

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

**F257
PNEUMATIC
ACTUATORS
STAINLESS STEEL
VERTICAL 1/4 TURN TYPE**



PENTAIR HYGIENIC PROCESS VALVES (Formerly Keystone) PNEUMATIC ACTUATORS

STAINLESS STEEL VERTICAL STYLE WITH QUARTER TURN OPERATION

The F257 pneumatic actuators for use with butterfly, ball and plug valves provide fast and reliable quarter turn operation.

GENERAL APPLICATIONS

- Brewery
- Dairy
- Winery
- Cannery
- Food processing
- Pharmaceutical
- Chemical
- Beverage

TECHNICAL DATA

Air supply:

Double acting (DA)

300kPa (3bar) to 800kPa (8bar) max

Spring return (SR)

550kPa (5.5bar) to 800kPa (8bar) max

Maximum output torque:

Refer to torque curves or actuator selection guide.

FEATURES

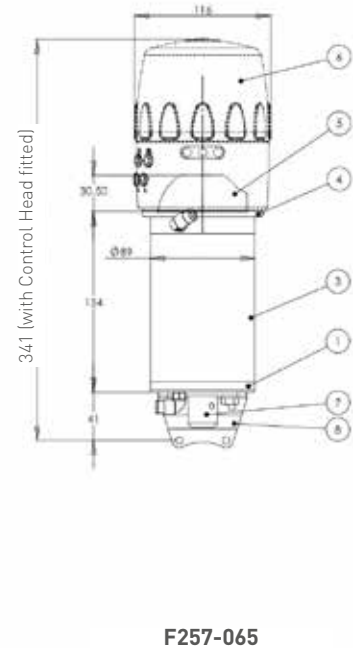
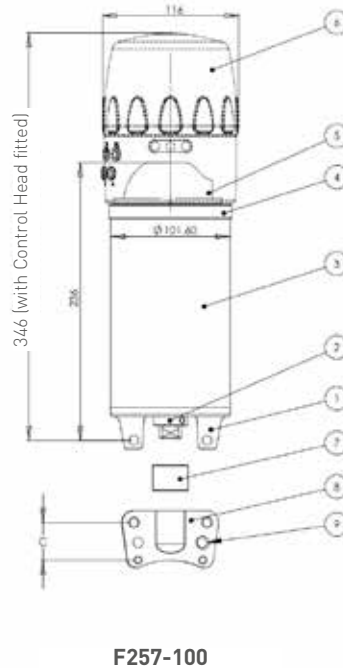
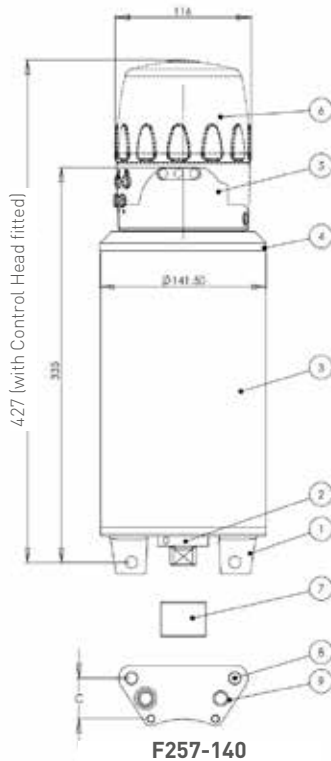
- Fast and reliable quarter turn operation makes it suitable for use with butterfly, ball and plug valves
- Only one external air supply line is required with our internally air ported actuator sizes 100 and 140, when used with the PENTAIR control top
- Constructed from corrosion resistant materials
- Designed with an optimized piston helix to provide maximum torque output
- Double acting or spring return models available
- Fully contained spring module, to ensure complete safety to maintenance personnel
- Maintenance friendly
- Site repairable
- Modular bridge clamp mounting for easy actuator change-out (sizes 100 and 140, 065 with angle bracket)
- Fitted with either hi-visibility indicator or F783E control head



PENTAIR PNEUMATIC ACTUATOR

F257 STAINLESS STEEL VERTICAL QUARTER TURN TYPE

PRODUCT INFORMATION



BRACKET DIMENSIONS

Valve sizes		Dimension C			
F250	F251	F257 065	F257 100	F257 140	
Inch OD	Metric				
1.0"-1.5"	25-40	41	24	*	
2.0"-2.5"	50	41	25	*	
3.0"	65-80	*	32	32	
4.0"-5.0"	100-125	*	32	35	
6.0"	150	*	35	35	

PARTS LIST

No.	Description	Material	Standard
1	Base plate	316 stainless steel	ASTM A743 CF8M
2	Output shaft	303 stainless steel	AISI 303 stainless steel
3	Cylinder	304 stainless steel	ASTM A269-A270
4	Top plate	Polymer/304 stainless steel	-
5	Blank head	Polymer	-
6	Control head	See note*	-
7	Drive boss	304 stainless steel	AISI 304 stainless steel
8	Bracket	304 stainless steel	AISI 304 stainless steel
9	Set screw	304 stainless steel	AISI 304 stainless steel

NOTE:

*Refer to separate F783 Easymind literature sheet for full details.

NOTE:

Dimension C will allow you to calculate the overall height of a F250/F251 valve and actuator arrangement.

*Not available

ACTUATOR WEIGHTS

Model		Mass (kg)
F257 065	DA	2.65
	SR	2.65
F257 100	DA	4
	SR	6
F257 140	DA	11
	SR	14

NOTE:

Weights are nominal and include mounting kits and F783 Control Head.

DA Double Acting

SR Spring Return

PENTAIR PNEUMATIC ACTUATOR

F257 STAINLESS STEEL VERTICAL QUARTER TURN TYPE

PRODUCT INFORMATION

Pneumatic actuator selection chart for F250 and F251 Butterfly Valves

This actuator selection chart is a guide to the anticipated maximum torque required to operate the valve under the stated conditions. It includes seating, unseating (break-away), running torques and allows for stem bearing frictional forces.

No additional safety factors are considered necessary unless the operating conditions are beyond the stated duties.

SERVICE DEFINITIONS

Normal service:

When used with clean lubricating fluids at ambient temperature and at a maximum of 1000kPa (10bar).

Severe service:

All other applications.

NOTES

For spring to open actuator selection, consult factory.

F257 DOUBLE ACTING PNEUMATIC ACTUATOR - NORMAL SERVICE

Valve size DN	Actuator supply pressure - kPa/(bar)					
	300 (3)	400 (4)	500 (5)	550 (5.5)	600 (6)	700 (7)
025 (1.0")	F257 065					
032 (1.25")						
040 (1.5")	F257 100					
050 (2.0")						
065 (2.5")	F257 140					
080 (3.0")						
100 (4.0")	F257 140					
125 (5.0")						
150 (6.0")	F257 140					

F257 SPRING TO CLOSE PNEUMATIC ACTUATOR - NORMAL SERVICE

Valve size DN	Actuator supply pressure - kPa/(bar)				
	400 (4)	500 (5)	550 (5.5)	600 (6)	700 (7)
025 (1.0")	F257 065				
032 (1.25")					
040 (1.5")	F257 100				
050 (2.0")					
065 (2.5")	F257 140				
080 (3.0")					
100 (4.0")	F257 140				
125 (5.0")					
150 (6.0")	F257 140				

F257 DOUBLE ACTING PNEUMATIC ACTUATOR - SEVERE SERVICE

Valve size DN	Actuator supply pressure - kPa/(bar)					
	300 (3)	400 (4)	500 (5)	550 (5.5)	600 (6)	700 (7)
025 (1.0")	F257 065					
032 (1.25")						
040 (1.5")	F257 100					
050 (2.0")						
065 (2.5")	F257 140					
080 (3.0")						
100 (4.0")	F257 140					
125 (5.0")						
150 (6.0")	F257 140					

F257 SPRING TO CLOSE PNEUMATIC ACTUATOR - SEVERE SERVICE

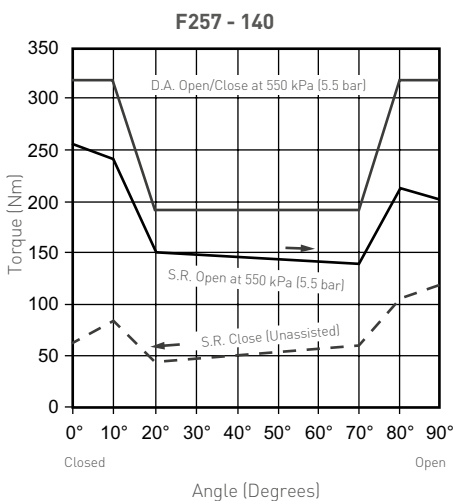
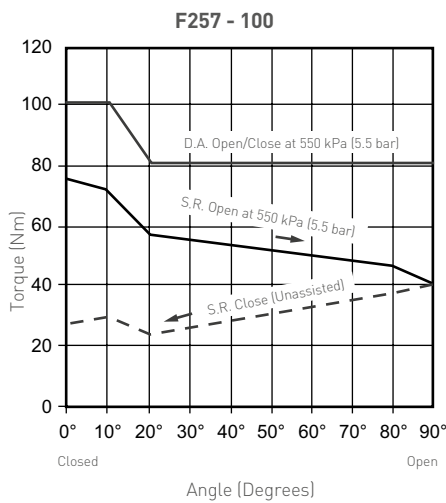
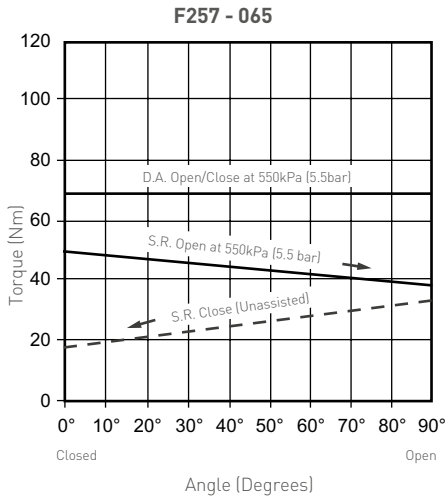
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	400 (4)	500 (5)	550 (5.5)	600 (6)	700 (7)
025 (1.0")	F257 065				
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050 (2.0")					
065 (2.5")	F257 140				
080 (3.0")					
100 (4.0")	F257 140				
125 (5.0")					
150 (6.0")	Consult Factory				

PENTAIR PNEUMATIC ACTUATOR

F257 STAINLESS STEEL VERTICAL QUARTER TURN TYPE

PRODUCT INFORMATION

TYPICAL TORQUE CURVES - F257 ACTUATORS



NOTES

To determine the torque output of Air Assisted Spring to Close actuators, add the SR Close (Unassisted) torque value to the Double Acting torque value.

The following points must be considered when selecting a suitable actuator:

- What size valve is to be actuated?
- Is the actuator to have an unassisted spring return?
- What service conditions is the valve to operate in (i.e elevated temperatures, dry, wet etc.)?

If you should have any doubts please contact your sales representative. For other air supply pressures contact your sales representative. Refer to F257 Actuator Selection Chart on previous page for sizing details.

DA Double Acting

SR Spring Return

Refer to F783 Control Head literature sheet for details on how to order the Control Head.

Actuators will be supplied with bare tops unless ordered with Control Heads or Blank Heads.

WARNING

PENTAIR actuators are factory lubricated and do not need lubricated air. Also the use of synthetic oils and some mineral oils are known to be damaging to polymer components. It is therefore recommended that clean dry air be used.

PENTAIR PNEUMATIC ACTUATOR

F257 STAINLESS STEEL VERTICAL QUARTER TURN TYPE

PRODUCT INFORMATION

SELECTION GUIDE

Example:	F257	100	SR	F250	100
Figure F257					
Actuator size 065 100 140					
Configuration DA SR					
Valve Figure number F250 F251					
Valve size 025 (1.0") 032 (1.25") 040 (1.5") 050 (2.0") 065 (2.5") 080 (3.0") 100 (4.0") 125 (5.0") 150 (6.0")					



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