CNP

TDE

50Hz

Vertical single-stage intelligent variable frequency pump

Stock code:300145

CNP

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subject to amendments

Pumping Water Pumping Honor

Company profile

Nanfang Pump Industry Co.,Ltd (CNP),as a subsidiary of Nanfang Zhongjin Environment Co.,Ltd, was founded in 1991,and listed on Shenzhen Stock Exchange on December 9,2010 with stock code 300145.

In 2019, CNP's annual output exceeded 900,000 units/set with nearly 3 billion sales revenue, continuing to maintain high growth.

As a national enterprise technology center, CNP has flagship ultra-high efficient product -new generation CDM (F) light vertical multistage centrifugal pump, MEI≥0.7. Same series high temperature pump products are developed in 2019 to satisfy high temperature applications. All light stainless steel pump product series grow stably. Advanced frequency conversion water supply equipment has been innovated to the 6th generation. Fire pump and diesel engine have obtained UL certification.TD in-line pump, NIS/NISO end suction pump, NSC split casing pump, WQ sewage pump, PQ stainless steel fountain submersible pump, BP silent tube pump, pool pump, non-blocking self-priming sewage pump, metering pump, oil pump and other pump products, can meet various application needs of different fields.

CNP has a complete sales network both in domestic and overseas market,exporting to over 60 countries and regions, maintaining long-term and strong relationship with our clients. CNP pumps have been widely applied in various fields like water treatment、water supply and drainage、HVAC、industrial application、seawater desalination、energy and power etc.

CNP, a green water expert beside you.

Content

Performance range

Performance scope

No	Model	Q [m³/h]	H [m]	n [r/min]	Standard voltage 3×380V P2[kW]
1	TDE32-21G/2	12.5	21		1.5
2	TDE32-26G/2	12.5	26		2.2
3	TDE32-33G/2	12.5	33		3
4	TDE32-40G/2	12.5	40		4
5	TDE32-50G/2	12.5	50		5.5
6	TDE40-21G/2	12.5	21		1.5
7	TDE40-20G/2	20	20		2.2
8	TDE40-26G/2	20	26		3
9	TDE40-30G/2	25	30		4
10	TDE40-36G/2	25	36		5.5
11	TDE40-48G/2	25	48		7.5
12	TDE50-32G/2	12.5	32		3
13	TDE50-39G/2	12.5	39		4
14	TDE50-49G/2	12.5	49		5.5
15	TDE50-59G/2	12.5	59		7.5
16	TDE50-80G/2	12.5	80		11
17	TDE50-15G/2	20	15		1.5
18	TDE50-18G/2	25	18		2.2
19	TDE50-24G/2	25	24		3
20	TDE50-28G/2	30	28		4
21	TDE50-35G/2	30	35		5.5
22	TDE50-40G/2	35	40		7.5
23	TDE50-50G/2	40	50		11
24	TDE50-60G/2	50	60	2900	15
25	TDE65-37G/2	25	37		5.5
26	TDE65-48G/2	25	48		7.5
27	TDE65-15G/2	30	15		2.2
28	TDE65-20G/2	30	20		3
29	TDE65-22G/2	40	22		4
30	TDE65-30G/2	40	30		5.5
31	TDE65-34G/2	50	34		7.5
32	TDE65-41G/2	50	41		11
33	TDE65-51G/2	50	51		15
34	TDE80-41G/2	50	41		11
35	TDE80-48G/2	50	48		15
36	TDE80-13G/2	50	13		3
37	TDE80-18G/2	50	18		4
38	TDE80-23G/2	50	23		5.5
39	TDE80-29G/2	50	29		7.5
40	TDE80-32G/2	70	32		11
41	TDE80-38G/2	80	38		15
42	TDE100-9/2	50	9		2.2
43	TDE100-15/2	60	15		4
44	TDE100-17G/2	80	17		5.5
45	TDE100-22G/2	80	22		7.5
46	TDE100-27/2	100	27		11
47	TDE100-33/2	100	33		15

Summary

TDE series vertical single-stage intelligent variable frequency pump (Hereafter as TDE series or pump) adopt an intelligent variable frequency controller in TD series single-stage inline centrifugal pump. It can realize constant pressure, constant temperature, constant pressure difference and other smart control functions by connecting pressure and temperature sensor.TDE series are energy-saving, low noise, intelligent, environmental friendly with compact structure, beautiful appearance,high reliability, and easy maintenance convenience. Pressure or temperature sensors and other accessories are not in TDE factory configuration. Users need to configure it according to needs.

The top of TDE series is designed as a pull-out available form, which enables to repair the pump without affecting the pipeline system.

Motor

TEFC motor,2-pole standard, three-phase asynchronous motor;
Protection class: IP55;
Insulation class: F;
Standard voltage: 50Hz 3×380V

Variable frequency controller

Input power supply : 50Hz 3×380V
Power range : 1.5kW~15kW
Output frequency range : 30Hz~50Hz
Pressure adjustment range : 0.1bar
Protection class : Ip55
Display: LCD

Operating condition

This pump is applied for thin, noncorrosive, clean, non-flammable,non-explosive, solid free, fiber free, physically and chemically water-like liquid.
Liquid temperature: -15℃ to 110℃
Ambient temperature: up to 40℃
Altitude: up to 1000m
Max working pressure: 12 bar for normal type;
16 bar for special type.

Application

TDE pump is designed for a variety of applications from the pumping of potable water to the pumping of industrial liquids. It is mainly used as liquid transport, pressurization and circulation equipment.
District heating system;
HVAC system;
Cooling system;
Domestic hot water system;
Industrial liquid transport.

Curves conditions

The requirements apply to all the performance curves below:

1. Curve tolerance in conformity to S9906:2012, grade 3B.

2. All curves are based on the measured value of motor at a constant speed of 2900rpm.

3. Measurement is done with 20℃ air-free water, kinematic viscosity of 1mm²/s.

4. The pump use should refer to the performance range of the bold curve to prevent overheating by too little flow or motor overload by excessive flow.

Model definition

TDE50-24G/2

TDE 50 - 24 G / 2

Pole of the motor

New generation

Rated head(m)

DN of inlet&outlet

Vertical single-stage intelligent

variable frequency pump
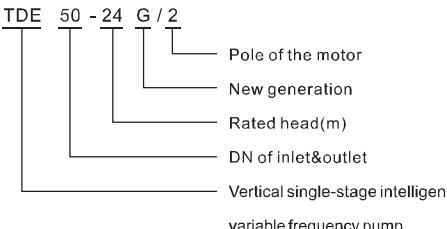
Function and Features

Pump control mode and function can be realized by configuring the communication line between pressure/temperature sensors or controllers in pump, as follows:

● **Control mode**: Five control modes are set in controller: constant pressure mode, constant temperature mode, constant pressure difference mode, constant temperature difference mode and manual mode.

● **Constant pressure mode**: In operation, the pump will enter the shutdown sleep state when the outlet pipeline pressure reaches the set value; the pump will start to operate again when the pressure drops to a certain value.

● **Constant temperature mode**: In operation, the pump will enter the shutdown sleep state when temperature of the outlet pipeline medium reaches the set value; pump will start to operate again when the temperature drops to a certain value.

● **Constant pressure difference mode & Constant temperature difference mode**:When the pump is used for cooling water control, you can choose the constant pressure difference control mode or constant temperature difference control mode. When the inlet and outlet pressure or temperature difference value of cooling equipment reaches the set value, the pump will operate at the lower limit frequency.

● **Function protection**: The Controller is equipped with function protection of high pressure, low pressure, high temperature, low temperature, etc. When actual value exceeds the set value in controller detection system, the controller will send an alarm signal and stop pump from operation automatically.

★ **Manual mode**:Controller can make the pump run at the specified frequency by controlling pump start or pump stop and the operating frequency through manual mode.

★ **Electrical protection**: Controller is equipped with the protection of over-current, over-voltage, under-voltage, overload and default phase.Facing the electrical fault, the display screen will show the corresponding fault signal and stop the running pump automatically.

★ **Restart**: Controller has restart function.When power off in pump running suddenly, the pump will stop; when power on again, the controller can make the pump restart running.

★ **Frost proof**: Controller has frost proof function. When the pump is in sleep state, the controller can make pump to operate in low frequency for a period of time in a very low environment temperature condition in the winter to protect pump from being damaged by water freezing .

▲ **Multi-pump coordinated operation**: Controller can control the coordinated operation of pumps, achieving at most one main pump, five auxiliary pumps and six pumps coordinated operation for water supply.Various coordinated modes can be adopted to ensure the system's intelligent constant pressure, constant temperature and other water supply modes.

▲ **Coordinated mode**: Controller is provided with four coordinated modes: synchronous mode, master-slave mode, large-small pump mode and single-pump operation mode

▲ **Synchronous mode**: Main pump and auxiliary pumps operate at the same frequency state.

▲ **Master-slave mode**: Main pump is operated in frequency-modulated state, while the other auxiliary pumps are operated in full-frequency state.

▲ **Large -small pump mode**: Pump group adopts a small flow pump and multiple large flow pumps . When the system starts or restarts, the small pump is used to run first. When the flow cannot meet the system requirements, the small flow pump will stop and the large flow pump will start instead.

▲ **Single pump operation mode**: When the pump group is running, the system adopts a single pump running at any time.(Only applicable to two pumps currently)

▲ **Automatic main pump transfer function**: In pump group, when the main pump sensor fail and stop, controller chooses to designate a auxiliary pump as main pump to start and run with main pump functions.

▲ **Alternate run**: After pump runs continuously for a long time, alternate run function can be set in controller to balance the pump service life. Running main and auxiliary pumps can act as the main pump in turn according to alternate run time.

Note: Pressure or temperature sensor is required in functions with ● symbol;no requirement of a sensor in functions with ★ symbol; configuration requirement of the sensor and 485 communication line connection in functions with ▲ symbol.

Performance curves

2900rpm
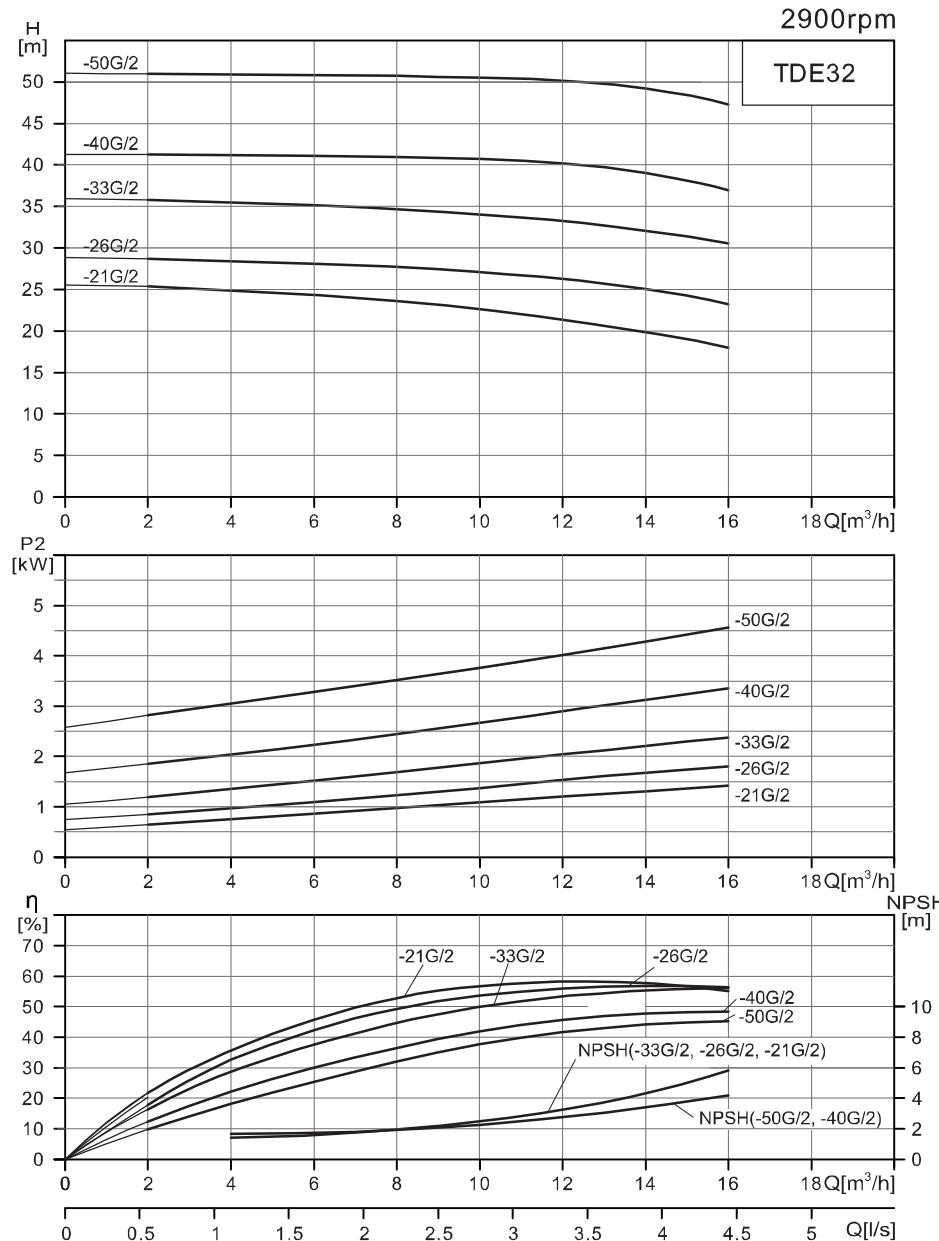
TDE32

TDE32 Performance table

Model	Motor (kW)	Q (m³/h)	2	4	6	8	10	12.5	14	16
TDE32-21G/2	1.5		25.3	24.9	24.3	23.6	22.6	21	19.9	18
TDE32-26G/2	2.2	H (m)	28.7	28.4	28.1	27.7	27.1	26	25	23.2
TDE32-33G/2	3		35.8	35.5	35.1	34.7	34.1	33	32.1	30.6
TDE32-40G/2	4		41.3	41.2	41.1	41	40.7	40	39.1	37
TDE32-50G/2	5.5		51	50.9	50.8	50.7	50.5	50	49.2	47.3
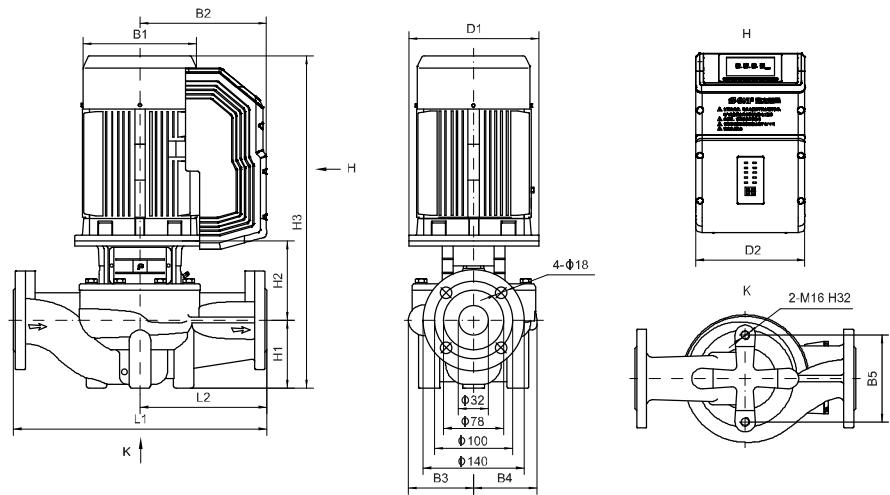
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE32-21G/2	140	186	172	217	101	101	144	90	137	514	320	160	42
TDE32-26G/2	140	186	172	217	101	101	144	90	137	514	320	160	46
TDE32-33G/2	160	186	197	227	109	109	144	90	145	572	340	170	56
TDE32-40G/2	160	208	215	245	128	128	144	100	151	593	360	180	70
TDE32-50G/2	200	208	260	263	128	128	144	100	173	656	360	180	89

Performance curves

2900rpm
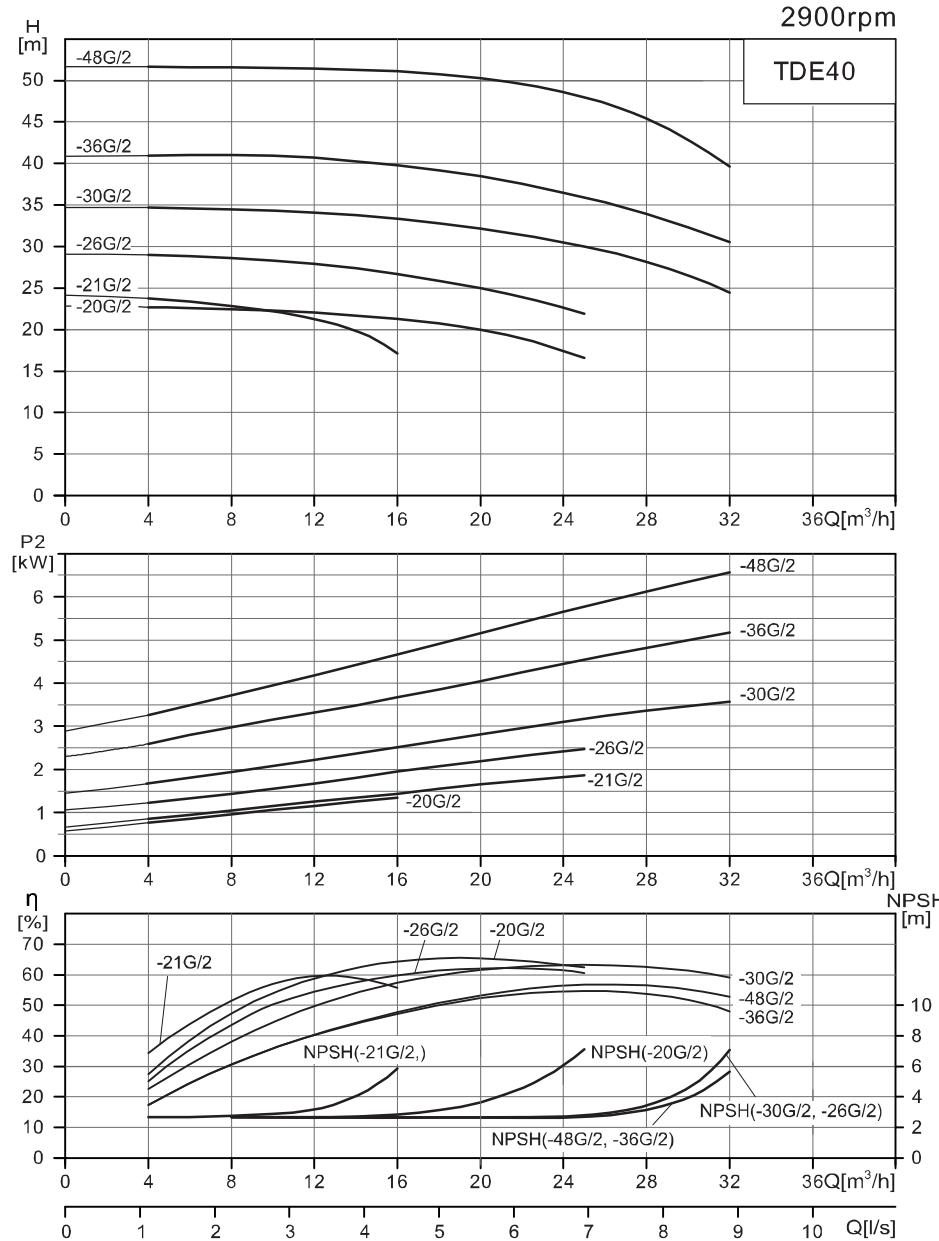
TDE40

TDE40 Performance table

Model	Motor (kW)	Q (m³/h)	4	8	12.5	16	20	25	28	32
TD40E-21G/2	1.5		23.8	22.9	21	17.1				
TD40E-20G/2	2.2		22.7	22.5	22	21.3	20	16.6		
TD40E-26G/2	3	H (m)	29	28.6	27.8	26.7	25	21.9		
TD40E-30G/2	4		34.7	34.5	34.1	33.4	32.2	30	28.2	24.5
TD40E-36G/2	5.5		40.9	41	40.7	39.8	38.5	36	34.1	30.5
TD40E-48G/2	7.5		51.6	51.6	51.4	51.1	50.3	48	45.4	39.6
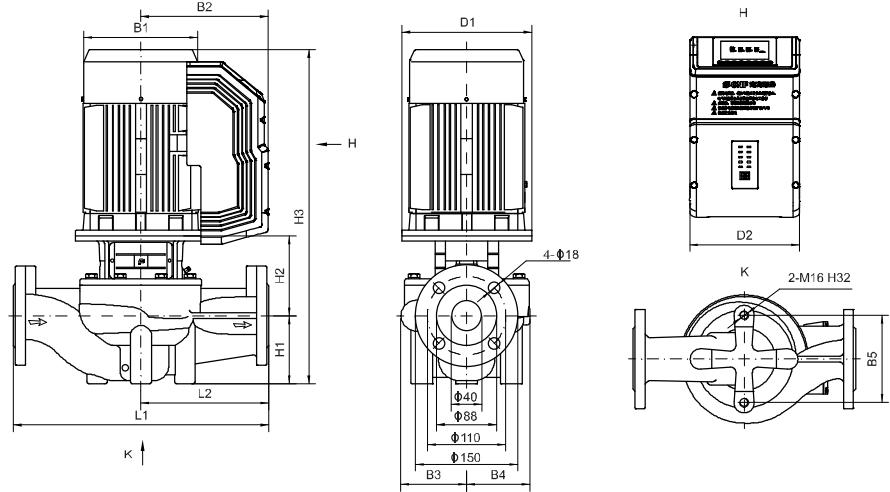
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE40-21G/2	140	186	172	217	98	95	120	68	149	504	320	160	42
TDE40-20G/2	140	186	172	217	105	95	144	85	144	516	320	160	47
TDE40-26G/2	160	186	197	227	116	109	144	85	156	578	340	170	58
TDE40-30G/2	160	208	215	245	116	109	144	85	156	583	340	170	67
TDE40-36G/2	200	208	260	263	133	128	144	90	181	654	380	190	90
TDE40-48G/2	200	208	260	263	133	128	144	90	181	654	380	190	99

Performance curves

2900rpm
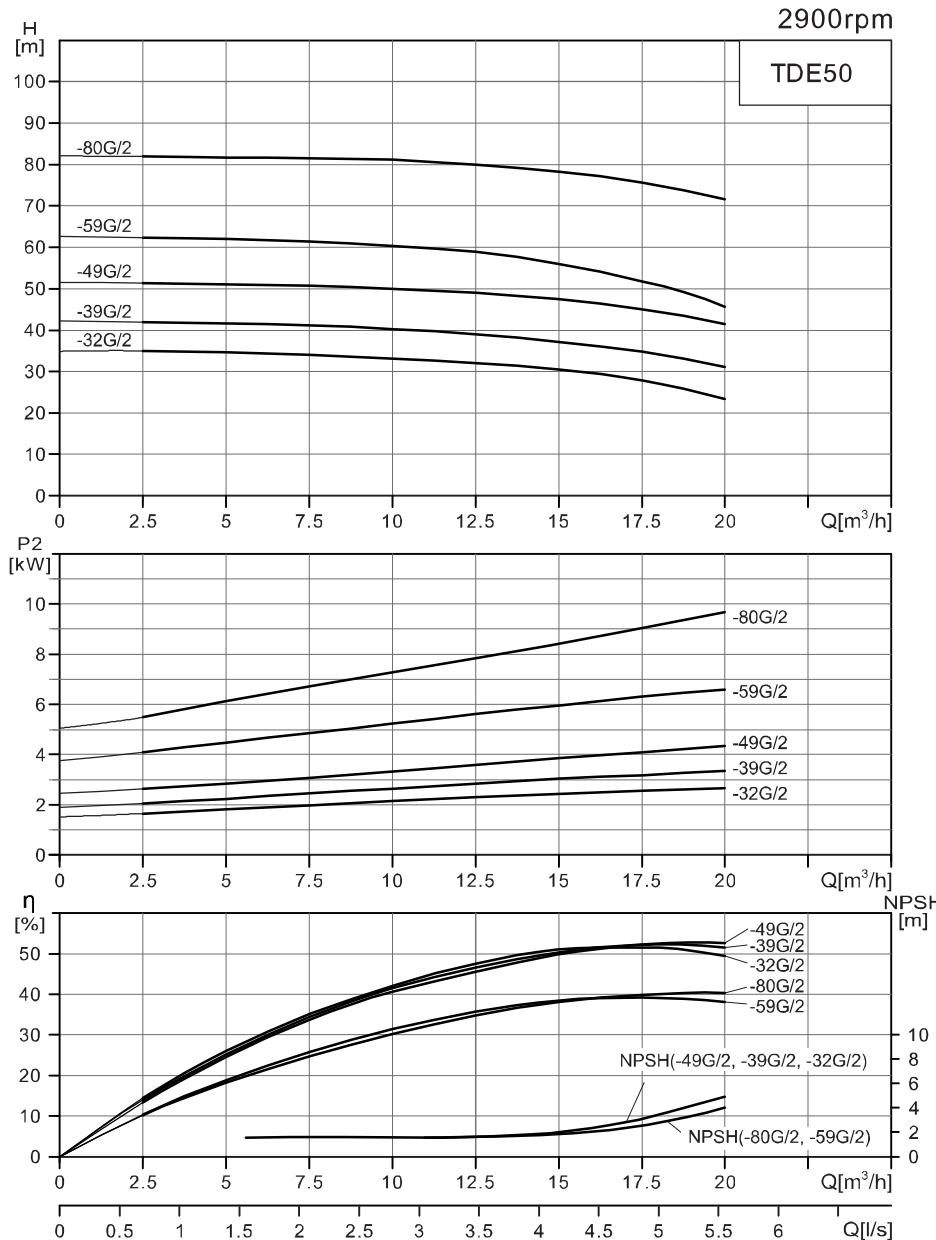
TDE50

TDE50 Performance table

Model	Motor (kW)	Q (m³/h)	2.5	5	7.5	10	12.5	15	17.5	20
TDE50-32G/2	3		35	34.6	34	33.2	33	30.5	27.9	23.3
TDE50-39G/2	4		41.9	41.7	41.3	40.2	39	37.2	34.8	31.2
TDE50-49G/2	5.5	H (m)	51.6	51.2	50.7	50	49	47.5	45.1	41.5
TDE50-59G/2	7.5		62.4	62.1	61.4	60.3	59	56.1	51.9	45.7
TDE50-80G/2	11		81.9	81.7	81.5	81.1	80	78.3	75.7	71.6
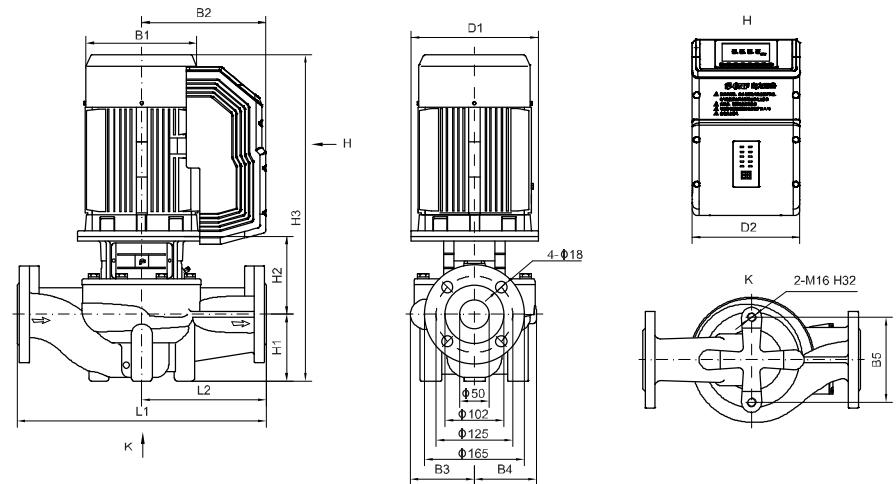
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE50-32G/2	160	186	197	227	128	128	144	105	150	592	400	200	68
TDE50-39G/2	160	208	215	245	128	128	144	105	150	597	400	200	75
TDE50-49G/2	200	208	260	263	128	128	144	105	172	660	400	200	93
TDE50-59G/2	200	208	260	263	163	163	144	105	178	666	440	220	117
TDE50-80G/2	350	257	330	325	163	163	144	105	222	827	440	220	192

Performance curves

2900rpm

TDE50

H [m] curves: -60G/2, -50G/2, -40G/2, -35G/2, -28G/2, -24G/2, -18G/2, -15G/2

P2 [kW] curves: -60G/2, -50G/2, -40G/2, -35G/2, -28G/2, -24G/2, -15G/2, -18G/2

η [%] / NPSH [m] curves: -18G/2, -35G/2, -50G/2, -24G/2, -28G/2, -15G/2, -40G/2, -60G/2, NPSH(-50G/2, -40G/2), NPSH(-35G/2, -28G/2), NPSH(-60G/2), NPSH(-24G/2, -18G/2, -15G/2)
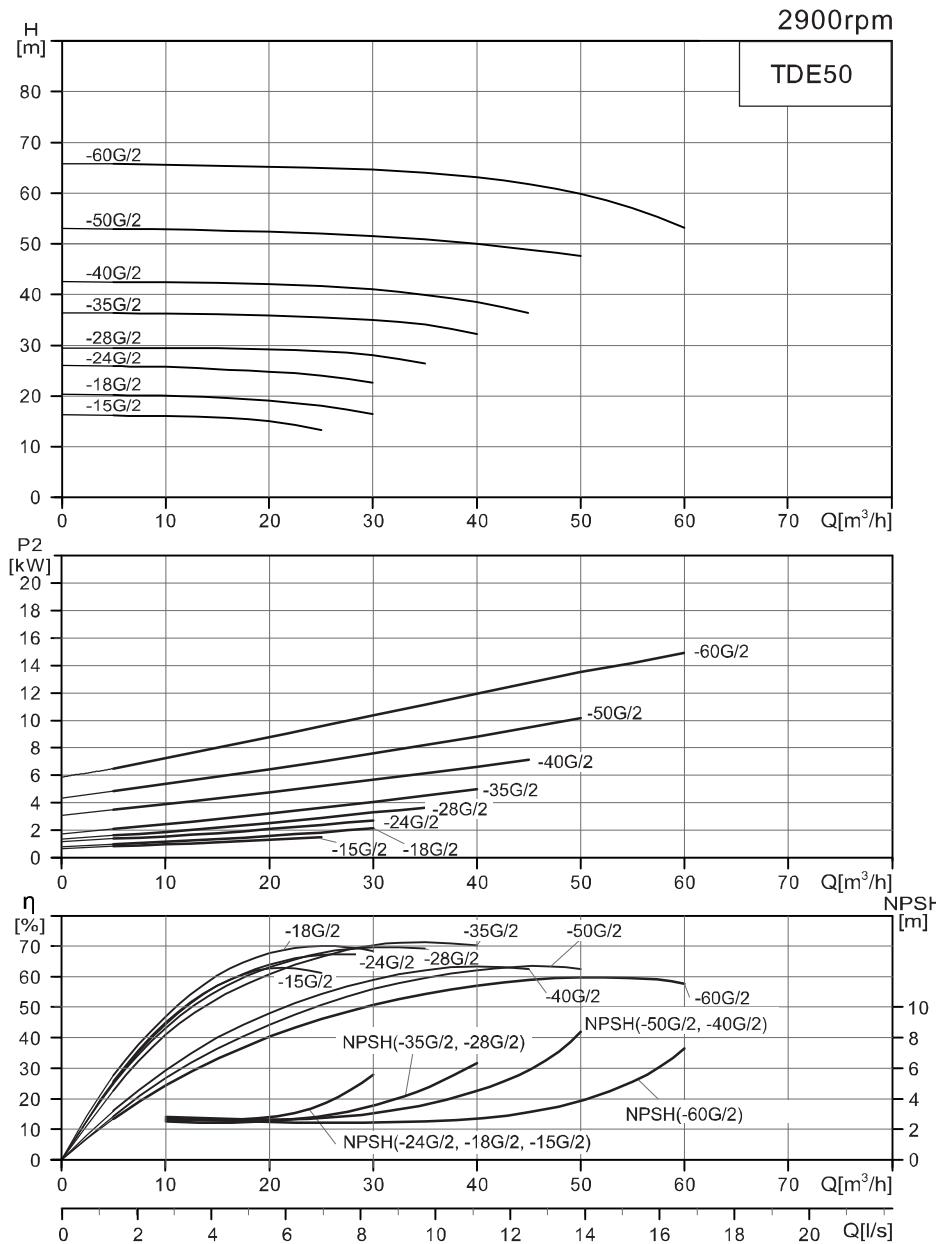
TDE50 Performance table

Model	Motor (kW)	Q (m³/h)	5	10	16	20	25	30	35	40	45	50	60
TDE50-15G/2	1.5		16.1	16.1	15.6	15	13.3						
TDE50-18G/2	2.2		20.2	20	19.6	18	18	16.4					
TDE50-24G/2	3		25.9	25.7	25.2	24.8	24	22.6					
TDE50-28G/2	4	H (m)	29.5	29.5	29.3	29.2	28.8	28	26.4				
TDE50-35G/2	5.5		36.3	36.2	36	35.9	35.5	35	34.1	32.2			
TDE50-40G/2	7.5		42.5	42.4	42.2	42.1	41.7	41	40	38.5	36.4		
TDE50-50G/2	11		53	52.9	52.6	52.4	52	51.5	50.9	50	48.7	48.4	
TDE50-60G/2	15		65.8	65.7	65.7	65.6	65.3	64.7	63.9	62.8	61.6	60	53.2
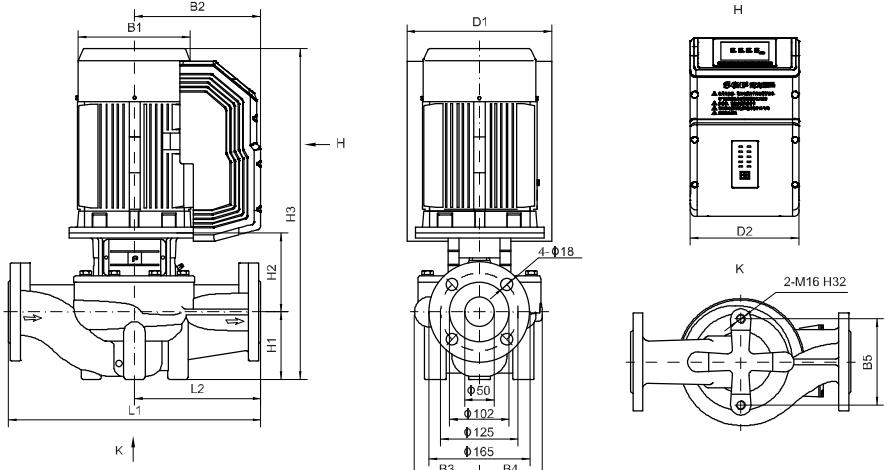
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE50-15G/2	140	186	172	217	114	101	144	105	137	529	340	170	46
TDE50-18G/2	140	186	172	217	114	101	144	105	137	529	340	170	49
TDE50-24G/2	160	186	197	227	114	101	144	105	147	589	340	170	59
TDE50-28G/2	160	208	215	245	118	109	144	105	152	599	340	170	69
TDE50-35G/2	200	208	260	263	118	109	144	105	175	663	340	170	86
TDE50-40G/2	200	208	260	263	142	138	144	105	175	663	400	200	103
TDE50-50G/2	350	257	330	325	142	138	144	105	225	830	400	200	181
TDE50-60G/2	350	257	330	325	171	163	144	115	225	840	440	220	204

Performance curves

2900rpm
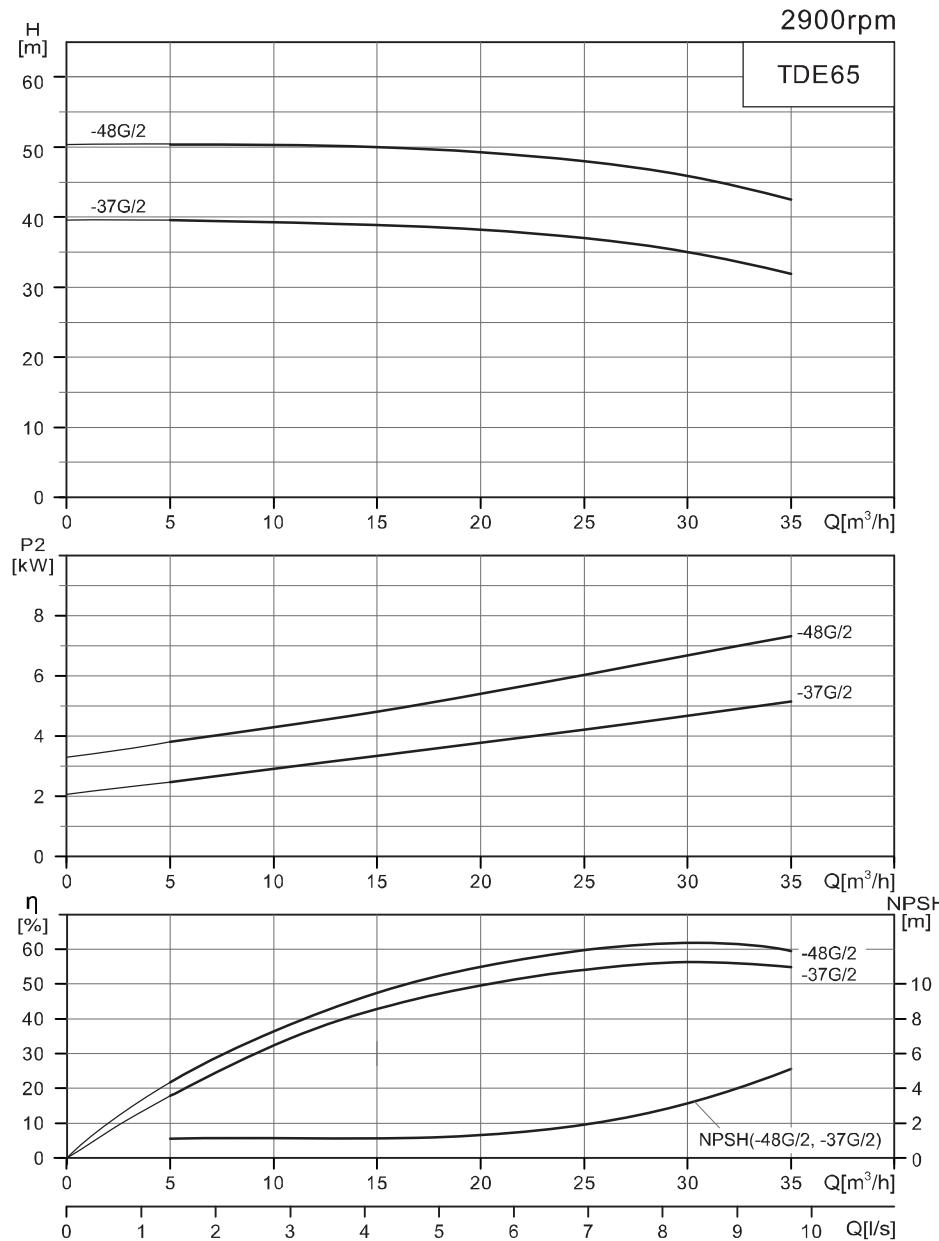
TDE65

TDE65 Performance table

Model	Motor (kW)	Q (m³/h)	5	10	15	20	25	30	35
TDE65-37G/2	5.5	H (m)	39.6	39.3	39	38.2	37	35	32.1
TDE65-48G/2	7.5		50.4	50.3	50	49.3	48	45.9	42.6
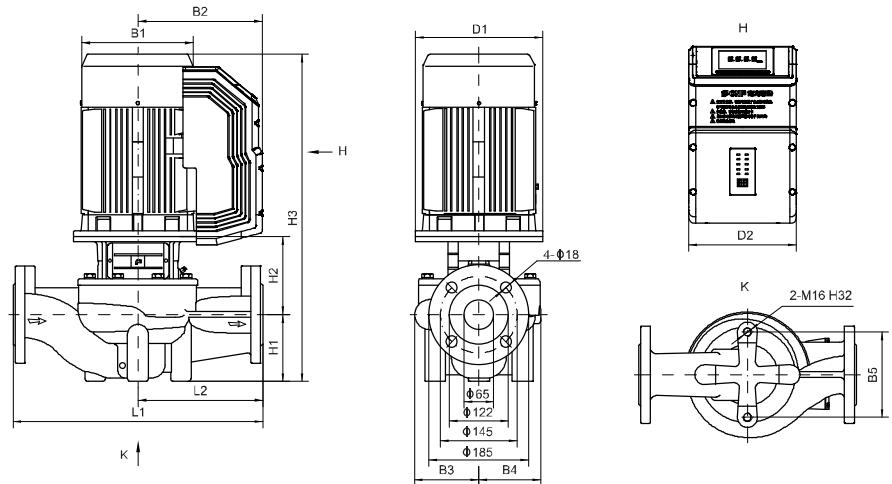
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE65-37G/2	200	208	260	263	128	128	144	105	180	668	400	200	95
TDE65-48G/2	200	208	260	263	128	128	144	105	180	668	400	200	103

Performance curves

2900rpm
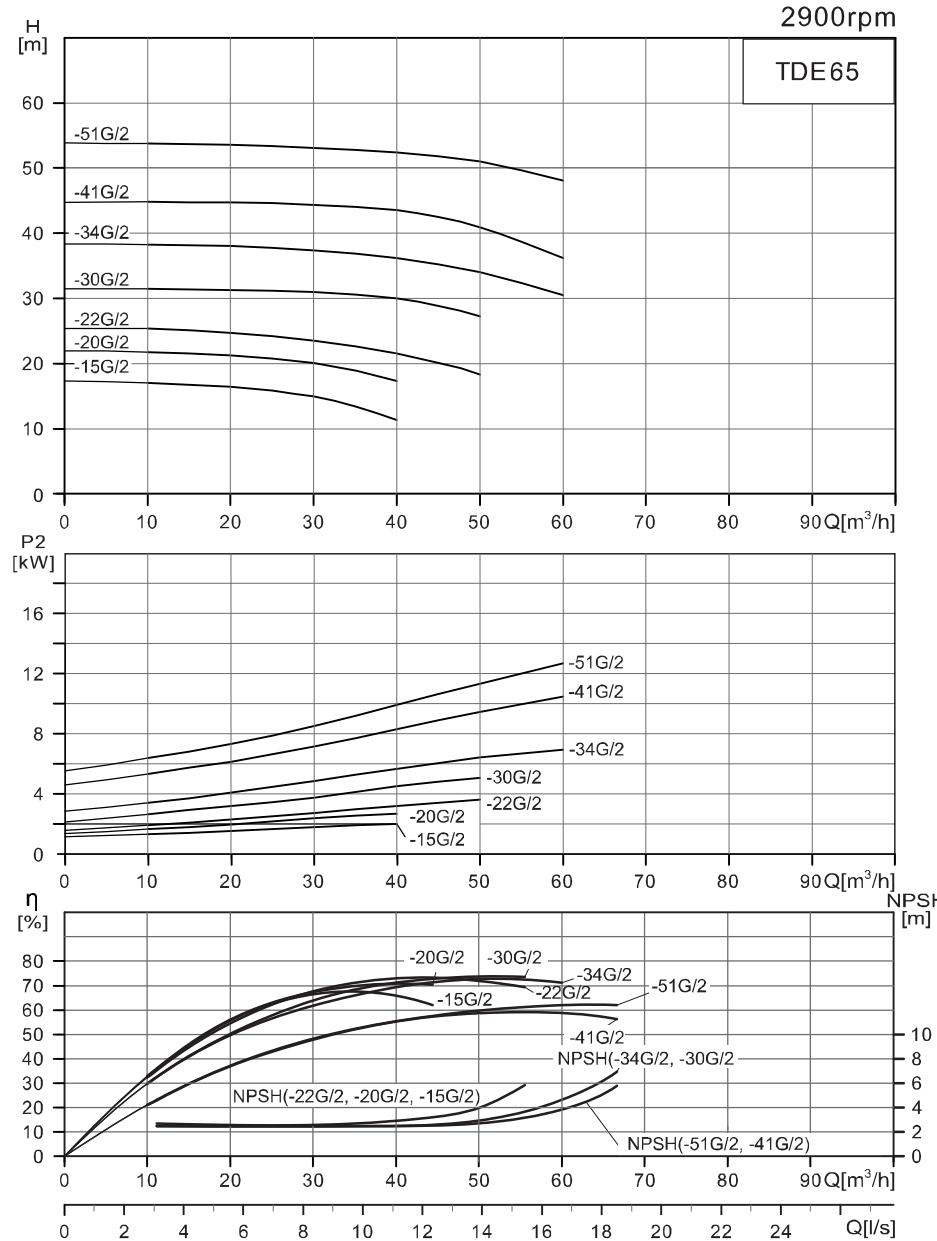
TDE65

TDE65 Performance table

Model	Motor (kW)	Q (m³/h)	10	20	30	40	50	60
TDE65-15G/2	2.2		17.1	16.4	15	11.3		
TDE65-20G/2	3		21.8	21.2	20	17.4		
TDE65-22G/2	4		25.1	24.8	23.9	22	18.4	
TDE65-30G/2	5.5	H (m)	31.5	31.3	31	30	27.3	
TDE65-34G/2	7.5		38.3	38	37.4	36.1	34	30.5
TDE65-41G/2	11		44.8	44.7	44.4	43.5	41	36.1
TDE65-51G/2	15		53.7	53.5	53.1	52.4	51	48
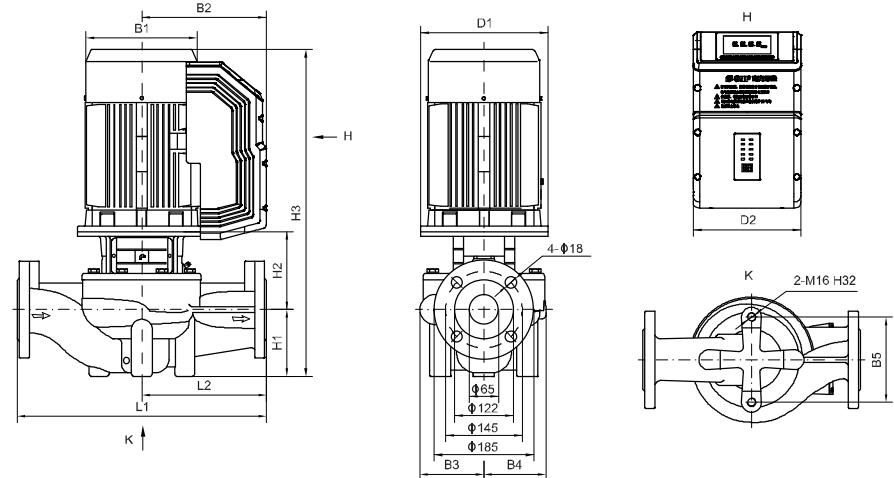
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE65-15G/2	140	186	172	217	116	101	144	105	153	545	340	170	52
TDE65-20G/2	160	186	197	227	116	101	144	105	163	605	340	170	61
TDE65-22G/2	160	208	215	245	116	101	144	105	163	610	340	170	69
TDE65-30G/2	200	208	260	263	131	115	144	105	194	682	360	180	90
TDE65-34G/2	200	208	260	263	131	115	144	105	194	682	360	180	99
TDE65-41G/2	350	257	330	325	148	138	144	105	234	839	400	200	181
TDE65-51G/2	350	257	330	325	148	138	144	105	234	839	400	200	196

Performance curves

2900rpm
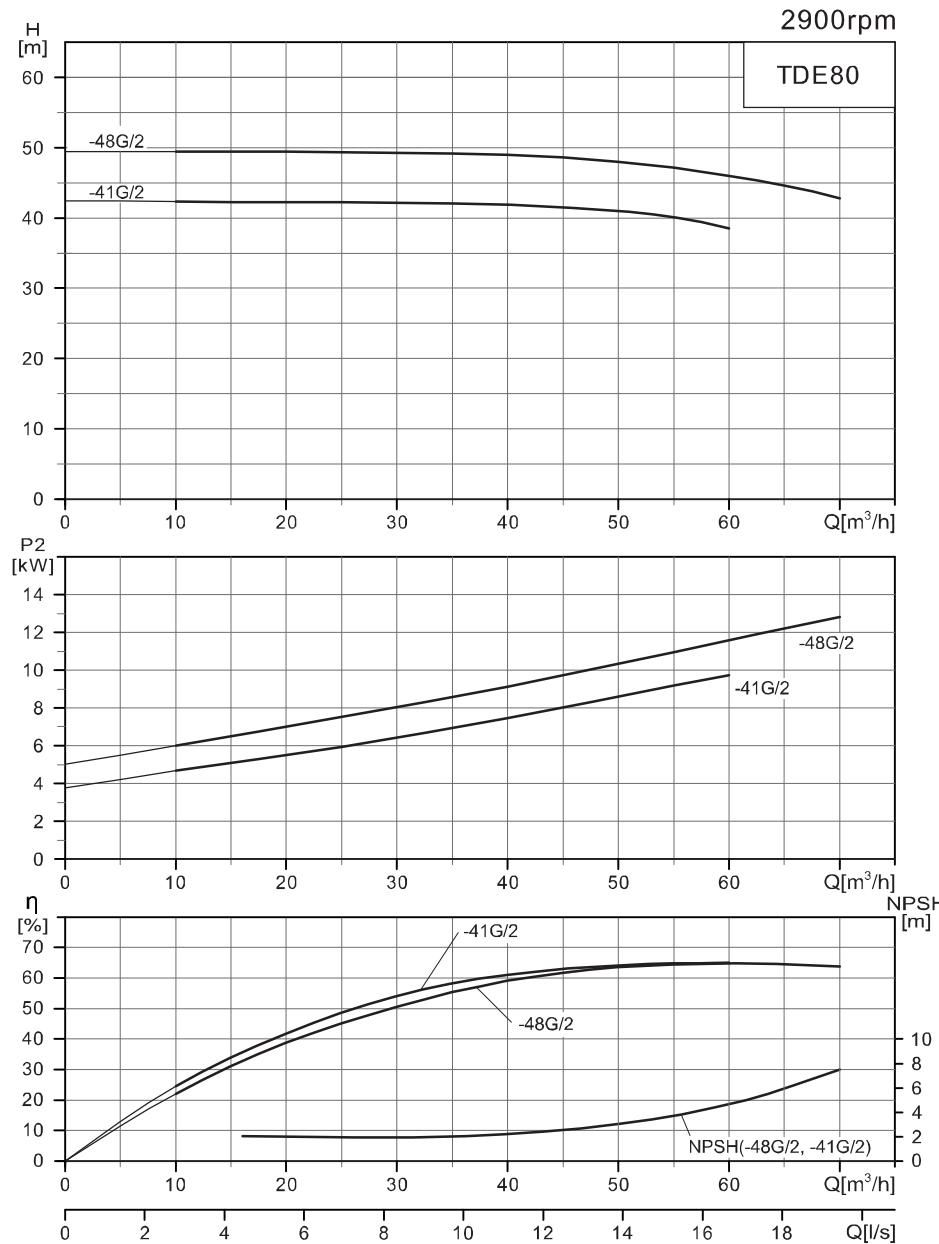
TDE80

TDE80 Performance table

Model	Motor (kW)	Q (m³/h)	10	20	30	40	50	60	70
TDE80-41G/2	11	H (m)	42.3	42.2	42.1	41.8	41	38.4	
TDE80-48G/2	15		49.4	49.4	49.3	49	48	46	42.8
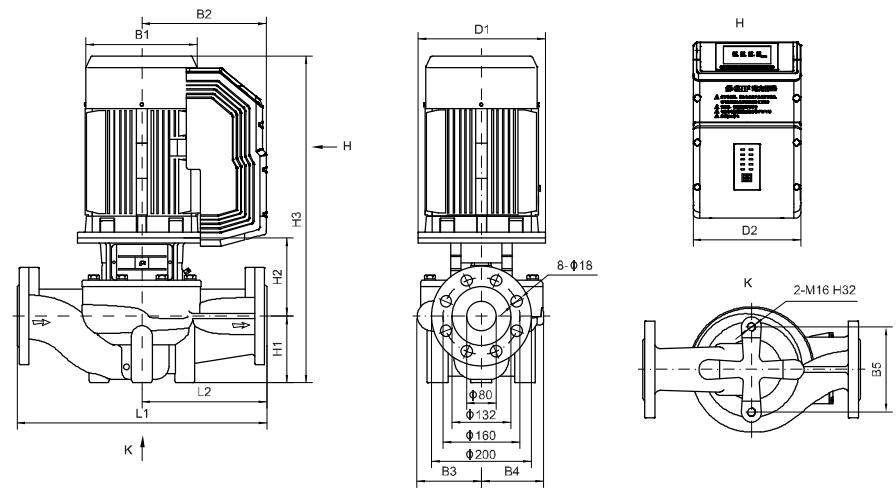
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE80-41G/2	350	257	330	325	137	128	144	115	221	836	500	250	184
TDE80-48G/2	350	257	330	325	137	128	144	115	221	836	500	250	199

Performance curves

2900rpm
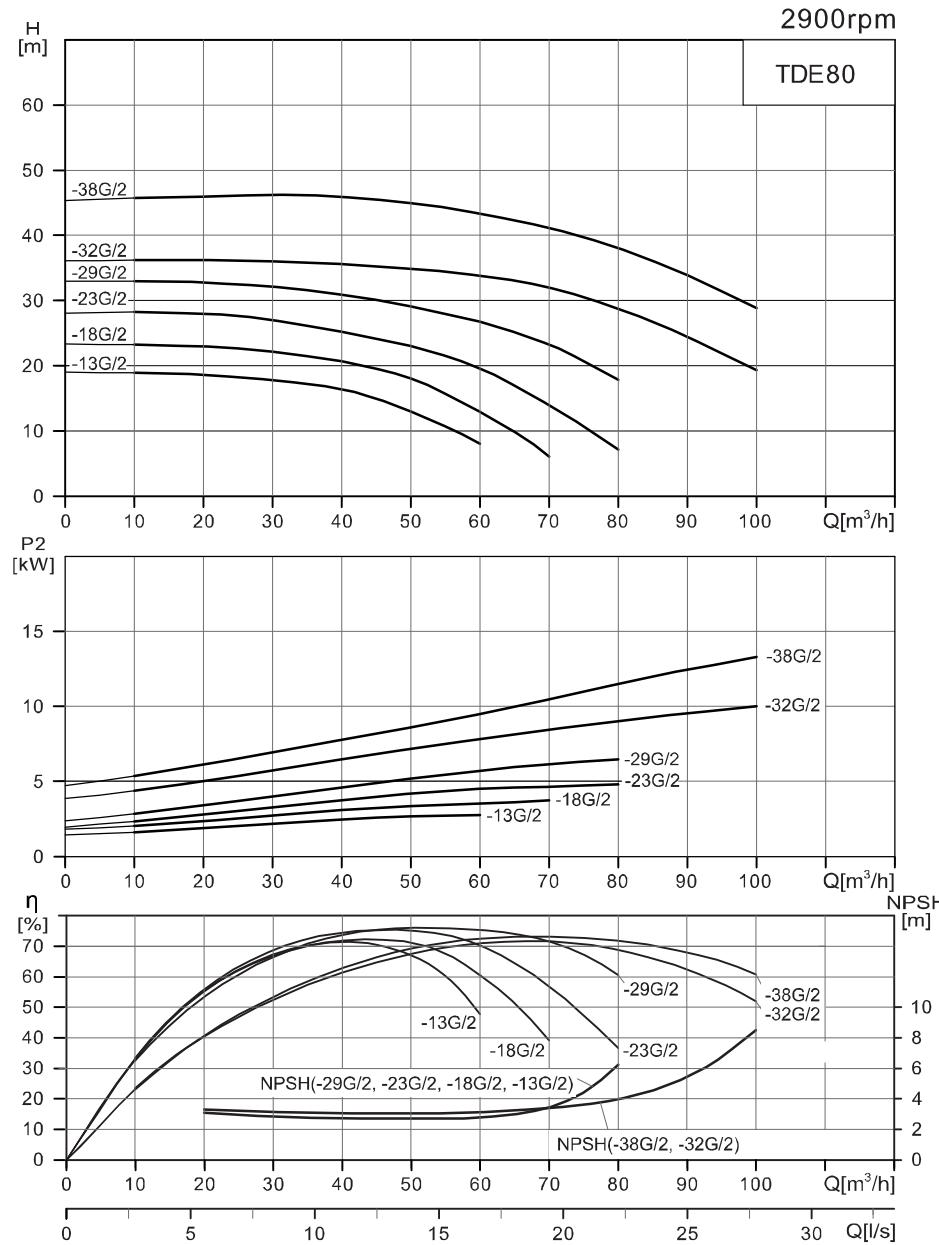
TDE80 Performance table

Model	Motor (kW)	Q (m³/h)	10	20	30	40	50	60	70	80	90	100
TDE80-13G/2	3		18.9	18.6	17.8	16.3	13	8				
TDE80-18G/2	4		23.2	23	22.2	20.6	18	12.9	6			
TDE80-23G/2	5.5	H (m)	28.2	28	27	25.2	23	19.5	13.9	7.1		
TDE80-29G/2	7.5		33	32.8	32.1	30.9	29	26.7	23.2	17.8		
TDE80-32G/2	11		36.2	36.2	36	35.6	34.9	33.8	32	28.7	24.4	19.3
TDE80-38G/2	15		45.7	45.9	46.2	45.9	45	43.3	41.1	38	33.8	28.8
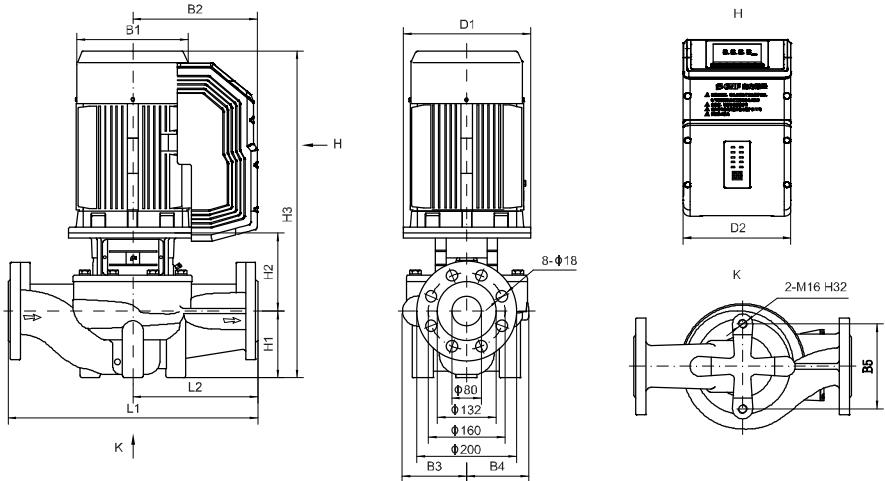
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE80-13G/2	160	186	197	227	134	112	144	105	171	613	400	200	67
TDE80-18G/2	160	208	215	245	134	112	144	105	171	618	400	200	75
TDE80-23G/2	200	208	260	263	134	112	144	105	195	683	400	200	92
TDE80-29G/2	200	208	260	263	134	112	144	105	195	683	400	200	100
TDE80-32G/2	350	257	330	325	159	138	144	115	240	855	450	225	187
TDE80-38G/2	350	257	330	325	159	138	144	115	240	855	450	225	202

Performance curves

2900rpm
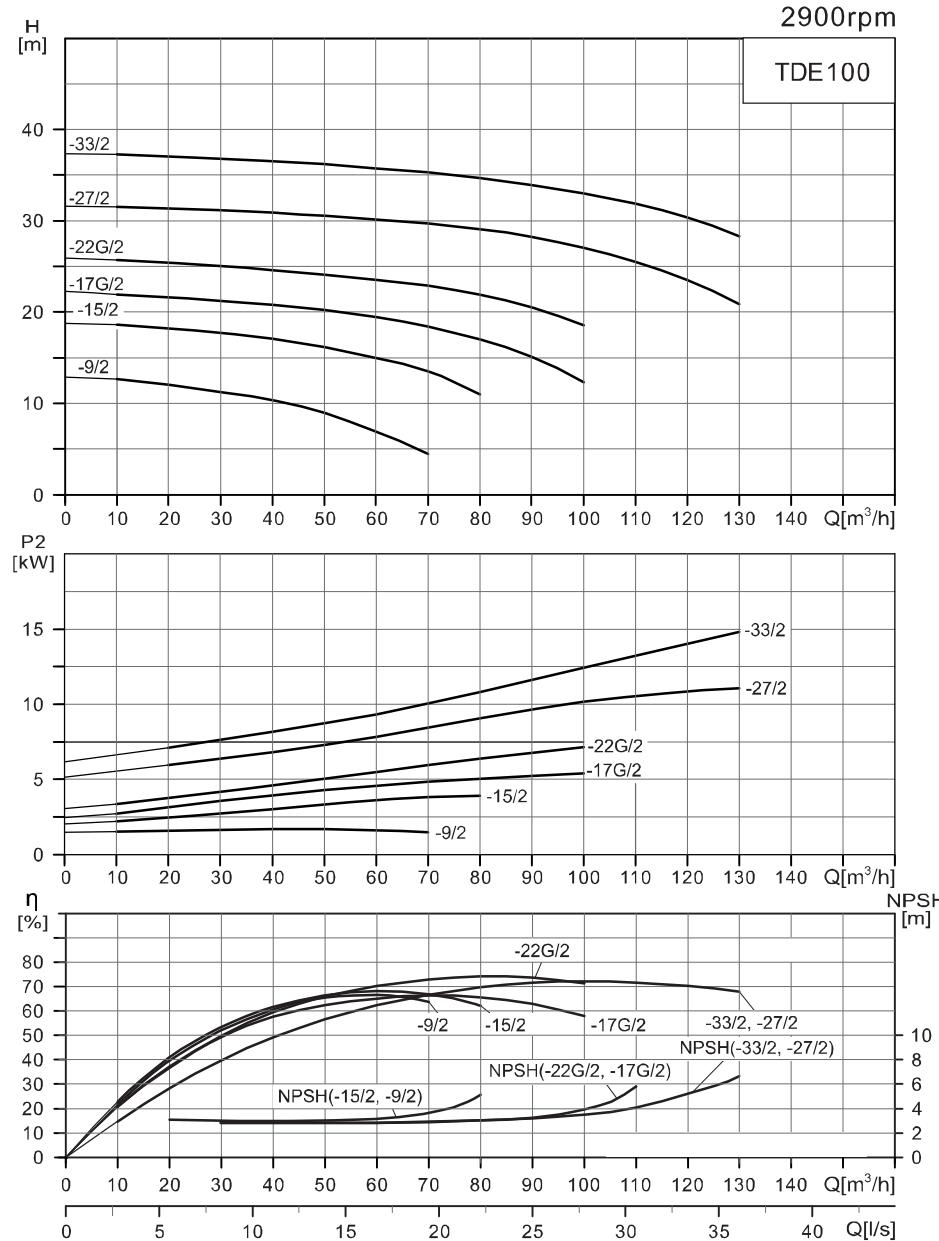
TDE100

TDE100 Performance table

Model	Motor (kW)	Q (m³/h)	10	20	30	40	50	60	70	80	90	100	110	120	130
TDE100-9/2	2.2	H (m)	13.9	13.2	12.2	10.8	9	6.8	4.4						
TDE100-15/2	4		18.6	18.2	17.7	17.1	16.2	15	13.4	11					
TDE100-17G/2	5.5		21.9	21.6	21.2	20.8	20	19.4	18.4	17	15.1	12.3			
TDE100-22G/2	7.5		25.7	25.5	25	24.6	24.1	23.6	22.9	21.9	20.5	18.6			
TDE100-27/2	11		31.5	31.3	31.1	30.9	30.7	30.3	29.8	29.2	28.2	27	25.5	23.6	20.8
TDE100-33/2	15		37.1	37	36.8	36.6	36.2	35.8	35.3	34.7	33.9	33	31.7	30.1	27.9
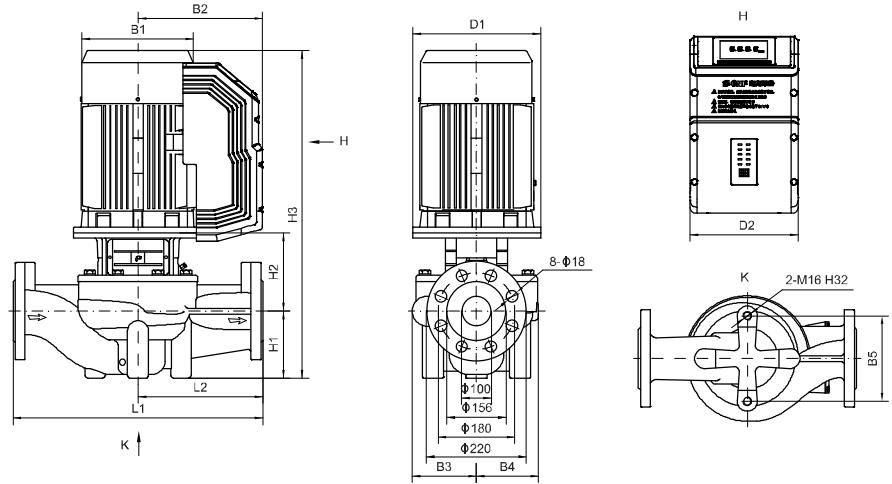
Dimensions and weight

Model	Dimensions (mm)												Weight (kg)
	D1	D2	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	
TDE100-9/2	140	186	172	217	134	101	160	107	172	570	450	225	60
TDE100-15/2	160	208	215	245	134	101	160	107	190	637	450	225	78
TDE100-17G/2	200	208	260	263	146	118	144	120	199	702	450	225	101
TDE100-22G/2	200	208	260	263	146	118	144	120	199	702	450	225	109
TDE100-27/2	350	257	330	325	147	123	144	140	260	900	550	275	195
TDE100-33/2	350	257	330	325	147	123	144	140	260	900	550	275	210

Attachment -Baseplate

4-Φ14   6-Φ18

120
160
195
235

144
195
235

δ35
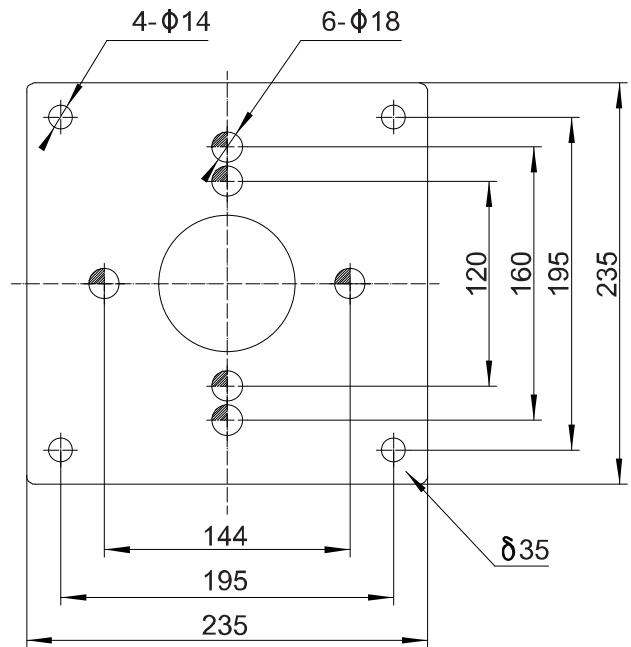
Note: Baseplate is optional.If it is needed, customers need to specify it in the order!