

Technical  
Specification



Flygt 3102, 50Hz

**FLYGT**  
a xylem brand



# Table of Contents

<b>C-pump, Standard Motor</b> .....	2
Product description.....	2
Motor rating and performance curves.....	4
<b>C-pump, Premium Efficiency Motor</b> .....	6
Product description.....	6
Motor rating and performance curves.....	8
<b>D-pump</b> .....	10
Product description.....	10
Motor rating and performance curves.....	12
<b>F-pump</b> .....	15
Product description.....	15
Motor rating and performance curves.....	17
<b>M-pump</b> .....	19
Product description.....	19
Motor rating and performance curves.....	21
<b>N-pump, Standard Motor</b> .....	24
Product description.....	24
Motor rating and performance curves.....	26
<b>N-pump, Premium Efficiency Motor (IE3)</b> .....	30
Product description.....	30
Motor rating and performance curves 3102.800/.810.....	32
Motor rating and performance curves 3102.820/.830.....	35
Motor rating and performance curves 3102.900/.910.....	38
<b>Dimensions and Weight</b> .....	42
Drawings, C-pump.....	42
Drawings, D-pump.....	46
Drawings, F-pump.....	47
Drawings, M-pump.....	48
Drawings, N-pump.....	49

# C-pump, Standard Motor

## Product description

### Usage

Submersible pump for pumping clean water, surface water and waste water containing solids or long-fibred material.

### Denomination

Type	Non explosion proof version	Explosion proof version	Pressure class	Installation types
Standard	3102.181	3102.090	MT – Medium head	P, S, T, Z

The pump can be used in the following installations:

- P** Semi permanent, wet well arrangement with pump installed on two guide bars with automatic connection to discharge.
- S** Portable semi permanent, wet well arrangement with hose coupling or flange for connection to discharge pipeline.
- T** Vertical permanent, dry well arrangement with flange connection to suction and discharge piping.
- Z** Horizontal permanent, dry well arrangement with flange connection to suction and discharge piping.

### Application Limits

Feature	Description
Liquid temperature	Maximum 40°C, (104°F)
Liquid temperature, warm water version	Maximum 70°C, (158°F)
Depth of immersion	Maximum 20 m (65 ft)
pH of the pumped liquid	5.5 - 14
Liquid density	Maximum 1100 kg/m <sup>3</sup>

### Motor data

Feature	Description
Motor type	Squirrel-cage induction motor
Frequency	50 Hz
Power supply	
Starting method	<ul style="list-style-type: none"> <li>• Direct on-line</li> <li>• Star-delta</li> </ul>
Number of starts per hour	Maximum 30
Code compliance	IEC 60034-1
Rated output variation	±10%

Feature	Description
Voltage variation	<ul style="list-style-type: none"> <li>Continuously running: Maximum <math>\pm 5\%</math></li> <li>Intermittent running: Maximum <math>\pm 10\%</math></li> </ul>
Voltage imbalance between phases	Maximum 2%
Insulation class	H (180°C, 356°F)

### Cables

Application	Type	Denomination
Direct-on-line start	SUBCAB® heavy-duty submersible cable	4G2.5 mm <sup>2</sup> 4G2.5+2×1.5 mm <sup>2</sup>
Y/D start	SUBCAB® heavy-duty submersible cable	7G2.5 mm <sup>2</sup> 7G2.5+2×1.5 mm <sup>2</sup>

### Monitoring Equipment

Thermal contacts opening temperature 125° C (257° F)

### Materials

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	35B	GJL-250
Pump housing, alternative 1	Cast iron, gray	35B	GJL-250
Pump housing, alternative 2	Cast iron, gray	ASTM A 48 NO 30B	GJL-200
Impeller	Cast iron, gray	35B	GJL-250
Wear ring, alternative 1	Rubber material, NBR		
Wear ring, alternative 2	Bronze	C924	CC491K, CC492K
Lifting handle	Stainless steel	AISI 316L	1.4404, 1.4432, ...
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A4	AISI 316L, 316, 316Ti	1.4401, 1.4404, ...
O-rings, alternative 1	Nitrile rubber (NBR) 70° IRH		
O-rings, alternative 2	Fluorinated rubber (FPM) 70° IRH		
Oil, part no 901752	Medical white oil of paraffin type. Fulfills FDA 172.878 (a)		

**Table 1: Mechanical face seals**

Alternative	Inner seal	Outer seal
1	Aluminum oxide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
2	Aluminum oxide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide

C-pump, Standard Motor

Alternative	Inner seal	Outer seal
3	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
4	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide

Surface Treatment

Priming	Finish
Painted with a primer, see internal standard M0700.00.0002	Navy gray color NCS 5804-B07G. Two-component high-solid top coating, see internal standard M0700.00.0004 for standard painting and M0700.00.0008 for special painting.

Options

- Warm liquid version (non-explosion proof versions)
- Leakage sensor in the stator housing (FLS)
- Leakage sensor in the oil housing (CLS)
- Surface treatment (Epoxy)
- Zinc anodes
- Other cables

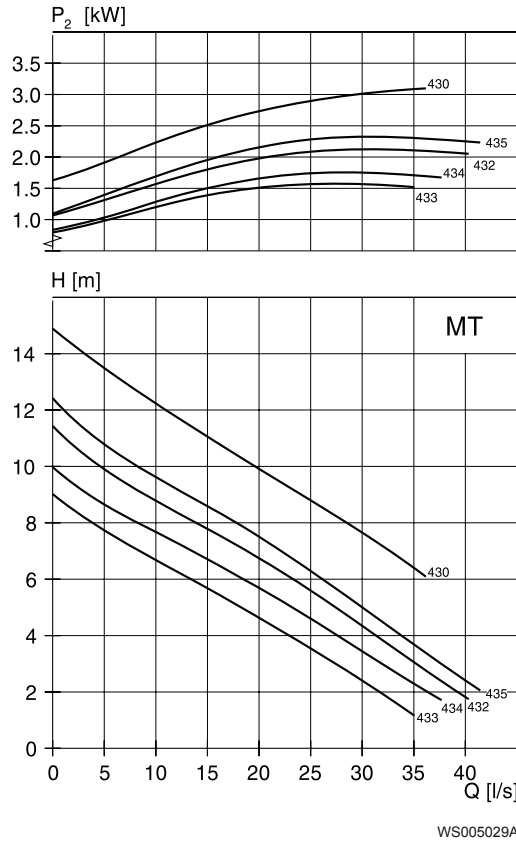
Accessories

Discharge connections, adapters, hose connections, and other mechanical accessories.  
 Electrical accessories such as pump controller, control panels, starters, monitoring relays, cables.

## Motor rating and performance curves

Star-delta starting current is 1/3 of Direct on-line starting current.

MT



**Table 2: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolution s per minute, rpm	Rated current, A	Starting current, A	Power factor, cos φ	Impeller thoughlet, mm	Installation
2,4	3,2	432	1455	5,1	33	0,8	76	T,Z
2,4	3,2	433	1455	5,1	33	0,8	76	T,Z
2,4	3,2	434	1455	5,1	33	0,8	76	T,Z
2,4	3,2	435	1455	5,1	33	0,8	76	T,Z
3,1	4,2	430	1440	6,3	33	0,85	76	P,S
3,1	4,2	432	1440	6,3	33	0,85	76	P,S
3,1	4,2	433	1440	6,3	33	0,85	76	P,S
3,1	4,2	434	1440	6,3	33	0,85	76	P,S
3,1	4,2	435	1440	6,3	33	0,85	76	P,S

# C-pump, Premium Efficiency Motor

## Product description

### Usage

Submersible pump for pumping clean water, surface water and waste water containing solids or long-fibred material.

### Denomination

Type	Non explosion proof version	Explosion proof version	Pressure class	Installation types
Standard	3102.800	3102.810	<ul style="list-style-type: none"> <li>MT – Medium head</li> </ul>	P, S, T, Z

The pump can be used in the following installations:

- P** Semi permanent, wet well arrangement with pump installed on two guide bars with automatic connection to discharge.
- S** Portable semi permanent, wet well arrangement with hose coupling or flange for connection to discharge pipeline.
- T** Vertical permanent, dry well arrangement with flange connection to suction and discharge piping.
- Z** Horizontal permanent, dry well arrangement with flange connection to suction and discharge piping.

### Application Limits

Feature	Description
Liquid temperature	Maximum 40°C, (104°F)
Liquid temperature, warm water version	Maximum 70°C, (158°F)
Depth of immersion	Maximum 20 m (65 ft)
pH of the pumped liquid	5.5 - 14
Liquid density	Maximum 1100 kg/m <sup>3</sup>

### Motor data

Feature	Description
Motor type	Line started permanent magnet motor (LSPM)
Frequency	50 Hz
Power supply	3-phase
Starting method	<ul style="list-style-type: none"> <li>Direct on-line</li> <li>Star-delta</li> </ul>
Number of starts per hour	Maximum 30
Code compliance	IEC 60034-1
Rated output variation	±10%



Feature	Description
Voltage variation	<ul style="list-style-type: none"> <li>Continuously running: Maximum <math>\pm 5\%</math></li> <li>Intermittent running: Maximum <math>\pm 10\%</math></li> </ul>
Voltage imbalance between phases	Maximum 2%
Insulation class	H (180°C, 356°F)

**Cables**

Application	Type	Denomination
Direct-on-line start	SUBCAB® heavy-duty submersible cable	4G2.5+2×1.5 mm <sup>2</sup> S3×2.5 mm <sup>2</sup> S6×2.5+2×1.5 mm <sup>2</sup>
Y/D start	SUBCAB® heavy-duty submersible cable	7G2.5+2×1.5 mm <sup>2</sup>
	Screened SUBCAB® heavy-duty submersible cable	S3×2.5+3×2.5/3+4×1.5 mm <sup>2</sup>

**Monitoring Equipment**

Thermal contacts opening temperature 125° C (257° F)

**Materials**

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	35B	GJL-250
Pump housing, alternative 1	Cast iron, gray	35B	GJL-250
Pump housing, alternative 2	Cast iron, gray	ASTM A 48 NO 30B	GJL-200
Impeller	Cast iron, gray	35B	GJL-250
Wear ring, alternative 1	Rubber material, NBR	-	-
Wear ring, alternative 2	Bronze	C924	CC491K, CC492K
Lifting handle	Stainless steel	AISI 316L	1.4404, 1.4432, ...
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A4	AISI 316L, 316, 316Ti	1.4401, 1.4404, ...
O-rings, alternative 1	Nitrile rubber (NBR) 70° IRH	-	-
O-rings, alternative 2	Fluorinated rubber (FPM) 70° IRH	-	-
Oil, part no 901752	Medical white oil of paraffin type. Fulfills FDA 172.878 (a)	-	-

**Table 3: Mechanical face seals**

Alternative	Inner seal	Outer seal
1	Aluminum oxide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide

C-pump, Premium Efficiency Motor

Alternative	Inner seal	Outer seal
2	Aluminum oxide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide
3	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
4	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide

Surface Treatment

Priming	Finish
Painted with a primer, see internal standard M0700.00.0002	Navy gray color NCS 5804-B07G. Two-component high-solid top coating, see internal standard M0700.00.0004 for standard painting and M0700.00.0008 for special painting.

Options

- Leakage sensor in the stator housing (FLS)
- Leakage sensor in the oil housing (CLS)
- Surface treatment (Epoxy)
- Zinc anodes
- Other cables

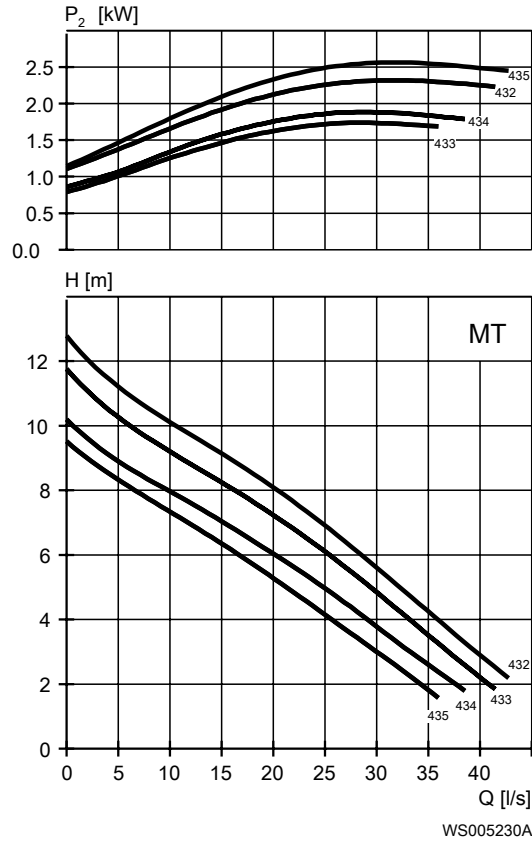
Accessories

Discharge connections, adapters, hose connections, and other mechanical accessories.  
 Electrical accessories such as pump controller, control panels, starters, monitoring relays, cables.

## Motor rating and performance curves

Star-delta starting current is 1/3 of Direct on-line starting current.

MT



**Table 4: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, cos φ	Installation
3.5	4.7	432	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	433	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	434	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	435	1500	6.3	40	.88	P,S,T,Z

# D-pump

## Product description

### Usage

Submersible pump for pumping liquids containing solids, abrasive media or low volumes at high heads.

### Denomination

Type	Non explosion proof version	Explosion proof version	Pressure class	Installation types
Standard	3102.181	3102.090	<ul style="list-style-type: none"> <li>• MT – Medium head</li> <li>• HT – High head</li> </ul>	P, T, Z

The pump can be used in the following installations:

- P** Semi permanent, wet well arrangement with pump installed on two guide bars with automatic connection to discharge.
- T** Vertical permanent, dry well arrangement with flange connection to suction and discharge piping.
- Z** Horizontal permanent, dry well arrangement with flange connection to suction and discharge piping.

### Application Limits

Feature	Description
Liquid temperature	Maximum 40°C, (104°F)
Liquid temperature, warm water version	Maximum 70°C, (158°F)
Depth of immersion	Maximum 20 m (65 ft)
pH of the pumped liquid	5.5 - 14
Liquid density	Maximum 1100 kg/m <sup>3</sup>

### Motor data

Feature	Description
Motor type	Squirrel-cage induction motor
Frequency	50 Hz
Power supply	3-phase
Starting method	<ul style="list-style-type: none"> <li>• Direct on-line</li> <li>• Star-delta</li> </ul>
Number of starts per hour	Maximum 30
Code compliance	IEC 60034-1
Rated output variation	±10%
Voltage variation	<ul style="list-style-type: none"> <li>• Continuously running: Maximum ±5%</li> <li>• Intermittent running: Maximum ±10%</li> </ul>

Feature	Description
Voltage imbalance between phases	Maximum 2%
Insulation class	H (180°C, 356°F)

### Cables

Application	Type	Denomination
Direct-on-line start	SUBCAB® heavy-duty submersible cable	4G2.5 mm <sup>2</sup> 4G2.5+2×1.5 mm <sup>2</sup>
Y/D start	SUBCAB® heavy-duty submersible cable	7G2.5 mm <sup>2</sup> 7G2.5+2×1.5 mm <sup>2</sup>

### Monitoring Equipment

Thermal contacts opening temperature 125° C (257° F)

### Materials

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	35B	GJL-250
Pump housing	Cast iron, gray	35B	GJL-250
Impeller	Cast iron, gray	35B	GJL-250
Lifting handle	Stainless steel	AISI 316L	1.4404, 1.4432, ...
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A4	AISI 316L, 316, 316Ti	1.4401, 1.4404, ...
O-rings, alternative 1	Nitrile rubber (NBR) 70° IRH	-	-
O-rings, alternative 2	Fluorinated rubber (FPM) 70° IRH	-	-
Oil, part no 901752	Medical white oil of paraffin type. Fulfills FDA 172.878 (a)	-	-

**Table 5: Mechanical face seals**

Alternative	Inner seal	Outer seal
1	Aluminum oxide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
2	Aluminum oxide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide
3	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
4	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide

D-pump

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Surface Treatment

Priming	Finish
Painted with a primer, see internal standard M0700.00.0002	Navy gray color NCS 5804-B07G. Two-component high-solid top coating, see internal standard M0700.00.0004 for standard painting and M0700.00.0008 for special painting.

Options

- Warm liquid version (non-explosion proof versions)
- Leakage sensor in the stator housing (FLS)
- Leakage sensor in the oil housing (CLS)
- Surface treatment (Epoxy)
- Zinc anodes
- Other cables

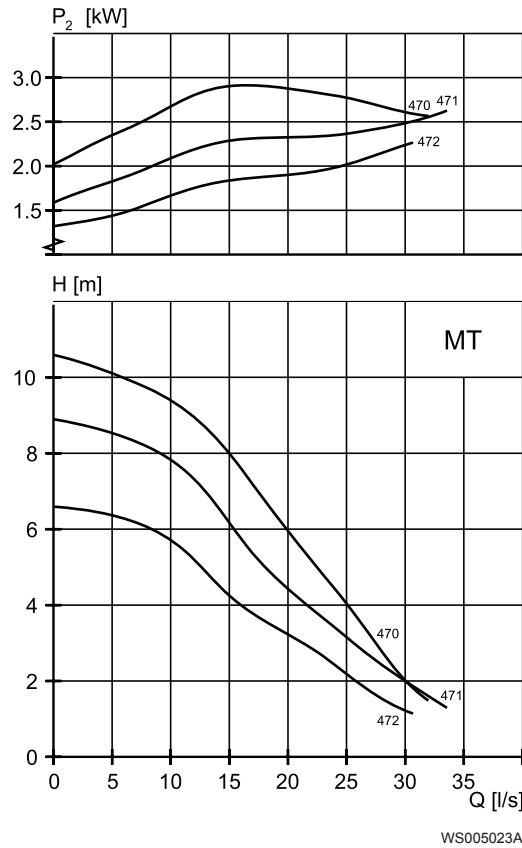
Accessories

Discharge connections, adapters, hose connections, and other mechanical accessories.  
Electrical accessories such as pump controller, control panels, starters, monitoring relays, cables.

## Motor rating and performance curves

Star-delta starting current is 1/3 of Direct on-line starting current.

MT

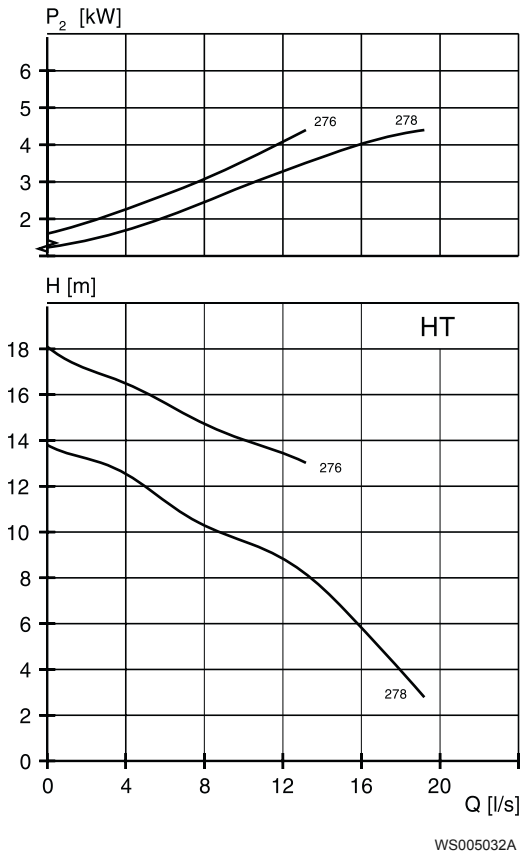


**Table 6: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolution s per minute, rpm	Rated current, A	Starting current, A	Power factor, cos φ	Impeller throughlet, mm	Installation
3,1	4,2	470	1440	6,3	33	0,85	-	P
3,1	4,2	471	1440	6,3	33	0,85	100	P
3,1	4,2	472	1440	6,3	33	0,85	100	P

D-pump

HT



**Table 7: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolution s per minute, rpm	Rated current, A	Starting current, A	Power factor, cos $\varphi$	Impeller throughlet, mm	Installation
4,2	5,6	276	2850	8,2	52	0,94	52	P
4,2	5,6	278	2850	8,2	52	0,94	52	P



# F-pump

## Product description

### Usage

Submersible pump for pumping liquid manure, or heavily contaminated sewage and sludge. The impeller is S-shaped and fitted with a cutting device.

### Denomination

Type	Non explosion proof version	Explosion proof version	Pressure class	Installation types
Standard	3102.181	3102.090	LT – Low head	P, S

The pump can be used in the following installations:

- P** Semi permanent, wet well arrangement with pump installed on two guide bars with automatic connection to discharge.
- S** Portable semi permanent, wet well arrangement with hose coupling or flange for connection to discharge pipeline.

### Application Limits

Feature	Description
Liquid temperature	Maximum 40°C, (104°F)
Liquid temperature, warm water version	Maximum 70°C, (158°F)
Depth of immersion	Maximum 20 m (65 ft)
pH of the pumped liquid	5.5 - 14
Liquid density	Maximum 1100 kg/m <sup>3</sup>

### Motor data

Feature	Description
Motor type	Squirrel-cage induction motor
Frequency	50 Hz
Power supply	3-phase
Starting method	<ul style="list-style-type: none"> <li>• Direct on-line</li> <li>• Star-delta</li> </ul>
Number of starts per hour	Maximum 30
Code compliance	IEC 60034-1
Rated output variation	±10%
Voltage variation	<ul style="list-style-type: none"> <li>• Continuously running: Maximum ±5%</li> <li>• Intermittent running: Maximum ±10%</li> </ul>
Voltage imbalance between phases	Maximum 2%
Insulation class	H (180°C, 356°F)

F-pump

Cables

Application	Type	Denomination
Direct-on-line start	SUBCAB® heavy-duty submersible cable	4G2.5 mm <sup>2</sup> 4G2.5+2×1.5 mm <sup>2</sup>
Y/D start	SUBCAB® heavy-duty submersible cable	7G2.5 mm <sup>2</sup> 7G2.5+2×1.5 mm <sup>2</sup>

Monitoring Equipment

Thermal contacts opening temperature 125° C (257° F)

Materials

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	35B	GJL-250
Pump housing	Cast iron, gray	35B	GJL-250
Impeller	Cast iron, nodular	-	GJS-400-18-LT
Suction cover	Cast iron, Hard-Iron™	A 532 IIIA	GJN-HB555(XCR23)
Lifting handle	Stainless steel	AISI 316L	1.4404, 1.4432, ...
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A4	AISI 316L, 316, 316Ti	1.4401, 1.4404, ...
O-rings, alternative 1	Nitrile rubber (NBR) 70° IRH	-	-
O-rings, alternative 2	Fluorinated rubber (FPM) 70° IRH	-	-
Oil, part no 901752	Medical white oil of paraffin type. Fulfills FDA 172.878 (a)	-	-

**Table 8: Mechanical face seals**

Alternative	Inner seal	Outer seal
1	Aluminum oxide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
2	Aluminum oxide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide
3	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
4	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide

Surface Treatment

Priming	Finish
Painted with a primer, see internal standard M0700.00.0002	Navy gray color NCS 5804-B07G. Two-component high-solid top coating, see internal standard M0700.00.0004 for standard painting and M0700.00.0008 for special painting.

Options

- Warm liquid version (non-explosion proof versions)
- Leakage sensor in the stator housing (FLS)
- Leakage sensor in the oil housing (CLS)
- Surface treatment (Epoxy)
- Zinc anodes
- Other cables

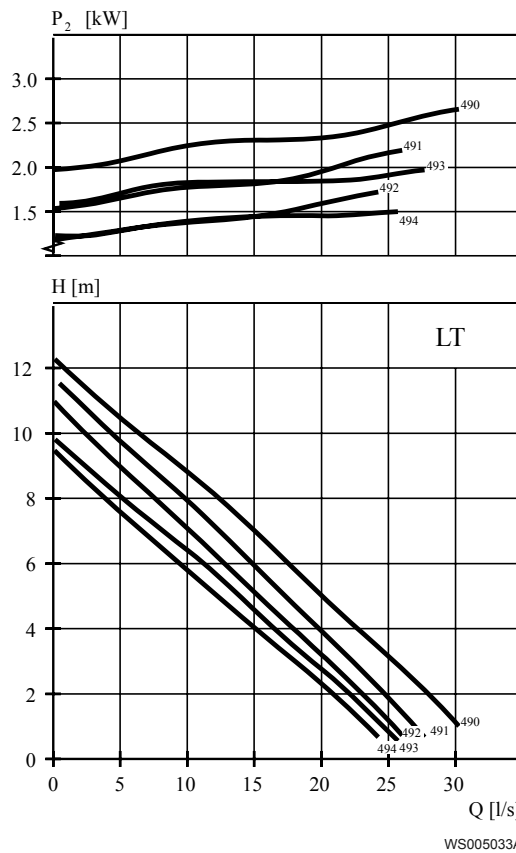
Accessories

Discharge connections, adapters, hose connections, and other mechanical accessories.  
Electrical accessories such as pump controller, control panels, starters, monitoring relays, cables.

## Motor rating and performance curves

Star-delta starting current is 1/3 of Direct on-line starting current.

LT



**Table 9: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, cos φ	Installation
3,1	4,2	490	1440	6,3	33	0,85	P,S
3,1	4,2	491	1440	6,3	33	0,85	P,S
3,1	4,2	492	1440	6,3	33	0,85	P,S
3,1	4,2	493	1440	6,3	33	0,85	P,S

F-pump

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Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
3,1	4,2	494	1440	6,3	33	0,85	P,S

# M-pump

## Product description

### Usage

Submersible pump for pumping waste water containing solids that need to be macerated. The impeller is equipped with a grinder device.

### Denomination

Type	Non explosion proof version	Explosion proof version	Pressure class	Installation types
Standard	3102.170	3102.890	<ul style="list-style-type: none"> <li>LT – Low head</li> <li>HT – High head</li> </ul>	F, H, P

The pump can be used in the following installations:

- F** Free standing semi permanent, wet well arrangement where the pump is placed on a firm surface.
- H** Semi permanent, wet well quick connection suspended arrangement, incorporating integral non-return valve.
- P** Semi permanent, wet well arrangement with pump installed on two guide bars with automatic connection to discharge.

### Application Limits

Feature	Description
Liquid temperature	Maximum 40°C, (104°F)
Depth of immersion	Maximum 20 m (65 ft)
pH of the pumped liquid	5.5 - 14
Liquid density	Maximum 1100 kg/m <sup>3</sup>

### Motor data

Feature	Description
Motor type	Squirrel-cage induction motor
Frequency	50 Hz
Power supply	3-phase
Starting method	<ul style="list-style-type: none"> <li>Direct on-line</li> <li>Star-delta</li> </ul>
Number of starts per hour	Maximum 30
Code compliance	IEC 60034-1
Rated output variation	±10%
Voltage variation	<ul style="list-style-type: none"> <li>Continuously running: Maximum ±5%</li> <li>Intermittent running: Maximum ±10%</li> </ul>
Voltage imbalance between phases	Maximum 2%

M-pump

Feature	Description
Insulation class	H (180°C, 356°F)

Cables

Application	Type	Denomination
Direct-on-line start	SUBCAB® heavy-duty submersible cable	4G2.5 mm <sup>2</sup> 4G2.5+2×1.5 mm <sup>2</sup>
Y/D start	SUBCAB® heavy-duty submersible cable	7G2.5 mm <sup>2</sup> 7G2.5+2×1.5 mm <sup>2</sup>

Monitoring Equipment

Thermal contacts opening temperature 125° C (257° F)

Materials

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	35B	GJL-250
Pump housing	Cast iron, gray	35B	GJL-250
Impeller	Cast iron, gray	30B	GJL-200
Cutter wheel	Cast iron, Hard-Iron™	A 532 IIIA	GJN-HB555(XCR23)
Cutter plate	Stainless steel	-	-
Lifting handle	Stainless steel	AISI 316L	1.4404,1.4432, ...
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A4	AISI 316L, 316, 316Ti	1.4401,1.4404, ...
O-rings	Nitrile rubber (NBR) 70° IRH	-	-
Oil, part no 901752	Medical white oil of paraffin type. Fulfills FDA 172.878 (a)	-	-

**Table 10: Mechanical face seals**

Alternative	Inner seal	Outer seal
1	Aluminum oxide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
2	Aluminum oxide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide
3	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
4	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide

**Surface Treatment**

Priming	Finish
Painted with a primer, see internal standard M0700.00.0002	Navy gray color NCS 5804-B07G. Two-component high-solid top coating, see internal standard M0700.00.0004 for standard painting and M0700.00.0008 for special painting.

**Options**

- Leakage sensor in the stator housing (FLS)
- Leakage sensor in the oil housing (CLS)
- Surface treatment (Epoxy)
- Zinc anodes
- Other cables

**Accessories**

Discharge connections, adapters, hose connections, and other mechanical accessories.

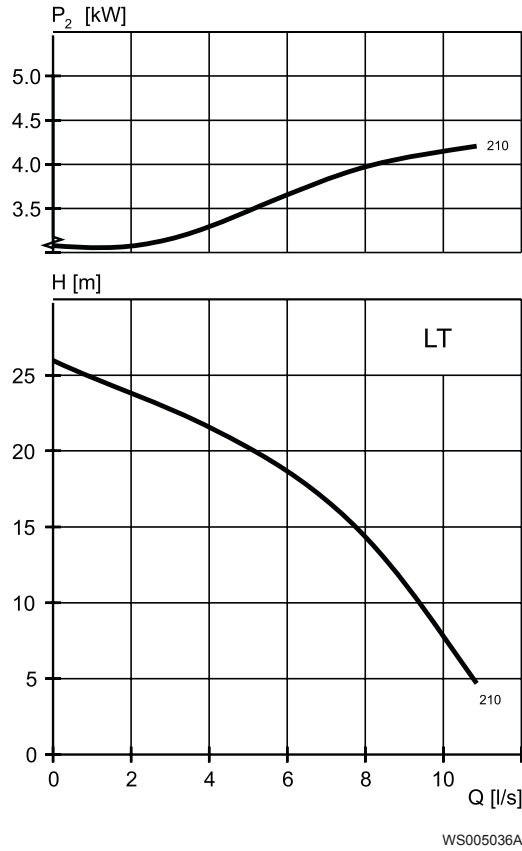
Electrical accessories such as pump controller, control panels, starters, monitoring relays, cables.

**Motor rating and performance curves**

Star-delta starting current is 1/3 of Direct on-line starting current.

M-pump

LT

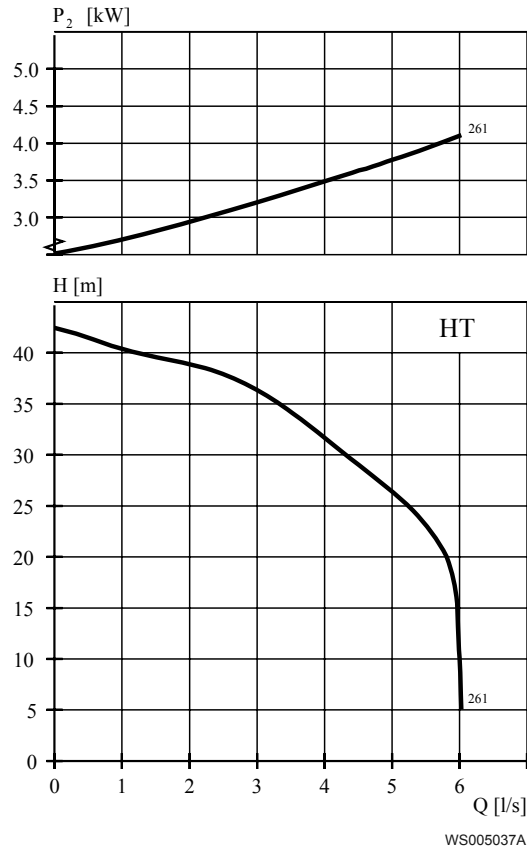


**Table 11: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
4,4	5,9	210	2885	8,7	72	0,89	F,H,P



HT



**Table 12: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
4,4	5,9	261	2885	8,7	72	0,89	F,H,P

# N-pump, Standard Motor

## Product description

### Usage

The submersible pump is designed for pumping clean water, surface water, and wastewater containing solids or long-fibred material.

### Denomination

Type	Non explosion proof version	Explosion proof version	Pressure class	Installation types
Adaptive	3102.160	3102.190	<ul style="list-style-type: none"> <li>• LT – Low head</li> <li>• MT – Medium head</li> <li>• SH – Super head</li> </ul>	P, S, T, Z
Standard	3102.181	3102.090		L, P, S, T, Z
Hard-Iron™	3102.185	3102.095		P, S, T, Z

The pump can be used in the following installations:

- L** Semi permanent, wet well column pipe arrangement where the well is divided into a suction part and a discharge part. Pump end equipped with guide vanes.
- P** Semi permanent, wet well arrangement with pump installed on two guide bars with automatic connection to discharge.
- S** Portable semi permanent, wet well arrangement with hose coupling or flange for connection to discharge pipeline.
- T** Vertical permanent, dry well arrangement with flange connection to suction and discharge piping.
- Z** Horizontal permanent, dry well arrangement with flange connection to suction and discharge piping.

### Application Limits

Feature	Description
Liquid temperature	Maximum 40°C, (104°F)
Liquid temperature, warm water version	Maximum 70°C, (158°F)
Depth of immersion	Maximum 20 m (65 ft)
pH of the pumped liquid	5.5 - 14
Liquid density	Maximum 1100 kg/m <sup>3</sup>

### Motor data

Feature	Description
Motor type	Squirrel-cage induction motor
Frequency	50 Hz
Power supply	3-phase
Starting method	<ul style="list-style-type: none"> <li>• Direct on-line</li> <li>• Star-delta</li> </ul>
Number of starts per hour	Maximum 30

Feature	Description
Code compliance	IEC 60034-1
Rated output variation	±10%
Voltage variation	<ul style="list-style-type: none"> <li>Continuously running: Maximum ±5%</li> <li>Intermittent running: Maximum ±10%</li> </ul>
Voltage imbalance between phases	Maximum 2%
Insulation class	H (180°C, 356°F)

### Cables

Application	Type	Denomination
Direct-on-line start	SUBCAB® heavy-duty submersible cable	4G2.5 mm <sup>2</sup>
	Screened SUBCAB® heavy-duty submersible cable	4G2.5+2×1.5 mm <sup>2</sup>
		S3×2.5 mm <sup>2</sup> S6×2.5+2×1.5 mm <sup>2</sup>
Y/D start	SUBCAB® heavy-duty submersible cable	7G2.5+2×1.5 mm <sup>2</sup> S3×2.5+3×2.5/3+4×1.5 mm <sup>2</sup>

### Monitoring Equipment

Thermal contacts opening temperature 125° C (257° F)

### Materials

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	35B	GJL-250
Pump housing, alternative 1	Cast iron, gray	35B	GJL-250
Pump housing, alternative 2	Cast iron, gray	ASTM A 48 NO 30B	GJL-200
Impeller Alt 1	Cast iron, gray	35B	GJL-250
Impeller Alt 2	Cast iron, Hard-Iron™	A 532 IIIA	GJN-HB555(XCR23)
Insert ring Alt 1	Cast iron, gray	35B	GJL-250
Insert ring Alt 2	Cast iron, Hard-Iron™	A 532 IIIA	GJN-HB555(XCR23)
Lifting handle	Stainless steel	AISI 316L	1.4404, 1.4432, ...
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A4	AISI 316L, 316, 316Ti	1.4401, 1.4404, ...
O-rings, alternative 1	Nitrile rubber (NBR) 70° IRH	-	-
O-rings, alternative 2	Fluorinated rubber (FPM) 70° IRH	-	-

N-pump, Standard Motor

Denomination	Material	ASTM	EN
Oil, part no 901752	Medical white oil of paraffin type. Fulfills FDA 172.878 (a)	-	-

**Table 13: Mechanical face seals**

Alternative	Inner seal	Outer seal
1	Aluminum oxide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
2	Aluminum oxide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide
3	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
4	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide

**Surface Treatment**

Priming	Finish
Painted with a primer, see internal standard M0700.00.0002	Navy gray color NCS 5804-B07G. Two-component high-solid top coating, see internal standard M0700.00.0004 for standard painting and M0700.00.0008 for special painting.

**Options**

- Warm liquid version (non-explosion proof versions)
- Leakage sensor in the stator housing (FLS)
- Leakage sensor in the oil housing (CLS)
- Surface treatment (Epoxy)
- Zinc anodes
- Other cables

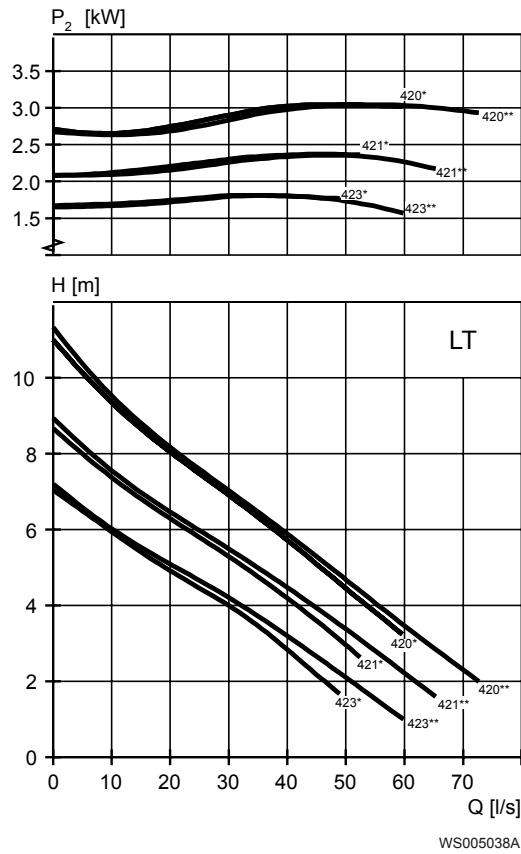
**Accessories**

Discharge connections, adapters, hose connections, and other mechanical accessories.  
 Electrical accessories such as pump controller, control panels, starters, monitoring relays, cables.

**Motor rating and performance curves**

Star-delta starting current is 1/3 of Direct on-line starting current.

LT



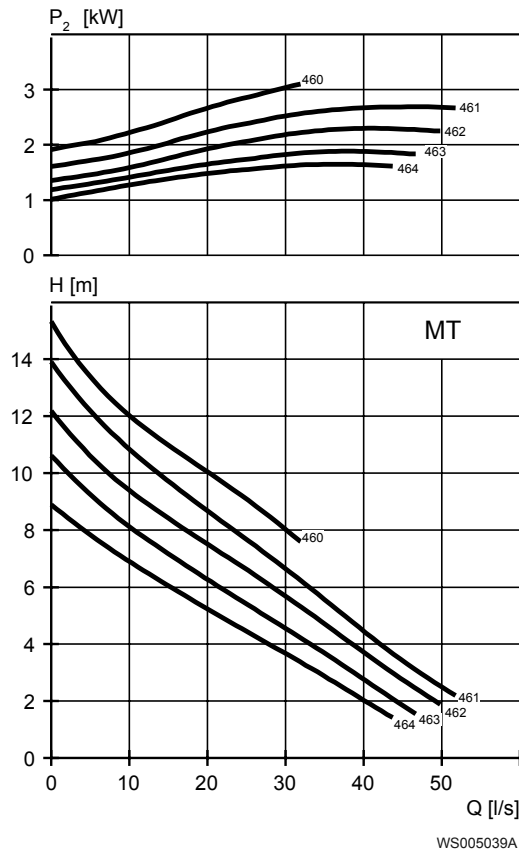
\* Pumphousing with outlet 100 mm

\*\* Pumphousing with outlet 150 mm

**Table 14: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
2,4	3,2	421	1460	5,7	40	0,71	T,Z
2,4	3,2	423	1460	5,7	40	0,71	T,Z
3,1	4,2	420	1450	6,8	40	0,78	P,S
3,1	4,2	421	1450	6,8	40	0,78	P,S
3,1	4,2	423	1450	6,8	40	0,78	P,S

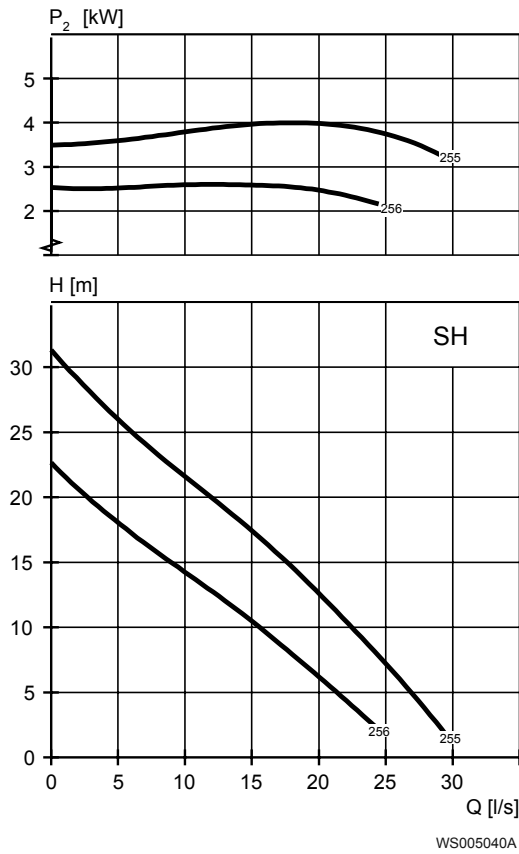
MT



**Table 15: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, cos φ	Installation
2,4	3,2	462	1460	5,7	40	0,71	T,Z
2,4	3,2	463	1460	5,7	40	0,71	T,Z
2,4	3,2	464	1460	5,7	40	0,71	T,Z
3,1	4,2	460	1450	6,8	40	0,78	P,S
3,1	4,2	461	1450	6,8	40	0,78	P,S
3,1	4,2	462	1450	6,8	40	0,78	P,S
3,1	4,2	463	1450	6,8	40	0,78	P,S
3,1	4,2	464	1450	6,8	40	0,78	P,S

SH



**Table 16: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
4,2	5,6	255	2850	8,2	52	0,94	P,S
4,2	5,6	256	2850	8,2	52	0,94	T,Z

# N-pump, Premium Efficiency Motor (IE3)

## Product description

### Usage

The submersible pump is designed for pumping clean water, surface water, and wastewater containing solids or long-fibred material.

### Denomination

Type	Non explosion proof version	Explosion proof version	Pressure class	Installation types
Standard	3102.800	3102.810	<ul style="list-style-type: none"> <li>• LT – Low head</li> <li>• MT – Medium head</li> <li>• SH – Super head</li> </ul>	P, S, T, Z
Hard-Iron™	3102.820	3102.820		
Adaptive	3102.900	3102.910		

The pump can be used in the following installations:

- P** Semi permanent, wet well arrangement with pump installed on two guide bars with automatic connection to discharge.
- S** Portable semi permanent, wet well arrangement with hose coupling or flange for connection to discharge pipeline.
- T** Vertical permanent, dry well arrangement with flange connection to suction and discharge piping.
- Z** Horizontal permanent, dry well arrangement with flange connection to suction and discharge piping.

### Application Limits

Feature	Description
Liquid temperature	Maximum 40°C, (104°F)
Liquid temperature, warm water version	Maximum 70°C, (158°F)
Depth of immersion	Maximum 20 m (65 ft)
pH of the pumped liquid	5.5 - 14
Liquid density	Maximum 1100 kg/m <sup>3</sup>

### Motor data

Feature	Description
Motor type	Line started permanent magnet motor (LSPM)
Frequency	50 Hz
Power supply	3-phase
Starting method	<ul style="list-style-type: none"> <li>• Direct on-line</li> <li>• Star-delta</li> </ul>
Number of starts per hour	Maximum 30



Feature	Description
Code compliance	IEC 60034-1
Rated output variation	±10%
Voltage variation	<ul style="list-style-type: none"> <li>Continuously running: Maximum ±5%</li> <li>Intermittent running: Maximum ±10%</li> </ul>
Voltage imbalance between phases	Maximum 2%
Insulation class	H (180°C, 356°F)

Cables

Application	Type	Denomination
Direct-on-line start	SUBCAB® heavy-duty submersible cable	4G2.5 mm <sup>2</sup> 4G2.5+2×1.5 mm <sup>2</sup> 7G2.5 mm <sup>2</sup> 7G2.5+2×1.5 mm <sup>2</sup>
Y/D start	SUBCAB® heavy-duty submersible cable	7G2.5 mm <sup>2</sup> 7G2.5+2×1.5 mm <sup>2</sup>
	Screened SUBCAB® heavy-duty submersible cable	S3×2.5 mm <sup>2</sup> S3×2.5+3×2.5/3+4×1.5 mm <sup>2</sup> S6×2.5+2×1.5 mm <sup>2</sup>

Monitoring Equipment

Thermal contacts opening temperature 125° C (257° F)

Materials

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	35B	GJL-250
Pump housing, alternative 1	Cast iron, gray	35B	GJL-250
Pump housing, alternative 2	Cast iron, gray	ASTM A 48 NO 30B	GJL-200
Impeller Alt 1	Cast iron, gray	35B	GJL-250
Impeller Alt 2	Cast iron, Hard-Iron™	A 532 IIIA	GJN-HB555(XCR23)
Insert ring Alt 1	Cast iron, gray	35B	GJL-250
Insert ring Alt 2	Cast iron, Hard-Iron™	A 532 IIIA	GJN-HB555(XCR23)
Lifting handle	Stainless steel	AISI 316L	1.4404, 1.4432, ...
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A4	AISI 316L, 316, 316Ti	1.4401, 1.4404, ...
O-rings, alternative 1	Nitrile rubber (NBR) 70° IRH	-	-
O-rings, alternative 2	Fluorinated rubber (FPM) 70° IRH	-	-

N-pump, Premium Efficiency Motor (IE3)

Denomination	Material	ASTM	EN
Oil, part no 901752	Medical white oil of paraffin type. Fulfills FDA 172.878 (a)	-	-

**Table 17: Mechanical face seals**

Alternative	Inner seal	Outer seal
1	Aluminum oxide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
2	Aluminum oxide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide
3	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Aluminum oxide/ Corrosion resistant cemented carbide
4	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide

**Surface Treatment**

Priming	Finish
Painted with a primer, see internal standard M0700.00.0002	Navy gray color NCS 5804-B07G. Two-component high-solid top coating, see internal standard M0700.00.0004 for standard painting and M0700.00.0008 for special painting.

**Options**

- Leakage sensor in the stator housing (FLS)
- Leakage sensor in the oil housing (CLS)
- Surface treatment (Epoxy)
- Zinc anodes
- Other cables

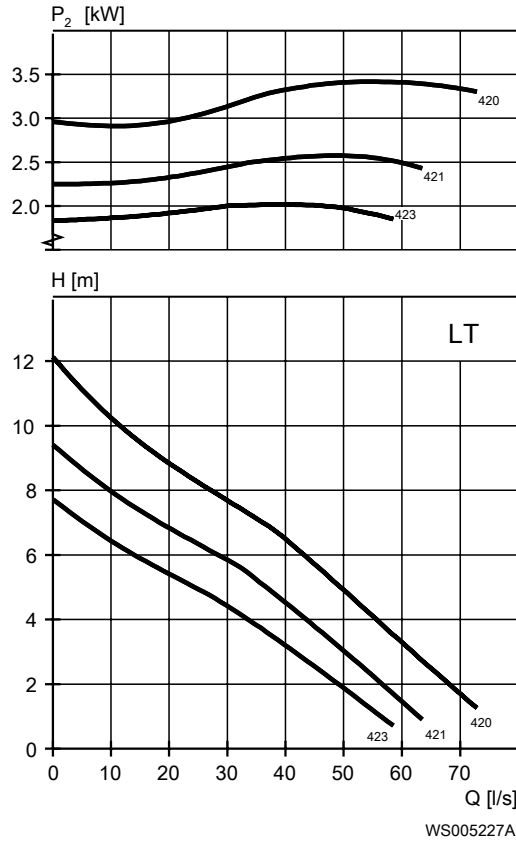
**Accessories**

Discharge connections, adapters, hose connections, and other mechanical accessories. Electrical accessories such as pump controller, control panels, starters, monitoring relays, cables.

## Motor rating and performance curves 3102.800/.810

Star-delta starting current is 1/3 of Direct on-line starting current.

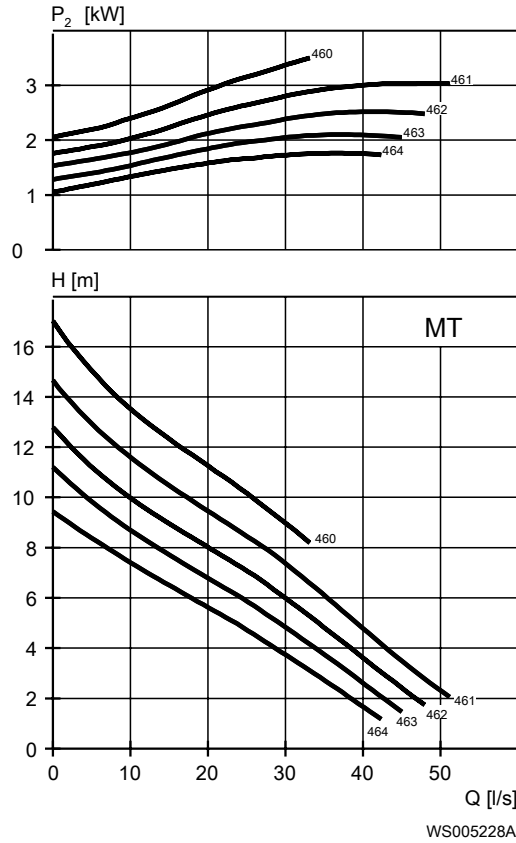
LT



**Table 18: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
3.5	4.7	420	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	421	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	423	1500	6.3	40	.88	P,S,T,Z

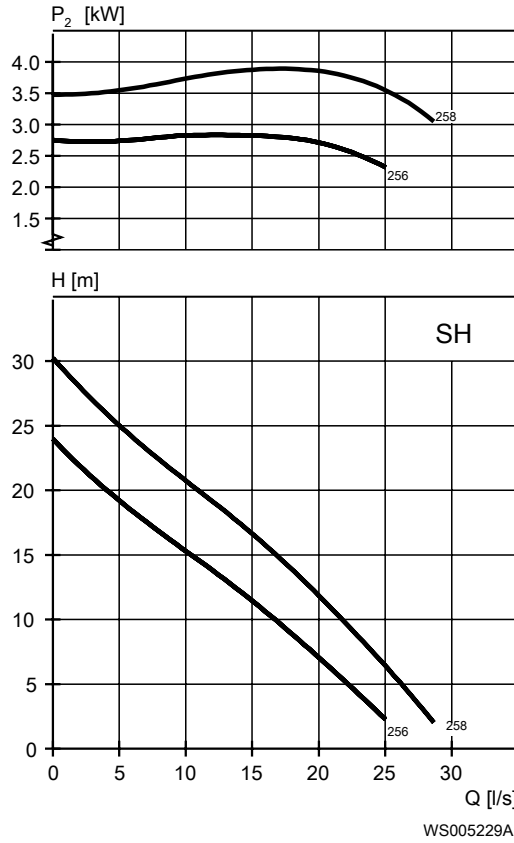
MT



**Table 19: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, cos φ	Installation
3.5	4.7	460	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	461	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	462	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	463	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	464	1500	6.3	40	.88	P,S,T,Z

SH



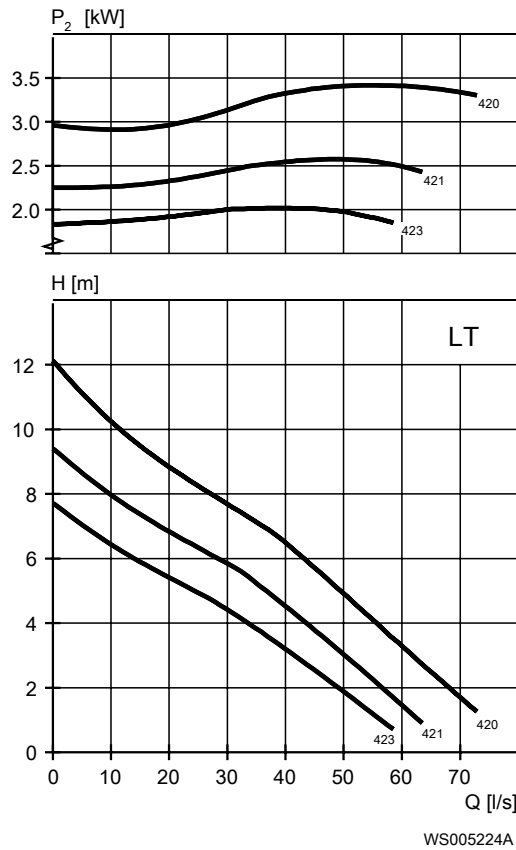
**Table 20: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
2.8	3.8	256	3000	5.9	64	.77	T,Z
4.5	6	256	3000	8.5	64	.86	P,S
4.5	6	258	3000	8.5	64	.86	P,S

## Motor rating and performance curves 3102.820/.830

Star-delta starting current is 1/3 of Direct on-line starting current.

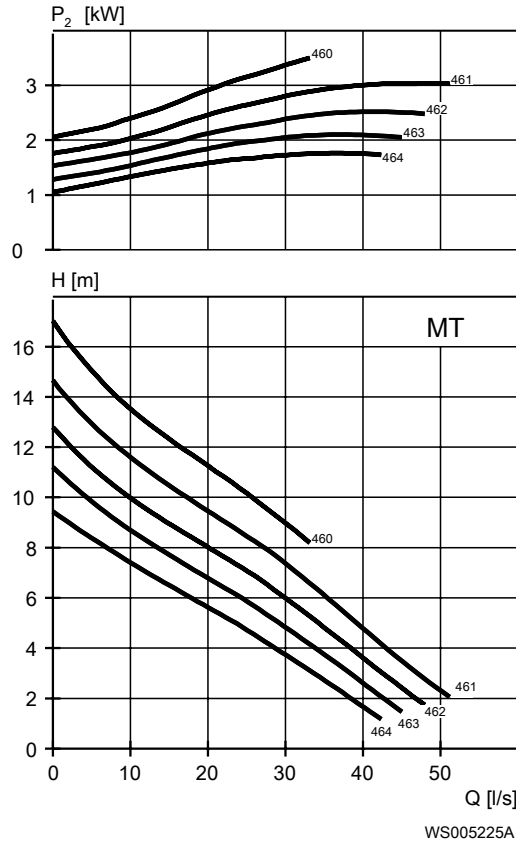
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**Table 21: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
3.5	4.7	420	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	421	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	423	1500	6.3	40	.88	P,S,T,Z

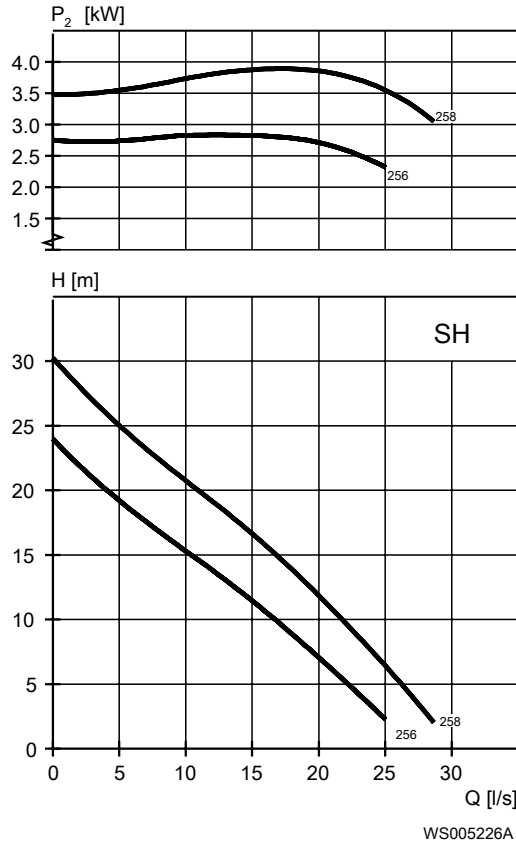
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**Table 22: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, cos φ	Installation
3.5	4.7	460	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	461	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	462	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	463	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	464	1500	6.3	40	.88	P,S,T,Z

SH



**Table 23: 400 V, 50 Hz, 3-phase**

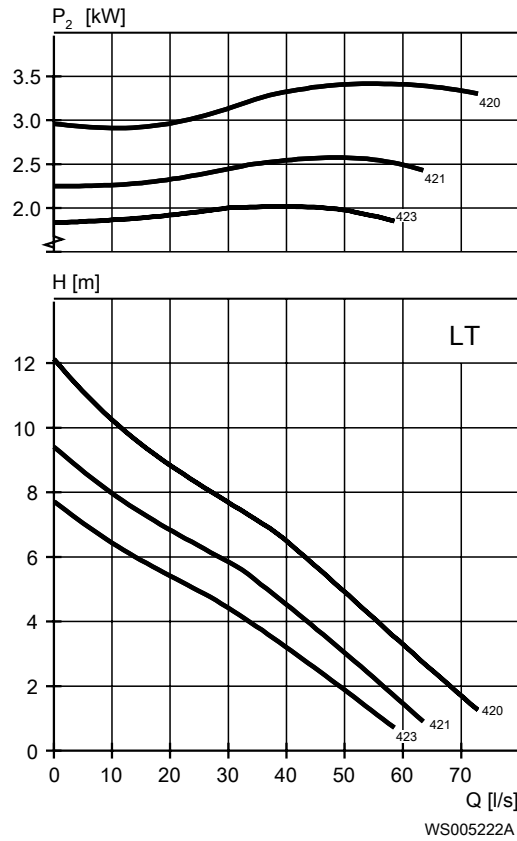
Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, cos φ	Installation
2.8	3.8	256	3000	5.9	64	.77	T,Z
4.5	6	256	3000	8.5	64	.86	P,S
4.5	6	258	3000	8.5	64	.86	P,S

## Motor rating and performance curves 3102.900/.910

Star-delta starting current is 1/3 of Direct on-line starting current.



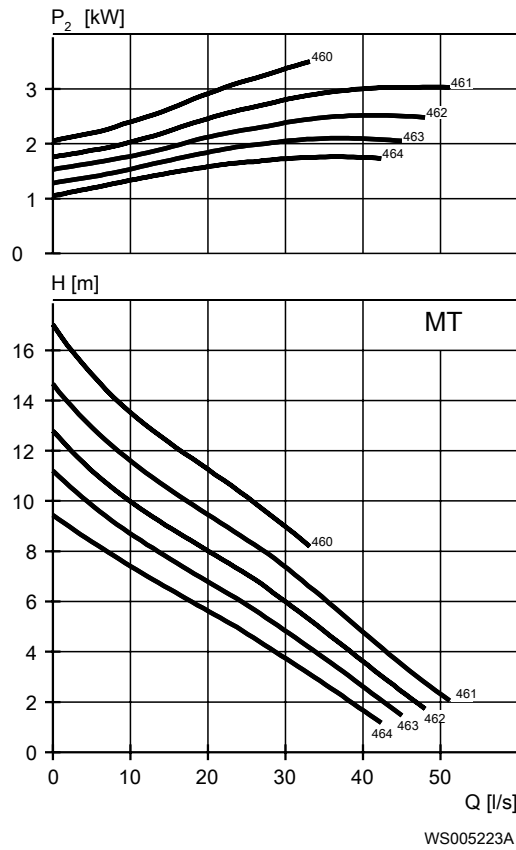
LT



**Table 24: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
3.5	4.7	420	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	421	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	423	1500	6.3	40	.88	P,S,T,Z

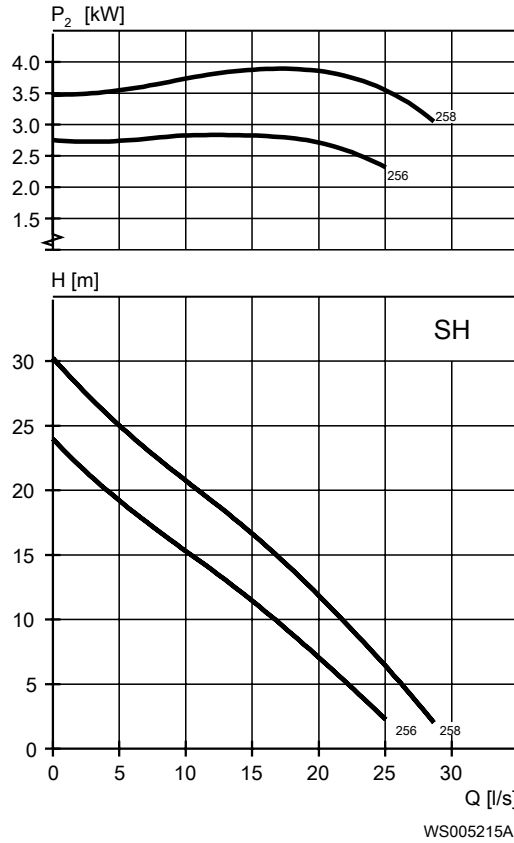
MT



**Table 25: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
3.5	4.7	460	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	461	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	462	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	463	1500	6.3	40	.88	P,S,T,Z
3.5	4.7	464	1500	6.3	40	.88	P,S,T,Z

SH



**Table 26: 400 V, 50 Hz, 3-phase**

Rated power kW	Rated power hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated current, A	Starting current, A	Power factor, $\cos \varphi$	Installation
2.8	3.8	256	3000	5.9	64	.77	T,Z
4.5	6	256	3000	8.5	64	.86	P,S
4.5	6	258	3000	8.5	64	.86	P,S

# Dimensions and Weight

## Drawings, C-pump

All drawings are available as Acrobat documents (.pdf) and AutoCad drawings (.dwg).  
Contact your sales representative for more information.

All dimensions are in mm.

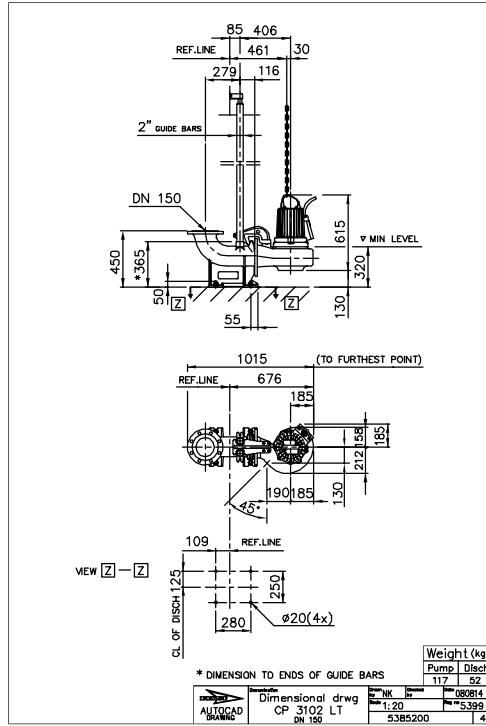


Figure 1: LT, P-installation

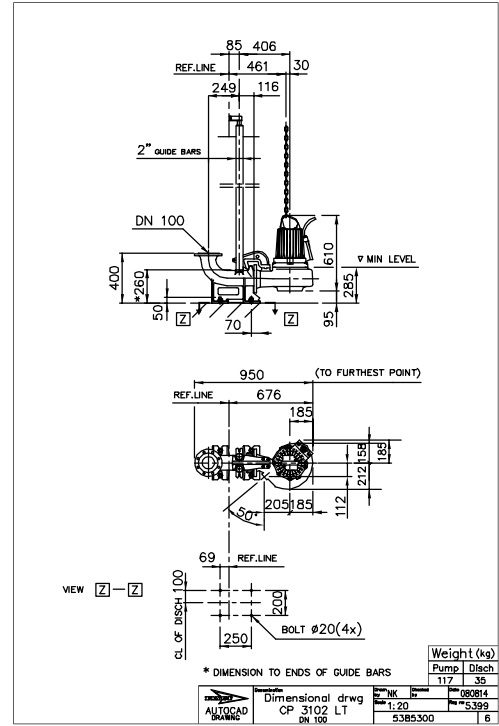


Figure 2: LT, P-installation

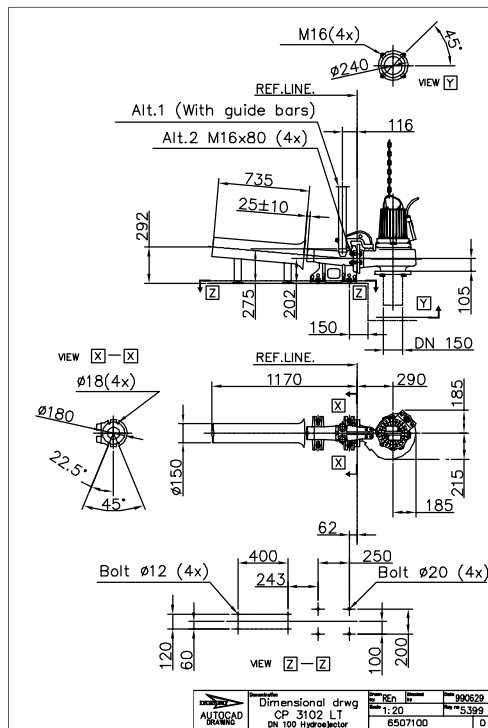


Figure 3: LT, P-installation

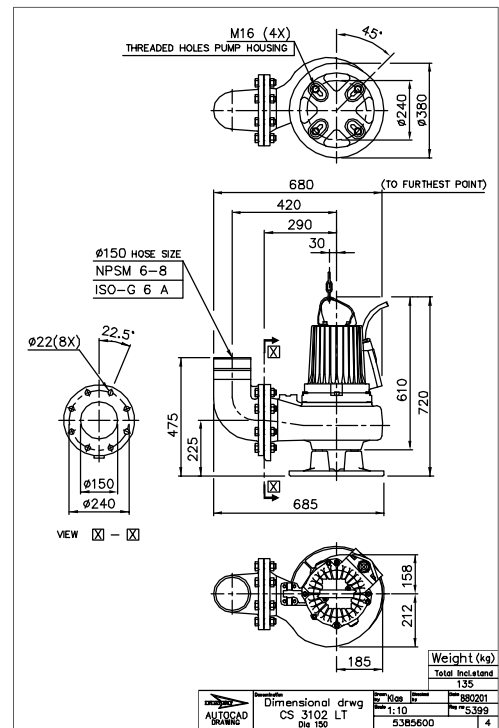


Figure 4: LT, S-installation

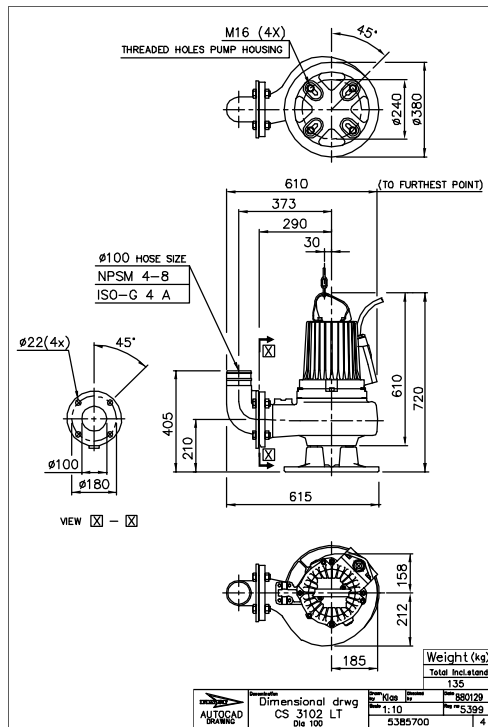


Figure 5: LT, S-installation

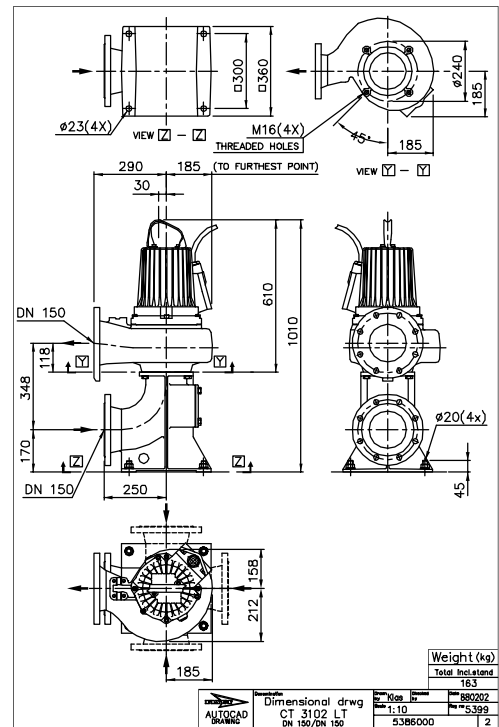


Figure 6: LT, T-installation

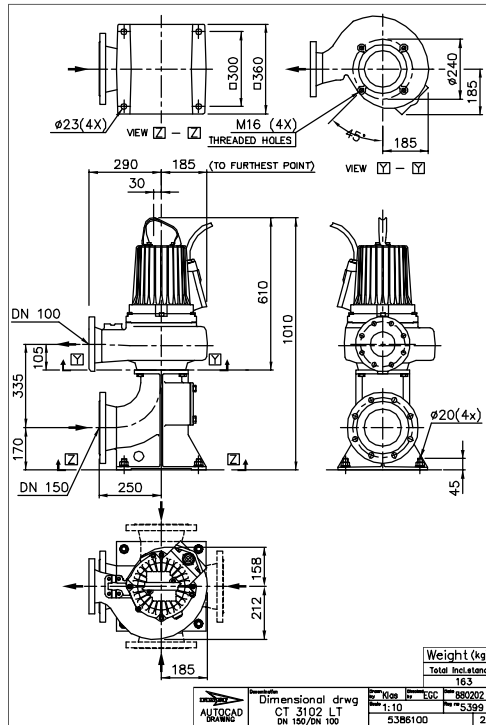


Figure 7: LT, T-installation

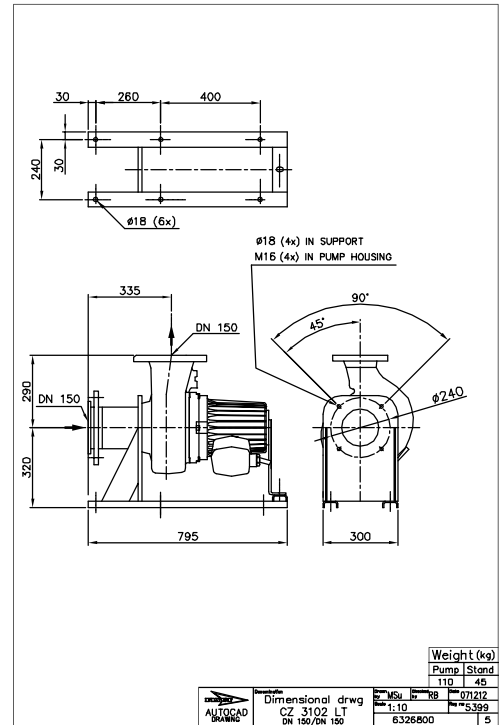


Figure 8: LT, Z-installation

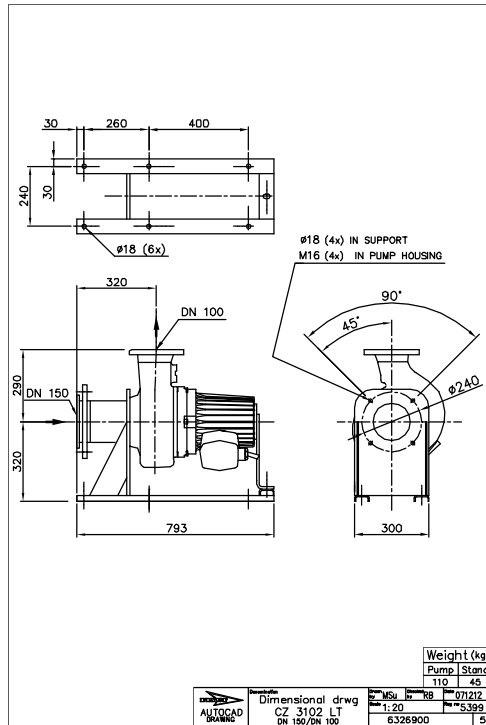


Figure 9: LT, Z-installation

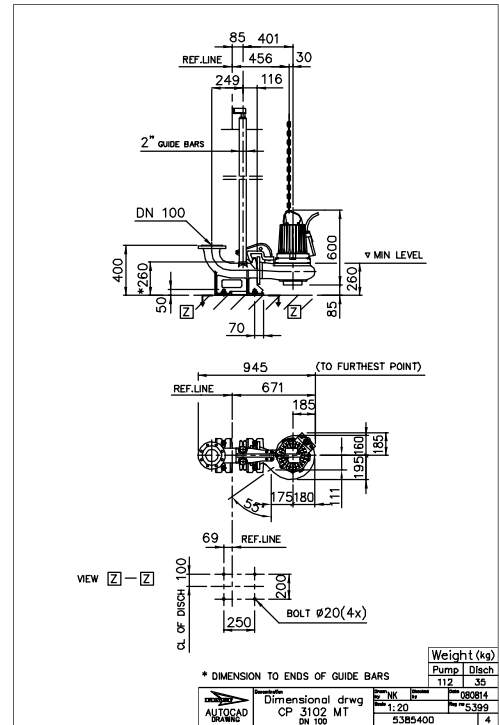


Figure 10: MT, P-installation

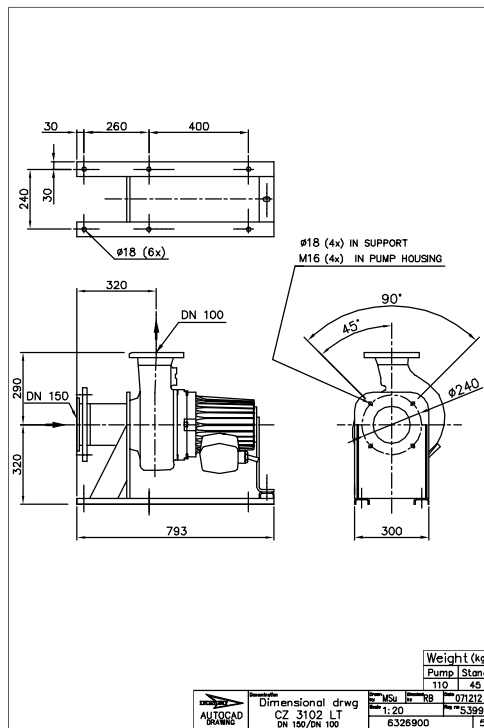


Figure 11: MT, S-installation

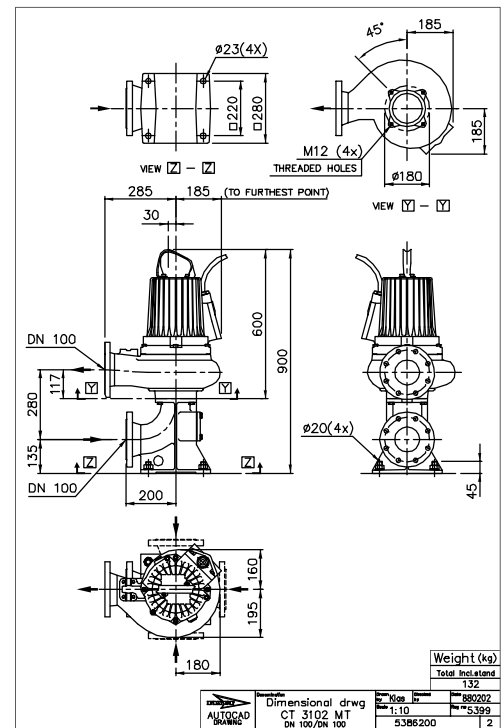


Figure 12: MT, T-installation

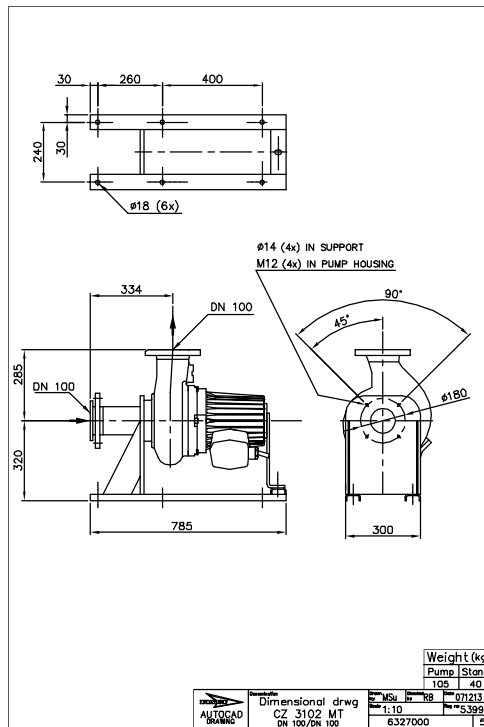


Figure 13: MT, Z-installation

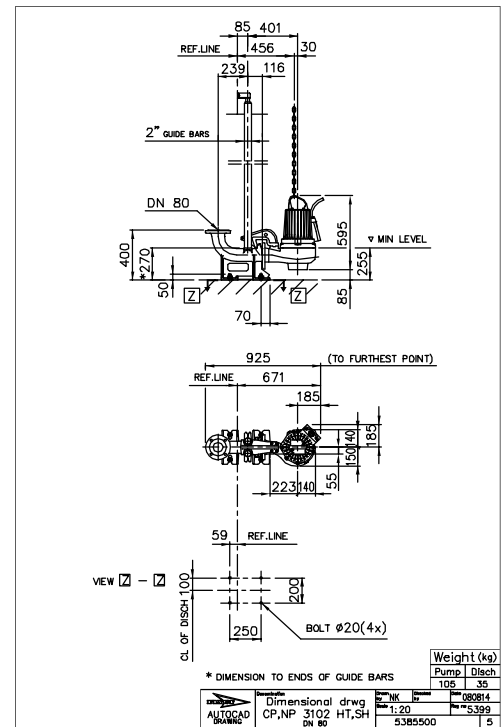


Figure 14: HT/SH, P-installation

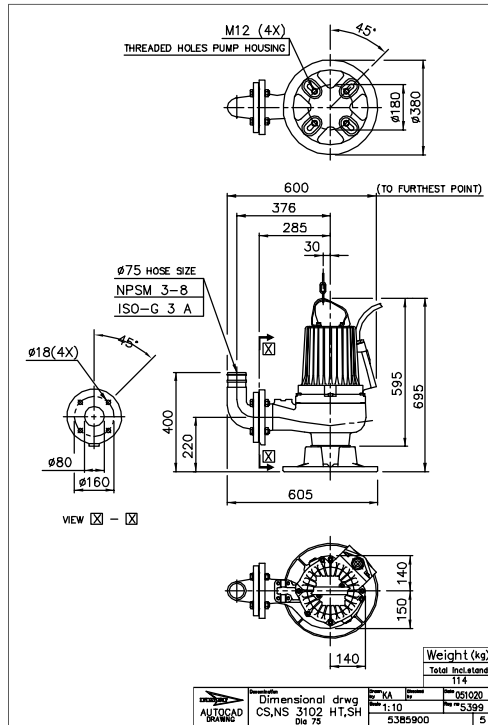


Figure 15: HT/SH, S-installation

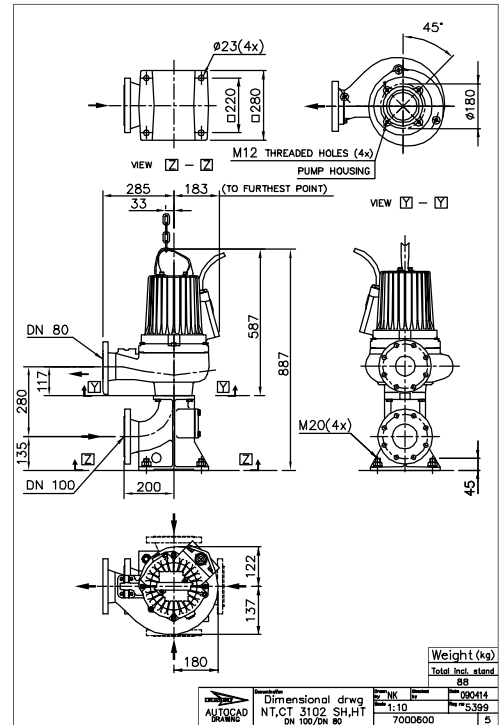


Figure 16: HT/SH, T-installation

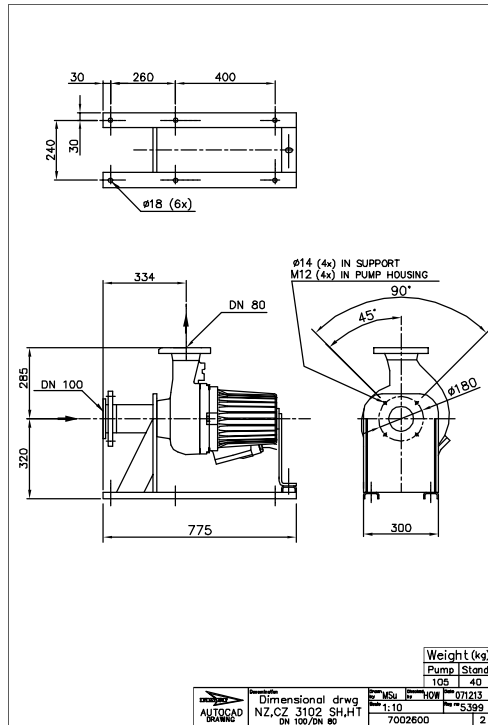


Figure 17: HT/SH, Z-installation

## Drawings, D-pump

All drawings are available as Acrobat documents (.pdf) and AutoCad drawings (.dwg). Contact your sales representative for more information.

All dimensions are in mm.



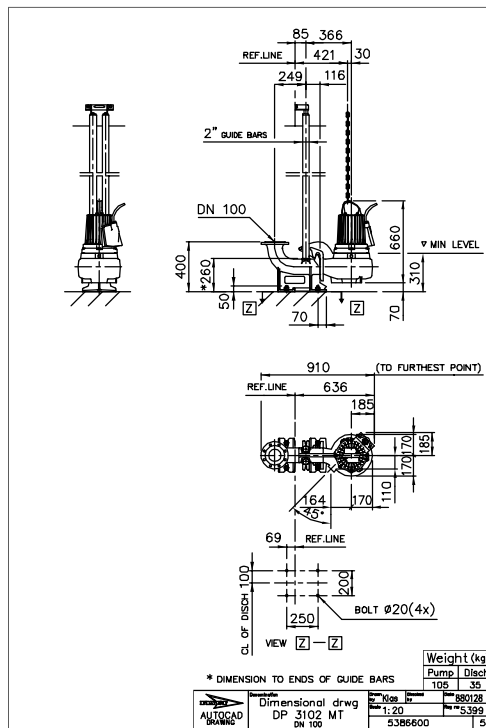


Figure 18: MT, P-installation

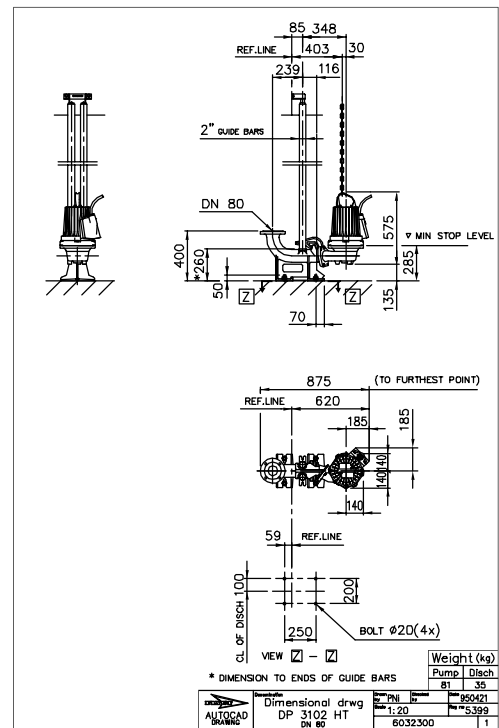


Figure 19: HT, P-installation

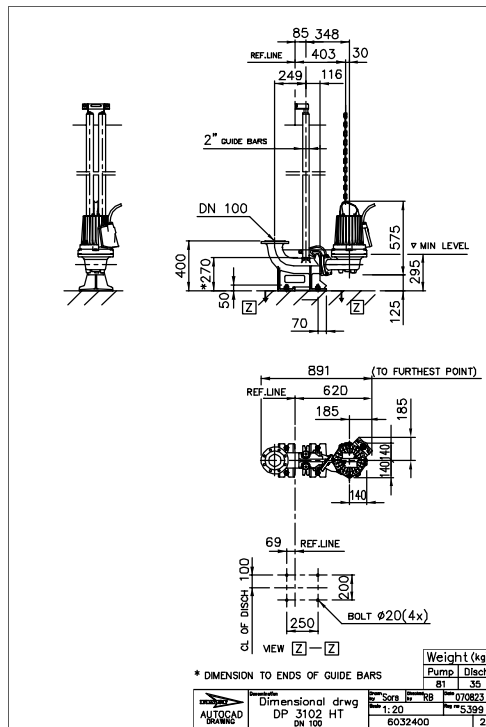


Figure 20: HT, P-installation

## Drawings, F-pump

All drawings are available as Acrobat documents (.pdf) and AutoCad drawings (.dwg). Contact your sales representative for more information.

All dimensions are in mm.

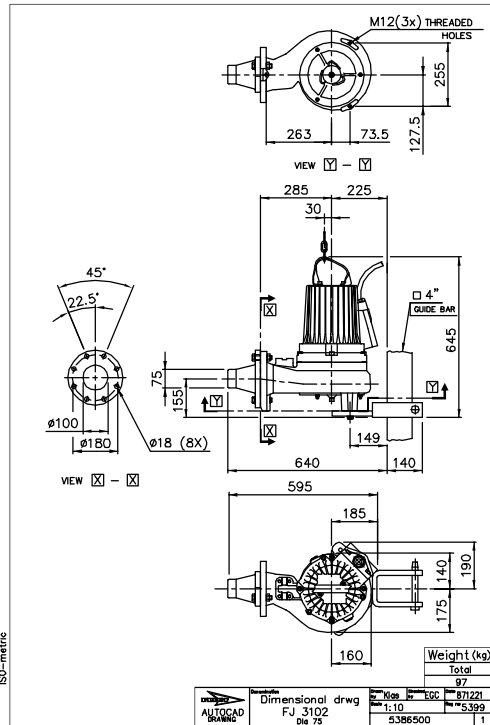


Figure 21: J-installation

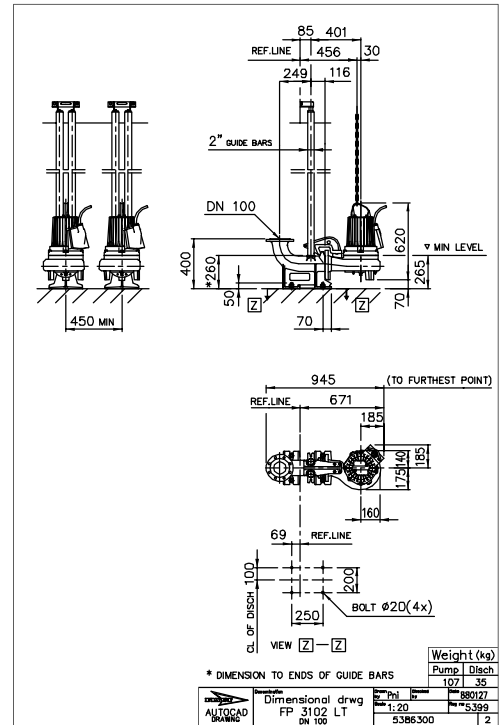


Figure 22: LT, P-installation

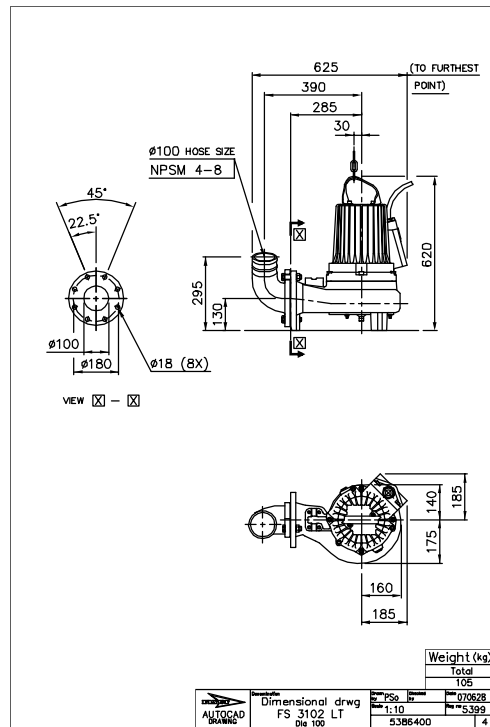


Figure 23: LT, S-installation

## Drawings, M-pump

All drawings are available as Acrobat documents (.pdf) and AutoCad drawings (.dwg). Contact your sales representative for more information.

All dimensions are in mm.

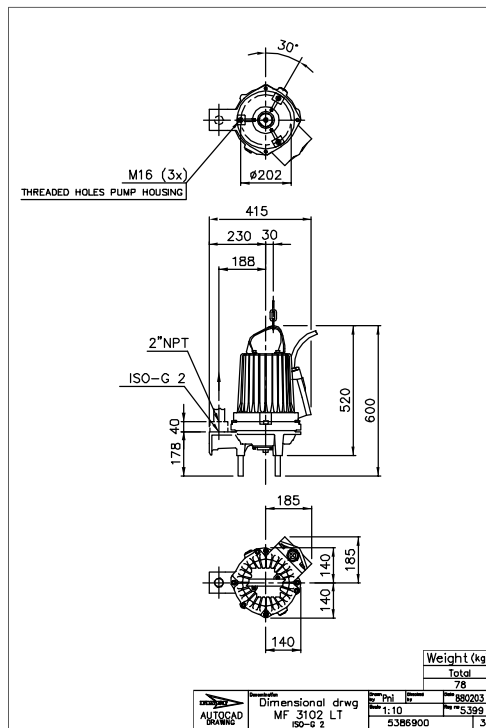


Figure 24: LT, F-installation

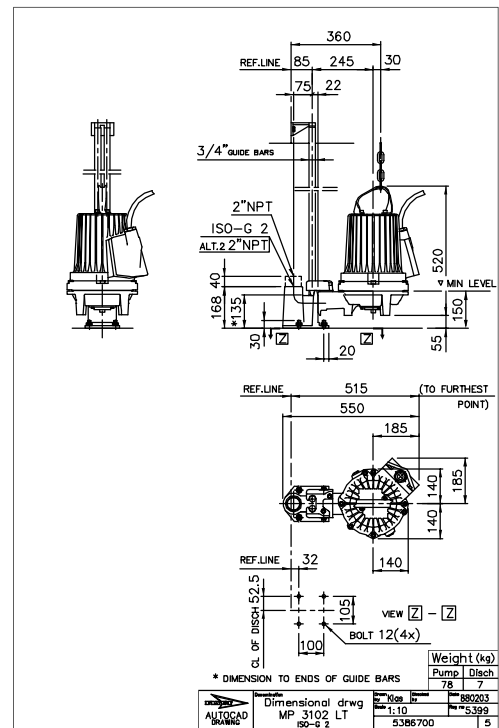


Figure 25: LT, P-installation

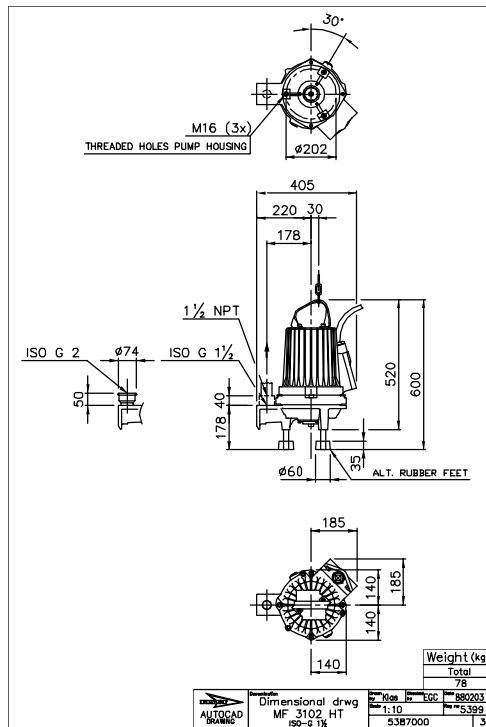


Figure 26: HT, F-installation

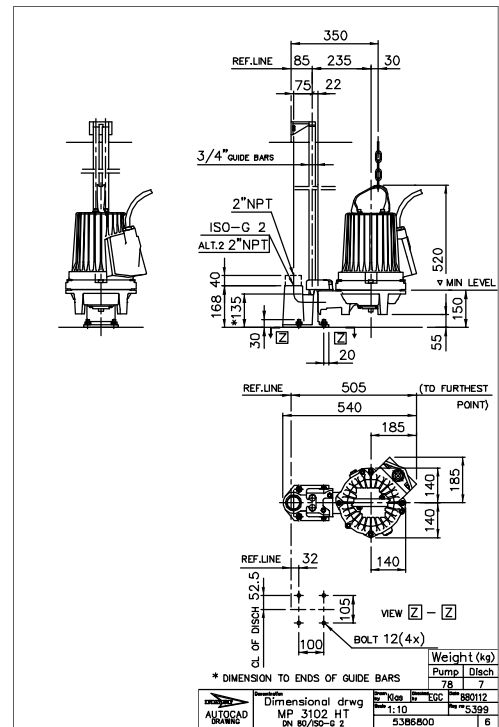


Figure 27: HT, P-installation

## Drawings, N-pump

All drawings are available as Acrobat documents (.pdf) and AutoCad drawings (.dwg). Contact your sales representative for more information.

All dimensions are in mm.

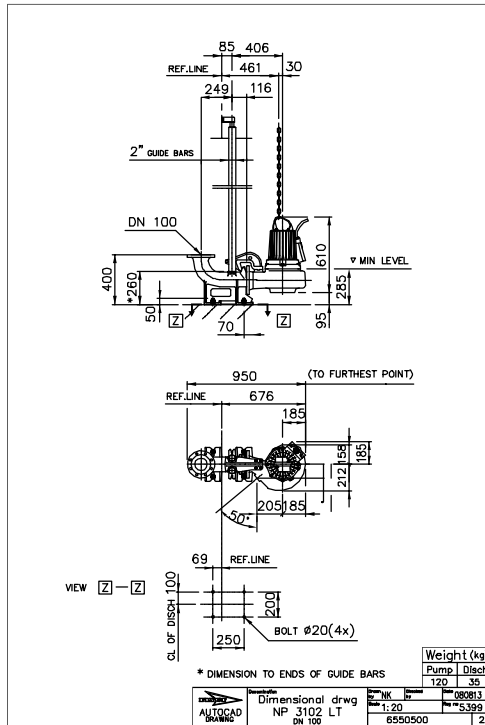


Figure 28: LT, P-installation

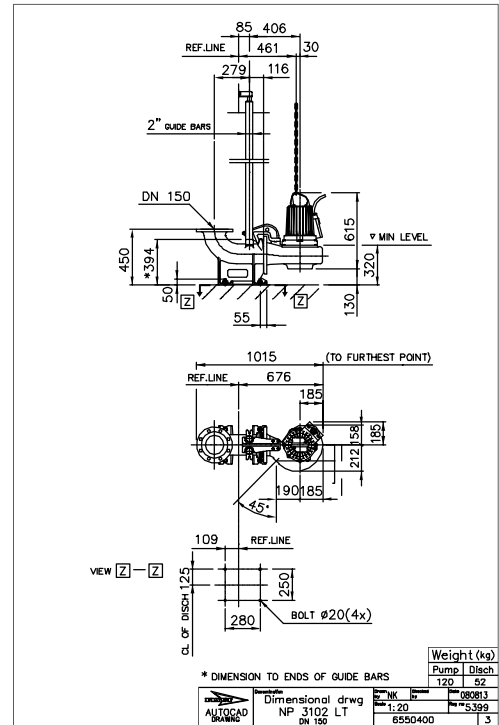


Figure 29: LT, P-installation

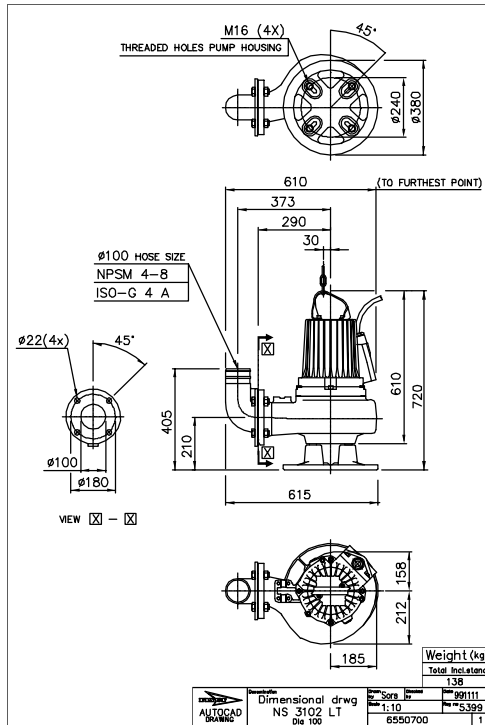


Figure 30: LT, S-installation

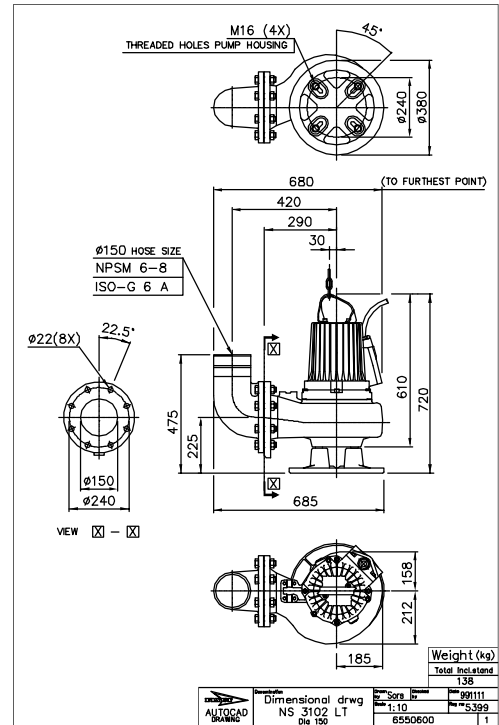


Figure 31: LT, S-installation

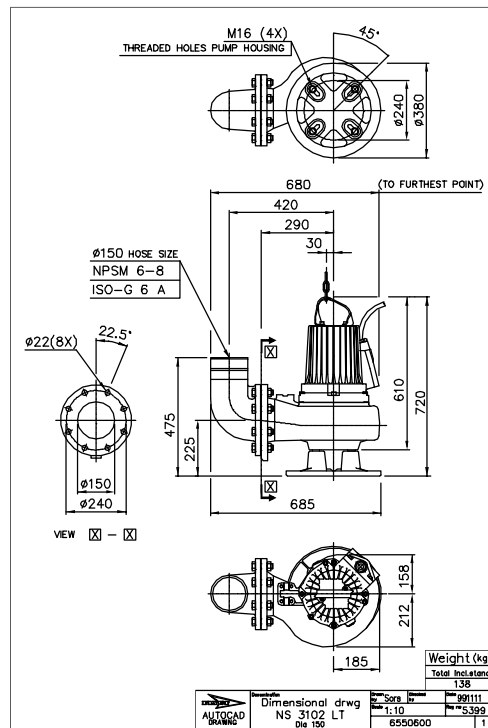


Figure 32: MT, P-installation

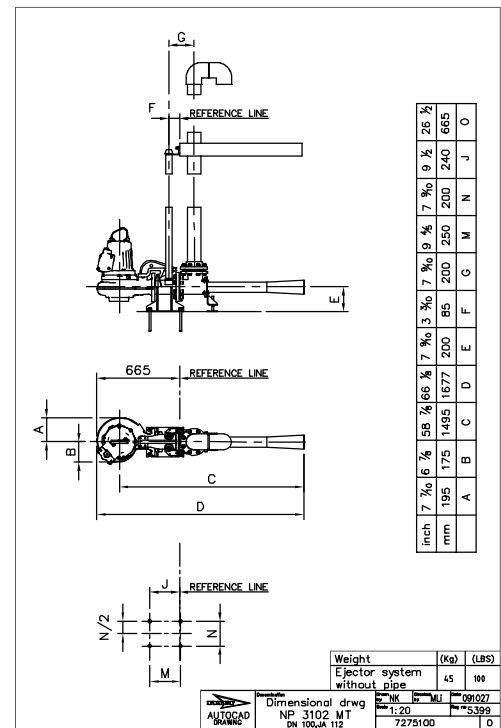


Figure 33: MT, P-installation

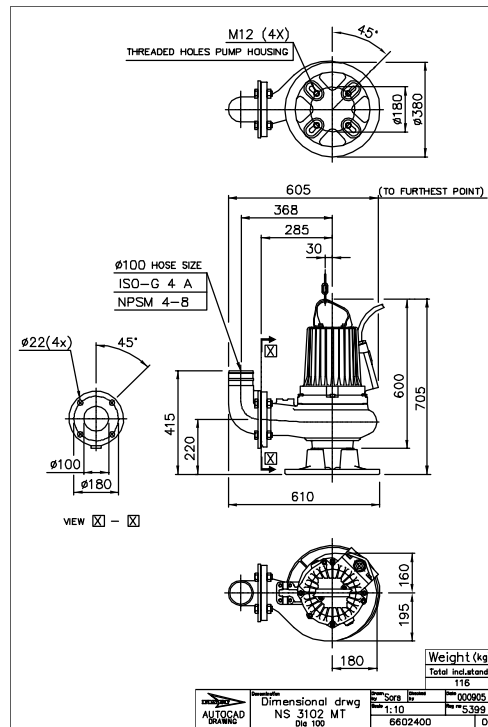


Figure 34: MT, S-installation

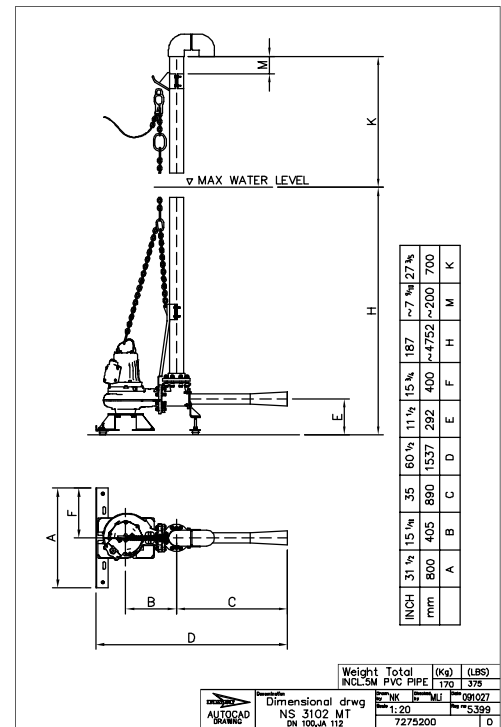


Figure 35: MT, S-installation

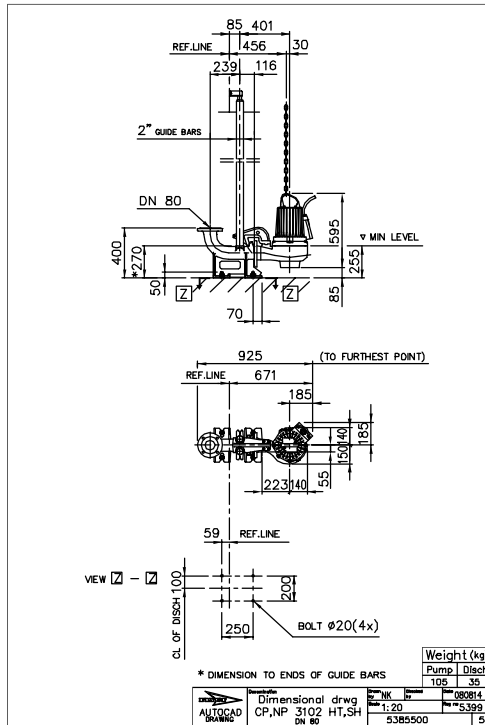


Figure 36: HT/SH, P-installation

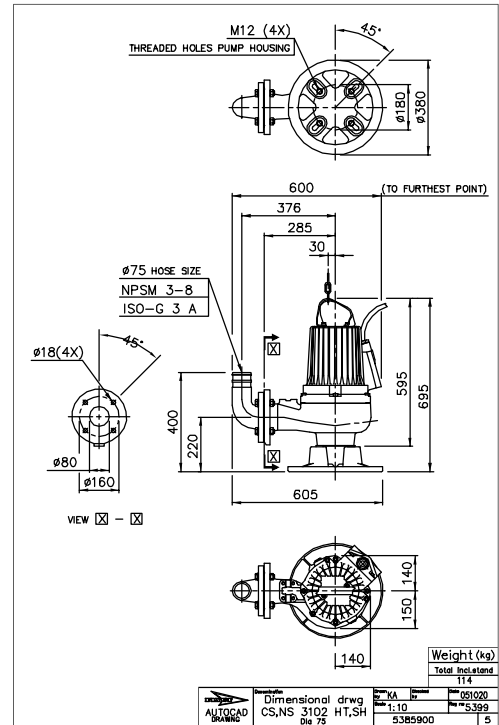


Figure 37: HT, S-installation

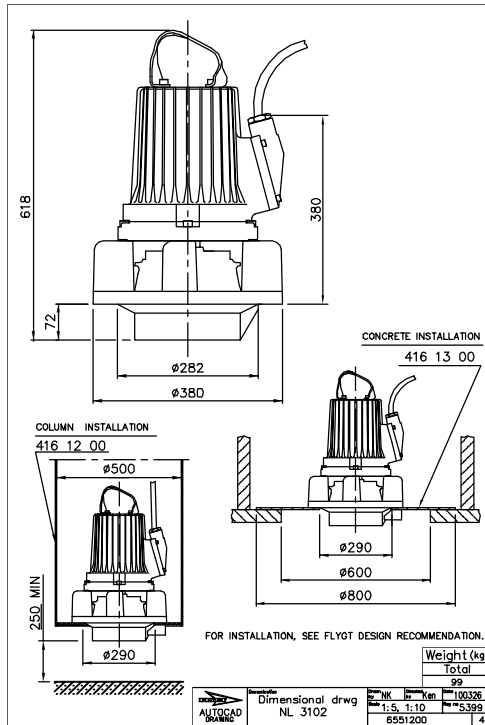


Figure 38: J-installation

