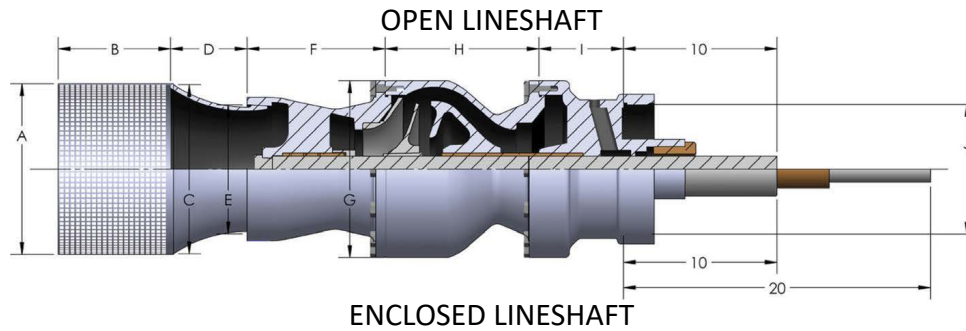
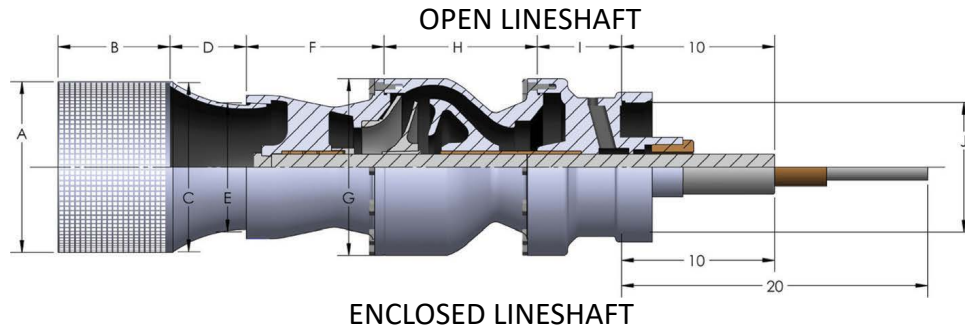


VERTICAL TURBINE BOWL DIMENSIONS



MODEL		BASKET STRAINER (OPTIONAL)	SUCTION BELL (OPTIONAL)		BOWL ASSEMBLY					WEIGHTS		BOWL SHAFT DIA.	COL. SIZE J	SUCTION SIZE E	LATERAL	
IMPELLER TYPE			DIMENSIONS IN INCHES												1ST STAGE	ADD STAGE
ENCLOSED	SEMI-OPEN	A	B	C	D	F	G	H	I							
5IC		8.250	6.000	N/A		5.750	5.200	4.000	3.750	1.000	4	4	5	4	0.500	0.560
5KC								0.310							0.310	
5LC								0.250							0.250	
5HC						0.438	0.630									
5WC								0.375								
5YC						5.900	5.130	4.000	60	20	0.380	0.625				
6IC															0.440	
6KC						5.870	6.375	4.000	90	30	0.500	0.500				
6LC															0.380	
6HC	6HS					5.500	5.440	5.500	57	16	0.440	0.625				
6WC		0.440														
6YC		7.750	7.000	3.750	105	30	1.188	6	6	0.380	0.750					
7LC	7LS											0.438	0.438			
7HC	7HS	10.000	11.000	9.000	4.000	6.250	7.500	6.500	3.875	1.188	6	5 or 6	0.500	0.560		
7WC															0.560	1.750
7YC		7.255	7.375	105	35	105	35	0.560	0.880							
8IC	8IS									0.560	1.750					
8KC	8KS	9.250	9.250	5.375	190	65	1.500	6 or 8	6 or 8	0.630	0.750					
8LC	8LS											0.630	0.750			
8HC	8HS	9.250	9.250	5.375	185	65	1.500	6 or 8	6 or 8	0.630	0.750					
8QC	8QS											0.630	0.750			
8RC	8RS	9.500	8.400	5.500	180	60	1.688	8	8	0.880	1.130					
8WC	8WS											0.750	1.000			
9LC	9LS	9.000	8.500	5.500	190	55	1.688	8	8	0.880	1.130					
9HC	9HS											0.750	1.130			
9WC	9WS	12.000	9.750	11.000	5.000	9.250	7.630	5.375	190	65	1.500	6 or 8	6 or 8	0.630	0.750	
9YC	9YS															0.630
10IC	10IS	9.000	8.500	5.500	190	55	1.688	8	8	0.880	1.130					
10KC	10KC											0.750	1.130			
10LC	10LS	9.000	8.500	5.500	190	55	1.688	8	8	0.880	1.130					
10MC	10MS											0.750	1.130			
10HC	10HS	9.000	8.500	5.500	190	55	1.688	8	8	0.880	1.130					
10WC	10WS											0.750	1.130			
10YC	10YS	9.000	8.500	5.500	190	55	1.688	8	8	0.880	1.130					
10ZC	10ZS											0.750	1.130			

VERTICAL TURBINE BOWL DIMENSIONS



MODEL		BASKET STRAINER (OPTIONAL)	SUCTION BELL (OPTIONAL)	BOWL ASSEMBLY						WEIGHTS		BOWL SHAFT DIA.	COL SIZE	SUCTION SIZE	LATERAL																					
ENCLOSED	SEMI-OPEN			DIMENSIONS IN INCHES						1ST STAGE	ADD STAGE				STANDARD	MAX																				
		A	B	C	D	F	G	H	I			J	E																							
11LC	11LS	12.000	9.750	11.000	5.000	10.000	11.000	9.875	5.625	275	100	1.688	6 or 8	8	0.750	0.880																				
11MC	11MS							12.375							285	110	2.000	2.000																		
11HC	11HS							14.000	10.750	13.000	6.000				11.250	11.000	6.500	345	120	1.938	8 or 10	8 or 10	1.500	1.500												
11LCXL																							11.000	9.000	270	110	6 or 8	0.625	0.875							
11MCXL																														11.500	10.000	250	105	8	0.630	1.000
11HCXL																																				
12DC	12DS	11.000	5.000	9.000	11.500	10.000	5.500	290	130	1.688	8 or 10	1.250	1.500																							
12EC	12ES													14.000	10.750	13.000	6.000	11.500	10.500	260	105	8 or 10	0.880	2.000												
12IC	12IS																								11.000	5.000	9.000	11.750	11.250	5.250	260	105	8 or 10	0.750	2.000	
12KC	12KS	16.000	12.750	15.000	7.000	11.000	11.500	11.502	7.000	355	110	1.938	10 or 12	10 or 12	0.900	1.250																				
12LC	12LS														14.000	10.750	13.000	6.000	9.000	11.750	11.250	5.250	260	105	8 or 10	0.880	2.000									
12MC	12MS																											11.000	5.000	9.000	11.500	10.000	5.500	290	130	1.688
12HC	12HS														14.000	10.750	13.000	6.000	9.000	11.750	11.250	5.250	260	105	8 or 10	0.880	2.000									
12RC	12RS																											11.000	5.000	9.000	11.500	10.000	5.500	290	130	1.688
12XC	12XS														14.000	10.750	13.000	6.000	9.000	11.750	11.250	5.250	260	105	8 or 10	0.880	2.000									
12WC	12WS	11.000	5.000	9.000	11.500	10.000	5.500	290	130	1.688	8 or 10	1.000	1.750																							
12ZC	12ZS													14.000	10.750	13.000	6.000	9.125	12.130	10.750	5.250	265	115	1.688	8 or 10	8 or 10	0.880	2.130								
13MC		11.000	5.000	9.000	11.500	10.000	5.500	290	130	1.688	8 or 10	1.000	1.750																							
13YCXL														14.000	10.750	13.000	6.000	9.125	12.130	10.750	5.250	265	115	1.688	8 or 10	8 or 10	2.000	3.250								
14LC	14LS	16.000	12.750	15.000	7.000	10.250	13.620	8.440	475	155	1.938	10 or 12	10 or 12														1.250	2.000								
14MC	14MS													11.500	440	185	2.000	2.250																		
14HC	14HS							13.500	550	215									1.000	2.250																
14LCXL														11.279	13.625	8.438	535	230			2.188	2.250	4.000													
14MCXL								13.188	14.170	14.125									15.750	17.500				2.188	1.750	2.750										
14HCXL														14.000	14.750	16.875	8.875	565			225	2.438	14				Bell	0.750	2.250							
14WC	14WS	10.748	15.256	14.748	8.438	18.940	17.760	16.752	12.992	2.688	Flanged	Bell	0.900						2.510																	
14YCXL														N/A	7.000	11.279	13.625	8.438		535	230	2.188	1.750	2.750												
15WC	15WS	10.748	15.256	14.748	8.438	18.940	17.760	16.752	12.992	2.688	Flanged	Bell	0.900						2.510																	
16MC														N/A	7.000	11.279	13.625	8.438		535	230	2.188	1.750	2.750												
18MC		N/A	7.000	11.279	13.625	8.438	535	230	2.188	1.750	2.750																									

BOWL ASSEMBLY PRESSURE LIMITS

MODEL	Maximum Bowl Working Pressure (PSIG)	
	Cast Iron CL 30	Ductile Iron Double Bolting
	Std Bolts (Grade 8)	Std Bolts (Grade 8)
5I	480	720
5K		
5L	480	720
5H		
5W	480	720
5Y		
6D	480	720
6E		
6I	360	600
6K		
6L	420	720
6H		
6W	200	N/A
6Y		
7L	415	720
7H		
7W	310	720
7Y		
8I	310	600
8K		
8L	425	790
8H		
8Q	364	600
8R		
8W	364	600
8Z	321	N/A
9L	400	860
9H		
9W	530	920
9Y		
10I	375	790
10K		

Notes:

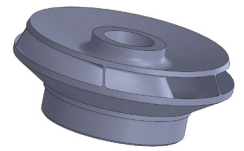
1. Pressure units based on maximum operating pressure of pump at any point on performance curve, normally occurring at shutoff.
2. Threaded bowl connection.
3. To insure proper sealing at bowl mating surfaced:
 Either O-ring or liquid gasket material recommended on all ductile iron, double-bolted bowl assemblies.

BOWL ASSEMBLY PRESSURE LIMITS

MODEL	Maximum Bowl Working Pressure (PSIG)	
	Cast Iron CL 30	Ductile Iron Double Bolting
	Std Bolts (Grade 8)	Std Bolts (Grade 8)
10L	430	790
10M		
10H		
10W	322	500
10Y		
10Z		
11L	380	680
11M		
11H		
11R	497	808
12D	340	680
12E		
12I		
12K	340	680
12L		
12M		
12H	300	610
12R		
12W		
12X	300	610
12Z		
13M		
13Y		
14L		
14M	340	720
14H		
14W		
14Y	327	700
15W	260	410
16M	335	620
18M	308	562
20M	380	650

Notes:

1. Pressure units based on maximum operating pressure of pump at any point on performance curve, normally occurring at shutoff.
2. Threaded bowl connection.
3. To insure proper sealing at bowl mating surfaced:
 Either O-ring or liquid gasket material recommended on all ductile iron, double-bolted bowl assemblies.

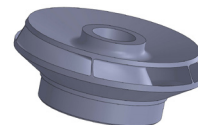


IMPELLER MECHANICAL DATA

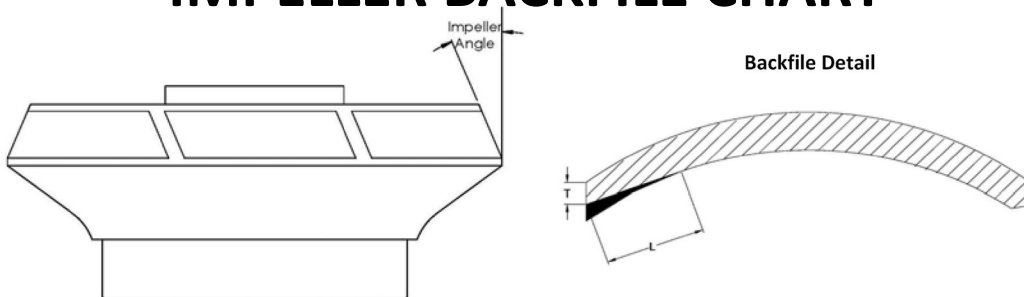
Model	Standard Lateral (in)	Max. Lateral (in)	Allowable Sphere (in)	Net Eye Area (in ²)	A (in)	B (in)	No. of Vanes	Impeller Weight (lbs)	
								Closed	Open
5L	0.31	0.31	0.22	2.95	4.07	0.42	5	1.8	N/A
5H	0.31	0.31	0.22	2.95	4.07	0.42	8	1.8	N/A
6L	0.38	0.63	0.22	4.12	4.22	0.48	5	2.1	N/A
6H	0.38	0.63	0.22	4.12	4.22	0.48	8	2.1	N/A
7L	0.50	0.50	0.43	6.44	5.72	5.72	5	3.9	N/A
7H	0.50	0.50	0.43	6.44	5.72	5.72	8	3.9	N/A
7W	0.38	0.75	0.83	10.11	5.65	1.11	4	4.3	N/A
7Y	0.38	0.75	0.83	10.11	5.65	1.11	7	4.5	N/A
8L	0.50	0.56	0.43	8.51	5.93	0.71	5	5.0	N/A
8H	0.50	0.56	0.43	8.51	5.93	0.71	8	4.9	N/A
8W	0.56	0.88	0.46	14.58	6.16	1.36	7	5.4	N/A
9L	0.88	1.25	0.56	10.93	7.40	0.79	5	6.6	3.5
9H	0.88	1.25	0.56	10.93	7.40	0.79	8	6.7	3.7
10I	0.63	0.75	0.45	8.64	7.72	0.60	5	7.3	4.1
10K	0.63	0.75	0.45	8.64	7.72	0.60	8	7.3	4.2
10W	0.88	1.13	0.87	19.41	8.25	1.21	6	7.9	4.9
10Y	0.75	1.13	0.87	19.41	8.25	1.53	6	8.1	4.9
10Z	0.50	0.88	1.43	26.70	8.25	1.70	6	9.2	5.3
11L	0.75	0.88	0.68	15.71	8.81	0.93	5	10.9	5.8
11M	0.75	0.88	0.68	15.71	8.81	0.93	7	11.0	6.0
11H	0.75	0.88	0.68	15.71	8.81	0.93	8	10.9	6.0
12D	0.63	0.88	0.63	12.69	9.31	0.83	5	14.1	7.9
12E	0.63	0.88	0.50	12.69	9.50	0.81	8	14.6	8.0
12I	0.63	1.00	0.62	18.92	9.31	0.88	5	12.9	7.1
12K	0.63	1.00	0.62	18.92	9.31	0.88	8	14.4	7.6
12L	1.00	1.75	0.73	18.19	9.50	1.00	5	15.2	8.8
12M	1.00	1.75	0.73	18.19	9.50	1.00	7	15.2	8.9
12H	1.00	1.75	0.73	18.19	9.50	1.00	8	14.7	8.4
12R	0.75	1.50	0.75	32.39	9.56	1.62	6	10.5	6.4
12Z	0.90	1.25	0.67	38.33	9.70	1.82	7	19.8	11.6
13M	0.88	2.13	0.75	21.00	9.94	1.08	8	14.2	N/A
14L	1.00	2.00	0.98	30.23	10.96	1.35	5	23.3	14.2
14M	1.00	2.00	0.98	30.23	10.96	1.35	7	23.6	13.8
14H	1.00	2.00	0.98	30.23	10.96	1.35	8	23.5	14.0
14Y	2.25	4.00	0.84	39.36	11.81	1.87	8	34.7	N/A

Notes:

1. Net eye area = (area of impeller opening) - (cross sectional area of shaft)

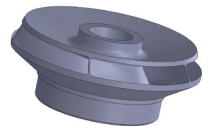


IMPELLER BACKFILE CHART

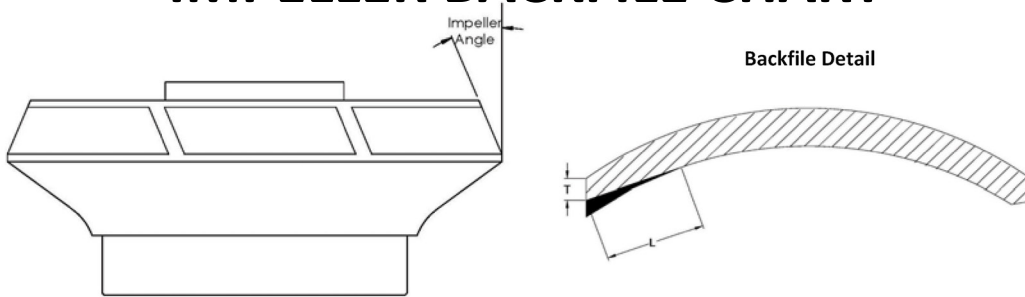


Impeller	Angle	Backfile	
		T	L
5IC	20°	0.125	0.750
5KC			
5LC	25°	0.063	
5HC			
5WC	26°	0.313	
5YC			
6DC	20°	0.125	
6DS			
6EC			
6ES			
6IC	27°	0.063	
6IS			
6KC	20°		1.000
6KS			
6LC	25°		0.750
6HC			
6HS			
6WC			
6YC	22°		0.750
7LC			
7HC			
7LS			
7HS			
7WC	18°	0.125	0.750
7YC		0.063	
8IC	18°	0.125	0.750
8IS		0.125	
8KC	25°	0.063	0.750
8KS		0.063	
8LC	25°	0.125	0.750
8LS			

Impeller	Angle	Backfile		
		T	L	
8HC	25	0.125	0.750	
8HS				
8QC	29°	0.188		
8QS				
8RC		0.125		
8RS				
8WC	24°	0.063		
8WS				
8ZS	24°	0.063		
9LC				20°
9LS	0.063			
9HC	17°	0.125		
9HS		0.375		
9WC				
9WS	0.250			
9YC				
9YS	20°	0.188		
10IC		0.063		
10IS		0.125		
10KC		0.188		
10KS				
10LC	25°	0.125		
10LS				
10MC	25°	0.188		
10MS				
10HC	33.25°	0.125		
10HS				
10WC	0.063			
10WS				
10YC				



IMPELLER BACKFILE CHART



Impeller	Angle	Backfile	
		T	L
10YS	33.25°	0.063	1.000
10ZC	42°		
10ZS			
11LC	23°	0.125	
11LS			
11MC			
11MS			
11HC			
11HS		0.063	
11RC	19°	0.125	
11RS			
12DC	25°		
12DS			
12EC			
12ES			
12IC	23°	0.063	
12IS			
12KC	23°	0.063	
12KS			
12LC	28°	0.125	1.250
12LS			
12MC		0.063	
12MS			
12HC			
12HS			

Impeller	Angle	Backfile	
		T	L
12RC	30°	0.125	1.250
12RS			
12WC			
12WS	32°		
12XC			
12XS			
12ZC	35°	0.063	
12ZS			
13MC	30°	0.125	
13YC	31°	0.063	
14LC	25°	0.125	
14LS		0.063	
14MC		0.125	
14MS		0.063	
14HC		0.125	
14HS			
14WC	26°	0.188	1.500
14WS			
14YC	31°		
14YS		0.375	
15WC	27°		
15WS		0.313	
16M	25°		
18MC	26°		
20HC	25°	0.313	
20LC			

VERTICAL TURBINE MATERIALS OF CONSTRUCTION OPEN LINESHAFT

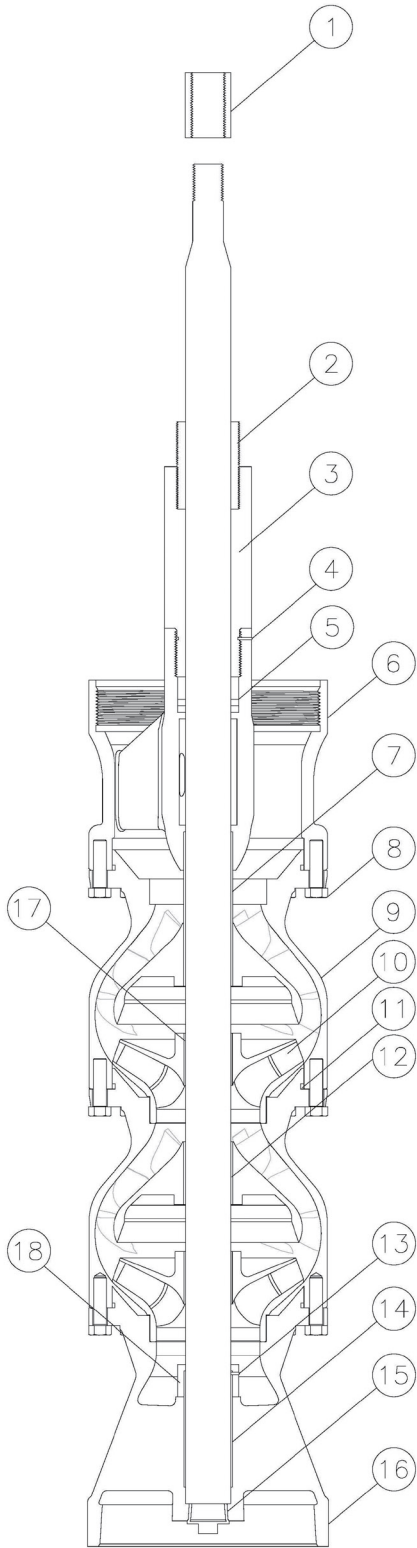


DESCRIPTION	MATERIAL	SPECIFICATION
SUCTION CASE PLUG	GALVANIZED	ASTM A-197
SUCTION CASE	CAST IRON	ASTM A48 CL30
O-RING	BUNA-N	BUNA-N
SUCTION BEARING	BRONZE LEAD FREE	907LF
SAND CAP	STAINLESS STEEL	ASTM A582 TYPE 416
SAND CAP SET SCREW	STAINLESS STEEL	ASTM A193,A320,F593
BOWL	CAST IRON VITREOUS ENAMELED	ASTM A48 CL30
BOWL BEARING	BRONZE LEAD FREE	907LF
IMPELLER	STAINLESS STEEL	ASTM A743/744 CF8 (304SS)
COLLET	STAINLESS STEEL	ASTM A582 type 416
DISCHARGE CASE LOWER BEARING	BRONZE LEAD FREE	907LF
DISCHARGE CASE	DUCTILE IRON	ASTM A536 Gr. 65-45-12
DISCHARGE CASE UPPER BEARING	BRONZE LEAD FREE	907LF
DISCHARGE CASE PLUG	GALVANIZED	ASTM A-197
DISCHARGE CASE SET SCREW	STAINLESS STEEL	ASTM A193,A320,F593
CAPSCREW	STAINLESS STEEL	ASTM A193,A320,F593

VERTICAL TURBINE MATERIALS OF CONSTRUCTION ENCLOSED LINESHAFT



DESCRIPTION	MATERIAL	SPECIFICATION
SUCTION CASE PLUG	GALVANIZED	ASTM A-197
SUCTION CASE	CAST IRON	ASTM A48 CL30
O-RING	BUNA-N	BUNA-N
SUCTION BEARING	BRONZE LEAD FREE	907LF
SAND CAP	STAINLESS STEEL	ASTM A582 TYPE 416
SAND CAP SET SCREW	STAINLESS STEEL	ASTM A193,A320,F593
BOWL	CAST IRON VITREOUS ENAMALED	ASTM A48 CL30
BOWL BEARING	BRONZE LEAD FREE	907LF
IMPELLER	STAINLESS STEEL	ASTM A743/744 CF8 (304SS)
COLLET	STAINLESS STEEL	ASTM A582 type 416
DISCHARGE CASE LOWER BEARING	BRONZE LEAD FREE	907LF
DISCHARGE CASE	DUCTILE IRON	ASTM A536 Gr. 65-45-12
LIP SEALS	STEEL CASE / NITRILE LIP	
TUBE ADAPTER	DUCTILE IRON	ASTM A536 Gr. 65-45-12
DISCHARGE CASE SET SCREW	STAINLESS STEEL	ASTM A193,A320,F593
CAPSCREW	STAINLESS STEEL	ASTM A193,A320,F593

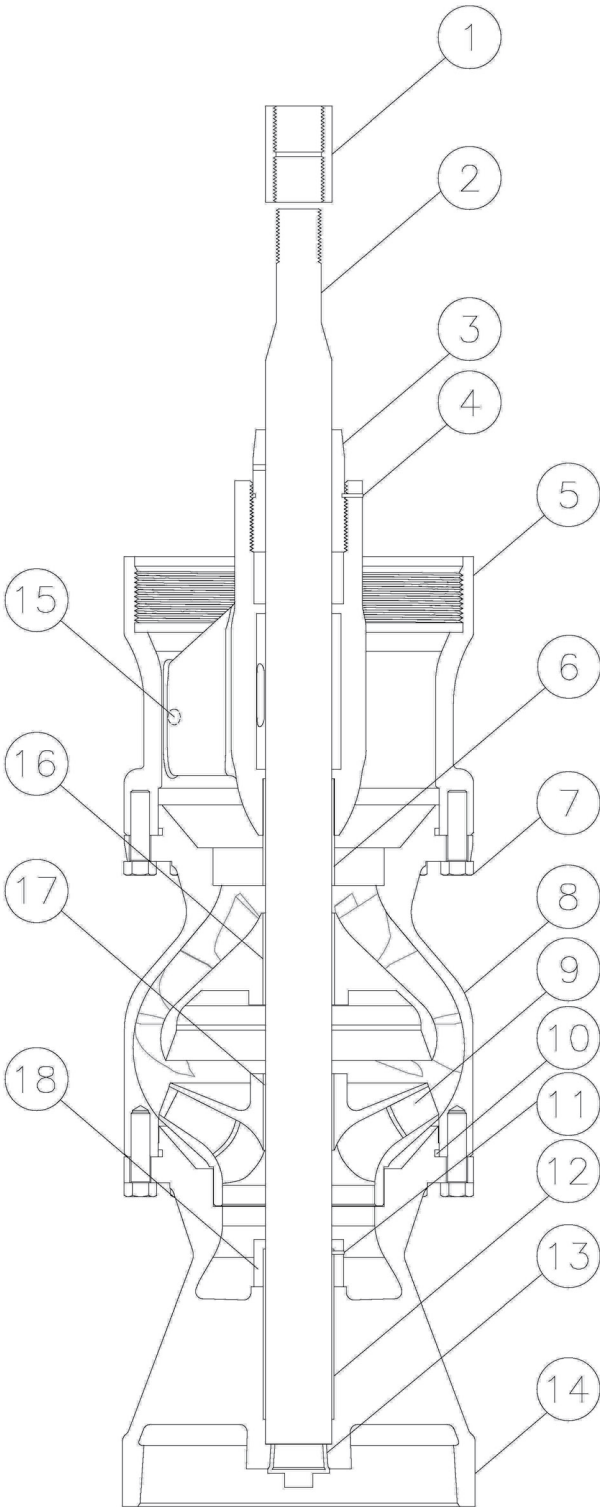


#	PART NUMBER	DESCRIPTION	MATERIAL	QTY
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

TURBINE PUMP

OPEN LINESHAFT BOWL ASSEMBLY - PARTS DIAGRAM



#	PART NUMBER	DESCRIPTION	MATERIAL	QTY
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

CUSTOMER				DATE	PO
PROJECT				PREPARED BY	
MODEL	STAGES	GPM	TDH	CUSTOMER APPROVAL	
MTR MFG	HP	FRAME	ENCL TYPE		
RPM	VOLTS	PH	HZ		

