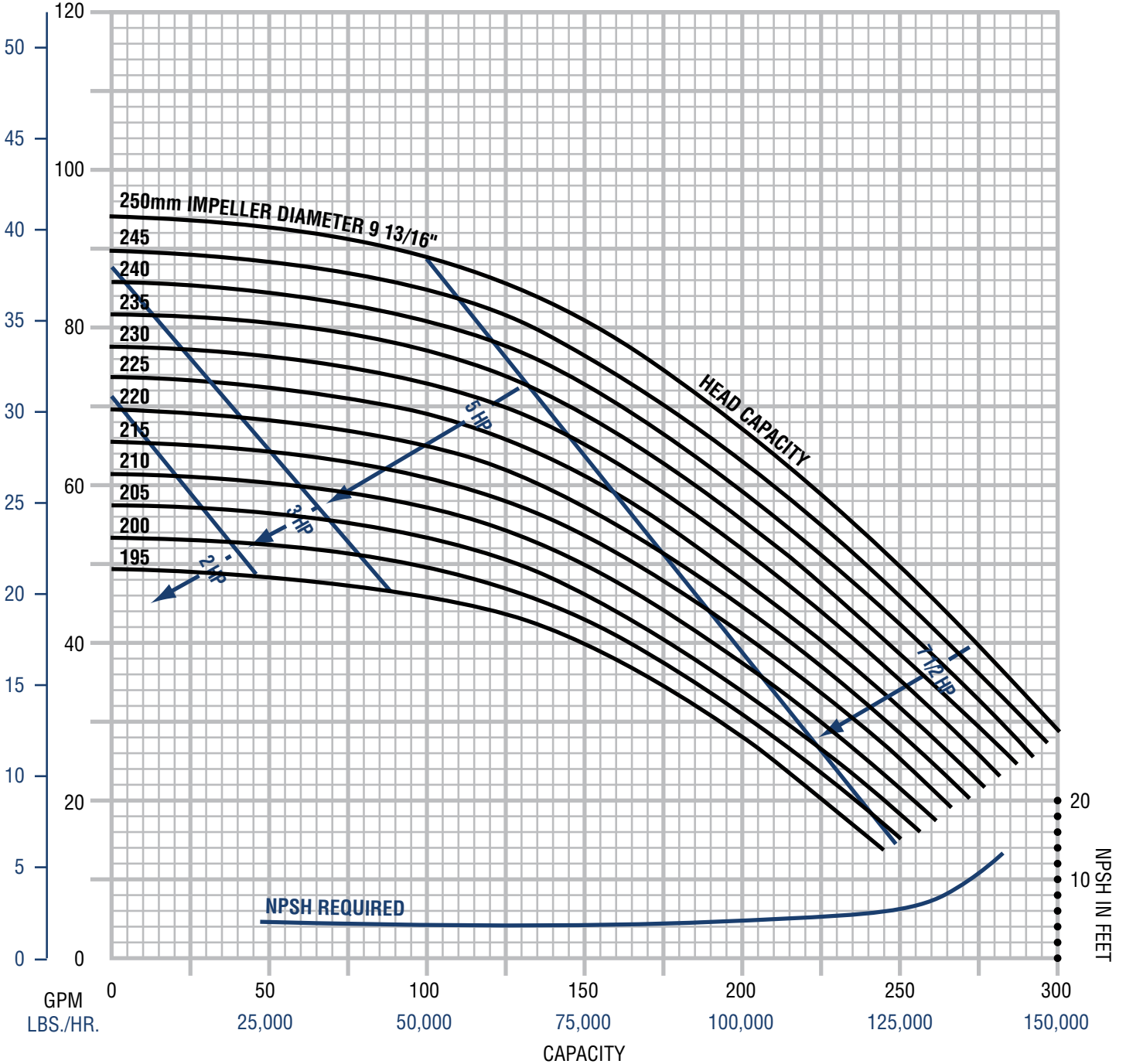




FP/FPX 3451 1750 RPM Inlet 3"-Outlet 2"

Performance curves based on tests using 70°F water. A tolerance of $\pm 5\%$ applies to all figures. For vacuum withdrawal applications contact Fristam Pumps.



FP & FPX Pump Seals

Fristam pump seals are one of the pumps' most outstanding features. Long life and the ability to prevent air from entering the product are two of the greatest benefits of the seal.

Fristam pump seals last far longer than competitive pump seals even under extreme duties. For instance, it is common in product withdrawal from evaporators, which run 24 hours per day, for the seal life to be measured in years, not weeks.

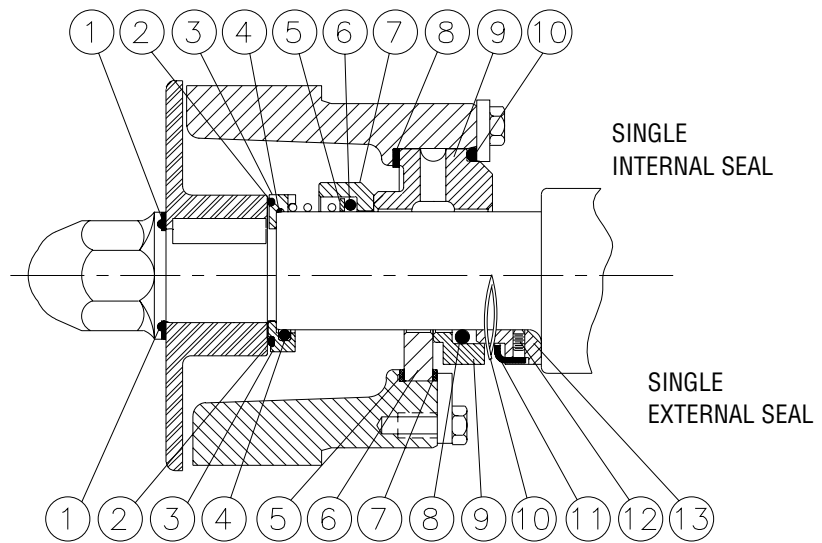
The special internal seal design will absorb pressure surges without releasing product out of the pump.

The inboard design of the seal enables the product or cleaning solution to clean, cool and lubricate the front seal area. Because of this construction, there is no contact between seal wear surfaces and any pump component such as a back plate or wear plate. There is never a need to replace pump components because of seal interface.

The illustration shown at right represents the single internal seal components and single external seal components. The external seal was developed as an option for applications where the customer prefers an external seal design.

ITEM	QUANTITY	DESCRIPTION	MATERIAL*
1	1	Impeller nut gasket	Viton
2	1	Outside O-ring front spring disc	Viton
3	1	Front spring disc driver	Stainless steel
4	1	Inside O-ring front spring disc (factory installed)	Viton
5	1	Front rotating seal washer	Stainless steel
6	1	Front rotating seal O-ring	Viton
7	1	Front seal ring	Chrome oxide coated stainless steel
8	1	Center stationary seal flat gasket	Viton
9	1	Center stationary seal	Carbon
10	1	Center stationary seal O-ring	Viton

*Standard materials shown. Other materials available.



ITEM	QUANTITY	DESCRIPTION	MATERIAL*
1	1	Impeller nut gasket	Viton
2	1	Outside O-ring front spring disc	Viton
3	1	Seal driver spacer	Stainless steel
4	1	Inside O-ring seal drive spacer (factory installed)	Viton
5	1	Flat gasket	Viton
6	1	Stationary center seal	Silicon carbide
7	1	Flat gasket	Teflon
8	1	Inside O-ring front seal ring	Viton
9	1	Rotating seal ring	Carbon
10	1	Spring	Stainless steel
11	1	Seal drive ring	Stainless steel
12	2	10-32 set screw	Stainless steel
13	1	Driver	Stainless steel

*Standard materials shown. Other materials available.

The wear components of the standard double seal consist of a chrome oxide-coated stainless steel front seal face, carbon center seal and ceramic rear seal. The chrome oxide against carbon front wear face combination is particularly good for reducing the friction and heat that cause wear.

The standard double seal, available on the FP series only, includes piping for a water flush. The water not only cools and lubricates the contact surfaces, but also helps to provide a barrier against air.

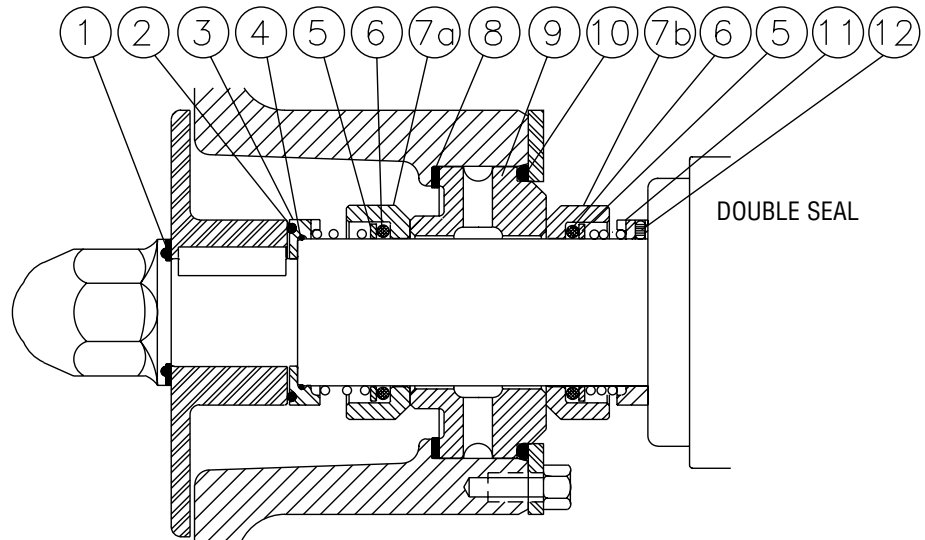
Properly installed, the double seal and water flush prevent air being drawn into the product area through the seal. If the seal should wear to the point that it leaks, then either the seal water will become discolored with product or the flow from the discharge will be interrupted. This is an obvious indication of the necessity to replace the seal.

There are only 3 sizes for the Fristam FP and FPX centrifugal pumps. This eliminates the need to stock a large number of seals. The chart below indicates the corresponding seal size and motor size.

FP and FPX Seal Size and Motor Frame Size

Seal Size	FP	FPX
633	up to 215 TC	up to 215 TC
735*	254-286 TC	254-286 TC
736	324-365 TC	324-365 TC

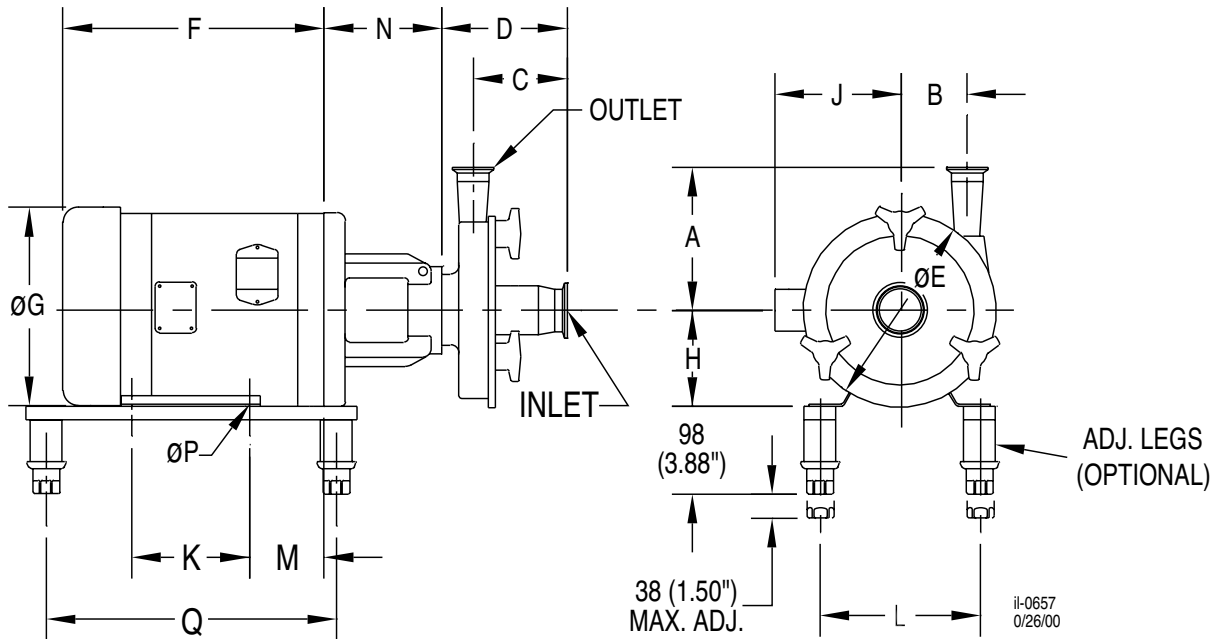
*May be used down to 180TC (355 only) in certain situations



ITEM	QUANTITY	DESCRIPTION	MATERIAL *
1	1	Impeller nut gasket	Viton
2	1	Outside O-ring front spring disc	Viton
3	1	Front spring disc driver	Stainless steel
4	1	Inside O-ring front spring disc (factory installed)	Viton
5	1	Front/rear seal washer	Stainless steel
6	1	Front/rear seal O-ring	Viton
7a	1	Front rotating seal ring	Chrome oxide coated stainless steel
7b	1	Rear rotating seal ring	Ceramic
8	1	Stationary seal flat gasket	Viton
9	1	Stationary seal	Carbon
10	1	Stationary seal O-ring	Viton
11	1	Rear spring disc (driver)	Stainless steel
12	2	10-32 set screw	Stainless steel

*Standard materials shown. Other materials available.

FPX Single Flange Dimensions



NOTE:

- (1) Motor dimensions may vary depending on manufacturer requested.
- (2) Pump dimensions are based on clamp fittings.
- (3) All dimensions are in Millimeters (Inches).

PUMP MODEL	INLET	OUTLET	DIMENSIONS IN MILLIMETERS (INCHES)					MOTOR HP 1750 RPM 3500 RPM	MOTOR FRAME	DIMENSIONS IN MILLIMETERS (INCHES)									
			A	B	C	D	ØE			F	ØG	H	J	K	L	M	N	ØP	Q
FPX 701/702	1.5"	1.5"	108	44.5	108.5	146.5	150	1 HP	143TC	281	183	89	133	102	140	70	120	8.7	343
			(4.25")	(1.75")	(4.27")	(5.77")	(5.90")	(11.06")	(7.19")	(3.50")	(5.22")	(4.00")	(5.50")	(2.75")	(4.72")	(11/32")	(13.50")		
FPX 711/712	2"	1.5"	144	58	113	150	185	1.5 HP	145TC	281	183	89	133	102	140	70	120	8.7	343
			(5.67")	(2.28")	(4.45")	(5.90")	(7.28")	(11.06")	(7.19")	(3.50")	(5.22")	(4.00")	(5.50")	(2.75")	(4.72")	(11/32")	(13.50")		
FPX 721/731/722	2"	1.5"	170	79	113	150	230	2 HP	145TC	281	183	89	133	102	140	70	120	8.7	343
			(6.69")	(3.11")	(4.45")	(5.90")	(9.06")	(11.06")	(7.19")	(3.50")	(5.22")	(4.00")	(5.50")	(2.75")	(4.72")	(11/32")	(13.50")		
FPX 741/732/742	2.5"	2"	195	96	101	141	270	3 HP	182TC	313	183	114	132	140	191	89	140	10.3	343
			(7.68")	(3.78")	(3.98")	(5.55")	(10.63")	(12.31")	(7.19")	(4.50")	(5.21")	(5.50")	(7.50")	(3.50")	(5.53")	(13/32")	(13.50")		
FPX 1741/1732/1742	2.5"	2"	200	91	104	150.5	270	3 HP	184TC	348	183	114	132	140	191	89	140	10.3	343
			(7.87")	(3.58")	(4.09")	(5.93")	(10.63")	(13.68")	(8.50")	(4.50")	(5.97")	(5.50")	(7.50")	(3.50")	(5.53")	(13/32")	(13.50")		
FPX 3521/3522	2.5"	2"	190	80	118	162	230	5 HP	184TC	386	216	114	152	140	191	89	140	10.3	343
			(7.48")	(3.15")	(4.64")	(6.38")	(9.06")	(15.18")	(8.50")	(4.50")	(5.97")	(5.50")	(7.50")	(3.50")	(5.53")	(13/32")	(13.50")		
FPX 3531/3532	2.5"	2"	191	95	115.5	162	260	5 HP	184TC	386	216	114	152	140	191	89	140	10.3	343
			(7.52")	(3.74")	(4.55")	(6.38")	(10.24")	(15.18")	(8.50")	(4.50")	(5.97")	(5.50")	(7.50")	(3.50")	(5.53")	(13/32")	(13.50")		
FPX 3541/3542	3"	2.5"	211	115	118	162	290	7.5 HP	184TC	386	216	114	152	140	191	89	140	10.3	343
			(8.31")	(4.53")	(4.64")	(6.38")	(11.42")	(15.18")	(8.50")	(4.50")	(5.97")	(5.50")	(7.50")	(3.50")	(5.53")	(13/32")	(13.50")		
FPX 3451/3452	3"	2"	211	140	114	158	350	7.5 HP	213TC	388	263	133	1.89	140	216	108	140*	10.3	343
			(8.31")	(5.51")	(4.49")	(6.22")	(13.78")	(15.27")	(10.34")	(5.25")	(7.46")	(5.50")	(8.50")	(4.25")	(5.53")	(13/32")	(13.50")		
FPX 3551	3"	2.5"	231	140	119	168	350	10 HP	215TC	388	263	133	1.89	140	216	108	140	10.3	343
			(9.09")	(5.51")	(4.68")	(6.61")	(13.78")	(17.15")	(10.34")	(5.25")	(7.46")	(5.50")	(8.50")	(4.25")	(5.53")	(13/32")	(13.50")		
FPX 3551	3"	2.5"	231	140	119	168	350	15 HP	215TC	436	263	133	1.89	140	216	108	140	10.3	343
			(9.09")	(5.51")	(4.68")	(6.61")	(13.78")	(17.59")	(10.34")	(6.25")	(8.88")	(8.25")	(10.00")	(4.75")	(6.65")	(17/32")	(13.50")		
FPX 3551	3"	2.5"	231	140	119	168	350	15 HP	254TC	447	263	159	225	210	254	121	169	13.5	394
			(9.09")	(5.51")	(4.68")	(6.61")	(13.78")	(17.59")	(10.34")	(6.25")	(8.88")	(8.25")	(10.00")	(4.75")	(6.65")	(17/32")	(13.50")		
FPX 3551	3"	2.5"	231	140	119	168	350	20 HP	256TC	491	263	159	225	254	254	121	169	13.5	394
			(9.09")	(5.51")	(4.68")	(6.61")	(13.78")	(19.34")	(10.34")	(6.25")	(8.88")	(10.00")	(10.00")	(4.75")	(6.65")	(17/32")	(15.50")		
FPX 3551	3"	2.5"	231	140	119	168	350	20 HP	256TC	499	336	159	239	254	254	121	169	13.5	394
			(9.09")	(5.51")	(4.68")	(6.61")	(13.78")	(19.66")	(13.25")	(6.25")	(9.42")	(10.00")	(10.00")	(4.75")	(6.65")	(17/32")	(15.50")		

*169 (6.65") FOR 3351 ONLY

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