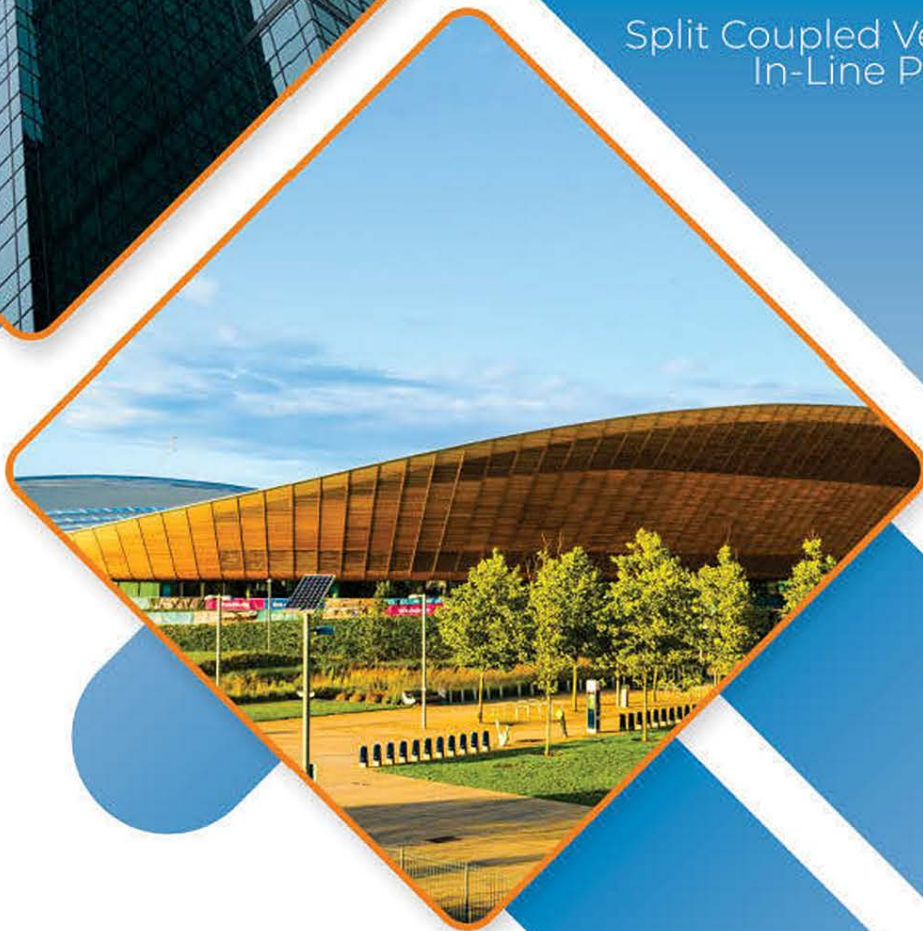




BVL

Split Coupled Vertical
In-Line Pumps


Barmesa® by
Pumps

Titan
MANUFACTURING, INC.

Quality Pumps Since 1953

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Split Coupled Vertical In-Line Pumps

- ▶ Capacities up to 12,000 GPM
- ▶ Heads up to 560 ft
- ▶ Temperatures up to 194 °F

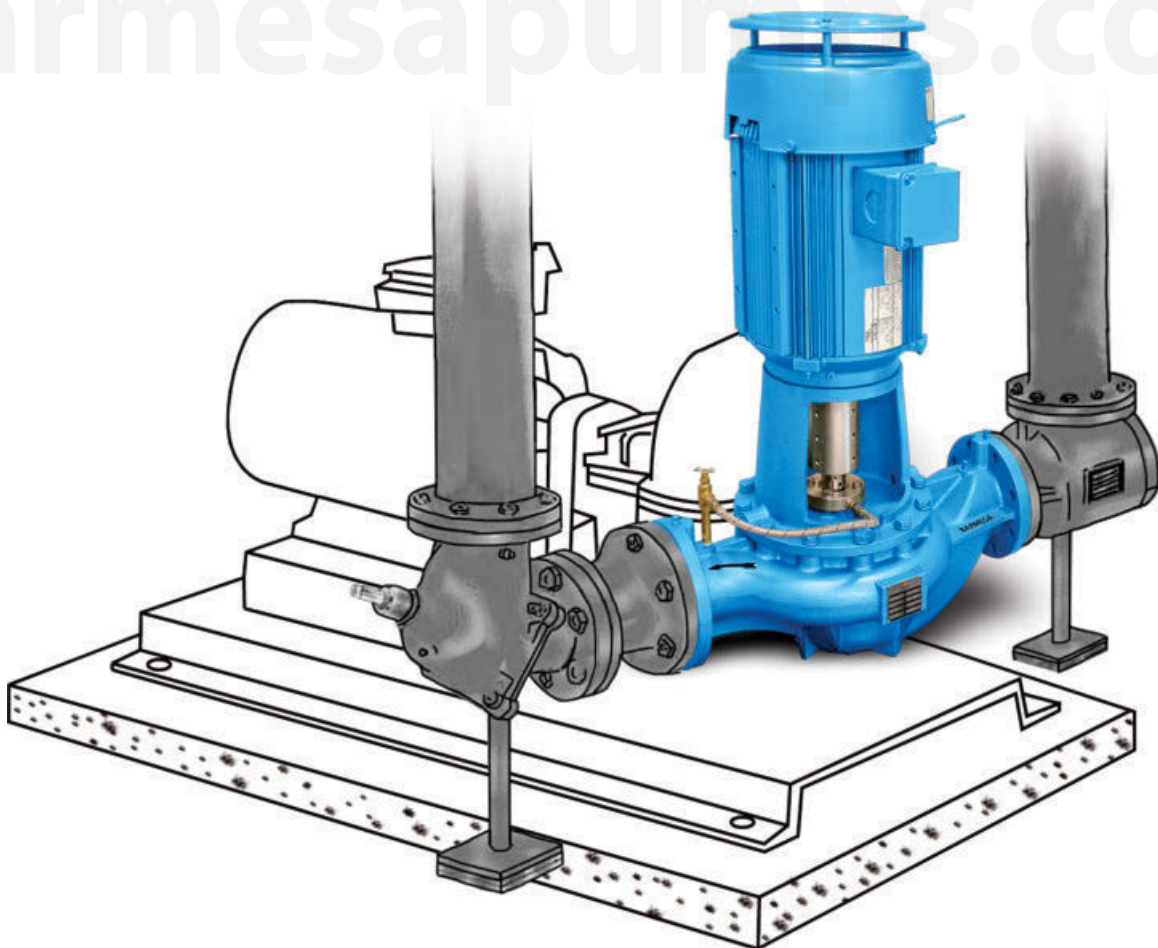
Typical Applications

- ▶ Air conditioning
- ▶ Condensed water
- ▶ Chilled water
- ▶ Service water

Advantages

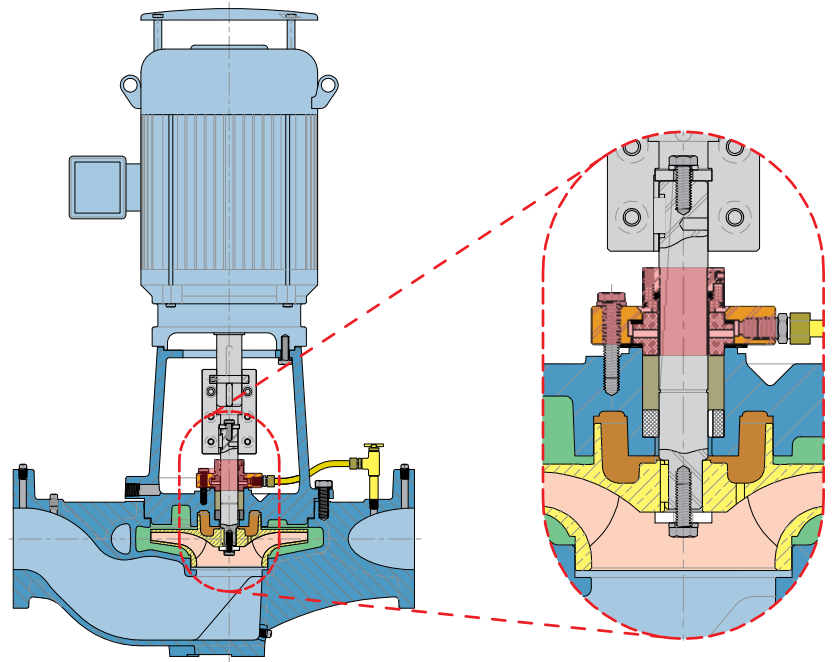
- ▶ The BVL Pump does not require field alignment or a foundation.
- ▶ Saving space, it may take three times less space than the horizontal split case pump.
- ▶ Coupling allows all mechanical seals components to be removed for servicing without disturbing other components. Reinstalling it gets the pump back to its original specifications.
- ▶ Highly reliable due to the rotating assembly and the dynamically balanced impeller assuring a silent operation.
- ▶ Simplifies pipes fixing considerably. The pump is supported by the pipes avoiding misalignment.
- ▶ Installation and servicing costs are highly reduced.
- ▶ Minimum time required for maintenance.
- ▶ Servicing can be done without disassembling it.

BVL PUMP vs. SPLIT CASE PUMP



Mechanical seal

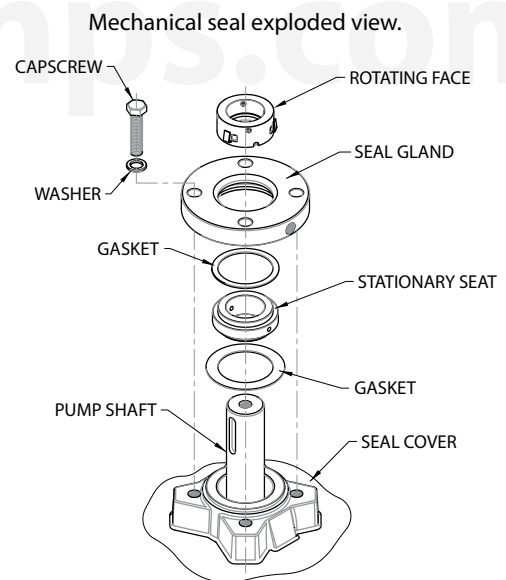
- ▶ Stainless steel multi-spring outside balanced type.
- ▶ Materials: viton secondary seal, carbon rotating face and silicon carbide stationary seat.



Mechanical seal on the BVL pump.

Mechanical seal diameters as follows:

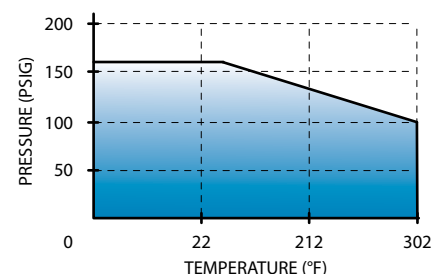
Group	Frame	Flange	Shaft motor diameter	Space between shafts	Mechanical seal diameter
S	143 - 145	TC	7/8"	1 3/8"	1 1/8"
	182 - 184		1 1/8"	2 1/2"	
	213 - 215		1 3/8"	2"	
	254 - 256		1 5/8"	1 3/8"	
M	284 - 286	TSC	1 5/8"	2 3/4"	1 5/8"
	324 - 326		1 7/8"	2 7/8"	
	364 - 365		1 7/8"	2 7/8"	
	404 - 405		2 1/8"	2 3/8"	
	284 - 286	TC	1 7/8"	1 3/8"	
	324 - 326		2 1/8"	1 3/8"	
	364 - 365	TSC	2 3/8"	1 3/8"	
	445 - 446		2 3/8"	1 3/8"	
	182 - 184	TC	1 1/8"	2 1/2"	
	213 - 215		1 3/8"	2"	
L	254 - 256	TC	1 5/8"	1 3/8"	2 1/8"
	324 - 326		2 1/8"	1 3/8"	
	364 - 365		2 3/8"	1 3/8"	
	404 - 405		2 7/8"	2 5/8"	
	444 - 445		3 3/8"	1 3/8"	
	447 - 449		3 3/8"	1 3/8"	



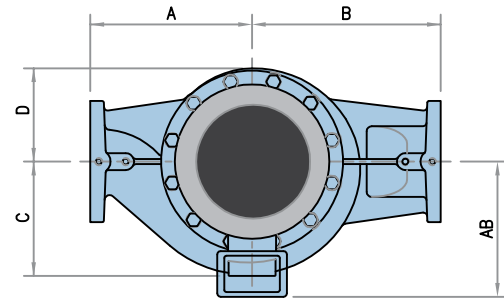
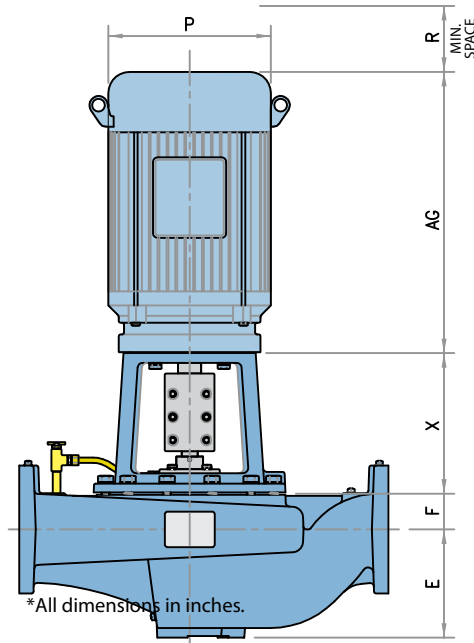
Split spacer coupling allows seal maintenance without disturbing pump or motor.

The outside mounting mechanical seal makes more simple its maintenance because it is accessible and easily replaceable; after removing the coupling, the space left between shafts is enough to remove the seal.

Pressure/temperature chart class 125 flanges



General dimensions



Couplings					
Impeller diameter	Dimensions		Impeller diameter	Dimensions	
	Frames	X		Frames	X
6"	143 - 145TC	8.75	8"	182 - 256TC	12.5
	182 - 256TC	10.5		284 - 286TC	13.25
8"	143 - 145TC	8.25		324 - 326TC	14
	182 - 256TC	10		444 - 445TC	14.75
	284 - 286TSC	13		364 - 365TC	15.25
	324 - 326TSC	13.75		404 - 405TC	16
10"	143 - 145TC	8.25	14"	444 - 449TC	16.75
	182 - 256TC	10		364 - 365TC	15.26
	284 - 286TC	10		404 - 405TC	16
	326 - 326TC	135		444 - 446TC	16.5
11.5"	182 - 256TC	9.88	15"	447 - 449TC	17
	284 - 286TC	12.88		364 - 365TC	16.75
	324 - 326TC	14.12		404 - 405TC	18.38
				444 - 449TC	18.38

BVL PUMP

Size	Dimensions					
	A	B	C	D	E	F
1.5 x 1.5 x 6	7	7.25	4.5	4.5	4.5	1.75
2 x 2 x 6	8	7	5.25	4.5	4.88	1.88
3 x 3 x 6	9.75	8.25	5.88	4.75	6	1.88
4 x 4 x 6	12	10	5.88	4.75	7.75	2.25
6 x 6 x 6	17.5	12	8.5	6.35	9.68	4
1.5 x 1.5 x 8	8	8	5.75	5.75	4.63	2.5
2 x 2 x 8	9.5	8.5	5.75	5.75	5.13	2.5
3 x 3 x 8	12	10	6.75	5.75	6.38	2.5
4 x 4 x 8	14	11	8	6.25	8	2.5
5 x 5 x 8	13	12	7.5	6.25	8	2.5
6 x 6 x 8	19.5	13.5	9.75	7.5	10.38	3.25
8 x 8 x 8	22	16	11	8.5	11.5	5.5
2 x 2 x 10	10	9	6.75	6.75	5.38	2.5
3 x 3 x 10	11.5	9.5	7.25	6.75	5.5	2.5
4 x 4 x 10	14	12	7.75	6.88	7.63	2.5
6 x 6 x 10	17	15	10.63	8.25	8.13	2.5
8 x 8 x 10	22	17	11.5	9	9.75	3
4 x 4 x 11.5	15.25	12.75	8.16	7.38	7.69	2.5
5 x 5 x 11.5	17.25	13.75	9.03	8.03	8.88	2.75
6 x 6 x 11.5	18.5	16.5	9.88	8.56	9.75	2.75
8 x 8 x 11.5	22	17.5	12	9.63	10	3.25
3 x 3 x 13	13.5	12	8.75	8.25	6.63	2.5
4 x 4 x 13	15.5	13.5	9.25	8.25	8.13	2.38
4 x 4 x 13L	15.5	13.5	9.25	8.25	8.13	2.38
6 x 6 x 13	19	17	11	9	10.25	2.75
8 x 8 x 13	23	19	12	9.75	10	2.94
10 x 10 x 13	26	21.38	14	11	16	3.25
12 x 12 x 13	22	24.25	17	12	12.5	12
8 x 8 x 15	25.88	22.88	13.88	11.5	12.38	3.25
10 x 10 x 15	26	22.5	14.5	11.5	13.44	3.25
14 x 14 x 15	25	27	20.1	13.5	13.75	13.88

ELECTRIC MOTORS

Frame	Dimensions				
	AG	AB	P	R	Shaft Ø
143TC	9.88	6.5	6.9	5	0.875
145TC	11.1				
182TC	11.62	7.38	8.9	5	1.125
184TC	12.62				
213TC	14.88	9	10.62	5	1.375
215TC	15.88				
254TC	18.5	9.9	12.62	6	1.625
256TC	20.25				
284TC	23	12.94	14.19	8	1.875
284TSC					1.625
286TC	24.5				1.875
286TSC					1.625
324TC	27	15.75	15.94	10	2.125
324TSC	26.5				1.875
326TC	27				2.125
326TSC	26.5				1.875
364TC	28.5	15.75	17.81	12	2.375
364TSC	28.63	17.69			1.875
365TC					2.375
365TSC					1.875
404TC	32.5	17.5	19.9	14	2.875
404TSC					2.125
405TC					2.875
405TSC					2.125
444TC	37.31	19.94	21.9	16	3.375
444TSC					2.375
445TC					3.375
445TSC					2.375
447TC	40.88	19.94	21.9	20	3.375
447TSC					2.375
449TC	45.85				3.375
449TSC					2.375

"S" GROUP MECHANICAL SEAL DIAMETER 1 1/8"

Size	Motor frame			
	143 - 145TC	182 - 184TC	213 - 215TC	254 - 256TC
1.5 x 1.5 x 6	TC	TC	-	-
2 x 2 x 6	TC	TC	TC	-
3 x 3 x 6	TC	TC	TC	-
4 x 4 x 6	TC	TC	TC	TC
6 x 6 x 6	TC	TC	TC	-
1.5 x 1.5 x 8	TC	TC	TC	-
2 x 2 x 8	TC	TC	TC	TC
3 x 3 x 8	TC	TC	TC	TC
4 x 4 x 8	TC	TC	TC	TC
5 x 5 x 8	TC	TC	TC	TC
6 x 6 x 8	-	TC	TC	TC
8 x 8 x 8	-	TC	TC	TC
2 x 2 x 10	TC	TC	TC	TC
3 x 3 x 10	TC	TC	TC	TC
4 x 4 x 10	-	TC	TC	TC
6 x 6 x 10	-	-	TC	TC
8 x 8 x 10	-	-	TC	TC
4 x 4 x 11.5	-	TC	TC	TC
5 x 5 x 11.5	-	TC	TC	TC
6 x 6 x 11.5	-	TC	TC	TC
8 x 8 x 11.5	-	-	-	TC
Pump shaft	Ø1 1/8"			
TC motor shaft	Ø7/8"	Ø1 1/8"	Ø1 3/8"	Ø1 5/8"
TC space between shafts	1 3/8"	2 1/2"	2"	1 3/8"

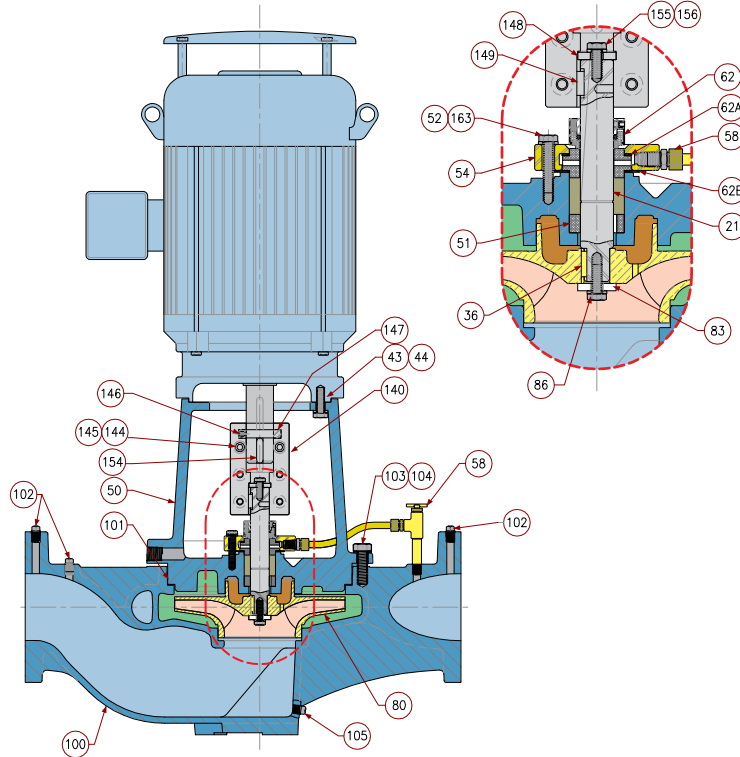
"M" GROUP MECHANICAL SEAL DIAMETER Ø1 5/8"

Size	Motor frame							
	182 - 184	213 - 215	254 - 256	284 - 286	324 - 326	364 - 365	404 - 405	444 - 445
2 x 2 x 8	-	-	-	TSC	-	-	-	-
3 x 3 x 8	-	-	-	TSC	TSC	-	-	-
4 x 4 x 8	-	-	-	TSC	TSC	TSC	-	-
5 x 5 x 8	-	-	-	TSC	TSC	-	-	-
2 x 2 x 10	-	-	-	TSC	TSC	-	-	-
3 x 3 x 10	-	-	-	TSC	TSC	TSC	-	-
4 x 4 x 10	-	-	-	TSC	TSC	TSC	-	-
6 x 6 x 10	-	-	-	TSC	TSC	TSC	TSC	-
8 x 8 x 10	-	-	-	TSC	TSC	-	-	-
4 x 4 x 11.5	-	-	-	TC	TC	-	-	-
5 x 5 x 11.5	-	-	-	TC	TC	-	-	-
6 x 6 x 11.5	-	-	-	TC	TC	-	-	-
8 x 8 x 11.5	-	-	-	TC	TC	TC	-	-
3 x 3 x 13	TC	TC	TC	TC	TC	TC	TSC	TSC
4 x 4 x 13	TC	TC	TC	TC	TC	-	-	-
4 x 4 x 13L	TC	TC	TC	TC	TC	-	-	-
6 x 6 x 13	-	TC	TC	TC	TC	-	-	-
8 x 8 x 13	-	TC	TC	TC	TC	TC	-	-
10 x 10 x 13	-	-	-	TC	TC	-	-	-
Pump shaft	Ø1 5/8"							
TSC motor shaft	-	-	-	Ø1 5/8"	Ø1 7/8"	Ø1 7/8"	Ø2 1/8"	Ø2 3/8"
TSC space between shafts	-	-	-	2 3/4"	2 7/8"	2 7/8"	2 3/8"	1 3/8"
TC motor shaft	Ø1 1/8"	Ø1 3/8"	Ø1 5/8"	Ø1 7/8"	Ø2 1/8"	Ø2 3/8"	-	-
TC space between shafts	2 1/2"	2"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	-	-

"L" GROUP MECHANICAL SEAL DIAMETER Ø2 1/8"

Size	Motor frame				
	143 - 145TC	182 - 184TC	213 - 215TC	254 - 256TC	254 - 256TC
10 x 10 x 13	TC	TC	TC	TC	TC
12 x 12 x 13	TC	TC	TC	TC	TC
14 x 14 x 14	-	TC	TC	TC	TC
8 x 8 x 15	-	TC	TC	TC	TC
10 x 10 x 15	-	TC	TC	TC	TC
14 x 14 x 15	-	-	TC	TC	TC
Pump shaft	Ø2 1/8"				
TC motor shaft	Ø2 1/8"	Ø2 3/8"	Ø2 7/8"	Ø3 3/8"	
TC space between shafts		1 3/8"	2 5/8"	1 3/8"	

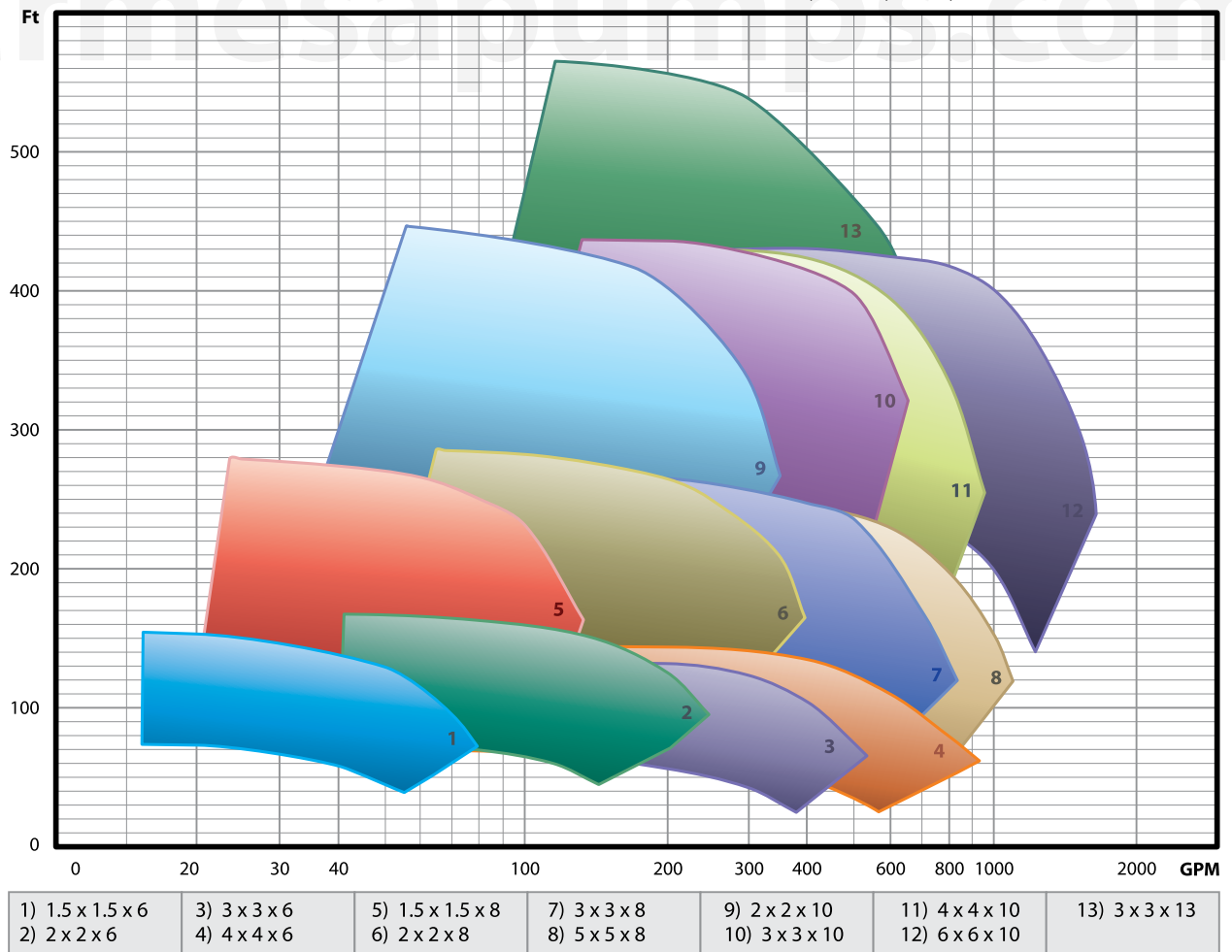
List of material



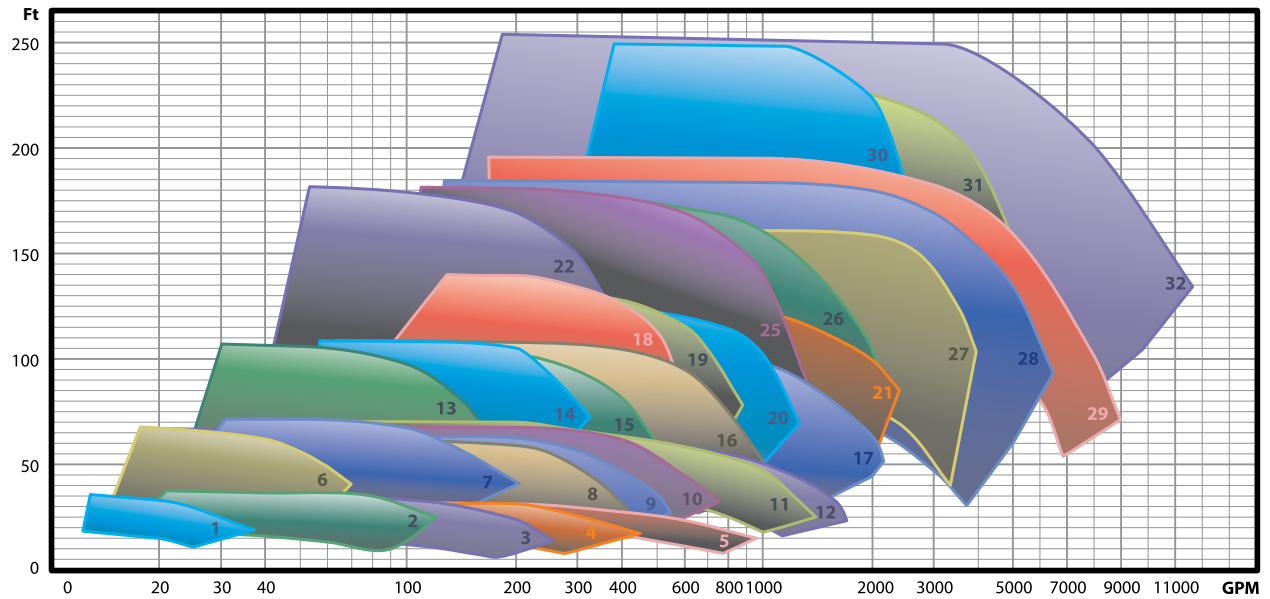
Item	Description	Material
21	SHAFT	STAINLESS STEEL 416
36	IMPELLER KEY	CARBON STEEL 1018
40	ADAPTER	CAST IRON ASTM-A48, CLASS 30
43	WASHER	CARBON STEEL
44	MOTOR CAPSCREW	CARBON STEEL
50	COUPLING	CAST IRON ASTM-A48, CLASS 30
50A	SEAL PLATE	CAST IRON ASTM-A48, CLASS 30
51	BUSHING	GRAPHITE
52	SEAL COVER CAPSCREW	STAINLESS STEEL 304
54	SEAL GLAND	STAINLESS STEEL 316
58	MALE STRAIGHT CONNECTOR	BRONZE
59	TUBING	COPPER
62	MECHANICAL SEAL	CARBON/SILICON CARBIDE-VITON-SS
62A	UPPER GASKET	NON ASBESTOS OR TEFLON (PTFE)
62B	LOWER GASKET	NON ASBESTOS OR TEFLON (PTFE)
63	TEE	
64	REDUCING BUSHING	BRONZE
67	NIPPLE	
68	AIR VENT	
80	IMPELLER	CAST IRON OR BRONZE*
83	IMPELLER WASHER	STAINLESS STEEL 304
86	IMPELLER SCREW	STAINLESS STEEL 304
100	CASING	CAST IRON ASTM-A48, CLASS 30
101	CASING GASKET	NON ASBESTOS OR TEFLON (PTFE)
102	GAUGE PLUG	GALVANIZED STEEL
103	CASING CAPSCREW	CARBON STEEL
104	WASHER	CARBON STEEL
105	CASING DRAIN PLUG	GALVANIZED STEEL OR CAST IRON
140	COUPLING	ALUMINIO 6061-T6
144	SOCKET SCREW	CARBON STEEL
145	WASHER	CARBON STEEL
146	STUD BOLT	CARBON STEEL
147	MOTOR COUPLER COLLAR	STEEL 1045
148	SHAFT COUPLER COLLAR	STEEL 1018
149	COUPLER KEY	STEEL 1018
150	GUARD	STEEL ASTM-A36
154	MOTOR KEY	STEEL 1018
155	CAPSCREW LOCKWASHER	CARBON STEEL
156	COUPLER COLLAR CAPSCREW	CARBON STEEL
163	WASHER	STAINLESS STEEL 304

* ASTM-B584, Gr. C84400 (OPTIONAL)

Hydraulic coverage - 3500 RPM

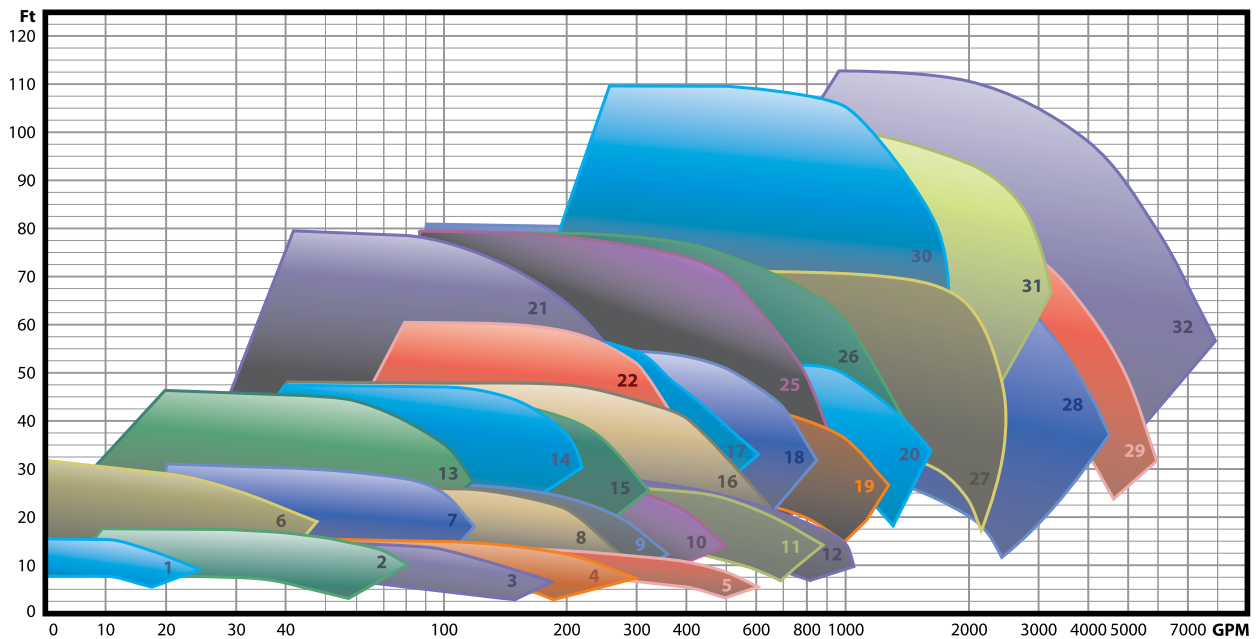


Hydraulic coverage - 1800 RPM



1) 1.5x1.5x6	6) 1.5x1.5x8	11) 6x6x8	16) 6x6x10	21) 8x8x11.5	26) 8x8x13	31) 10x10x15
2) 2x2x6	7) 2x2x8	12) 8x8x8	17) 8x8x10	22) 3x3x13	27) 10x10x13	32) 14x14x15
3) 3x3x6	8) 3x3x8	13) 2x2x10	18) 4x4x11.5		28) 12x12x13	
4) 4x4x6	9) 5x5x8	14) 3x3x10	19) 5x5x11.5		29) 14x14x14	
5) 6x6x6	10) 4x4x8	15) 4x4x10	20) 6x6x11.5	25) 6x6x13	30) 8x8x15	

Hydraulic coverage - 1200 RPM



1) 1.5x1.5x6	6) 1.5x1.5x8	11) 6x6x8	16) 6x6x10	21) 3x3x13	26) 8x8x13	31) 10x10x15
2) 2x2x6	7) 2x2x8	12) 8x8x8	17) 5x5x11.5	22) 4x4x11.5	27) 10x10x13	32) 14x14x15
3) 3x3x6	8) 3x3x8	13) 2x2x10	18) 6x6x11.5		28) 12x12x13	
4) 4x4x6	9) 5x5x8	14) 3x3x10	19) 8x8x10		29) 14x14x14	
5) 6x6x6	10) 4x4x8	15) 4x4x10	20) 8x8x11.5	25) 6x6x13	30) 8x8x15	