

**Technical Specification** 



# Flygt 3152, 50Hz



a **xylem** brand

# **Table of Contents**

1 C-pump	
1.1 Product description	
1.2 Motor rating and performance curves	
	0
2 F-Pump	۲۲ م
<ul><li>2.1 Product description</li><li>2.2 Motor rating and performance curves</li></ul>	
3 L-pump	14
3.1 Product description	
3.2 Motor rating and performance curves	
4 Dimensions and Weight, C-pump	
4.1 Drawings	
5 Dimensions and Weight, F-pump	
5.1 Drawings	
6 Dimensions and Weight, L-pump	
6 Dimensions and Weight, L-pump 6.1 Drawings	

# 1 C-pump

### 1.1 Product description



#### Usage

A submersible pump for wastewater containing solids or fibered material, clean water, or surface water.

#### Denomination

Туре	Non-explosion proof version	Explosion proof version	Pressure class	Installation types
Gray iron	3152.181	3152.091	<ul> <li>LT – Low head</li> <li>MT – Medium head</li> <li>HT – High head</li> <li>SH – Super head</li> </ul>	P, S, T, Z

The pump can be used in the following installations:

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

#### **Application limits**

Feature	Description		
Liquid temperature	Maximum 40°C (104°F)		
Depth of immersion	Maximum 20 m (65 ft)		

Feature	Description
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> <li>Direct on-line</li> <li>Star-delta</li> <li>Variable Frequency Drive (VFD)</li> </ul>
Number of starts per hour	Maximum 30
Code compliance	IEC 60034-1
Voltage variation	<ul> <li>Continuously running: Maximum ±5%</li> <li>Intermittent running: Maximum ±10%</li> </ul>
Voltage imbalance between phases	Maximum 2%
Stator insulation class	H (180°C, 356°F)

#### Cables

Application	Туре
Direct-on-line start or Y/D start with two cables	Flygt SUBCAB <sup>®</sup> - a heavy duty 4 cores motor power cable with two twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature. Cables < 10 mm <sup>2</sup> with unscreened control cores.
Y/D start	Flygt SUBCAB <sup>®</sup> - a heavy duty 7 cores motor power cable with two twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature. Cables < 7G6 mm <sup>2</sup> with unscreened control cores.
Variable Frequency drive	Screened Flygt SUBCAB <sup>®</sup> - a heavy duty 4 screened cores motor power cable with four twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature.

#### Monitoring equipment

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

#### Materials

Table 1: Major parts except mechanical seals

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	35B	GJL-250

Denomination	Material	ASTM	EN	
Pump housing	Cast iron, gray	35B	GJL-250	
Impeller	Cast iron, gray	35B	GJL-250	
Wear ring, alternative 1	Nitrile rubber (NBR)			
Wear ring, alternative 2	Bronze	C924	СС491К, СС492К	
Lifting handle	ting handle Steel		1.0038, 1.0114 and 1.0117 1.0044, 1.0143 and 1.0145	
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) -rings, alternative 2 70° IRH		-	
Oil, part no 901752	Medical white oil of paraffin type. Fulfills FDA 172.878 (a)	-		

#### Table 2: Mechanical seals

Alternative	Inner seal	Outer seal	O-rings	
1	Corrosion resistant cemented carbide/ Carbon	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Fluorinated rubber (FPM) 70° IRH	
2	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Fluorinated rubber (FPM) 70° IRH	

#### Surface treatment

All cast parts are primed with a water-borne primer. The finishing coat is a high-solid two pack paint.

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

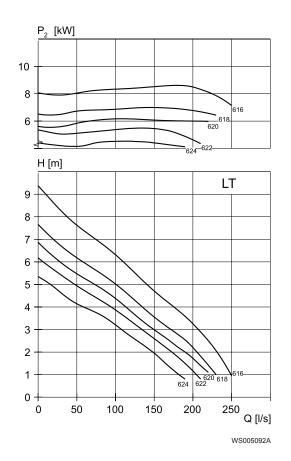
#### Accessories

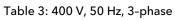
Discharge connections, adapters, hose connections, and other mechanical accessories Electrical accessories such as pump controller, control panels, starters, monitoring relays, cables

### 1.2 Motor rating and performance curves

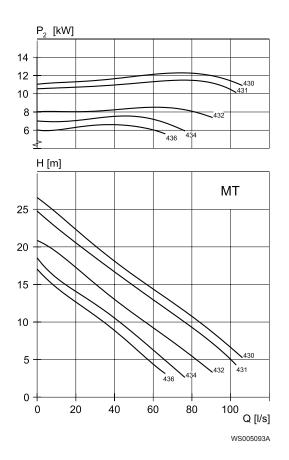
These are examples of motor rating and curves. For more information, please contact your local sales and service representative.

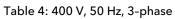
Star-delta starting current is 1/3 of Direct on-line starting current.



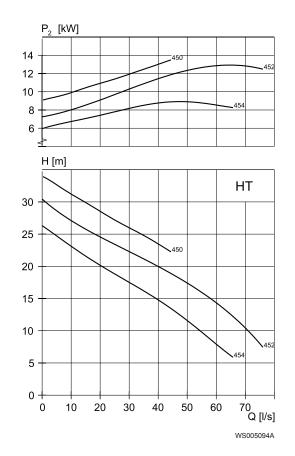


Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cosφ	Installation
8.8	11.8	616	955	18	87	0.87	P,S,T,Z
8.8	11.8	618	955	18	87	0.87	P,S,T,Z
8.8	11.8	620	955	18	87	0.87	P,S,T,Z
8.8	11.8	622	955	18	87	0.87	P,S,T,Z
8.8	11.8	624	955	18	87	0.87	P,S,T,Z

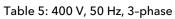




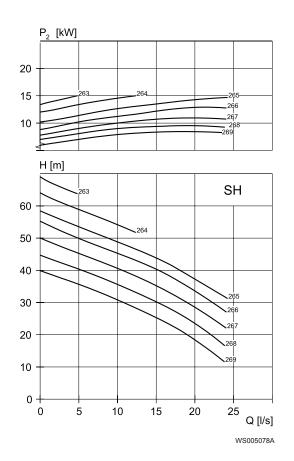
Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cos <b>φ</b>	Installation
13.5	18.1	430	1450	27	162	0.83	P,S,T,Z
13.5	18.1	431	1450	27	162	0.83	P,S,T,Z
13.5	18.1	432	1450	27	162	0.83	P,S,T,Z
13.5	18.1	434	1450	27	162	0.83	P,S,T,Z
13.5	18.1	436	1450	27	162	0.83	P,S,T,Z
9	12.1	432	1455	19	116	0.81	P,S,T,Z
9	12.1	434	1455	19	116	0.81	P,S,T,Z
9	12.1	436	1455	19	116	0.81	P,S,T,Z

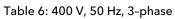


ΗT



Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cosφ	Installation
13.5	18.1	450	1450	27	162	0.83	P,S,T,Z
13.5	18.1	452	1450	27	162	0.83	P,S,T,Z
13.5	18.1	454	1450	27	162	0.83	P,S,T,Z
9	12.1	454	1455	19	116	0.81	P,S,T,Z





Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cosφ	Installation
15	20	263	2920	28	229	0.89	P,S,T,Z
15	20	264	2920	28	229	0.89	P,S,T,Z
15	20	265	2920	28	229	0.89	P,S,T,Z
15	20	266	2920	28	229	0.89	P,S,T,Z
15	20	267	2920	28	229	0.89	P,S,T,Z
15	20	268	2920	28	229	0.89	P,S,T,Z
15	20	269	2920	28	229	0.89	P,S,T,Z

# 2 F-Pump

### 2.1 Product description



#### Usage

A submersible pump for liquid manure, or heavily contaminated sewage and sludge. The impeller is S-shaped and has a cutting function.

#### Denomination

Туре	Non-explosion proof version	Explosion proof version	Pressure class	Installation types
Gray iron	3152.350	-	<ul> <li>LT – Low head</li> <li>HT – High head</li> </ul>	J, P, S

The pump can be used in the following installations:

- J Semipermanent, wet well arrangement with guide bars or wire for a pump with a jet nozzle intended for mixing. For connection to a discharge stool. Jet nozzle can also be used as a hose connection.
- P Semipermanent, wet well arrangement with the pump installed on two guide bars. The connection to the discharge is automatic.
- S Portable semipermanent, wet well arrangement with hose coupling or flange for connection to the discharge pipeline.

#### **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>

Feature	Description
Motor type	Squirrel-cage induction motor
Frequency	50 Hz
Power supply	• 3-phase
Starting method	<ul> <li>Direct on-line</li> <li>Star-delta</li> <li>Variable Frequency Drive (VFD)</li> </ul>
Number of starts per hour	Maximum 30
Code compliance	IEC 60034-1
Voltage variation	<ul> <li>Continuously running: Maximum ±5%</li> <li>Intermittent running: Maximum ±10%</li> </ul>
Voltage imbalance between phases	Maximum 2%
Stator insulation class	H (180°C, 356°F)

#### Cables

Application	Туре
Direct-on-line start or Y/D start with two cables	Flygt SUBCAB <sup>®</sup> - a heavy duty 4 cores motor power cable with two twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature. Cables < 10 mm <sup>2</sup> with unscreened control cores.
Y/D start	Flygt SUBCAB <sup>®</sup> - a heavy duty 7 cores motor power cable with two twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature. Cables < 7G6 mm <sup>2</sup> with unscreened control cores.
Variable Frequency drive	Screened Flygt SUBCAB <sup>®</sup> - a heavy duty 4 screened cores motor power cable with four twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature.

#### Monitoring equipment

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

#### Materials

Table 7: Major parts except mechanical seals

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, alternative 1	Cast iron, Hard-Iron™	A 532 IIIA	GJN-HB555(XCR23)

Denomination	Material	ASTM	EN
Suction cover, alternative			
2	Steel	A 572 GR50	S355
Lifting handle	Steel	A 573 Gr. 65/42 and A 283 Gr. D	1.0038, 1.0114 and 1.0117 1.0044, 1.0143 and 1.0145
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 seals

Alternative	Inner seal	Outer seal	O-rings
1	Corrosion resistant cemented carbide/ Carbon	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Fluorinated rubber (FPM) 70° IRH
2	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Fluorinated rubber (FPM) 70° IRH

#### Surface treatment

All cast parts are primed with a water-borne primer. The finishing coat is a high-solid two pack paint.

#### Options

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

#### Accessories

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

### 2.2 Motor rating and performance curves

These are examples of motor rating and curves. For more information, please contact your local sales and service representative.

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

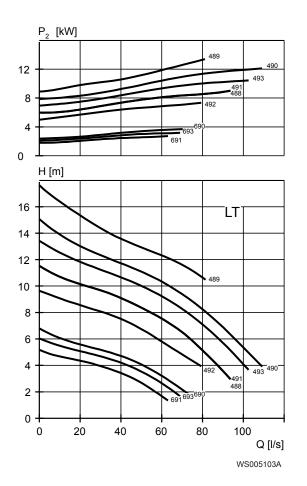
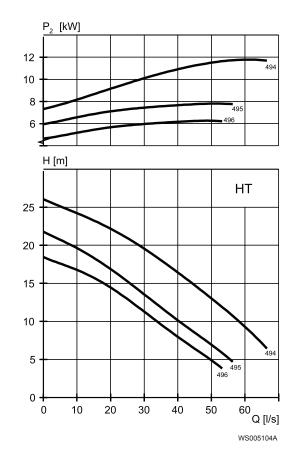
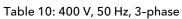


Table 9: 400 V, 50 Hz, 3-phase

Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cos <b>φ</b>	Installation
13.5	18.1	488	1450	27	162	0.83	J,P,S
13.5	18.1	489	1450	27	162	0.83	J,P,S
13.5	18.1	490	1450	27	162	0.83	J,P,S
13.5	18.1	491	1450	27	162	0.83	J,P,S
13.5	18.1	492	1450	27	162	0.83	J,P,S
13.5	18.1	493	1450	27	162	0.83	J,P,S
9.0	12.1	491	1455	19	116	0.81	J,P,S
9.0	12.1	492	1455	19	116	0.81	J,P,S
8.8	11.8	690	955	18	87	0.87	J,P,S
8.8	11.8	691	955	18	87	0.87	J,P,S
8.8	11.8	693	955	18	87	0.87	J,P,S
7.5	10.1	492	1460	16	104	0.81	J,P,S





Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cosφ	Installation
13.5	18.1	494	1450	27	162	0.83	J,P,S
13.5	18.1	495	1450	27	162	0.83	J,P,S
13.5	18.1	496	1450	27	162	0.83	J,P,S
9.0	12.1	495	1455	19	116	0.81	J,P,S
9.0	12.1	496	1455	19	116	0.81	J,P,S
7.5	10.1	496	1460	16	104	0.81	J,P,S

# 3 L-pump

### 3.1 Product description



#### Usage

A submersible pump for a mixed flow of clean water, surface water, or storm water. Intended for high flow and low head applications, in column installation.

#### Denomination

Туре	Non-explosion proof version	Explosion proof version	Pressure class	Installation types
Gray iron	3152.181	3152.091	<ul> <li>LT – Low head</li> </ul>	L

The pump can be used in the following installations:

L Vertical semipermanent, wet well column pipe arrangement where the well is divided into a suction part and a discharge part. Pump end equipped with guide vanes.

#### **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

Feature	Description
Starting method	<ul> <li>Direct on-line</li> <li>Star-delta</li> <li>Variable Frequency Drive (VFD)</li> </ul>
Number of starts per hour	Maximum 30
Code compliance	IEC 60034-1
Voltage variation	<ul> <li>Continuously running: Maximum ±5%</li> <li>Intermittent running: Maximum ±10%</li> </ul>
Voltage imbalance between phases	Maximum 2%
Stator insulation class	H (180°C, 356°F)

#### Cables

Application	Туре
Direct-on-line start or Y/D start with two cables	Flygt SUBCAB <sup>®</sup> - a heavy duty 4 cores motor power cable with two twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature. Cables < 10 mm <sup>2</sup> with unscreened control cores.
Y/D start	Flygt SUBCAB <sup>®</sup> - a heavy duty 7 cores motor power cable with two twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature. Cables < 7G6 mm <sup>2</sup> with unscreened control cores.
Variable Frequency drive	Screened Flygt SUBCAB <sup>®</sup> - a heavy duty 4 screened cores motor power cable with four twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature.

#### Monitoring equipment

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

#### Materials

#### Table 11: Major parts except mechanical seals

Denomination	Material	ASTM	EN
Major castings Cast iron, gray 33		35B	GJL-250
Pump housing Cast iron, gray 3		35B	GJL-250
Impeller Cast iron, gray 3		35B	GJL-250
Insert ring	Cast iron, gray	35B	GJL-250
Lifting handle	Steel	A 573 Gr. 65/42 and A 283 Gr. D	1.0038, 1.0114 and 1.0117 1.0044, 1.0143 and 1.0145
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		-	-

Denomination Material		ASTM	EN
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 12: Mechanical seals

Alternative	Inner seal	Outer seal	O-rings	
1	Corrosion resistant cemented carbide/ Carbon	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Fluorinated rubber (FPM) 70° IRH	
2	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Corrosion resistant cemented carbide/ Corrosion resistant cemented carbide	Fluorinated rubber (FPM) 70° IRH	

#### Surface treatment

All cast parts are primed with a water-borne primer. The finishing coat is a high-solid two pack paint.

#### 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

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

### 3.2 Motor rating and performance curves

These are examples of motor rating and curves. For more information, please contact your local sales and service representative.

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

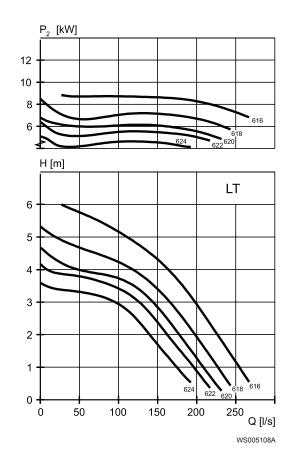


Table 13: 400 V, 50 Hz, 3-phase

Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cosφ	Installation
8.8	11.8	616	955	18	87	0.87	L
8.8	11.8	618	955	18	87	0.87	L
8.8	11.8	620	955	18	87	0.87	L
8.8	11.8	622	955	18	87	0.87	L
8.8	11.8	624	955	18	87	0.87	L

# 4 Dimensions and Weight, C-pump

### 4.1 Drawings

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

Drawings are found on Xylect or on TPI.

All dimensions are in mm.

Drawing number	Discharge connection	Installation
5391200	300 (LT)	Р
5391300	250 (LT)	Р
5391400	150 (MT)	Р
5391500	200 (MT)	Р
5391600	150 (HT)	Р
5391700	100 (HT, SH)	Р
5392300	250 (LT)	S
5392400	150 (MT)	S
5392500	200 (MT)	S
5392600	150 (HT)	S
5392700	200 (HT)	S
5392800	100 (SH)	S
5391900	300/250 (LT)	Т
5392000	200/150 (MT)	Т
5392100	150/150 (HT)	Т
5392200	150/100 (HT, SH)	Т
6327900	300/250 (LT)	Z
6328000	200/150 (MT)	Z
6328100	150/150 (HT)	Z
7258700	150/100 (HT, SH)	Z

#### **P-installation**

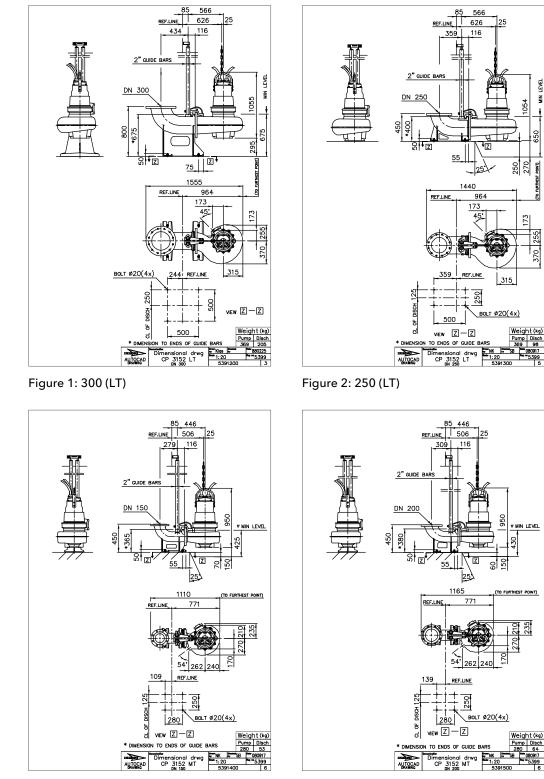


Figure 3: 150 (MT)

Figure 4: 200 (MT)

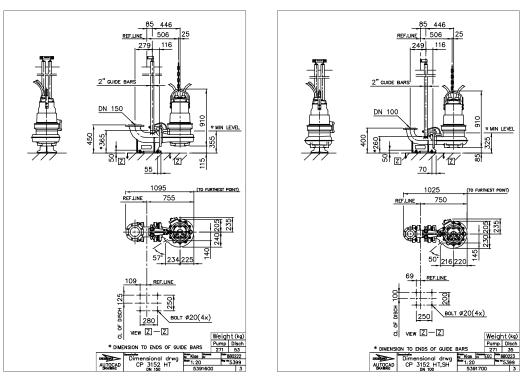
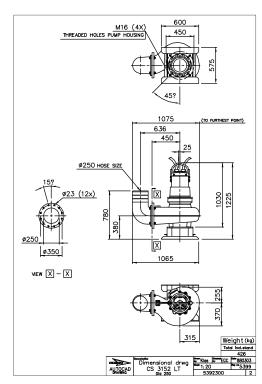
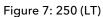


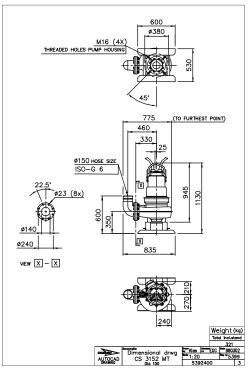
Figure 5: 150 (HT)

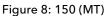
Figure 6: 100 (HT, SH)

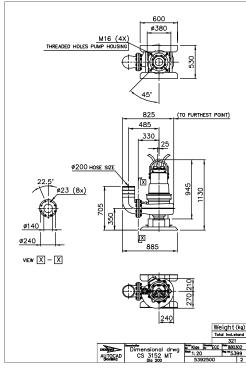
#### S-installation











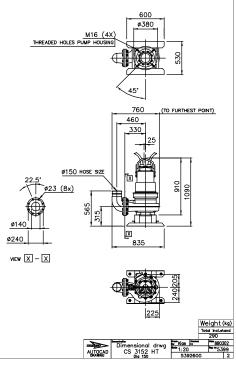


Figure 9: 200 (MT)

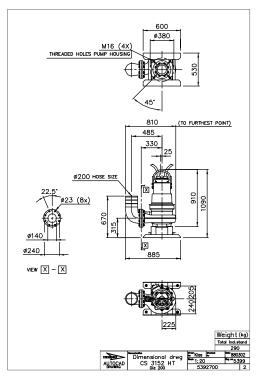


Figure 11: 200 (HT)

Figure 10: 150 (HT)

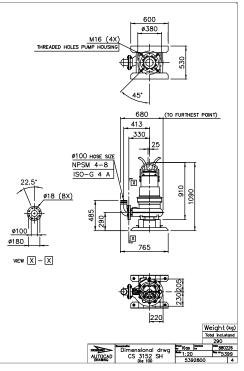


Figure 12: 100 (SH)

#### **T**-installation

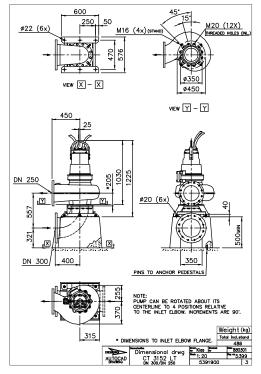


Figure 13: 300/250 (LT)

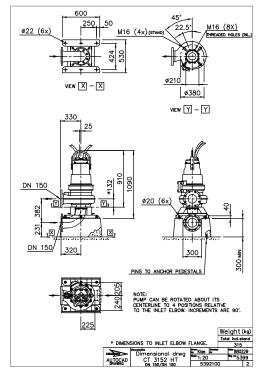


Figure 15: 150/150 (HT)

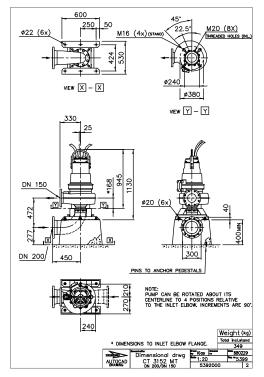


Figure 14: 200/150 (MT)

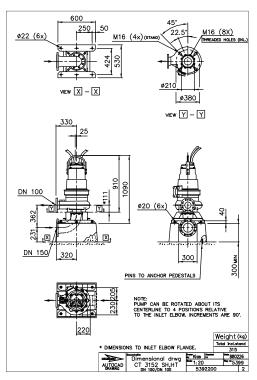


Figure 16: 150/100 (HT, SH)

#### Z-installation

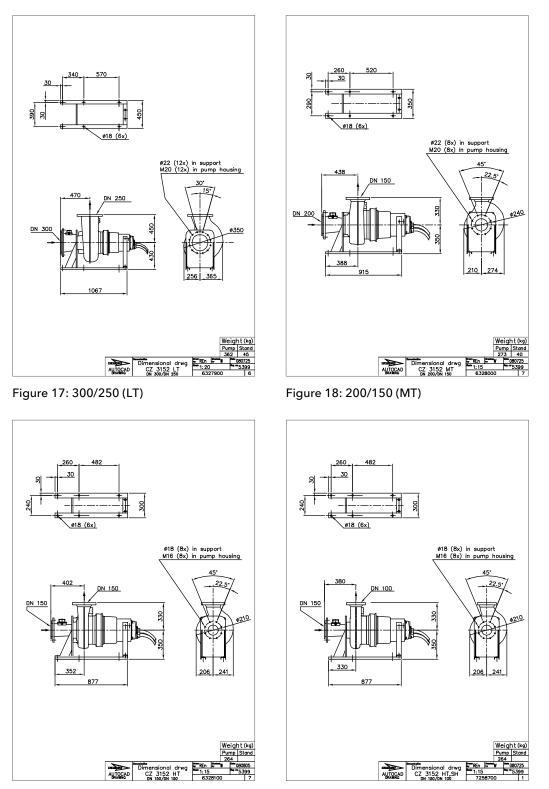


Figure 19: 150/150 (HT)

Figure 20: 150/100 (HT, SH)

# 5 Dimensions and Weight, F-pump

## 5.1 Drawings

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

Drawings are found on Xylect or on TPI.

All dimensions are in mm.

Drawing number	Discharge connection	Installation
5394100	100 (LT)	J
5394200	100 (HT)	J
5392900	150 (LT)	Р
5393000	100 (HT)	P
5393100	100 (LT)	S
5393200	100 (HT)	S

#### J-installation

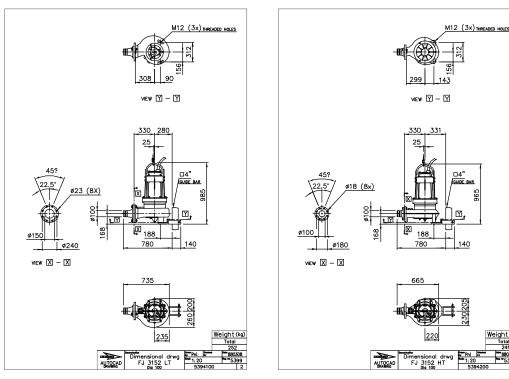


Figure 21: 100 (LT)

Figure 22: 100 (HT)

#### **P-installation**

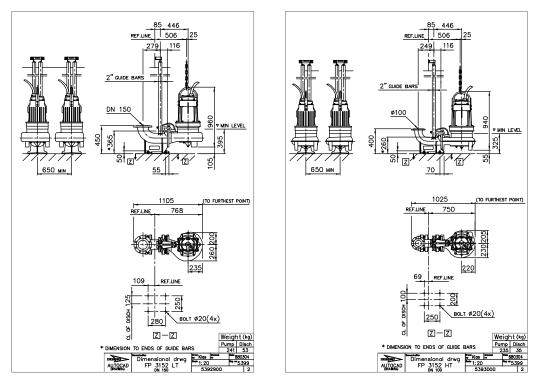


Figure 23: 150 (LT)

Figure 24: 100 (HT)

705

435

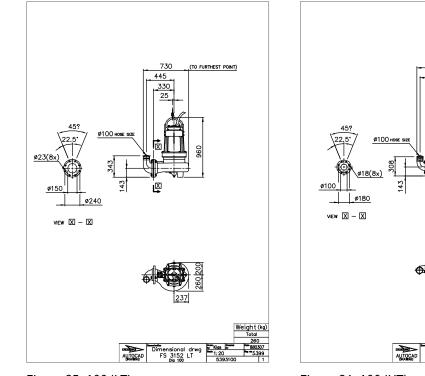
<u>330</u> 25

220

drı HT

(TO FURTHEST POINT)

#### S-installation



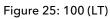


Figure 26: 100 (HT)

# 6 Dimensions and Weight, L-pump

## 6.1 Drawings

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

Drawings are found on Xylect or on TPI.

All dimensions are in mm.

Drawing number	Discharge connection	Installation
5448200	-	L

#### L-installation

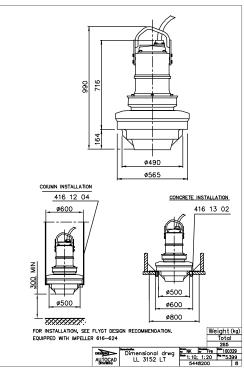


Figure 27: LT

# Xylem |'zīləm|

1) The tissue in plants that brings water upward from the roots;

2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services, and agricultural settings. With its October 2016 acquisition of Sensus, Xylem added smart metering, network technologies and advanced data analytics for water, gas and electric utilities to its portfolio of solutions. In more than 150 countries, we have strong, longstanding relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.



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The original instruction is in English. All non-English instructions are translations of the original instruction.

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