

## CENTRIFUGAL MULTISTAGE PUMPS



## G E N E R A L

FTT Vertical Multistage Centrifugal Pumps are non self -priming with inline suction and discharge ports. Pump Upper and Lower Casing, Shaft, Impellers are made of heavy duty and high quality material for better pumping life. Pump Assembly components like shaft, impellers, diffusers and bowl assembly are made of high grade stainless steel (SS304/SS316/Duplex SS) and welded with the state-of-art sheet metal technology to achieve better efficiency and maximum benefit of low weight components.

The upper and lower housing of these pumps are made by proprietary investment casting process.

Main Advantages of FTT Pumps are – Low Installation Cost, economical, power efficient. Ex-stock available.

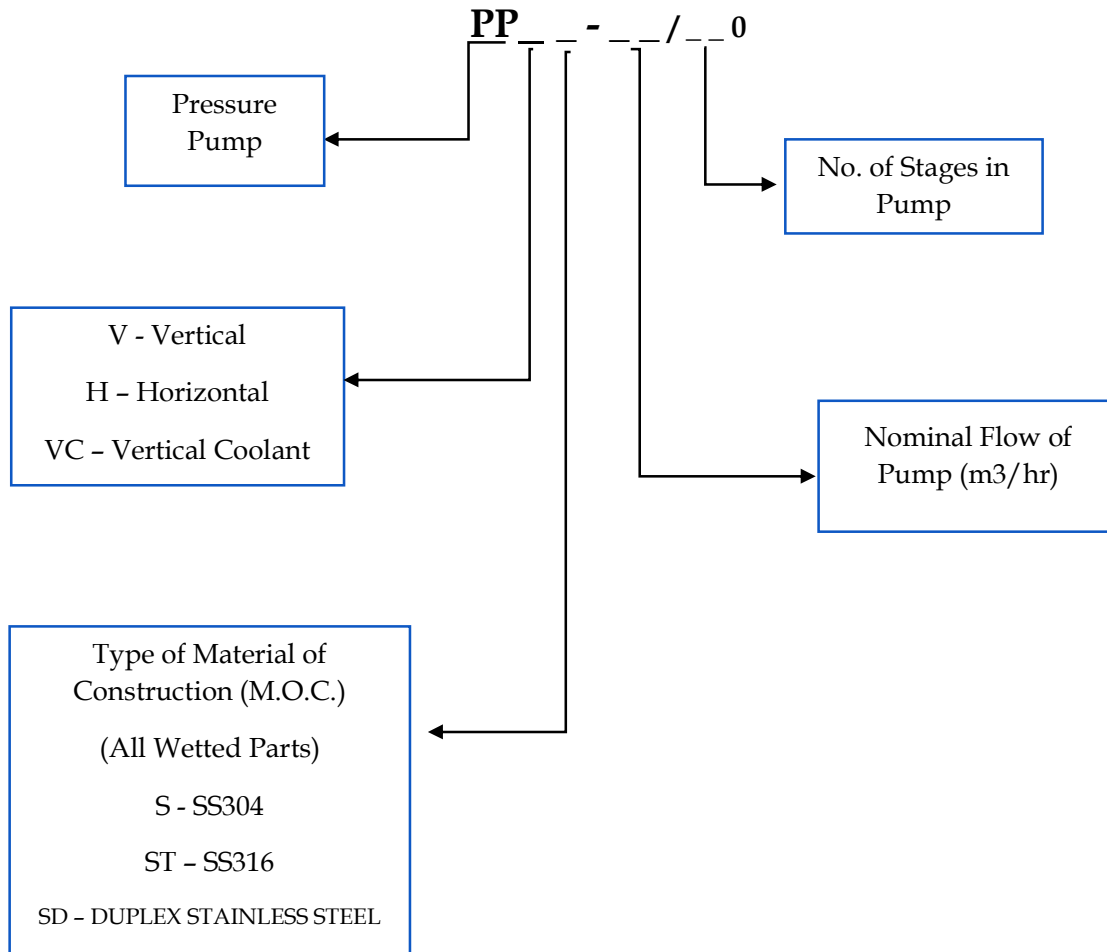
Proud to say FTT Pumps - an absolutely a '**Made in Bharath**' product



### Applications:

- ♦ Pressure Boosting Systems.
- ♦ Fire Fighting Equipment.
- ♦ Pressure Jet -cleaning.
- ♦ Filtration Systems
- ♦ Reverse Osmosis.
- ♦ Boiler Feed Water & Condensate Transfer
- ♦ Chilling Plants
- ♦ Machine Tool Coolant Circulation
- ♦ Pressurized Water Distribution
- ♦ And Many More.....

**PUMP MODEL IDENTIFICATION CODE:**



**GENERAL SPECIFICATIONS:**

<b>Power Range</b>	0.5HP to 20 HP
<b>Speed</b>	2900 rpm
<b>Degree of Protection</b>	IP55
<b>Insulation Class</b>	F
<b>Phase</b>	Single Phase / Three Phase
<b>Mechanical Seal</b>	Cartridge Seal / Mechanical Seal with Nitrile/ Viton Elastomers
<b>Direction of rotation</b>	Counter clockwise
<b>Duty</b>	S1
<b>Flange type</b>	Oval / Round / Victaulic
<b>Suction × Discharge Flange size</b>	1" x 1", 1½" x 1½", 2" x 2"

**PERFORMANCE RANGE:**

<b>Nominal Flow Rate up to</b>	20 m <sup>3</sup> /hr
<b>Total Head up to</b>	310 m

**OPERATION LIMITS:**

<b>Suction</b>	Positive / Flooded
<b>Maximum Liquid Temperature</b>	120°C
<b>Maximum Operating Pressure</b>	Up to 38 bar

**PUMPING FLUID:**

The pump has been designed and built for pumping water, free from explosive substances and solid particles or fibres, and a kinematic viscosity of 1 mm<sup>2</sup>/s. The liquid must not be attacked by the pump material chemically.

## IMPORTANT NOTES:

The pump must be fitted in a well-ventilated place, protected from weather. Ensure that an adequate supply of cool air reaches the motor cooling fan. Arrows on the pump / pump base show the direction of the flow of the liquid. The pump can be installed vertically and horizontally. It is advisable to fit anti-vibration mounting between pump and foundation to absorb any vibration caused by the pump. The pump must always be protected against back flow by means of any non-return valve (foot valve).

In case of purchase of a pump without motor, make sure the motor should be mounted properly.

Lift the pump shaft upward and push the shaft downward and adjust it in middle before coupling it with the motor shaft making sure the pump must rotate freely without any internal friction.

AFTER PROPERLY MOUNTING THE MOTOR, THE PUMP MUST BE TESTED

## TECHNICAL DATA:

### MATERIAL OF CONSTRUCTION:

PART NAME	PPVS (SS304)	PPVST (SS316)	PPVSD (DUPLEX SS)
Pump Base	C.I	C.I	Duplex
Motor Stool	C.I	C.I	Duplex
Top Casing	SS 304	SS 316	Duplex
Bottom Casing	SS 304	SS 316	Duplex
Shaft	SS 316	SS 316	Duplex
Impeller	SS 304	SS 316	Duplex
Diffuser	SS 304	SS 316	Duplex
Mechanical Seal	SS 304	SS 316	Duplex
Seal Face	Carbon vs SiC	Carbon vs SiC	Carbon vs SiC
Wear Ring	PTFE	PTFE	PTFE
Elastomer	Nitrile/Viton	Nitrile/Viton	Nitrile/Viton

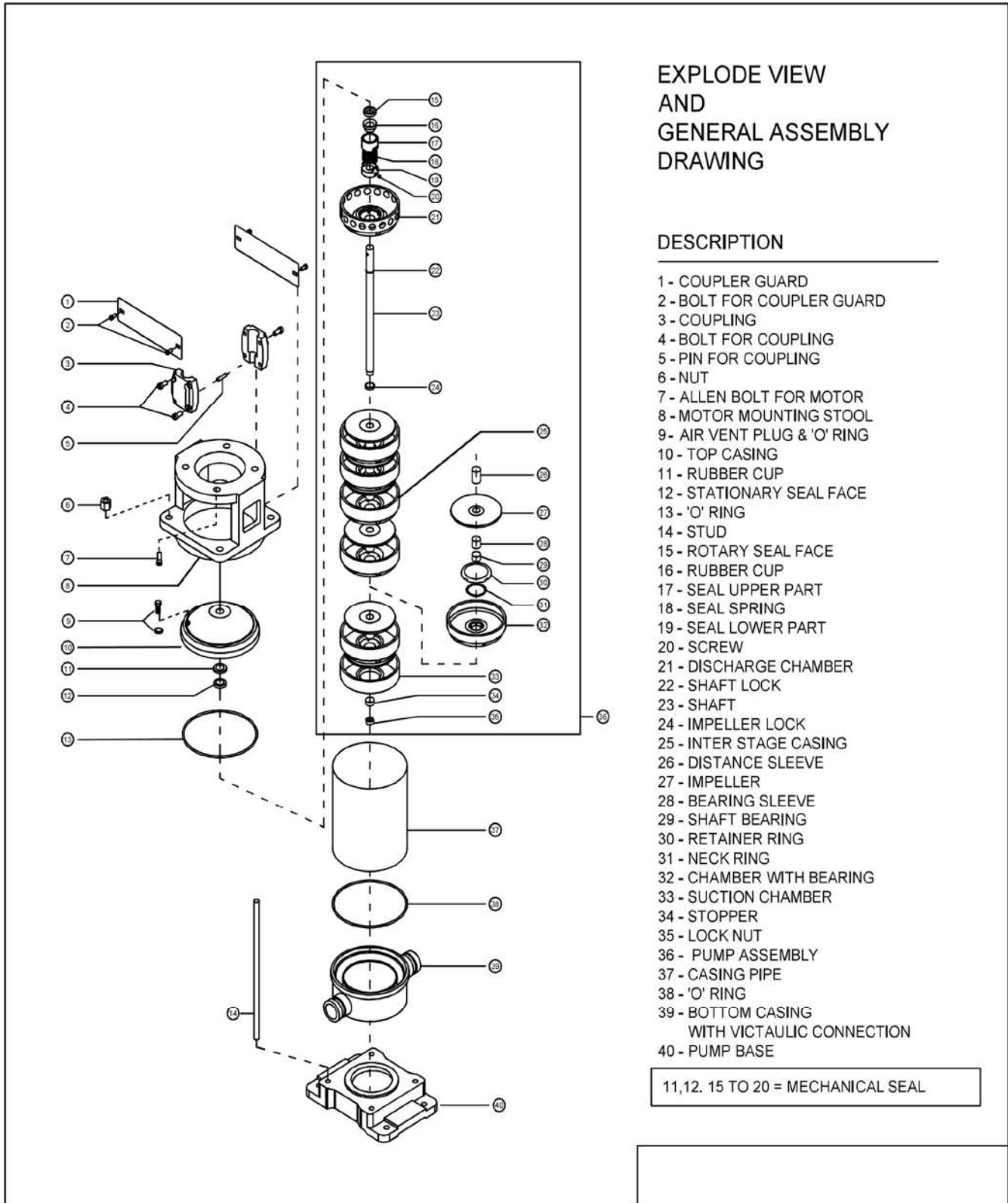
## SALIENT FEATURES:

- Wet parts are completely in SS304 right from inlet port –discharge port (incl. top & bottom casing)
- Pump Casing pipe thickness is 1.5 mm.
- Top - Bottom Casings are by default SS304 investment casting.
- Pump Tie Rods are in SS 410.
- Mechanical Seal – Regular Mech. Seal (Series 2 & 4) and Cartridge type for Series 8 & 16 pumps.
- Spare-parts are available ex-stock
- On-site service support across the country
- Coupler of the pump is dynamically balanced within 5 gm. wt.
- Pump shaft are in SS316 MoC/Duplex SS 14 MM diameter with 4-grooves to fit & lock the Impellers
- Pump Flanges at bottom casing has below options:
  - Flange: C.I. Round/SS Round
  - C. I. Oval
  - Victaulic Connection
  - Threaded connection

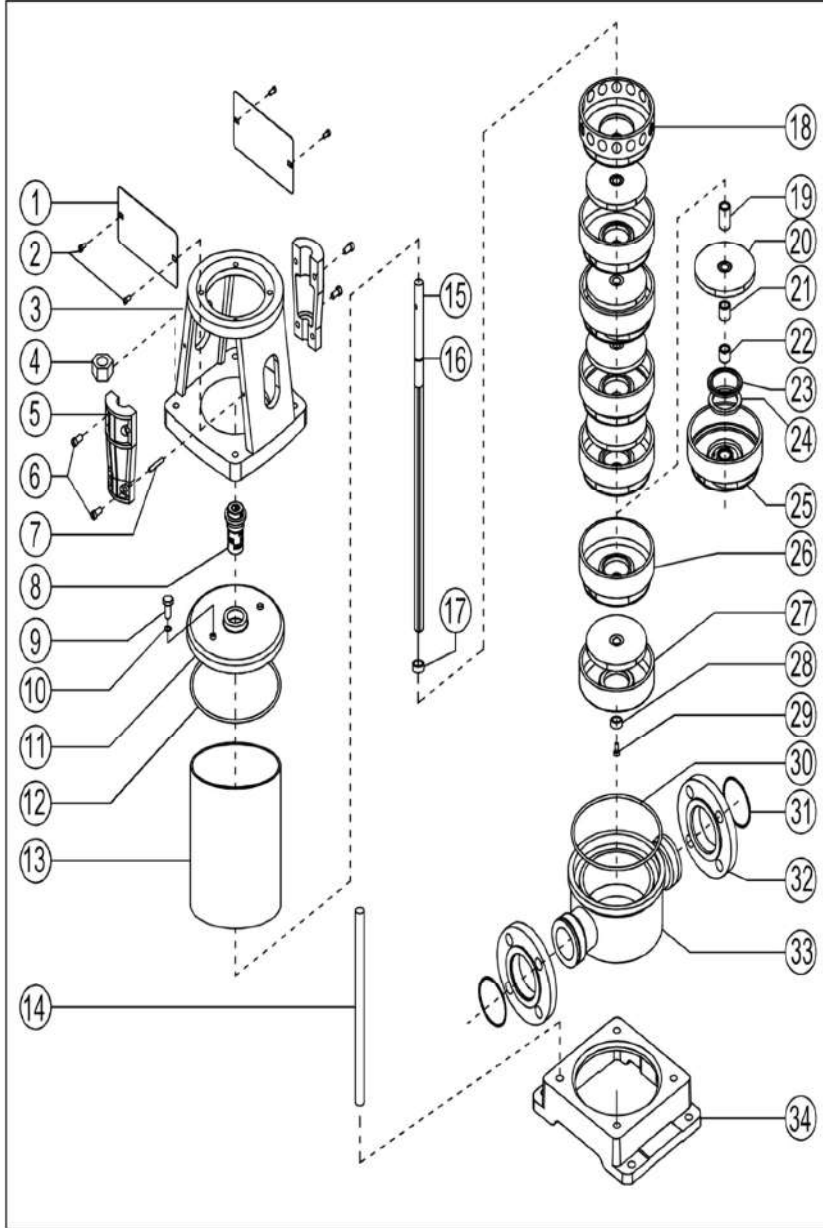
**A) INLINE VERTICAL PUMP**

**GENERAL ARRANGEMENT DRAWING:**

**SERIES-2 &4 :**



**SERIES-8**

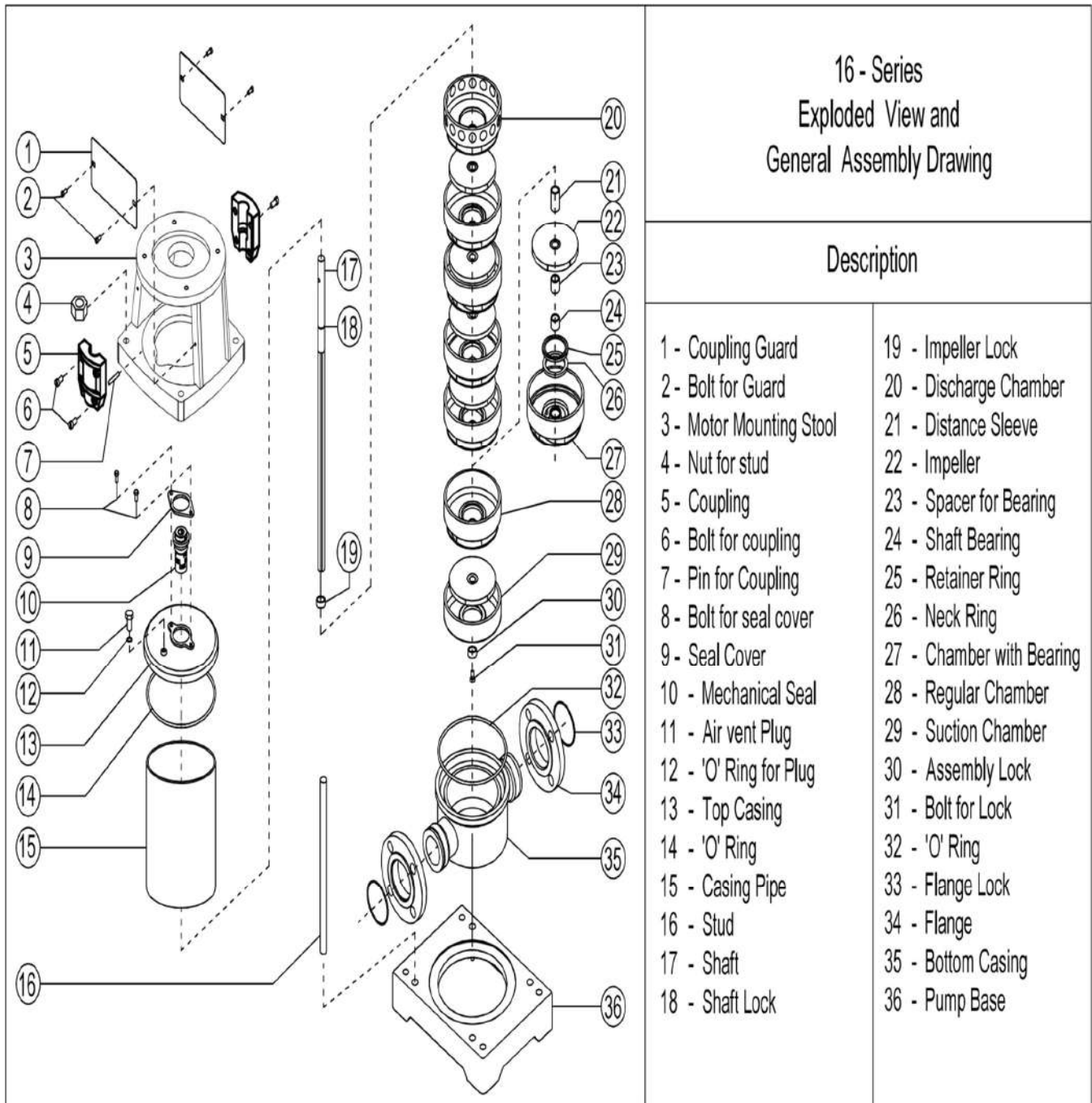


**8 - Series  
 Exploded View and  
 General Assembly Drawing**

**Description**

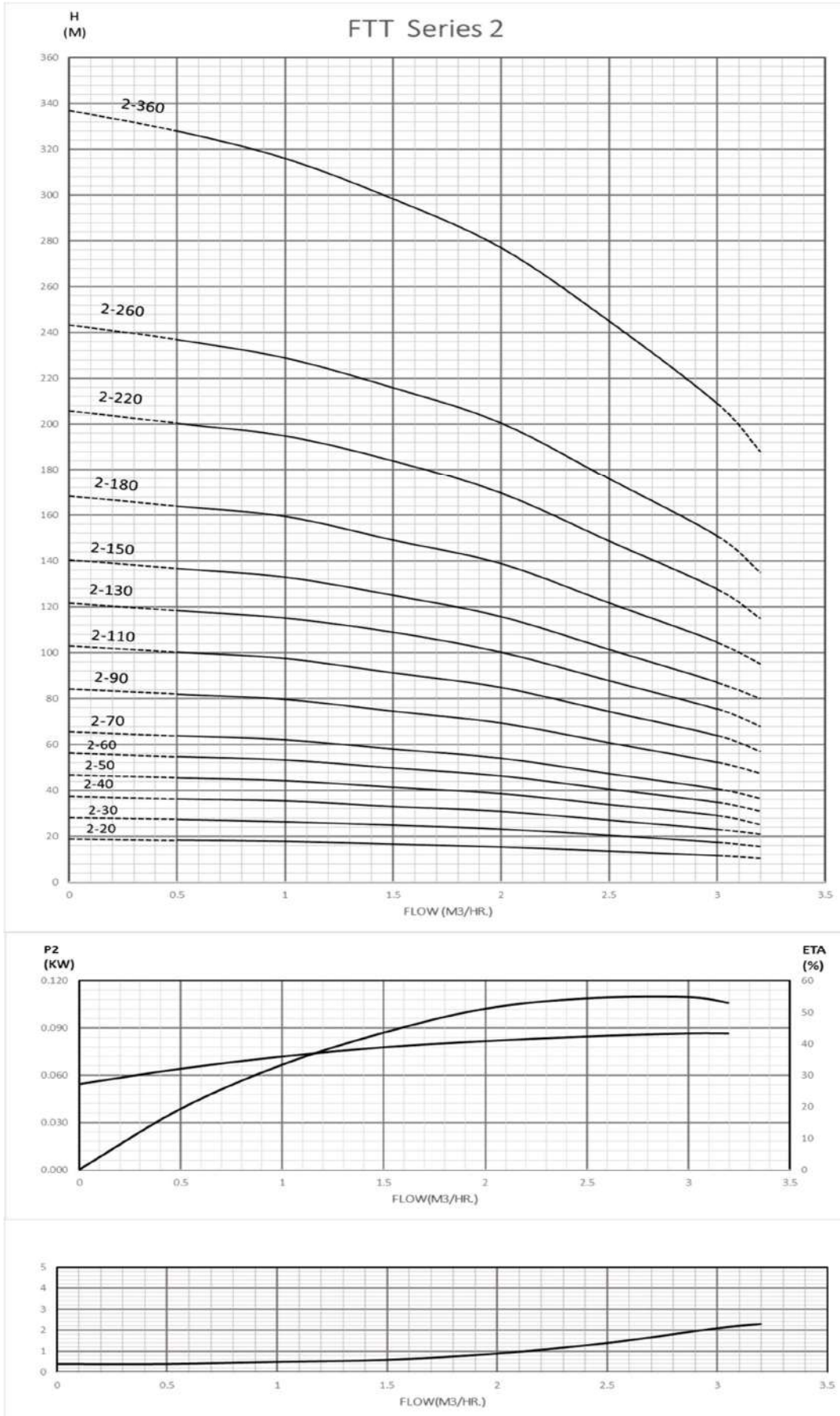
- |                          |                           |
|--------------------------|---------------------------|
| 1 - Coupling Guard       | 18 - Discharge Chamber    |
| 2 - Bolt for Guard       | 19 - Distance Sleeve      |
| 3 - Motor Mounting Stool | 20 - Impeller             |
| 4 - Nut for stud         | 21 - Spacer for Bearing   |
| 5 - Coupling             | 22 - Shaft Bearing        |
| 6 - Bolt for coupling    | 23 - Retainer Ring        |
| 7 - Pin for Coupling     | 24 - Neck Ring            |
| 8 - Mechanical Seal      | 25 - Chamber with Bearing |
| 9 - Plug for vent        | 26 - Regular Chamber      |
| 10 - 'O' Ring for Plug   | 27 - Suction Chamber      |
| 11 - Top Casing          | 28 - Assembly Lock        |
| 12 - 'O' Ring            | 29 - Bolt for Lock        |
| 13 - Casing Pipe         | 30 - 'O' Ring             |
| 14 - Stud                | 31 - Flange Lock          |
| 15 - Shaft               | 32 - Flange               |
| 16 - Shaft Lock          | 33 - Bottom Casing        |
| 17 - Impeller Lock       | 34 - Pump Base            |

**SERIES-16**

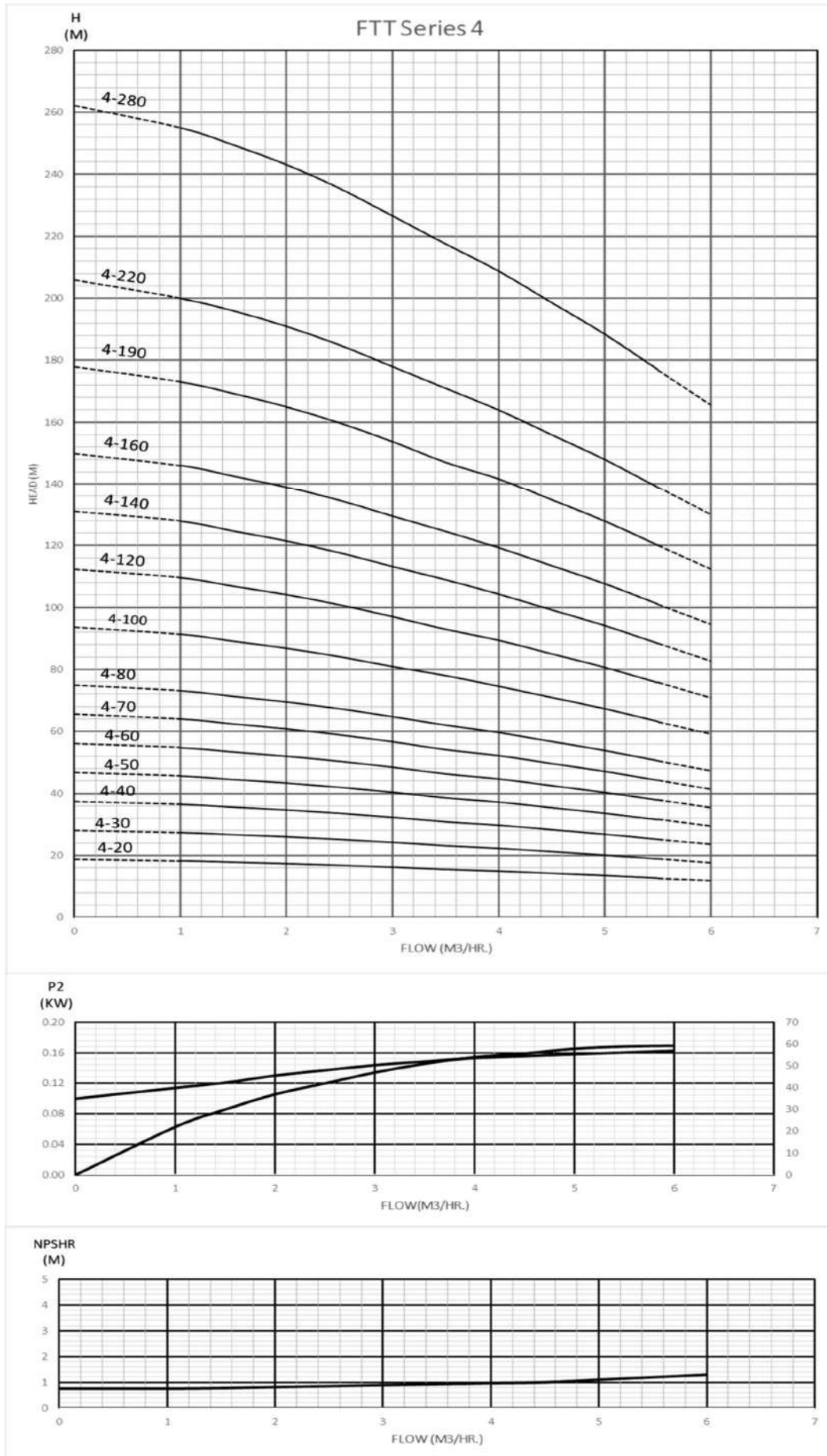


**PERFORMANCE OF PUMPS:**

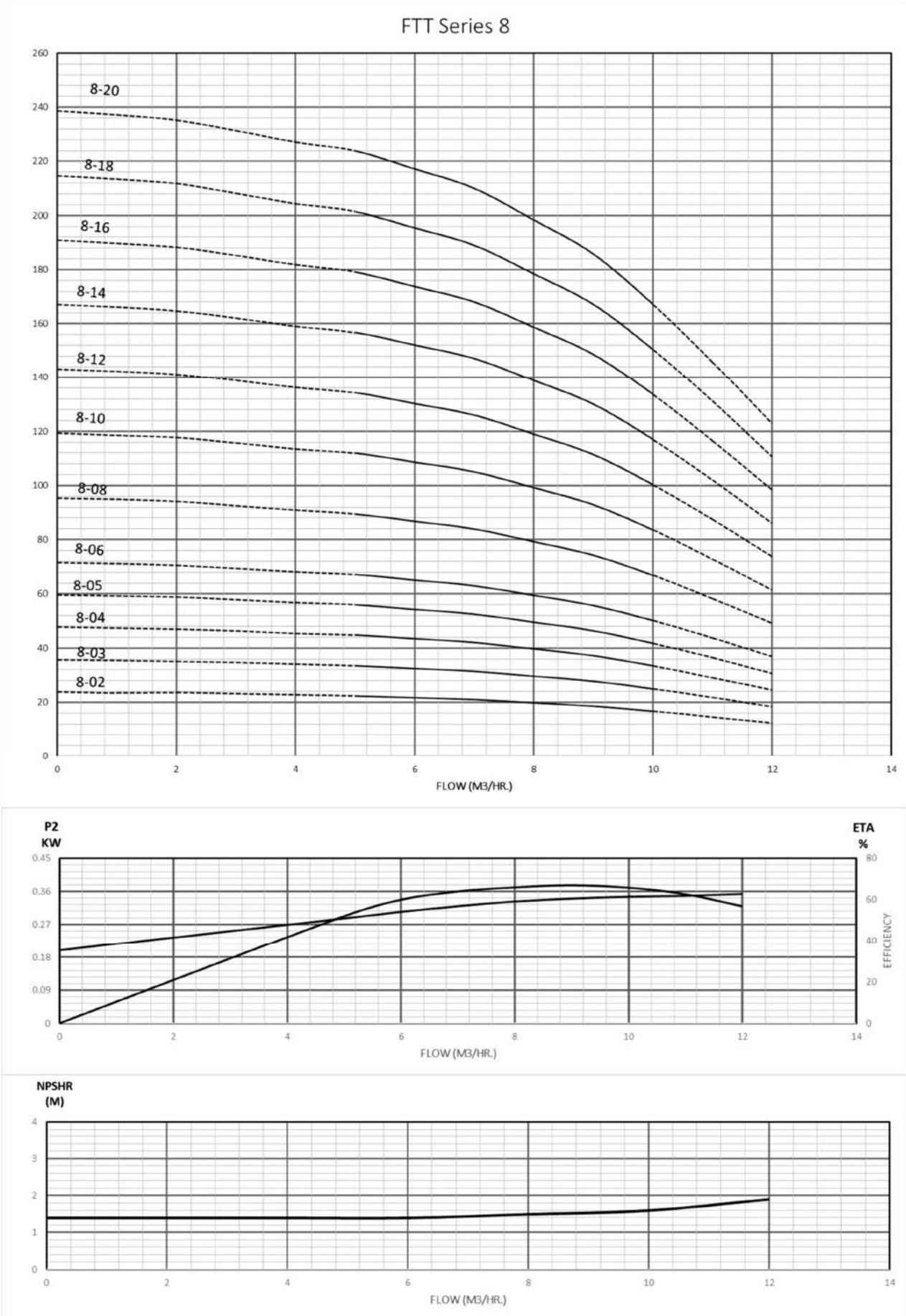
**(i) SERIES-2 (Family Curve)**



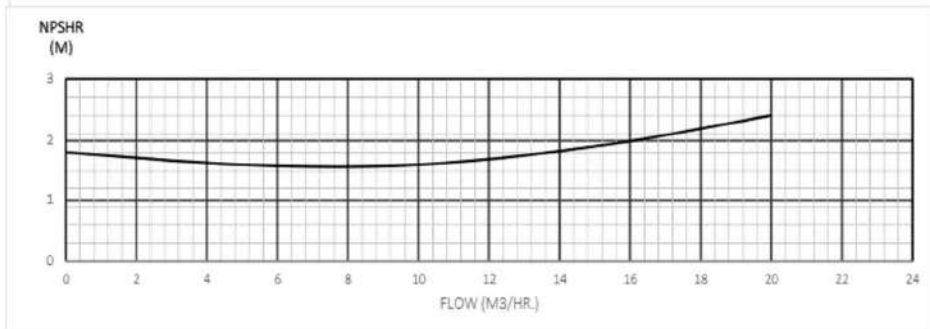
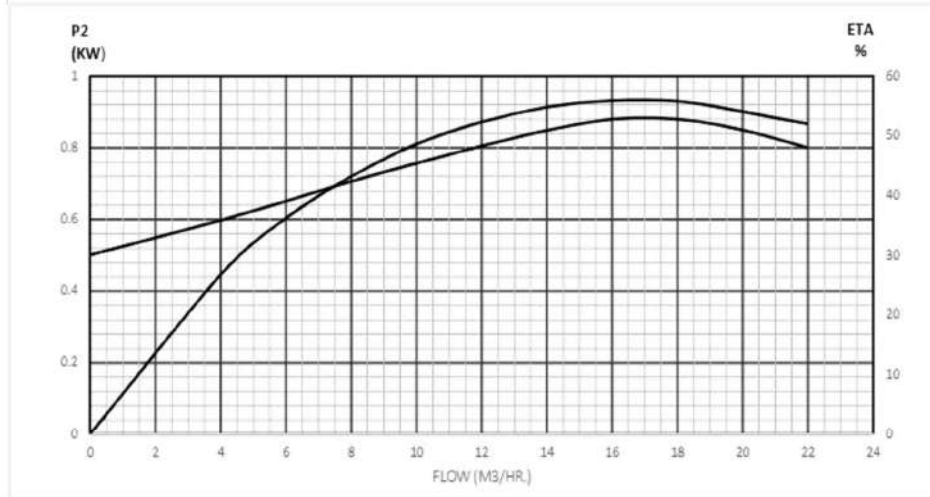
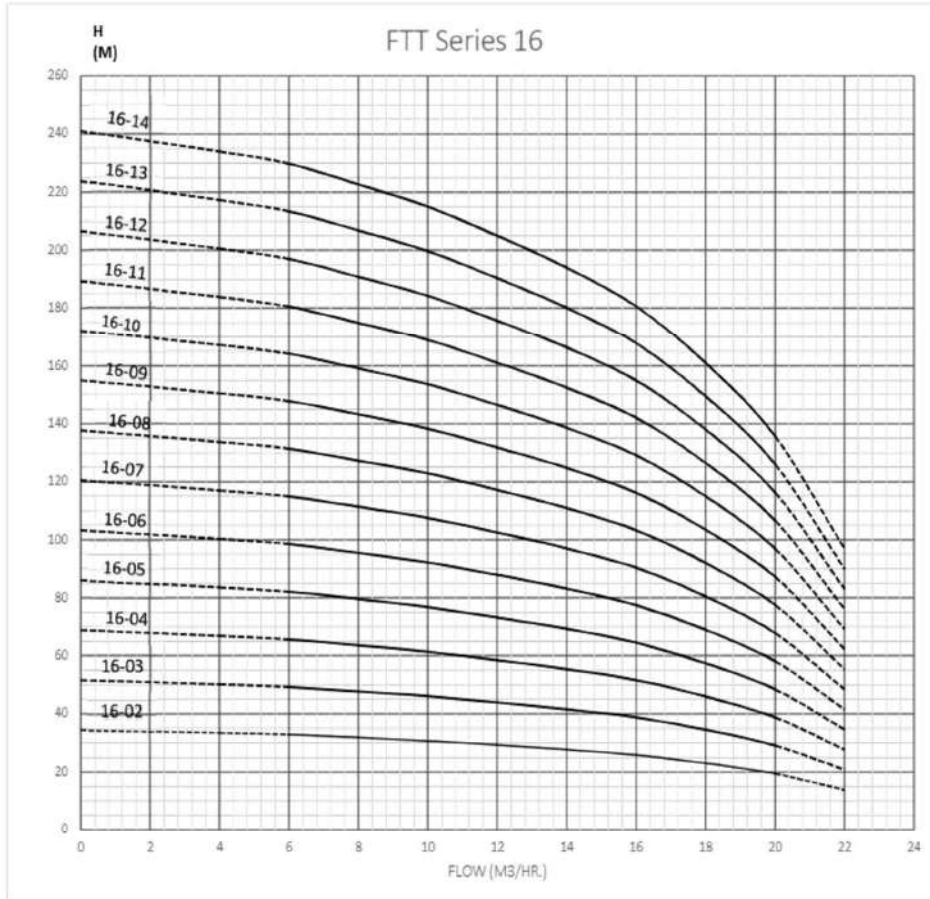
(i) **SERIES-4 (Family Curve)**



(ii) **SERIES-8 (Family Curve)**

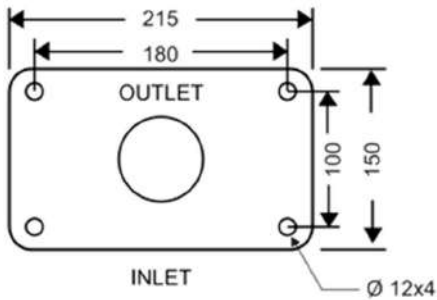
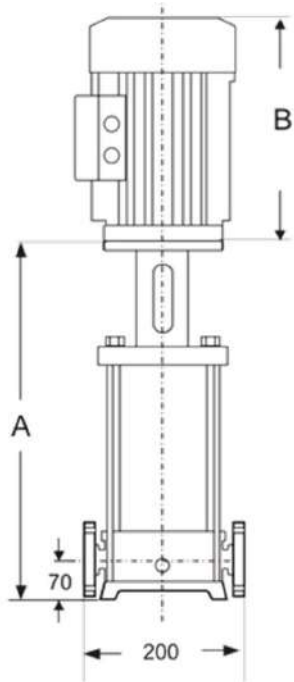


(iv) **SERIES-16 (Family Curve)**

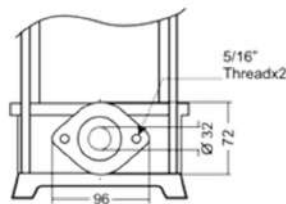


## GENERAL DIMENSIONAL DRAWINGS:

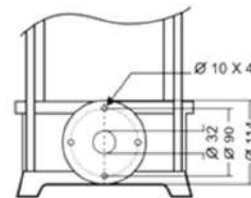
### Series 2



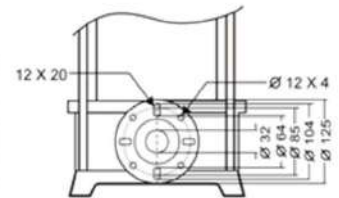
PUMP BASE



C.I. Oval Flange



C.I. Round Flange

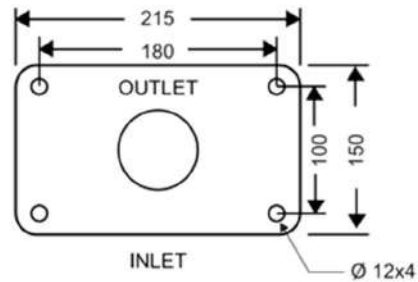
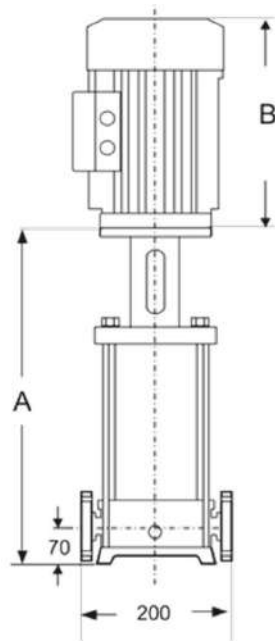


S.S. Round Flange

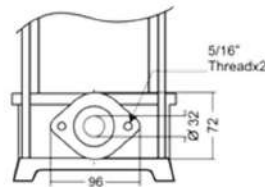
MODEL	Motor HP	A	B - 3PH	B-1PH
FTT-2-20	0.5	280	298	230
FTT-2-30	0.5	299	298	230
FTT-2-40	1	315	332	250
FTT-2-50	1	335	332	250
FTT-2-60	1	355	322	250
FTT-2-70	1	370	322	250
FTT-2-90	1.5	405	322	260
FTT-2-110	1.5	462	322	260
FTT-2-130	2	495	397	280
FTT-2-150	2	525	397	280
FTT-2-180	3	584	400	320
FTT-2-220	3	655	400	320
FTT-2-260	4	725	427	-
FTT-2-360	7.5	910	502	-

## GENERAL DIMENSIONAL DRAWINGS:

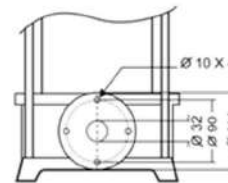
### Series 4



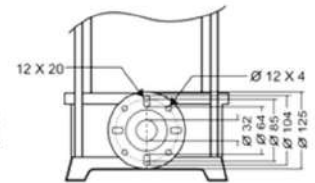
PUMP BASE



C.I. Oval Flange



C.I. Round Flange

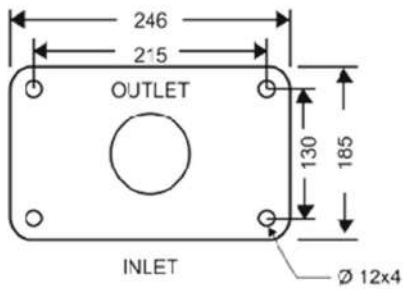
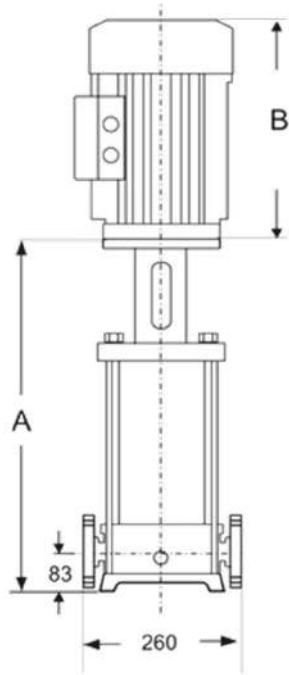


S.S. Round Flange

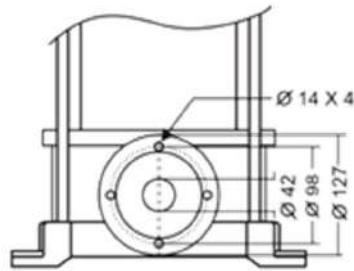
MODEL	Motor HP	A	B - 3PH	B-1PH
FTT-4-20	0.5	310	225	230
FTT-4-30	1	335	255	250
FTT-4-40	1	360	255	250
FTT-4-50	1.5	390	255	260
FTT-4-60	1.5	420	255	260
FTT-4-70	2	460	260	280
FTT-4-80	2	495	260	280
FTT-4-100	3	540	285	320
FTT-4-120	3	595	285	320
FTT-4-140	4	650	325	-
FTT-4-160	4	702	325	-
FTT-4-190	5	785	335	-
FTT-4-220	5	863	335	-
FTT-4-280	7.5	1030	350	-

**GENERAL DIMENSIONAL DRAWINGS**

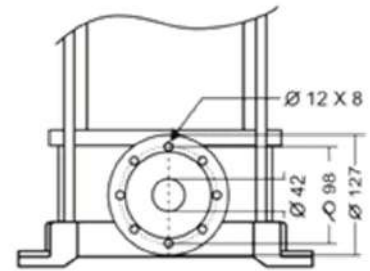
**Series 8**



PUMP BASE



C.I. Flange

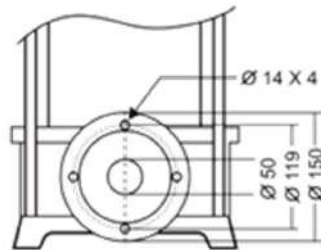
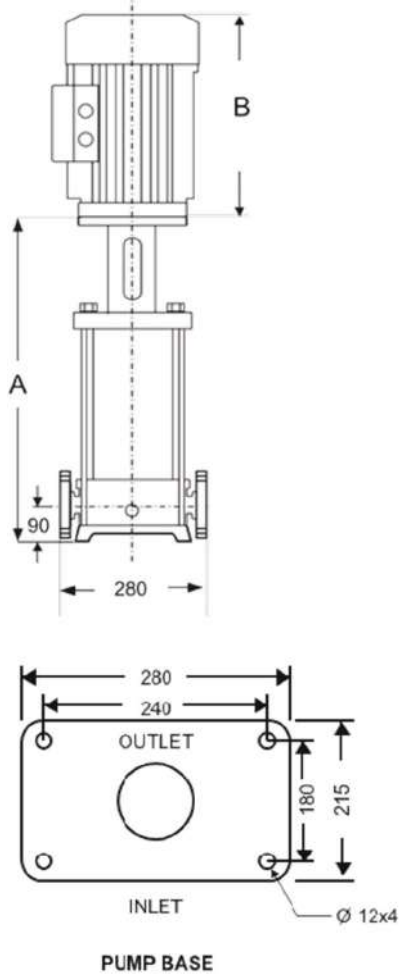


S.S. Flange

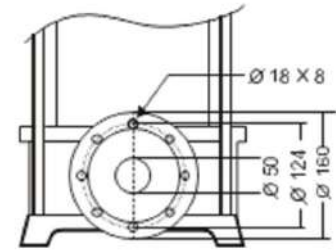
MODEL	Motor HP	A	B-3PH	B-1PH
FTT-8-20	1	108	255	250
FTT-8-30	1.5	162	255	260
FTT-8-40	2	216	260	280
FTT-8-50	3	270	285	320
FTT-8-60	3	324	285	320
FTT-8-80	4	435	325	-
FTT-8-100	5	542	335	-
FTT-8-120	7.5	655	370	-
FTT-8-140	7.5	760	370	-
FTT-8-160	10	870	370	-
FTT-8-180	10	977	380	-
FTT-8-200	10	1085	380	-

## GENERAL ARRANGEMENT DRAWINGS

### Series 16



C.I. Flange



S.S. Flange

MODEL	Motor HP	A	B-3 PH	B-1 PH
<b>FTT-16-20</b>	3	371	285	320
<b>FTT-16-30</b>	4	406	325	-
<b>FTT-16-40</b>	5	441	335	-
<b>FTT-16-50</b>	7.5	476	370	-
<b>FTT-16-60</b>	10	522	380	-
<b>FTT-16-70</b>	10	557	380	-
<b>FTT-16-80</b>	12.5	592	410	-
<b>FTT-16-90</b>	12.5	627	410	-
<b>FTT-16-100</b>	15	697	510	-
<b>FTT-16-110</b>	15	732	510	-
<b>FTT-16-120</b>	20	767	510	-
<b>FTT-16-130</b>	20	802	510	-
<b>FTT-16-140</b>	20	873	510	-

## **B) IMMERSIBLE / COOLANT PUMP:**

FTT Immersible /coolant pump is a specific type of pump commonly used in machine tools and industrial cooling systems to circulate coolant fluids. These pumps are typically partially submerged in the coolant reservoir, with the motor located above the liquid level. They are designed to handle cutting fluids, emulsions, and other lubricating or cooling liquids.

The pumps consist of two main components: The motor and the pump unit. Depending on the solution required, the length of the immersed pump unit can vary.

### **GENERAL SPECIFICATIONS:**

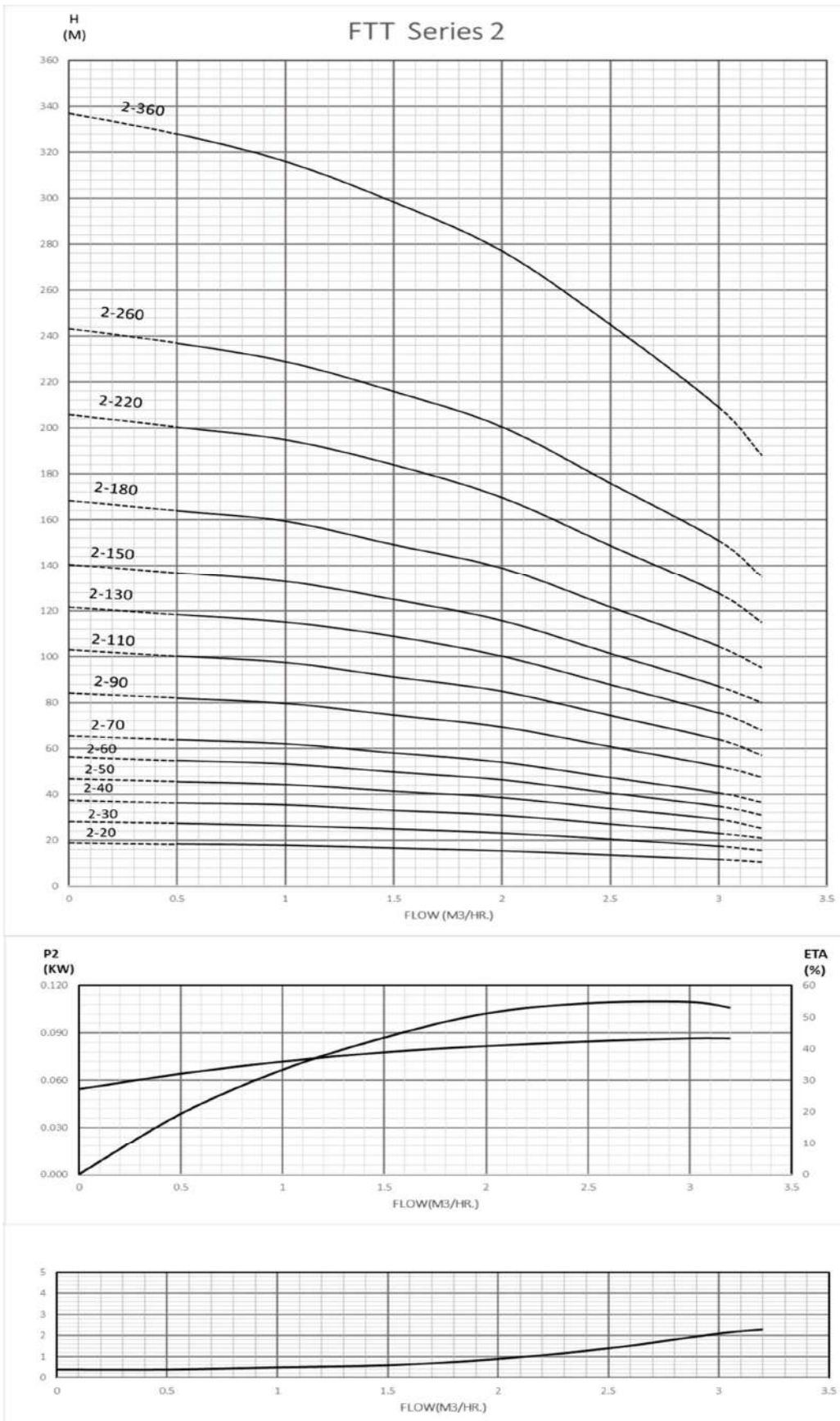
<b>Power Range</b>	0.5HP to 10 HP
<b>Speed</b>	2900 rpm
<b>Degree of Protection</b>	IP55
<b>Insulation Class</b>	F
<b>Phase</b>	Single Phase / Three Phase
<b>Mechanical Seal</b>	Carbon Vs Sic, Ceramic Vs Sic
<b>Direction of rotation</b>	Counter clockwise
<b>Duty</b>	S1
<b>Discharge Flange size</b>	1" x 1", 1½" x 1½", 2" x 2"

### **PERFORMANCE RANGE:**

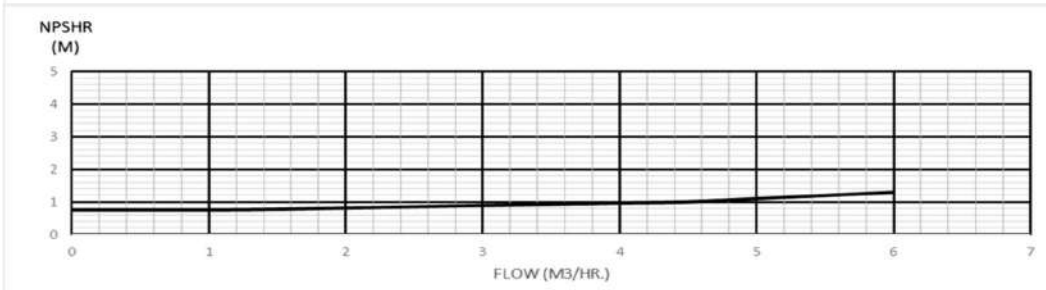
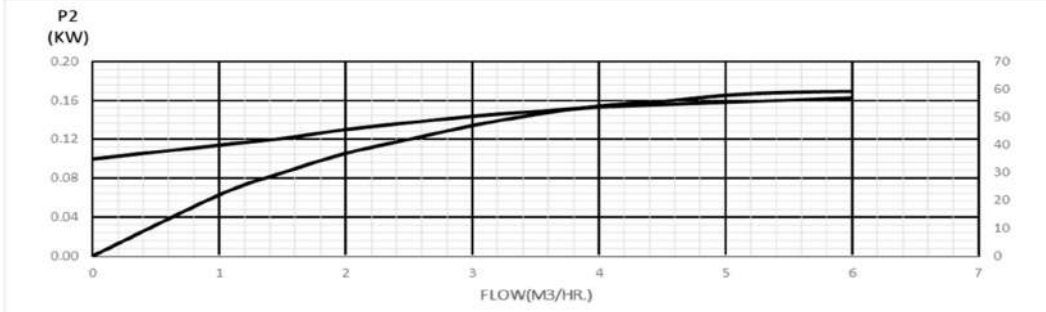
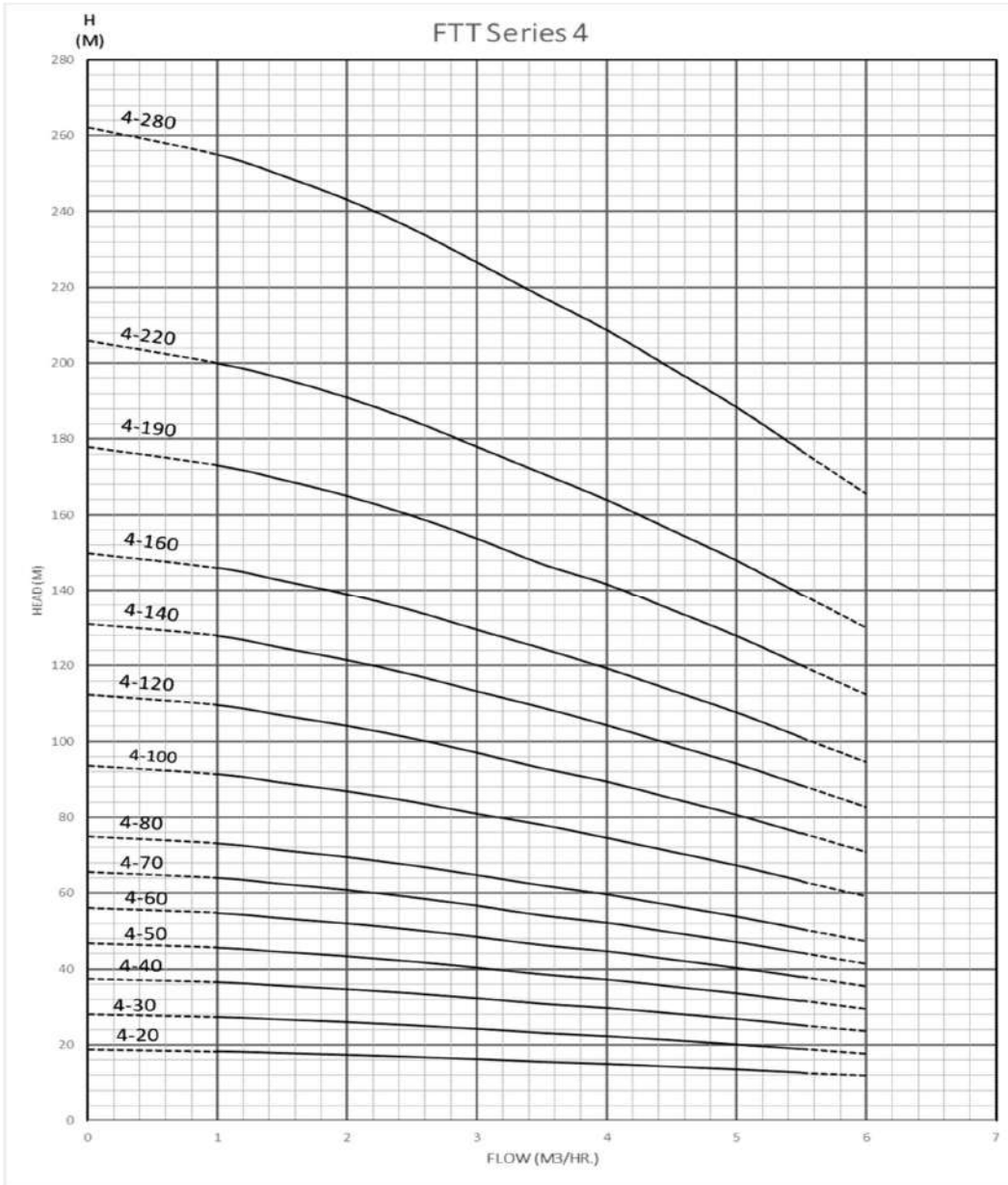
<b>Nominal Flow Rate up to</b>	12 m3/hr
<b>Total Head up to</b>	310 m

**PERFORMANCE OF PUMPS:**

**(i) SERIES-2 (Family Curve)**

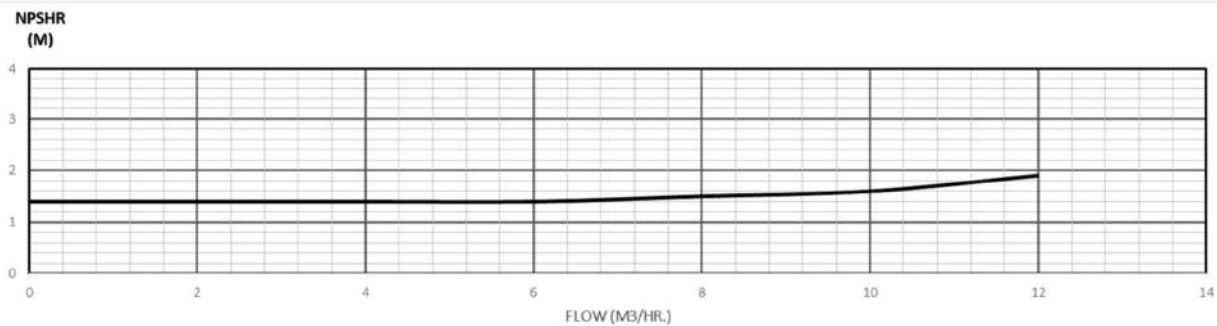
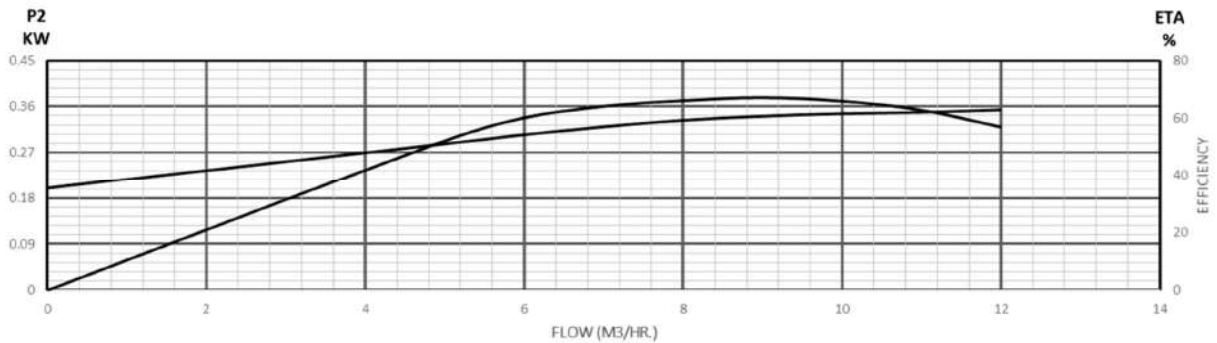
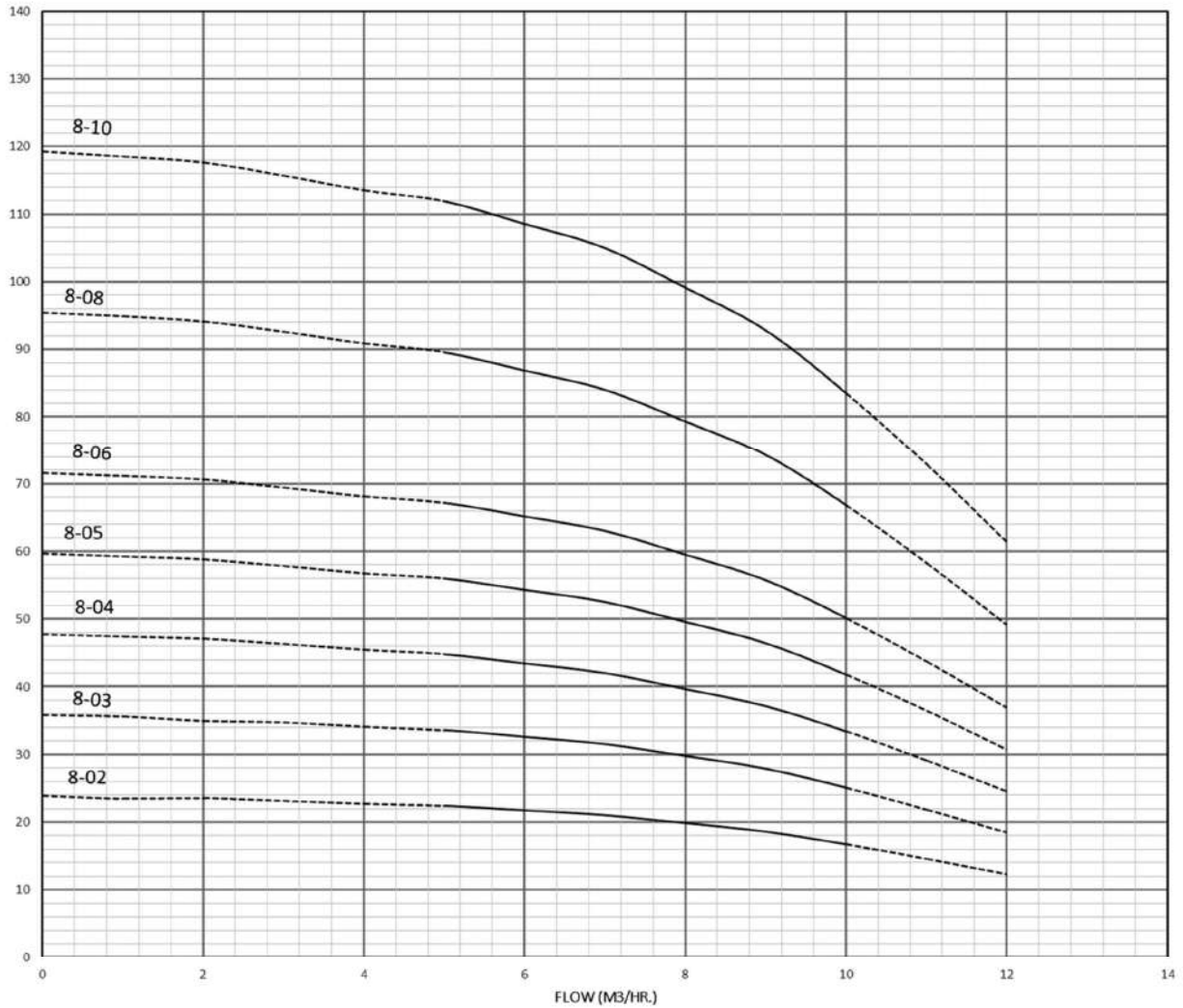


**(ii) SERIES- 4 (Family Curve)**



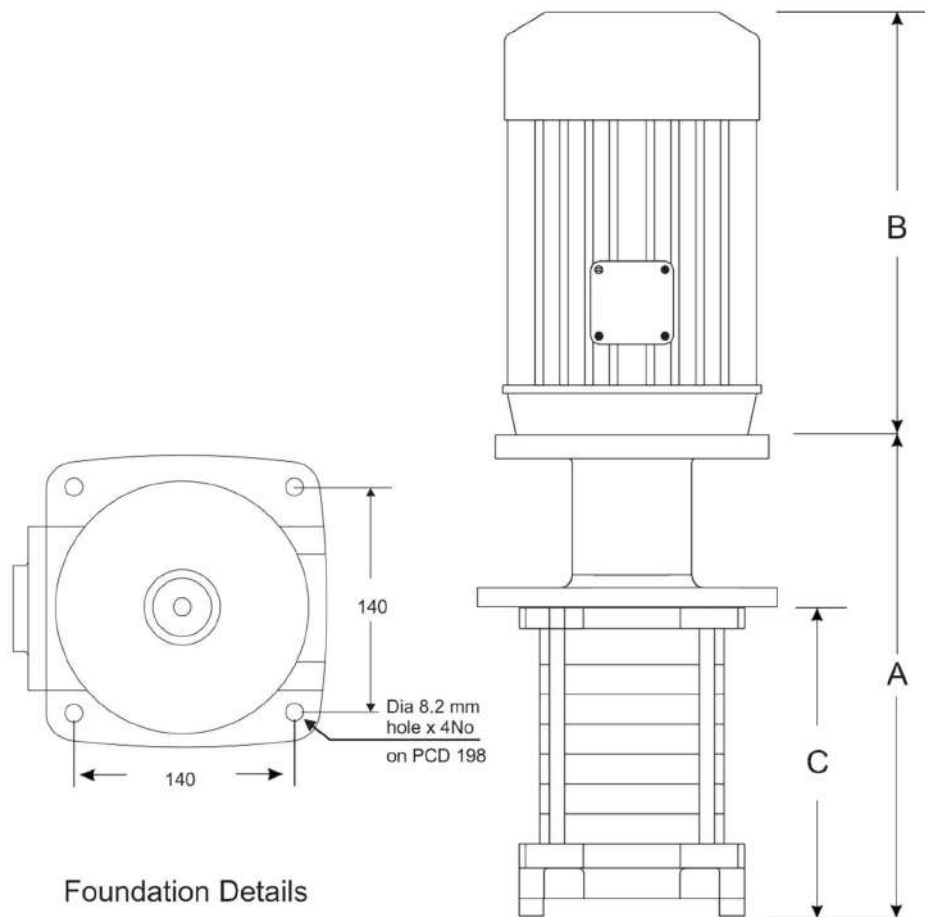
**(iii) SERIES-8 (Family Curve)**

FTT Series 8



## GENERAL DIMENSIONAL DRAWINGS:

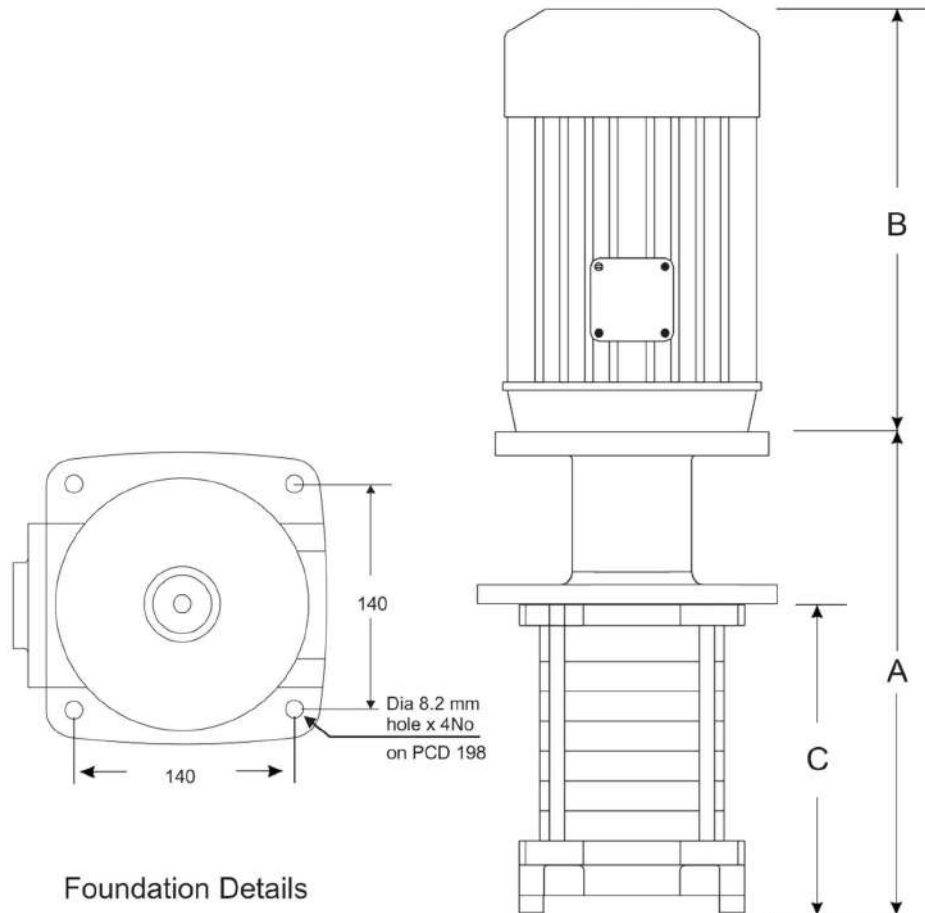
### Series 2



MODEL	Motor HP	A	B 3PH	B 1PH	C - Immersion
<b>FTT-2-20</b>	0.5	268	298	230	148
<b>FTT-2-30</b>	0.5	286	298	230	166
<b>FTT-2-40</b>	1	304	332	250	184
<b>FTT-2-50</b>	1	322	332	250	202
<b>FTT-2-60</b>	1	340	322	250	220
<b>FTT-2-70</b>	1	358	322	250	238
<b>FTT-2-90</b>	1.5	394	322	260	274
<b>FTT-2-110</b>	1.5	430	322	260	310
<b>FTT-2-130</b>	2	466	397	280	346
<b>FTT-2-150</b>	2	502	397	280	382
<b>FTT-2-180</b>	3	556	400	320	436
<b>FTT-2-220</b>	3	628	400	320	508
<b>FTT-2-260</b>	4	700	427	-	580
<b>FTT-2-360</b>	7.5	880	502	-	760

**GENERAL DIMENSIONAL DRAWINGS:**

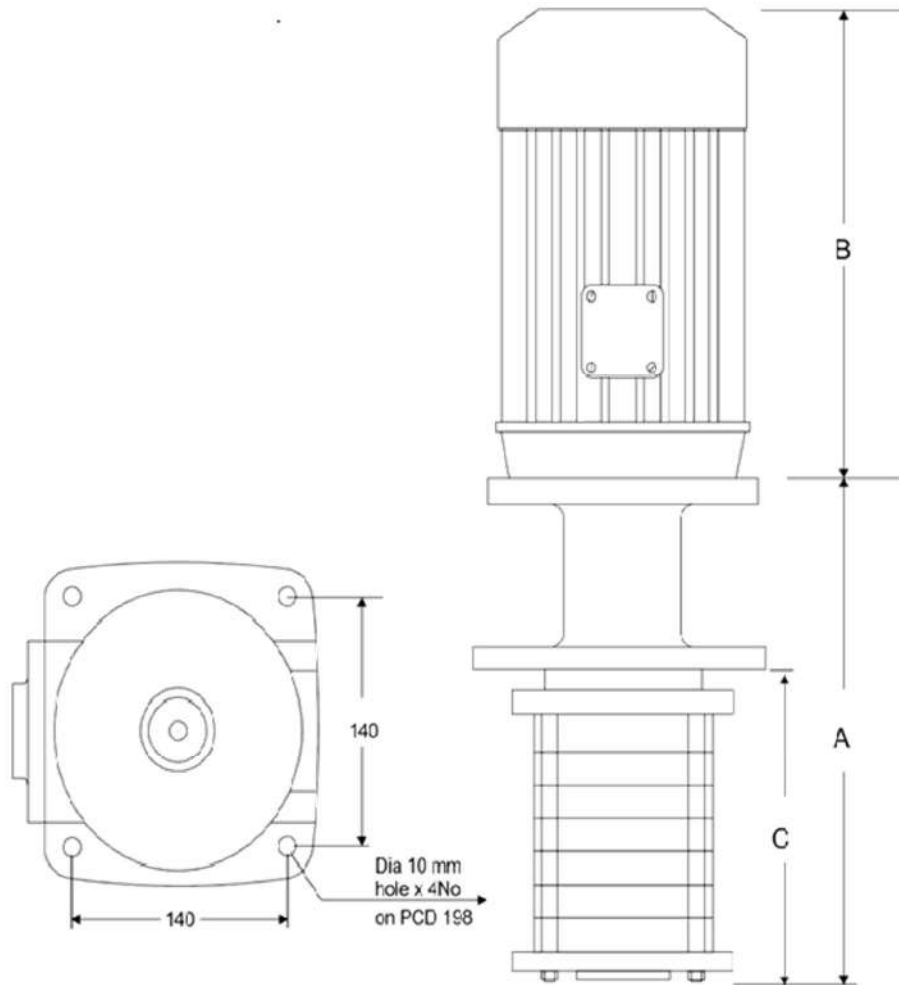
**Series 4**



MODEL	Motor HP	A	B 3PH	B 1PH	C - Immersion
<b>FTT-4-20</b>	0.5	290	298	230	170
<b>FTT-4-30</b>	1	317	332	250	197
<b>FTT-4-40</b>	1	344	332	250	224
<b>FTT-4-50</b>	1.5	371	332	260	251
<b>FTT-4-60</b>	1.5	398	332	260	278
<b>FTT-4-70</b>	2	425	397	260	305
<b>FTT-4-80</b>	2	452	397	280	332
<b>FTT-4-100</b>	3	506	400	320	386
<b>FTT-4-120</b>	3	560	400	320	440
<b>FTT-4-140</b>	4	614	427	330	494
<b>FTT-4-160</b>	4	668	427	330	548
<b>FTT-4-190</b>	5	749	427	-	629
<b>FTT-4-220</b>	5	830	427	-	710
<b>FTT-4-280</b>	7.5	992	502	-	872

**GENERAL DIMENSIONAL DRAWINGS:**

**Series 8**



MODEL	Motor HP	A	B 3PH	B 1PH	C - Immersion
<b>FTT-8-20</b>	1	264	332	250	141
<b>FTT-8-30</b>	1.5	294	332	260	171
<b>FTT-8-40</b>	2	325	397	280	202
<b>FTT-8-50</b>	3	355	400	320	232
<b>FTT-8-60</b>	3	385	400	-	262
<b>FTT-8-80</b>	4	446	427	-	333
<b>FTT-8-100</b>	5	507	427	-	384

### **C) HORIZONTAL PUMP:**

FTT Horizontal Pumps are non-self-priming centrifugal pumps designed for reliable fluid transfer in a wide range of industrial applications.

The pump and motor are fully integrated into a compact and user-friendly design, making these units especially suitable for installation in space-limited or compact systems. Their streamlined construction simplifies installation and minimizes maintenance requirements, while ensuring dependable performance.

### **GENERAL SPECIFICATIONS:**

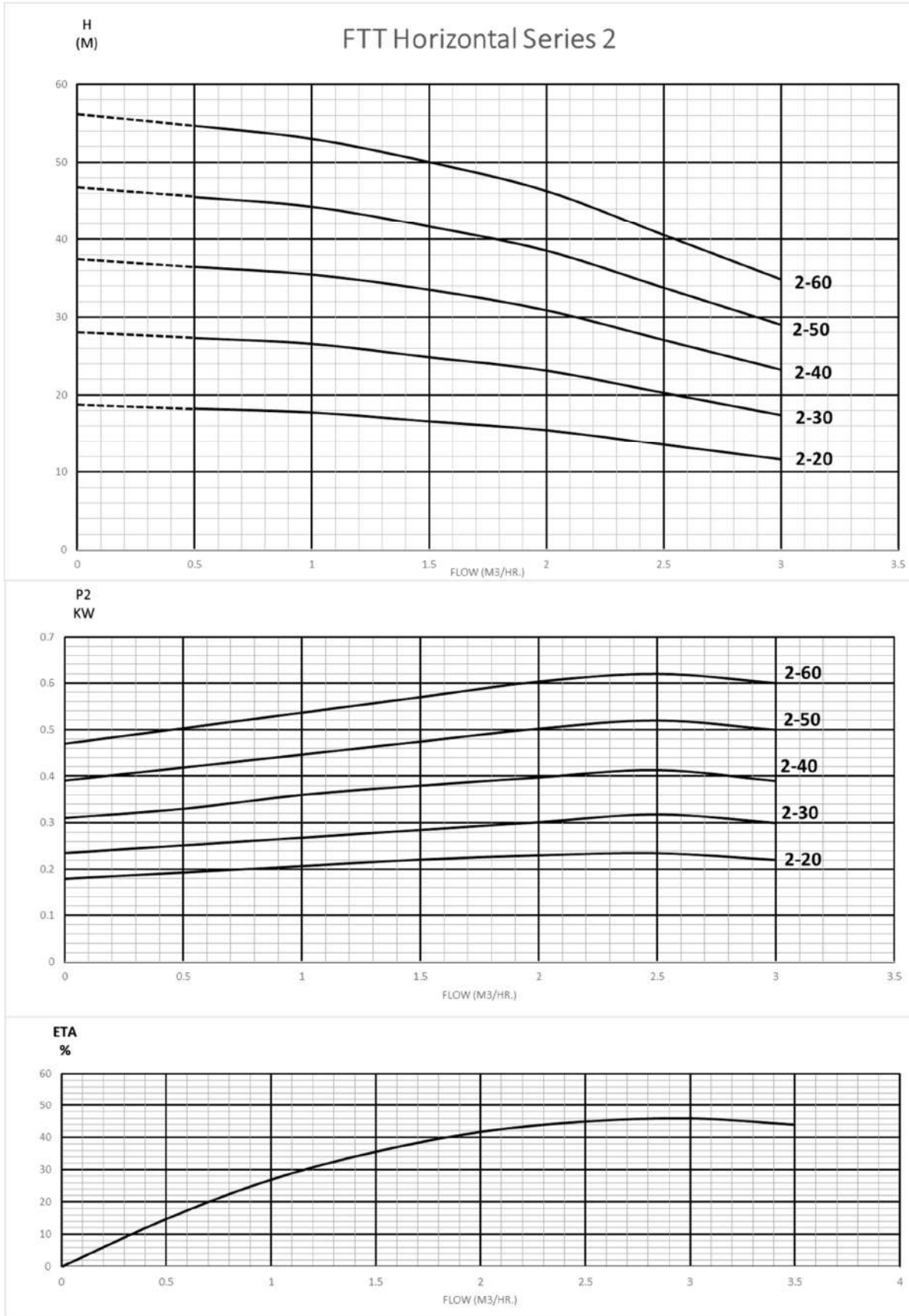
<b>Power Range</b>	0.5HP to 1.5 HP
<b>Speed</b>	2900 rpm
<b>Degree of Protection</b>	IP 44
<b>Insulation Class</b>	F
<b>Phase</b>	Single Phase / Three Phase
<b>Mechanical Seal</b>	Carbon Vs Sic, Ceramic Vs Sic
<b>Direction of rotation</b>	Counter clockwise
<b>Duty</b>	S1
<b>Discharge Flange size</b>	1" x 1" BSP

### **PERFORMANCE RANGE:**

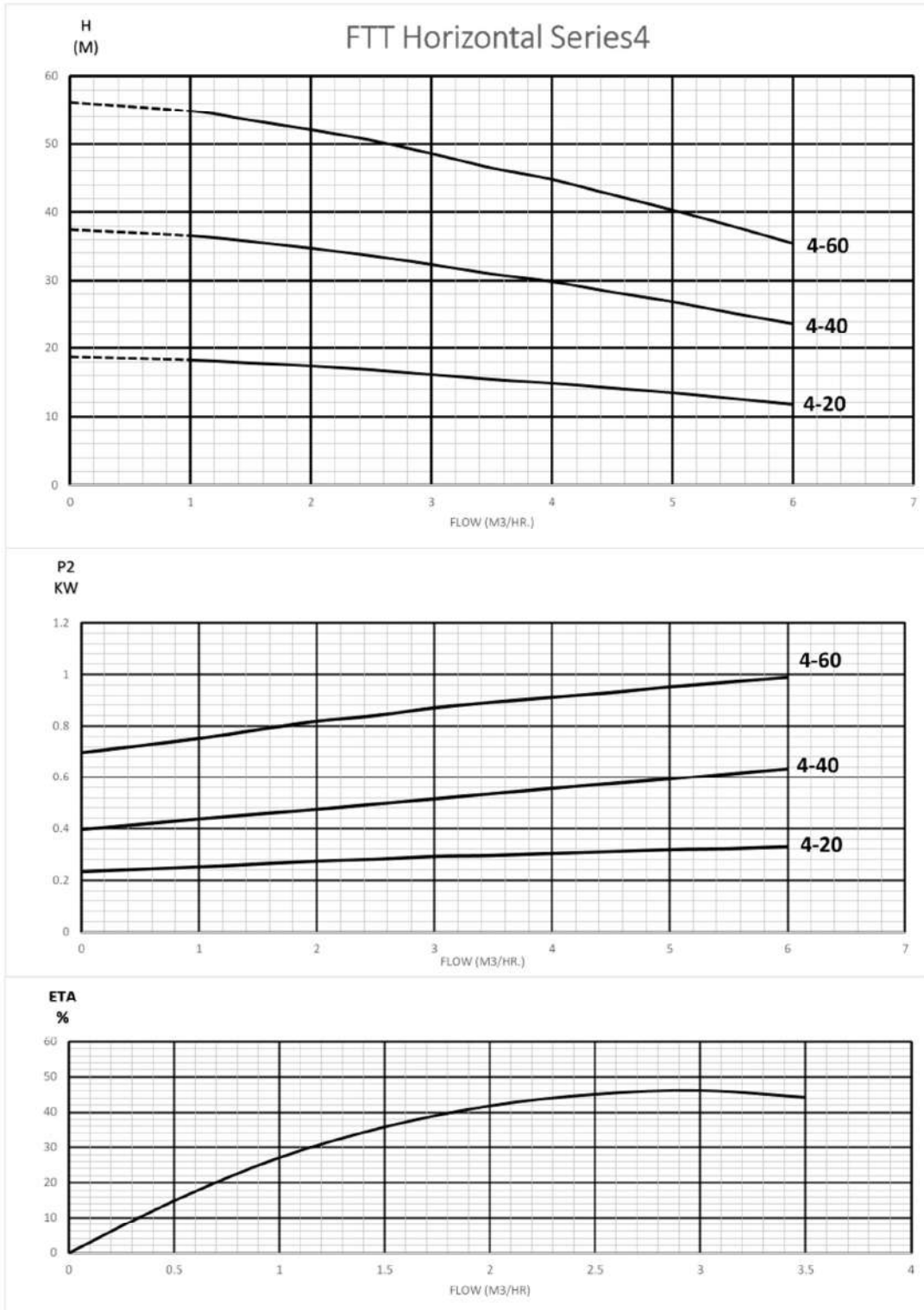
<b>Nominal Flow Rate up to</b>	6 m <sup>3</sup> /hr
<b>Total Head up to</b>	56 m

**PERFORMANCE OF PUMPS:**

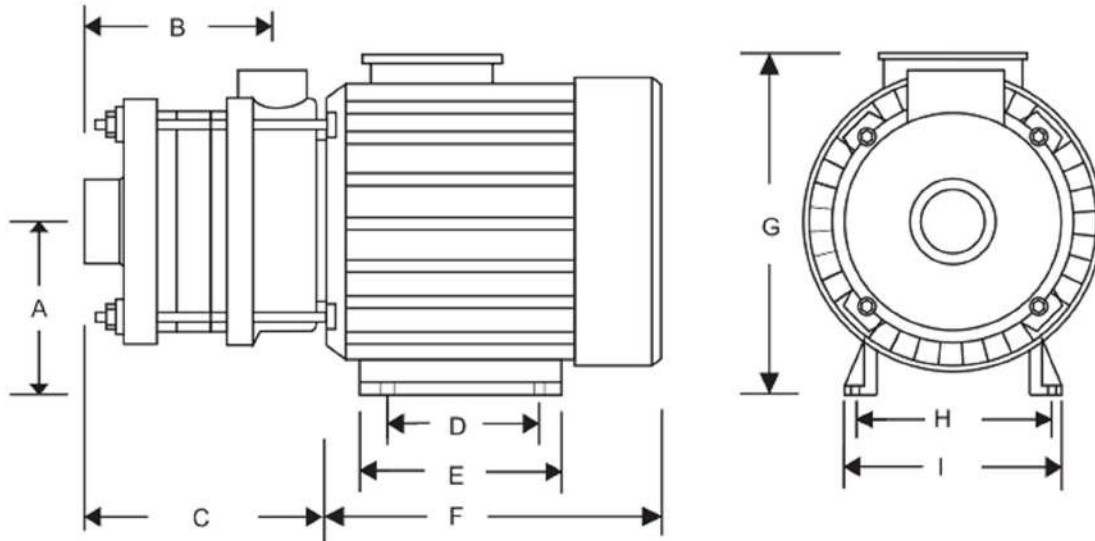
**(i) SERIES-2 (Family Curve)**



(II) **SERIES- 4 (Family Curve)**



**GENERAL DIMENSIONAL DRAWINGS:**



**Series 2:**

Model	A	B	C	D	E	F	G	H
2-20	80	103	132	90	124	245	205	125
2-30	80	121	150	90	124	245	205	125
2-40	80	139	168	90	124	245	205	125
2-50	80	157	186	90	124	245	205	125
2-60	80	175	205	90	124	245	205	125

**Series 4:**

Model	A	B	C	D	E	F	G	H
4-20	80	131	158	90	124	245	205	125
4-40	80	185	212	90	124	245	205	125
4-60	80	239	266	90	124	245	205	125

**D) HIGH INLET PRESSURE WITH REVERSE ASSY.**

FTT R is a non self-priming, vertical multistage centrifugal pump. The direction of rotation is the opposite of that of standard pumps, and the assembly is turned upside-down, resulting in the pumped liquid flowing in the opposite direction. This design ensures that the shaft seal is not affected by the pump discharge pressure. The base has in-line suction and discharge ports.



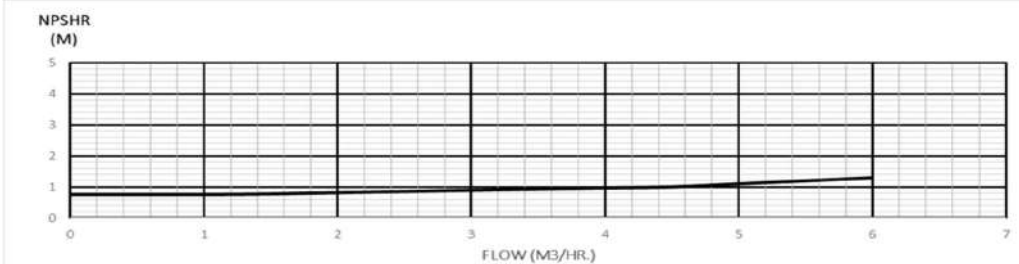
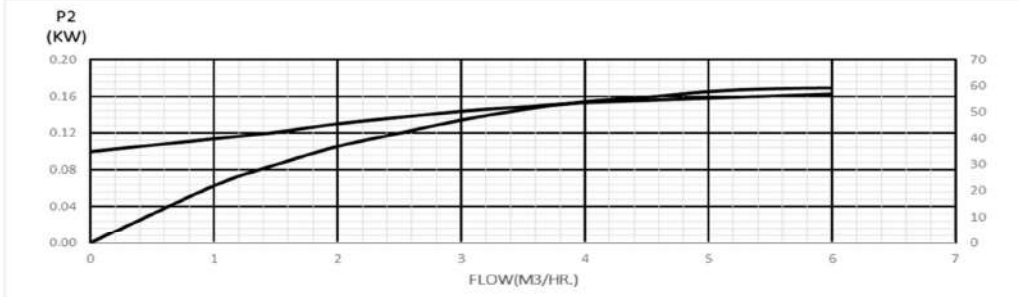
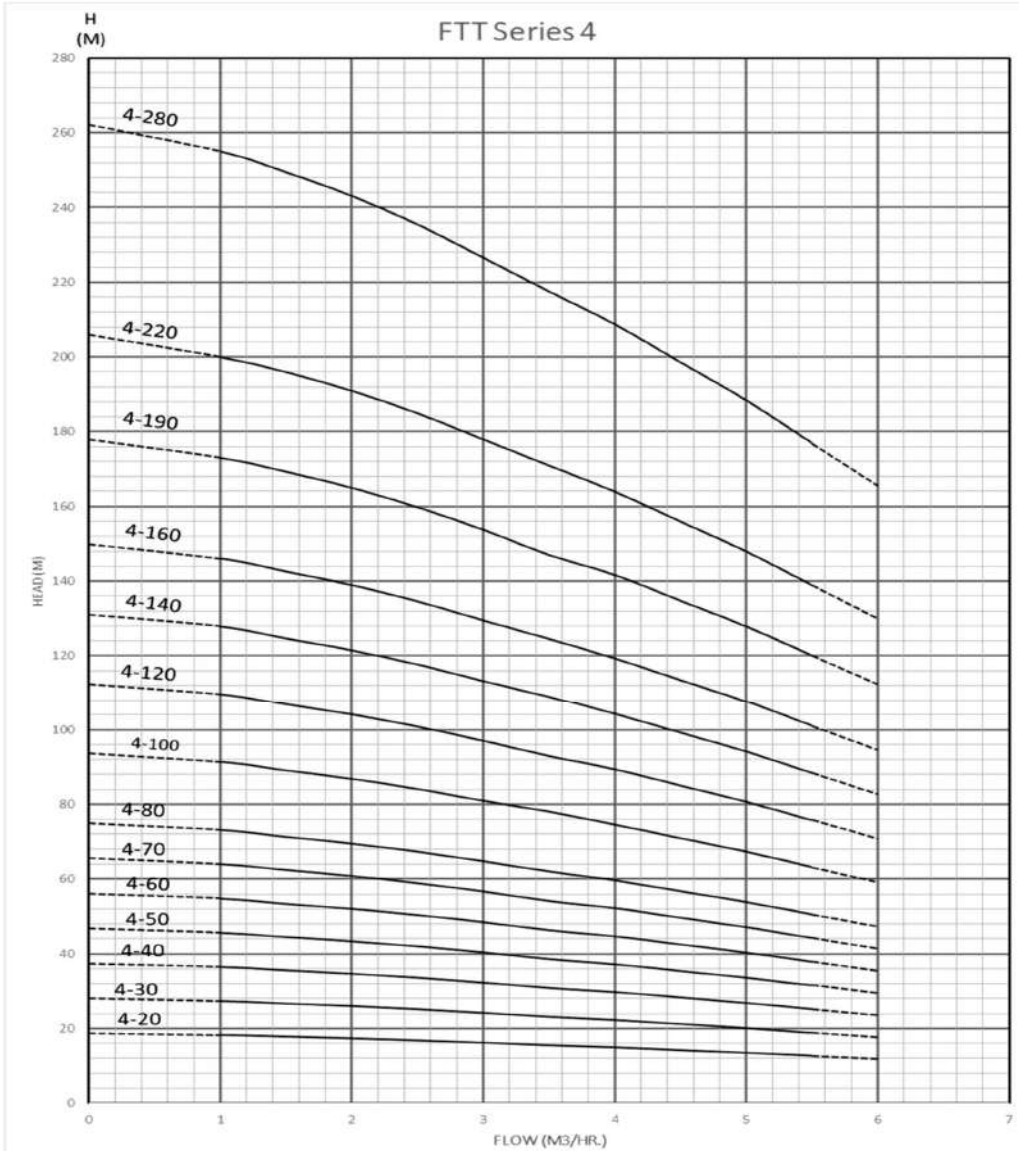
**PERFORMANCE RANGE:**

<b>Nominal Flow Rate up to</b>	20 m <sup>3</sup> /hr
<b>Inlet Pressure up to</b>	40 Bar
<b>Total Head up to</b>	50 Bar

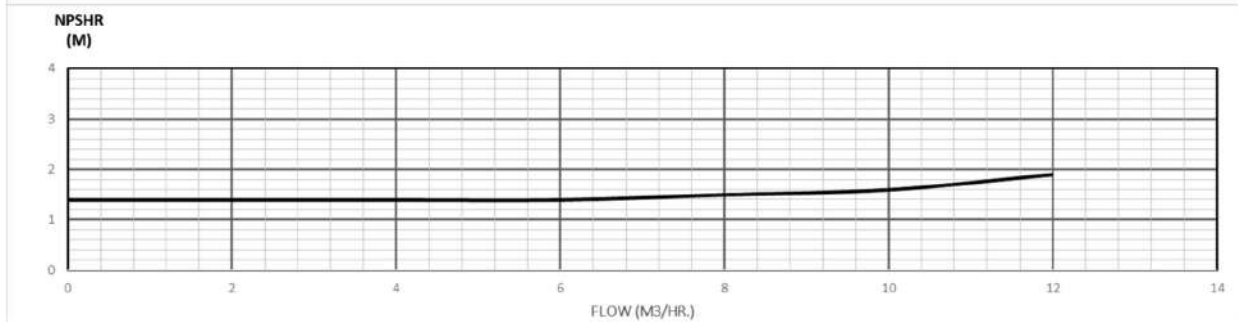
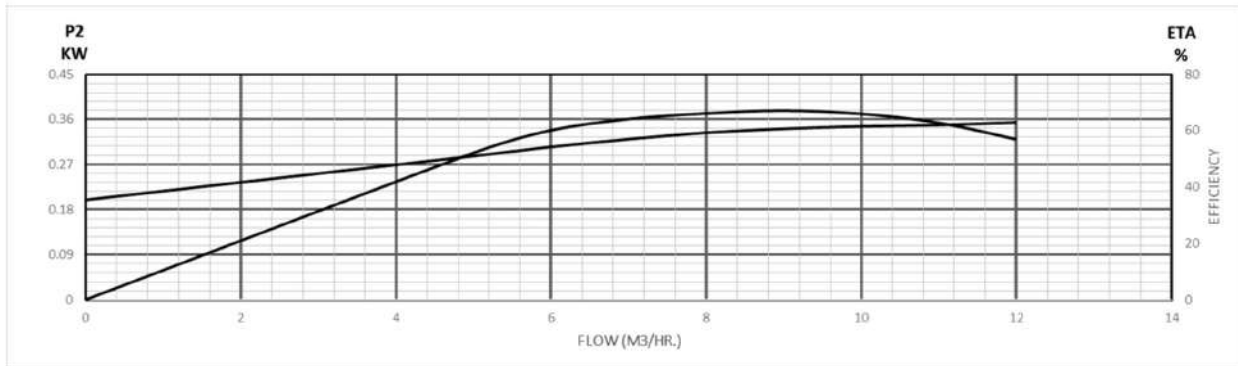
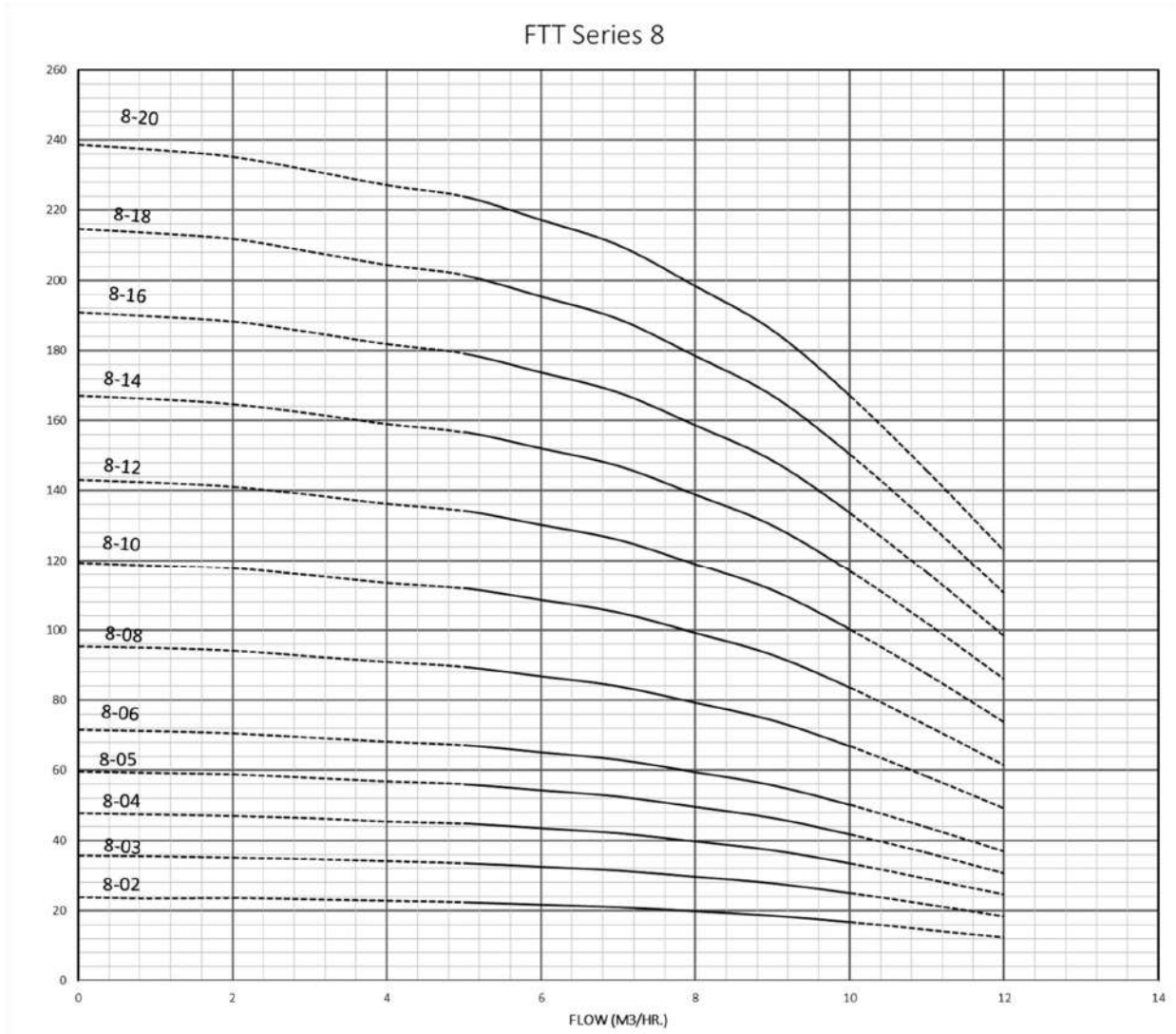
**MATERIAL OF CONSTRUCTION:**

<b>PART NAME</b>	<b>PPVST (SS316)</b>
<b>Pump Base</b>	C.I
<b>Motor Stool</b>	C.I
<b>Top Casing</b>	SS 316
<b>Bottom Casing</b>	SS 316
<b>Shaft</b>	SS 316
<b>Impeller</b>	SS 316
<b>Diffuser</b>	SS 316
<b>Mechanical Seal</b>	SS 316
<b>Seal Face</b>	Sic vs SiC
<b>Wear Ring</b>	PTFE
<b>Elastomer</b>	Viton

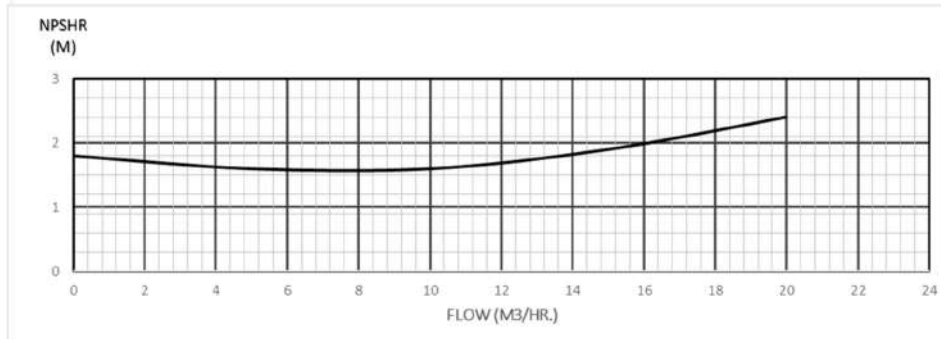
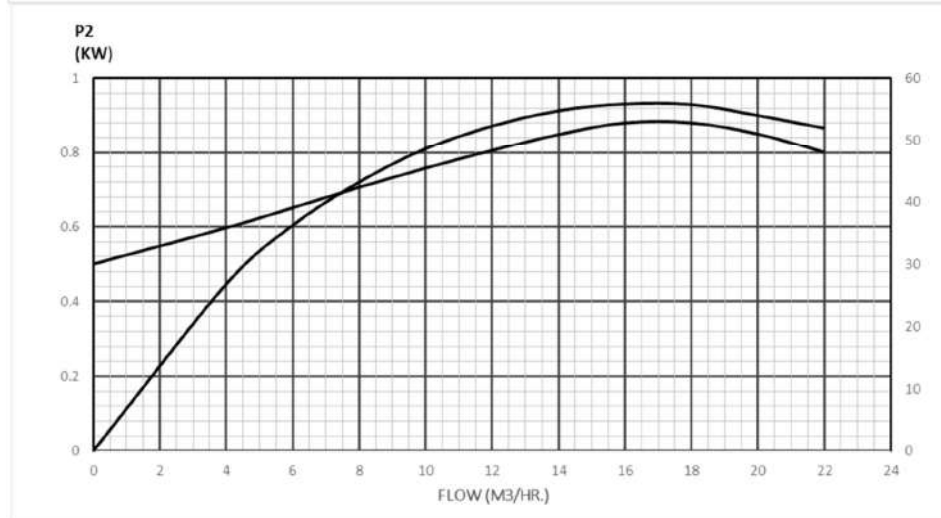
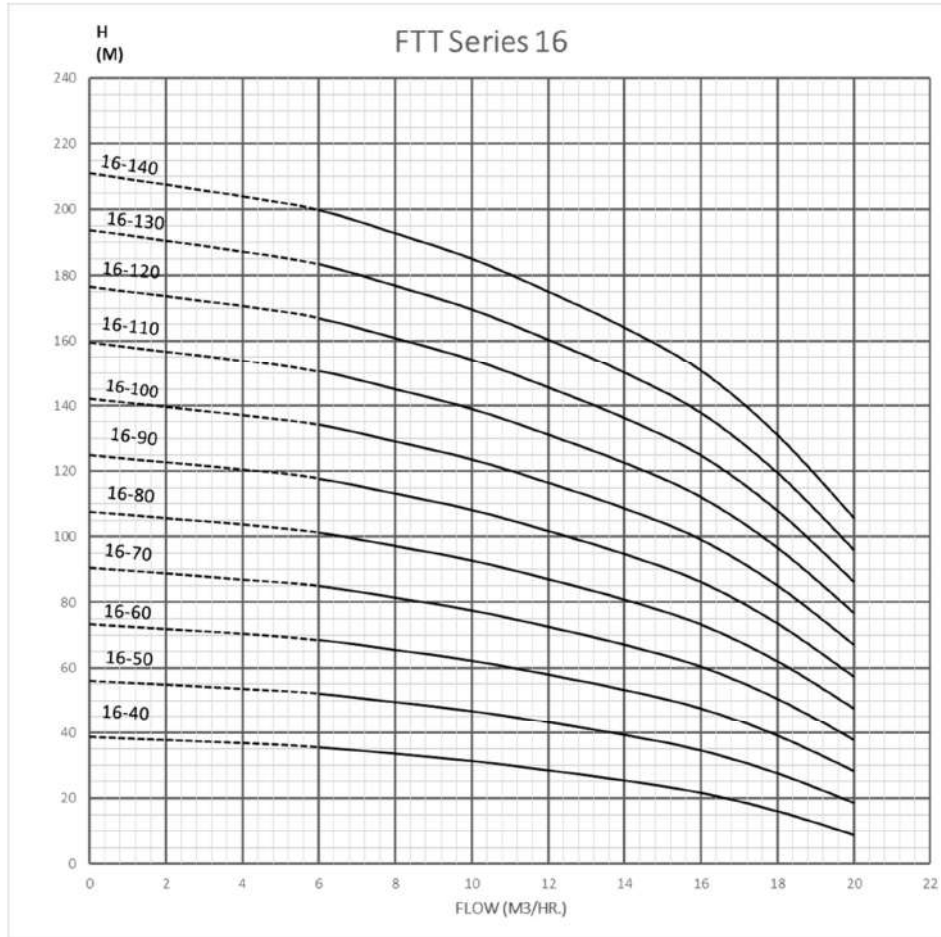
**(i) SERIES- 4 (Family Curve)**



**(ii) SERIES-8 (Family Curve)**

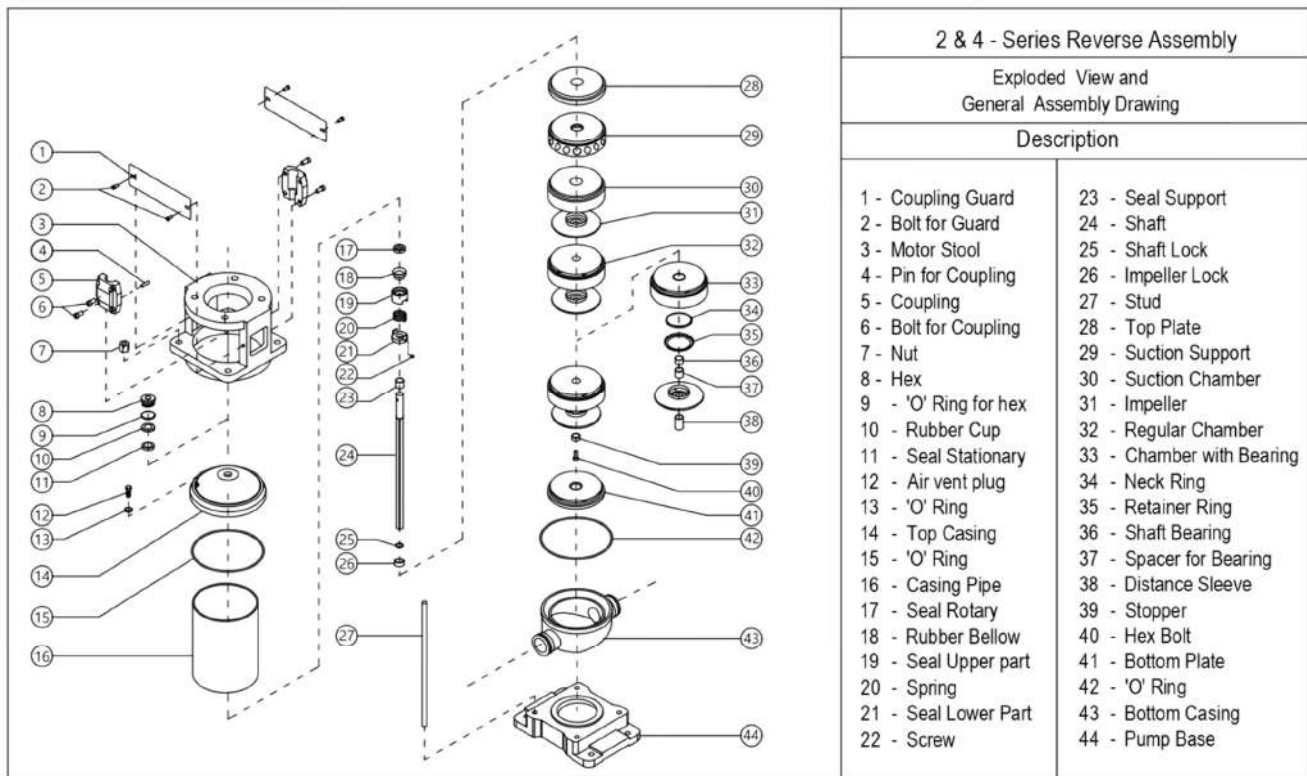


(iii) **SERIES-16(Family Curve)**



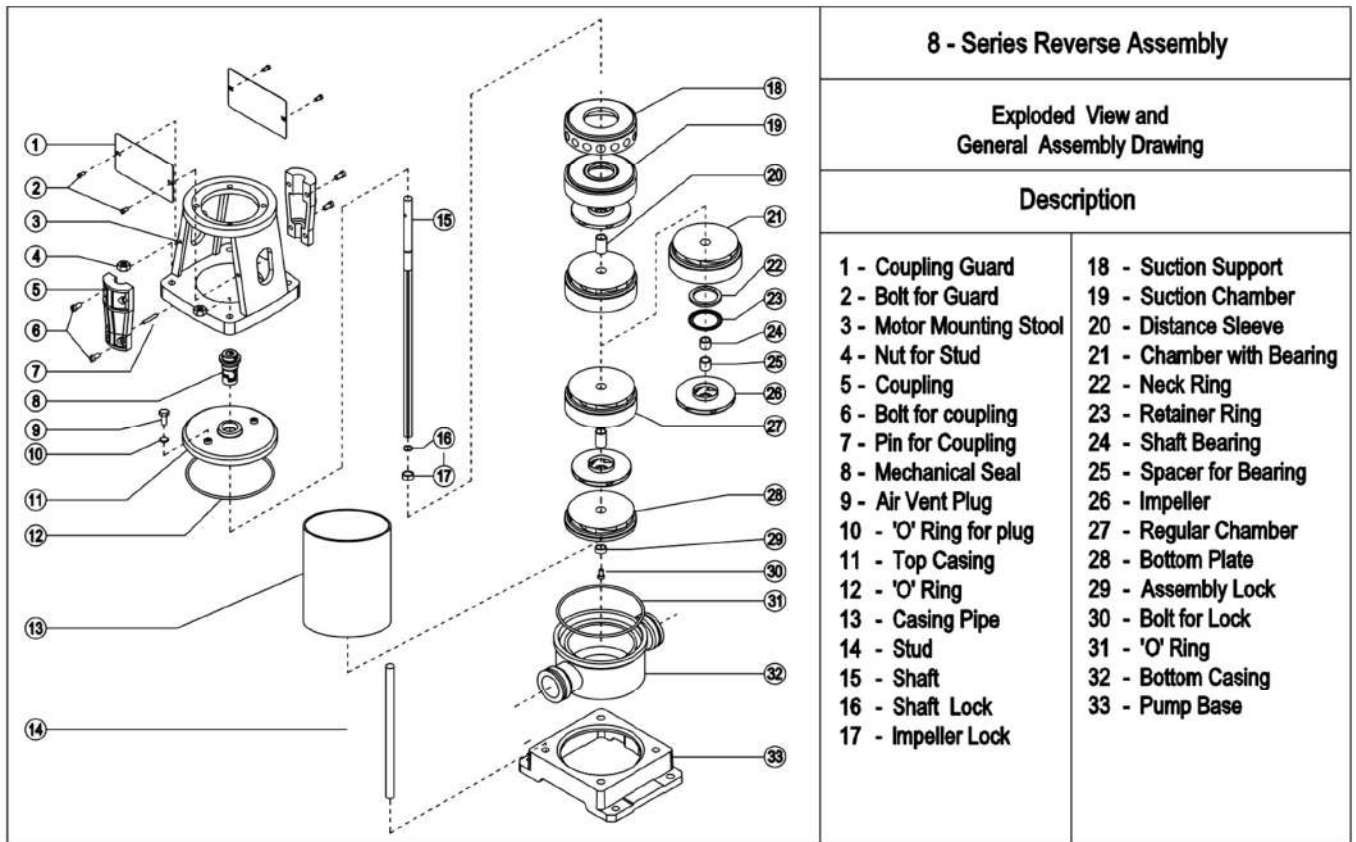
**GENERAL ARRANGEMENT DRAWING:**

**(i) FTT R SERIES-4:**



**GENERAL ARRANGEMENT DRAWING:**

**(ii) FTT R SERIES-8:**



**GENERAL ARRANGEMENT DRAWING:**

**(iii) FTT R SERIES-16:**

