

CENTRIFUGAL PROCESS PUMPS

TORO
robust pumping power



www.intraxglobal.com

Global coverage for abrasive and corrosive fluid applications



Providing pump solutions to industry, globally

Intrax Global Group is a worldwide leader specialized in providing pumping equipment for challenging applications in the Mining, Chemical and other industries with abrasive and corrosive fluids.

To bring our products closer to the market, we developed global distributors that add value by

offering innovation and developing high impact solutions.

From chemical and slurry compatible centrifugal pumps to submersible dewatering equipment, we work with high quality standards that guarantee support and reliability.

Our brands



TECHNIFLO SLURRYPRO®



CENTRIFUGAL PROCESS PUMPS

The Toro ANSI pump line has 44 models available to meet the service conditions of a wide range of hydraulic parameters.

Capable of delivering up to 1150 m³/h and working pressures up to 25 bar, they can withstand temperatures from -70°C to 260°C. Robustly constructed from cast iron, stainless steel, Hastelloy or titanium, Toro pumps provide greater protection against abrasion and crystallization. The Toro pumps are characterized by three essential features: **passage of large solids, extended service life and modular interchangeability.**

PASSAGE OF SOLIDS, ANTI BLOCKAGE

Provided with a semi-open impeller, Toro pumps allow for external adjustment to compensate for wear and renew performance. They allow the passage of solids and fibers up to 5 mm in diameter. Their back vanes and balancing holes lead to lower axial loads, improving seal and bearing life.

EXTENDED LIFETIME

Toro ANSI pumps can be supplied with a mechanical seal (single, double or cartridge), packing or expeller, according to customer requirements. The different stuffing box alternatives favor heat dissipation, seal face lubrication and keep solids away avoiding premature wear.

MODULAR INTERCHANGEABILITY

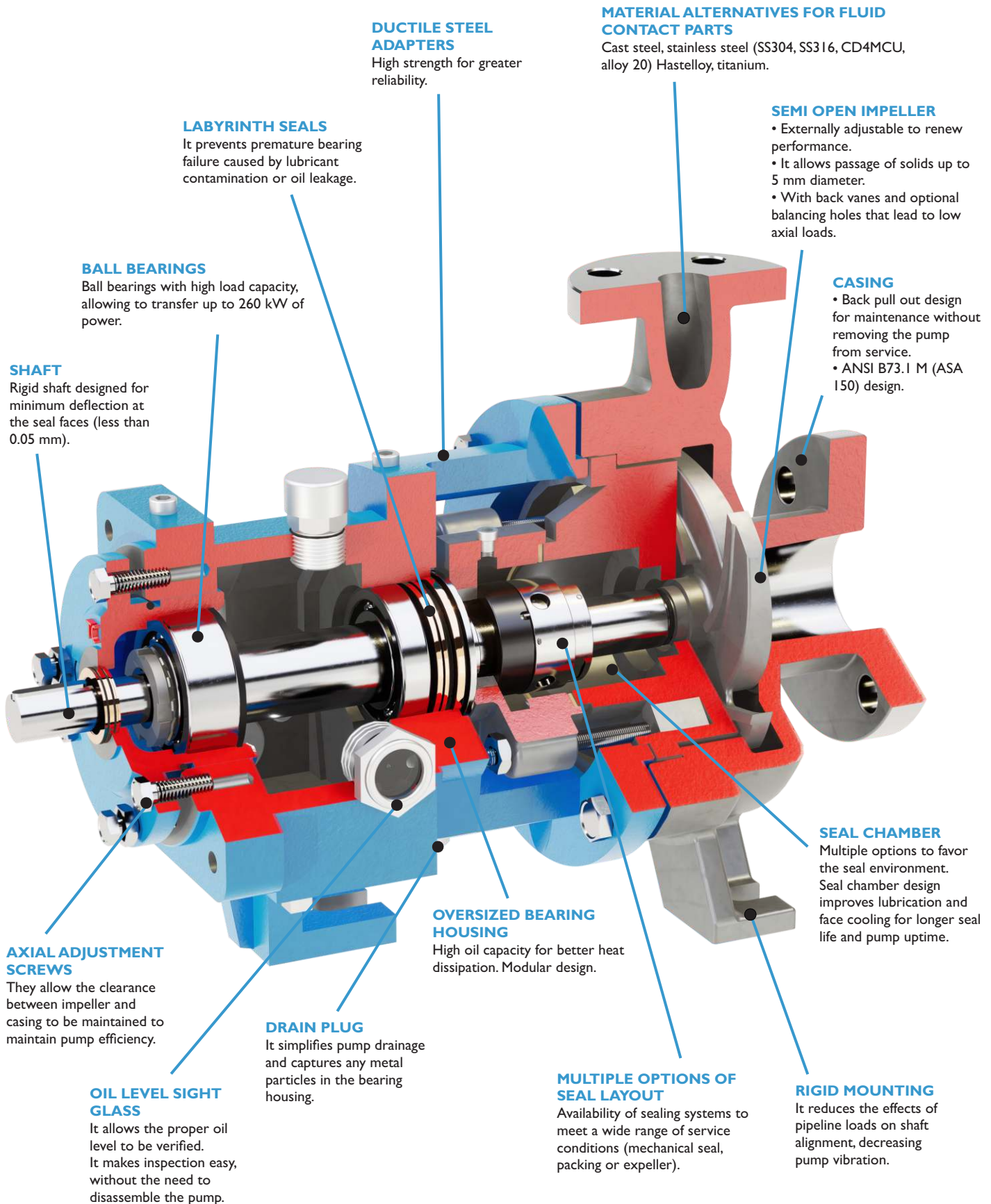
In those cases where the customer has more than one model of Toro ANSI pumps, the modular structure allows the interchangeability of parts, facilitating replacement and reducing costs.

Other features

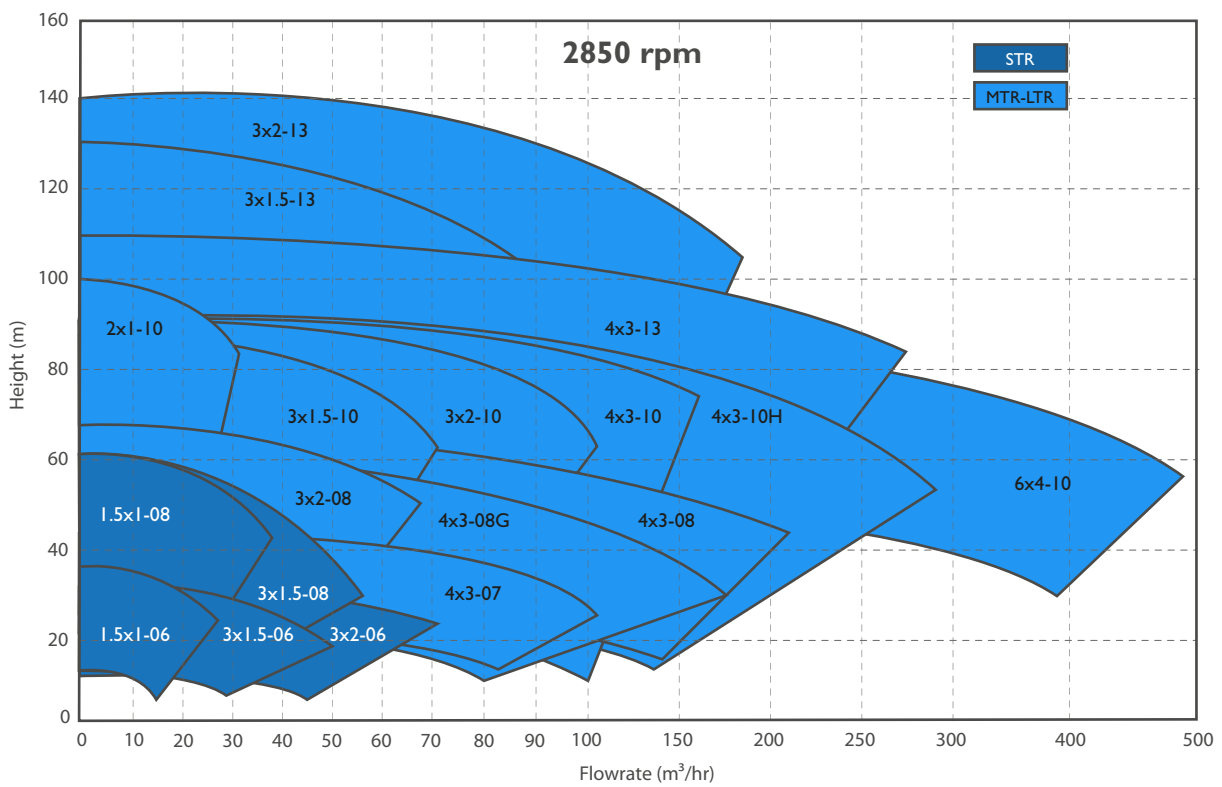
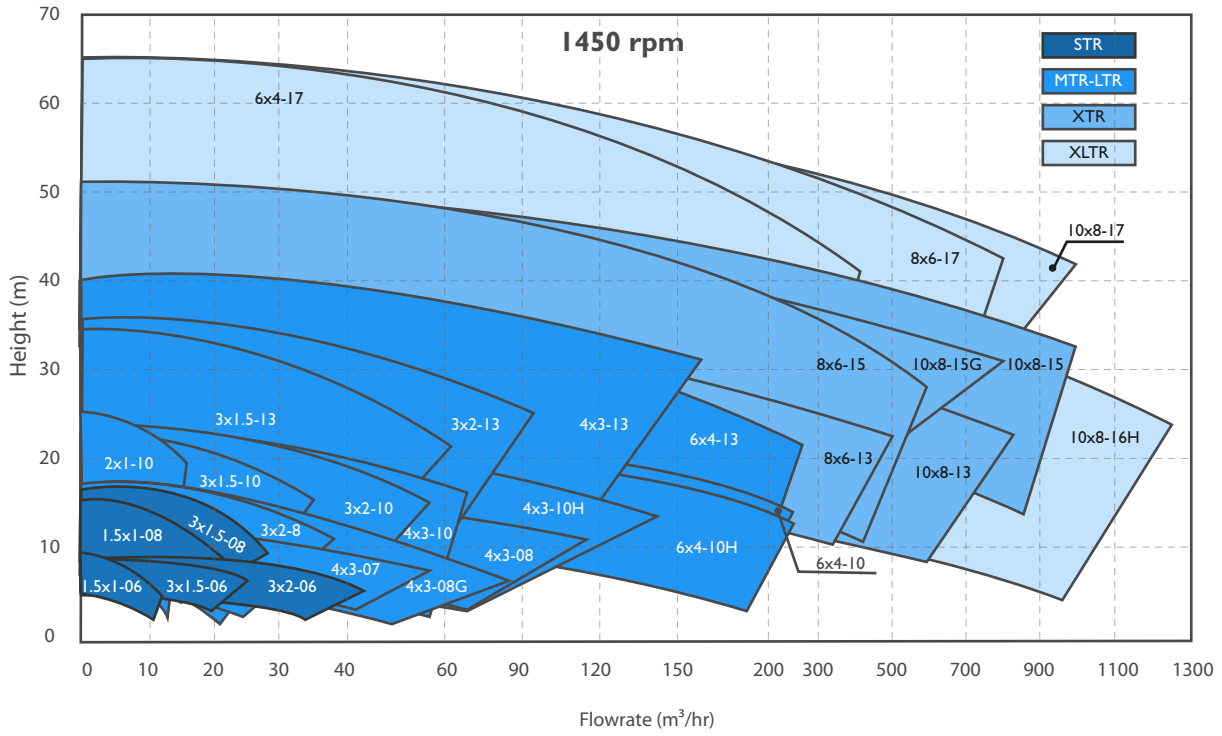
- ANSI B73.1 M (ASA 150) design
- Back pull out design
- Oversized bearing housing
- Double row bearings
- 5 years warranty against manufacturing defects



PUMP CROSS SECTION



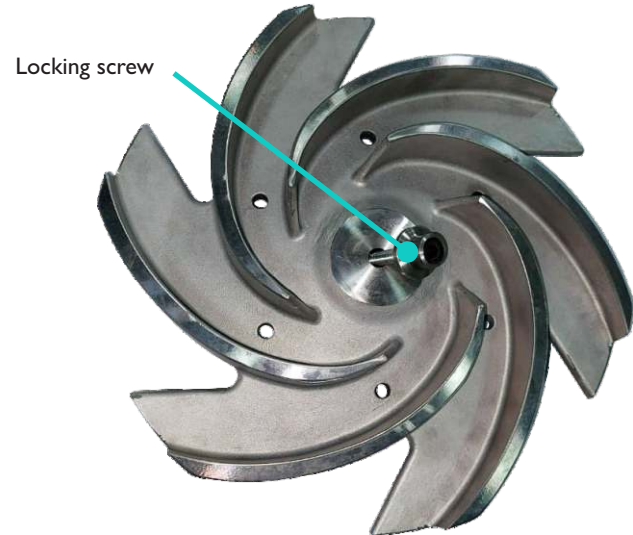
PERFORMANCE RANGE



PASSAGE OF SOLIDS, NO BLOCKING

LARGER CONTACT SURFACE AND IMPELLER LOCKING

Unlike pumps with closed impeller where wear is concentrated in the impeller eye, the erosion of the semi-open impeller is generated uniformly in all its sections. Toro ANSI pumps have an O-ring that provides protection to the shaft-impeller joint, preventing corrosion of the parts and premature wear. The locking screw located in the eye of the impeller, prevents the part from unscrewing from the shaft, in case of involuntary counter rotation.

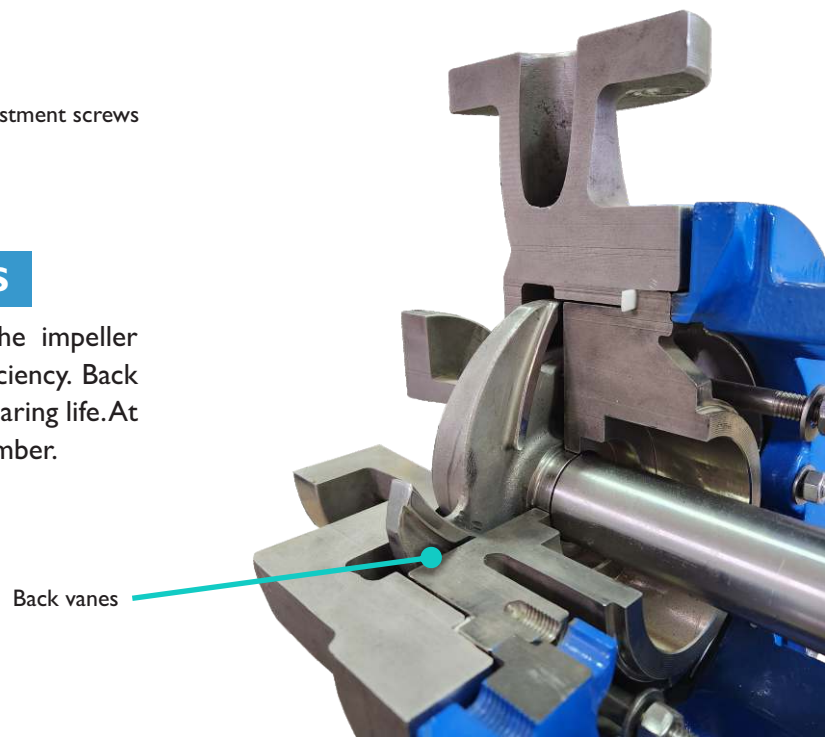


IMPELLER EXTERNAL ADJUSTMENT

As a pump wears, its performance decreases. Toro's semi-open impeller allows its original performance to be restored through the axial adjustment screws, located at the rear of the bearing housing. This action allows to maintain the clearance between the impeller and the volute.

LOW RADIAL AND AXIAL LOADS

Proper clearance of the front and back of the impeller minimizes radial loads and improves pump efficiency. Back vanes control and reduce axial thrust favoring bearing life. At the same time, they lower pressure in the seal chamber.



SEALING SYSTEMS AND ENVIRONMENT

Toro ANSI pumps have three seal chamber options to be configured with mechanical seal, packing or expeller. The enlarged radial space between the mechanical seal and the chamber promotes liquid flow to and from the seal faces, allowing continuous flow of solids and vapors, and promoting proper temperature.

STUFFING BOX OPTIONS



Standard Bore (SB):

Designed for packing. Recommended for clean fluid applications.



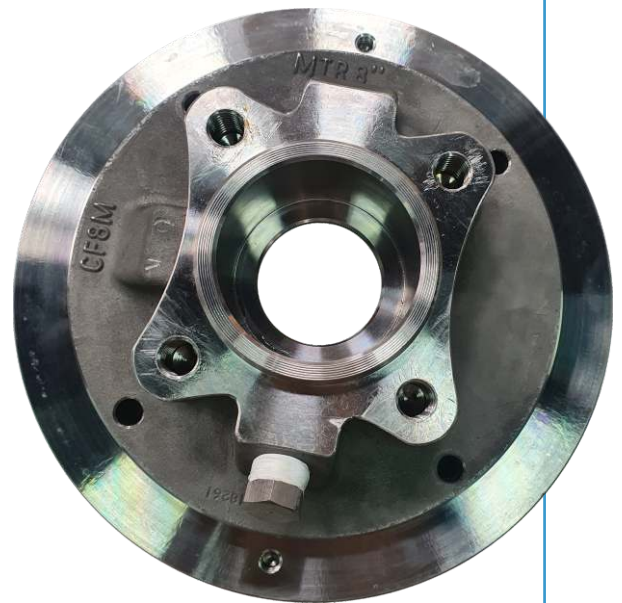
Big bore (BB):

Enlarged chamber for increased seal life through improved lubrication and cooling. To be used with flush, recommended for fluids with high percentage of solids.



Taper bore (conical stuffing box) (TB):

Lower seal face temperatures, self-venting & draining. Solids and vapors are circulated away from seal faces. Recommended for fluids and slurries with high percentage of solids (with expeller), no need of flushing.



COMPONENT MECHANICAL SEAL

Single mechanical seal of unbalanced type, with a single spring located around the shaft sleeve, exerting pressure on the dynamic O-ring against the rotating face.

- Internal assembly that favors the working environment of the seal and the reduction of fluid losses, while keeping larger solids away from the seal faces.
- Its unbalanced design allows for safer operation in conditions of vibration, shaft misalignment or cavitation.
- The increased spring clearance decreases the chances of spring clogging.

CARTRIDGE MECHANICAL SEAL

Balanced type mechanical seal, with multiple springs located outside the fluid, preventing clogging and spring corrosion. Cartridge design minimizes installation errors and ensures correct spring tension. Built with 316 stainless steel body. Available with silicon carbide faces, with an option of tungsten carbide, wear resistant.

- Pre-assembled part supplied, which facilitates installation on equipment.
- Balanced design reduces the effect of hydraulic forces on the sealing faces, generating less friction and heat.
- Monolithic sealing faces, cushioned with O-rings to guarantee their operation, even in the event of temperature changes or mechanical impacts.

Toro seals are available in single version, with flush connection (the fluid enters the pump for flushing the tracks) or quench (the vapor or fluid circulates on the external side of the seal) and double version with connections for barrier fluid and recirculation tank (it does not mix with the process fluid, ensuring a fix volume of recirculating liquid).



T52 mechanical seal with cartridge type design, suitable for fluids that generate wear.



T52 withstands pressures up to 20 bar and temperatures up to 170 °C.






Toro pumps offer the possibility to replace a component seal with a cartridge seal without modifying other parts.



Scan the code and watch the seal replacement video.

MODULAR INTERCHANGEABILITY

The modular structure of Toro ANSI pumps allows interchangeability of parts between models reducing the need for stock and associated costs.

SERIES	MODEL	MOTOR END	ADAPTER	STUFFING BOX	IMPELLER	VOLUTE
						
STR (1.375") Up to 30kW	1.5x1-06		NA			
	3x1.5-06					
	3x2-06					
	1.5x1-08					
	3x1.5-08					
MTR (1.75") Up to 75kW	4x3-07				D I F F E R E N T	D I F F E R E N T
	3x2-08					
	4x3-08					
	4x3-08G					
	2x1-10					
	3x1.5-10					
	3x2-10					
	4x3-10					
	6x4-10G					
	4x3-10H					
	6x4-10H					
	3x1.5-13					
	3x2-13					
	4x3-13					
6x4-13						
LTR (2.125") Up to 150kW	3x1.5-13				F O R	F O R
	3x2-13					
	4x3-13					
	6x4-13					
	6x4-13					
XTR (2.5") Up to 260kW	8x6-13				A L L	A L L
	10x8-13					
	8x6-15					
	10x8-15					
	10x8-15G					
XLTR (2.75") Up to 260kW	10x8-16H					
	6x4-17					
	8x6-17					
	10x8-17					

CONSTRUCTION MATERIALS

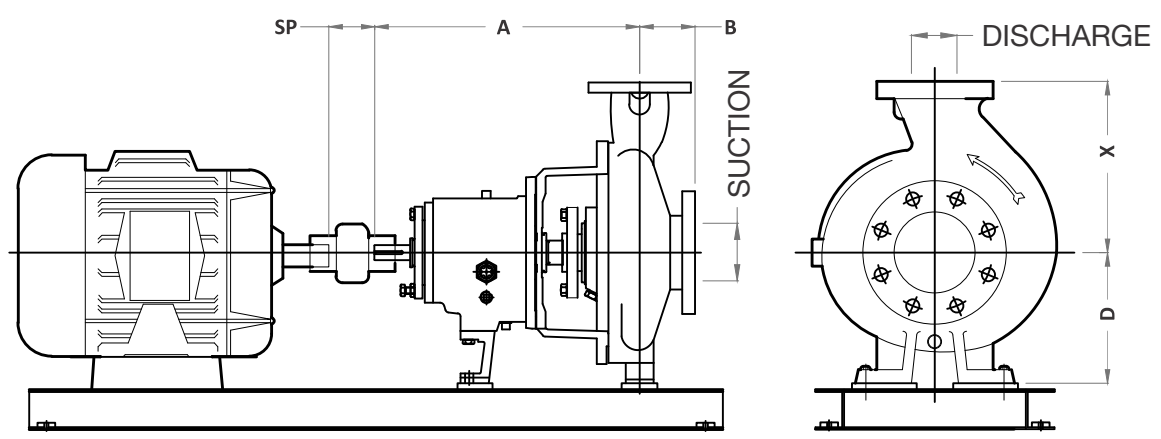
Toro ANSI centrifugal pumps are built in a range of materials to cover a wide variety of applications with abrasive and corrosive fluids.

Materials and part codes in contact with the fluid:

MATERIAL	GRADE	TORO CODE
Cast steel	WCB	335
Stainless Steel SS-304	CF8	123
Stainless Steel SS-316	CF8M	118
Stainless Steel SS-316L	CF3M	125
Duplex Stainless Steel	CD4MCu	121
Alloy 20	C7NM	122
Hastelloy	C276	131
Cast Titanium	B367 C2	130



DIMENSIONS



Group	Pump Size	ANSI Designation	Suction Size	Discharge Size	X	A	B	D	SP	Pump weight Lbs. (kg.)
STR	1.5x1-6	AA	1.5	1	6.5 (165)	13.5 (343)	4 (102)	5.25 (133)	3.75 (95)	84 (38)
	3x 1.5-6	AB	3	1.5						92 (42)
	3x2-6	AC	3	2						95 (43)
	1.5x1-8	AA	1.5	1						100 (45)
	3x1.5-8	AB	3	1.5						108 (49)
MTR/ LTR	4x3-7	A70	4	3	11 (280)	19.5 (495)	4 (102)	8.25 (210)	3.75 (95)	220 (100)
	3x2-8	A60	3	2	9.5 (242)					200 (91)
	4x3-8	A70	4	3	11 (280)					220 (100)
	4x3-8G	A70	4	3	8.5 (216)					220 (100)
	2x1-10	A05	2	1						200 (91)
	3X1.5-10	A50	3	1.5	220 (100)					
	3x2-10	A60	3	2	9.5 (242)	230 (104)				
	4x3-10	A70	4	3	11 (280)	265 (120)				
	4x3-10H	A40	4	3	12.5 (318)	19.5 (495)	4 (102)	10 (254)	3.75 (95)	275 (125)
	6x4-10G	A80	6	4	13.5 (343)					305 (138)
	6x4-10H	A80	6	4	13.5 (343)					305 (138)
	3X1.5-13	A20	3	1.5	10.5 (267)					245 (111)
	3x2-13	A30	3	2	11.5 (292)					275 (125)
	4x3-13	A40	4	3	12.5 (318)	330 (150)				
	6x4-13	A80	6	4	13.5 (343)	405 (184)				
XTR	8x6-13	A90	8	6	16 (406)	27.88 (708)	6 (152)	14.5 (368)	5.25 (133)	560 (254)
	10x8-13	A100	10	8	18 (457)					670 (304)
	8x6-15	A110	8	6	18 (457)					610 (277)
	10x8-15	A120	10	8	19 (483)					740 (336)
	10x8-15G									710 (322)
XLTR	10x8-16H	A120	10	8	19 (483)	27.88 (708)	6 (152)	14.5 (368)	5.25 (133)	850 (385)
	6x4-17	A105	6	4	16 (406)					650 (295)
	8x6-17	A110	8	6	18 (457)					730 (331)
	10x8-17	A120	10	8	19 (483)					830 (376)

*Reference dimensions. Do not use for construction.



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