

MICRO SWITCH

TYPES OF ACTUATORS

750 D X 250 W ROLLER 1. Roller 1500 R 578	750 D X 250 W ROLLER 2. Adjustable Roller Arm 1000-3500 (ADJ) 578	250 D 125 D 5560 MAX (ADJ) 578	4. Adjustable Stainless Steel Rod 1100	5. Adjustable Spring Rod 750	6. Hand Operated Lever 1100
750 D X 250 W ROLLER(2) 7. Yoke Actuator 1500 R 578	189 D 5550 8. Flexible Rod/Cable	190 D 5550 9. Spring Rod	10. Wire 040 D 7530	11. Top Actuated Roller Plunger with Boot Seal 440 D X .188 W ROLLER 1730 O.P.	12. Top Actuated Roller Plunger 1500 R 1730 O.P.
656 D X .188 W ROLLER 12. Top Actuated Roller Plunger 1730 O.P.	357 D 1330 O.P. 13. Top Actuated Plunger	373 D 1330 O.P. 14. Top Actuated Plunger with Boot Seal	15. Side Actuated Roller Plunger 656 D X .188 W ROLLER	16. Side Actuated Plunger 1600 O.P. 357 D	

See Table below for variations and ordering numbers.

Actuator Roller Type No.	Roller Diameter	Roller Thickness	Roller Material	Lever or Rod Length	Adjustable Lever or Rod	Rod Diameter	Rod Material	Rollers Same Side	Rollers on Opp. Side	Order Actuator Packet No.
1	0.750	0.250	MDN							6PA71
	0.750	0.250	Steel							6PA121
	0.750	0.280	Steel††							6PA144
2	0.750	0.250	MDN	3.5	x					6PA44
	1.000	0.500	MDN	3.5	x					6PA56
	1.500	0.250	MDN	3.5	x					6PA68
	2.000	0.250	MDN	3.5	x					6PA67
3				5.0	x	0.125	Aluminum			6PA43
4				12.0	x		Stainless Steel			6PA63
5				7.5	x		Stainless Steel			6PA69
6	1.500 (Button Dia.)			2.68						6PA57
7	0.750	0.250	Steel					x		6PA87
	0.750	0.250	MDN					x		6PA102
	0.750	0.250	Steel						x	6PA80
8	Cable Type		MDN	5.55		0.189			x	6PA119
9	Coil Spring Actuator			5.55		0.264				9PA58*
9	Coil Spring with Rod			5.55		0.264				9PA42*
10	Music Wire Actuator			7.53		0.040				9PA49*
11			Steel		with Boot Seal					9PA54*
12	0.656	0.188	Steel							9PA79**
13	Top Actuated Plunger		Steel							9PA33*
14	Top Actuated Plunger with Boot Seal									9PA32*
15	Side Actuated Plunger		Steel							9PA78**
16	Side Actuated Plunger									9PA45*
† High Strength Nylon Roller										9PA44*
†† With Ball Bearings.										

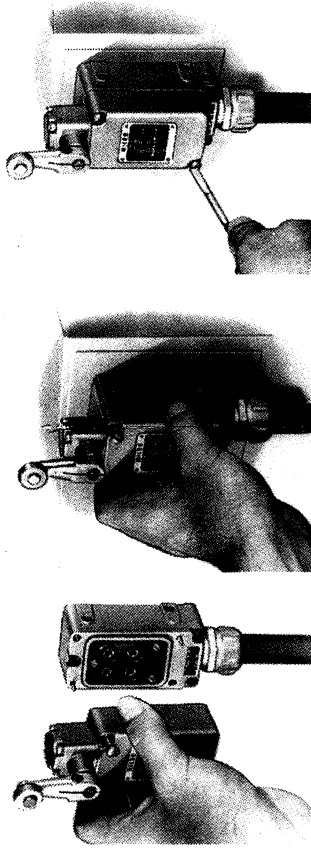
* Order complete head assembly. Actuator not sold separately
 ** This actuator is NOT interchangeable with the same actuator design without boot seal.
 Measurements in inches.

PK 8102 8

INSTALLATION INSTRUCTIONS FOR "LS" LIMIT SWITCHES

"Plug-in 200LS" Type

Plug switch into an 18PA1 terminal block, tighten two screws, and mounting is complete. Installation of 18PA1 terminal block (purchased separately) is covered in instructions which are packed with the block.

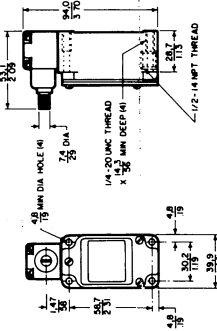


Compact "LS" Type

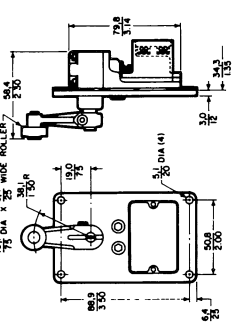
Two simple methods of mounting: (a) use four #10 screws from the front, or (b) use four 1/4-20 UNC screws from the back. Make sure conduit connection is sealed. Locate switch so condensate or oil won't drain into switch through conduit.

For "LS" cavity mount type, use four #10 screws to fasten the switch plate to the surface. A rubber gasket seals the plate to the mounting surface.

Use copper, 60/75 degrees C inch pounds max. Terminal screw torque-20 inch pounds max.



COMPACT LS WITHOUT ACTUATOR

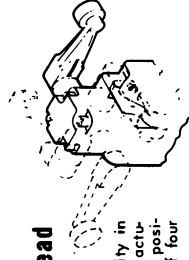


ROLLER LEVER CAVITY MOUNT

ADJUSTING INSTRUCTIONS

Actuator Head

To give flexibility in application, the actuator head may be positioned in any of four directions.



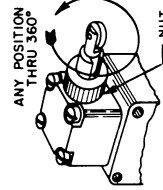
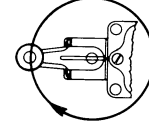
(See **NOTICE** in "Direction of Actuation".)

Reversing the Roller

The roller arm may be reversed to face the roller inside or outside of the arm.

Positioning Lever

The lever assembly is adjustable to any position through 360° by loosening the socket head screws. A 1/2 inch hexagon key wrench is required (available in Handy Adjusting Tool Set* 15PAS3).



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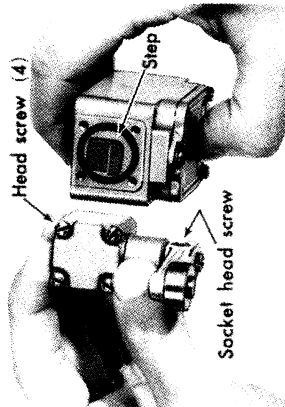
a Honeywell Division

Direction of Actuation

Operation in clockwise, counterclockwise or both directions of the lever arm is possible. As factory assembled, the switch is actuated in both directions. To convert the switch to one direction actuation, remove the actuator head and rotate the step plunger 90° clockwise or counterclockwise. When the switch is adjusted for actuation in one direction only the arm may be moved to the full overtravel position in the opposite direction without damaging the mechanism.

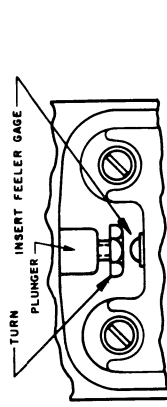
NOTICE

If the actuator head is removed and replaced, readjustment for operating characteristics may be necessary. See Adjusting Operating Characteristics.



Adjusting Operating Point

Rotary Actuator Types (1LS and 201LS)
Top In-Line Actuator Types (2LS, 5LS, 202LS, 205LS)
 When replacement of the contact block is necessary, or if the actuator head is removed and replaced, readjustment may be required to duplicate the operating point as originally provided in the factory assembled switch. This adjustment is made after the contact block has been secured to the housing and with the external lever arm or in-line plunger in the free position. Using a 3/16-inch wrench, turn the adjusting screw two turns clockwise (two wrenches are needed for top in-line plunger switches). Insert a .045 to .049 inch feeler gauge between adjusting screw and internal switch plunger. Turn adjusting screw counter-clockwise until contact block operates. See "Handy Adjusting Tool Set" 15PA33.



Adjusting Flexible Type Actuator "LS" Switches (8LS and 208LS)

Use two 3/16-inch open end wrenches to hold plunger and turn adjusting screw two turns clockwise. Insert a .025 to .030 inch feeler gauge between adjusting screw and button on contact block. Turn adjusting screw counterclockwise until contact block operates.

Adjusting Side Actuated "LS" Switches (3LS, 4LS, 203LS, and 204LS)

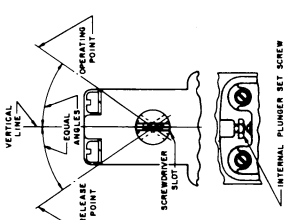
Hold the actuating plunger in fully depressed position and, with a 3/16-inch wrench, turn the adjusting screw counterclockwise until the switch "clicks". Then continue to turn the screw another 3/4 turn to provide the necessary overtravel.

CAUTION: Be certain not to turn the adjusting screw more than 3/4 turn beyond the operating point. It could exceed the overtravel of the basic switch and cause permanent damage to the contact block.

Adjusting Yoke Type Actuated "LS" Switches (6LS and 206LS)

Remove the switch cover plate (or entire switch in the 206LS "Plug-in" design) to expose the internal actuating plunger and the contact block. Using the screwdriver slot on the end of the shaft as a guide, adjust internal plunger set screw so that the basic switch operates and releases at approximately equal angles past the vertical line on the screwdriver slot. Adjust in both the counterclockwise and the clockwise directions.

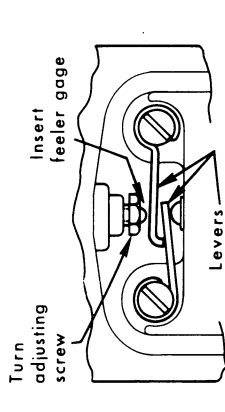
Be certain not to turn the adjusting screw too far out, so that it would exceed the overtravel of the contact block and cause permanent damage to the contact block.



Short Pretravel Switches

Adjusting instructions and figure below apply to the short pretravel switches 1LS19, 1LS27, 1LS47, 1LS56, 1LS58, and 1LS59.

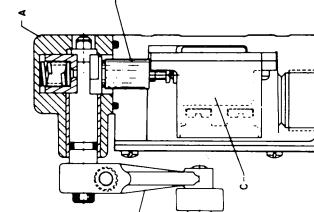
Using a 3/16-inch wrench, turn adjusting screw two turns to the right. Insert .008-inch feeler gage between adjusting screw and top lever. Turn adjusting screw to the left until basic switch clicks.



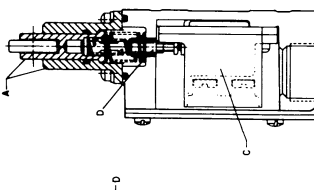
Contact Block Replacement

Remove cover plate (or entire switch assembly of "Plug-in" design) and remove the plastic contact block. Turn internal plunger adjusting screw two full turns to the right. Mount new block.

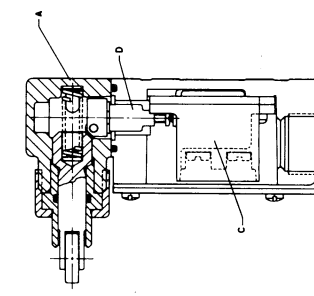
Handy Adjusting Tool Set for all adjustments on type "LS" switches contains (2) 3/16-inch open end wrenches, (1) 3/16-inch hexagon key wrench, Order Packet Number 15PA33.



Packet A - Complete head and lever assembly includes: Lever arm, actuator housing, return spring, actuator plunger, sleeve, shaft and seal-ring and housing retaining screws.



Packet B - Lever arm assembly (includes set screw).



Packet C - Contact Block (includes housing cover, housing seal cover, cover mounting screws, and contact block mounting screws.)

Packet D - Plunger Assembly Replacement (includes adjusting screw and seal ring).

*Packets do not include lever arm "B".

**Refer to page 4 for choice of actuator packet numbers that fit switch

***Packet A does not include Plunger Assembly, which must be ordered separately as indicated in Packet D Column.

†This actuator is NOT interchangeable with same actuator design without boot seal

Note 1:
 For switches with code number 6732 and higher, use 8PA50.
 For switches with code number 6731 and lower use 8PA11.

(Code number appears on nameplate to the left of the catalog listing.)

1LS, 6LS, 201LS, 206LS

2LS, 5LS, 202LS, 205LS,

3LS, 4LS, 203LS, 204LS,

SWITCH LISTING	FEATURE	COMPACT TYPE	PACKET A Head... Assembly	PACKET B** Lever Assembly	PACKET C Contact Block	PACKET D Plunger Assembly
1LS1	Std., pretravel 20°	9PA15	9PA15	1	2MN1	8PA11
1LS2	20° pretravel 4 1/2 in.-lbs. force	9PA16*	9PA16*	1, 2, 3, 4, 5, 6	2MN1	8PA11
1LS3	Adjustable reversible lever	9PA16*	9PA16*	2	2MN1	8PA11
1LS6	Light force	9PA16*	9PA16*	1, 2, 3, 4, 5, 6	2MN8	8PA11
1LS9	5 in. aluminum rod-adjustable	9PA15	9PA15	3	2MN1	8PA11
1LS10	Std., pretravel 5°	9PA15	9PA15	1, 3, 4	2MN1	8PA11
1LS19	Low force 20° pretravel	9PA8*	9PA8*	1, 2, 3, 4, 5, 6	2MN1	8PA11
1LS22	5 in. aluminum rod-adjustable 5° pretravel	9PA40	9PA40	3	2MN8	Note 1
1LS47	5 in. aluminum rod-adjustable 5° pretravel	9PA40	9PA40	3	2MN8	Note 1
1LS53	Light force	9PA48	9PA48	1, 3, 4	2MN8	Note 1
1LS56	Low force 5° pretravel	9PA74*	9PA74*	2	2MN8	Note 1
1LS58	Adjustable reversible lever 5° pretravel	9PA16*	9PA16*	2	2MN8	Note 1
1LS74	Adjustable reversible lever 18 oz. force	9PA16*	9PA16*	2	2MN8	Note 1
1LS78	1 1/2 in. aluminum rod-adjustable	9PA16*	9PA16*	2 (6PA67)	2MN1	8PA11
1LS243	Hi-temp. +250° F	9PA15	9PA15	1 (6PA121)	2MN1	8PA50
1LS501	Lighted indicator in nameplate - 120 vac	9PA15	9PA15	1	2MN1	8PA11
2LS1	Top actuated plunger	9PA32	9PA32	N/A	2MN1	8PA38
3LS1	Side actuated plunger	9PA45	9PA45	N/A	2MN11	8PA43
4LS1	Top actuated plunger	9PA44	9PA44	N/A	2MN11	8PA43
5LS1	Top actuated roller plunger	9PA33	9PA33	N/A	2MN1	8PA37
5LS7	Top actuated roller plunger, rotated 90° Boot Seal	9PA79†	9PA79†	N/A	2MN1	8PA57
5LS8	Top actuated roller plunger, with boot seal	9PA79†	9PA79†	N/A	2MN1	8PA57
6LS1	Maintained contact - supplied with lever 6PA80	9PA46	9PA46	7 (6PA80)	2MN1	8PA59
6LS2	Maintained contact - see Packet B for lever	9PA47*	9PA47*	2MN1	2MN1	8PA59
7LS1	Flush panel mount	9PA47*	9PA47*	7 (6PA102)	2MN1	8PA11
8LS1	Cable-type actuator	9PA15	9PA15	N/A	2MN11	N/A
8LS3	Cable spring rod	9PA48	9PA48	N/A	2MN11	N/A
8LS75	Miscellaneous	9PA54	9PA54	N/A	2MN11	N/A
8LS125	Coil spring actuator	9PA42	9PA42	N/A	2MN1	8PA11
8LS152	Coil spring actuator	9PA15	9PA15	1	8AS42	8PA11
201LS1	20° pretravel	9PA15	9PA15	1	2MN6	8PA11
201LS1-NA	Pretravel 20°, nylon roller, clockwise operation	9PA16*	9PA16*	1 (6PA71)	2MN6-A	8PA11
201LS2	20° pretravel 4 1/2 in.-lbs.	9PA16*	9PA16*	1, 2, 3, 4, 5, 6	2MN6	8PA11
201LS3	Reversible adjustable lever	9PA16*	9PA16*	2	2MN6	8PA11
201LS6	Light force 18 oz.	9PA16*	9PA16*	1, 2, 3, 4, 5, 6	2MN13	Note 1
201LS9	5° pretravel 3 lbs. force	9PA16*	9PA16*	1, 2, 3, 4, 5, 6	2MN13	Note 1
201LS10	5 in. aluminum rod-adjustable	9PA40	9PA40	3	2MN6	8PA11
201LS19	5° pretravel	9PA15	9PA15	1, 3, 4	2MN13	Note 1
201LS23	Low force 20° pretravel	9PA68*	9PA68*	3	2MN13	Note 1
201LS47	5 in. aluminum rod-adjustable 5° pretravel	9PA74*	9PA74*	3	2MN13	Note 1
201LS56	Low force 5° pretravel	9PA74*	9PA74*	3	2MN13	Note 1
201LS242	Hi-temp. +250° F	9PA55	9PA55	1 (6PA121)	2MN6	8PA50
201LS501	Light indicator in name plate - 120 vac	9PA15	9PA15	N/A	2MN14	8PA11
202LS1	Top actuated plunger	9PA32	9PA32	N/A	2MN6	8PA38
202LS7	Top actuated plunger with Boot Seal	9PA45	9PA45	N/A	2MN9	8PA37
202LS11	Side actuated roller plunger	9PA44	9PA44	N/A	2MN9	8PA43
204LS1	Top actuated roller plunger	9PA33	9PA33	N/A	2MN9	8PA38
205LS1	Top actuated roller plunger Rotated 90° Boot Seal	9PA79†	9PA79†	N/A	2MN9	8PA57
205LS7	Top actuated roller plunger with Boot Seal	9PA79†	9PA79†	N/A	2MN9	8PA57
206LS1	Maintained contact - supplied with lever 6PA80	9PA46	9PA46	7 (6PA80)	2MN6	8PA59
206LS2	Maintained contact - see Packet B for lever	9PA47*	9PA47*	2MN6	2MN6	8PA59
208LS1	Cable type actuator	9PA15	9PA15	N/A	2MN9	N/A
208LS11	Cable spring with rod	9PA48	9PA48	N/A	2MN9	N/A
208LS125	Miscellaneous	9PA54	9PA54	N/A	2MN9	N/A
208LS152	Coil spring actuator	9PA42	9PA42	N/A	2MN9	N/A