

ABOUT US

DPUMPS is a brand manufactured by an Industrial Group with over 70 years Worldwide experience. The company's goal is to provide high quality products at extremely competitive prices supported by the best customer service in the industry. To be a company which supplies world standard products, and to be a leading company in pump industries.

Our company group tries to hear every customers' voice and help them with the best recommendation for different applications.

As the world moves into a competitive situation which only best products survive, DPUMPS enhancements have been developed to offer superior performance and reliability. It is not just another ANSI pump, with its reverse vane impeller that delivers unequalled efficiency, performance and the high quality it is made, it becomes one of the best.

Our engineering team highly trained in their field, works hard with their expert knowledge to make the best pumps: Using modern technology and equipment make it easier to use and guarantee the reliability.



SPECIFICATIONS

The advanced design and precision manufacture of the rugged, heavy-duty service pump significantly enhance bearing and seal life. Our team is committed to helping users maximize mean time between planned maintenance (MTBPM). Some features of the DPUMPS series resulted from the suggestions of working engineers in the field, and were combined with others derived from the broad experience of our team. Thus practical features, backed by the large experience in pump manufacturing, assure you of excellent pump performance and full satisfaction.

MATERIAL SPECIFICATIONS

CONSTRUCTION					
Part	Carbon Steel	Carbon Steel 316 SS	All 316 SS	All CD4MCUN	All Alloy 20
Casing	Carbon Steel	Carbon Steel	316 SS	CD4MCUN	Alloy 20
Impeller	Carbon Steel	316 SS	316 SS	CD4MCUN	Alloy 20
Shaft	Steel	Steel	Shaft For Hook Sleeve in steel with sleeve in 316SS (optinoal solid shaft in 316SS)	Shaft For Hook Sleeve in steel with sleeve in CD4MCuN	Shaft For Hook Sleeve in steel with sleeve in Alloy 20
Cover	Carbon Steel	Carbon Steel	316 SS	CD4MCuN	Alloy 20
Seal Gland	316 SS	316 SS	316 SS	CD4MCuN	Alloy 20
Power End	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron

CASING

The casing is constructed of steel or other specified material. It is of the volute type, carefully and accurately proportioned to permit smooth flow and to convert high velocity energy of the fluid as it leaves the impeller into pressure. Suction and discharge nozzles are flanged and are cast integral with the volute. The casing has cast integral feet standard and the discharge port is of the vertical centerline type. The casing assembly fully meets ASME B73.1 dimensional requirements. Necessary vent and drain openings can be provided upon request. The DPUMPS low flow models feature concentric casings that minimize shaft deflection and pump vibration.

IMPELLER

The impeller is of the reverse vane, end suction type, casted in one piece of cast steel or other specified material. Running clearances need to only be adjusted between the back of the impeller and the cover. This design allows for repeatable factory tolerances, all of which can be adjusted on the bench, not just in the field. All impellers are statically balanced prior to assembly. Front semi-open impellers can be supplied upon request. Running clearances for the front semi-open impeller need to be adjusted between the front of the impeller and the casing. All model meets the stringent performance requirements of ASME B73.1. Our industrial group also manufactures 3 Low-Flow models, 3 Self-priming models and 2 Vortex type models on DPUMPS SERIES to meet different process applications.



Reverse vane impeller with balance holes offers important performance enhancing maintenance reducing advantages.

Front vane, semi-open impeller is fully interchangeable with the reverse vane impeller. Excellent choice for stringy and certain applications requiring high shear against the casing.



Front vane, low flow semi-open impeller for operation at low flow with minimal thrust loads and vibration.

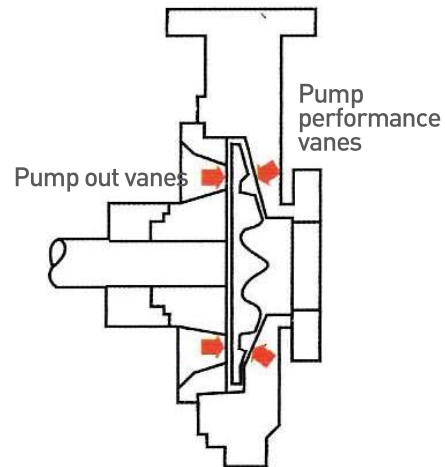


REVERSE VANE IMPELLER ADJUSTMENT

The reverse vane impeller has only one set of pumping vanes and one critical tolerance location –between the impeller and rear cover- to establish:

- Performance
- Efficiencies
- Seal chamber pressures (i.e., mechanical seal MTBPM)
- Thrust/axial loads (i.e., bearing life)

Since an impeller can only be set in one direction, the reverse vane impeller has inherent advantages.



FRONT VANE IMPELLER ADJUSTMENT

The front vane open style impeller has two sets of pumping vanes and two critical tolerance locations:

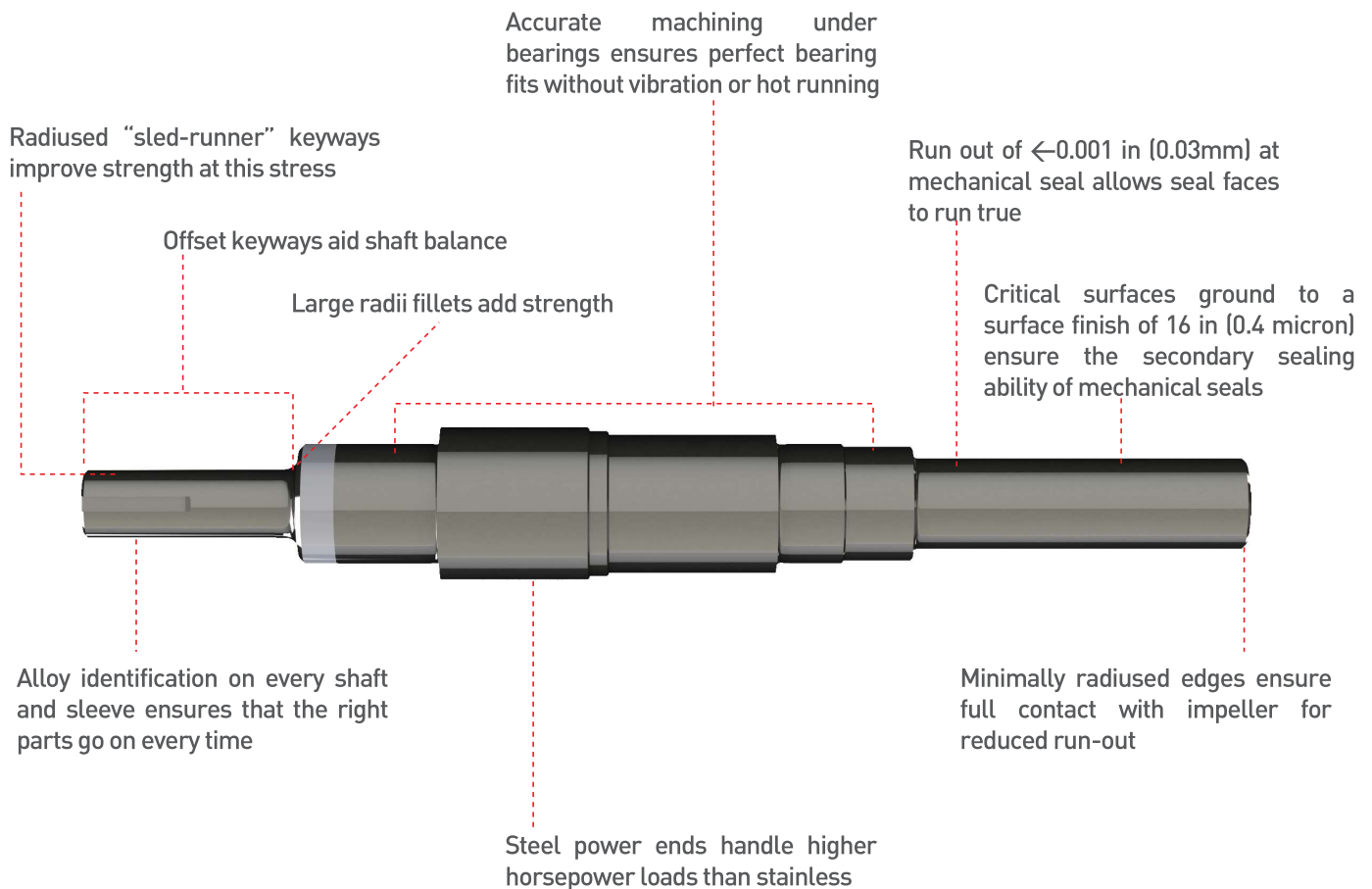
- The front vane of the impeller clearance to the casing establishes: performance, efficiencies.
- The impeller pump out vanes clearance to the rear cover establishes:
- Seal chamber pressures and seal life.
- Thrust loads and bearing life

SHAFT

The shaft is of high strength steel or other specified material, ground to accurate dimensions. It is designed for extra stiffness to avoid all critical speeds in operation. DPUMPS lead the industry in low L3/D4 ratio's minimizing shaft deflection at the stuffing box. All DPUMPS models guarantee less than 0.002" shaft deflection at the seal face location, while in operation. As an option, the shaft can be protected by a shaft sleeve of ample thickness to ensure long life. The shaft sleeve can be supplied in various materials.

SHAFT DETAILS

DPUMPS shafts are designed to improve pump reliability.



COVER

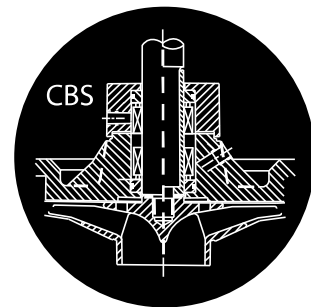
The cover for DPUMPS models is available in four (4) different configurations depending on the jobsite requirement. DPUMPS models feature the Flow Modified (FM) seal chamber that keeps solid matter from collecting in the seal chamber causing premature seal failure. The FM bores are available in a small bore (FMS), and large bore (FML), all designed to meet the process requirements of the seal industry. DPUMPS models can also be supplied in a standard Cylindrical Bore (CB) arrangement. The CB bores are available in a small bore (CBS) and large bore (CBL) both designed to meet the process requirements of the seal industry. Seal chambers have provisions for various flush plan arrangements customizing the seal chamber to meet the requirements of the end user. If it is required, packing with a lantern ring can also be supplied. A wide variety of component and cartridge mechanical seals can be used with DPUMPS standard components.

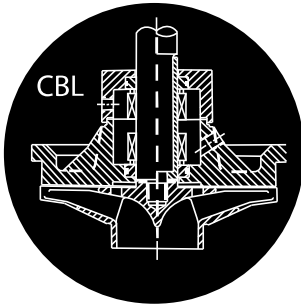
COVER TYPES

CBS

Cylindrical bore design for packing arrangements and conventional seals with small gland bolt and gasket circles

- Dual internal component seals. Isolates the seal chamber from the process. Allows less expensive seal materials. Recommended in tough slurry applications. Allows for thermal convection type flush plans; however, pumping ring devices are recommended. Note: External Flush Plans 52, 53, 54
- Single internal component or cartridge seals when applied with a throat bushing. Usually selected to increase stuffing box pressure above the vapor pressure to avoid cavitation, etc.
- Usually preferred over the CBL when jacketing is selected for increased effectiveness in cooling. Note: Applied with Plan 11, etc.





CBL

Oversized, cylindrical step bore design for seals with large gland bolt and gasket circles.

- Dual internal component seals. Isolates the seal chamber from the process. Allows less expensive seal materials. Recommended in tough slurry applications.

Note: Use External Flush Plan 54. Others (i.e., Plans 52, 53) not recommended without close tolerance pumping mechanism.

- Single internal component or cartridge seals when applied with a throat bushing. Usually selected to increase stuffing box pressure above the vapor pressure to avoid cavitation, etc.

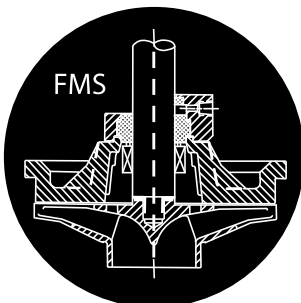
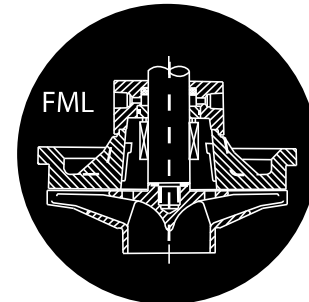
Note: Applied with Plan 11, etc.

FML

Oversized, tapered bore with 8 specially shaped and evenly spaced cast-in flow modifiers. Designed for seals with large gland bolt and gasket circles.

- Single internal cartridge seals.
- Dual internal/external cartridge seals.
- Single internal component seals with flexibly mounted seats.
- Dual internal “true” tandem cartridge seals.

Note: Bypass flush to internal seal normally not required. Barrier fluid or external flush may apply to dual seals (Plans 52, 53, etc.).



FMS

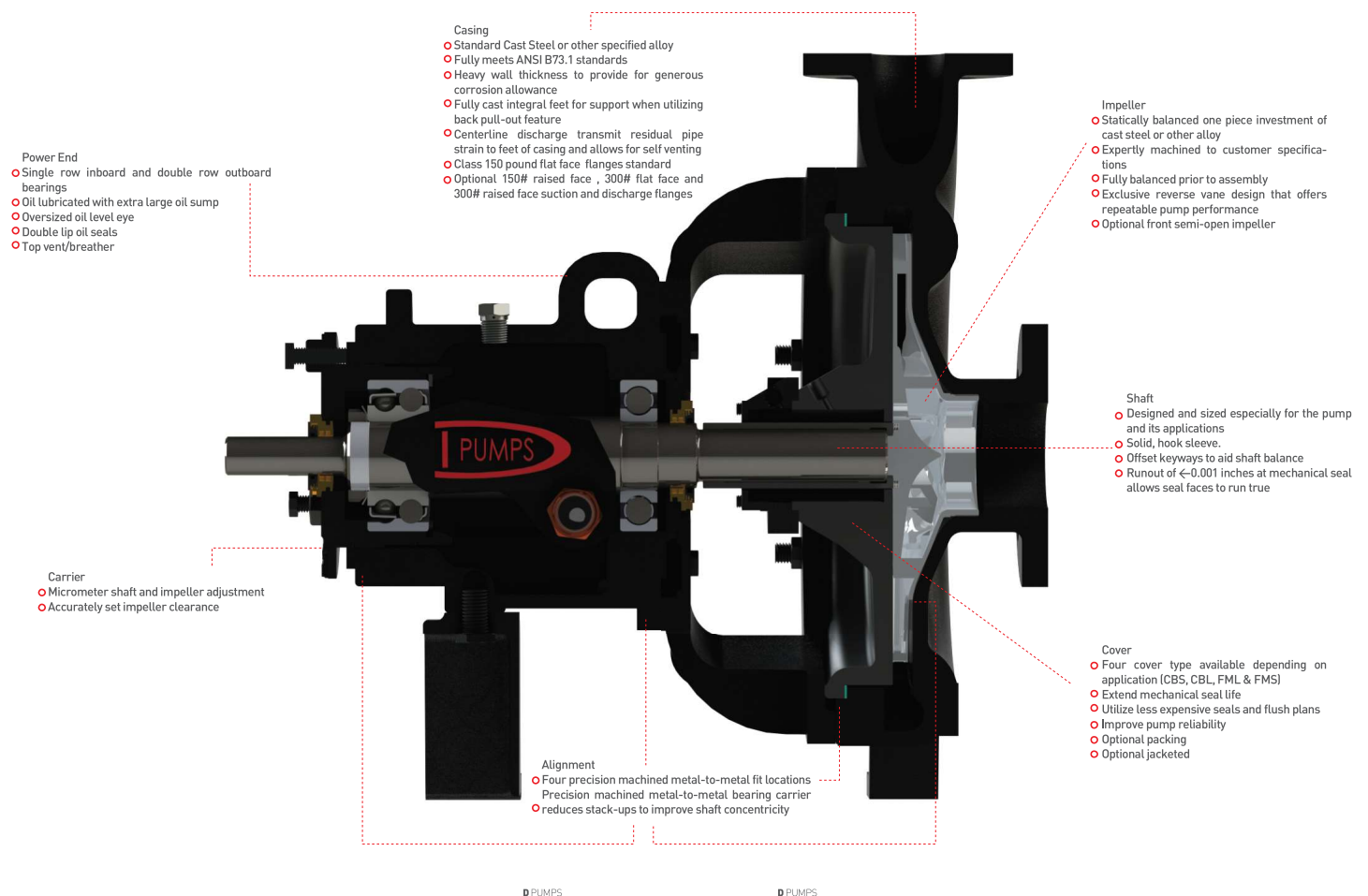
Same chamber design as FML but accommodates seals with small gland bolt and gasket circles.

Same seal and flush plan recommendations as for FML. Single seals with all types of seat mounting configurations can be installed. FMS design is provided for the convenience of customers with seal standards that include small glands.

POWER END

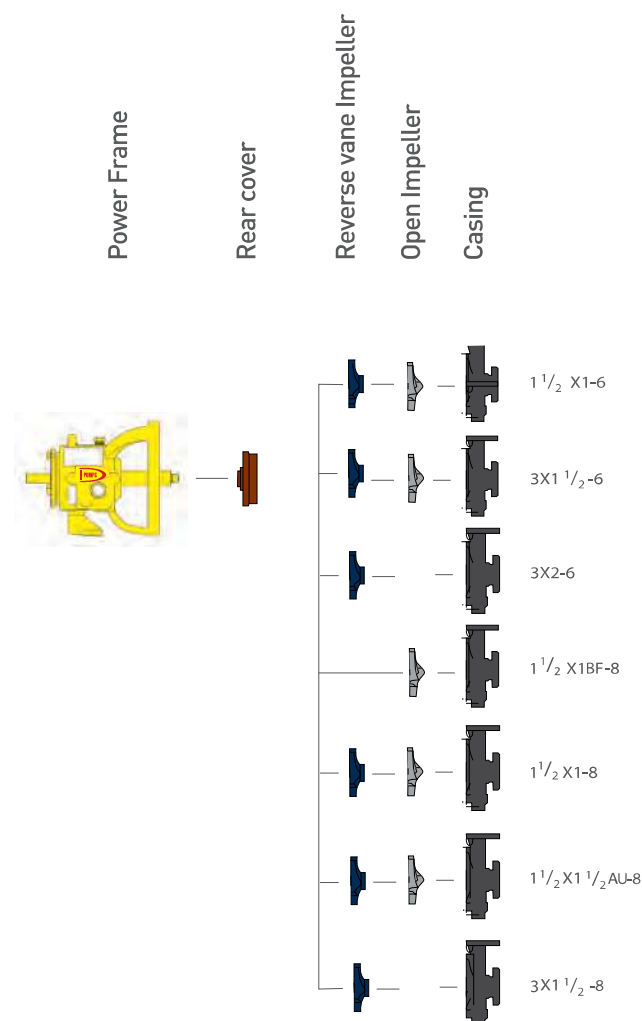
The power end is constructed of cast iron and provides support for the inboard and outboard bearings. The outboard bearing is of the double row, angular contact type and the inboard bearing is of the single row, deep groove type for excellent axial and radial load support. For axial adjustment of the impeller, the power frame employs a micrometer adjustment (carrier) which allows the user to dial back factory tolerances between the impeller and the seal chamber. This re-adjustment of tolerances can be done on the bench, compensating for proper seal setting and eliminating the need to have the casing near for final adjustment. Double lip seals ensure that contaminants are kept out of the power frame. Upgraded bearing isolators can be supplied upon request. The power end has an oversized, integral oil sump that provides oil for lubrication to each bearing. A large one inch oil level eye is provided standard on the power frame to visually indicate the oil level. The bearings and shafts are so designed to last up to 61% longer than the competition. With shaft deflection indices surpassing nearly all of the competition, 43-252% greater stiffness is achieved resulting in longer Mean Time Between Planned Maintenance (MTBPM).



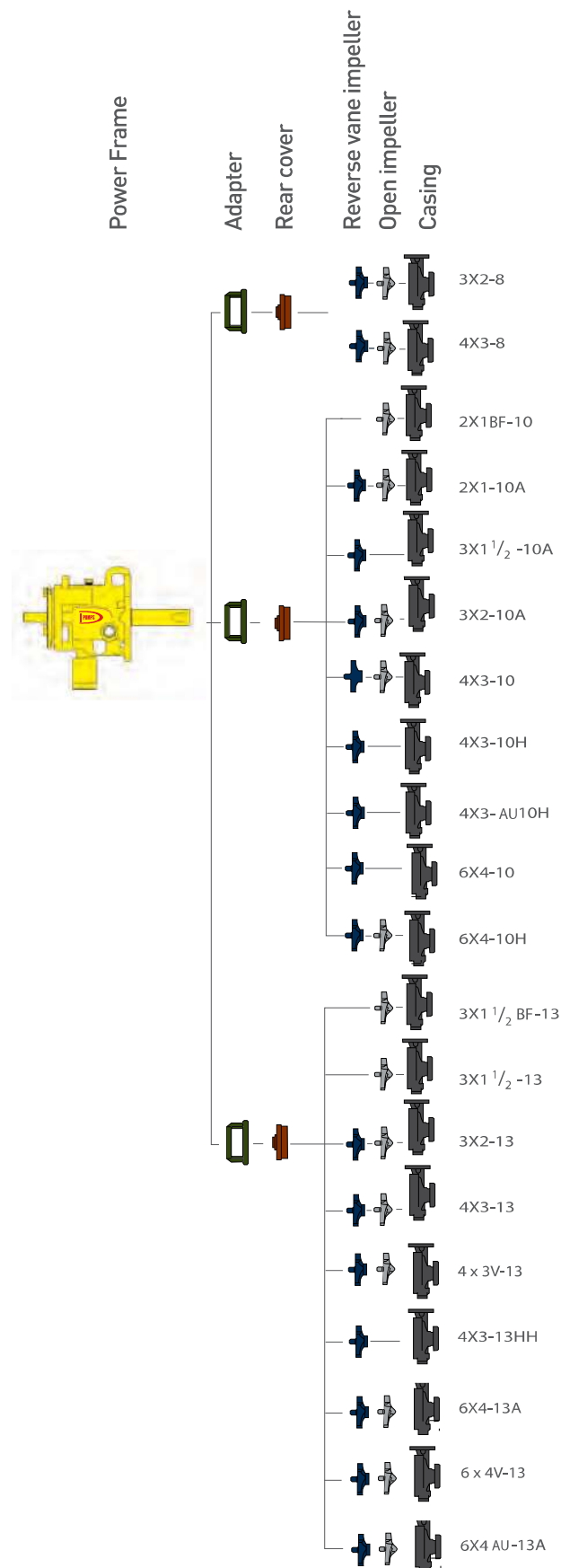


INTERCHANGEABILITY

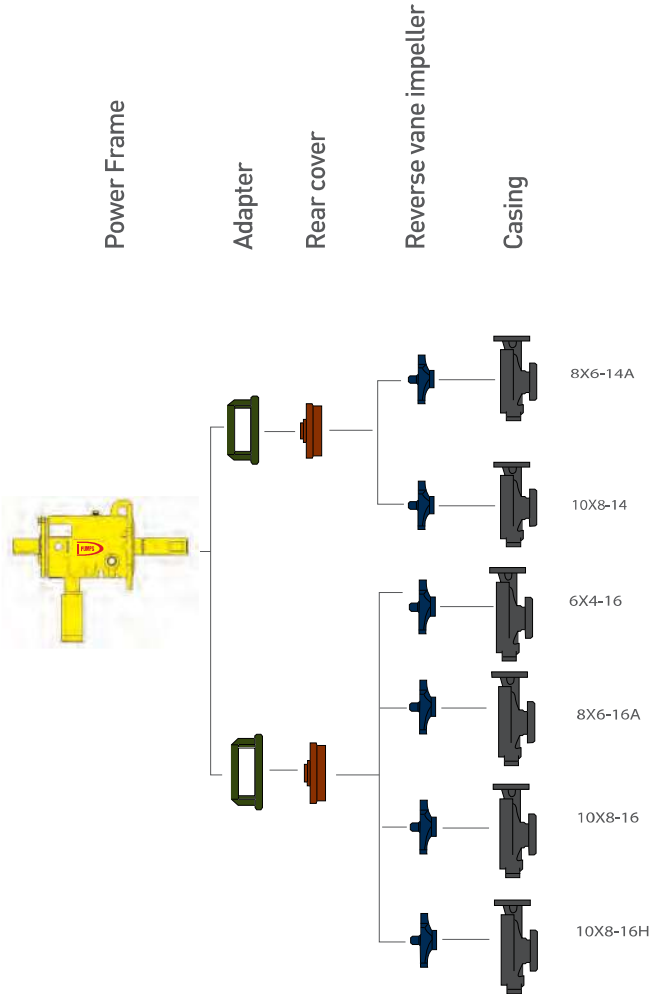
1 L TYPE



2 L TYPE

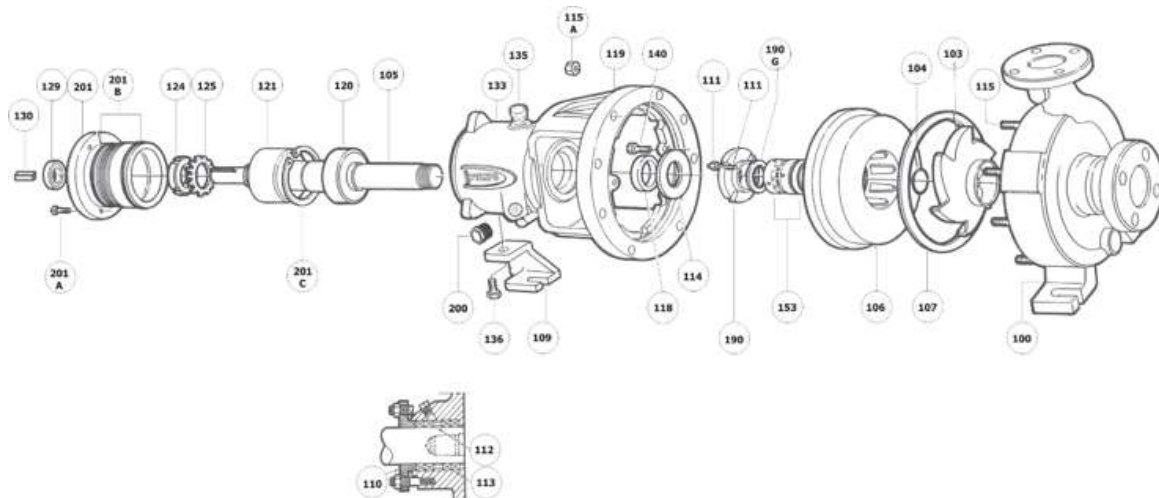


3L TYPE



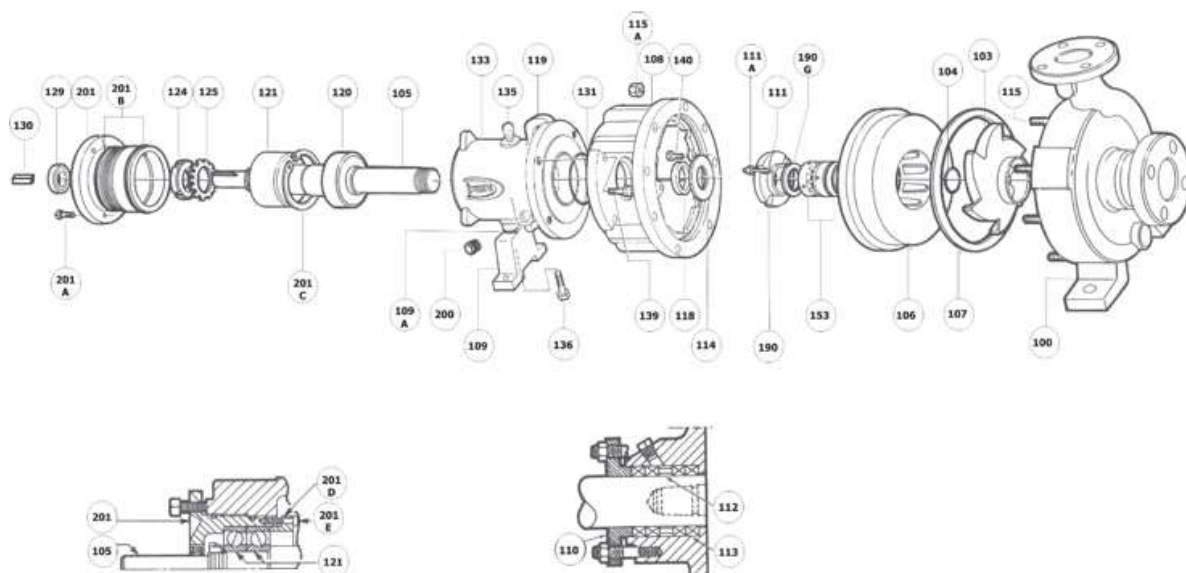
SECTIONAL DRAWINGS

TYPE 1L



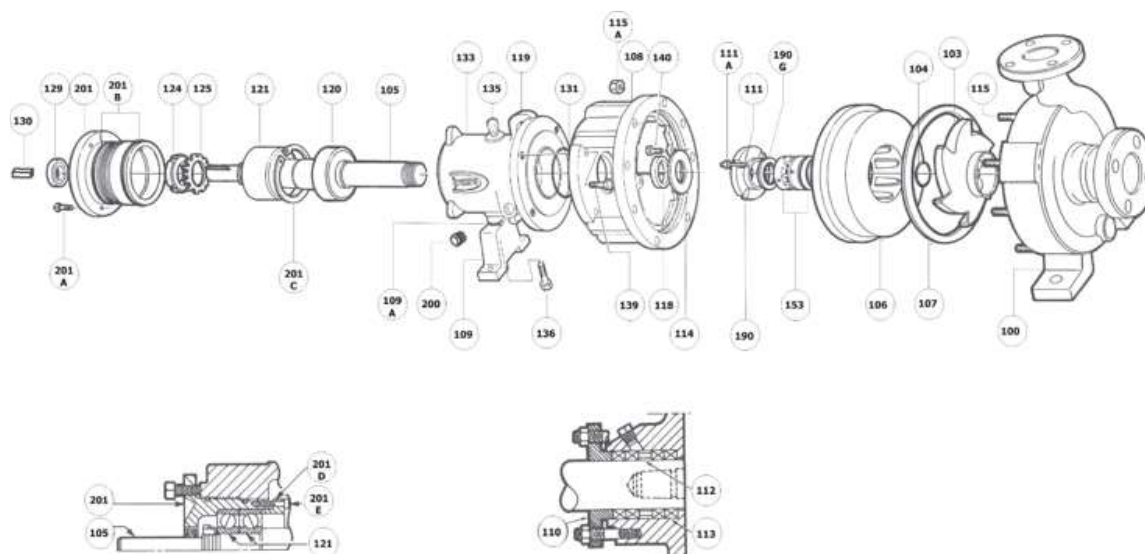
ITEM	DESCRIPTION		ITEM	DESCRIPTION	
100.	Casing		124.	Bearing Locknut	
103.	Impeller		125.	Bearing Lockwasher	
104.	Impeller Gasket		129.	Outboard Oil Lip Seal	
105.	Shaft		131.	Adapter O-Ring	N/A
106.	Cover		134.	Bearing Housing Drain Plug	
107.	Cover Gasket		135.	Bearing Housing Vent Plug	
108.	Adapter		136.	Capscrew – Foot	
109.	Bearing Housing Foot		139.	Capscrew – Bearing Housing	N/A
110.	Gland – Packing	OPT.	140.	Capscrew – Cover/Adapter	
111.	Stud – Gland		153.	Mechanical Seal	
111A.	Hex Nut – Gland		177.	Hook Sleeve	OPT.
112.	Lantern Ring Halves	OPT.	190.	Gland – Mechanical Seal	
113.	Packing	OPT.	190G.	Gland Gasket	
114.	Inboard Deflector	OPT.	200.	Oil Sight Gage	
115.	Stud – Casing		201.	Carrier	
115A.	Hex Nut – Casing		201A.	Set Screw – Carrier	
118.	Inboard Oil Lip Seal		201B.	O-Ring – Carrier	
119.	Bearing Housing		201C.	Carrier Retainer	
120.	Inboard Bearing		201D.	Clap Ring Bearing Housing	OPT.
121.	Outboard Bearing		201E.	Socket Head Capscrew Clamp	OPT.
122.	Oil Slinger	OPT.			

TYPE 2L



ITEM	DESCRIPTION		ITEM	DESCRIPTION	
100	Casing		124	Bearing Locknut	
103	Impeller		125	Bearing Lockwasher	
104	Impeller Gasket		129	Outboard Oil Lip Seal	
105	Shaft		131	Adapter O-Ring	
106	Cover		134	Bearing Housing Drain Plug	
107	Cover		135	Bearing Housing Vent Plug	
108	Adapter		136	Capscrew – Foot	
109	Bearing Housing Foot		139	Capscrew – Bearing Housing	N/A
110	Gland – Packing	OPT.	140	Capscrew – Cover/Adapter	
111	Stud – Gland		153	Mechanical Seal	
111A	Hex Nut – Gland		177	Hook Sleeve	OPT.
112	Lantern Ring Halves	OPT.	190	Gland – Mechanical Seal	
113	Packing	OPT.	190G	Gland Gasket	
114	Inboard Deflector	OPT.	200	Oil Sight Gage	
115	Stud – Casing		201	Carrier	
115A	Hex Nut – Casing		201A	Set Screw – Carrier	
118	Inboard Oil Lip Seal		201B	O-Ring – Carrier	
119	Bearing Housing		201C	Bearing Carrier Retainer	
120	Inboard Bearing		201D	Clap Ring Bearing Housing	OPT.
121	Outboard Bearing		201E	Socket Head Capscrew Clamp	OPT.
122	Oil Slinger	OPT.			

TYPE 3L



ITEM	DESCRIPTION		ITEM	DESCRIPTION	
100	Casing		124	Bearing Locknut	
103	Impeller		125	Bearing Lockwasher	
104	Impeller Gasket		129	Outboard Oil Lip Seal	
105	Shaft		131	Adapter O-Ring	
106	Cover		134	Bearing Housing Drain Plug	
107	Cover		135	Bearing Housing Vent Plug	
108	Adapter		136	Capscrew – Foot	
109	Bearing Housing Foot		139	Capscrew – Bearing Housing	N/A
110	Gland – Packing	OPT.	140	Capscrew – Cover/Adapter	
111	Stud – Gland		153	Mechanical Seal	
111A	Hex Nut – Gland		177	Hook Sleeve	OPT.
112	Lantern Ring Halves	OPT.	190	Gland – Mechanical Seal	
113	Packing	OPT.	190G	Gland Gasket	
114	Inboard Deflector	OPT.	200	Oil Sight Gage	
115	Stud – Casing		201	Carrier	
115A	Hex Nut – Casing		201A	Set Screw – Carrier	
118	Inboard Oil Lip Seal		201B	O-Ring – Carrier	
119	Bearing Housing		201C	Bearing Carrier Retainer	
120	Inboard Bearing		201D	Clap Ring Bearing Housing	
121	Outboard Bearing		201E	Socket Head Capscrew Clamp	
122	Oil Slinger	OPT.			

LOW FLOW TYPE PUMP

The low flow pump has a special design casing and impeller which allows it to work very reliably at low flows. The pump has an impeller with radial vanes that twist around the hub, and a circular, concentric casing. This design ensures that, at low flows, no significant hydraulic radial forces are transmitted to the shaft. Minimum flow on this pump is "Minimum thermal flow". This is defined as the minimum flow that will not cause an excessive temperature rise.

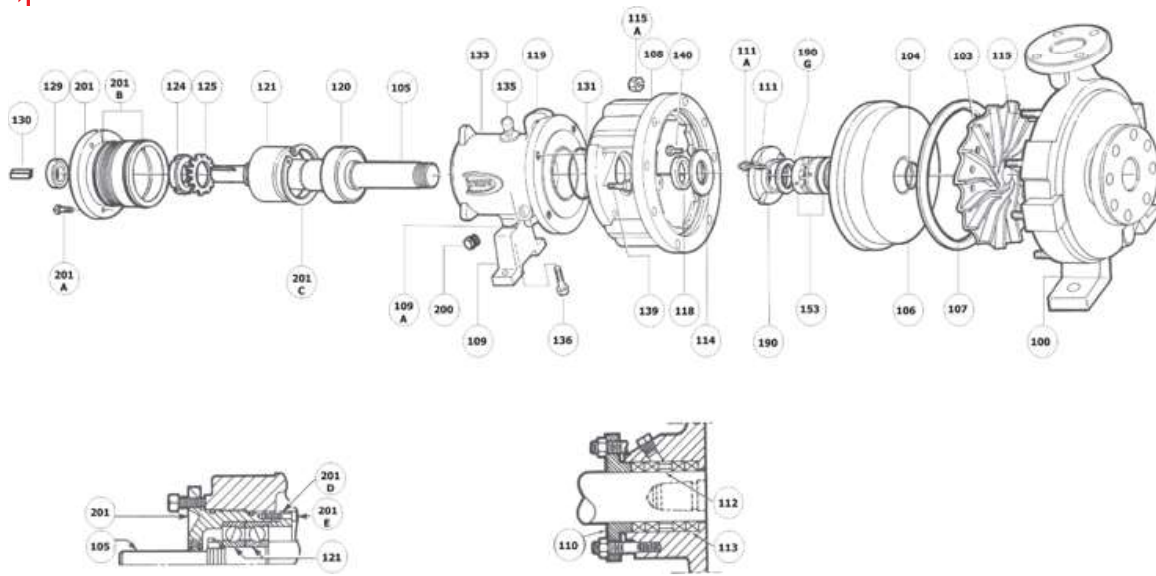
Only the impeller and casing are special, all other parts are standard parts. Note: The adapter on the 13 in pump is the standard adapter but with 16 holes drilled in it for attachment to the casing.



SECTIONAL DRAWINGS

TYPE 1L

1



ITEM	DESCRIPTION		ITEM	DESCRIPTION	
100	Casing		124	Bearing Locknut	
103	Impeller		125	Bearing Lockwasher	
104	Impeller Gasket		129	Outboard Oil Lip Seal	
105	Shaft		131	Adapter O-Ring	
106	Cover		134	Bearing Housing Drain Plug	
107	Cover		135	Bearing Housing Vent Plug	
108	Adapter		136	Capscrew – Foot	
109	Bearing Housing Foot		139	Capscrew – Bearing Housing	N/A
110	Gland – Packing	OPT.	140	Capscrew – Cover/Adapter	
111	Stud – Gland		153	Mechanical Seal	
111A	Hex Nut – Gland		177	Hook Sleeve	OPT.
112	Lantern Ring Halves	OPT.	190	Gland – Mechanical Seal	
113	Packing	OPT.	190G	Gland Gasket	
114	Inboard Deflector	OPT.	200	Oil Sight Gage	
115	Stud – Casing		201	Carrier	
115A	Hex Nut – Casing		201A	Set Screw – Carrier	
118	Inboard Oil Lip Seal		201B	O-Ring – Carrier	
119	Bearing Housing		201C	Bearing Carrier Retainer	
120	Inboard Bearing		201D	Clap Ring Bearing Housing	OPT.
121	Outboard Bearing		201E	Socket Head Capscrew Clamp	OPT.
122	Oil Slinger	OPT.			

SELF PRIMING TYPE PUMP

Dpumps series combine the best design features of its standard pumps with efficient self-priming casings. These specific-purpose wet end parts fit the basic building block philosophy in that they utilize the standard pump components from the impeller on back to the bearing housing. The self-priming casings were designed to pump from liquid sources which do not flow naturally to the pump's suction, such as from sumps or from the tops of tank cars.

Costs less to buy, install and service than submersible pumps. Utilizes the same power end, shaft, seal chamber and impeller as the standard ANSI pump. Only the casing is special.

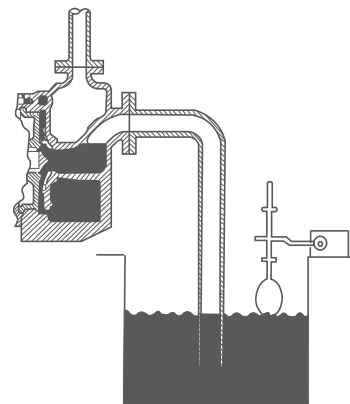
Applications

- Sump service
- Tank car unloading
- Duplex pumping lift stations
- Flyash pond transfer
- Waste acid transfer
- Waste Treatment lagoon service

PRIMING CYCLE

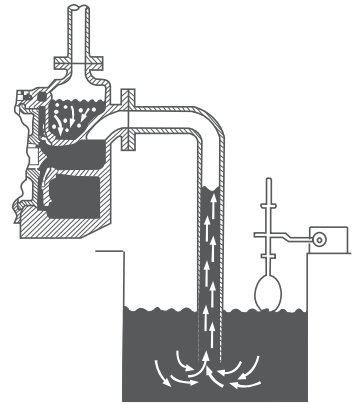
1.- SUMP FILLING, PUMP STOPPED

The casing is shown with the initial prime liquid, which permanently stays in the casing. This serves as the priming liquid necessary to entrain the air contained in the suction line.



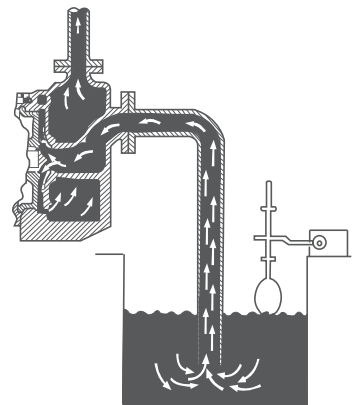
2.- PUMP START-UP

As the impeller spins the priming liquid entrains air from the suction pipe and is pumped into the air separator/priming tank portion of the casing. In this chamber the air separates from the priming liquid and vents out the discharge while the priming liquid flows through the bypass slot in the bottom of the casing and back into the impeller eye. As the priming liquid circulates, it reentrains more air, creating a partial vacuum in the suction line. The sump liquid is then pushed upward by atmospheric pressure



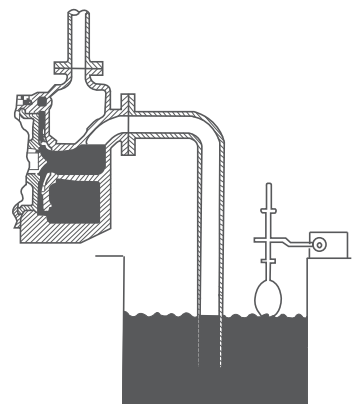
3.- PRIMING ACHIEVEMENT

After the priming cycle has evacuated all of the air from the suction pipe, the sump liquid floods the volute, air separator and priming chamber, and pipe begins. The Unitized self-priming is fully primed and now operates exactly as a standard flooded-suction pump.

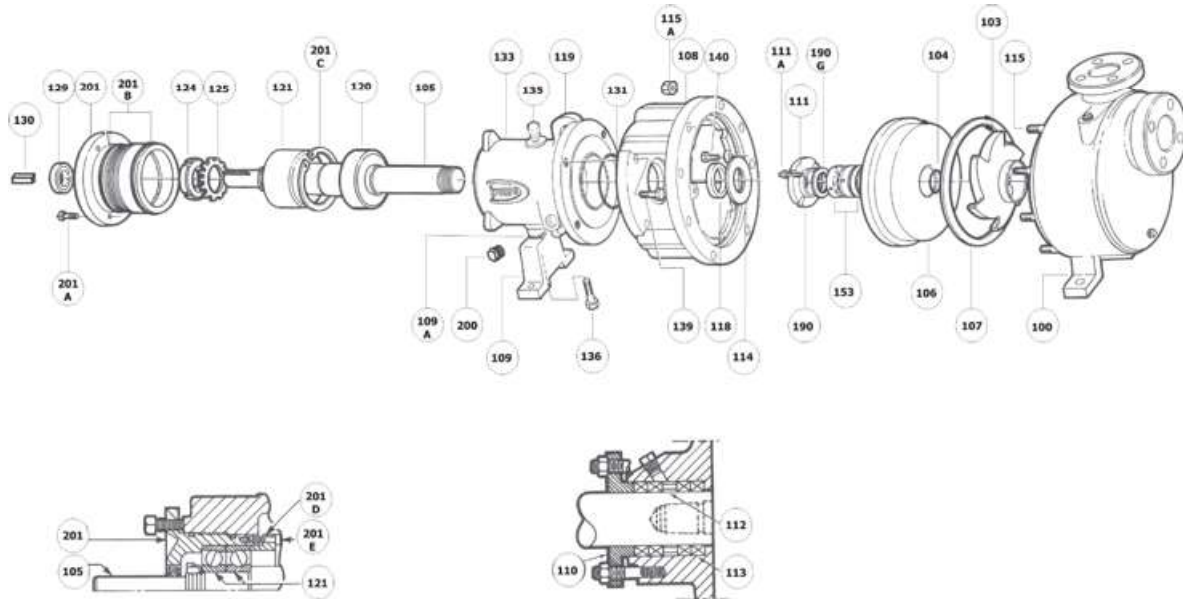


4.- SUMP EMPTY, PUMP STOPPED

When the pump stops, the liquid in the discharge piping flows back through the pump, leaving the priming chamber filled with sufficient liquid for the next priming cycle. Except for the first fillup of the priming chamber and an occasional "topping off" in dry climates, the unitized self-priming from Dpumps series is automatic and trouble-free.



SECTIONAL DRAWINGS



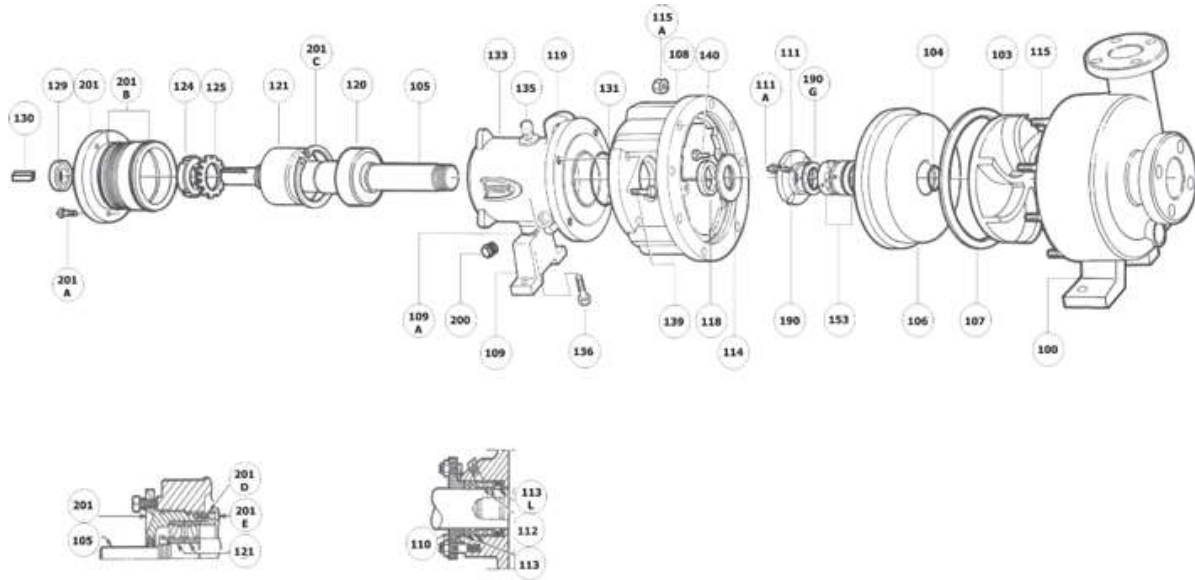
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104	Impeller Gasket		129	Outboard Oil Lip Seal	
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106	Cover		134	Bearing Housing Drain Plug	
107	Cover		135	Bearing Housing Vent Plug	
108	Adapter		136	Capscrew - Foot	
109	Bearing Housing Foot		139	Capscrew - Bearing Housing	N/A
110	Gland - Packing	OPT.	140	Capscrew - Cover/Adapter	
111	Stud - Gland		153	Mechanical Seal	
111A	Hex Nut - Gland		177	Hook Sleeve	OPT.
112	Lantern Ring Halves	OPT.	190	Gland - Mechanical Seal	
113	Packing	OPT.	190G	Gland Gasket	
114	Inboard Deflector	OPT.	200	Oil Sight Gage	
115	Stud - Casing		201	Carrier	
115A	Hex Nut - Casing		201A	Set Screw - Carrier	
118	Inboard Oil Lip Seal		201B	O-Ring - Carrier	
119	Bearing Housing		201C	Bearing Carrier Retainer	
120	Inboard Bearing		201D	Clap Ring Bearing Housing	OPT.
121	Outboard Bearing		201E	Socket Head Capscrew Clamp	OPT.
122	Oil Slinger	OPT.			

VORTEX TYPE PUMP

The vortex created by the spinning impeller does the pumping with less than 20% of the media actually contacting the impeller.

Abrasive wear is minimized and solids integrity is maintained. Precision-cast impellers ensure peak energy efficiency and low NPSH requirements. Rear pump out vanes are used as necessary to ensure low, positive seal chamber pressure and to expel solids from the seal area, thus maximizing mechanical seal and packing life. The impeller is set to the rear cover plate just like the standard reverse vane impeller.

SECTIONAL DRAWINGS



ITEM	DESCRIPTION		ITEM	DESCRIPTION	
100	Casing		124	Bearing Locknut	
103	Impeller		125	Bearing Lockwasher	
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105	Shaft		131	Adapter O-Ring	
106	Cover		134	Bearing Housing Drain Plug	
107	Cover		135	Bearing Housing Vent Plug	
108	Adapter		136	Capscrew – Foot	
109	Bearing Housing Foot		139	Capscrew – Bearing Housing	N/A
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111	Stud – Gland		153	Mechanical Seal	
111A	Hex Nut – Gland		177	Hook Sleeve	OPT.
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121	Outboard Bearing		201E	Socket Head Capscrew Clamp	OPT.
122	Oil Slinger	OPT.			

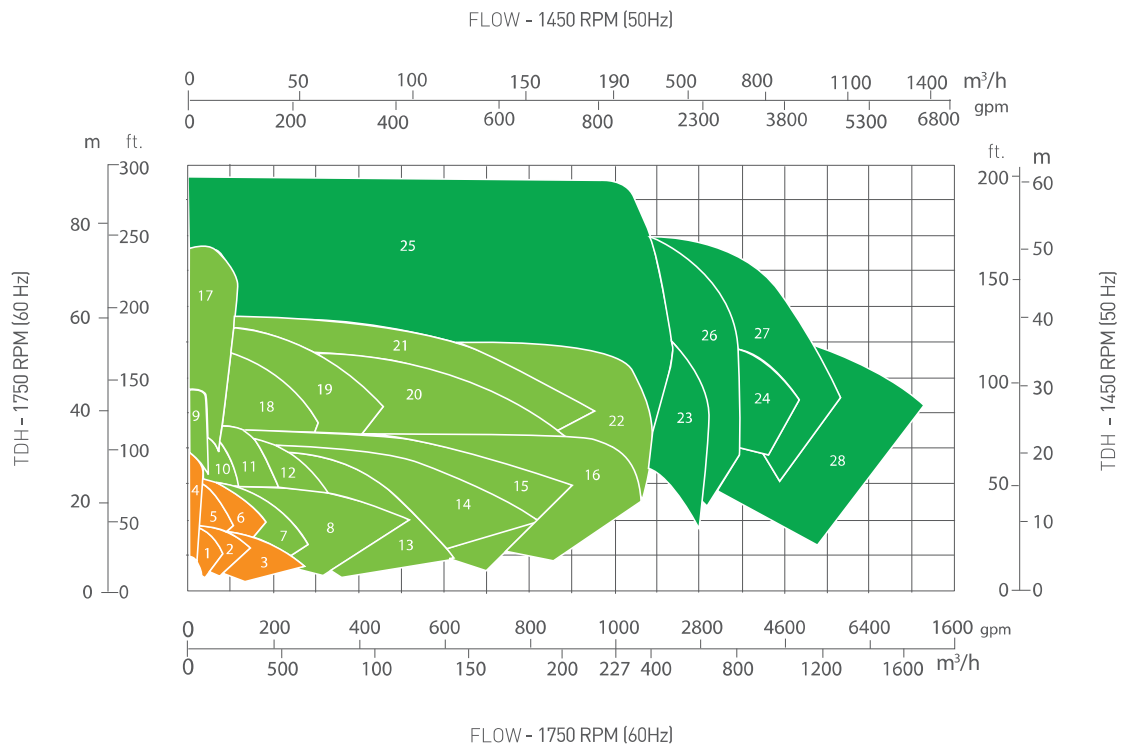
CASING DYNAMICS

The cylindrical volute design combined with the impeller spinning “out of the flow” minimize radial loads on the impeller. The result is longer seal life as well as maximized radial bearing life. The circular flow path and tangential discharge also contribute to maximum pump life.

APPLICATIONS

- Abrasive Waste Water
- Biological Sludge
- Clarifier Underflow
- 5% Coke Slurry
- Diatomaceous Earth Slurry
- Flocculant Sludge
- Latex
- Lime Mud Slurry
- Organic Slurry
- Polymer Slurry
- Resin Slurry
- Rubber Crumb Slurry
- Sodium Hydroxide
- Catalyst Slurry

GENERAL PERFORMANCE CURVES



1L Type

1. 1½ X 1-6
2. 3 X 1½-6
3. 3 X 2-6
4. 1½ X 1BF-8
5. 1½ X 1-8
6. 3 X 1½-8

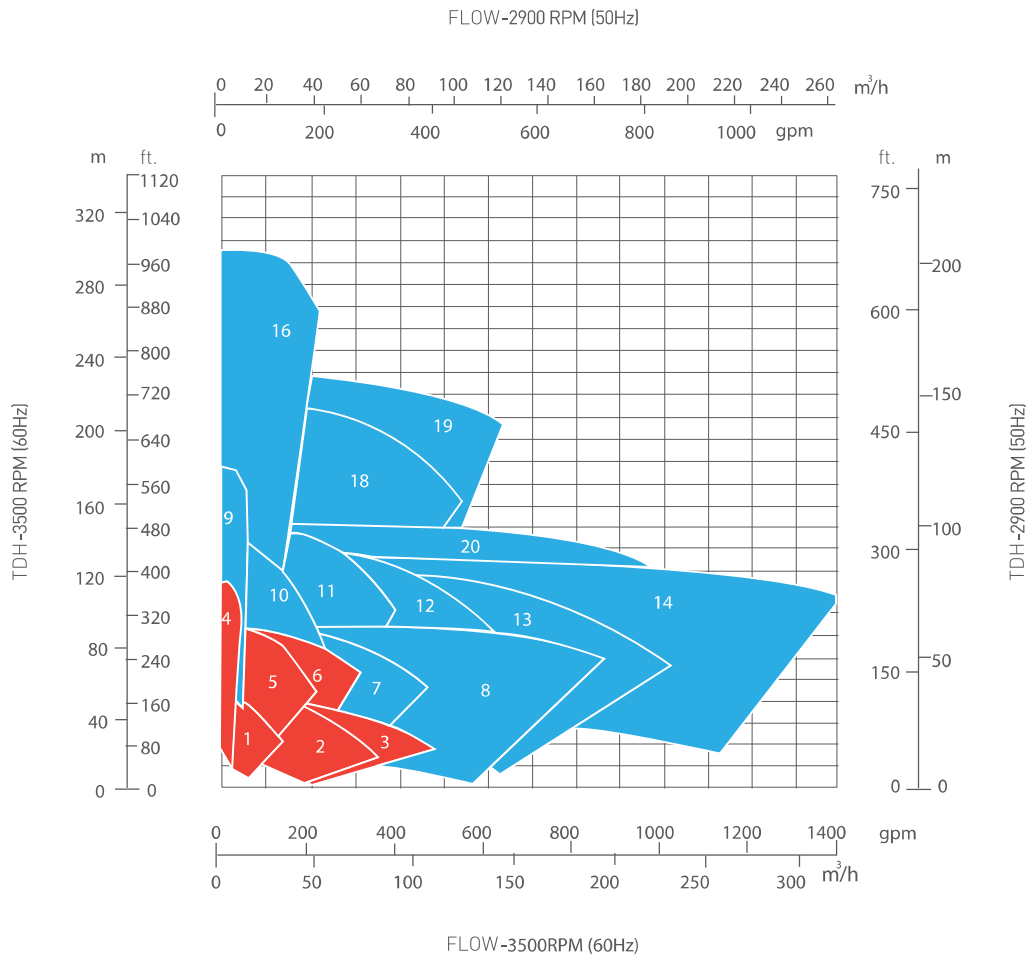
2L Type

7. 3 X 2-8
8. 4 X 3-8
9. 2 X 1BF-10
10. 2 X 1-10A
11. 3 X 1½-10A
12. 3 X 2-10A
13. 4 X 3-10
14. 4 X 3-10H

3L Type

15. 6 X 4-10
16. 6 X 4-10H
17. 3 X 1½ BF-13
18. 3 X 1½-13
19. 3 X 2-13
20. 4 X 3-13
21. 4 X 3-13HH
22. 6 X 4-13A
23. 8 X 6-14A
24. 10 X 8-14
25. 6 X 4-16
26. 8 X 6-16A
27. 10 X 8-16
28. 10 X 8-16H

General performance data. Not adequate for selecting pumps



1L Type

- 1. 1 1/2 X1-6
- 2. 3 1/2 X1-6
- 3. 3 X2 6
- 4. 1 1/2 X1BF-8
- 5. 1 1/2 X1-8
- 6. 3 X1 1/2 -8

2L Type

- 7. 3X2 8
- 8. 4X3-8
- 9. 2X1 BF-10
- 10. 2X1-10A
- 11. 3X1 1/2 -10A
- 12. 3X2-10A
- 13. 4X3-10
- 14. 6 X4 -10
- 16. 3 X1 1/2 BF-13
- 18. 3 X1 1/2 -13
- 19. 3 X2-13
- 20. 4 X3-13

General performance data. Not adequate for selecting pumps

DPUMPS

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