PUMPS

FEOC

COMERCIALIZADORA

ABOUT US

Our goal is to provide high quality products at extremely competitive prices supported by the best customer service in the industry

Comercializadora FEOC belongs to a group with over 60 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, Comercializadora FEOC 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, Comercializadora FEOC introduces its line pump DPUMS Series in to the market. It is not just another ANSI pump, with its reverse vane impeller that delivers unequalled efficiency, performance and high quality of our products, DPUMS enhancements have been developed to offer superior performance and reliability.

Comercializadora FEOC's engineering team, highly trained in their field, works hard with their expert knowledges to make better pumps: Using modern technology and equipment make it easier to use an guarantee the reliability.

SPECIFICATIONS

Comercializadora FEOC is committed to help users maximize mean time between planned maintenance (MTBPM)

The advanced design and precision manufacture of the rugged, heavy-duty service pump significantly enhance bearing and seal life. Comercializadora FEOC is committed to helping users maximize mean time between planned maintenance (MTBPM). Some features of the DPUMP series resulted from the suggestions of working engineers in the field, and were combined with others derived from the broad experience of Comercializadora FEOC. 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 316SS	ALL 316 SS	ALL CD4MCu	ALL ALLOY 20
Casing	CARBON STEEL	CARBON STEEL	316 SS	CD4MCu	ALLOY 20
Impeller	CARBON STEEL	316 SS	316 SS	CD4MCu	ALLOY 20
Shaft	STEEL	STEEL	Shaft for hook sleeve in STEEL and Sleeve in 316 SS (Optional solid Sleeve in 316SS)	Shaft for hook sleeve in STEEL and Sleeve in CD4MCu	Shaft for hook sleeve in 316SS and Sleeve in Alloy 20
Cover	CARBON STEEL	CARBON STEEL	316 SS	CD4MCu	ALLOY 20
Seal Gland	316 SS	316 SS	316 SS	CD4MCu	ALLOY 20
Power End	CAST IRON	CAST IRON	CAST IRON	CAST IRON	CAST IRON

CASING

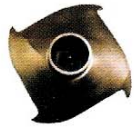
The casing is constructed of steel or other specified material. It is of the volute type, carefully and accurately proportioned to permit smooth flow and to convert high velocity energy of the fluid as it leaves the impeller into pressure. Suction and discharge nozzles are flanged and are cast integral 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 ANSI/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 ANSI/ASME B73.1. Comercializadora FEOC also manufactures 3 Low-Flow models, 3 Self-priming models and 2 Vortex type models on DPUMPS SERIES to meet different process applications.

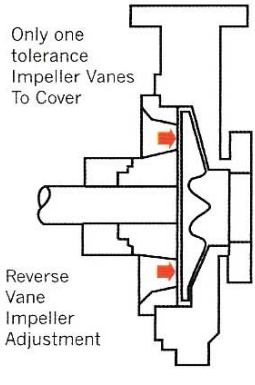
IMPELLER OPTIONS

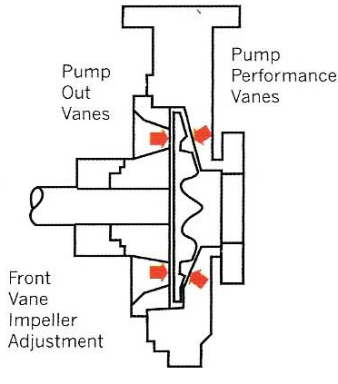
Reverse vane impeller with balance holes offers important performance enhancing maintenance reducing advantages.



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.





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.

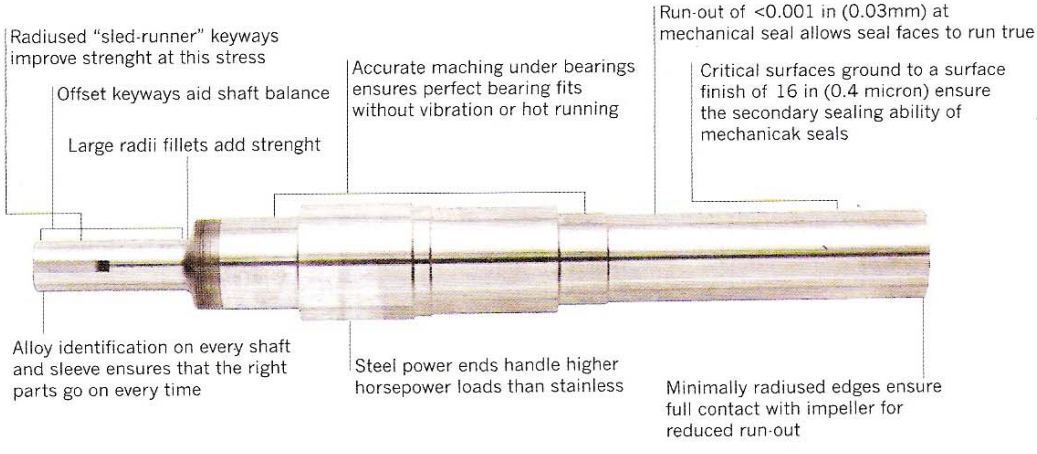
The front vane open style impeller has two sets of pumping vanes and twp critical tolerance locations:
- The front vane of the impeller clearance to the casing establishes: performance, efficiencies.
- The impeller pump out vanes clearance to the rear cover establishes:
- Seal chamber pressures and seal 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. DPUMP lead the industry in low L3/D4 ratio's minimizing shaft deflection at the stuffing box. All DPUMP 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

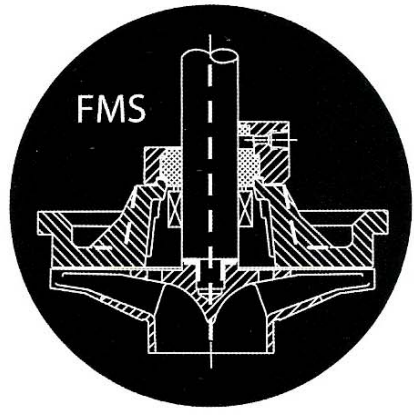
The cover for DPUMPS models is available in four (4) different configurations depending on the jobsite requirement. DPUMPS models feature the Flow Modified (FM) seal chamber that keeps solid matter from collecting in the seal chamber causing premature seal failure. The FM bores are available in a small 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.

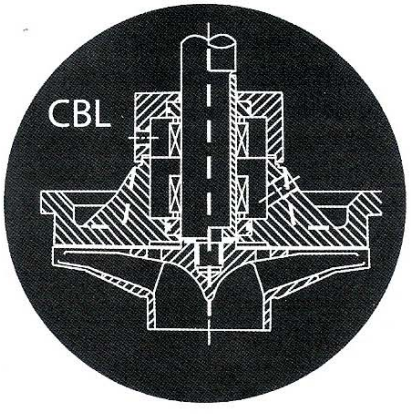
COVER TYPES

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.



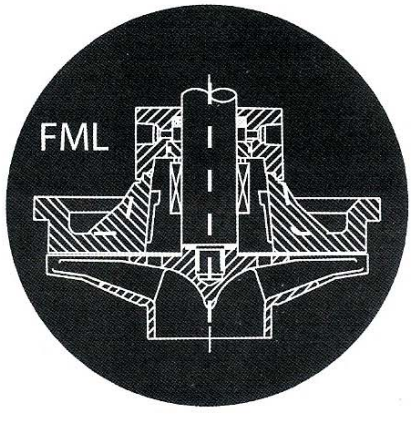


CBL

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.



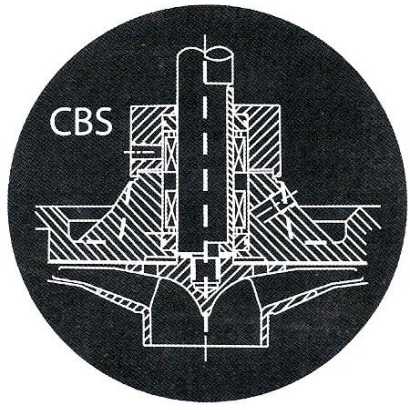
FML

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.).

CBS

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



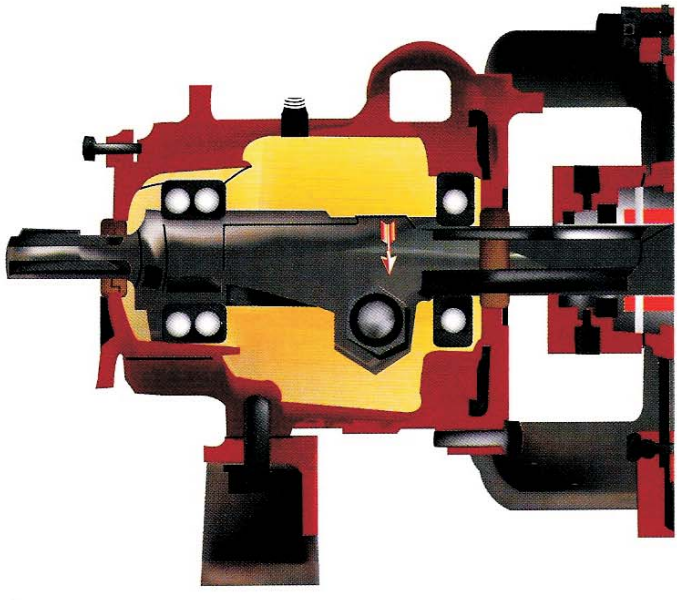
• Dual internal component seals. Isolates the seal chamber from the process. Allows less expensive seal materials. Recommended in tough slurry applications. Allows for thermal convection type flush plans; however, pumping ring devices are recommended.
Note: External Flush Plans 52, 53, 54

• 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.

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).

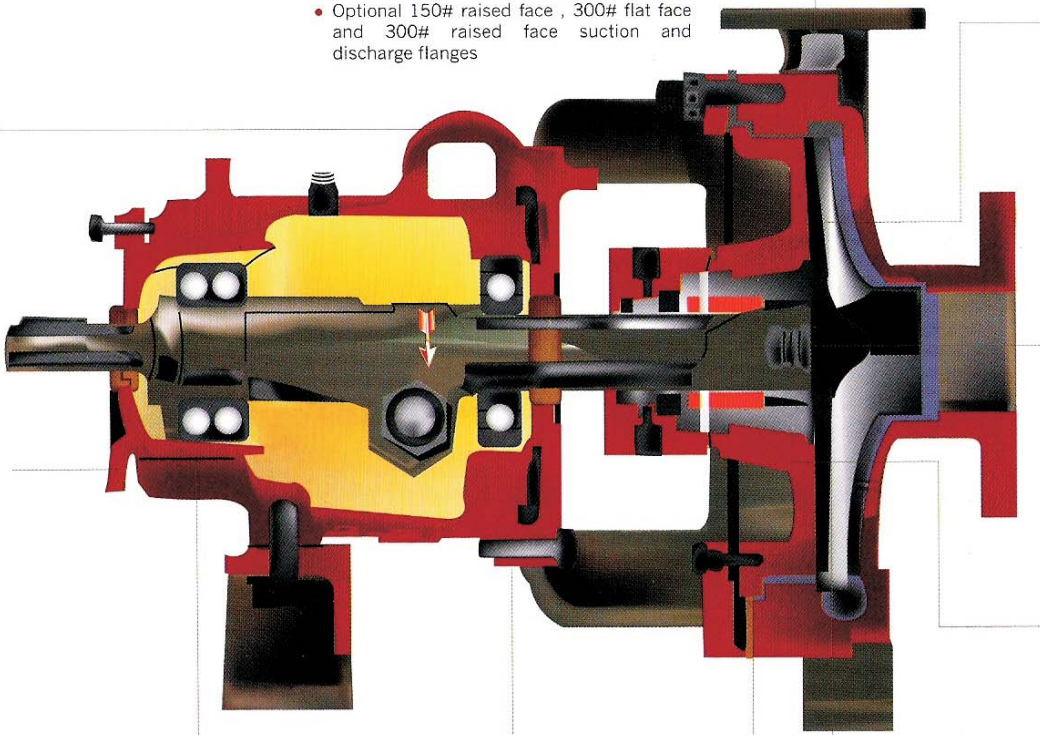


CASING

- Standard Cast Steel or other specified alloy
- Fully meets ANSI B73.1 standards
- Heavy wall thickness to provide for generous corrosion allowance
- Fully cast integral feet for support when utilizing back pull-out feature
- Centerline discharge transmit residual pipe strain to feet of casing and allows for self venting
- Class 150 pound flat face flanges standard
- Optional 150# raised face , 300# flat face and 300# raised face suction and discharge flanges

POWER END

- Single row inboard and double row outboard bearings
- Oil lubricated with extra large oil sump
- Oversized oil level eye
- Double lip oil seals
- Top vent/breather



IMPELLER

- Hydraulically balanced one piece investment of cast steel or other alloy
- Expertly machined to customer specifications
- Fully balanced prior to assembly
- Exclusive reverse vane design that offers repeatable pump performance
- Optional front semi-open impeller

SHAFT

- Designed and sized especially for the pump and its applications
- Solid, hook sleeve.
- Offset keyways to aid shaft balance
- Runout of <0.001 inches at mechanical seal allows seal faces to run true

CARRIER

- Micrometer shaft and impeller adjustment
- Accurately set impeller clearance

COVER

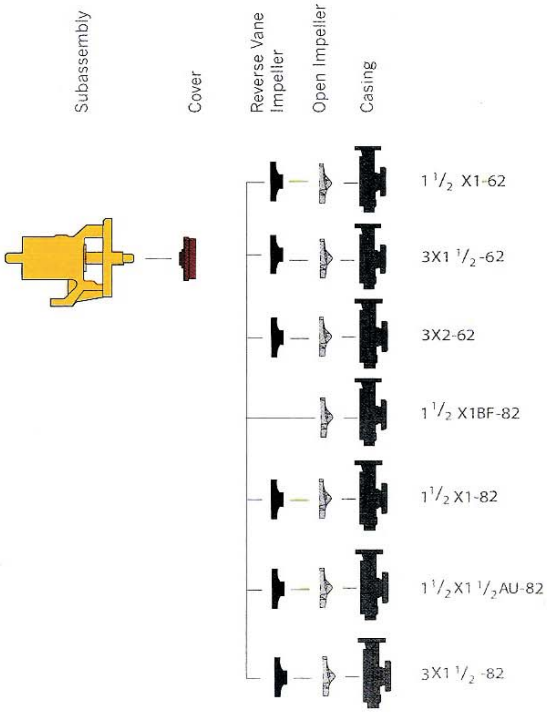
- Four cover type available depending on application (CBS, CBL, FML & FMS)
- Extend mechanical seal life
- Utilize less expensive seals and flush plans
- Improve pump reliability
- Optional packing
- Optional jacketed

ALIGNMENT

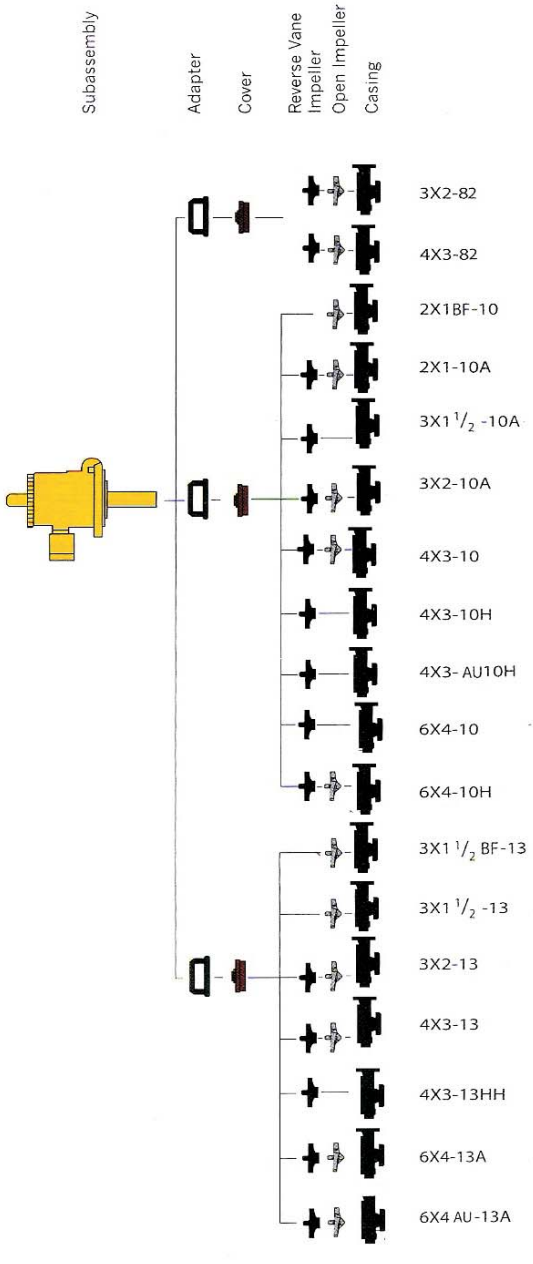
- Four precision machined metal-to-metal fit locations
- Precision machined metal-to-metal bearing carrier reduces stack-ups to improve shaft concentricity

INTERCHANGEABILITY

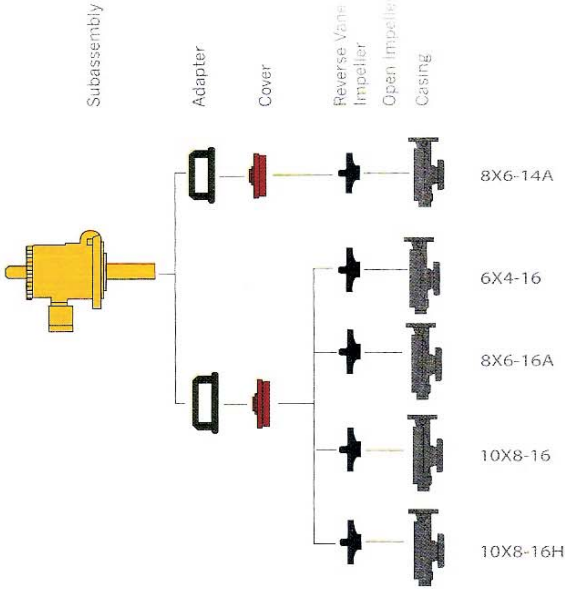
Type 1L



Type 2L

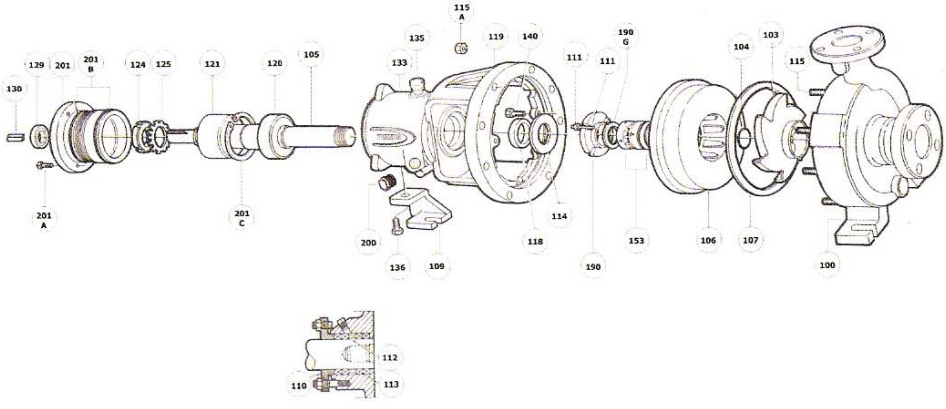


Type 3L



SECTIONAL DRAWINGS

Sectional Drawings Type 1L

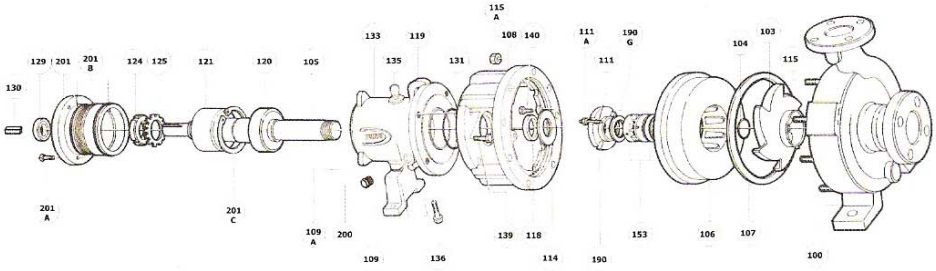


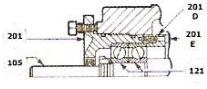
Item Number	Item Description	
100	Casing	
103	Impeller	
104	Impeller Gasket	
105	Shaft	
106	Cover	
107	Cover Gasket	
108	Adapter	
109	Bearing Housing Foot	
110	Gland – Packing	OPT.
111	Stud – Gland	
111A	Hex Nut – Gland	
112	Lantern Ring Halves	OPT.
113	Packing	OPT.
114	Inboard Deflector	OPT.
115	Stud – Casing	
115A	Hex Nut – Casing	
118	Inboard Oil Lip Seal	
119	Bearing Housing	
120	Inboard Bearing	
121	Outboard Bearing	

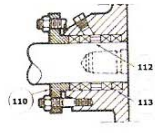
Item Number	Item Description	
124	Bearing Locknut	
125	Bearing Lockwasher	
129	Outboard Oil Lip Seal	
131	Adapter O-Ring	N/A
134	Bearing Housing Drain Plug	
135	Bearing Housing Vent Plug	
136	Capscrew – Foot	
139	Capscrew – Bearing Housing	N/A
140	Capscrew – Cover/Adapter	
153	Mechanical Seal	
177	Hook Sleeve	OPT.
190	Gland – Mechanical Seal	
190G	Gland Gasket	
200	Oil Sight Gage	
201	Carrier	
201A	Set Screw – Carrier	
201B	O-Ring – Carrier	
201C	Carrier Retainer	
201D	Clap Ring Bearing Housing	OPT.
201E	Socket Head Capscrew Clamp	OPT.

SECTIONAL DRAWINGS

Sectional Drawings Type 2L







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107	Cover	
108	Adapter	
109	Bearing Housing Foot	
110	Gland – Packing	OPT.
111	Stud – Gland	
111A	Hex Nut – Gland	
112	Lantern Ring Halves	OPT.
113	Packing	OPT.
114	Inboard Deflector	OPT.
115	Stud – Casing	
115A	Hex Nut – Casing	
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119	Bearing Housing	
120	Inboard Bearing	
121	Outboard Bearing	

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201A	Set Screw – Carrier	
201B	O-Ring – Carrier	
201C	Bearing Carrier Retainer	
201D	Clap Ring Bearing Housing	OPT.
201E	Socket Head Capscrew Clamp	OPT.

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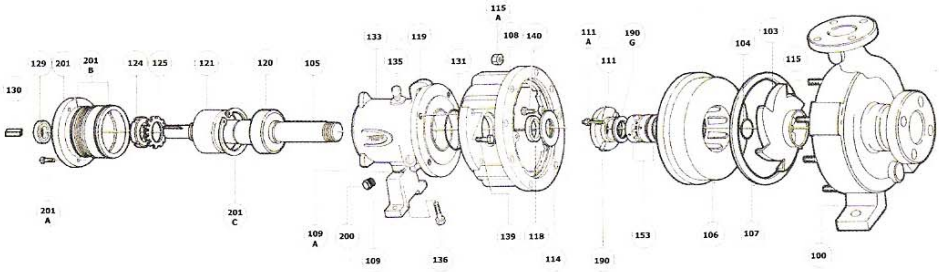

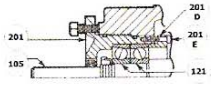

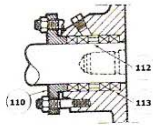

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111A	Hex Nut – Gland	
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113	Packing	OPT.
114	Inboard Deflector	OPT.
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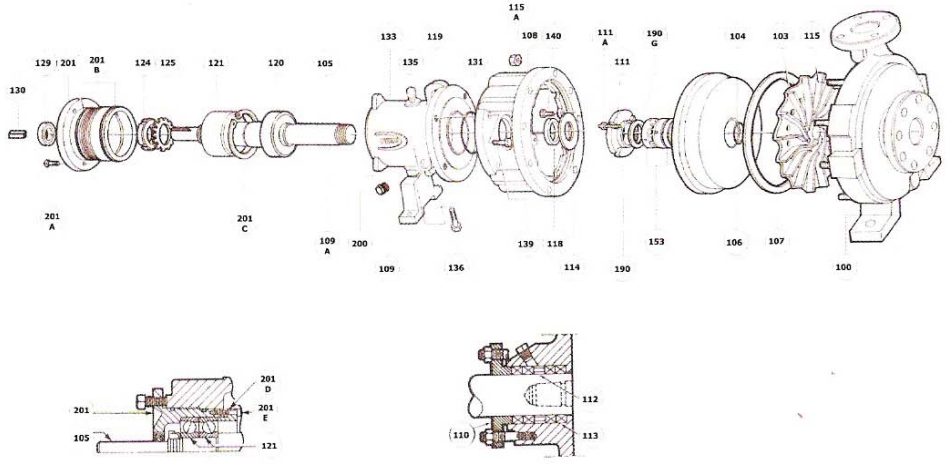
201B	O-Ring – Carrier	
201C	Bearing Carrier Retainer	
201D	Clap Ring Bearing Housing	
201E	Socket Head Capscrew Clamp	

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.

LOW FLOW SECTIONAL DRAWING



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111	Stud – Gland	
111A	Hex Nut – Gland	
112	Lantern Ring Halves	OPT.
113	Packing	OPT.
114	Inboard Deflector	OPT.
115	Stud – Casing	
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201D	Clap Ring Bearing Housing	OPT
201E	Socket Head Capscrew Clamp	OPT

SELF PRIMING TYPE PUMP

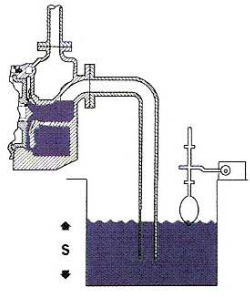
Dpumps series combine the best design features of its standard pumps with efficient self-priming casings. These specific-purpose wet end parts fit the basic building block philosophy in that they utilize the standard pump components from the impeller on back to the bearing housing. The self-priming casings were designed to pump form 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

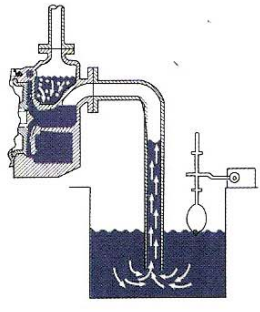
Sump service, Tank car unloading, Duplex pumping lift stations, Flyash pond transfer, Waste acid transfer, Waste Treatment lagoon service.

Priming Cycle

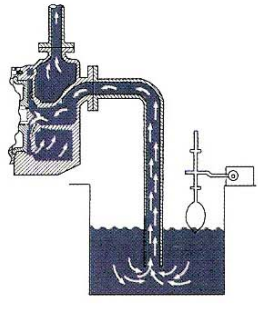
1.- Sump Filling, Pump Stopped
The casing is shown with the initial prime liquid, which permanently stays in the casing. This serves as the priming liquid necessary to entrain the air contained in the suction line.



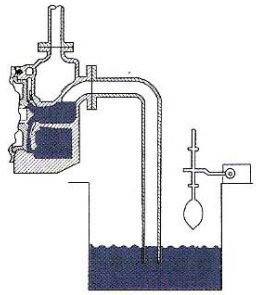
2.- Pump start-up
As the impeller spins the priming liquid entrains air from the suction pipe and is pumped into the air separator/priming tank portion of the casing. In this chamber the air separates from the priming liquid and vents out the discharge while the priming liquid flows through the bypass 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.



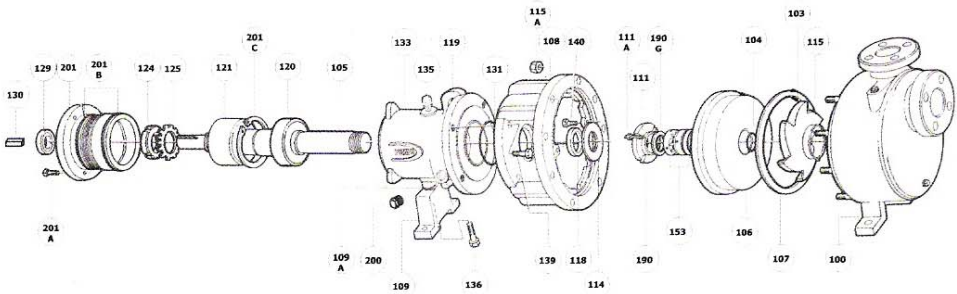
3.- Priming Achievement
After the priming cycle has evacuated all of the air form the suction pipe, the sump liquid floods the volute, air separator and priming chamber, and pipe begins. The Unitized self-priming is fully primed and now operates exactly as a standard flooded-suction pump.

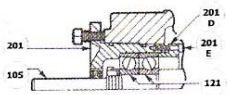


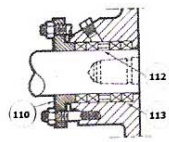
4.- Sump Empty, pump stopped
When the pump stops, the liquid in the discharge piping flows back through the pump, leaving the priming chamber filled with sufficient liquid for the next priming cycle. Except for the first fillup of the priming chamber and an occasional "topping off" in dry climates, the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



Self Priming Sectional Drawing







Item Number	Item Description	
100	Casing	
103	Impeller	
104	Impeller Gasket	
105	Shaft	
106	Cover	
107	Cover	
108	Adapter	
109	Bearing Housing Foot	
110	Gland – Packing	OPT.
111	Stud – Gland	
111A	Hex Nut – Gland	
112	Lantern Ring Halves	OPT.
113	Packing	OPT.
114	Inboard Deflector	OPT.
115	Stud – Casing	
115A	Hex Nut – Casing	
118	Inboard Oil Lip Seal	
119	Bearing Housing	
120	Inboard Bearing	
121	Outboard Bearing	

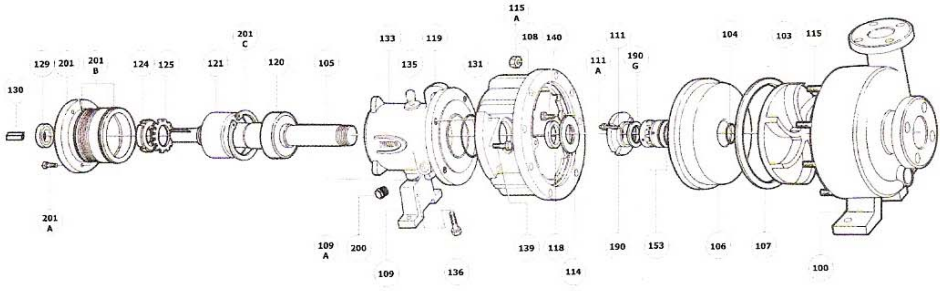
Item Number	Item Description	
124	Bearing Locknut	
125	Bearing Lockwasher	
129	Outboard Oil Lip Seal	
131	Adapter O-Ring	
134	Bearing Housing Drain Plug	
135	Bearing Housing Vent Plug	
136	Capscrew – Foot	
139	Capscrew – Bearing Housing	N/A
140	Capscrew – Cover/Adapter	
153	Mechanical Seal	
177	Hook Sleeve	OPT
190	Gland – Mechanical Seal	
190G	Gland Gasket	
200	Oil Sight Gage	
201	Carrier	
201A	Set Screw – Carrier	
201B	O-Ring – Carrier	
201C	Bearing Carrier Retainer	
201D	Clap Ring Bearing Housing	OPT
201E	Socket Head Capscrew Clamp	OPT

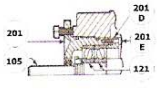
VORTEX TYPE PUMP

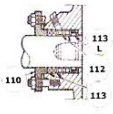
The vortex created by the spinning impeller does the pumping with less than 20% of the media actually contacting the impeller.

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.

VORTEX TYPE SECTIONAL DRAWING







Item Number	Item Description	
100	Casing	
103	Impeller	
104	Impeller Gasket	
105	Shaft	
106	Cover	
107	Cover	
108	Adapter	
109	Bearing Housing Foot	
110	Gland – Packing	OPT.
111	Stud – Gland	
111A	Hex Nut – Gland	
112	Lantern Ring Halves	OPT.
113	Packing	OPT.
114	Inboard Deflector	OPT.
115	Stud – Casing	
115A	Hex Nut – Casing	
118	Inboard Oil Lip Seal	
119	Bearing Housing	
120	Inboard Bearing	
121	Outboard Bearing	

Item Number	Item Description	
124	Bearing Locknut	
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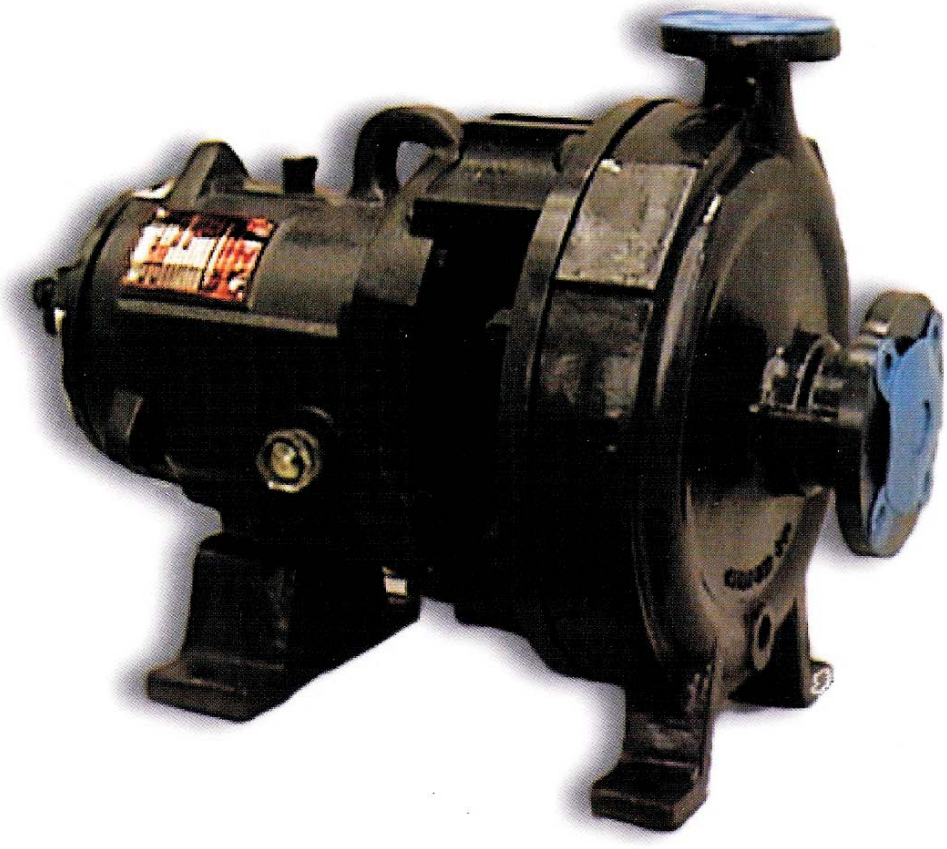
201	Carrier	
201A	Set Screw – Carrier	
201B	O-Ring – Carrier	
201C	Bearing Carrier Retainer	
201D	Clap Ring Bearing Housing	OPT
201E	Socket Head Capscrew Clamp	OPT

CASING DYNAMICS

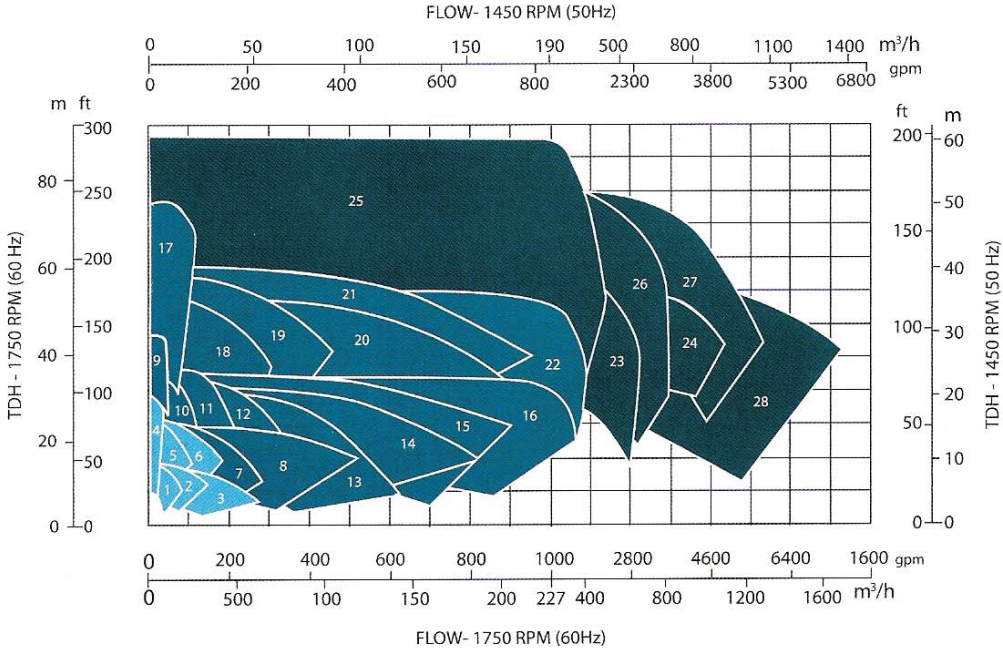
The cylindrical volute desing combined with the impeller spinning "out of the flow" minimize radial loads on the impeller. The result is longer seal life as well as maximized radial bearing life. The circular flow path and tangential discharge also contribute to maximum pump life.

Applications

Abrasive Waste Water, Biological Sludge, Clarifier Underflow, 5% Coke Slurry, Diatomaceous Earth Slurry, Floculant Sludge, Latex, Lime Mud Slurry, Organic Slurry, Polymer Slurry, Resin Slurry, Rubber Crumb Slurry, Sodium Hydoxide, Catalyst Slurry



GENERAL PERFORMANCE CURVES



Type 1L

1. 1 ½ X 1-62
2. 3 X 1 ½-62
3. 3 X 2-62
4. 1 ½ X 1BF-82
5. 1 ½ X 1-82
6. 3 X 1 ½-82

Type 2L

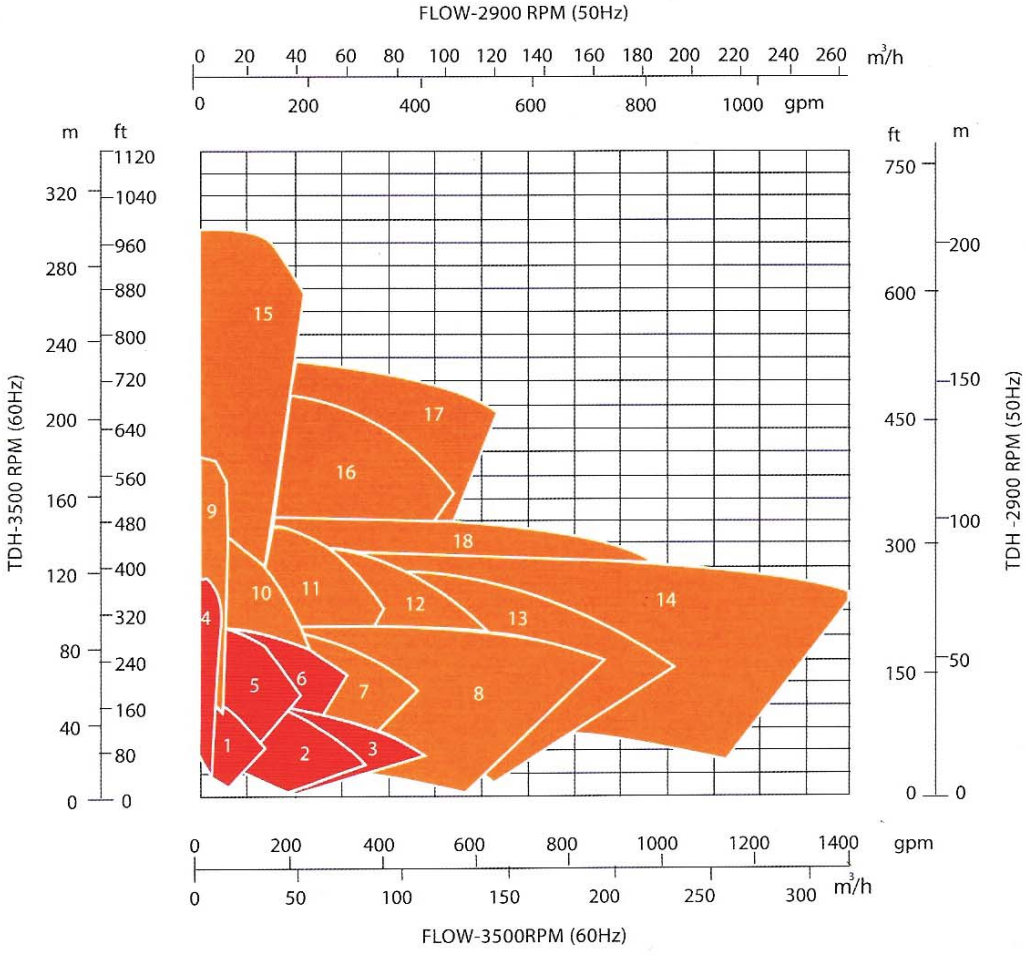
7. 3X2-82
8. 4X3-82
9. 2X1BF-10
10. 2X1-10A
11. 3X1½-10A
12. 3X2-10A
13. 4X3-10
14. 4X3-10H
15. 6X4-10
16. 6X4-10H
17. 3X1½ BF-13
18. 3X1½-13
19. 3X2-13
20. 4X3-13
21. 4X3-13HH
22. 6X4-13A

Type 3L

23. 8X6-14A
24. 10X8-14
25. 6X4-16
26. 8X6-16A
27. 10X8-16
28. 10X8-16H

General performance data. Not adequate for selecting pumps

GENERAL PERFORMANCE CURVES



Type 1L

1. 1 ½ X1-62
2. 3 ½ X1-62
3. 3X2-62
4. 1 ½ X1BF-82
5. 1 ½ X1-82
6. 3X1½-82

Type 2L

7. 3X2-82
8. 4X3-82
9. 2X1 BF-10
10. 2X1-10A
11. 3X1½-10A
12. 3X2-10A
13. 4X3-10
14. 6X4 -10
16. 3X1 ½ BF-13
18. 3X1½-13
19. 3X2-13
20. 4X3-13

General performance data. Not adequate for selecting pumps

FEOC
COMERCIALIZADORA

PUMPS

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