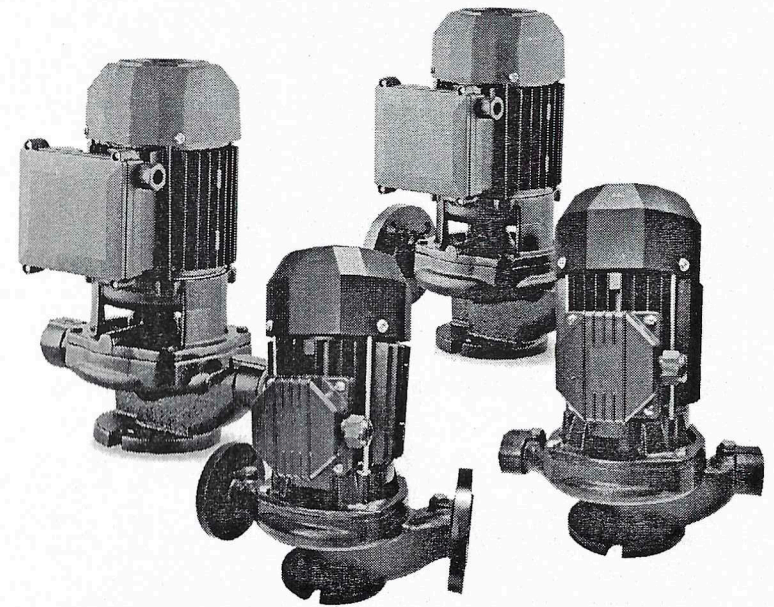




ENERGY

IGD(3) Vertical Pipeline Pump



Operating Condition

Vertical pipeline pumps are used for transporting liquids that are thin, clean, no solid particles or fibers, or with physical and chemical properties similar to water.

Maximum working pressure: Conventional type :1.0MPa

High-pressure type :1.6MPa

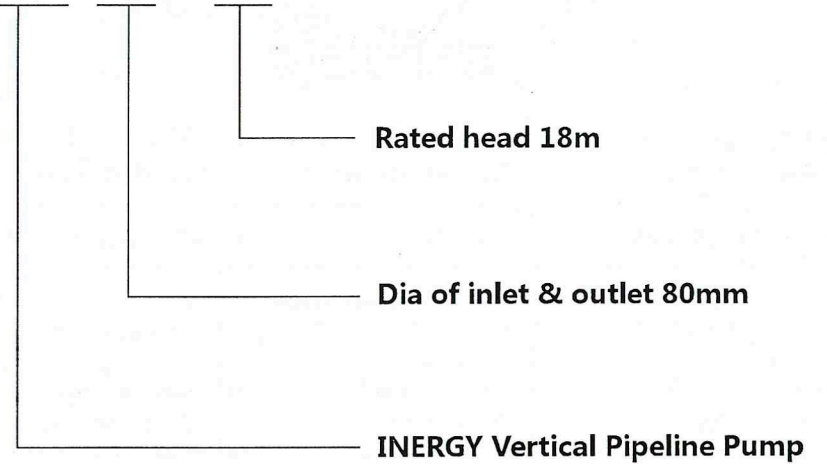
Liquid applicable temperature :-40°C~120°C

Maximum ambient temperature :40°C

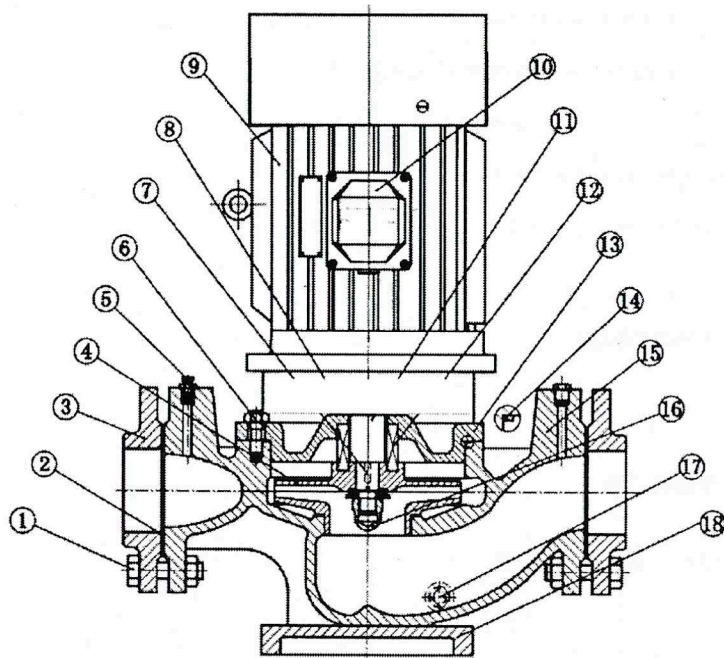
Model Description

IGD(3)80-18

IGD(3) 80 - 18



Pump Constructions & Specification



No.	Part Name	No.	Part Name	No.	Part Name
1	Flange screw	7	Key	13	Coupler
2	Rubber for flange	8	Waterproof rubber ring	14	Sealing ring
3	Flange	9	Motor	15	Pump body
4	Impeller	10	Motor terminal box	16	Impeller nut
5	Exhaust valve	11	Shaft	17	Drain plug
6	Joint screw	12	Mechanical seal	18	Pump base

Minimum inlet pressure

Before the operation of the pump, it is necessary to fill the pump and remove the gas in the pump chamber to ensure the normal and stable water absorption and operation of the pump. If the liquid pressure in the pump chamber is lower than its vaporization pressure, cavitation may occur during pump operation. To avoid cavitation, it is necessary to ensure that there is a minimum pressure on the inlet side of the pump.

The minimum pressure on the inlet side of the pump is related to the system and use of the pump, and generally does not need to be calculated. The maximum suction of the pump needs to be calculated only if the pump is used in the following cases:

- 1, when the liquid temperature is high (generally more than 50C)
- 2, the water pump inlet pipe diameter is small
3. The suction range of the pump is large or the inlet pipe is long
- 4, the system pressure is too small (such as semi-vacuum water absorption)
- 5, poor import conditions (such as long water inlet pipe, too much winding, etc.)

- Maximum suction H(m)(or pump installation height) can be calculated according to the following formula:

$H = H_{atm} - NPSH - H_f - H_v - 0.5$ The formula is as follows:

H_{atm} : Atmospheric pressure, 10m

Static pressure in closed piping (m)

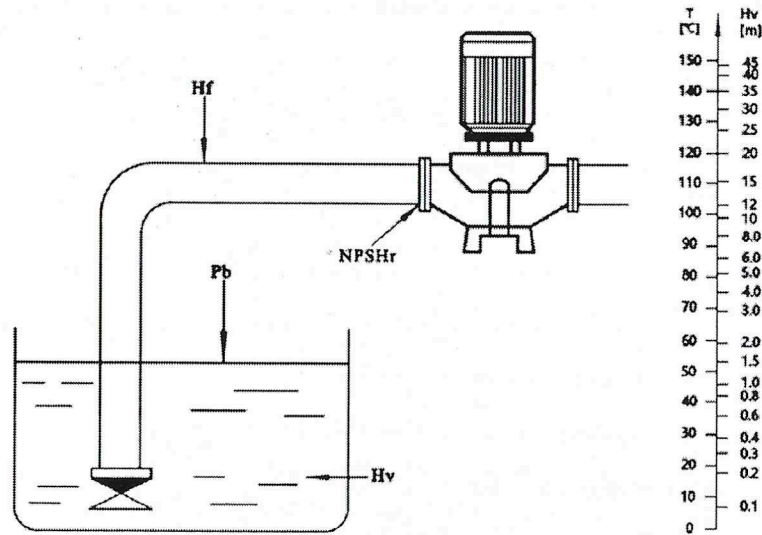
NPSH: Pump net positive suction head (m)

H_f : Pump inlet line loss (m)

H_v : Vaporization pressure of liquid at corresponding temperature (m)

0.5m: safe margin

- Vaporization pressure value of water at different temperatures:



Pump application & Feature

IGD(3) vertical pipeline pump, is a multi-purpose water pressurization product, can be used to pump and transport diluted, clean, non-corrosive normal temperature water, and viscosity below 5°E physical and chemical properties similar to water liquid, widely used in drainage water supply, refrigeration, fire protection, electroplating, chemical industry, extrusion

Equipment, environmental protection sewage treatment system equipment.

- Water supply system
- Fire system
- Refrigeration system
- Electroplating industry
- Chemical industry
- Sewage treatment

Pump Liquid		Max Operating Temp (°C)	Liquid Characteristics	Using Range
Water	Air conditioning circulating water	<90°C		Pipeline pump is commonly used in domestic water, industrial water, cooling system water, district heating system, air conditioning circulating system, such as: 1. Main circulation pump 2. mixing pipeline pump 3. boiler pump 4. constant pressure system with pumps, etc
	Boiler water	<110°C		
	Regional water supply	<110°C		
	Condensate	<90°C		
	Softening water	-15°C~90°C		
	Weak alkaline water	Room Temperature	Alkalescence	
Cooling liquid	Hydrocarbon antifreeze	Room Temperature	Liquid containing trace crystals may damage the shaft seal	Pipeline pump used in industry, such as chemical, pharmaceutical, food processing and other industries, such as: 1. Raw material transportation 2. System pressurization 3. mixed loop cycle, etc
	Machining cooling or circulating liquid	Room Temperature, <50%	Liquid containing trace crystals may damage the shaft seal	
	Alcohols (liquids)	Room Temperature		
	Some saline solution	Room Temperature	Liquid containing trace crystals may damage the shaft seal	
Organic solvent	Isopropyl alcohol	<60°C	Flammable liquid	
	Propyl alcohol	<60°C	Flammable liquid	
Oxidizing agent	Hydrogen peroxide	<60°C, 20%		

Pump model

Series	No	Pump model	Flow (m ³ /h)	Head (m)	Speed (r/min)	Power (kW)	DN/PN	
IGD(3)25	1	IGD(3)25-15	4	15	2900	0.55	No flange	
	IGD(3)32	2	IGD(3)32-14	5	14	2900	0.37	DN32/PN6
		3	IGD(3)32-16	8	16	2900	0.75	DN32/PN6
		4	IGD(3)32-20	6	20	2900	0.75	DN32/PN6
		5	IGD(3)32-30	6	30	2900	1.5	DN32/PN6
IGD(3)40	5	IGD(3)40-10	11.4	10	2900	0.75	DN40/ PN10	
	6	IGD(3)40-15	11.4	15	2900	1.1	DN40/PN10	
	7	IGD(3)40-20	11.4	20	2900	1.5	DN40/PN10	
	8	IGD(3)40-21	20	21	2900	2.2	DN40/PN10	
	9	IGD(3)40-26	20	26	2900	3	DN40/PN10	
	10	IGD(3)40-29	25	29	2900	4	DN40/PN10	
	11	IGD(3)40-30	11.4	30	2900	2.2	DN40/PN10	
	12	IGD(3)40-50	11.4	50	2900	4	DN40/ PN10	

IGD(3)50	13	IGD(3)50-8	18	8	2900	0.75	DN50/ PN10
	14	IGD(3)50-12	18	12	2900	1.1	DN50/PN10
	15	IGD(3)50-20	12.5	20	2900	1.5	DN50/PN10
	16	IGD(3)50-25	18	25	2900	2.2	DN50/ PN10
	17	IGD(3)50-30	18	30	2900	3	DN50/PN10
	18	IGD(3)50-40	18	40	2900	4	DN50/ PN10
	19	IGD(3)50-50	18	50	2900	5.5	DN50/ PN10
	20	IGD(3)50-60	18	60	2900	7.5	DN50/ PN10
	21	IGD(3)50-15	18	15	2900	1.5	DN50/ PN10
	22	IGD(3)50-17	18	17	2900	1.5	DN50/ PN10
	23	IGD(3)50-18	25	18	2900	2.2	DN50/PN10
	24	IGD(3)50-24	25	24	2900	3	DN50/ PN10
	25	IGD(3)50-28	30	28	2900	4	DN50/ PN10
	26	IGD(3)50-34	30	34	2900	5.5	DN50/PN10
IGD(3)65	27	IGD(3)65-10	25	10	2900	1.5	DN65/PN10
	28	IGD(3)65-16	25	16	2900	2.2	DN65/PN10
	29	IGD(3)65-19	25	19	2900	2.2	DN65/PN10
	30	IGD(3)65-22	40	22	2900	4	DN65/PN10
	31	IGD(3)65-25	25	25	2900	3	DN65/PN10
	32	IGD(3)65-30	25	30	2900	4	DN65/PN10
	33	IGD(3)65-29	45	29	2900	5.5	DN65/PN10
	34	IGD(3)65-35	50	35	2900	7.5	DN65/PN10
	35	IGD(3)65-40	25	40	2900	5.5	DN65/PN10
	36	IGD(3)65-50	25	50	2900	7.5	DN65/PN10
	37	IGD(3)65-60	25	60	2950	11	DN65/PN10

Series	No	Pump model	Flow	Head	Speed	Power	DN/PN	
			(m ³ /h)	(m)	(r/min)	(kW)		
IGD(3)80	40	IGD(3)80-14	42	14	2900	3	DN80/PN10	
	41	IGD(3)80-21	42	21	2900	4	DN80/PN10	
	42	IGD(3)80-24	42	24	2900	4	DN80/PN10	
	43	IGD(3)80-30	42	30	2900	5.5	DN80/PN10	
	44	IGD(3)80-40	42	40	2900	7.5	DN80/PN10	
	45	IGD(3)80-50	42	50	2950	11	DN80/PN10	
	46	IGD(3)80-18	50	18	2900	4	DN80/PN10	
	47	IGD(3)80-23	50	23	2900	5.5	DN80/PN10	
	48	IGD(3)80-29	50	29	2900	7.5	DN80/PN10	
	49	IGD(3)80-32	70	32	2950	11	DN80/PN10	
	50	IGD(3)80-38	80	38	2900	15	DN80/PN10	
	IGD(3)100	51	IGD(3)100-16	48	16	2900	4	DN100/PN10
		52	IGD(3)100-21	60	21	2900	5.5	DN100/PN10
		53	IGD(3)100-30	50	30	2900	7.5	DN100/PN10
54		IGD(3)100-50A	50	46	2950	11	DN100/PN10	
55		IGD(3)100-50	50	50	2950	15	DN100/PN10	
56		IGD(3)100-10	80	10	2900	4	DN100/PN10	
57		IGD(3)100-19A	80	15	2900	5.5	DN100/PN10	
58		IGD(3)100-17	80	17	2900	5.5	DN100/PN10	
59		IGD(3)100-19	90	19	2900	7.5	DN100/PN10	
60		IGD(3)100-328	75	24	2900	7.5	DN100/PN10	
61		IGD(3)100-32A	90	28	2950	11	DN100/PN10	
62		IGD(3)100-32	100	32	2950	15	DN100/PN10	
63		IGD(3)100-38	87	38	2950	15	DN100/PN10	
64		IGD(3)100-44	94	44	2950	18.5	DN100/PN10	
65		IGD(3)100-50K	100	50	2950	22	DN100/PN10	

IGD(3)125	66	IGD(3)125-9	130	9	2950	5.5	DN125/PN10
	67	IGD(3)125-10	143	10	2950	7.5	DN125/PN10
	68	IGD(3)125-14	120	14	2900	7.5	DN125/PN10
	69	IGD(3)125-16	143	16	2950	11	DN125/PN10
	70	IGD(3)125-24	138	24	2950	15	DN125/PN10
	71	IGD(3)125-28	150	28	2950	18.5	DN125/PN10
	72	IGD(3)125-32	160	32	2950	22	DN125/PN10
	73	IGD(3)125-38	138	38	2950	22	DN125/PN10
	74	IGD(3)125-44	150	44	2950	30	DN125/PN10
75	IGD(3)125-50	160	50	2950	37	DN125/PN10	

Series	No	Pump model	Flow	Head	Speed	Power	DN/PN
			(m ³ /h)	(m)	(r/min)	(kW)	
IGD(3)150	76	IGD(3)150-14	167	14	2950	11	DN150/PN10
	77	IGD(3)150-17	184	17	2950	15	DN150/PN10
	78	IGD(3)150-20	200	20	2950	18.5	DN150/PN10
	79	IGD(3)150-24	173	24	2950	18.5	DN150/PN10
	80	IGD(3)150-28	187	28	2950	22	DN150/PN10
	81	IGD(3)150-32	200	32	2950	30	DN150/PN10

Start, Operation-Maintenance

1. Before starting, the air inside of the pump must be completely exhausted to let the liquid fullfilled in the pump cave, thus ensure for pump's starting correctly.

2. Open the outlet gate valve gradually after starting and adjust operating point inquired.

3. During operating if there is in any noise or unnormal sounds, stop the pump immediately and check the cause currently Check and replace the motor bearing one time one year. The rotation of the pump is clock wise direction when seeing from the motor end.

Troubleshooting

Troubles	Cause	Remedies
No or low discharge	Pump not filled enough water	Refill the pump with water
	Leakages in suction pipes system	Tighten the bolts to eliminat the leakage
	Leakages in foot valve	Repairing the valve or change one
The motor is overheated, bumtnoisy	Low voltage or too high	Adjust the voltage
	Leakage of seal	Replace the seal
	Wrong direction of motor rotation bearing worn out	Check the motor rotation diretion replace the bearing
Low head, Capacity lower than predicted	The resistance of suction is too high	Shorten the suction pipe
	Leakage of air found from the suction pipe	Check and re-install the pipe
	Impeller worn out	Replace the impeller