50/12	7.1	5.0		●	18.2	52	2	●	●			●	155	173
RW 6531	650	462	○	A 75/12	10.3	7.5		●	24.5	54	3	●	●			●	182	200
RW 6532	650	462	○	A 75/12	10.3	7.5		●	24.5	54	3	●	●			●	182	200
RW 6533	650	470	○	A 100/12	13.3	10.0		●	31.9	91	4	●	●			●	214	232

P₁ = Power input ; P₂ = Power output

● = Standard ; ○ = Option.

**Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 7G 1.5, 2 = 1 x 10G 1.5, 3 = 1 x 10 G 2.5, 4 = 2 x 4G 4 + 2 x 0.75

NOTE *Data applies also for versions with flow ring (see section 1.5 Identification code). Other voltages available on request.*

1.6.2 Technical data RW 60 Hz

Mixer type	Propeller			Version with flow ring	Motor type	Motor (60 Hz/460 V)						Cable type** (Ex and standard)	Temperature monitoring	Seal monitoring	FM (NEC 500)	Installation		
	Propeller diameter	Speed				Rated power input P ₁	Rated power output P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 460 V	Starting current at 460 V					Guide tube □ 60	Guide tube □ 100	Total weight (without flow ring)
	[mm]	[1/min]			[kW]	[kW]			[A]	[A]							[kg]	[kg]
RW 4021	400	858	○	A 35/8	4.6	3.5	●		8.7	38	1	●	●	○	●	○	96	107
RW 4022	400	858	○	A 35/8	4.6	3.5	●		8.7	38	1	●	●	○	●	○	96	107
RW 4023	400	858	○	A 35/8	4.6	3.5	●		8.7	38	1	●	●	○	●	○	96	107
RW 4024	400	841	○	A 46/8	6.0	4.6		●	10.3	38	2	●	●	○	●	○	96	107
RW 4031	400	841	○	A 46/8	6.0	4.6		●	10.3	38	2	●	●	○	●	○	96	107
RW 6521	580	571	○	A 60/12	8.0	6.0		●	17.5	50	2	●	●	○		●	155	173
RW 6522	580	571	○	A 60/12	8.0	6.0		●	17.5	50	2	●	●	○		●	155	173
RW 6531	650	567	○	A 90/12	11.5	9.0		●	23.9	52	2	●	●	○		●	182	200
RW 6532	650	567	○	A 90/12	11.5	9.0		●	23.9	52	2	●	●	○		●	182	200
RW 6533	650	567	○	A 90/12	11.5	9.0		●	23.9	52	2	●	●	○		●	182	200
RW 6534	650	569	○	A 120/12	15.3	12.0		●	31.4	88	3	●	●	○		●	214	232
RW 6535	650	569	○	A 120/12	15.3	12.0		●	31.4	88	3	●	●	○		●	214	232

P₁ = Power input ; P₂ = Power output

● = Standard ; ○ = Option.

**Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 7G 1.5, 2 = 1 x 10G 1.5, 3 = 1 x 10 G 2.5, 4 = 2 x 4G 4 + 2 x 0.75

NOTE *Data applies also for versions with flow ring (see section 1.5 Identification code). Other voltages available on request.*

1.6.3 Technical data RCP 50 Hz

RCP hydraulics type	Propeller				Motor (50 Hz/400 V)											
	Propeller diameter	Propeller speed	H _{max}	Q _{max}	Motor type	Rated input power P ₁	Rated motor power P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 400 V	Starting current at 400 V	Cable type** (Ex- and standard)	Temperature monitoring	Seal monitoring	Ex d IIB T4	Total weight (Complete unit)
	[mm]	[1/min]	[m]	[l/s]		[kW]	[kW]			[A]	[A]					[kg]
RCP 4022	394	730	1.13	165	A 40/8	5.6	4.0		•	10.9	40	1	•	•	•	118
RCP 4023	394	730	1.35	195	A 40/8	5.6	4.0		•	10.9	40	1	•	•	•	118
RCP 4024	394	730	1.49	215	A 40/8	5.6	4.0		•	10.9	40	1	•	•	•	118
RCP 4031	394	730	1.67	225	A 40/8	5.6	4.0		•	10.9	40	1	•	•	•	118
RCP 4032	394	730	1.40	245	A 40/8	5.6	4.0		•	10.9	40	1	•	•	•	118
RCP 4033	394	730	1.21	280	A 40/8	5.6	4.0		•	10.9	40	1	•	•	•	118
RCP 5031	492	470	1.08	390	A 50/12	7.1	5.0		•	18.2	52	1	•	•	•	215
RCP 5032	492	470	1.30	440	A 75/12	10.3	7.5		•	24.5	54	2	•	•	•	250
RCP 5033	492	470	1.38	500	A 75/12	10.3	7.5		•	24.5	54	2	•	•	•	250
RCP 5034	492	470	1.40	550	A 75/12	10.3	7.5		•	24.5	54	2	•	•	•	250
RCP 5035	492	470	1.45	585	A 100/12	13.3	10.0		•	31.9	91	3	•	•	•	255
RCP 5036	492	470	1.27	655	A 100/12	13.3	10.0		•	31.9	91	3	•	•	•	255

P₁ = Power input ; P₂ = Power output.

• = Standard ; ○ = Option.

**Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 10G 1.5, 2 = 1 x 10G 2.5, 3 = 2 x 4G 4 + 2 x 0.75

1.6.4 Technical data RCP 60 Hz

RCP hydraulics type	Propeller				Motor (60 Hz/460 V)											
	Propeller diameter	Propeller speed	H _{max}	Q _{max}	Motor type	Rated input power P ₁	Rated motor power P ₂	Starting: Direct (D.O.L)	Starting: Star/Delta	Rated current at 460 V	Starting current at 460 V	Cable type** (Ex- and standard)	Temperature monitoring	Seal monitoring	FM (NEC 500)	Total weight (Complete unit)
	[mm]	[1/min]	[m]	[l/s]		[kW]	[kW]			[A]	[A]					[kg]
RCP 4022	394	841	1.70	200	A 46/8	6.0	4.6		•	10.3	38	1	•	•	•	118
RCP 4023	394	841	1.85	245	A 46/8	6.0	4.6		•	10.3	38	1	•	•	•	118
RCP 4024	394	841	1.62	265	A 46/8	6.0	4.6		•	10.3	38	1	•	•	•	118
RCP 4031	394	841	1.36	275	A 46/8	6.0	4.6		•	10.3	38	1	•	•	•	118
RCP 5031	492	570	1.62	460	A 90/12	11.5	9.0		•	23.9	52	1	•	•	•	250
RCP 5032	492	570	1.52	515	A 120/12	15.3	12.0		•	31.4	88	2	•	•	•	255
RCP 5033	492	570	1.20	590	A 120/12	15.3	12.0		•	31.4	88	2	•	•	•	255
RCP 5034	492	570	1.14	640	A 120/12	15.3	12.0		•	31.4	88	2	•	•	•	255

P₁ = Power input ; P₂ = Power output.

• = Standard ; ○ = Option.

**Cable type: 10 m cable with free cable ends as standard: 1 = 1 x 10G 1.5, 2 = 1 x 10G 2.5

1.7 Dimensions and weights

NOTE The weights of the units can be obtained from the nameplate of the unit or from the table in section 1.6 Technical data.

1.7.1 Dimensions RW

Dimension	RW 400 A30/40 (50 Hz) A35/46 (60 Hz)	RW 650 A50 (50 Hz) A60 (60 Hz)	RW 650 A75 (50 Hz) A90 (60 Hz)	RW 650 A100 (50 Hz) A120 (60 Hz)
D_1	ø 400	ø 650	ø 650	ø 650
D_2	ø 560	ø 810	ø 810	ø 810
d_1	ø 222.5	ø 262.5	ø 262.5	ø 262.5
H □ 60	262	-	-	-
H □ 100	306	306	306	306
h_1	700	1100	1100	1100
L_1 □ 60	665	-	-	-
L_1 □ 100	700	830	970	970
L_2 □ 60	685	-	-	-
L_2 □ 100	720	850	990	990
l_1	795	925	1065	1065
l_2 □ 60	300	-	-	-
l_2 □ 100	300	400	630	530
X_1 □ 60	360	-	-	-
X_1 □ 100	280	320	420	400
X_2 □ 60	300	-	-	-
X_2 □ 100	310	330	430	410

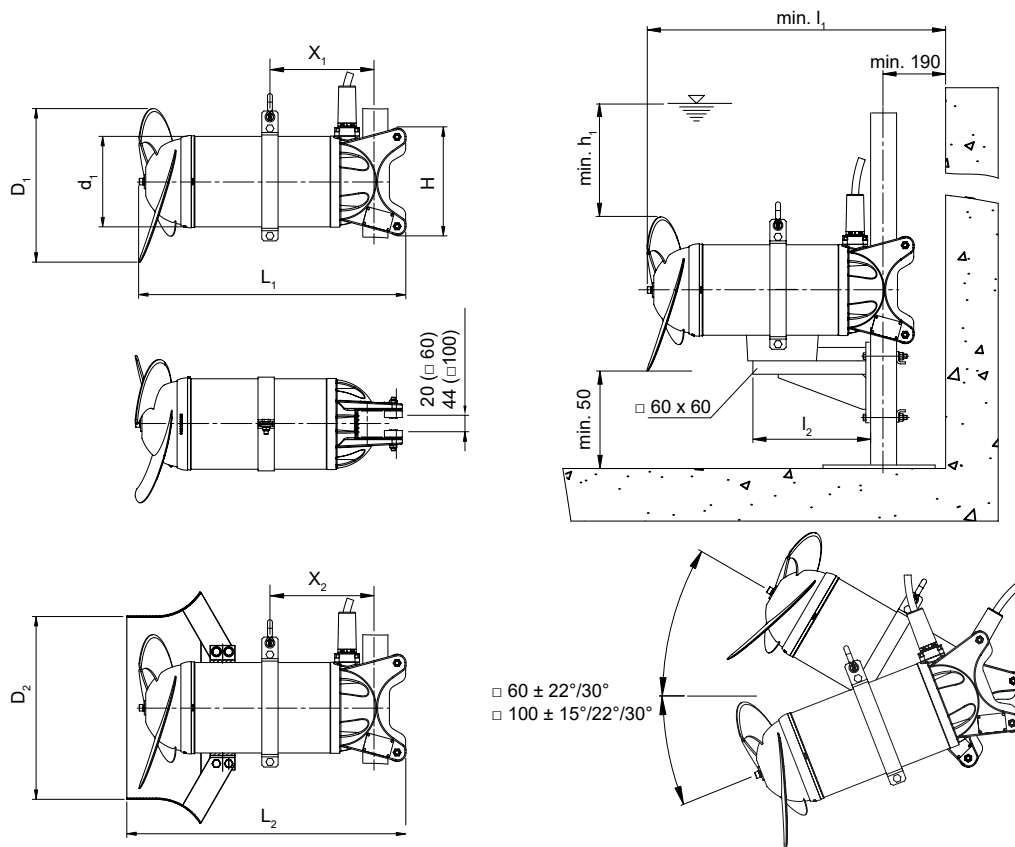


Figure 1. Dimensions RW

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1.7.2 Dimensions RCP

0553-0001

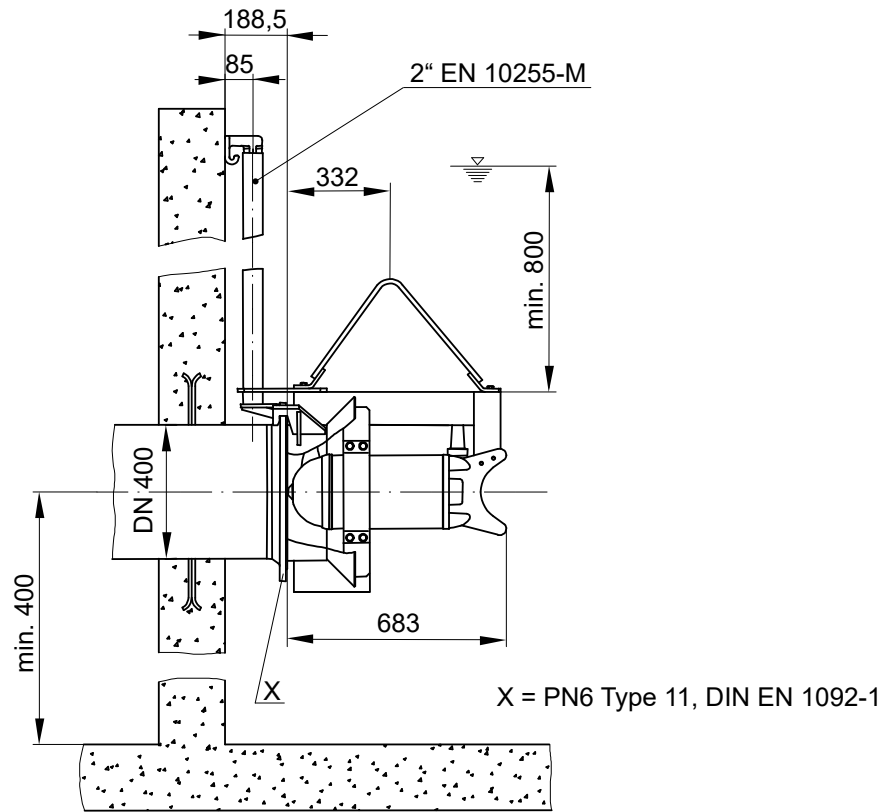


Figure 2. RCP 400

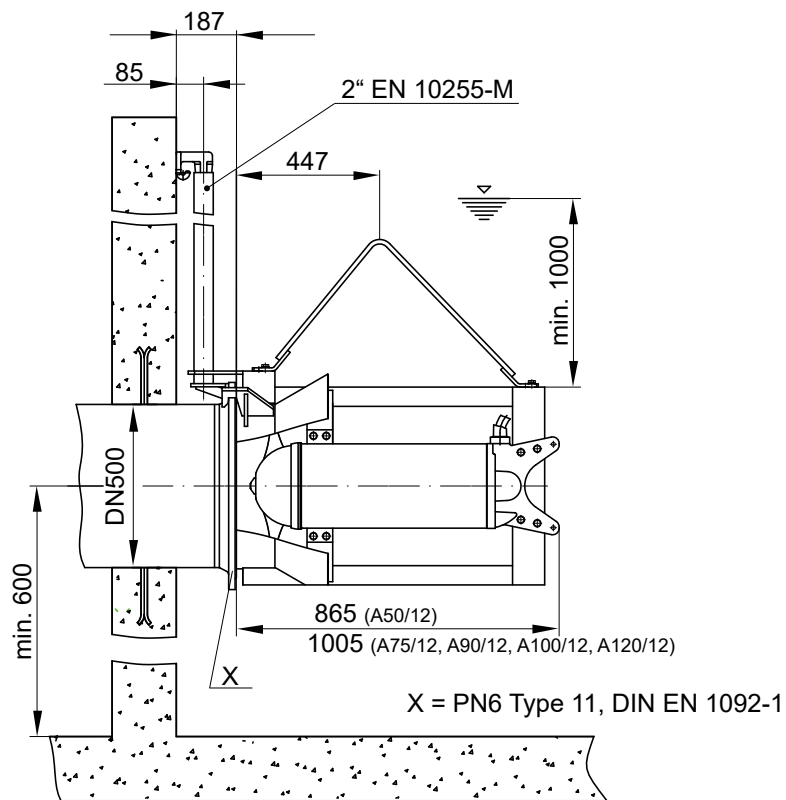


Figure 3. RCP 500

0554-0001

1.7.3 Flange dimension check

0655-0001

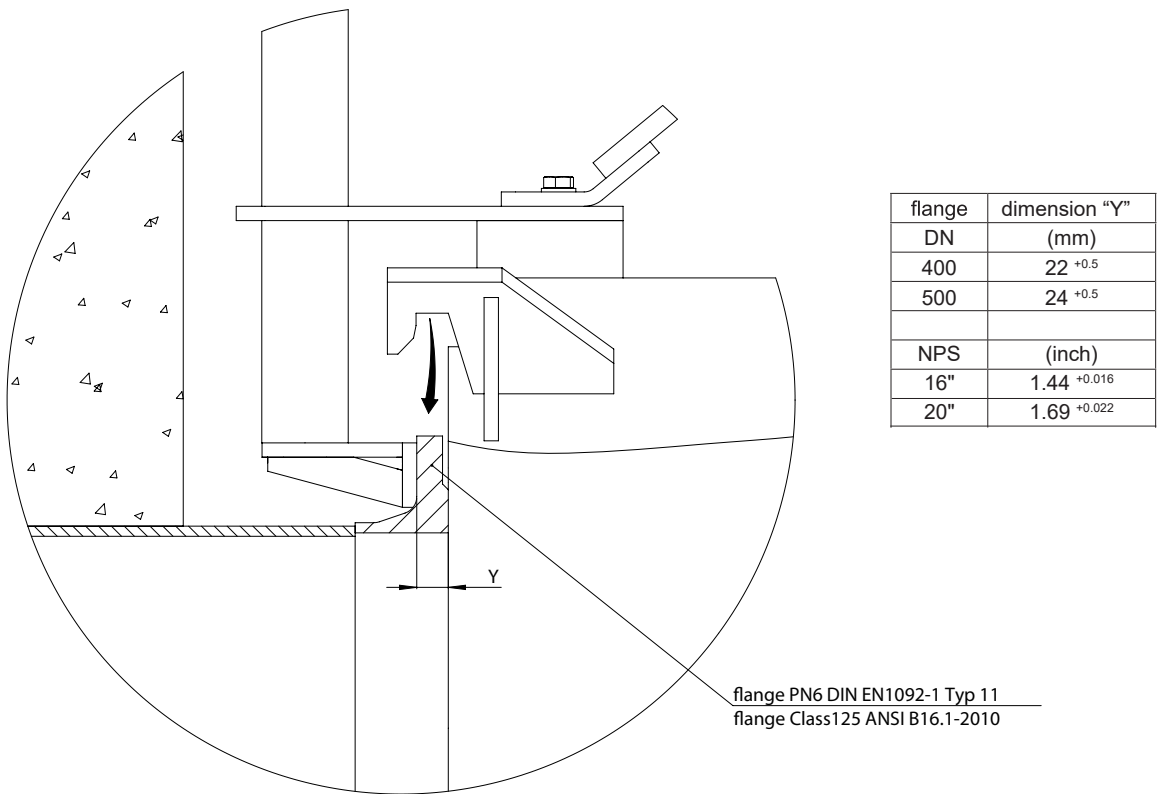


Figure 4. Flange dimensions

ATTENTION *Before installing the recirculation pump, check the "Y" dimension of the flange. Make sure that the dimensions specified in the table are adhered to, otherwise the flange will need to be reworked.*

1.8 Nameplate

We recommend that you record the data from the original nameplate so that you can refer to it at any time.

NOTE In all communication please state type of the unit, item and serial number.

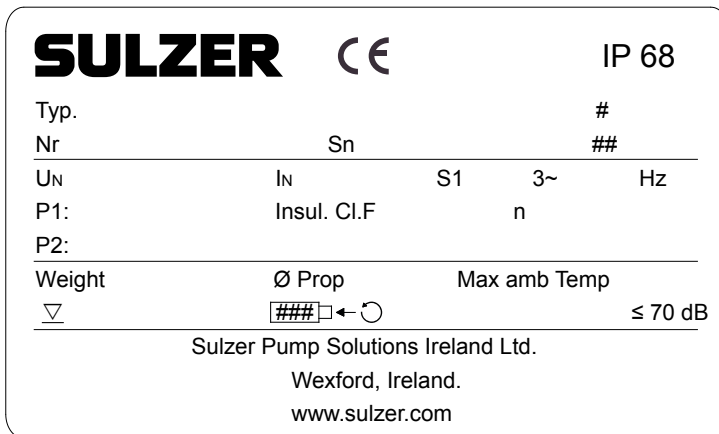


Figure 5. Nameplate 50 Hz

1555-00

Legend	
IP68	Protection type
Typ.	Type designation
#	Production date (Week/Year)
Nr	Item number
Sn	Serial number
##	Order number
UN	Nominal voltage V
IN	Nominal current A
S1	Continuous operating mode
3~	Number of phases
Hz	Frequency Hz
P1	Power (consumption) kW
Insul. Cl.H	Insulation class
n	Rotation speed rpm
P2	Power (output) kW
Weight	kg
Ø Prop.	Propeller diameter mm
Max amb Temp	Maximum ambient temperature 40 °C
∇	Maximum immersion depth m
###	Motor shaft direction of rotation
≤ 70 dB	Maximum noise level



####: RW 400/RCP400 = 1034,
RW 650/RCP500 = 1035

Figure 6. Nameplate ATEX

2 Safety

The general and specific health and safety instructions are described in detail in the separate booklet **Safety Instructions for Sulzer Products Type ABS**. If anything is not clear or you have any questions as to safety make certain to contact the manufacturer Sulzer.

3 Transport and storage

3.1 Transport



The unit must never be raised by the power cable.

Depending on the version, the units are fitted with a lifting hoop/eyelet, to which a chain can be fastened by means of shackles for transportation, installation or removal.



Take note of the entire weight of the unit (see nameplate Figure 2). The hoist and chain must be adequately dimensioned for the weight of the unit and must comply with the current valid safety regulations. Good technical practice must be observed.



The unit should be protected from rolling over!



The unit is prepared for transportation by placing it on an adequately strong, completely horizontal surface, taking care that it cannot topple over.



Do not stay or work in the swivel area of a suspended load!



The lifting hook height must take into consideration the entire height of the unit as well as the length of the lifting chain.

3.2 Transport securing devices

3.2.1 Motor connection cable moisture protection

The motor connection cables are protected against the ingress of moisture along the cable by having the ends sealed at manufacture with protective covers.

ATTENTION *These protective covers should only be removed immediately prior to connecting the pumps electrically.*

Particular attention is necessary during storage or installation of units in locations, which could fill with water prior to laying and connection of the power cable of the motor. Please note that the cable ends, even where fitted with protective sleeves, must not be immersed in water.

ATTENTION *These protective covers only provide protection against water spray or similar and are not a watertight seal. The ends of the cables should not be immersed in water, otherwise moisture could enter the connection chamber of the motor.*

NOTE *If there is a possibility of water ingress then the cables should be secured so that the ends are above the maximum possible flood level. Take care not to damage the cable or its insulation when doing this!*

3.3 Storage of the units

ATTENTION *Sulzer products must be protected from weather influences such as UV from direct sunlight, high humidity, aggressive dust emissions, mechanical damage, frost etc. Sulzer original packaging with the relevant transport securing devices (where used) ensures optimum protection of the unit. If the units are exposed to temperatures under 0 °C / 32 °F check that there is no water in the hydraulics, cooling system, or other spaces. In the case of heavy frosts, the units and cable should not be moved if possible. When storing under extreme conditions, e.g. in tropical or desert conditions, suitable additional protective steps should be taken. We would be glad to advise you further.*

NOTE *Sulzer units do not generally require any particular maintenance during storage. After long storage periods (after approx. one year), the transportation locking device on the motor shaft (not with all versions) should be disassembled. By rotating the shaft several times by hand, new lubricating oil, or depending on the version, a small amount of coolant (which also serves to cool or lubricate the mechanical seals) is applied to the sealing surfaces, thus ensuring perfect operation of the mechanical seals. The bearings supporting the motor shaft are maintenance-free.*

4 Product description

4.1 General description

- Hydraulically optimized propeller with high wear resistance.
- The motor shaft is supported in lubricated-for-life, maintenance-free ball bearings.
- The shaft is sealed on the medium side by means of a high quality mechanical seal, which is independent of direction of rotation.
- The oil chamber is filled with lubricating oil (oil change is not necessary).

Motor

- Three phase squirrel cage motor.
- Rated voltage: 400 V 3~ 50 Hz / 460 V 3~ 60 Hz.
- Other voltages available on request.
- Insulation class F = 155 °C / 311 °F, Protection type IP68.
- Temperature of the medium for continuous operation: + 40 °C / 104 °F.

Motor monitoring

- All motors are fitted with temperature monitors that switch off the motor in the case of excessive temperatures. The sensors must be correctly wired into the control panel.

Seal monitoring

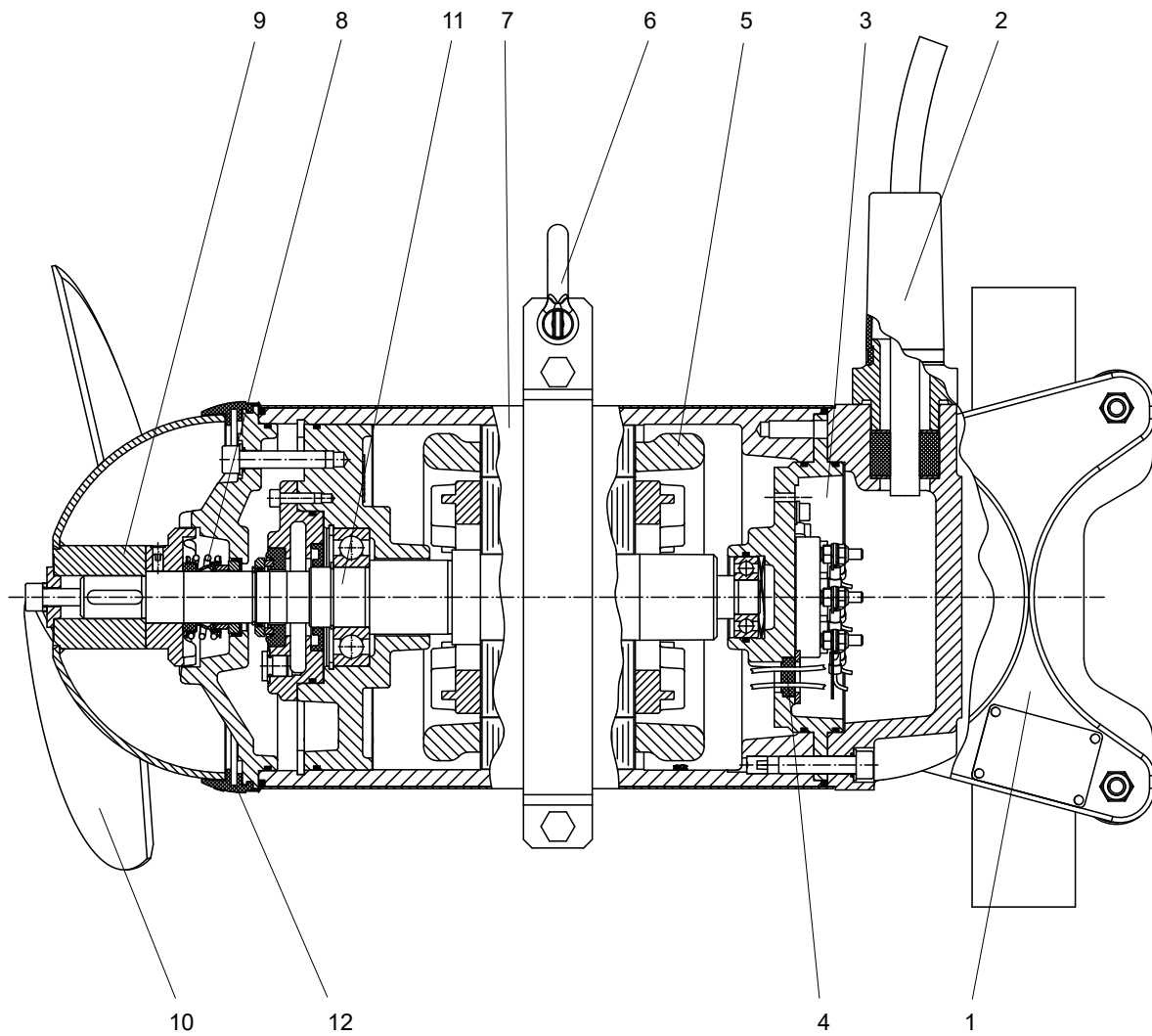
- The DI electrode carries out the seal monitoring function and signals the ingress of moisture by means of a special electronic device.

Operation with frequency inverters

- All RW / RCP, when **suitably selected**, can be used with frequency inverters. **Observe the EMC Directive and the installation and operating instructions of the inverter manufacturer!**

4.2 Structural design

4.2.1 RW 400 and 650



0556-0001

Figure 7. RW 400/650

Legend

- | | | | |
|---|-----------------------------------|----|------------------------------------|
| 1 | Bracket | 8 | Mechanical seal |
| 2 | Cable inlet | 9 | Propeller boss |
| 3 | Connection chamber | 10 | Propeller |
| 4 | Sealing of the motor chamber | 11 | Shaft unit with rotor and bearings |
| 5 | Stator | 12 | SD ring |
| 6 | Bracket with shackle | | |
| 7 | Stainless steel covering (option) | | |

4.2.2 RCP 400 and 500

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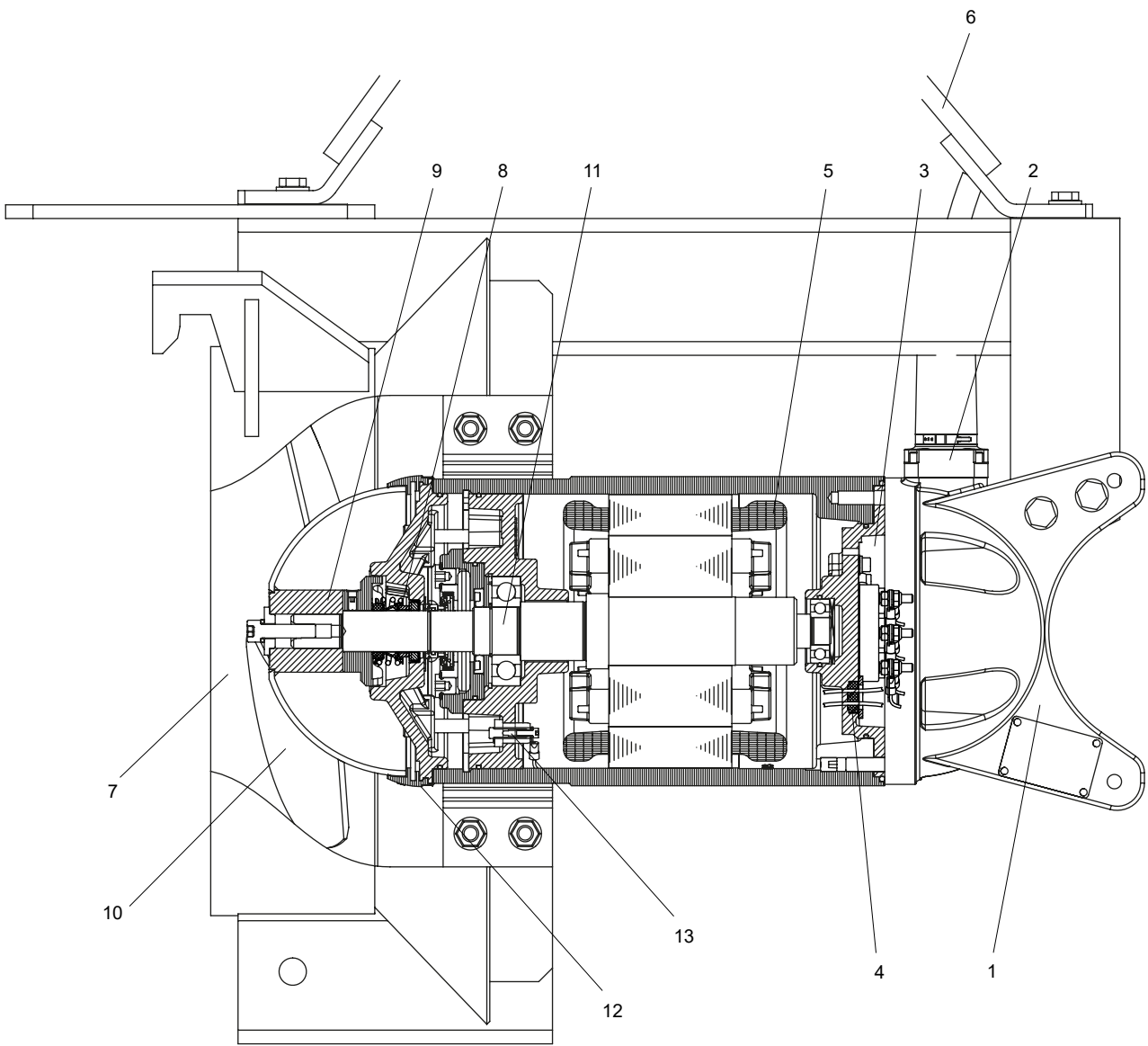


Figure 8. RCP 400/500

Legend

- | | | | |
|---|------------------------------|----|------------------------------------|
| 1 | Bracket | 8 | Mechanical seal |
| 2 | Cable inlet | 9 | Propeller boss |
| 3 | Connection chamber | 10 | Propeller |
| 4 | Sealing of the motor chamber | 11 | Shaft unit with rotor and bearings |
| 5 | Stator | 12 | SD ring |
| 6 | Lifting hook | 13 | DI-electrode (seal monitor) |
| 7 | Inlet cone | | |

4.3 Operation with frequency inverters

The stator design and the insulation grade of the motors from Sulzer means that they are suitable for usage with frequency inverters. It is however essential that the following conditions are met:

- The guidelines for EMC (electromagnetic compatibility) are complied with.
- Speed/torque curves for motors driven by frequency inverters can be found in our product selection range.
- Explosion-proof motors must be equipped with thermistors (PTC temperature sensors).
- Machines designated as Ex machines may never, without exception, be operated using a mains frequency that is greater than the maximum of 50 Hz or 60 Hz as indicated on the nameplate. Make sure that the rated current specified on the nameplate is not exceeded after starting the motor. The maximum number of starts according to the motor datasheet may not be exceeded.
- Machines that are not designated as Ex machines may only be operated using the mains frequency indicated on the nameplate. Greater frequencies can be used but only after consulting with and receiving permission from the Sulzer manufacturing plant.
- For operation of Ex motors on frequency inverters special requirements in relation to the tripping times of the thermo control elements must be observed.
- The lowest frequency must be set so that it is not falling below 25 Hz.
- The maximum frequency must be set so the rated power of the motor is not exceeded.

Modern frequency inverters use higher wave frequencies and a steeper rise on the flanks of the voltage wave. This means that motor loss and motor noise is reduced. Unfortunately these inverter output signals cause higher voltage spikes in the stator. Experience has shown, that depending on rated voltage and the length of the cable between the inverter and the motor, these voltage spikes can adversely affect the life of the motor. In order to avoid this, inverters of this type must be equipped with sinus filters when used in the critical zone (see Figure 9). The sinus filter chosen must be suitable for the inverter with regard to rated voltage, inverter wave frequency, rated current of the inverter, and maximum inverter output frequency. Make sure that the rated voltage is supplied to the terminal board of the motor.

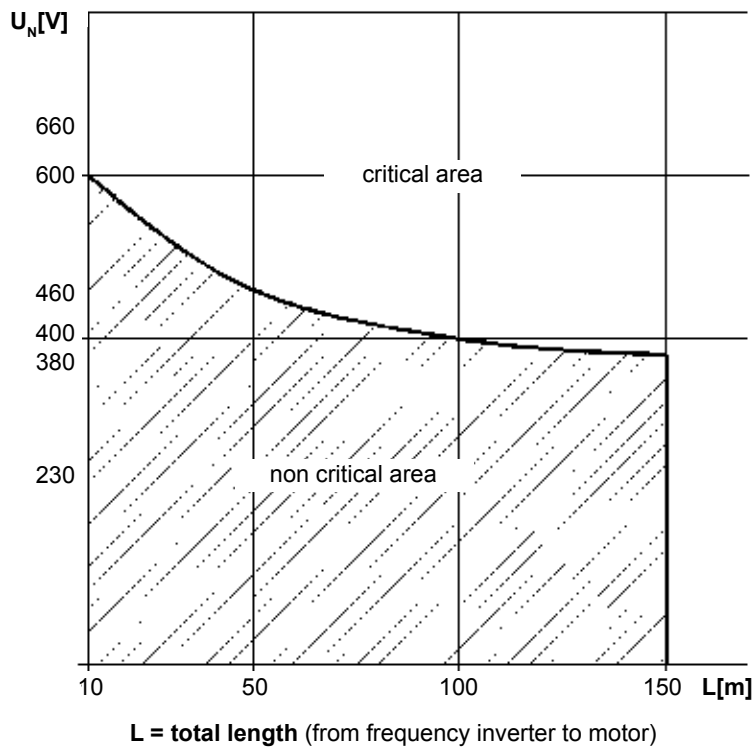


Figure 9. Critical/non critical area

1186-00

5 Installation



The safety instructions in the previous sections must be observed!

5.1 Installation RW / RCP



Care must be taken that the connection cables are positioned that they cannot get caught up in the propeller blades and that they are not subjected to tension.



The electrical connection is carried out in accordance with section 5.7 Electrical connection.

NOTE

We recommend that Sulzer installation accessories be used for the installation of the RW / RCP.

5.2 Tightening torque

Tightening torque for Sulzer stainless steel screws A4-70:							
Thread	M6	M8	M10	M12	M16	M20	M24
Tightening torque	6.9 Nm	17 Nm	33 Nm	56 Nm	136 Nm	267 Nm	460 Nm

5.2.1 Nord-Lock® washer

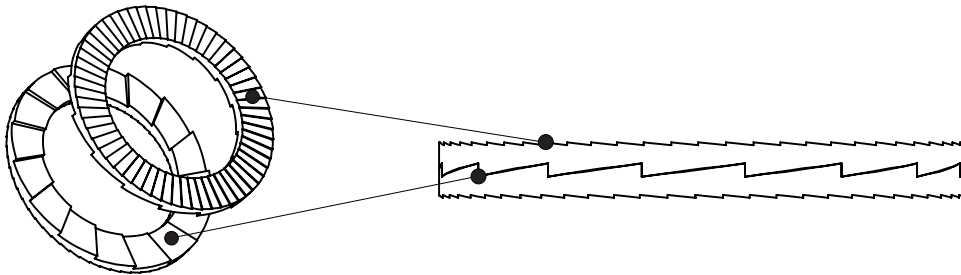


Figure 10. Correct fitting position of the Nord-Lock® securing washers

1176-00

5.3 Installation examples RW

5.3.1 Installation example with existing accessories

We recommend that the closed bracket be used for this type of installation (See *Figure 17*).

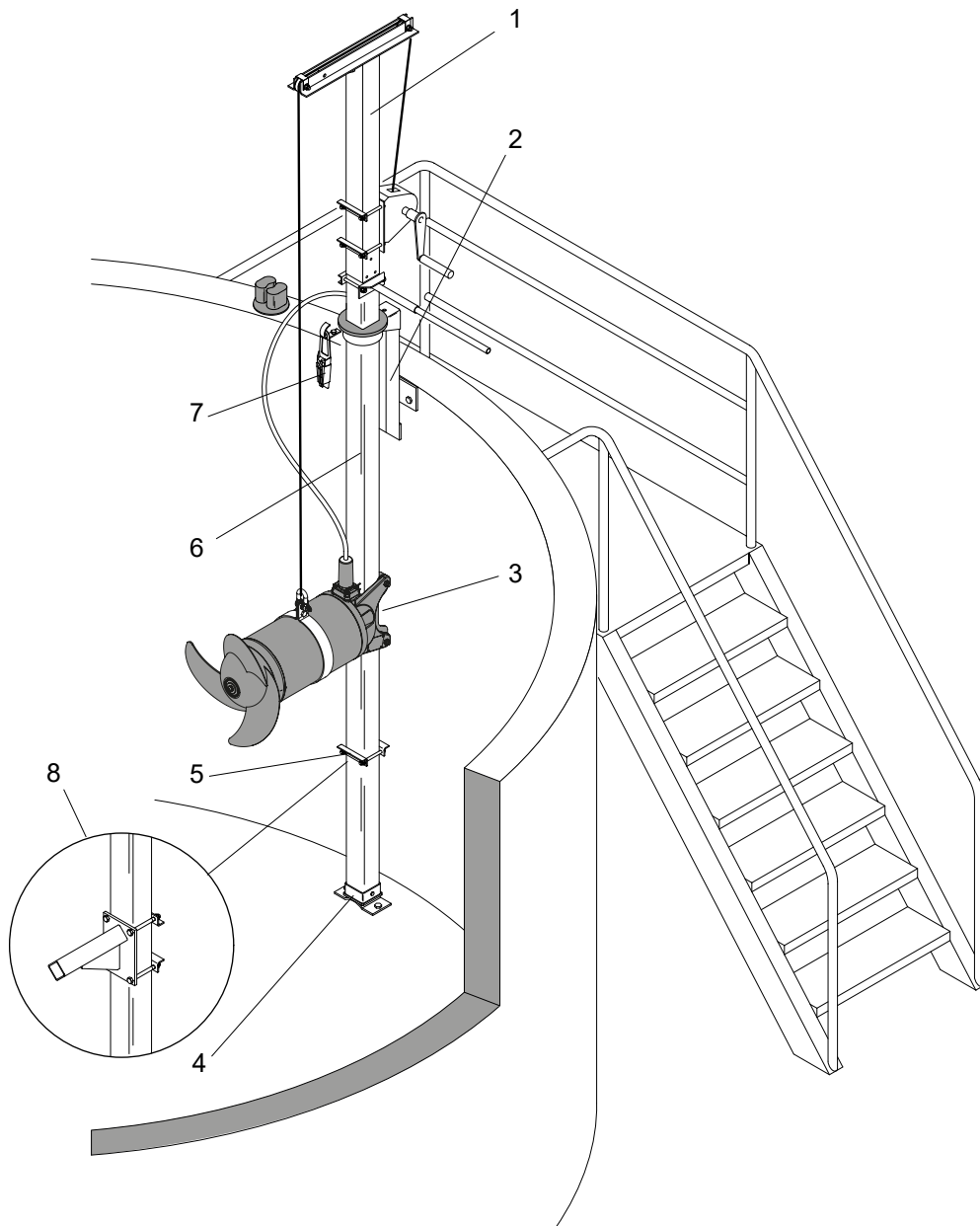


Figure 11. Installation example with existing accessories

Legend

- | | | | |
|---|----------------------------------|---|------------------------------------|
| 1 | Hoist with winch and rope | 5 | Safety stop clamp |
| 2 | Upper bracket with locking plate | 6 | Swivelling square guide tube |
| 3 | Closed bracket | 7 | Cable clamp with cable hook |
| 4 | Bottom plate | 8 | Stop for vibration damper (option) |

5.3.2 Installation example with alternative fixing possibilities

We recommend that the open bracket be used for this type of installation (See Figure 17).

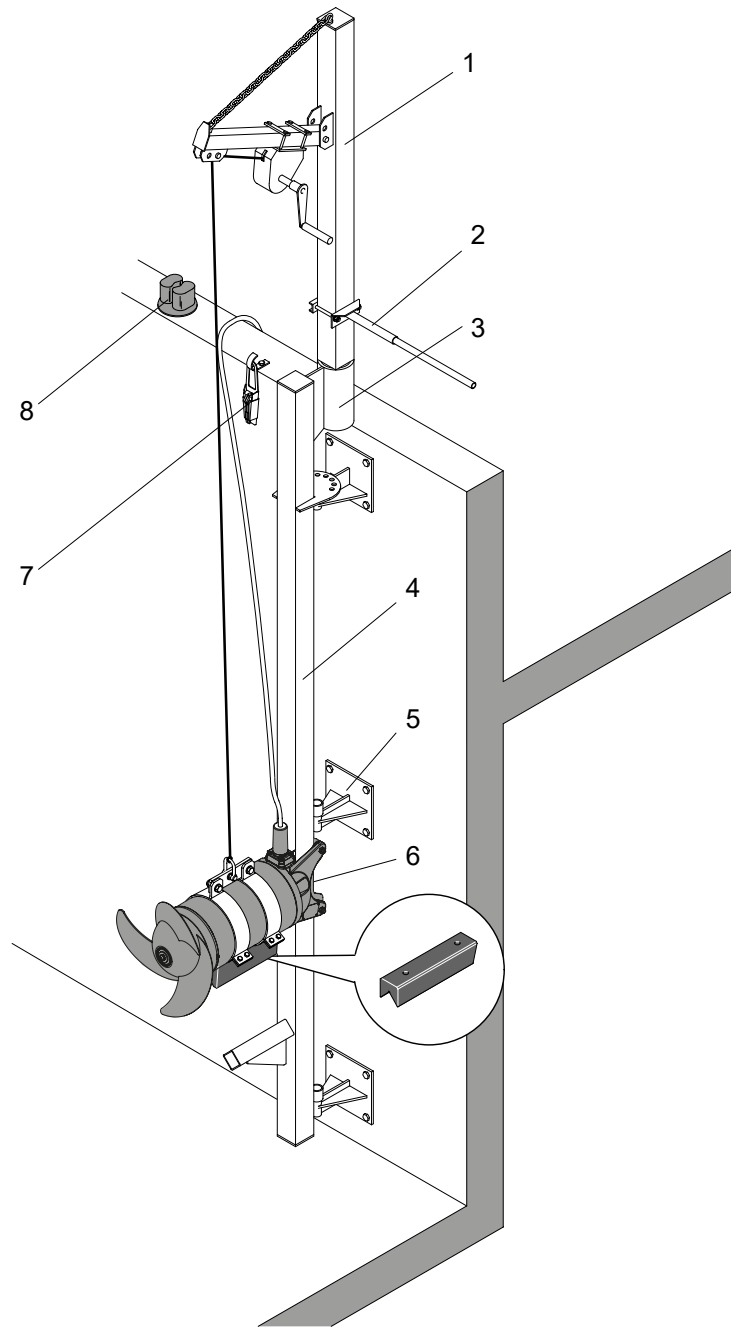


Figure 12. Installation example with alternative fixing possibilities

Legend

- | | | | |
|---|------------------------------|---|---------------------------------|
| 1 | Transportable lifting unit | 5 | Swivelling wall mounted bracket |
| 2 | Swivel handle | 6 | Open bracket |
| 3 | Socket (fixed installed) | 7 | Cable clamp with cable hook |
| 4 | Swivelling square guide tube | 8 | Rope block |

5.3.3 Installation example with fixed installation as flow booster

We recommend that the open bracket be used for this type of installation (See Figure 17).

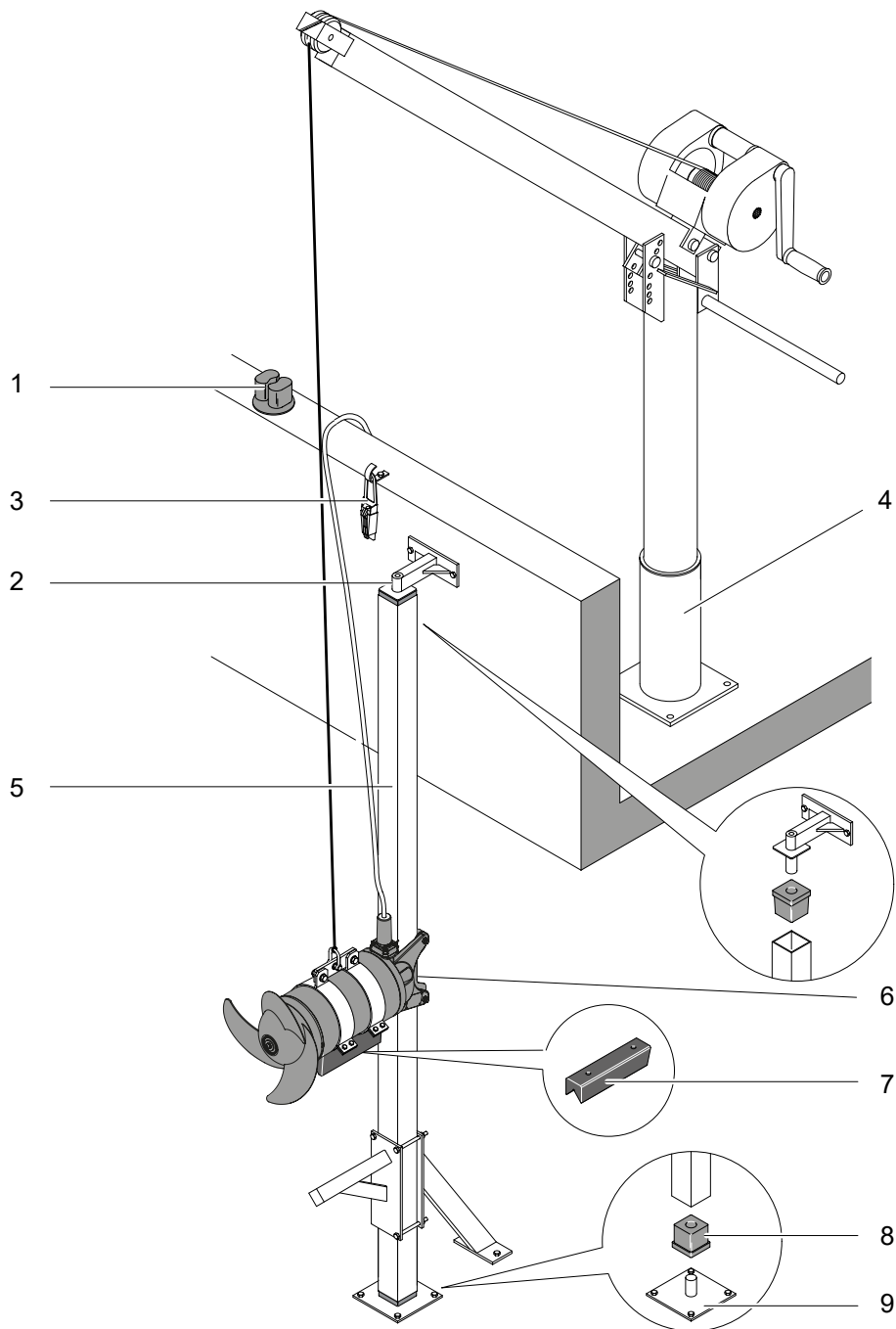


Figure 13. Installation example with fixed installation as flow booster

Legend

- 1 Rope block
- 2 Tube retainer
- 3 Cable clamp with cable hook
- 4 Sulzer lifting unit 5 kN
- 5 Square guide tube
- 6 Open bracket
- 7 Vibration damper
- 8 Tube connector
- 9 Bottom plate

5.3.4 Fixed installation with vibration damper

If the mixer is to be installed at a fixed point in the tank, then we recommend that the console with the vibration damper be used. In this case a further square tube must be used as a console at the guide tube. The vibration damper for the relevant mixer can be ordered (see table below).

Vibration damper listing

Mixer	Part no.
RW 400	6 162 0019
RW 650	6 162 0020 (A50/12, A 60/12). 6 162 0027 (A75/12, A 90/12, A100/12, A 120/12)

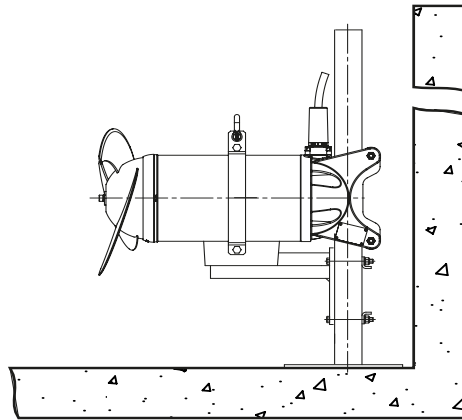


Figure 14. Fixed installation with vibration damper

5.4 Brackets RW

Brackets which can be swivelled vertically (only optional) are available for both open and closed models of the brackets for all mixers of the series.

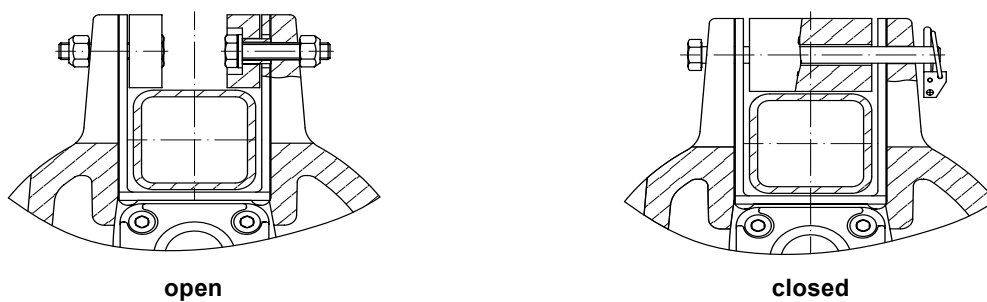


Figure 15. Open bracket / closed bracket

5.4.1 Fitting of the open bracket with vertical swivelling (option)

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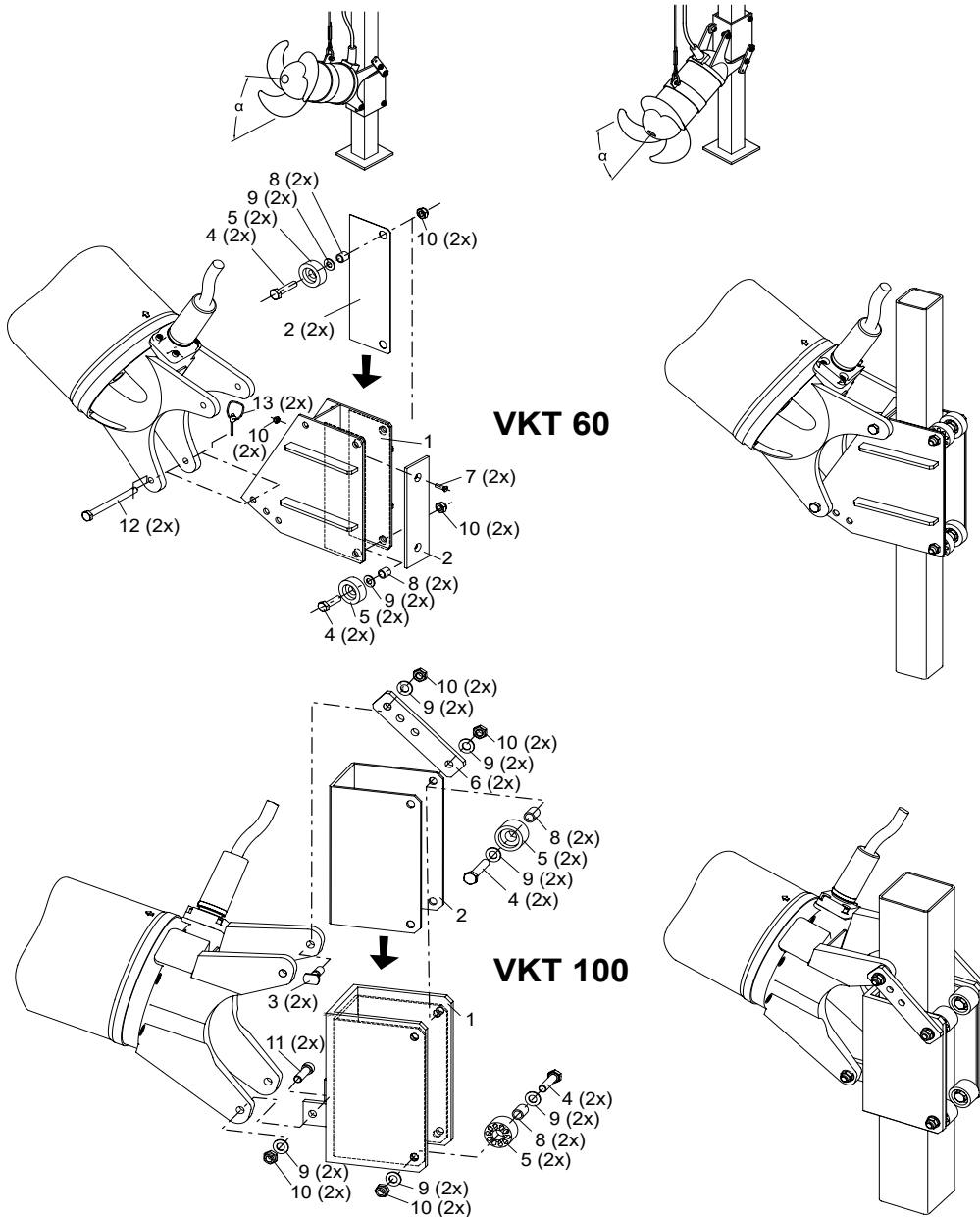
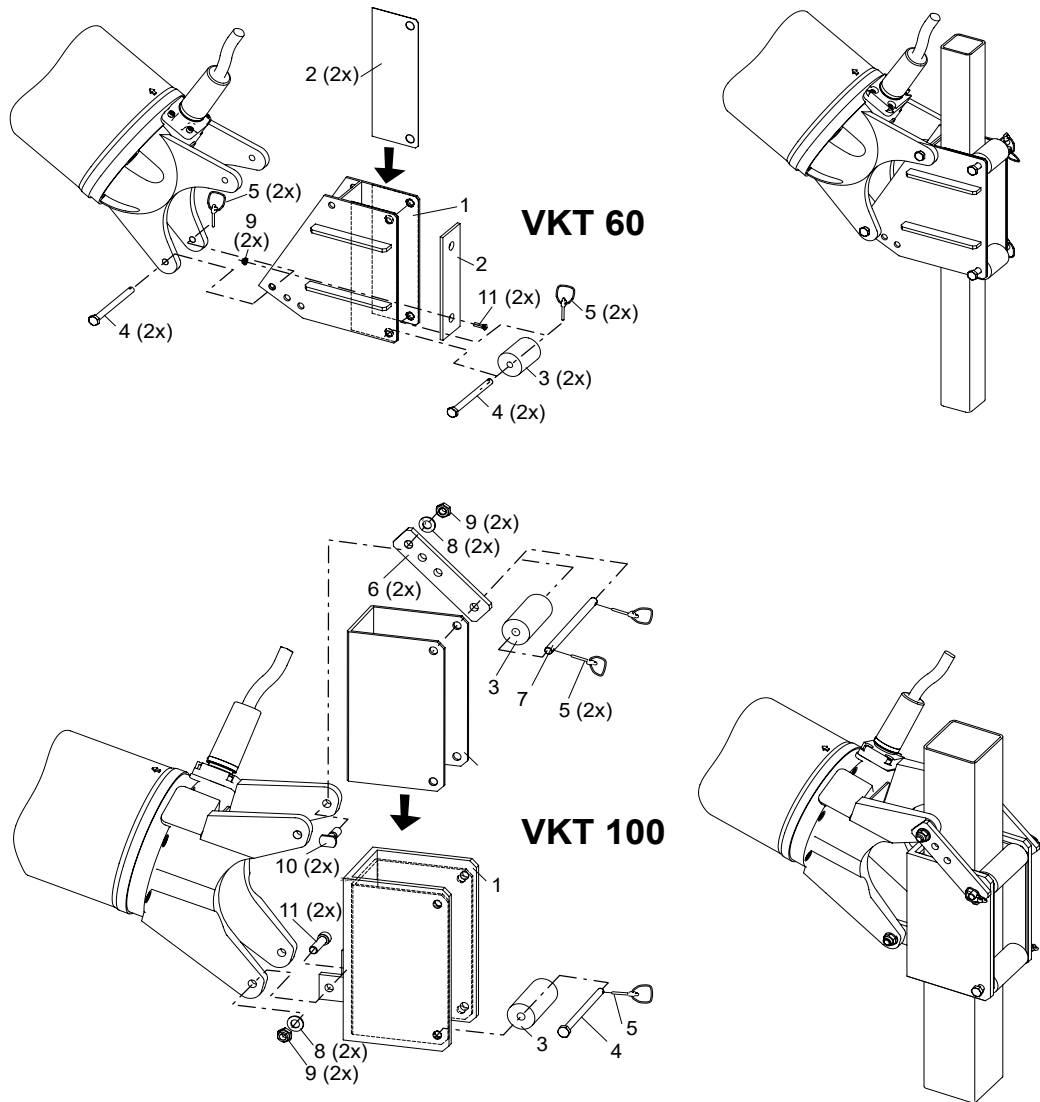


Figure 16. Open bracket with vertical swivelling

Legend

- | | | |
|--------------------|-------------------|----------------------|
| 1 Bracket | 6 Strap | 10 Hex nut |
| 2 Cladding | 7 Flat head screw | 11 Socket head screw |
| 3 Threaded inserts | 8 Tube | 12 Hinge bolt |
| 4 Hex bolts | 9 Washer | 13 Linchpin |
| 5 Roller | | |

5.4.2 Fitting of the closed bracket with vertical swivelling (option)



0565-0001

Figure 17. Closed bracket with vertical swivelling

Legend

- | | |
|--------------|----------------------|
| 1 Bracket | 7 Bolt long |
| 2 Cladding | 8 Washer |
| 3 Roller | 9 Hex nut |
| 4 Bolt short | 10 Threaded insert |
| 5 Linchpin | 11 Socket head screw |
| 6 Strap | |

5.4.3 Bracket alignment on guide rail

The mixer must be set up freely suspended with bracket fully mounted so that the bracket points vertically towards the ground. When doing this the clamp of the mixer should be moved until the desired slope of the mixer is achieved. This ensures that the mixer can slide up and down easily on the guide tube after it is fitted.

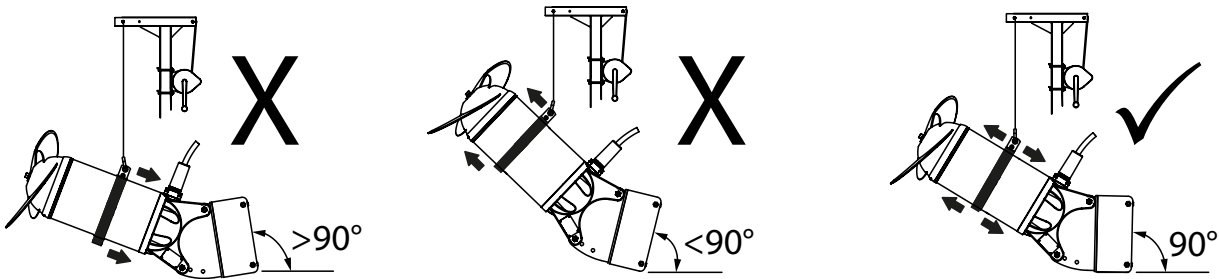


Figure 18. Setting up with fully mounted bracket

ATTENTION *Damage to bracket liner due to incorrect alignment setup will not be covered under warranty.*

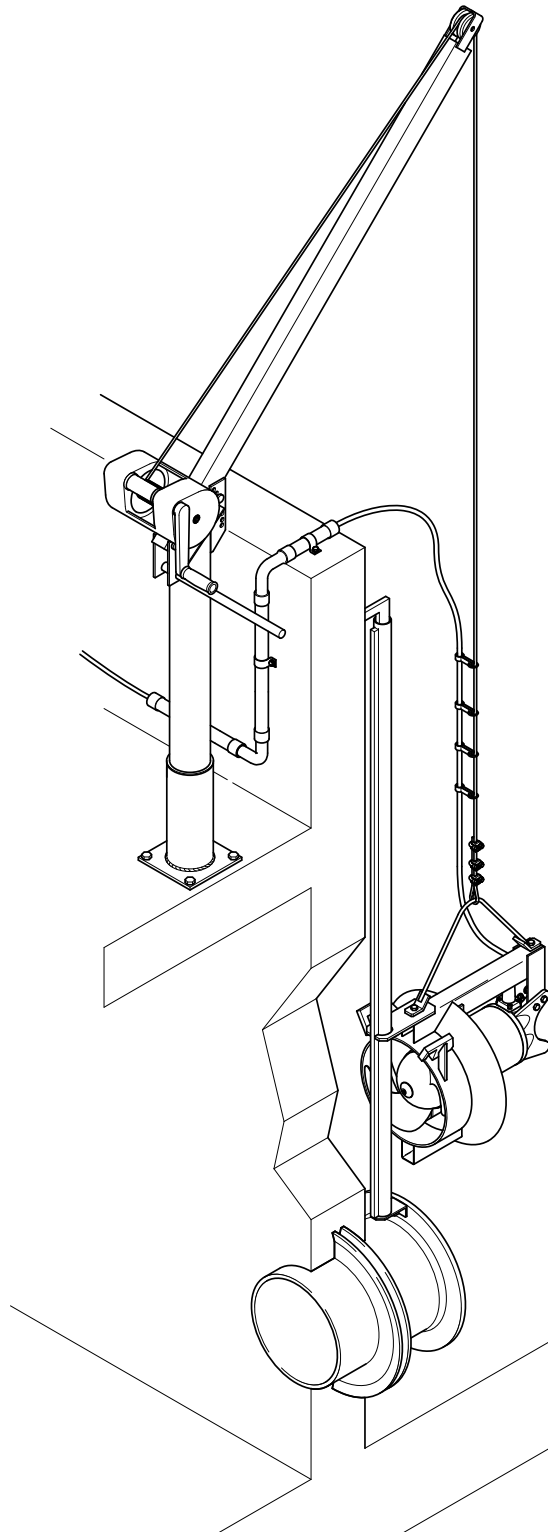
5.5 Guide tube lengths RW (square tube)

The table below shows the maximum lengths of the guide tubes, based on the maximum allowable bending $1/300$ th. of the length. These values have been determined in clean water of density 1000 kg/m^3 for the maximum thrust of the most powerful mixer.

Mixer	Maximum guide tube length (L) for an installation with square guide tube		
	with push-in type lifting unit	with separate lifting unit	guide tube with additional wall fixing
RW 400	□ 2" x 3/16". L ≤ 5 m	□ 2" x 3/16". L ≤ 5 m	□ 2" x 3/16". L ≤ 5 m
	□ 60 x 60 x 4. L ≤ 4 m	□ 60 x 60 x 4. L ≤ 5 m	□ 60 x 60 x 4. L ≤ 5 m
	□ 100 x 100 x 4. L ≤ 9 m	□ 100 x 100 x 4. L ≤ 10 m	□ 100 x 100 x 4. L ≤ 10 m
RW 650	□ 100 x 100 x 4. L ≤ 5 m	□ 100 x 100 x 4. L ≤ 6 m	□ 100 x 100 x 4. L ≤ 6 m
	□ 100 x 100 x 6. L ≤ 6 m	□ 100 x 100 x 4. L ≤ 7 m	□ 100 x 100 x 4. L ≤ 6 m
	□ 100 x 100 x 8. L ≤ 7 m	□ 100 x 100 x 4. L ≤ 8 m	□ 100 x 100 x 4. L ≤ 6 m

5.6 Installation RCP

5.6.1 Installation example with Sulzer lifting unit



0570-0001

Figure 19. Installation example with Sulzer lifting unit 5 kN

5.6.2 Guide tube installation



The safety hints in the previous sections must be observed!

ATTENTION

The discharge line and the required flange DIN EN 1092-1 PN6 should be installed on site before starting the installation of the guide tube. The DIN flange should be installed so that none of the holes in the flange are on the axis line but are symmetrically on either side of it. Ensure that the DIN flange is securely fixed in the concrete.

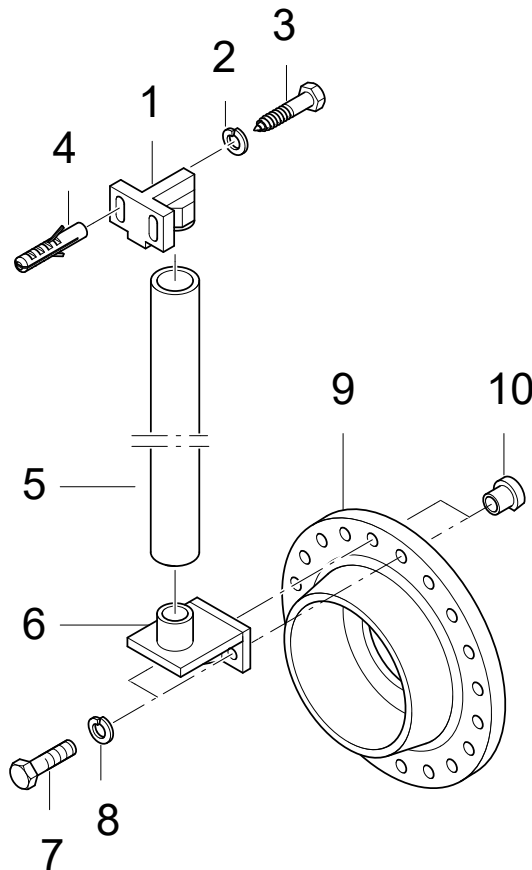


Figure 20. Guide tube installation

- Place bracket (20/6) on the DIN-flange (20/9) and fasten using hex nuts (20/7) together with spring washers (20/8) and the special nuts (20/10).

ATTENTION **The flattened edge of the special nuts (20/10) must point towards the flange centre.**

- Position the tube retainer (20/1) vertically over the bracket (20/6). Mount with the aid of the wall plugs (20/4) but do not tighten yet!
- Place the guide tube (20/5) alongside the conical section of the bracket (20/6) and determine the required length. To do this measure the upper edge of the tube retainer (20/1).
- Cut the guide tube (20/5) to the required length and place it on the conical portion of the bracket (20/6).
- Press the tube retainer (20/1) into the guide tube (20/5), so that no vertical play remains. Now tighten the hex screws (20/3) using the spring washers.

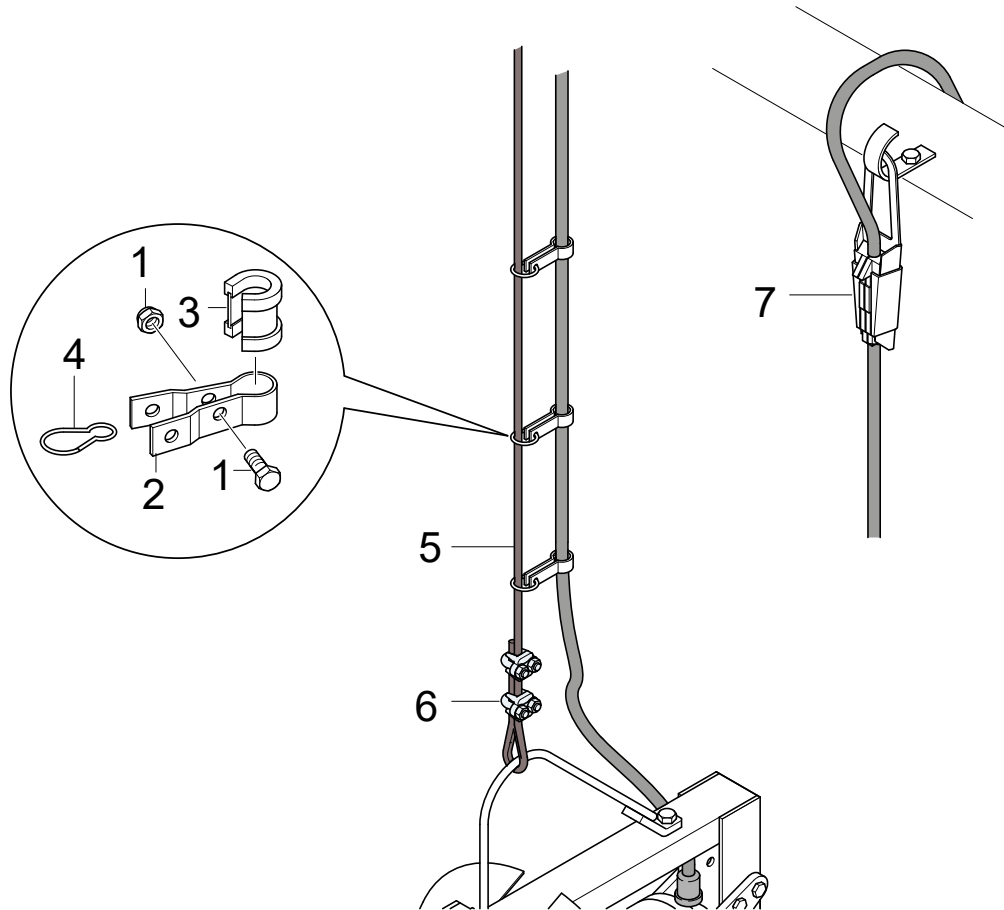
5.6.3 Securing and positioning of the motor connection cables of the RCP



The safety hints in the previous sections must be observed!

NOTE

The cable holders described here are not supplied as part of the standard execution of the RCP.



0572-0001

Figure 21. Securing and positioning of the motor connection cables of the RCP

- Place the cable holder (21/2) with rubber sleeve (21/3) on the connection cable close to the RCP itself and tighten using hex screw (21/1).
- Connect the snap hook (21/4) to the cable holder (21/2) and attach to the wire rope or chain.



Care must be taken that the connection cables are positioned that they cannot be caught up in the propeller blades and that they are not subjected to tension.

- Assemble all other cable holders in a similar manner. The spacing can be increased as the distance from the RCP increases.
- Hang the connection cable into the cable hook using the strain relief (21/7).



The electrical connection is carried out in accordance with section 5.7 Electrical connection.

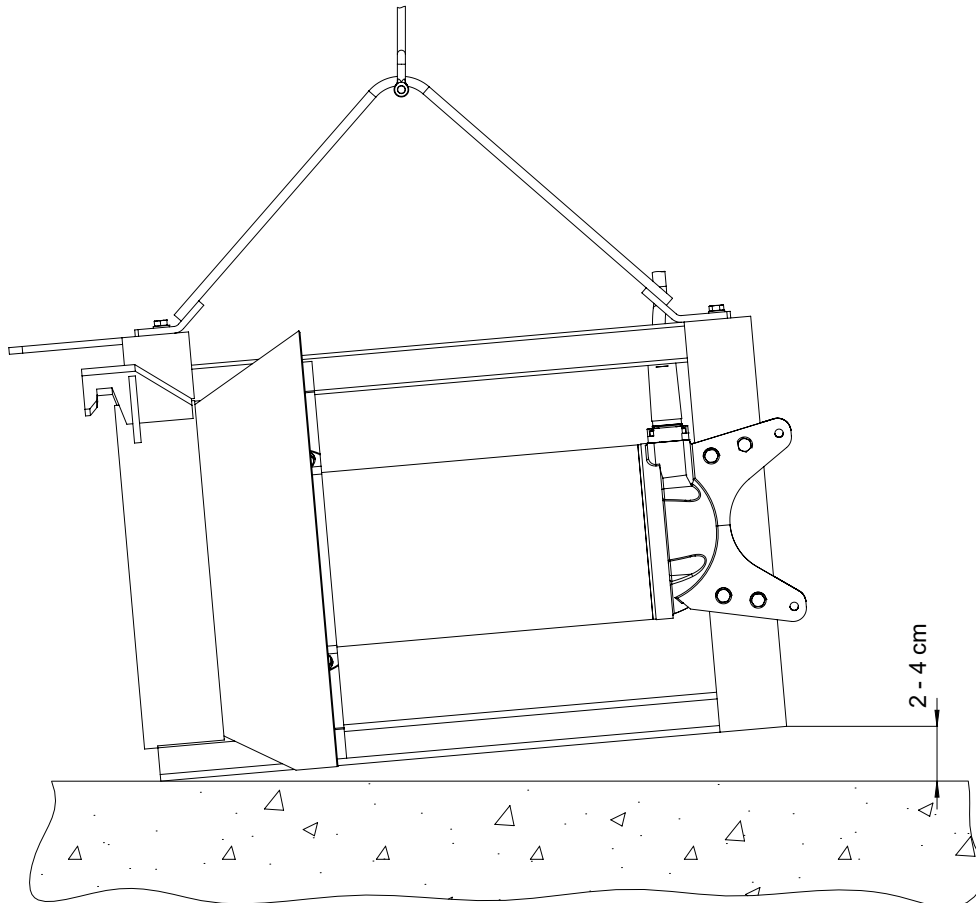
5.6.4 Lowering of the RCP along the guide tube



The safety hints in the previous sections must be observed!

The RCP together with the guide piece is connected onto the guide tube and lowered along it until it automatically sits in its final position (see Figure 23). When doing this, carefully feed the power cable downwards at the same time.

To ensure the RCP will tilt enough to lower correctly on the guide tube, the angle of the pump created by the lifting hook when suspended by the hoist has to be checked prior to lowering. For this purpose, begin lifting the pump from a horizontal surface and check that the rear end of the fixing support rises 2- to 4- cm from the floor before the front end begins to lift clear (see Figure 22).



0573-0001

Figure 22. checking installation angle of pump

ATTENTION *The power cable should be connected to the wire rope or chain in such a manner that it cannot become entangled in the propeller and that it is not subjected to any tension.*

After lowering of the RCP the tension of the wire rope or the chain should be released.

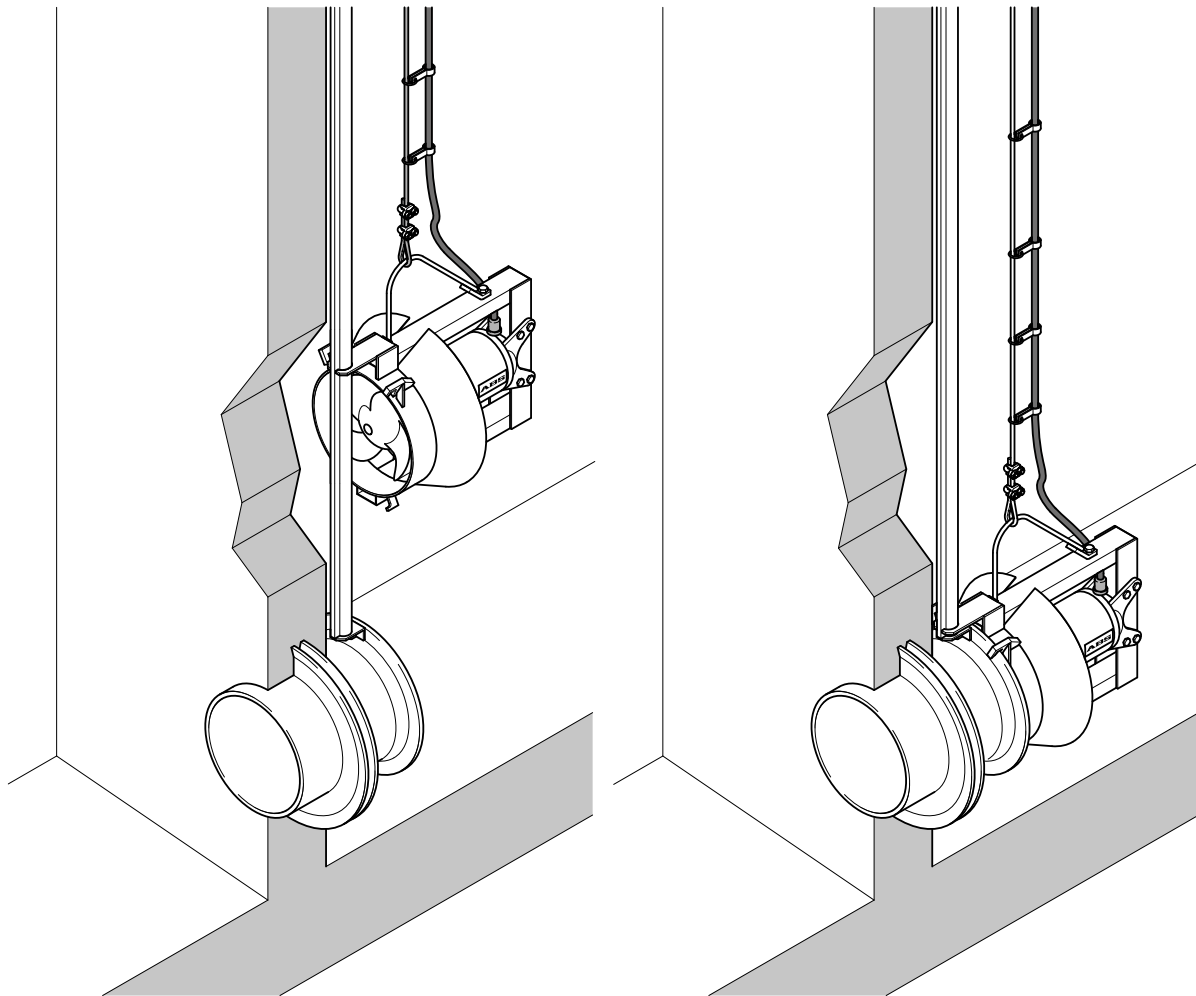


Figure 23.

RCP lowering

RCP connected

5.7 Electrical connection



The safety instructions in the previous sections must be observed!

Before commissioning, an expert should check that one of the necessary electrical protective devices is available. Earthing, neutral, earth leakage circuit breakers, etc. must comply with the regulations of the local electricity supply authority, and a qualified person should check that these are in perfect order.

ATTENTION *The power supply system on site must comply with VDE or other local regulations with regard to cross-sectional area and maximum voltage drop. The voltage stated on the nameplate of the pump must correspond to that of the mains.*



The incoming power supply as well as the connection of the unit itself to the terminals on the control panel must comply with the circuit diagram of the control panel as well as the motor connection diagrams and must be carried out by a qualified person.

The power supply cable must be protected by an adequately dimensioned slow-blow fuse corresponding to the rated power of the unit.

In pump stations/tanks potential bonding must be carried out in accordance with EN 60079-14:2014 [Ex] or IEC 60364-5-54 [non-Ex] (Regulations for the installation of pipe lines, protective measures in power plants).

In the case of units supplied with a standard control panel this must be protected from dampness and installed above flood level by means of a correctly fitted CEE earthed socket.

ATTENTION

The only method of starting allowed is that specified in chapter 1.6 Technical data or on the nameplate. If you want to use other starting methods please consult the manufacturer.

In the case where a control panel is not supplied as standard the unit must only be operated with a motor protection switch with overload relay and thermal sensors connected.

5.7.1 Standard connection diagrams. mains voltage 380 - 420 V at 50 Hz / 460 V at 60 Hz

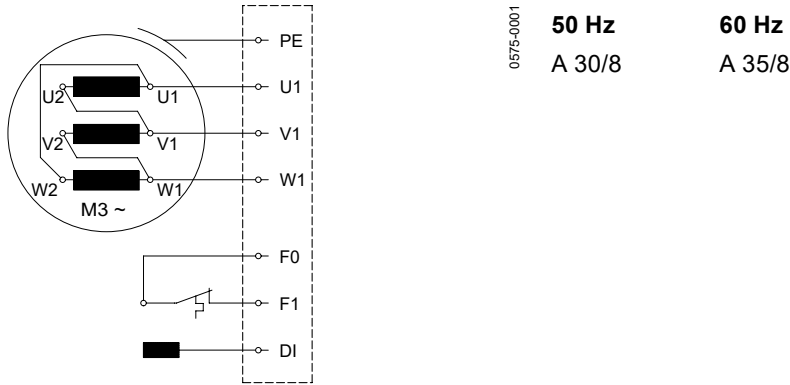


Figure 24. One power cable with integrated control leads (internal connection in the motor only for motor < 3 kW)

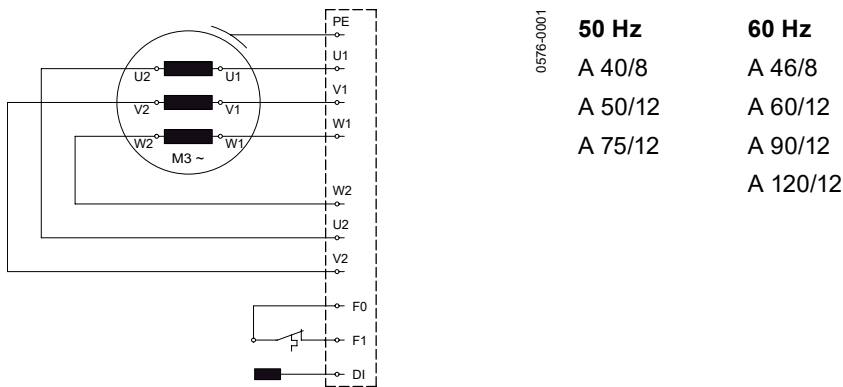


Figure 25. One power cable with integrated control leads

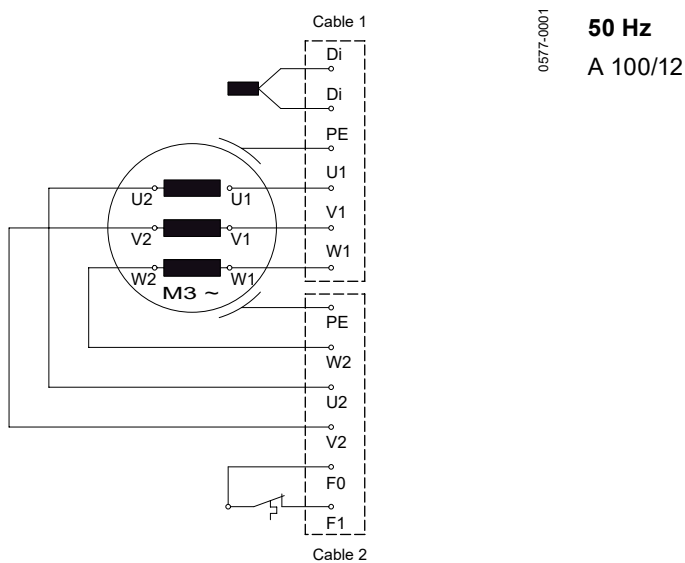
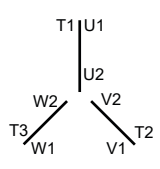


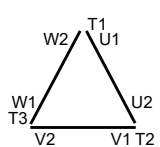
Figure 26. Two power cables with integrated control leads

5.7.2 Lead designations

Direct starting in star				
	L1	L2	L3	Join
North America	T1 (U1)*	T2 (V1)*	T3 (W1)*	-
Sulzer factory standard	U1	V1	W1	U2, V2, W2



Direct starting in delta				
	L1	L2	L3	
North America	T1 (U1)*	T2 (V1)*	T3 (W1)*	-
Sulzer factory standard	U1; W2	V1; U2	W1; V2	-



* Alternative lead designations



The thermal monitoring circuit (F1) must be wired into the motor contactors in such a manner that a manual reset is required.

ATTENTION The temperature limiting switches may only be operated as specified by the manufacturer (see following table).

Operating voltage...AC	100 V to 500 V ~
Rated voltage AC	250 V
Rated current AC $\cos \varphi = 1.0$	2.5 A
Rated current AC $\cos \varphi = 0.6$	1.6 A
Max. switching current at I_N	5.0 A

5.7.3 Soft starter (option)

For units > 15 kW we recommend the use of a soft starter.

ATTENTION The units must be connected DOL when used with soft starters.

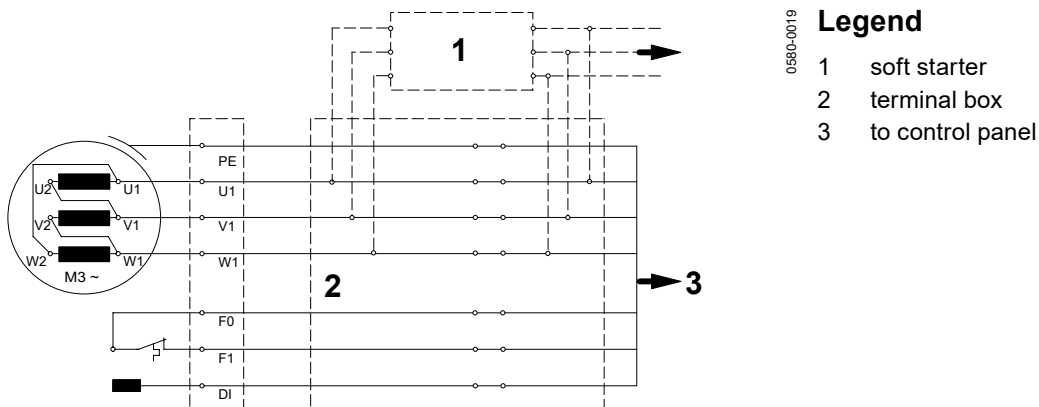


Figure 27. Wiring diagram with soft starter (option)

Testing and adjustment of soft starter:

ATTENTION For the first test adjust the potentiometer in position C.

For further information consult the installation and operating instructions of the soft start manufacturer. These are supplied with the unit.

Test:

- First test with potentiometer setting “C”.

Setting:

- Set to the **lowest possible starting torque** (within the adjustment range possible).
- Set to the **longest possible starting time** (within the adjustment range possible).

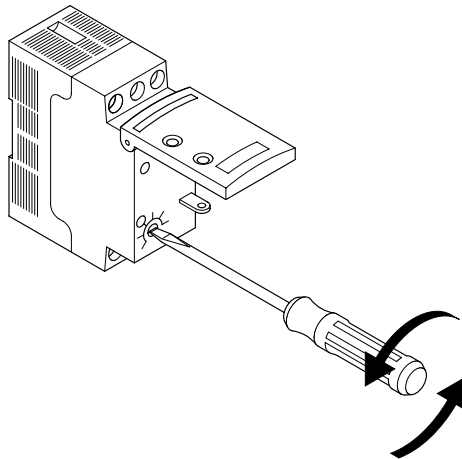


Figure 28. Testing and adjustment of soft starter

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5.7.4 Checking direction of rotation

When the units are being commissioned for the first time, and also when used on a new site, the direction of rotation must be carefully checked by a qualified person.

The direction of rotation (propeller rotation) is correct if the propeller when viewed from the rear over the motor housing rotates in a clockwise manner (see arrow). This applies to all versions of the RW / RCP!

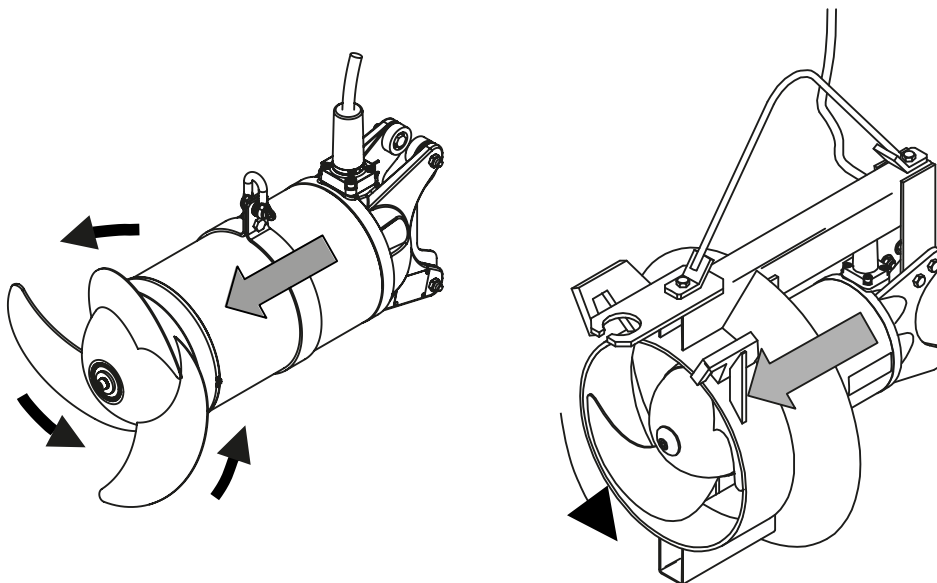


Figure 29. Checking direction of rotation

0582-0001



When checking the direction of rotation take care that no injury can be caused by the rotation of the propeller or the resulting airflow. Do not place a hand or other part of the body near the propeller or the hydraulics!



The direction of rotation should only be altered by a qualified person.



When carrying out the direction of rotation check as well as when starting the unit pay attention to the Start Reaction. This can be very powerful.

NOTE *If a number of units are connected to a single control panel then each unit must be individually checked.*

ATTENTION *The mains supply in the control panel must have a clockwise sense of rotation. If the units are connected in accordance with the wiring diagram and the lead designations the direction of rotation will be correct.*

5.7.5 Changing direction of rotation



The safety instructions in the previous sections must be observed!



Changing direction of rotation must only be carried out by a qualified person.

If the direction of rotation is incorrect then this is altered by changing over two phases of the power supply cable in the control panel. The direction of rotation should then be rechecked.

NOTE *The direction of rotation measuring device monitors the direction of rotation of the mains supply or that of an emergency generator.*

5.7.6 Connection of the seal monitoring unit to the control panel

The standard versions of the units are fitted as standard with DI seal monitors which monitor the state of the sealing. In order to integrate the DI electrode into the control panel it is necessary to fit a Sulzer DI module and connect it in accordance with the wiring diagram (Fig. 23).

ATTENTION *The DI seal monitoring probe in the oil chamber (60 Hz, Hazardous Location, North America only) must be connected to an intrinsically safe electrical circuit in accordance with FM (Factory Mutual) 3650.*

ATTENTION *The Sulzer DI module must be located outside of the hazardous location.*

ATTENTION *If the DI seal monitor is activated the unit must be immediately taken out of service. Please contact your Sulzer Service Centre.*

NOTE *Running the pump with the thermal and/or moisture sensors disconnected will invalidate any related warranty claims.*

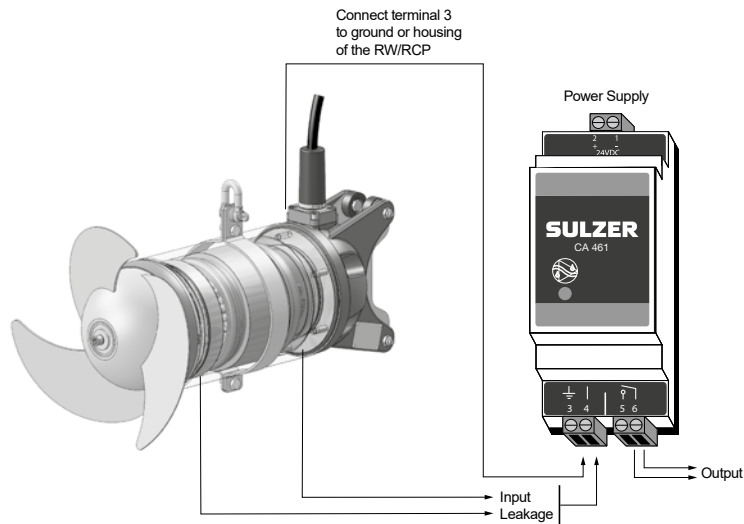


Figure 30. Electronic amplifier with collective signalling

Electronic amplifier for 50/60 Hz

110 - 230 V AC (CSA) (Part No.: 1 690 7010)

18 - 36 V DC (CSA) (Part No.: 1 690 7011)

ATTENTION *Maximum relay contact loading: 2 Ampere*

6 Commissioning

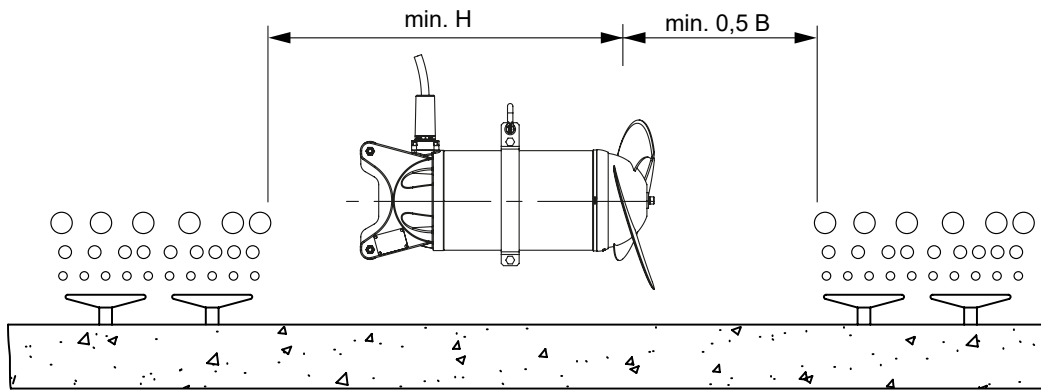


The safety instructions in the previous sections must be observed!

Before commissioning, the unit should be checked and a functional test carried out. Particular attention should be paid to the following:

- Have the electrical connections been carried out in accordance with regulations?
- Have the thermal sensors/limiters been connected?
- Is the seal monitoring device (where fitted) correctly installed?
- Is the motor overload switch correctly set?
- Have the power and control circuit cables been correctly fitted?
- Has the motor connection cable been laid in such a manner that it cannot be caught up by the rotating body?
- Has the minimum submergence level been observed? (See Section 1.7 Dimensions and weights).

6.1 Types of operation



0584-0001

B = Tank width; H = Water depth

Figure 31. Installation example with aeration

ATTENTION *The illustration is only an example. For the correct installation please contact Sulzer.*

ATTENTION *Operation within the directly aerated area is not allowed!*

ATTENTION *The units must work fully submerged in the fluid. During operation no air should be drawn in by the propeller. Ensure that there is a smooth medium flow. The unit should not vibrate heavily when in operation.*

Uneven flow formation and vibrations can occur if:

- Over-active mixing in small tanks (only for RW).
- Prevention of free inflow or outflow in the area of the flow ring if fitted (only for RW). Changing the position or direction of the mixer may assist.
- Prevention of free inflow or outflow in the area of the guide cone (only for RCP).

7 Maintenance



The safety instructions in the previous sections must be observed!

In particular, the advice regarding maintenance in *paragraph 3.2* of the separate booklet Safety Instructions for Sulzer Products Type ABS are to be observed.

7.1 General maintenance hints



Before commencing any maintenance work the unit should be completely disconnected from the mains by a qualified person and care should be taken that it cannot be inadvertently switched back on.



Servicing must only be carried out by qualified personnel.

NOTE

The maintenance instructions given here are not designed for “do-it-yourself” repairs as special technical knowledge is required.



Repair work on explosion-proof motors may only be carried out in approved workshops by approved personnel using original parts supplied by the manufacturer. Otherwise the Ex approvals no longer apply.

Sulzer units are reliable quality products, each being subjected to careful final inspection. Lubricated-for-life ball bearings, together with monitoring devices, ensure optimum reliability provided that the unit has been connected and operated in accordance with the operating instructions.

Should, nevertheless, a malfunction occur, do not improvise but ask your Sulzer Customer Service Department for assistance.

This applies particularly if the unit is continually switched off by the current overload in the control panel, by the thermal sensors/limiters of the thermo-control system, or by the seal monitoring system (DI).

ATTENTION ***The lifting tools such as chains and shackles should be visually checked at regular intervals (approx. every 3 months) for wear and corrosion. These parts should be replaced if required!***

The Sulzer Service Organisation would be pleased to advise you on any applications you may have and to assist you in solving your aerating problems.

NOTE ***The Sulzer warranty conditions are only valid provided that any repair work has been carried out in Sulzer approved workshops and where original Sulzer spare parts have been used.***

ATTENTION ***Regular checks are highly recommended and other checks are prescribed regulations after specific intervals. This ensures a long lifetime and trouble-free operation of the units (see section 7.2 Maintenance).***

NOTE ***In the case of repair work, "Table 1" from IEC60079-1 and FM 3615 may not be applied. In this case please contact Sulzer After-Sales Service!***

7.2 Maintenance RW/RCP



The safety instructions in the previous sections must be observed!

Inspections carried through at regular intervals and preventive maintenance guarantee trouble-free operation. For this reason the complete unit should be cleaned thoroughly on a regular basis, maintained and inspected. For this purpose special care must be taken that all parts of the unit are in a good condition and that operational security is guaranteed. The inspection period is determined by the type of usage of the units, but should however not exceed one year.

The maintenance and inspection work must be carried through corresponding to the subsequent inspection plan. The executed work must be documented in the attached inspection list. In case of non-observance the manufacturer's warranty does not apply!

7.2.1 Faults

In addition to the maintenance and inspection tasks described in section 7.3 *Inspection and maintenance intervals* an urgent check of the unit and installation should be carried out if heavy vibrations develop or uneven flow patterns occur.

Possible causes:

- Minimum liquid coverage of the RW propeller is not present.
- Aeration in the RW propeller area.
- Wrong direction of rotation of the propeller.
- Propeller is damaged.
- Restriction to the free inflow or outflow in the area of the RW flow ring.
- Restriction to the free inflow or outflow in the area of the RCP inflow cone.
- Parts of the installation, such as bracket or coupling parts, have become defective or loose.

In these cases the unit should be immediately switched off and inspected. If no fault can be found, or the fault remains after it has apparently been corrected, the unit should be left switched off. The same applies also where the current overload in the control panel regularly trips, where the DI seal monitor or the temperature sensors in the stator are activated. We recommend that in such cases you contact the local Sulzer Service Centre.

7.3 Inspection and maintenance intervals



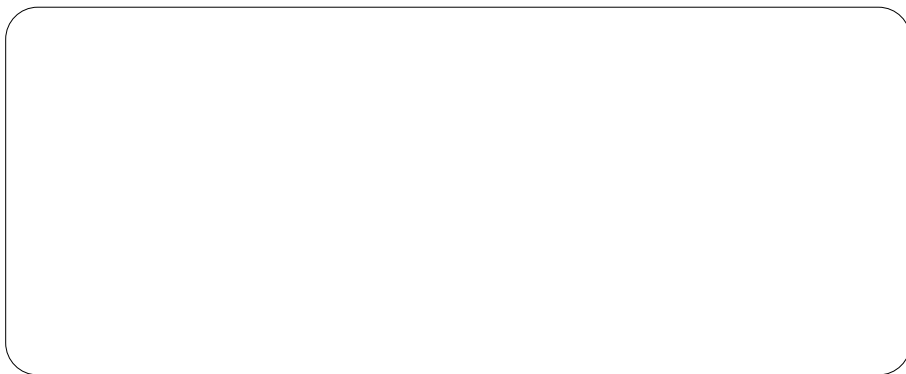
The safety instructions in the previous sections must be observed!

PERIOD OF TIME:	Regulation: once a month
ACTIVITY:	Cleaning and inspection of the power and control circuit cables.
DESCRIPTION:	Once a month (more frequently - for example - in difficult application cases where the medium is heavily polluted with fibrous matter) the power and control circuit cables should be cleaned. In particular, fibrous materials must be removed. Part of the regular maintenance is also the inspection of the motor cables. These must be checked for scratches, fissures, bubbles or crushing.
MEASURE:	Damaged power and control circuit cables must be replaced in all cases. Please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Recommendation: once a month
ACTIVITY:	Check the current consumption at the amp meter.
DESCRIPTION:	With normal operation the current consumption is constant; occasional current fluctuations result from the constitution of the material being mixed.
MEASURE:	If the current consumption is too high for a longer period during normal operation please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Regulation: every 3 months
ACTIVITY:	Cleaning and inspection of the shackles and the lifting equipment.
DESCRIPTION:	Lift the unit out of the tank and clean it. Lifting equipment like hoists, shackles, wire ropes and wire clamps etc. must undergo a visual examination at regular intervals for wear and corrosion.
MEASURE:	Worn or damaged parts should be replaced. Please contact your local Sulzer Service Centre.
ACTIVITY:	Inspection of the propeller and the SD ring (Solids-Deflection-Ring).
DESCRIPTION:	The propeller should be inspected carefully. The propeller might show spots of rupture and wear due to strongly abrasive or aggressive mixing material. In both cases the flow formation is reduced considerably and the propeller must be replaced. The solids deflection ring must also be checked. If wear or scoring is visible on the propeller boss these parts must be replaced as well.
MEASURE:	If you find out any cases of the damage described above please contact your local Sulzer Service Centre.

PERIOD OF TIME:	Recommendation: every 6 months
ACTIVITY:	Insulation resistance check.
DESCRIPTION:	Within the scope of the maintenance work the insulation resistance of the motor winding should be measured every 4,000 hours, and/or at least once a year. If the proper insulation resistance level is not reached, moisture might have got into the motor.
MEASURE:	The unit must be taken out of operation and may not be started again. Please contact your local Sulzer Service Centre.
ACTIVITY:	Functional testing of the monitoring devices.
DESCRIPTION:	In the scope of the maintenance measures functional testing of all monitoring devices must be carried through every 4,000 hours and/or at least once a year. For these functional tests the unit must have cooled down to the ambient temperature. The electrical connecting line of the monitoring device must be disconnected at the control box. These measurements must be carried through by means of an ohmmeter at the respective cable ends.
MEASURE:	In any case of any functional problems on the monitoring devices please contact your local Sulzer Service Centre.



Submersible mixers
type ABS RW 200 – RW 650



Main industries and applications

A compact and versatile mixer with a wide range of applications, including use in aggressive and abrasive liquids.

- Mixing and stirring applications in sewage treatment plants and industrial areas such as:
 - Equalization of sewage
 - Biological processes (aerobic, anoxic and anaerobic)
 - Selector (contact zone)
- Applicable for homogenization highly concentrated sludge and slurries such as:
 - Primary, secondary and digested sludge in storage and buffer tanks
 - Lime and mineral slurries
- Mixing applications in pump sumps as prevention of deposits and floating crusts (RW 200/280)
- Hazardous locations:
 - Certification for ATEX (Ex II 2G Ex h db IIB T4 Gb), FM and CSA available as an option



Water and wastewater



General industry



Pulp, paper and board

Key customer benefits

Economical

- The RW mixer range includes several submersible mixers with integral motors ranging from 1.3 to 13 kW (1.7 – 17.5 hp)
- Sulzer offers efficient multiple and gear-driven mixers either standard or explosion-proof motor enclosures
- Reduced energy costs
- Short mixing times

Reliable

- Compact, water pressure-tight design
- Minimal risk of motor overloading

Easy to replace existing installations

- Our wide range of brackets and adapters make them suitable for existing guide rails and lifting devices without modification to meet customer needs.

RW 400 and RW 650 features and benefits

1 Efficient three-phase motor, water pressure-tight encapsulated. Protection type IP 68, stator insulation class F (155°C). Motor shaft and rotor dynamically balanced

- Economical and reliable design
- Continuous running 24/7

2 Pre-loaded upper bearing

- Prevents spinning through the design of the outer ring
- Eliminates backlash
- Ensures longer bearing life

3 DI-system

- Seal monitoring and indication that an inspection is due

4 Solids deflection ring

- Protects the mechanical seal from damage due to the ingress of solids or fibrous matter

5 Enhanced mechanical seal protection

- Keeps the mechanical seal clog-free
- Greatly extends the life of the seal

6 Hydraulic-optimized, 2- or 3-blade axial flow propeller design

- Achieves high thrust and therefore a high flow capacity
- Strong rotating flow in axial direction
- Ensures high mixing performance
- Reduces maintenance through self-cleaning

7 Abrasion-resistant, galvanically insulated mast bracket

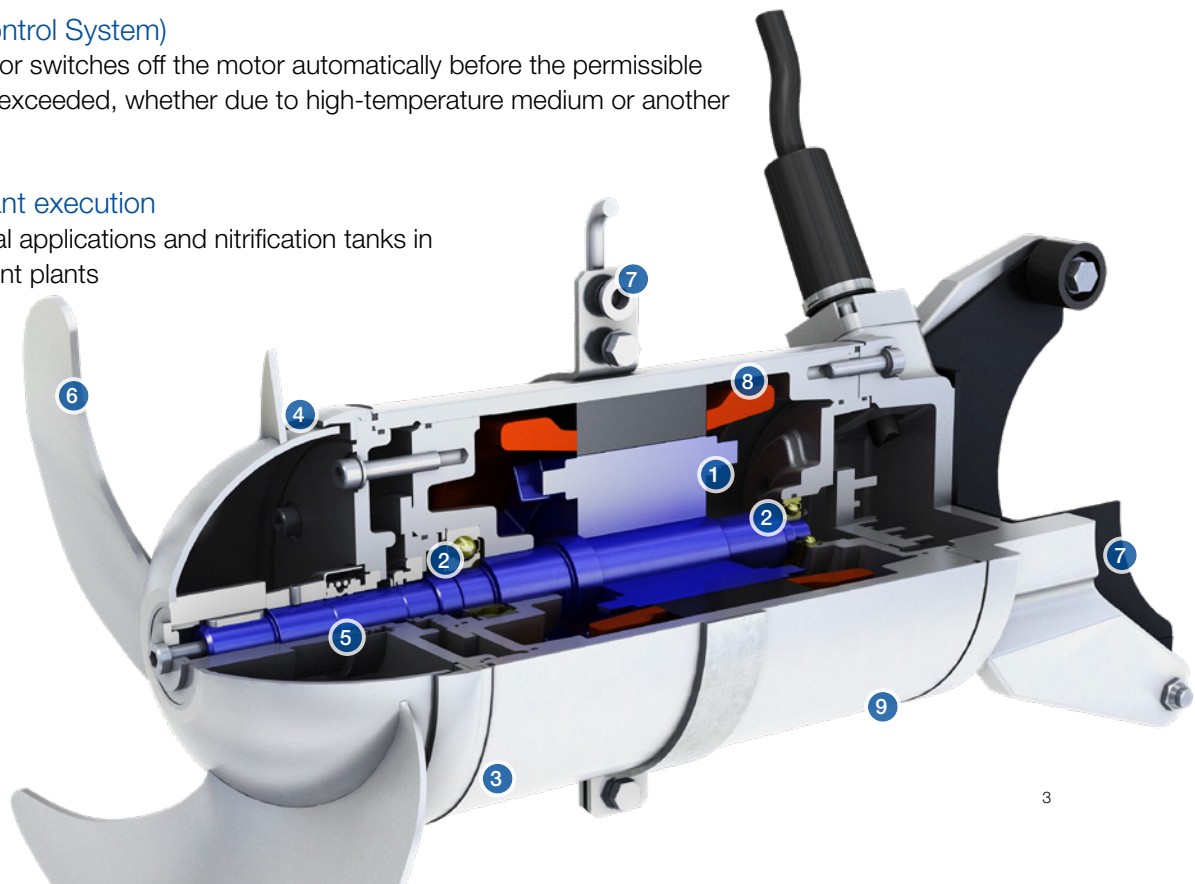
- Reduces the risk of electrochemical corrosion

8 TCS (Thermo Control System)

- Provides a warning or switches off the motor automatically before the permissible temperature limit is exceeded, whether due to high-temperature medium or another problem source

9 Corrosion resistant execution

- Suitable for industrial applications and nitrification tanks in wastewater treatment plants



RW 480 features and benefits

1 Efficient three-phase motor, water pressure-tight encapsulated. Protection type IP 68, stator insulation class F (155°C). Motor shaft and rotor dynamically balanced

- Economical and reliable design

2 Helical one stage robust gearbox

- Allows numerous ratios via fatigue-strength helical gears
- Calculated lifetime of more than 100'000 hours for the oil-lubricated bearings
- Compact and lightweight drives

3 Large, long-lasting bearings

- Offer true reliability with a calculated lifetime of more than 100'000 operating hours
- Need no maintenance – lubricated for life

4 DI-system

- Seal monitoring and indication that an inspection is due

5 Solids deflection ring

- Protects the mechanical seal from damage due to the ingress of solids or fibrous matter

6 Enhanced mechanical seal protection

- Keeps the mechanical seal clog-free
- Greatly extends the life of the seal

7 Special 2-blade mixed-flow propeller design

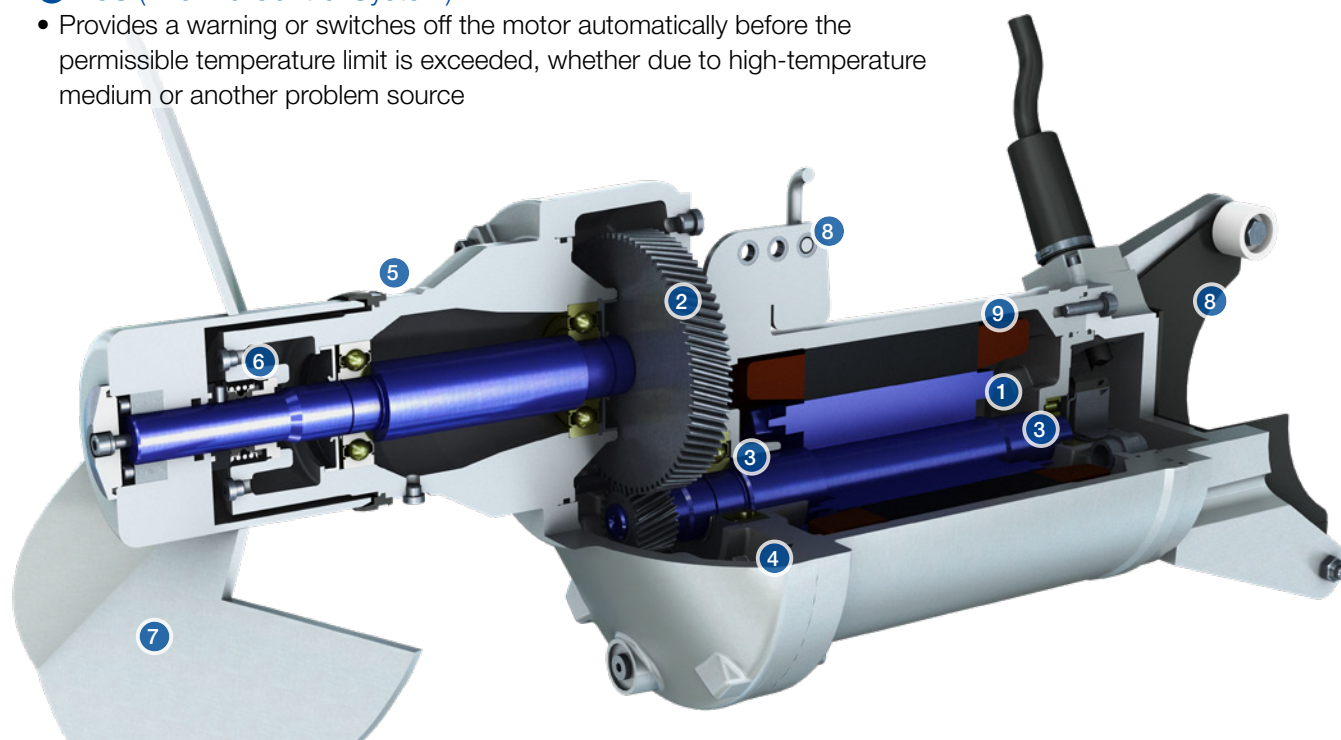
- Strong rotating turbulent flow in radial and axial direction
- Highly efficient for homogenization of concentrated sludge and slurries
- Ensures high mixing performance
- Reduces maintenance through self-cleaning

8 Abrasion-resistant, galvanically insulated mast bracket

- Reduces the risk of electrochemical corrosion

9 TCS (Thermo Control System)

- Provides a warning or switches off the motor automatically before the permissible temperature limit is exceeded, whether due to high-temperature medium or another problem source



RW 200 and RW 280 features and benefits

Prevention of deposits and floating crusts in pump sumps, it keeps the sump clean, it limits the accumulation of solids and consequently the pumps blockages. Intermittent duty when used in combination with the pumps, to reduce the power consumption.

Efficient three-phase motor, water pressure-tight encapsulated. Protection type IP 68, stator insulation class F (155°C). Motor shaft and rotor dynamically balanced

- Economical and reliable design

DI-system

- Seal monitoring and indication that an inspection is due

Solids deflection ring

- Protects the mechanical seal from damage due to the ingress of solids or fibrous matter

Hydraulic-optimized, 2-blade axial flow propeller design running at high speed (4 poles)

- Strong rotating turbulent flow in axial direction
- Highly efficient for homogenization of raw sewage and floating crusts
- Ensures high mixing performance
- Reduces maintenance through self-cleaning

TCS (Thermo Control System)

- Provides a warning or switches off the motor automatically before the permissible temperature limit is exceeded, whether due to high-temperature medium or another problem source

Versatile mounting bracket for hanging installation

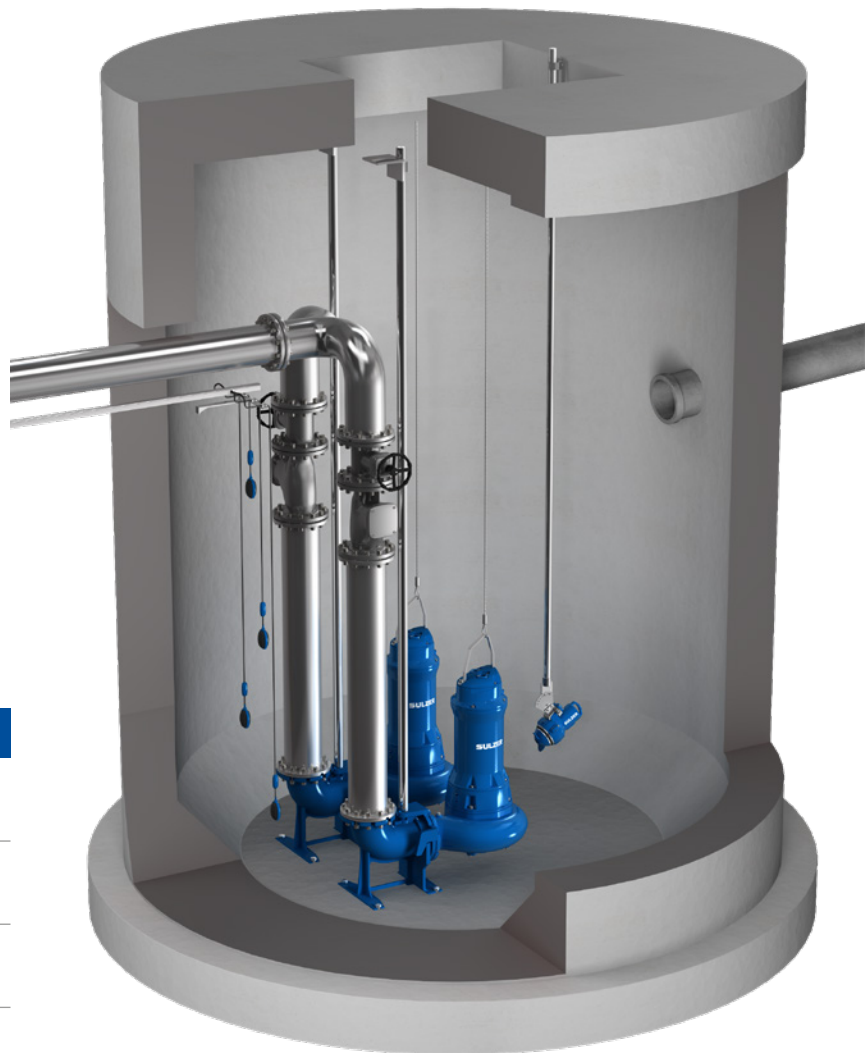
- It allows to adjust both vertical and horizontal orientation of the mixer to remove the sediments from the dead zones of the wet sump
- The hanging installation allows retrofitting the mixer in critical pumping stations even when they are in operation. The installation footprint is minimal



RW 200 / RW 280 pump stations

The RW 200 / RW 280 mixers are mainly used for mixing applications in pump sumps. The function of the mixers is to thoroughly mix up the contents of the sump before the pumps themselves start up, so that after completion of the pumping only a small amount of deposit remains. Silting up of the pump sump is therefore effectively avoided.

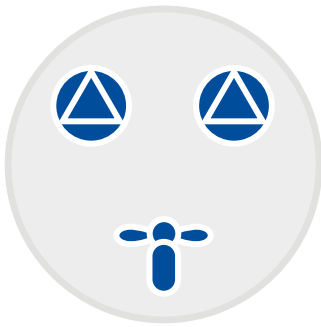
In general the operation of the mixers in the pump sump is controlled as follows: The mixer is operated by a level control unit which switches it on shortly before the pumps themselves are switched on. In general a timer allows 30 to 45 seconds mixing before starting the pumps. An additional level control unit switches off the mixer while propeller coverage of 30 to 40 cm remains.



Specific power density

Municipal raw sewage	25 - 40 W/m ³
Sewage containing lots of solid materials	50 - 80 W/m ³
Sewage containing lots of sandy materials	100 - 200 W/m ³

Maximum sump size when using only RW 200 / RW 280



Round tanks

Max. diameter:
RW 200 = 3.5 m
RW 280 = 5.0 m



Rectangular tanks

Max. size:
RW 200 = 3 x 5 m
RW 280 = 4 x 6 m

Materials

Mixer parts RW 400 – RW 650	EC (cast iron)	CR (stainless steel)
Motor housing	EN-GJL-250, painted	1.4404 (AISI 316L)
Motor shaft / propeller shaft	1.4021 (AISI 420)	1.4404 (AISI 316L)
Propeller	1.4571 (AISI 316Ti)	1.4571 (AISI 316Ti)
Fasteners	1.4401 (AISI 316)	1.4401 (AISI 316)

Mixer parts RW 200 and RW 280	EC (cast iron)
Motor housing	EN-GJL-250, painted
Motor shaft / propeller shaft	1.4021 (AISI 420)
Propeller	EN-GJL-250, painted
Fasteners	1.4401 (AISI 316)

Mixer parts RW 480	EC (cast iron)
Motor housing	EN-GJL-250, painted
Motor shaft / propeller shaft	1.4021 (AISI 420) / 1.4418 (AISI S165M)
Propeller	1.4571 (AISI 316Ti)
Fasteners	1.4401 (AISI 316)

Operating data

	50 Hz	60 Hz
Propeller diameter	185 - 650 mm	185 - 650 mm 7.3 - 25.6 in.
Motor power	up to 11 kW	up to 13 kW up to 17.5 hp
Motor efficiency	up to 87%	up to 88%
Mixing flow	up to 0.83 m ³ /s	up to 0.92 m ³ /s up to 14'600 USgpm



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Sulzer mixers designed to tackle digested sludge

The wastewater treatment plant of Crispijana, operated by the municipal water and sewage company Amvisa (Agua Municipales de Vitoria-Gasteiz, S.A.), treats the wastewater from the city of Vitoria-Gasteiz, Álava, Spain. The plant has a capacity of 120'000 m³/day, 500'000 population equivalent. It has undergone a number of changes and extensions since it was opened in 1984. During the latest upgrade in 2016, the mixing problem caused by the high sludge content was solved.



With the two new mixers in action, our customer can see the sludge moving and small bubbles forming in the digestion tank. This proves that the RW 4814 mixers are doing what they are supposed to.

Iván Quintela, Area Coordinator, Municipal Water, Sulzer Pumps Wastewater Spain, S.A.

Product data

Three submersible mixers RW 4814 A110/4 – two in operation and one as stand-by – were installed in a round secondary digester with the following dimensions

- Diameter 20 m
- Circular sidewalls depth 4 m
- Center depth of conical tank floor 2 m
- Water level 4-6 m



The challenge

Four submersible mixers of type ABS RW 6533 A100/12 were installed in the Crispijana WWTP several years back. Before this, the treatment plant used another manufacturer's brand. After a short period of time, however, all mixers started experiencing frequent bearing failures and motor burnouts. This was due to the high concentration of sludge, which makes mixing a tough task.

The solution

After thorough discussions with the customer, Sulzer suggested and installed two new submersible mixers of type ABS RW 4814 A110/4 to replace the ones that did not achieve the required mixing result. The new mixers are specifically designed for highly concentrated and thickened sludge. A gear box allowing low speed rotation makes the mixing of sludge possible. After three years in operation, the mixers perform well and deliver very good mixing results.

Customer benefit

The RW 4814 mixers are well suited for digested sludge with a concentration of more than 6%. The homogenization in the digester has improved significantly. The plant can now benefit from

- reduced repair costs
- efficient and trouble-free operation
- more than 30% savings in power consumption (rated current) of digester mixing
- previously, two mixers consumed 63.9 A – today two mixers consume 43.6 A

[Read more](#) about the RW mixers.

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