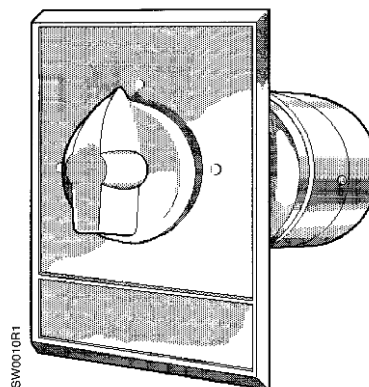


Powers™ Controls

SW 786 Selector Switch



Description

The SW 786 Selector Switches are designed to deliver, stop, or redirect a pneumatic signal to air operated control devices. The switch can be mounted on a panel at a remote location or close to the devices being controlled.

Features

- Four ports for 3-position selection
- Non-exhausting
- Large Capacity (LC) switch available
- Surface or panel mounted
- Standard dial and nomenclature plates available

Product Numbers

Table 1.

Description	Product Number
Standard Selector Switch	786-0500
Large Capacity (LC) Selector Switch	786-0520
Accessories	
Panel Mounting Kit	786-129
Surface Mounting Kit	786-130
Graphic Panel Mounting Kit	151-148
Dial Plates	See Table 2
Nomenclature Plates	See Table 3
Tubing Kit	786-062

Application

The following are some typical selector switch applications. The switch can be used to change the mode of control, (e.g., auto to manual, day to night). It can also be used for positive control, (e.g. on to off, open to closed). It can also be used for a combination of the two types of control, (e.g., heat to auto to cool).

Figure 1 shows an example of a selector used for auto-manual control. In the manual mode the positioning switch is used to manually position the valve. In auto mode the transmitter through the receiver-controller positions the valve to maintain a set point.

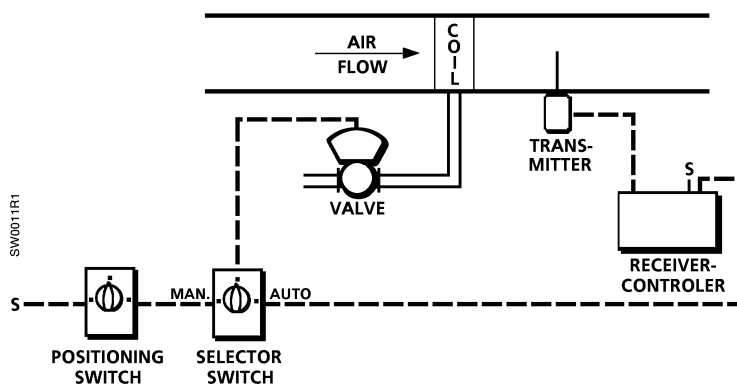


Figure 1. Auto-Manual Application.

Specifications	Medium	Air
Air Connections:		
Standard Switch		1/16-inch NPT
LC Switch		1/8-inch NPT
Ambient Temperature		-20 to 160°F (- 29 to 71°C)
Maximum Air Pressure		30 psig (207 kPa)
Air Capacity (20 psig supply and 1 psig drop)		
Standard Switch		1200 scim (328 ml/s)
LC Switch		2500 scim (683 ml/s)
Materials		See <i>Table 8</i>
Dimensions		See <i>Figure 9</i>
Shipping Weight (Standard & LC)		2 lbs. (0.91 kg)

Accessories

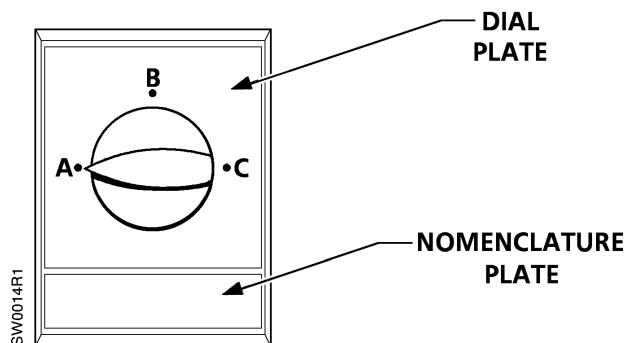


Figure 2. Dial and Nomenclature Plates are Finished in Gray with White Letters.

Table 2. Dial Plates (See Figure 2).

Lettering On Plate			Part Number
@ A	@B	@C	
		OPEN	786-094
OFF		ON	786-095
HEAT	—	COOL	786-096
HEAT	AUTO	COOL	786-097
DAY	—	NITE	786-098
AUTO	—	MAN	786-100
CLOSE	AUTO	OPEN	786-115 Side 1
OFF	AUTO	ON	786-115 Side 2
DAY	AUTO	NITE	786-116 Side 1
OCC	AUTO	UNOCC	786-116 Side 2

Table 3. Nomenclature Plates (See Figure 2).

Lettering On Plate	Part Number
Blank (No Lettering)	151-098
Humidity	151-151
Static Pressure	151-152
Damper Control	786-102
Valve Control	786-103
Thermostatic Control	786-104

Operation

(See *Table 4* and
Figure 3)

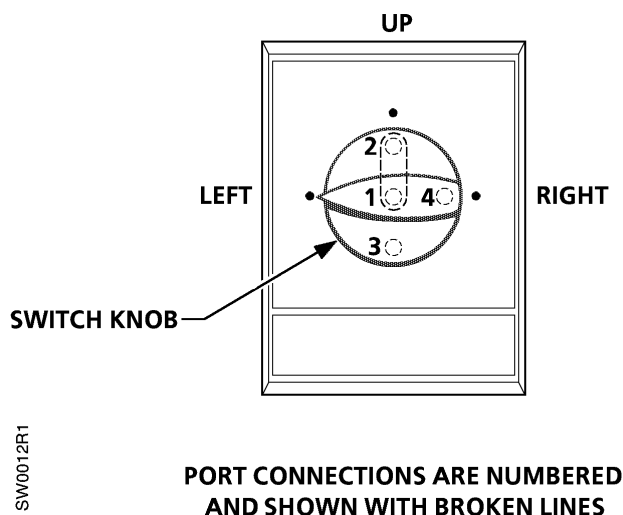


Figure 3. Port Connections.

Table 4. Pointer Positions and Port Connections.

Knob Pointer Position	Ports Connected
Left	1 and 2
Up	1 and 4
Right	1 and 3

2-position Switch

Make tubing connections to Ports 1, 2, and 3. Port 1 is the common port. Knob rotation is 180° between the two switch positions. Plug Port 4 to prevent a partial loss of signal in Port 1 when switching between Ports 2 and 3. If it is desirable to vent Port 1 when switching between Ports 2 and 3, leave Port 4 unplugged. Turn knob approximately 90°, knob pointing up, this will connect Ports 1 and 4. Allow Port 1 to exhaust its signal before completing the knob rotation.

3-position Switch

Make tubing connections to Ports 1, 2, 3, and 4. Port 1 is the common Port. Knob rotation is 90° between adjacent ports. Starting with the switch knob pointed to the left, rotating the knob clockwise through 90° disconnects Port 1 from Port 2 and connects Port 1 to Port 4. Rotating the knob another 90° clockwise disconnects Port 1 from Port 4 and connects it to Port 3. This sequence is reversed when the knob is rotated counterclockwise. The switch is non-exhausting, that is, ports not connected are sealed off by the disc to prevent any leakage.

Installation

Before beginning the installation, make sure you have a selector switch, the appropriate mounting kit, a dial plate, and a nomenclature plate.

Surface Mounting

Surface mounting kit 786-130 is required. See *Figure 4* and *Table 5*.

1. Remove adjusting knob from switch shaft by loosening the set screw with a 5/64-inch (2.0 mm) hex wrench.
2. Fasten washer (2) and stop screws (1) to the mounting plate (3). See *Figure 5* for greater detail of the washer and stop screw.
3. Attach bracket (10) to the surface at the desired location.
4. Fasten the mounting plate to the panel with screws (4), nuts (5), and washers (6).
5. Attach air fittings or plug to the thread ports at the rear of the switch body. Port threads are 1/16-inch NPT on standard and 1/8-inch NPT on LC switch.
6. Put switch shaft through the hole in the center of the mounting plate. Fasten the switch to the mounting plate using screws (7). Stop screw heads must fit in recesses provided in the front surface of the switch body.
7. Place dial and nomenclature plates in the recesses provided in the dial face plate (8). Attach it to the mounting plate using screws (9).
8. Replace and tighten the adjusting knob to the switch shaft.

The installation is now complete.

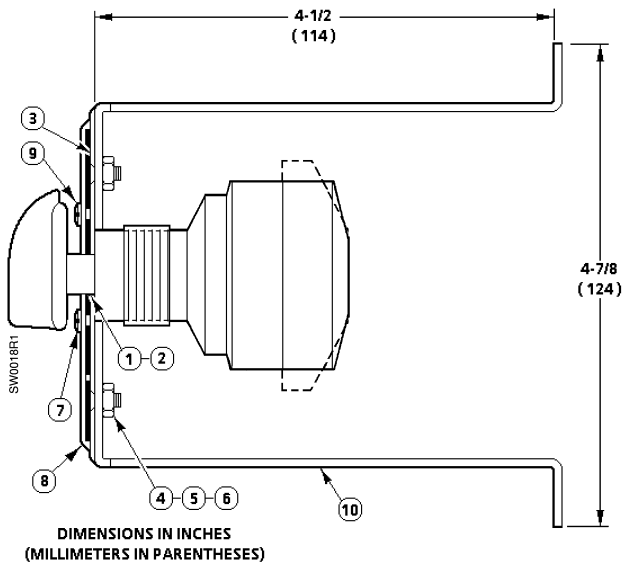


Figure 4. Surface Mounting.

Table 5. Surface Mounting Kit 786-130.

Item	Description	Qty
1	2 - 56 x 1/4 (6.4 mm) lg. stop screw	2
2	Washer	2
3	Mounting plate	1
4	6 - 32 x 1/2" (13 mm) lg. 100° flat. head. screw	2
5	6 - 32 hex nut	2
6	Shake proof washer	2
7	6 - 32 x 1/4" (6.4 mm) lg. screw	2
8	Dial face plate	1
9	3 - 48 x 1/8" (3.2 mm) lg. screw	2
10	Bracket	1

Panel Mounting

- Panel mounting kit 786-129 is required. See *Figures 5 and 6 and Table 6.*
1. Remove adjusting knob from switch shaft by loosening the set screw with a 5/64-inch (2.0 mm) hex wrench.
 2. Fasten washer (2) and stop screws (1) to the mounting plate (3).
 3. Fasten the mounting plate to the panel with screws (4). If the panel is less than 0.106 inch (2.7 mm) thick, drill two 0.21 inch (5.3 mm) diameter holes and use nut (5) and washer (6).
 4. Attach air fittings or plug to the thread ports at the rear of the switch body. Port threads are 1/16-inch NPT on standard and 1/8-inch NPT on LC switch.
 5. Put switch shaft through the hole in the center of the mounting plate. Fasten the switch to the mounting plate using screws (7). Stop screw heads must fit in recesses provided in the front surface of the switch body.
 6. Place dial and nomenclature plates in the recesses provided in the dial face plate (8). Attach it to the mounting plate using screws (9).
 7. Replace and tighten the adjusting knob to the switch shaft.
- The installation is now complete.

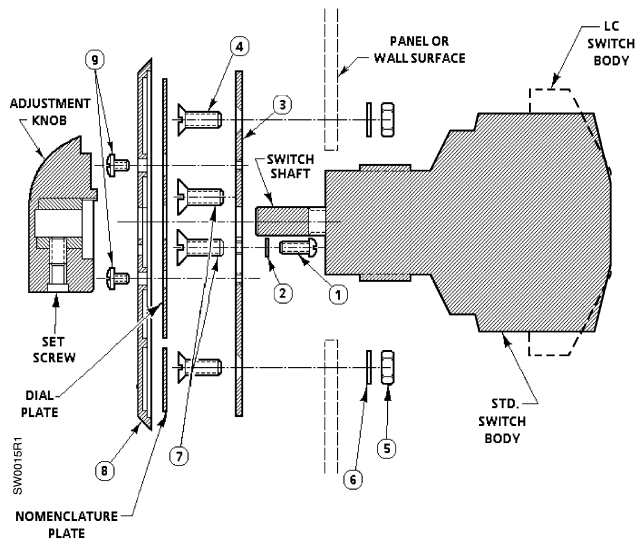


Table 6. Panel Mounting Kit 786-129.

Item	Description	Qty
1	Two 56 x 1/4" (6.4 mm) lg. stop screw	2
2	Washer	2
3	Mounting plate	1
4	Six 32 x 1/2" (13 mm) lg. 100° flat head	2
5	Six 32 hex nut	2
6	Shake proof washer	2
7	Six 32 x 1/4" (6.4 mm) lg. screw	2
8	Dial face plate	1
9	Three 48 x 1/3" (3.2 mm) lg. screw	2

Figure 5. Panel Mounting.

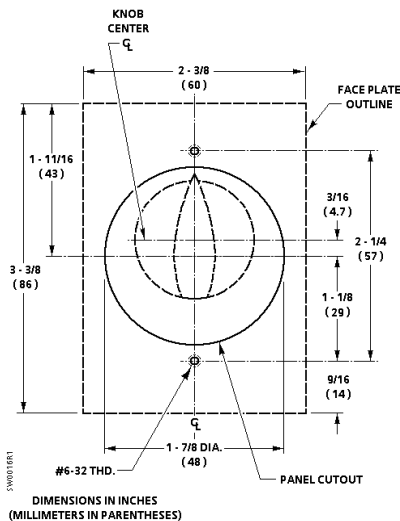
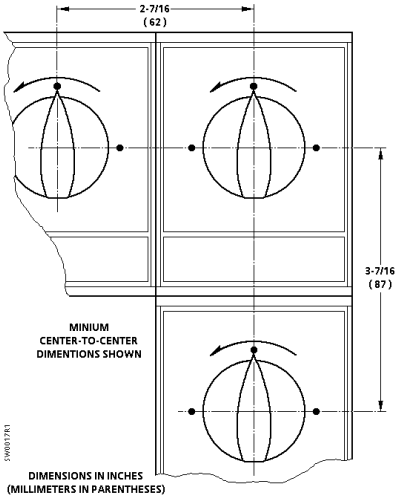


Figure 6. Panel Mounting Dimensions.



**Graphic Panel
Mounting**

Graphic panel mounting kit 151-148 is required. See *Figure 7* and *Table 7*.

1. Follow steps 1, 2, and 4 of Panel Mounting.
2. Thread clamping nut (5) on the switch body.
3. Fasten the mounting plate (3) to the panel using drive screw (6) in 0.052 inch (1.3 mm) diameter hole in the panel.
4. Put the switch shaft through the hole in the center of the mounting plate. Fasten the switch to the mounting panel using screws (4). Stop screw heads must fit in the recesses provided in the front surface of the switch body.
5. Tighten the clamping nut (5).
6. Follow Step 7 of Panel Mounting.
7. If the switch knob positions don't match the markings on the panel, relocate the drive screw.

The installation is now complete.

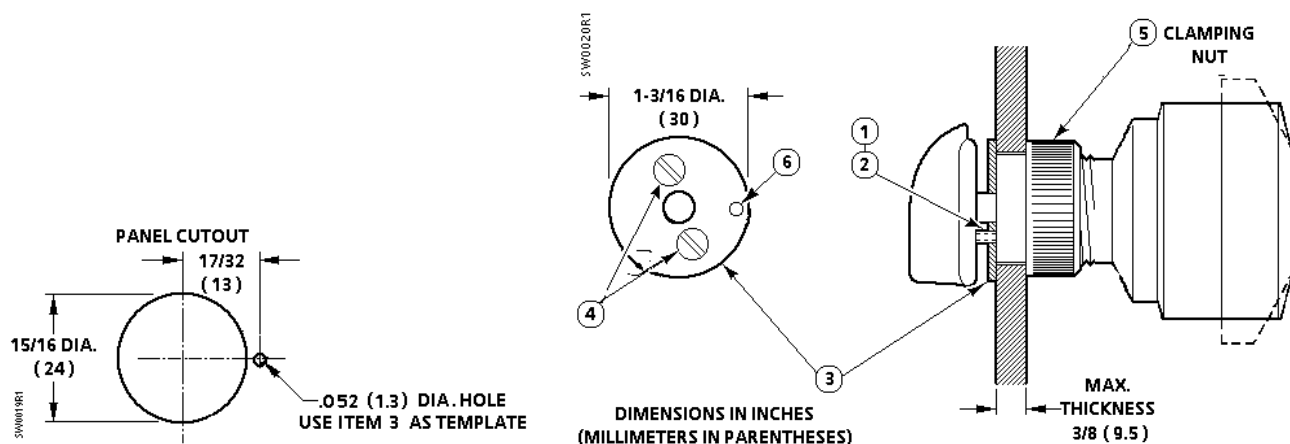


Figure 7. Graphic Panel Mounting.

Table 7. Graphic Panel Mounting Kit 151-148.

Item	Description	Qty
1	Two 56 x 3/16 (4.8 mm) lg. screw	2
2	Washer	2
3	Mounting plate	1
4	Six 32 x 5/16" (7.9 mm) lg. screw	2
5	Clamping nut	1
6	No. 11 x 1/8" (3.2 mm) lg. drive screw	1

Construction

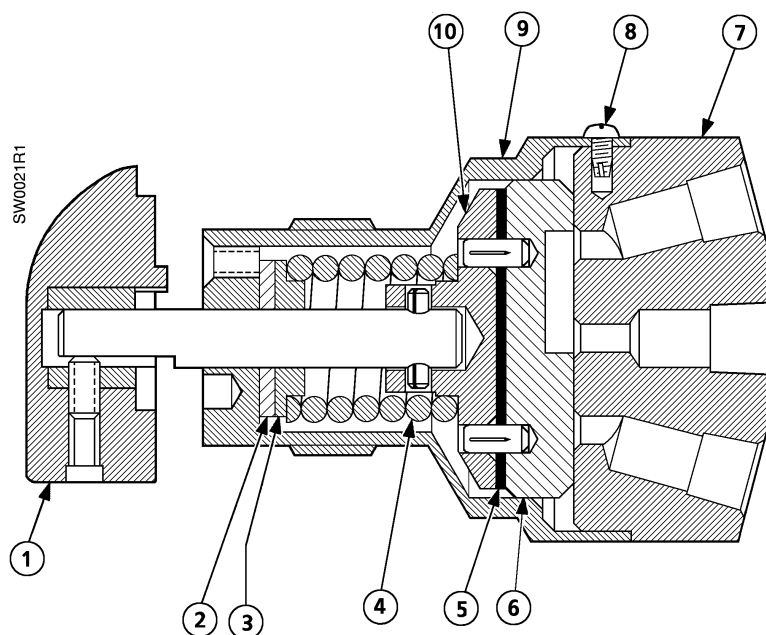


Figure 8. Construction.

Table 8. Selector Switch Components.

Item	Description	Quantity	Material
1	Adjusting knob	1	Urea
2	Anti-friction washer	1	Teflon
3	Spring flange	1	Brass
4	Spring, standard switch	1	Stainless steel
5	Backing disc	1	Stainless steel
6	Disc, standard switch	1	Graphitar
	Disc, LC switch	1	Teflon
7	Switch body	1	Chrome-plated brass
8	Two 56 x 3/16" (4.8 mm) lg. screw	3	Nickel-plated steel
9	Spring housing	1	Brass
10	Shaft and flange assembly	1	—

Dimensions

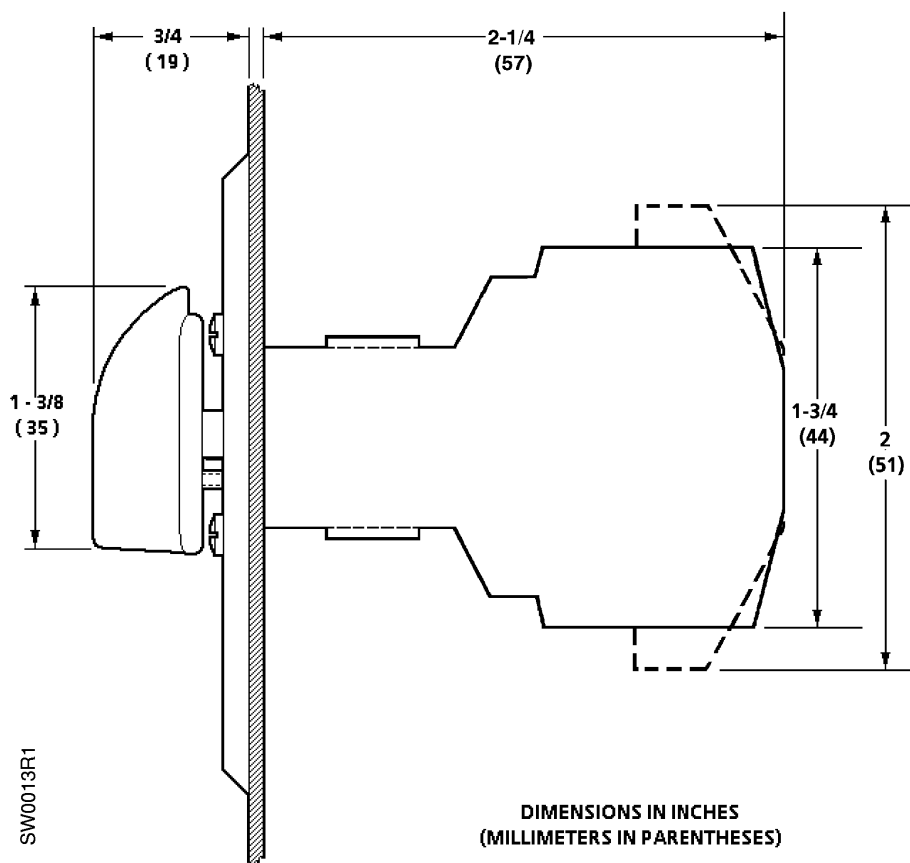


Figure 9. Dimensions.

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