



**PENTAIR
HYGIENIC PROCESS VALVES
(FORMERLY KEYSTONE)**

F273J+

HYGIENIC SINGLE SEAT TANK BOTTOM VALVES

REVERSIBLE ACTUATOR TYPE

PENTAIR HYGIENIC PROCESS VALVES (Formerly Keystone)

HYGIENIC SINGLE SEAT TANK BOTTOM VALVES

The F273J+ Valve is a single seat valve, tank bottom mounted, used to control process or C.I.P fluids.

GENERAL APPLICATIONS

- Dairy factories
- Breweries and beverage plants
- Wineries
- Canneries and food processing plants
- Pharmaceutical
- Chemical processing



TECHNICAL DATA

Working temperature:	-5 to +100°C (-5 to 120°C for static condition)
Sterilizing temperature:	Up to 140°C for 30min (Steam for static condition)
Maximum pressure, valve body:	10bar fluid pressure
Maximum pressure, valve seat:	See separate plug lifting chart
Minimum pressure:	Full vacuum
Operating air pressure:	4 to 8bar max
Air connections:	R1/8" (BSP)
Surface finish:	Internal < 0.8 Ra, External hairline / buffed
Length tolerance between ends:	±0.5mm ~ ±1.0mm
Parallelism or squareness of ends:	±0.5° or less

FEATURES

- Product contact parts are manufactured from high quality 316L stainless steel bar.
- Heavy walled body construction.
- Semi bright external surface finish.
- Compact, lightweight design.
- Heavy duty cast body clamps (bolted type).
- Various sealing options available.
- Metal plug stop, protects seat seals from wear or damage.
- A wide choice of port configurations are available.
- Resilient seated for positive isolation.
- Free draining design, eliminates product puddling and air pockets.
- Smooth ball shaped bodies, reduces turbulence and improves flow.
- Smooth internal surfaces for ease of cleaning.
- Maintenance friendly design.
- Reversible actuator.
- Clamped body style offers full 360° orientation of body ports.
- Butt weld end connection.

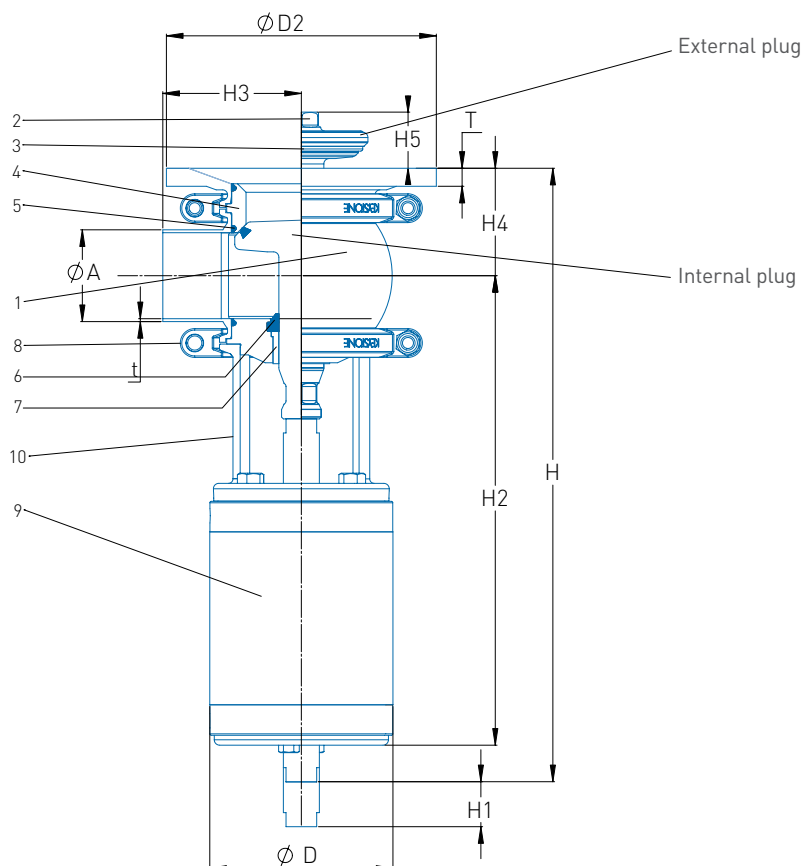
OPTIONS

- Mirror polished internals.
- Clamp and thread end connections.
- Manual operating device.
- 3-Position actuator.
- Booster actuator.
- Control head or feed back unit.
- Quick release body clamps.

PENTAIR HYGIENIC SINGLE SEAT VALVES

F273J+ TANK BOTTOM VALVE

TECHNICAL SPECIFICATIONS



NOTE: F273J+ Standard (Int./Ext.)

PARTS LIST

No.	Description	Material	Standards
1	Body	316L S/S, 304L S/S	ASTM A276
2	Plug/shaft	316L S/S	ASTM A276
3	Seat seal	EPDM, NBR, PTFE, FKM	FDA
4	Intermediate seal ring	316L S/S	ASTM A276
5	Body seal	EPDM, NBR, FKM	FDA
6	Stem seal	Santoprene®, EPDM, NBR, FKM	FDA
7	Shaft bush	PTFE, UHMWPE	Commercial
8	Body clamp	304 CF8 S/S	ASTM A743 CF8
9	Actuator assembly	304 S/S	-
10	Sight housing	304 CF8 S/S	ASTM A743 CF8

DIMENSIONS (mm)

Size		ØA x t		ØD	D2	T	H	H1	H2	H3		H4	H5
Inch OD	Metric	Inch OD	Metric							Inch OD	Metric		
1.0"	025	25.4 x 1.6	29.5 x 1.6	102	115	8	311	8	231	55.0	54.0	45.0	25
1.5"	040	38.1 x 1.6	41.5 x 1.6	102	115	8	317	17	237	61.5	60.5	51.5	25
2.0"	050	50.8 x 1.6	53.5 x 1.6	102	150	10	357	26	261	77.0	76.0	60.0	40
2.5"	065	63.5 x 1.6	69.5 x 1.6	102	150	10	374	26	267	88.5	87.5	65.5	40
3.0"	080	76.2 x 1.6	84.5 x 1.6	141	220	12	485	38	356	109.0	108.0	78.5	55
4.0"	100	101.6 x 1.6	103.5 x 1.6	168	250	12	589	38	428	142.0	141.0	95.0	60
5.0"	125	129.0 x 2.0	130.0 x 2.0	219	300	15	576	50	497	156.0	155.0	132.0	75
6.0"	150	152.4 x 2.0	155.0 x 2.0	219	300	15	576	50	510	156.0	155.0	132.0	75

NOTE:

Metric bodies are created from standard Inch OD bodies by fitting eccentric reducers.

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PENTAIR HYGIENIC SINGLE SEAT VALVES

F273J+ TANK BOTTOM VALVE

WORKING PRINCIPLE

The F273J+ valves are operated by compressed air, via a linear pneumatic actuator, that can be supplied with or without spring return.

The at-rest position of the valve when actuator is fitted with a spring, although normally closed, can also be provided in the normally open position, this is determined by both the plug configuration and the actuator mode combination being used and as selected at time of order.

I.E. Spring Extend (SE) actuator with an Int. plug type will result in a Normally Closed (NC) valve, therefore SE + Ext.= NO, Spring Retract (SR) actuator with an Int. plug type will result in a Normally Open (NO) valve, therefore SR + Ext.= NC The mode can also be easily changed on site by simply inverting the actuator assembly. (See separate Installation, Operation and Maintenance Instructions for details).

When air pressure is applied to the cylinder, the valve plug moves through its entire stroke changing from one state to the other. In the case of the F273J+ from open to closed.

These valves have only a few simple moving parts resulting in a very reliable valve in service.

AIR CONSUMPTION FOR SINGLE ACTING ACTUATORS (litres of free air)

Supply pressure bar/(psi)	Valve size (Actuator size)				
	025-040 (100S)	050-065 (100)	080-100 (140)	*100 (170)	125-150 (200)
4.1 (60)	0.89	1.23	3.28	4.71	8.94
6.2 (90)	1.25	1.72	4.60	6.60	12.54
8.3 (120)	1.61	2.21	5.92	8.50	16.14

* (Option)

100 size valves can also be fitted with the Model 170 actuator as an option. This will boost the pressure holding power if required.

PENTAIR HYGIENIC SINGLE SEAT VALVES

F273J+ TANK BOTTOM VALVE

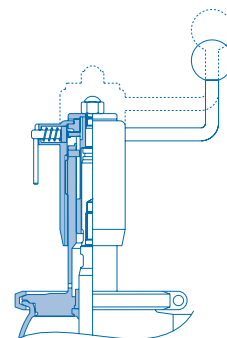
MANUAL OPERATOR

The manual operator replaces the air driven actuator, and is used where variable control of flow is required or automation is not possible.

Flow is fully adjustable throughout the entire stroke of the valve.

The manual operator comes equipped with a visual position indicator and a locking device that can be engaged at any position.

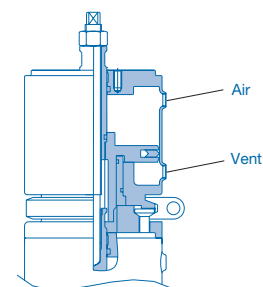
The lever crank allows quick and easy operation of the valve.



3-POSITION ACTUATOR

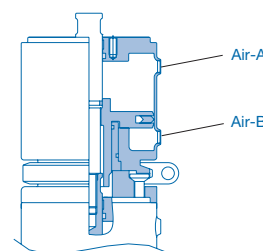
The 3-Position Actuator can be used for an adjusted flow control at any position throughout the valve's entire stroke.

For example on dosing or filling to give optional full flow or partial flows, for topping up, or varying flow between product or CIP duties.



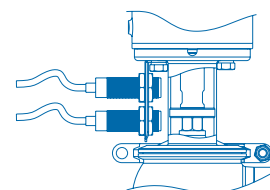
BOOSTER ACTUATOR

The Booster Actuator can be used where extra force is required to hold seal tightness under extra high line pressures, or for opening valves against high line pressures.



POSITION SENSORS

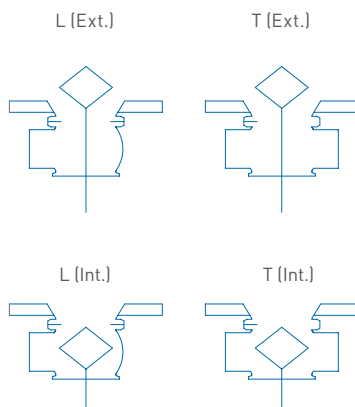
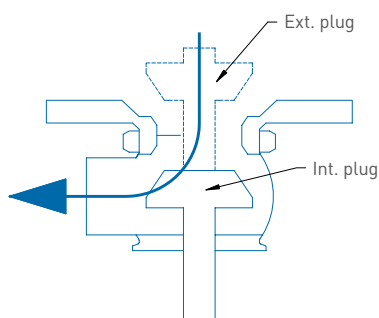
Standard Ø18mm barrel type proximity sensors can be provided as a kit, complete with mounting bracket and sensor target.



VALVE TYPE

Type	Standard configurations	
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F273J+
Standard flow



PENTAIR HYGIENIC SINGLE SEAT VALVES

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SELECTION GUIDE

Example:	AA -	F273J+	A	SSE	B	L - -	M	6S	V	V	V	X
Body size												
Inch OD	Metric											
A	1.0"	M	025									
B	1.5"	O	040									
C	2.0"	P	050									
D	2.5"	Q	065									
E	3.0"	R	080									
F	4.0"	S	100									
G	5.0"	T	125									
H	6.0"	U	150									
Figure												
F273J+ Stop valve												
Valve style:												
A	STD (std)											
B	NS/NC (Extra body)											
C	NWS/NWC (Extra body+Reverse plug)											
D	Other											
Actuator type												
SSE	Spring Extend (std)											
SSR	Spring Retract											
SSA	Double Air/Acting											
MO	Manual Operator											
End connection												
B	Butt weld (std)		S	Male thread SMS								
C	Clamp ISO		M	Male thread RJT Modified								
J	Male thread RJT		D	Male thread DIN 11851								
I	Male thread IDF		E	Other								
Port configuration												
L	T											
Actuator accessory												
M	Metric 6mm Air fittings (std)											
I	Inch 1/4" Air fittings											
X	None											
Material type/finish, welded parts												
6S	316L Stainless Steel (Semi bright) (std)											
6P	316L Stainless Steel (Polished)											
4S	304L Stainless Steel (Semi bright)											
4P	304L Stainless Steel (Polished)											
Body seal materials												
E	EPDM (std)											
N	NBR											
V	FKM											
Plug seal materials												
E	EPDM (std)											
N	NBR											
V	FKM											
P	PTFE											
Stem seal materials												
S	Santoprene® Wiper type (std)			E	EPDM			F	FKM O-ring type			
D	Diaphragm (Only available on some sizes)			V	FKM Wiper type			N	NBR			
Actuator optional extras												
T	3-Position actuator		D	Damper actuator								
U	Booster actuator		X	Consult factory for more options								



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