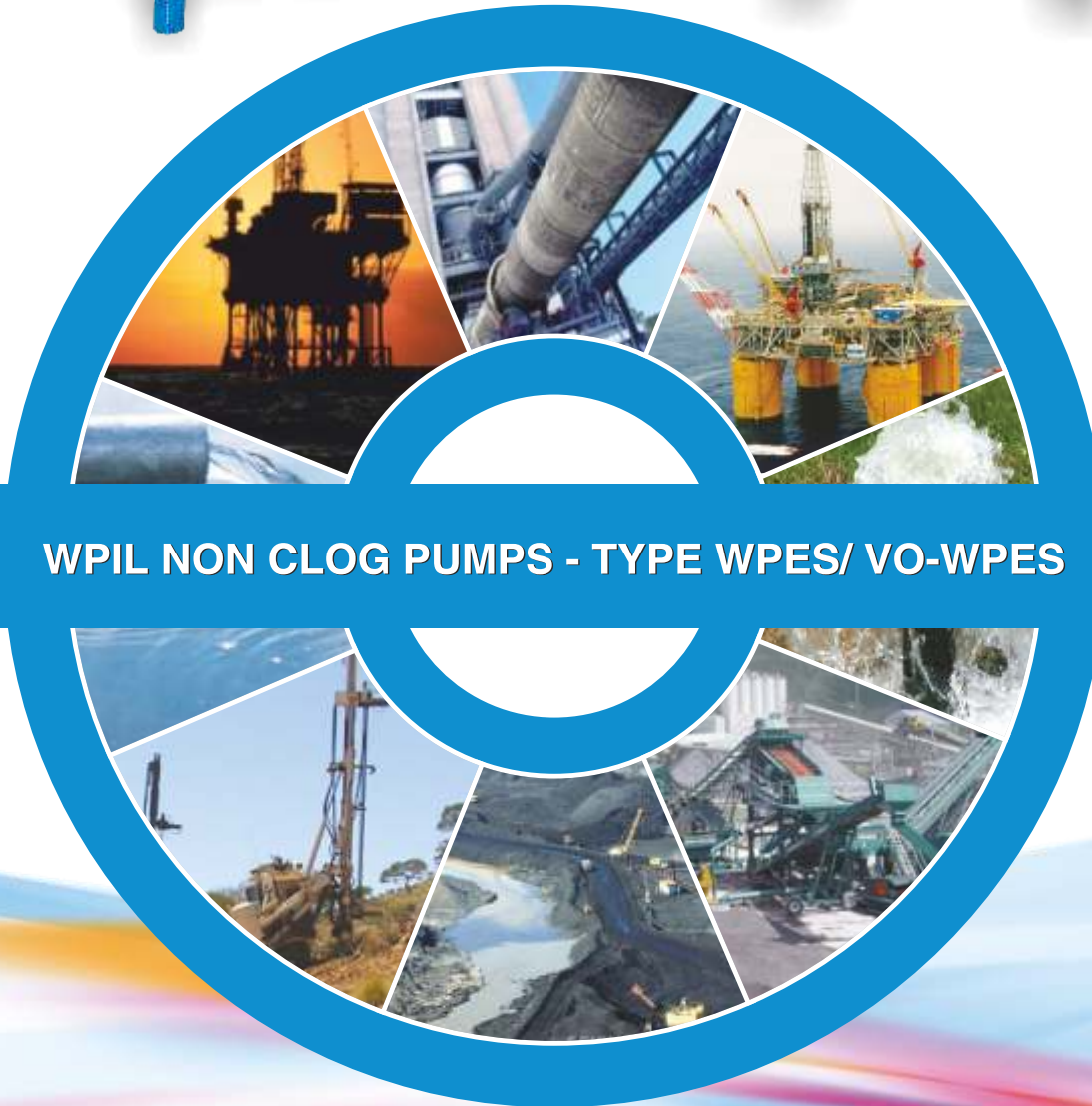
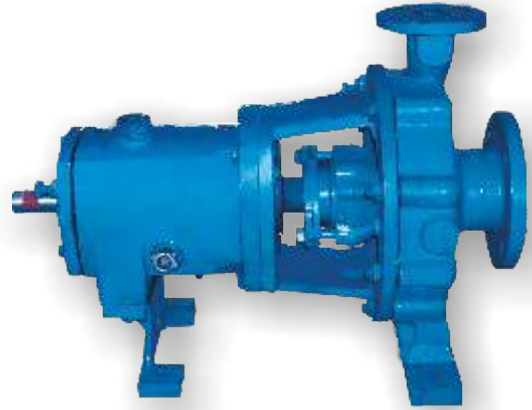




Serving Society Since 1952

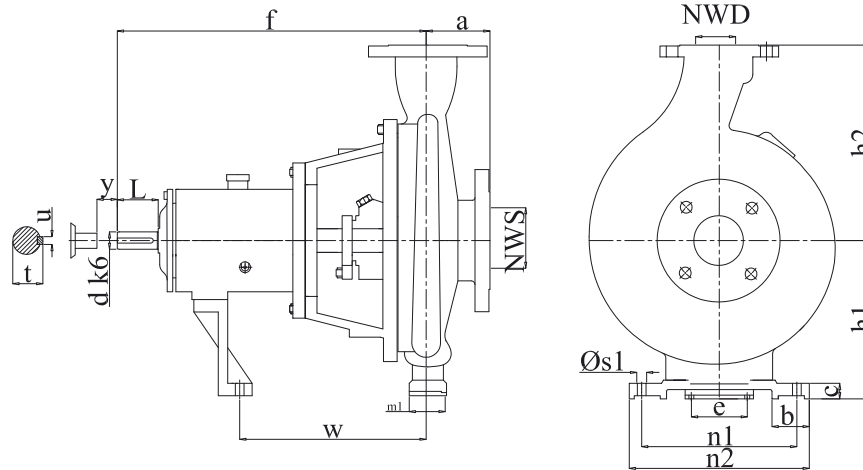
**WPIL Limited**

Visit: [www.wpil.co.in](http://www.wpil.co.in)



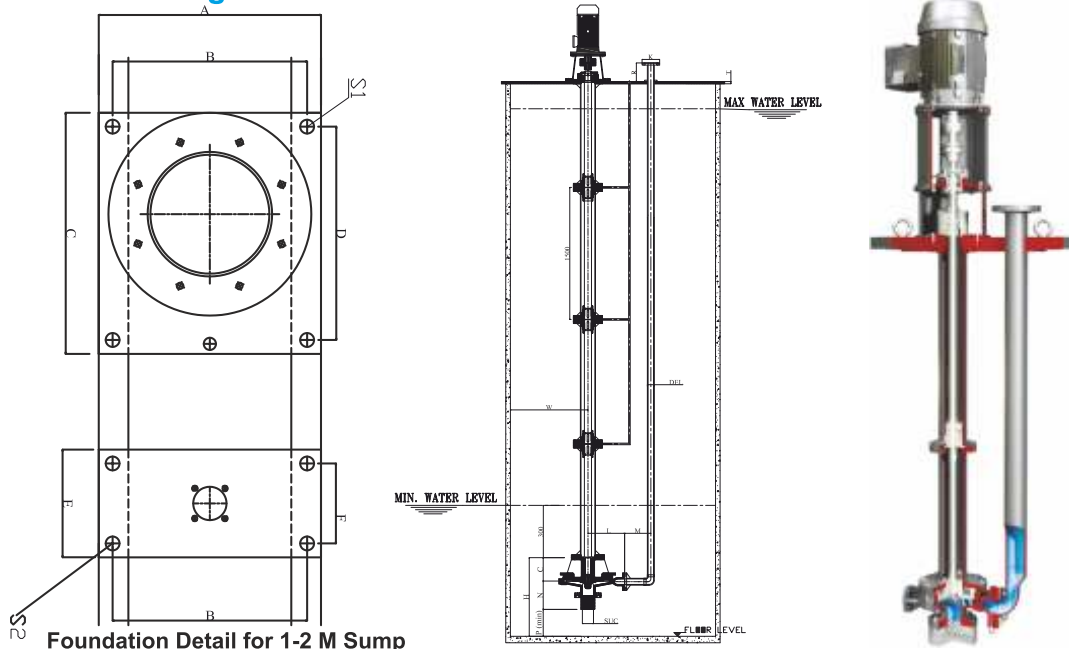
**WPIL NON CLOG PUMPS - TYPE WPES/ VO-WPES**

*Engineering Solutions*

**WPES GA Drawing**


PUMP TYPE	FRAME UNIT	PUMP DIMENSIONS						FOOT DIMENSIONS								SHAFT END				Y	
		NWS	NWD	a	f	h1	h2	b	m1	c	n2	n1	e	s1	s2	w	d	L	t		u
25/160	15	25	25	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
25/160-1		40	25	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
40/160		80	40	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
50/160		80	40	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
25/180		25	25	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
25/180-1		40	25	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
40/180		80	40	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
50/180		80	50	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
25/200		25	25	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
25/200-1		40	25	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100
40/200	80	40	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100	
50/200	80	50	102	343	132	165	50	50	15	200	152	0	16	16	184	22	50	24.8	6	100	
80/200	100	80	102	495	210	280	60	60	15	290	248	184	16	16	318	28	65	31.1	8	100	
25/230	18	50	25	102	495	210	216	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
40/230		80	40	102	495	210	216	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
50/230		80	50	102	495	210	242	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
80/230		100	80	102	495	210	280	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
100/230		150	100	102	495	254	318	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
25/260		50	25	102	495	210	216	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
40/260		80	40	102	495	210	216	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
50/260		80	50	102	495	210	242	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
80/260		100	80	102	495	210	280	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
100/260		150	100	102	495	254	318	65	60	25	290	248	184	16	16	318	28	65	31.1	8	100
40/300	22	80	40	102	495	254	266	60	60	25	290	248	184	16	16	318	28	65	31.1	8	100
50/300		80	50	102	495	254	292	65	60	25	290	248	184	16	16	318	28	65	31.1	8	100
80/300		100	80	102	495	254	318	65	60	25	290	248	184	16	16	318	28	65	31.1	8	100
100/300		150	100	102	495	254	343	65	60	25	290	248	184	16	16	318	28	65	31.1	8	100
150/300		200	150	150	700	315	375	100	100	25	460	410	230	22	22	475	60	110	64	18	140
80/400		100	80	150	700	370	405	100	100	25	460	410	230	22	22	475	60	110	64	18	140
100/400		150	100	150	700	370	405	100	100	25	460	410	230	22	22	475	60	110	64	18	140
150/400		200	150	150	700	370	460	100	100	25	460	410	230	22	22	475	60	110	64	18	140
200/400		250	200	150	700	370	485	100	100	25	460	410	230	22	22	475	60	110	64	18	140

### VO WPES GA Drawing



SL NO	PUMP MODEL VO WPES	SUC	DEL	N	C	L	M	K	P	W	R	T	A	B	C	D	S1	S2	E	F
1	25/130	25	25	202	250	165	300	1"	100	632	150	16	700	640	800	740	18	18	250	190
2	25/160	40	25	202	250	165	300	1"	100	632	150	16	700	640	800	740	18	18	250	190
3	40/160	80	40	202	250	165	300	1.5"	100	632	150	16	700	640	800	740	18	18	250	190
4	25/180	40	25	202	250	165	300	1"	100	632	150	16	700	640	800	740	18	18	250	190
5	40/180	80	40	202	250	165	300	1.5"	100	632	150	16	700	640	800	740	18	18	250	190
6	25/200	40	25	202	250	165	300	1"	100	632	150	16	700	640	800	740	18	18	250	190
7	50/160	80	50	202	250	165	300	2"	100	632	150	16	700	640	800	740	18	18	250	190
8	50/180	80	50	202	250	165	300	2"	100	632	150	16	700	640	800	740	18	18	250	190
9	40/200	80	40	202	250	165	300	1.5"	100	632	150	16	700	640	800	740	18	18	250	190
10	50/200	80	50	202	250	165	300	2"	100	632	150	16	700	640	800	740	18	18	250	190
11	80/200	100	80	252	300	280	500	3"	150	710	150	24	900	800	1000	900	18	18	250	150
12	25/230	50	25	252	300	216	500	1"	150	710	150	24	900	800	1000	900	18	18	250	150
13	40/230	80	40	252	300	216	500	1.5"	150	710	150	24	900	800	1000	900	18	18	250	150
14	50/230	80	50	252	300	242	500	2"	150	710	150	24	900	800	1000	900	22	22	250	150
15	80/230	100	80	252	300	280	500	3"	150	710	150	24	900	800	1000	900	22	22	250	150
16	100/230	150	100	252	300	318	500	4"	150	754	150	24	900	800	1000	900	22	22	250	150
17	25/260	50	25	252	300	216	500	1"	150	710	150	24	900	800	1000	900	22	22	250	150
18	40/260	80	40	252	300	216	500	1.5"	150	710	150	24	900	800	1000	900	22	22	250	150
19	50/260	80	50	252	300	242	500	2"	150	710	150	24	900	800	1000	900	22	22	250	150
20	80/260	100	80	252	300	280	500	3"	150	710	150	24	900	800	1000	900	22	22	250	150
21	100/260	150	100	252	300	318	500	4"	150	710	150	24	900	800	1000	900	25	25	250	150
22	40/300	80	40	252	300	266	500	1.5"	150	754	150	24	900	800	1000	900	25	25	250	150
23	50/300	80	50	252	300	292	500	2"	150	754	150	24	900	800	1000	900	25	25	250	150
24	80/300	100	80	252	300	318	500	3"	150	754	150	24	900	800	1000	900	25	25	250	150
25	100/300	150	100	252	300	343	500	4"	150	754	150	24	900	800	1000	900	25	25	250	150
26	150/300	200	150	300	500	375	500	6"	150	815	150	30	1150	1050	1400	1300	25	25	400	300
27	80/400	100	80	300	500	405	500	3"	150	870	150	30	1150	1050	1400	1300	25	25	400	300
28	100/400	150	100	300	500	405	500	4"	150	870	150	30	1150	1050	1400	1300	25	25	400	300
29	150/400	200	150	300	500	460	500	6"	150	870	150	30	1150	1050	1400	1300	25	25	400	300
30	200/400	250	200	300	500	485	500	8"	150	870	150	30	1150	1050	1400	1300	25	25	400	300
31	200/401	250	200	350	600	500	500	8"	150	900	150	30	1200	1100	1500	1400	25	25	400	300
32	200/552	250	200	370	650	520	550	8"	150	930	150	30	1200	1100	1500	1400	25	25	400	300
33	250/401	300	250	400	700	540	600	10"	150	910	150	30	1200	1100	1500	1400	25	25	400	300



## WPIL SOLID HANDLING NON-CLOG PUMPS TYPE – WPES/ VO-WPES

### Description

#### Range

Delivery size up to 200 mm  
Capacity up to 800 m<sup>3</sup>/hr  
Head up to 90 m  
Max. permissible solid size up to 15 mm  
Consistency up to 5%

#### Applications

For handling liquids with solids in suspension, sludge or pulpy material in paper Industries, sewage or waste with soft solids in suspension, viscous liquids or liquids carrying fibrous material or powdered material slurries, contaminated process liquids like sugar factory waste, trade liquors, water carrying gravel, etc.

#### Constructional Features

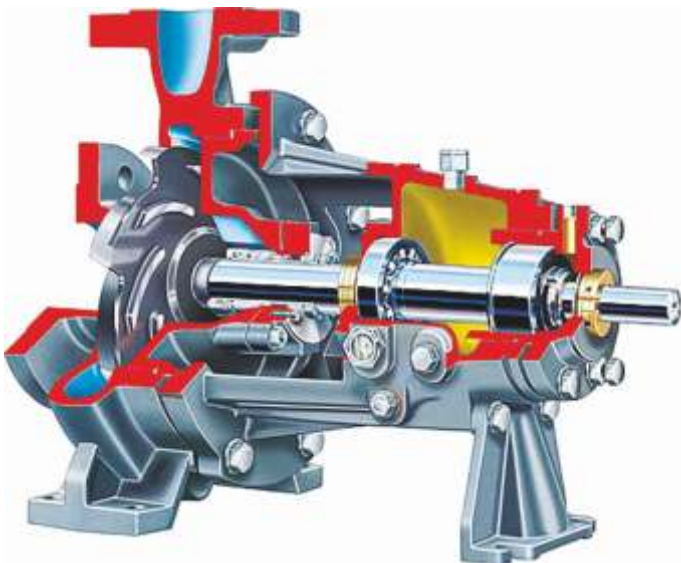
**WPES** are horizontal non clog pumps having single stage, single suction with back pull out type design.

**VO WPES** are vertical non clog pumps for wet pit applications. The pump unit is suspended by a column pipe which also protects the transmission shaft. These pumps can be offered with a column length up to 10m. These pumps operate at 50 Hz and 60 Hz.

#### Casing

End suction with top centerline delivery as well as horizontal side delivery. High efficiency volute providing smooth unobstructed flow. Delivery flange and feet are cast integral with the casing. A large inspection opening is provided on casing with easily removable cover.

#### Cut-Section View



#### Impeller

Single suction type non clog impeller dynamically balanced. Enclosed/ semi-open or channel impellers are available.

#### Shaft

In WPES pumps, shaft is supported by two bearings. Shaft in stuffing box area is protected by a shaft sleeve. Axial clearance between semi-open impeller and suction wear plate can be adjusted externally without dismantling the pump. The shaft sleeves under bearing housing and bearing spider are shrunk fitted to shaft in WPES pumps.

#### Stuffing Box

Standard stuffing box is gland packed with grease sealing. Without cooling up to 90°C and with cooling up to 140°C. Mechanical seal option with plans is also available.

#### Bearings

Standard : Deep groove ball bearings at DE/NDE.  
Optional :

1. Deep groove ball bearing at DE and rollerbearing at NDE.
2. A pair of angular contact ball bearings (BECB) at DE & one cylindrical roller bearing at NDE. Standard lubrication is oil and optional is grease.

#### Direction of Rotation

Clockwise viewed from driving end.

**Drive :** These pumps are suitable for coupling with electric motor or engine directly or through belt drives.

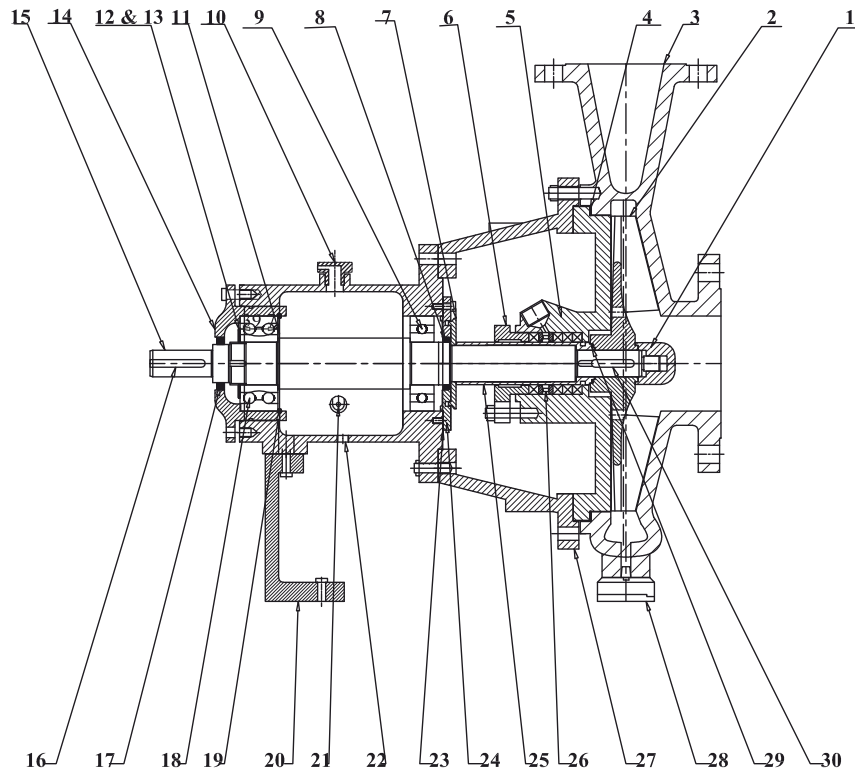
#### Flanges

Standard drilling to DIN 2533 ND 16 / ANSI B 16.5 150 class.  
Optional drilling to ASA/BS/IS

#### Note :

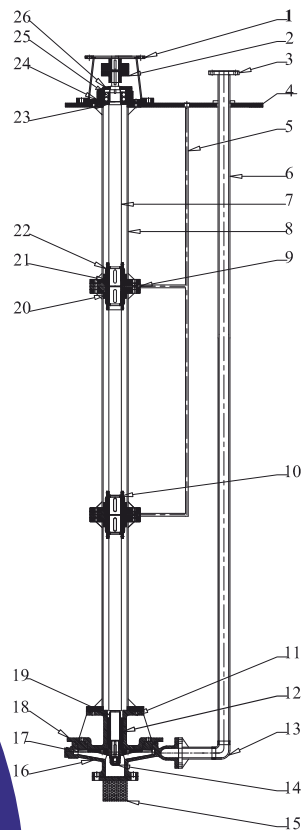
1. Designs subject to change.
2. Other sizes/options available as per requirement.

### WPES Sectional Drawing

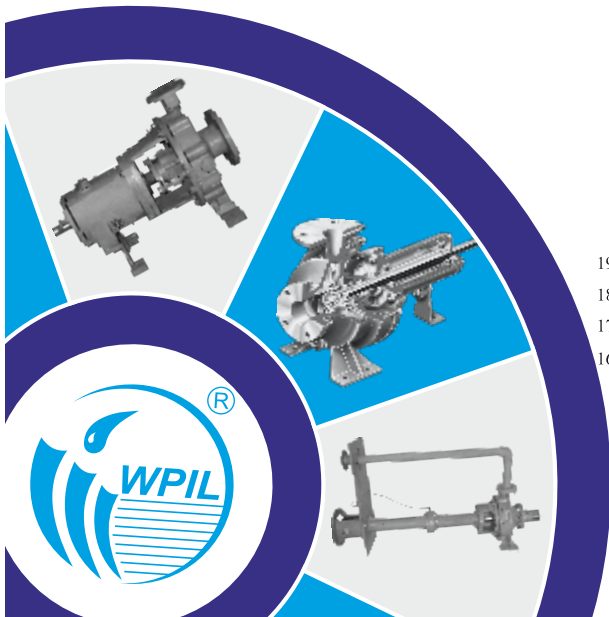


CODE NO	PART NAME	QTY
1	IMPELLER NUT	1
2	IMPELLER	1
3	CASING	1
4	STUFFING BOX	1
5	GASKET CASING	1
6	GLAND	1
7	DEFLECTOR	1
8	OIL SEAL	1
9	BEARING	1
10	VENT	1
11	BEARING BED	1
12	LOCK WASHER	1
13	LOCK NUT	1
14	ADAPTOR	1
15	SHAFT	1
16	KEY-CUPLING	1
17	OIL SEAL	1
18	BEARING	1
19	CIR CLIP	1
20	SUPPORT FOOT	1
21	OIL LEVEL INDICATOR	1
22	DRAIN PLUG	1
23	GASKET BEARING CAP	1
24	BEARING CAP INNER	1
25	SLEEVE	1
26	LANTERN RING	1
27	LANTERN	1
28	CASING FOOT	1
29	GAS KET SLEEVE	1
30	KEY IMPELLER	1

### VO WPES Sectional Drawing



CODE NO	PART NAME	QTY
1	MM STOOL	1
2	PIN BUSH COUPLING	1
3	DELIVERY FLANGE	1
4	BASE PLATE	1
5	COOLING TUBE	1
6	DELIVERY PIPE	1
7	SHAFT	4
8	COLUMN PIPE	4
9	BUSH HOUSING	3 SET
10	COLLAR	6
11	STUFFING BOX	1
12	STUFFING BOX BUSH	1
13	DELIVERY BEND	1
14	IMPELLER NUT	1
15	STAINER	1
16	CASING	1
17	IMPELLER	1
18	STUFFING BOX RING	1
19	SHAFT SLEEVE	3
20	BUSH BEARING (B.HOUSING)	3
21	COUPLING SLEEVE	3
22	SLEEVE NUT	6
23	OIL SEAL	2
24	BEARING HOUSING	1
25	BEARING	1
26	BEARING CAP	1
27	FASTNERS	



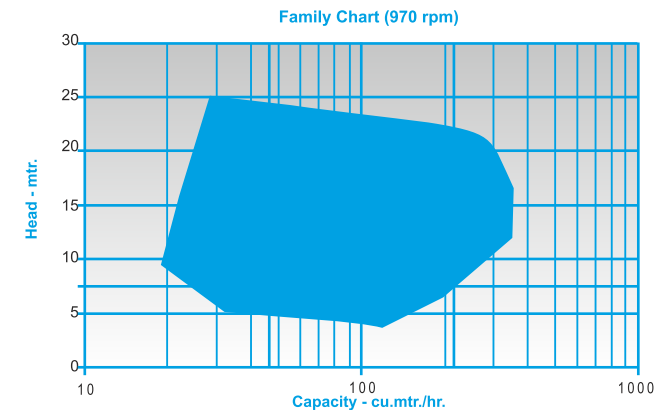
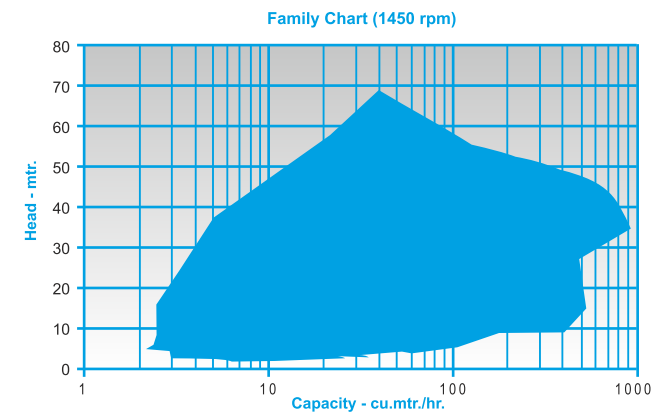
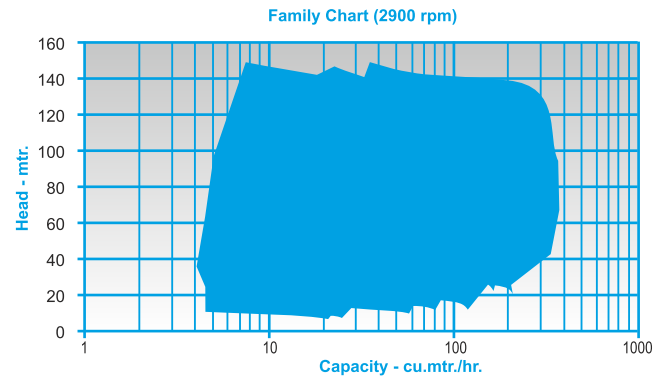
## Material of Construction

Pump Casing	CI	CI	Bronze/Ph Br.	ACI	CF8M	Cast Steel
Wear Plate	CI	CI	Bronze/Ph Br.	ACI	CF8M	Cast Steel
Casing Cover	CI	CI	Bronze/Ph Br.	ACI	CF8M	Cast Steel
Impeller	CI/Bronze	Ph Br.	Bronze/Ph Br.	ACI	CF8M	Cast Steel
Wear Ring	CI/Bronze	Ph Br.	Bronze/Ph Br.	ACI	CF8M	Cast Steel
Shaft	CS	CS	AISI 410	AISI 410	AISI 316	CS
Shaft Serve	AISI 410(H)	AISI 410(H)	AISI 410(H)	AISI 410(H)	AISI 316	AISI 410(H)
Lantern Ring	CI	CI	CF8M	CF8M	CF8M	CF8M
Gland	CI	CI	CF8M	CF8M	CF8M	CF8M

(H) denotes hardened  
Other materials are also available on request optionally.

## Material Standards

Material	IS	Equivalent International Standards	
		BS	ASTM
Cast Iron (CI)	IS 210 Gr.FG 260	B.S. 1452 Gr. 250	ASTM-A 48 CL35
Austenitic Cast Iron (ACI)	IS 2749 Gr. AFG Ni 15	B.S. 3468 AUS 101 Gr.8	ASTM-A 436 Type 1
	Cu6 Cr3		
Carbon Steel (CS)	IS 1570 Gr. 40 C 8	B.S. 970080 M40	ASTM-A 107 Gr. CF8M
CF8M	IS 3444 Gr. 9	B.S. 1632 Gr. 8	ASTM-A 351 Gr. CF8M
AISI 316	IS 1570 Gr. 05 Cr. 18	B.S. 970316 S 16	ASTM-A 276 Type 316
	Ni 11 Mo 3		
AISI 410		B.S. 970410 S 21	ASTM-A 276 Type 410
Bronze	IS 318 Gr. LTB2	B.S. 1400 LG 2C	ASTM-B62, B145 Alloy 4A
Phosphor Bronze (Ph.Br.)	IS 28 Gr. 1	B.S. 1400 PB4	
Zinc Free Bronze		B.S. 1400 Gr. CT1	
Cast Steel		B.S. 1504101 A	ASTM-A 216 Gr. 74dWCB



**WPIL Limited**  
(Formerly Worthington Pump India Ltd.)

Visit: [www.wpil.co.in](http://www.wpil.co.in)



**Head Office:** "Trinity Plaza" 3rd Floor  
84/1A, Topsia Road (South)  
Kolkata-700 046 INDIA  
Phone: +91 33 3021 6800, Fax: +91 33 3021 6835

**Regional Offices:** Kolkata, Delhi (Ghaziabad)  
Mumbai, Chennai, Hyderabad, Bangalore, Bhubaneswar

**Authorised Distributor**

