Technical Specification

887402_1.0

1305, 50Hz

xylem
Let's Solve Water

Table of Contents

1 Vortex

1.1 Product description

Usage

A submersible pump, with vortex hydraulic, for liquids containing solids and abrasive media, or light wastewater.

Denomination

Type	Non-explosion proof version	Explosion proof version	Model variant	Installation types
Vortex	1305.180	1305.090	• H – High head	• Free-standing • Wet-well

The pump can be used in the following installations:

Free-standing Portable semipermanent, wet well arrangement with hose coupling or flange for connection to the discharge pipeline.

Wet-well Semipermanent, wet well arrangement with the pump installed on two guide bars. The connection to the discharge is automatic.

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^3

Motor data

Feature	Description
Motor type	Squirrel-cage induction motor
Frequency	50 Hz
Power supply	1-phase or 3-phase
Starting method	• Direct on-line • Variable Frequency Drive (VFD)
Number of starts per hour	Maximum 15
Code compliance	IEC 60034-1
Voltage variation without overheating	±10%, if it does not run continuously at full load
Voltage imbalance between phases	Maximum 2%
Stator insulation class	F (155°C [311°F])

Cables

Application	Type
Direct-on-line start or Y/D start with two cables	Flygt SUBCAB® - 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^2 with unscreened control cores.
Y/D start	Flygt SUBCAB® - 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^2 with unscreened control cores.

Monitoring equipment

Motor	Thermal contacts opening temperature
12-08-2B	125°C (257°F)

Materials

Table 1: Major parts except mechanical seals

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	30B	GJL-200
Pump housing	Cast iron, gray	30B	GJL-200
Impeller, alternative 1	Cast iron, gray	35B	GJL-250
Impeller, alternative 2	Cast iron, gray	30B	GJL-200
Lifting handle	Stainless steel	AISI 304	1,4301
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A2	AISI 304	1.4301, 1.4306, 1.4307, 1.4311
O-rings	Nitrile rubber (NBR) 70° IRH	–	–

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

Table 2: Mechanical seals

Inner seal	Outer seal
Carbon (CSb)/ Aluminum oxide (Al_2O_3)	Silicon carbide (RSiC)/ Silicon carbide (RSiC)

Surface treatment

Finish
Black or blue two-component high-solid top coating. See internal standard M 0700.00.0004 for standard painting.

Options

Leakage sensor in the stator housing (FLS)

Accessories

- Installation equipment

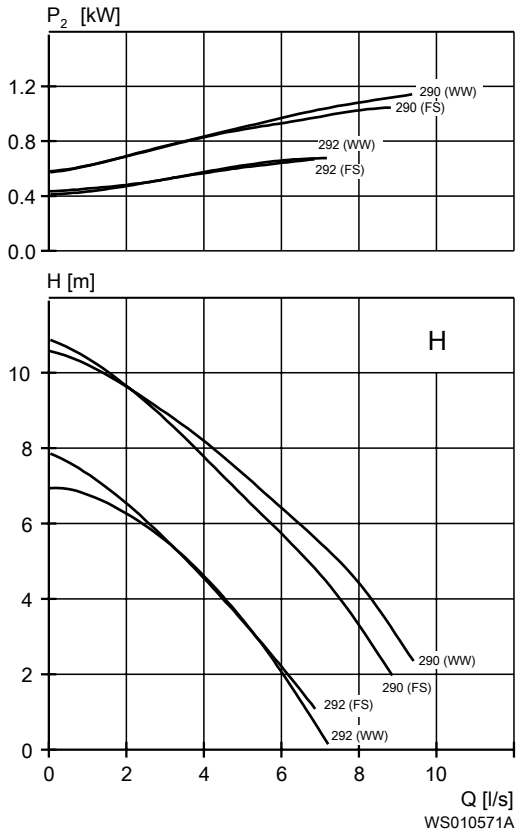
  Sold in kits
- Mechanical accessories such as discharge connections, adapters, and hose connections
- Electrical accessories such as pump controller, control panels, starters, monitoring relays, and cables

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.

H



- FS=Free-standing
- WW=Wet-well

Table 3: 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 φ	Installation
1.2	1.6	290	2785	2.8	17	0.79	FS, WW
0.75	1	292	2875	2.2	17	0.63	FS, WW

- FS=Free-standing
- WW=Wet-well

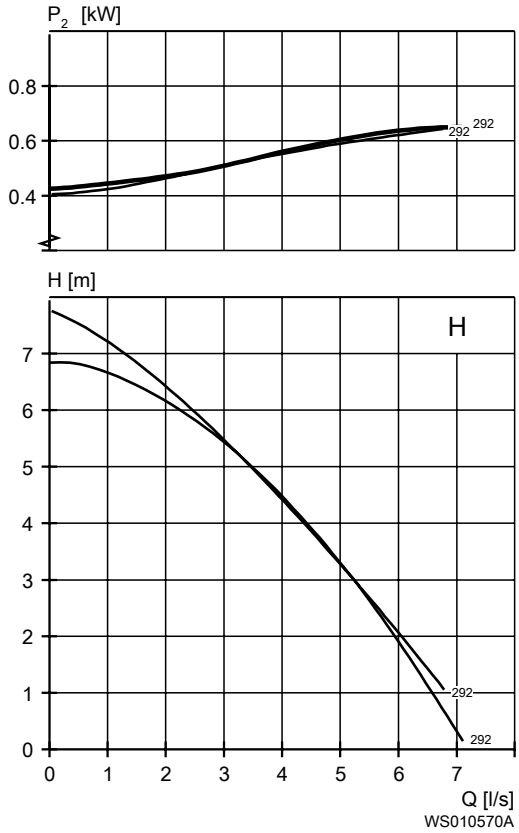


Table 4: 230 V, 50 Hz, 1-phase

Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cos φ	Installation
0.75	1	292	2825	4.2	19	1	FS, WW

- FS=Free-standing
- WW=Wet-well

2 Non-clog

2.1 Product description

Usage

A submersible pump for efficient pumping of clean water, surface water, and wastewater containing solids. The pump is designed for sustained efficiency over time.

Denomination

Type	Non-explosion proof version	Explosion proof version	Model variant	Installation types
Non-clog	1305.180	1305.090	S – Super high head	• Free-standing • Wet-well

The pump can be used in the following installations:

Free-standing Portable semipermanent, wet well arrangement with hose coupling or flange for connection to the discharge pipeline.

Wet-well Semipermanent, wet well arrangement with the pump installed on two guide bars. The connection to the discharge is automatic.

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^3

Motor data

Feature	Description
Motor type	Squirrel-cage induction motor
Frequency	50 Hz
Power supply	1-phase or 3-phase
Starting method	• Direct on-line • Variable Frequency Drive (VFD)
Number of starts per hour	Maximum 15
Code compliance	IEC 60034-1
Voltage variation without overheating	±10%, if it does not run continuously at full load
Voltage imbalance between phases	Maximum 2%
Stator insulation class	F (155°C [311°F])

Cables

Application	Type
Direct-on-line start or Y/D start with two cables	Flygt SUBCAB® - 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^2 with unscreened control cores.
Y/D start	Flygt SUBCAB® - 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^2 with unscreened control cores.

Monitoring equipment

Motor	Thermal contacts opening temperature
12-08-2B	125°C (257°F)

Materials

Table 5: Major parts except mechanical seals

Denomination	Material	ASTM	EN
Major castings	Cast iron, gray	30B	GJL-200
Pump housing	Cast iron, gray	30B	GJL-200
Impeller	Cast iron, gray	30B	GJL-200
Lifting handle	Stainless steel	AISI 304	1,4301
Shaft	Stainless steel	AISI 431	1.4057+QT800
Screws and nuts	Stainless steel, A2	AISI 304	1.4301, 1.4306, 1.4307, 1.4311
O-rings	Nitrile rubber (NBR) 70° IRH	–	–

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

Table 6: Mechanical seals

Inner seal	Outer seal
Carbon (CSb)/ Aluminum oxide (Al_2O_3)	Silicon carbide (RSiC)/ Silicon carbide (RSiC)

Surface treatment

Finish
Black or blue two-component high-solid top coating. See internal standard M 0700.00.0004 for standard painting.

Options

Leakage sensor in the stator housing (FLS)

Accessories

- Installation equipment

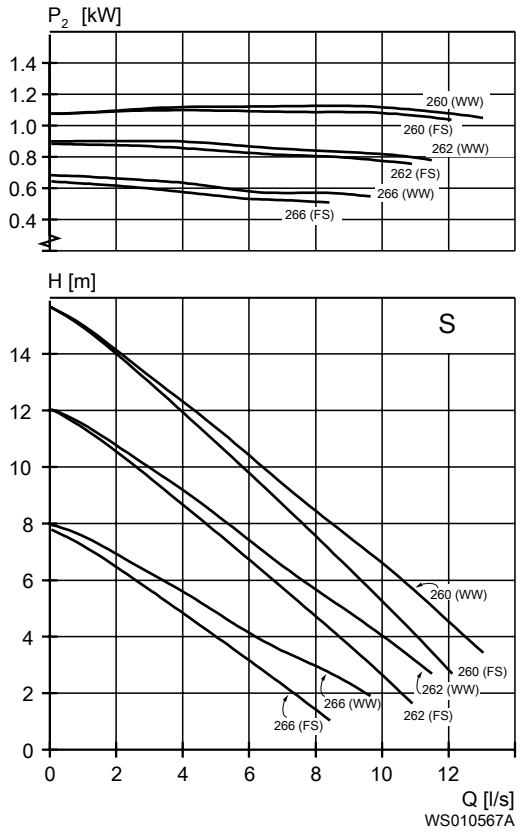
  Sold in kits
- Mechanical accessories such as discharge connections, adapters, and hose connections
- Electrical accessories such as pump controller, control panels, starters, monitoring relays, and cables

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.

S



- FS= Free-standing
- WW=Wet-well

Table 7: 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 φ	Installation
1.2	1.6	260	2785	2.8	17	0.79	FS, WW
1.2	1.6	262	2785	2.8	17	0.79	FS, WW
0.75	1	266	2875	2.2	17	0.63	FS, WW

- FS= Free-standing
- WW=Wet-well

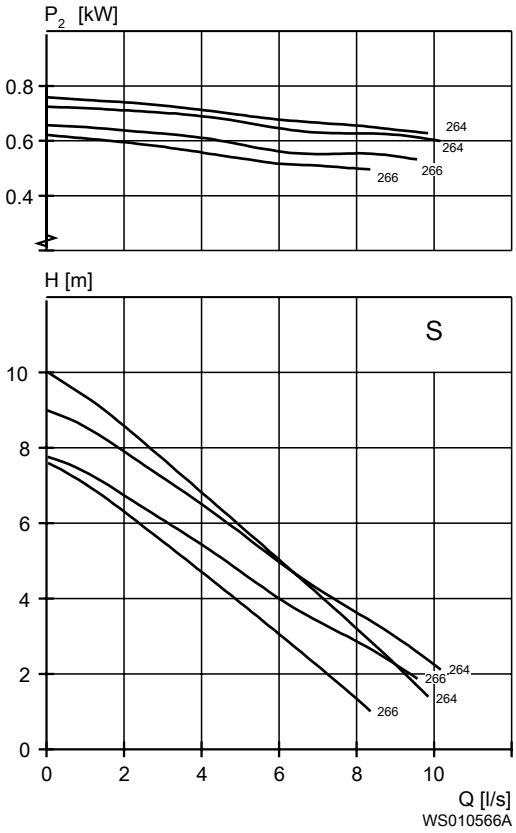


Table 8: 230 V, 50 Hz, 1-phase

Rated power, kW	Rated power, hp	Curve/ Impeller No	Revolutions per minute, rpm	Rated Current, A	Start current, A	Power Factor, cos φ	Installation
0.75	1	264	2825	4.2	19	1	FS, WW
0.75	1	266	2825	4.2	19	1	FS, WW

- FS= Free-standing
- WW=Wet-well

Xylem |ˈzīləm|

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 settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing 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.

For more information on how Xylem can help you, go to www.xylem.com

xylem
Let's Solve Water

Visit our Web site for the latest version of this document and more information

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

887402_1.0_en-US_2018-05_TS_1305, 50Hz