PRO PUMP

The Quality Pump for Your Application

D SERIES

ANSI B73.1

Heavy Duty Process Pump

ANSI PUMP

The American National Standards Institute (ANSI) sets standards for manufacturers, producers, engineers and technicians for several products.

One such standard is the B73.1 for centrifugal pumps, which covers 25 pump sizes and sets key dimensions for each of the sizes. The end user is guaranteed a quality product that meets specific industry requirements.

ANSI
American National Standards Institute

Long Lasting With High Quality

18 Months Warrantee Period with D SERIES

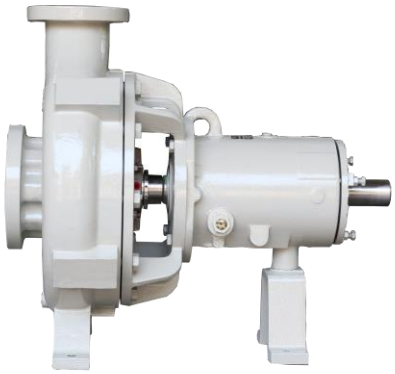
Pump Designation

The PRO D SERIES ANSI standard pumps are manufactured for a wide range of flow and head requirements follow ASME and ANSI B73.1 specifications. The MAX III Series combines high efficiency, maximum performance, and extended Mean Time Between Failure (MTBF) for reduced maintenance cost.

Applications

The D SERIES ANSI-standard pump will handle corrosive, toxic and abrasive process liquids such as acids, bases and solvents. This pump can be found in Chemical, Petro-chemical, Pulp & Paper, Plastic, Refining and Pharmaceutical plants. A wide range of alloys, options and sealing systems makes it an ideal choice for almost any application.

Specifications



Capacities:	Up to 1,022 m3/hr
Head	Up to 222 meters
Pressure	Up to 2586 kPa
Horsepower	Up to 224 kW
Temperature	Up to 260°C
Drives	Motors, engines, steam turbine
Liquids	Chemical, pulp and paper, all process
Materials	**Standard Materials:** CD4MCu, Alloy 20, Hastelloy C **Custom Materials Available :** Nickel Alloy, Titanium, TiPd

Features & Benefits

- ✓ **ANSI B73.1 Standard Dimensions**, can fit and replace with the same dimensions to all ANSI B73.1 process pump.
- ✓ Parts interchangeability for minimum spare parts inventory to **D-Series pump** with same hydraulic design and best performance
- ✓ **Conicalflo Seal Chamber** with **Flow Breaker** to extend seal life and provide advanced self-flushing capability.
- ✓ External **SpiralMark** impeller adjustment accurately sets impeller clearance in 1 minutes, in the shop or in the field.
- ✓ **Back pull-out design** for quick inspection against contaminations long life and reliability
- ✓ **Wide range of material available**

D SERIES Design

PRO ConicalFlo seal chamber

- Improve pump reliability and reduce total cost of ownership
- Extend mechanical seal life, self-flushing, self-venting and self-draining
- Permits use of less expensive seals and flush plans: API Plan 11, 32 can be eliminated**.**

ConicalFlo Seal Chamber with Flow Breaker

1. Flow breaker redirect flow from circumferential to axial
2. Balance flow with low pressure drop in the chamber helps keep solids in suspension, minimize erosion.
3. The mechanical seal creates a centrifugal action away from its parts.
4. Solids and slurry merge into the returning from path and are flushed out of the seal chamber.

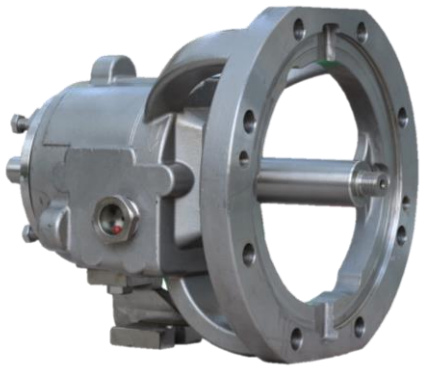
Casing

The D-SERIES casing is a self venting, top centerline discharge with a fully confined gasket. Class 150 lb. FF flanges are standard, with optional Class 150 lb. RF and both FF and RF Class 300 lb. flanges available. All ductile iron and 316SS casings are supplied with casing drains.

Impeller

The impeller is a semi open design that significantly reduces clogging. Impeller balancing holes reduce stuffing box pressure, prolonging mechanical seal life. Impeller and casing are matched to achieve high efficiency and low NPSH. Sealed by an O-ring, the threaded area is protected against corrosion.

A Low Flow Impeller is available for selected sizes of group 1 bearing frame pumps. This Low Flow Impeller helps extend MTBF for those applications operating far to the left of the Best Efficiency Point (BEP) of the standard pump.



Power End

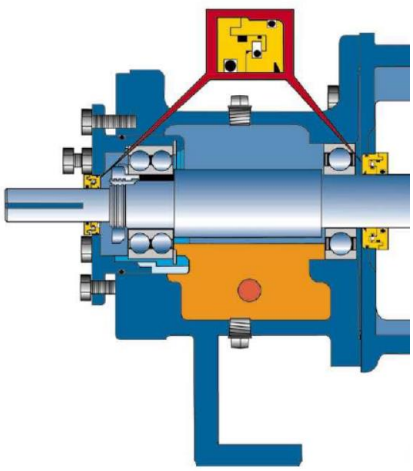
The power end has a bearing frame made of heavy-duty cast iron construction. Designed with enlarged oil reservoir for better dissipation of heat and bulls-eyesight glass for easy monitoring of oil level.

316 SS power end material is available on request.

All Power Ends are backed by a 3 years warranty.

Bearing Protection

Inpro/Seal ™ Bearing Isolator, designed especially for **PRO D SERIES Pump**, provides both static and dynamic sealing using contact technology to positively seal the bearings from environmental contamination.



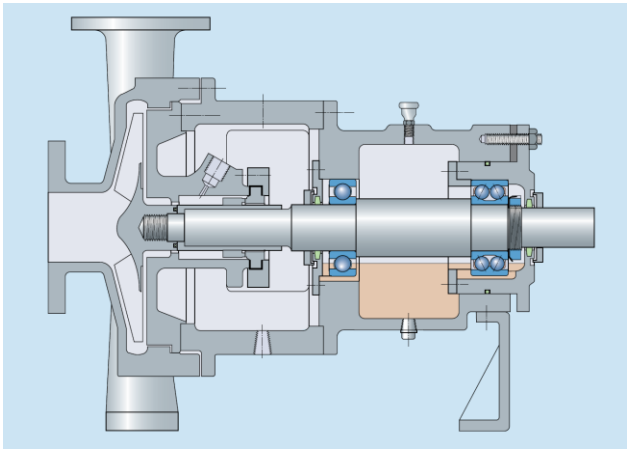
Shaft

The shaft is available with hook sleeve or in solid shaft construction.

Low defection (less than 0.002 in.) at seal face for longer seal and bearing life.

Solid Shaft: steel end-to-end or stainless alloy end-to-end

Hook Sleeve: a steel shaft end-to-end accommodation a hook sleeve

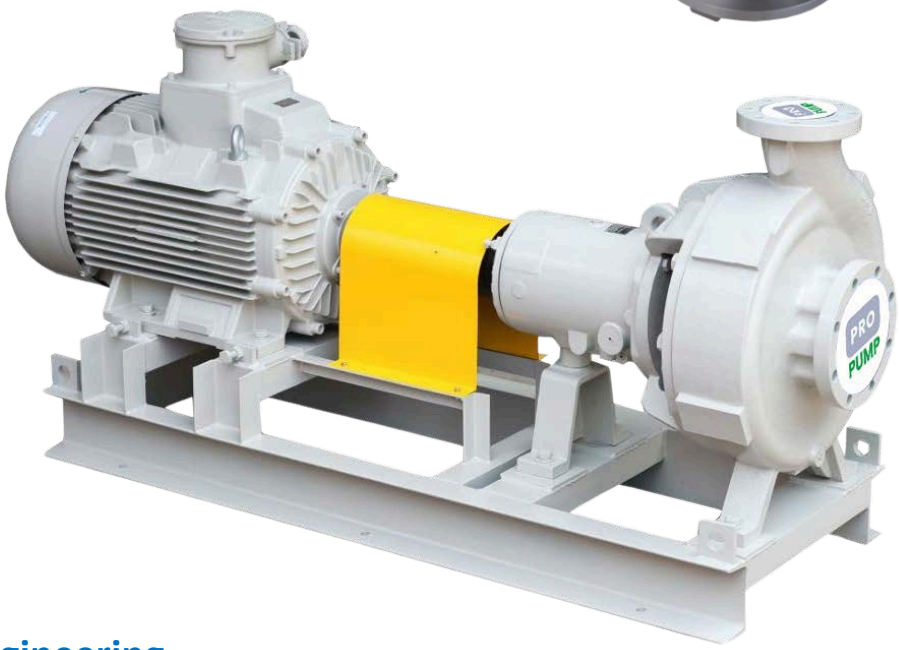


Large oil sump: Bearing run cooler, last longer.

Bearing

Bearing fits are precision bored and all bearings meet or exceed minimum ANSI L10 life or 17,500 hours.

The bearings supporting the axial load are mounted in a bearing carrier, separate from the pump frame, to allow adjustment of the impeller in the casing.



Quality Engineering

The PRO D Series delivers variety, durability, standardized options and configurations unequalled in the industry.

Seal Chamber Options

CBS

Cylindrical Bore Standard

CBL

Cylindrical Bore Large

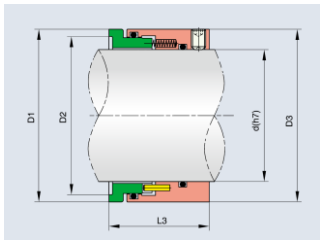
CFB

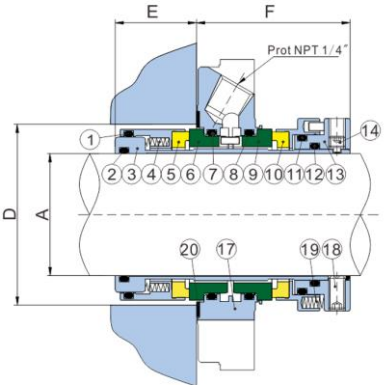
Conical Flow Breaker

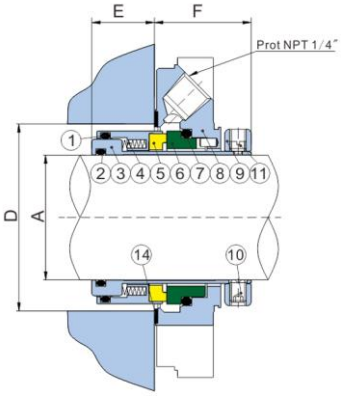
CBS: For standard packing seal

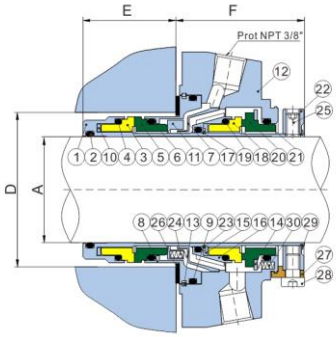
CBL: Improved lubrication and cooling of seal faces extend mechanical seal life.

CFB*:* **ConicalFlo seal chamber** with **flow breaker** extend seal life and provide seal self-flushing capability.





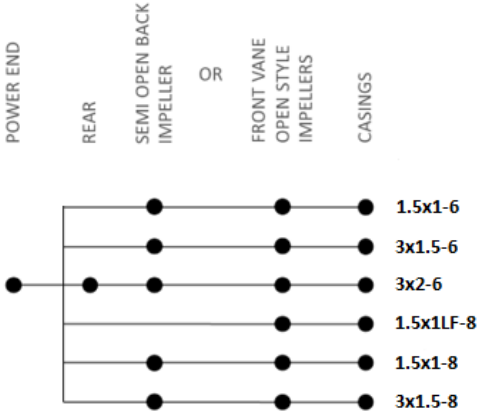




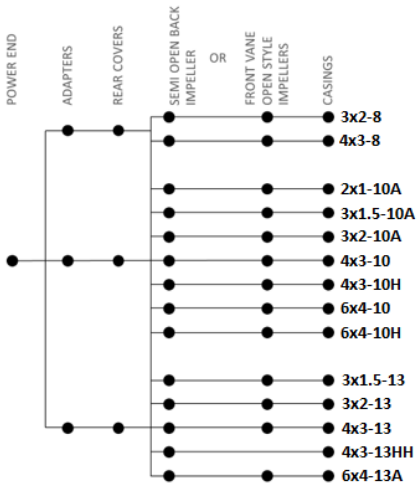
Standard Mechanical Seal Options

Description	Code					
	11V	Q6V	C1V	P6V	D6V	02T
Type	Component	Component	Cartridge	Cartridge	Cartridge	Component
Single/Double	Single	Double	Single	Double	Double	Single Outside
Design	Balnace, Enclosed Spring	Multi-Spring, Back to Back	Balance, Enclosed Spring	Balance, Enclosed Spring	Balnace, Rotaing Seat, Enclosed Spring with pumping ring	Balance, Enclosed Spring
Seal Faces	Carbon/SiC/Viton	SiC/SiC-Carbon/SiC/Viton	Carbon/SiC/Viton	SiC/SiC-Carbon/SiC/Viton	SiC/SiC-Carbon/SiC/Viton	SiC/SiC/PTFE
API	-	54	-	54	52, 53	62

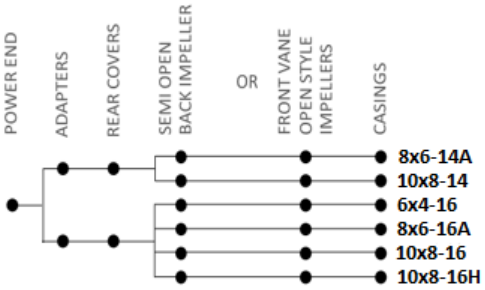
Note: Mechanical seal type and material combination are as on request to meet the required application.



Group 1



Group 2

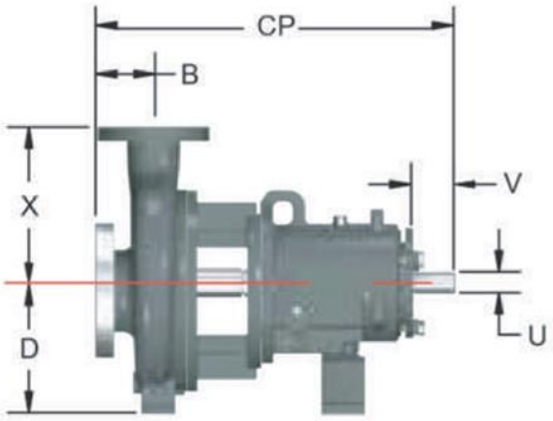


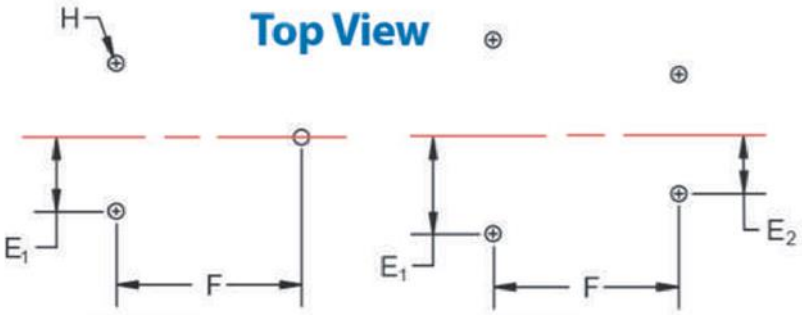
Group 3

D SERIES Pump Technical

Pump Series	Pump Model	Min. Casing Thickness (mm)	Max. Sphere Thru Imp. (RV.) (mm)	RV Impeller Eye Area (cm2)	Corrosion Allow (mm)	Max. Temp. (ºC)	Max. Allow Horse Power			Max. Shaft End Play (mm)	Bearing number	Max. Impeller Dia. (mm)
							960 kW	1450 kW	2900 kW			
Group 1	1.5x1 - 6	10	9.5	20			8.5	12.5	25	0.03	I.B. 6207, O.B. 3306/5306	158
	3x1.5 - 6	10	11.1	28.4								158
	3x2 - 6	10	11.1	36.1								158
	1.5x1 - 8	10	8.7	20								208
	3x1.5 - 8	11	14.3	35.5								208
Group 2	3x2 - 8	11	13.5	43.8	3	175 [380], with cooling	31	46.5	93	0.03	I.B. 6310, O.B. 3310/5310	208
	4x3 - 8	11	12.7	80								208
	2x1 - 10A	11	10.3	22.6								254
	3x1.5 - 10A	11	11.9	35.4								254
	3x2 - 10A	11	13.5	41.3								254
	4x3 - 10	13	16.7	85.2								254
	4x3 - 10H	13	19.8	85.2								254
	6x4 - 10	13	17.5	126.5					110			254
	6x4 - 10H	13	14.3	142					93			254
	3x1.5 - 13	11	15.1	48.4								330
	3x2 - 13	11	10.3	48.4								330
	4x3 - 13	11	17.5	98								330
	4x3 - 13HH	11	17.5	98								330
	6x4 -13A	11	26.2	187.1					110			330
Group 3	8x6 - 14A	13	41.3	292	3	175 [380], with cooling	134	200	-	0.03	I.B. 6314 O.B. 3314/5314	356
	10x8 - 14	16	38.1	410								356
	6x4 - 16	16	30.2	172								406
	8x6 - 16A	14	31.7	292								406
	10x8 - 16	14	39.7	410								406
	10x8 - 16H	13	41.3	506								406

D SERIES Pump Dimensions





Group 1 **Group 2 & 3**

Dimensions are in inches

Pump Series	Pump Model	ANSI	X	D	B	CP	FOOT PATTERN				SHAFT			PUMP WEIGHT lbs. (kg)
							E1	E2	F	H	U	KWY	V	
Group 1	1.5x1 - 6	AA	6.5	5.25	4	17.5	3	0	7.25	5/8	7/8	3/16 x 3/32	2	100 (45)
	3x1.5 - 6	AB												110 (50)
	3x2 - 6													115 (52)
	1.5x1 - 8	AA												100 (45)
	3x1.5 - 8	AB	7 1/2	7										125 (57)
Group 2	3x2 - 8	A60	9 1/2	8 1/2	4	23 1/2	4 7/8	3 5/8	12 1/2	5/8	1 1/8	1/4 x 1/8	2 5/8	200 (90)
	4x3 - 8	A70	11											230 (104)
	2x1 - 10A	A05	8 1/2											210 (95)
	3x1.5 - 10A	A50	8 1/2											220 (100)
	3x2 - 10A	A60	9 1/2											225 (102)
	4x3 - 10	A70	11											225 (102)
	4x3 - 10H	A40	12 1/2	10										250 (113)
	6x4 - 10	A80	13 1/2											290 (132)
	6x4 - 10H	A80	13 1/2								1 1/2	3/8 x 3/16		330 (150)
	3x1.5 - 13	A20	10 1/2								1 1/8	1/4 x 1/8		250 (113)
	3x2 - 13	A30	11 1/2											260 (118)
	4x3 - 13	A40	12 1/2											280 (127)
	4x3 - 13HH	A40	12 1/2											280 (127)
	6x4 -13A	A80	13 1/2											325 (147)
Group 3	8x6 - 14A	A90	16	14 1/2	6	33 7/8	8	4 1/2	18 3/4	7/8	2 3/8	5/8 x 5/16	4	680 (308)
	10x8 - 14	A100	18											900 (408)
	6x4 - 16		16											640 (290)
	8x6 - 16A	A110	18											830 (376)
	10x8 - 16	A120	19											920 (417)
	10x8 - 16H	A120	19											990 (450)