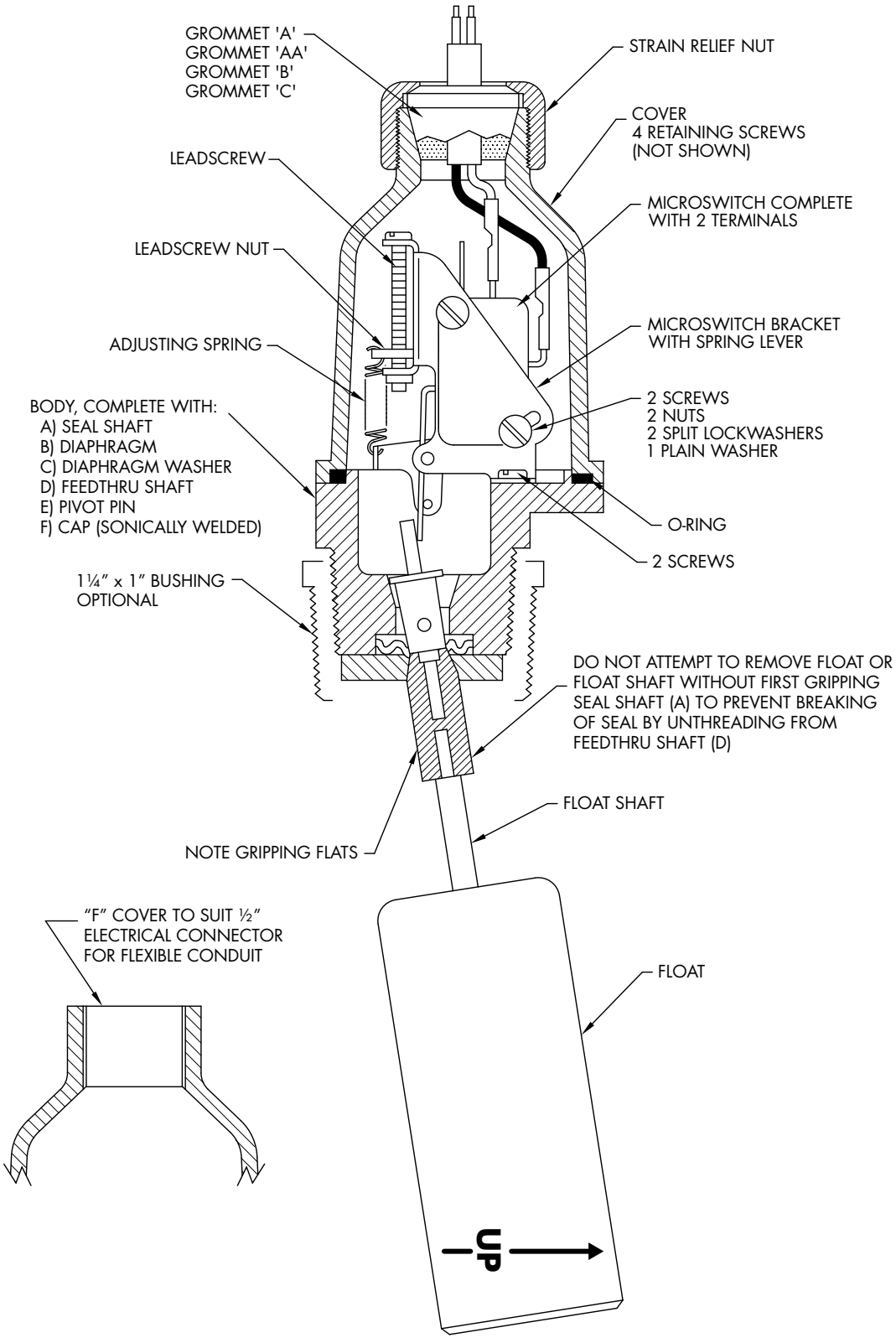
MODEL L-8

L-8N, L-8R, L-8CR

HARWIL CORPORATION
541 KINETIC DRIVE, OXNARD, CA 93030
TEL: (805) 988-6800 FAX: (805) 988-6804
EMAIL: HARWIL@HARWIL.COM

INSTALLATION INSTRUCTIONS



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SPECIFICATIONS

(Same for all models except where shown)

MODEL L-8N
Noryl body, float and bushing; Hypalon diaphragm, 316 stainless steel float shaft and screws.

FOR
Mild acids and bases, inorganics, some alcohols, some hydrocarbons, water, etc.

MODEL L-8R
Fortron (PPS) body, float, and bushing; Viton diaphragm, 316 stainless float shaft and screws.

FOR
Medium acids and bases, inorganics, alcohols, most hydrocarbons.

MODEL L-8CR
Fortron (PPS) body, float, and bushing; Viton diaphragm, Hastelloy C float shaft, and Teflon screws.

FOR
Concentrated acids and bases, inorganics, alcohols, hydrocarbons, chlorinated organics, phenols, etc.

WORKING FLUID SPECIFIC GRAVITY RANGE ADJUSTABLE BETWEEN 0.6 AND 1.5 AND UP.

NOMINAL WORKING TEMPERATURE/PRESSURE: 180˚F at 75 psig

LIQUID LEVEL CHANGE TO ACTIVATE SWITCH: ≈¼" max. travel

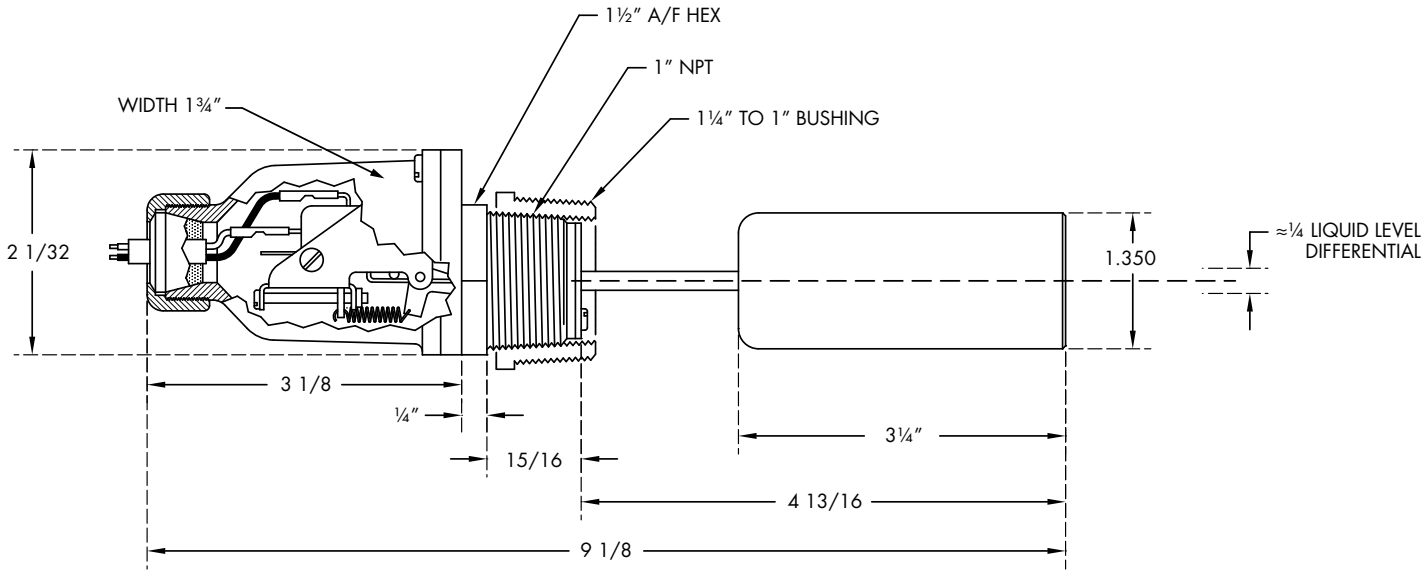
WEIGHT: 0.5 lb.

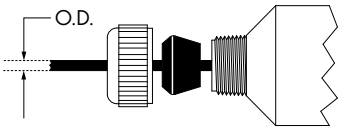
ELECTRICAL SWITCH CHARACTERISTICS

- SPDT
- UL and CSA listed
- 15 AMP, ½ HP at 125 or 250 VAC
- ½ AMP at 125 VDC, ¼ AMP at 250 VDC
- 5 AMP at 125 VAC (Tungsten lamp load)
- 10,000,000 mechanical operations median

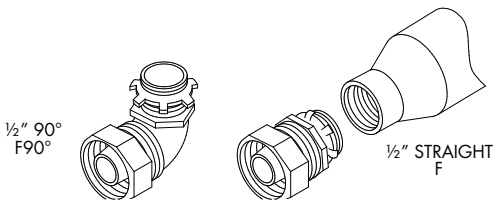
SPDT–DRY CIRCUIT UL & CSA LISTED
Gold cross bar contacts for computer/PLC interface. 1.0 AMP or less, 5–24 VAC/DC

INSTALLATION DIMENSIONS





Grommet Size	Cable OD	Grommet Size	Cable OD
A	0.25"	B	0.37"
AA	0.30"	C	0.50"



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MODEL L-8

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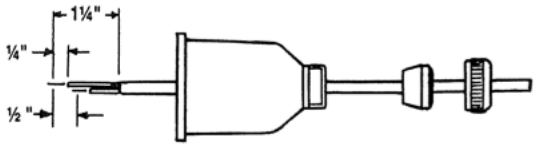
ELECTRICAL WIRING

Model L-8 is supplied with a strain relief cable fitting for use with round or plastic jacketed power cable.

1. Remove strain relief nut, grommet, and cover.
2. Strip the outer jacket of the cord back approximately 1¼", stagger ½", and strip leads ¼".



3. Remove slip-on connectors from microswitch and crimp or solder to the leads.
4. Feed the cable through the strain relief nut, grommet, and cover.

NOTE: Check match of outside diameter of cable with inside diameter of grommet. No more than 0.20" of play should be evident.

5. Apply slip-on connectors to appropriate terminals of the microswitch. Slide the cover down the cable and fasten it to the body with four screws. Slide the grommet down the cable until the small end is level with the outer jacket. Push the grommet into the tapered hole of the cover, hold the jacket to prevent rotation, and tighten the strain relief nut firmly.

Model L-8 supplied with "F" Cover
"F" Cover allows the use of standard ½" electrical connectors to suit flexible conduits, such as Sealflex, plastic Spiraduct, etc. Attach slip-on connectors to leads and appropriate terminals of microswitch and complete wiring to electrical code.

Microswitch activation may be monitored by an audible click or with and ohmmeter prior to connecting line power to the switch terminals, or by monitoring the voltage supplied to the load through the microswitch.

Fig 1: Wiring schematic for power applied to load when liquid level is less than set point (power to load interrupted when level increases to above set point).

Decreasing liquid level moves actuator in direction shown.

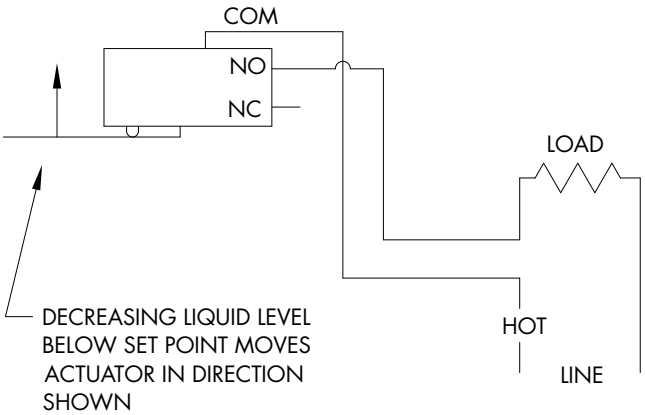
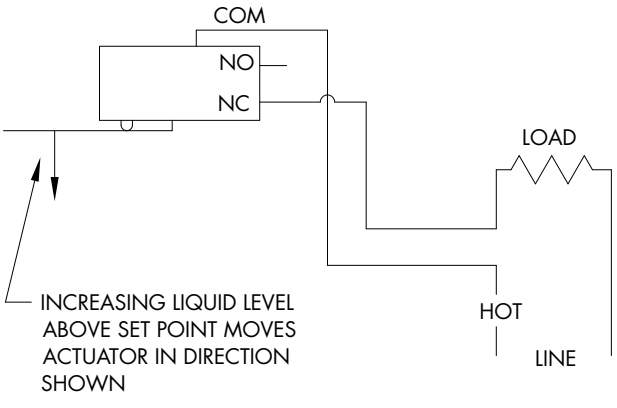


Fig 2: Wiring schematic for power applied to load when liquid level is greater than set point (power to load interrupted when level decreases to below set point).

Increasing liquid level moves actuator in direction shown.



MODEL L-8

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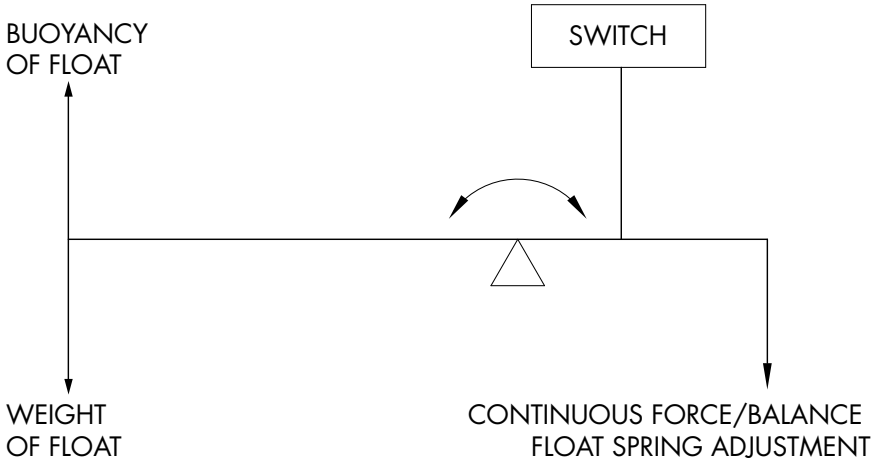
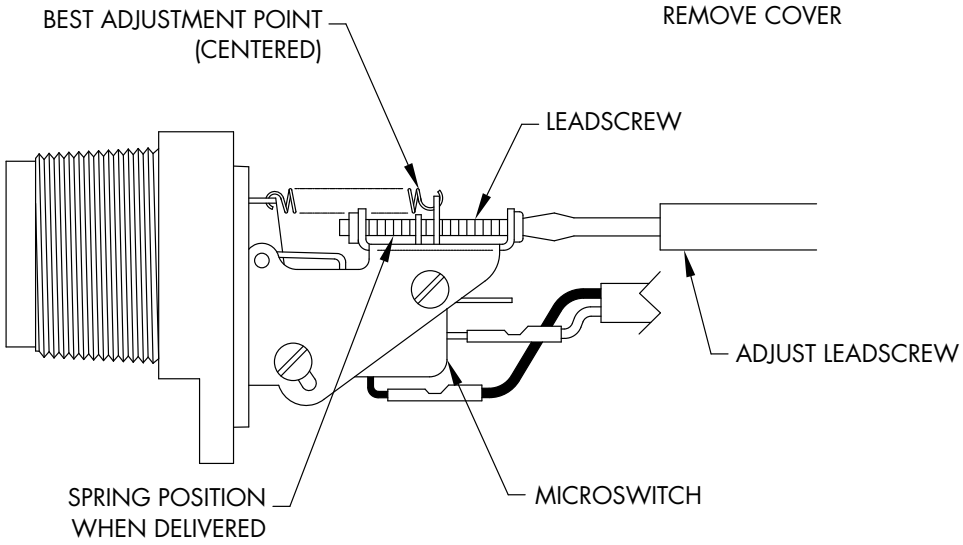
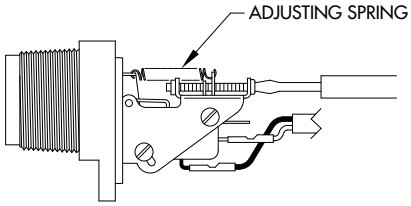
Model L-8 liquid level switch is provided with a continuous adjustable float buoyancy control to allow use in fluids with specific gravity down to 0.6.





SWITCH POINT ADJUSTMENT

1. Remove cover.
2. All units are delivered with the spring in the fully relaxed condition (A), which corresponds to the maximum specific fluid condition.



3. Insert blade type screw driver in the slotted end of the adjusting screw and turn it in a clockwise direction. This extends the length of the adjusting spring, which in turn adjusts the float net effective buoyancy to respond to lower specific gravity fluids.

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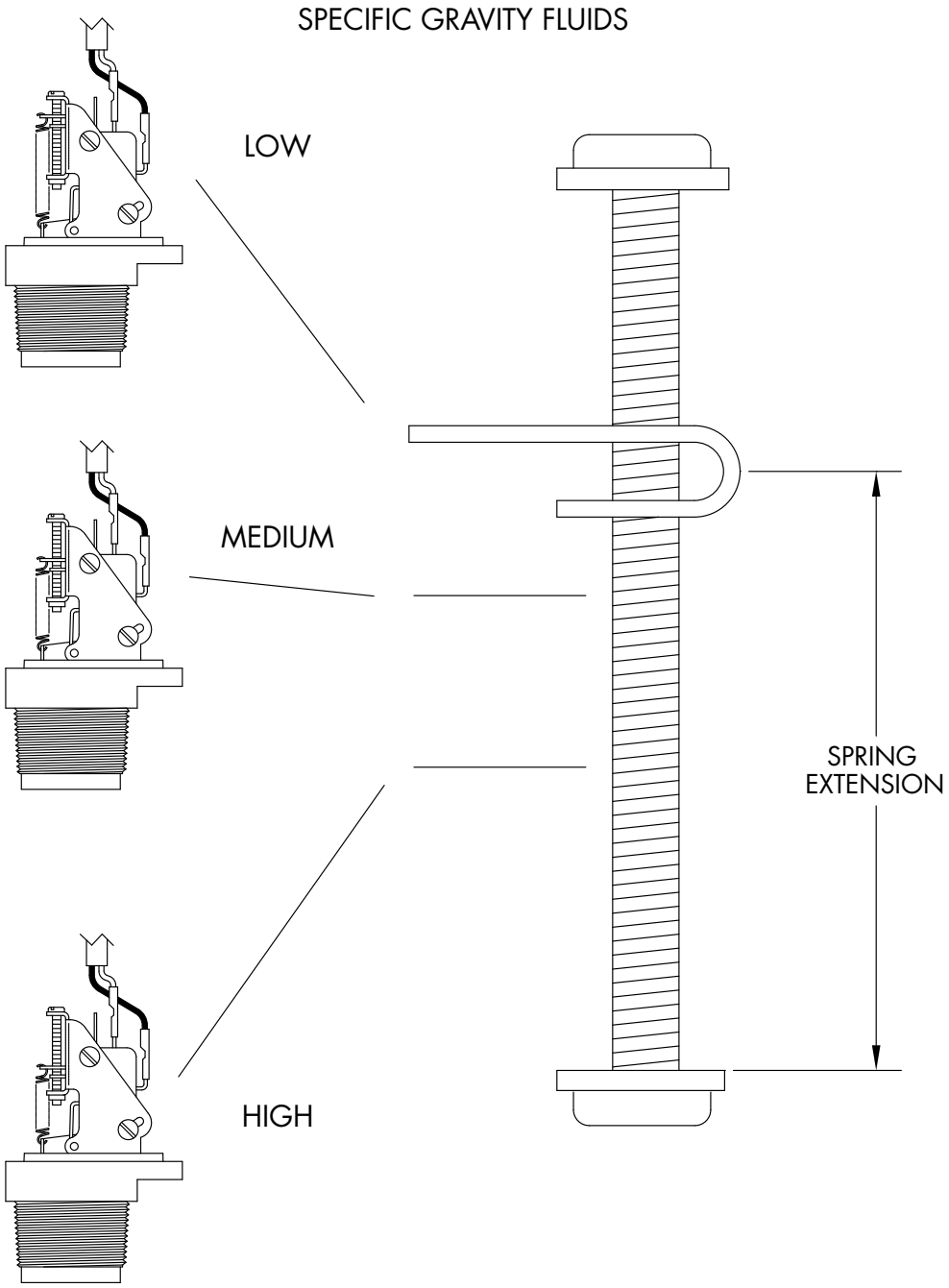

Microswitch actuation point may be monitored during the adjustment procedure detailed in (2 and 3) above by an audible click or with an ohmmeter before connecting line power to the terminal strip, or by monitoring the voltage supplied to the load through the microswitch.

MODEL L-8

L-8N

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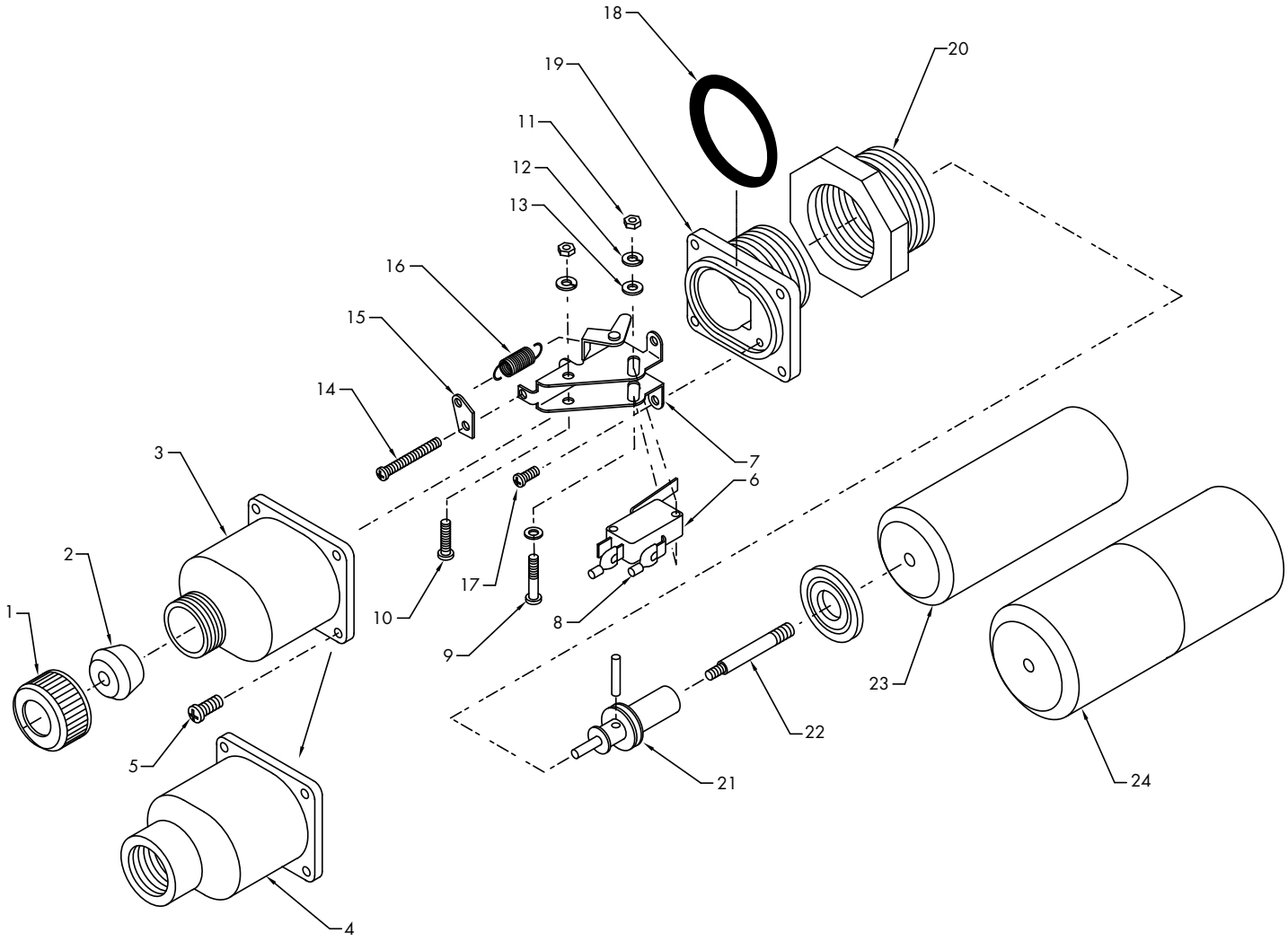
L-8N (Series 65600)

#	PART NAME	QTY	PART #
1	STRAIN RELIEF NUT	(1)	60127
2	GROMMET		
	#A (OPTIONAL)	(1)	10440
	#AA (OPTIONAL)	(1)	10441
	#B (OPTIONAL)	(1)	10442
	#C (OPTIONAL)	(1)	10443
3	COVER (MALE) (OPTIONAL)	(1)	60125
4	COVER (FEMALE) (OPTIONAL)	(1)	60126
5	SCREW	(4)	109-S
6	MICROSWITCH	(1)	20103
7	BRACKET (COMPLETE ASSEMBLY)	(1)	65201
	#A CROSS PIN	(1)	65215
	#B SPRING LEVER	(1)	65216
8	TERMINALS	(3)	706-T
9	SCREW	(1)	133-S
10	SCREW	(1)	116-S
11	NUT	(2)	219-N
12	WASHER	(2)	311-W

#	PART NAME	QTY	PART #
13	WASHER	(2)	301-W
14	SCREW	(2)	118-S
15	LEAD SCREW NUT	(1)	65214
16	SPRING	(1)	65202
17	SCREW	(2)	123-S
18	O-RING	(1)	65110
19	BODY (ASSEMBLY ONLY)	(1)	65203
	CLAMP RING (SONIC WELD)	(1)	65102
20	BUSHING REDUCER (OPTIONAL)	(1)	65204
	BUSHING REDUCER (OPTIONAL)	(1)	65205
21	FEED THRU SHAFT (ASSEMBLY ONLY)	(1)	65103
	A) SEAL SHAFT	(1)	65104
	B) DIAPHRAGM	(1)	65105
	C) DIAPHRAGM WASHER	(1)	65106
	D) PIVOT PIN	(1)	65107
	E) CROSS PIN	(1)	65108
22	FLOAT SHAFT ARM #2-B	(1)	65208
23	FLOAT (FORTRON)	(1)	65601
24	FLOAT (POLYPROPYLENE) (OPTIONAL)	(1)	65602



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MODEL L-8

L-8R

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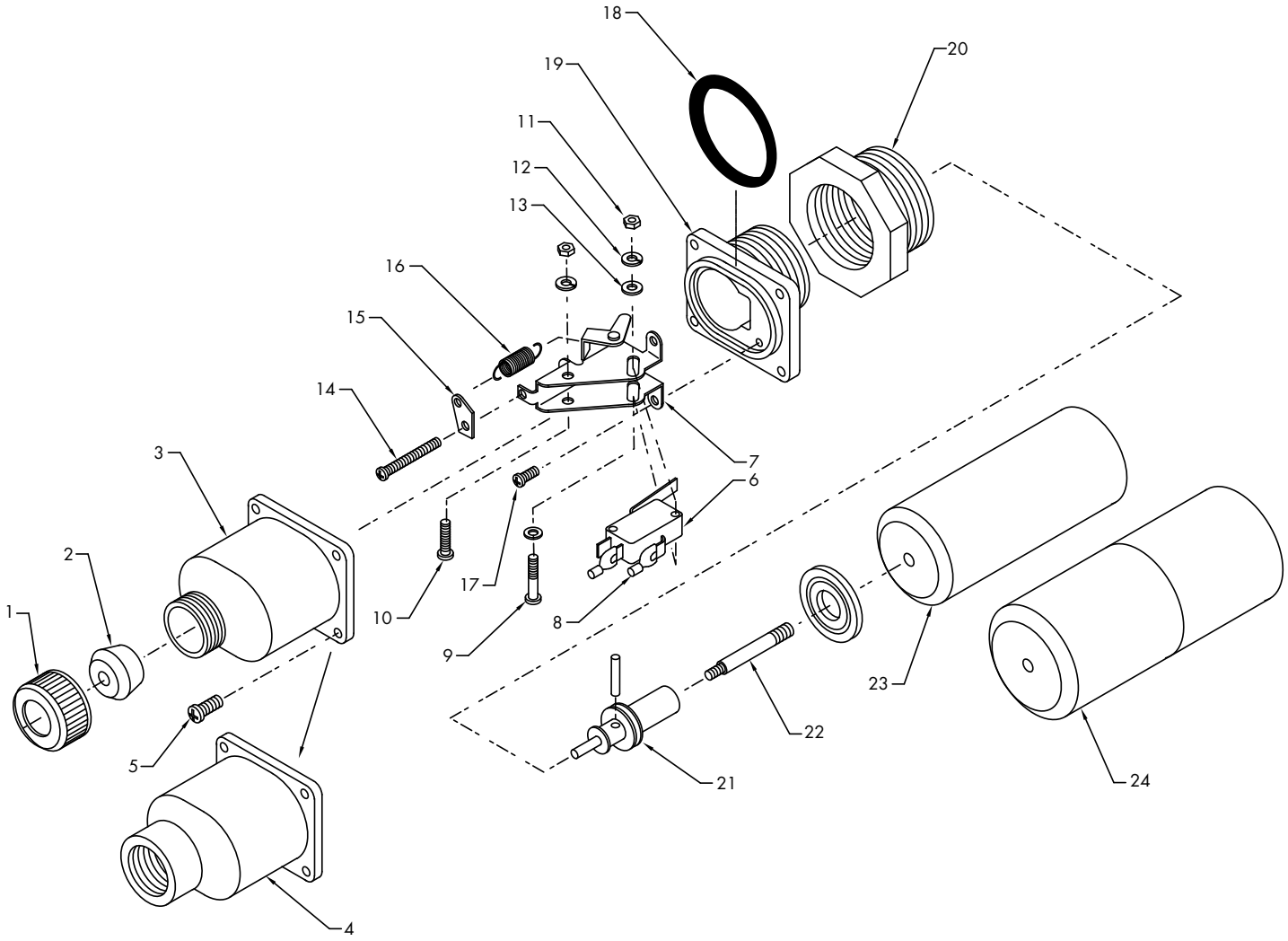
EMAIL: HARWIL@HARWIL.COM

L-8R (Series 65800)

#	PART NAME	QTY	PART #
1	STRAIN RELIEF NUT	(1)	65301
2	GROMMET		
	#A (OPTIONAL)	(1)	10440
	#AA (OPTIONAL)	(1)	10441
	#B (OPTIONAL)	(1)	10442
	#C (OPTIONAL)	(1)	10443
3	COVER (MALE) (OPTIONAL)	(1)	65302
4	COVER (FEMALE) (OPTIONAL)	(1)	65303
5	SCREW	(4)	109-S
6	MICROSWITCH	(1)	20103
7	BRACKET (COMPLETE ASSEMBLY)	(1)	65201
	#A CROSS PIN	(1)	65215
	#B SPRING LEVER	(1)	65216
8	TERMINALS	(3)	706-T
9	SCREW	(1)	133-S
10	SCREW	(1)	116-S
11	NUT	(2)	219-N
12	WASHER	(2)	311-W

#	PART NAME	QTY	PART #
13	WASHER	(2)	301-W
14	SCREW	(2)	118-S
15	LEAD SCREW NUT	(1)	65214
16	SPRING	(1)	65202
17	SCREW	(2)	123-S
18	O-RING	(1)	65110
19	BODY (ASSEMBLY ONLY)	(1)	65304
	CLAMP RING (SONIC WELD)	(1)	65305
20	BUSHING REDUCER (OPTIONAL)	(1)	65306
	BUSHING REDUCER (OPTIONAL)	(1)	65307
21	FEED THRU SHAFT (ASSEMBLY ONLY)	(1)	65103
	A) SEAL SHAFT	(1)	65104
	B) DIAPHRAGM	(1)	65105
	C) DIAPHRAGM WASHER	(1)	65106
	D) PIVOT PIN	(1)	65107
	E) CROSS PIN	(1)	65108
22	FLOAT SHAFT ARM #2-B	(1)	65208
23	FLOAT (FORTRON)	(1)	65601
24	FLOAT (POLYPROPYLENE) (OPTIONAL)	(1)	65602



MODEL L-8

L-8CR

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EMAIL: HARWIL@HARWIL.COM

L-8CR (Series 65900)

#	PART NAME	QTY	PART #
1	STRAIN RELIEF NUT	(1)	60127
2	GROMMET		
	#A (OPTIONAL)	(1)	65701
	#AA (OPTIONAL)	(1)	65702
	#B (OPTIONAL)	(1)	65703
	#C (OPTIONAL)	(1)	65704
3	COVER (MALE) (OPTIONAL)	(1)	65302
4	COVER (FEMALE) (OPTIONAL)	(1)	65303
5	SCREW	(4)	109-S
6	MICROSWITCH	(1)	20103
7	BRACKET (COMPLETE ASSEMBLY)	(1)	65201
	#A CROSS PIN	(1)	65215
	#B SPRING LEVER	(1)	65216
8	TERMINALS	(3)	706-T
9	SCREW	(1)	133-S
10	SCREW	(1)	116-S
11	NUT	(2)	219-N
12	WASHER	(2)	311-W

#	PART NAME	QTY	PART #
13	WASHER	(2)	301-W
14	SCREW	(2)	118-S
15	LEAD SCREW NUT	(1)	65214
16	SPRING	(1)	65202
17	SCREW	(2)	123-S
18	O-RING	(1)	65110
19	BODY (ASSEMBLY ONLY)	(1)	65304
	CLAMP RING (SONIC WELD)	(1)	65305
20	BUSHING REDUCER (OPTIONAL)	(1)	65306
	BUSHING REDUCER (OPTIONAL)	(1)	65307
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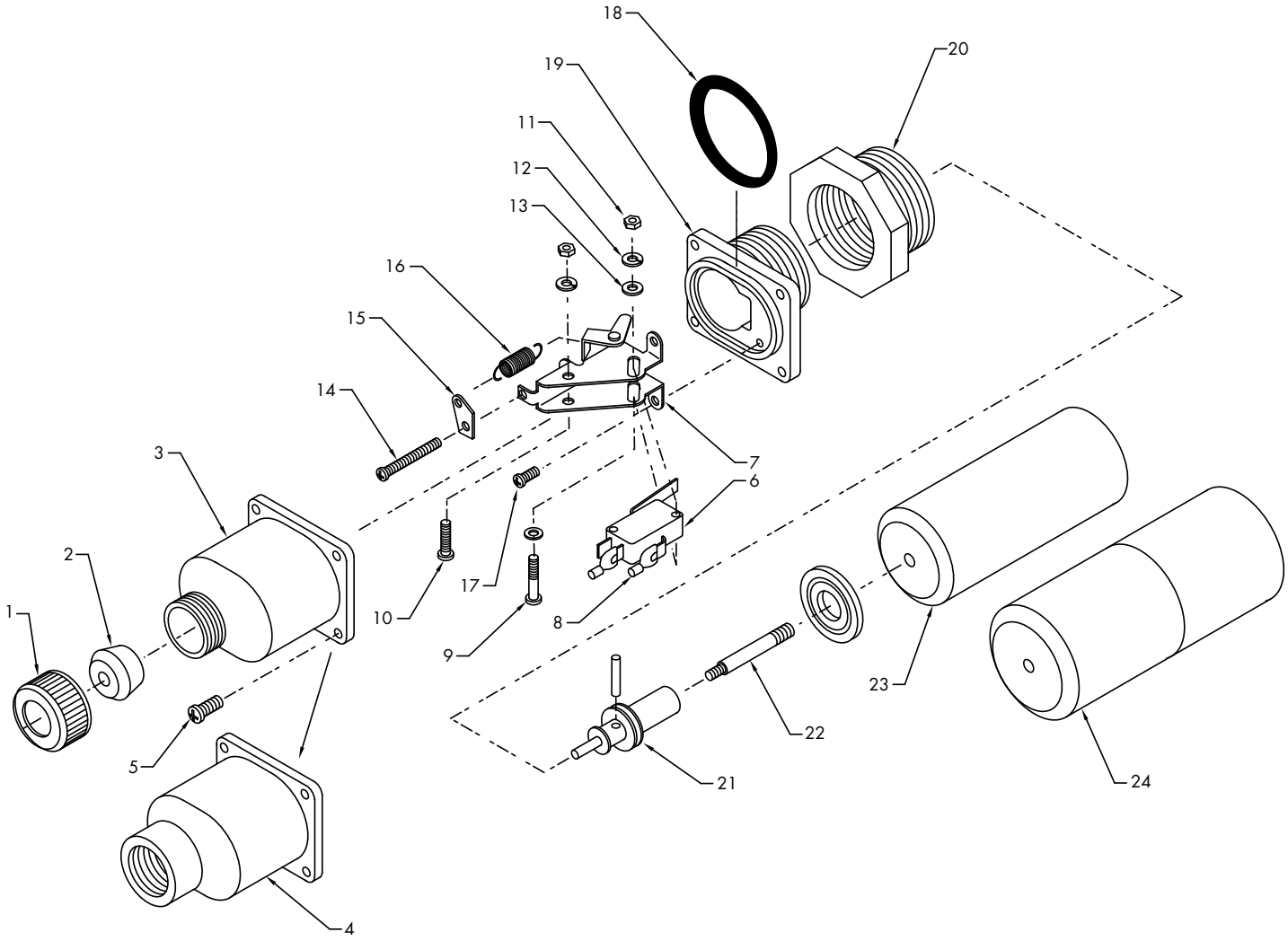
	A) SEAL SHAFT	(1)	65104
	B) DIAPHRAGM	(1)	65105
	C) DIAPHRAGM WASHER	(1)	65106
	D) PIVOT PIN	(1)	65107
	E) CROSS PIN	(1)	65108
22	FLOAT SHAFT ARM #2-B	(1)	65708
23	FLOAT (FORTRON)	(1)	65805
24	FLOAT (POLYPROPYLENE) (OPTIONAL)	(1)	65602



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CERTIFICATE OF CONFORMANCE

All Harwil Corporation ("HARWIL") products are manufactured using new materials and components. Our products meet the applicable performance and materials specifications indicated in our current Specifications Sheets and Parts List. HARWIL endeavors to obtain its materials and components from American Companies.

DOMINANCE OF HARWIL LIMITED EXPRESS WARRANTY

Each user MUST make appropriate analysis and tests to determine the suitability of the HARWIL product for the intended use prior to purchase.

HARWIL warrants that all HARWIL products will be free from defects in material and workmanship for a period of one year from the date of original shipment. This Warranty shall be LIMITED to the replacement and reconditioning of our products and parts. HARWIL reserves the right and sole discretion to modify or change the composition, design and appearance of its products at anytime.

THIS WARRANTY SHALL BE IN LIEU OF ALL WARRANTIES OF MERCHANTABILITY AND OF ALL WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE RELATING TO HARWIL PRODUCTS AND PARTS. BUYER'S SOLE REMEDY SHALL BE REPLACEMENT OR RECONDITIONING AS SET FORTH HEREIN.

HARWIL SHALL INCUR NO OBLIGATIONS HEREUNDER AND NO LIABILITY IN THE EVENT OF (1) BUYER NOT FULFILLING ITS RESPONSIBILITIES; INCLUDING AS SET FORTH HEREIN; (2) NEGLECT, ALTERATION OR IMPROPER PRODUCT USE, INCLUDING USE WITH NON-COMPATIBLE DEVICES OR CHEMICALS; OR (3) REPAIR BY ANOTHER COMPANY OR PERSON THAN HARWIL.

ANY LAWSUIT RELATING TO THIS LIMITED EXPRESS WARRANTY MUST BE COMMENCED WITHIN ONE YEAR OF THE DATE THE LAWSUIT ACCRUES.

> HARWIL provides NO WARRANTY and ASSUMES NO RESPONSIBILITY for corrosive attack on any material, component or design features associated with any of its products.

Corrosion resistance information listed in HARWIL specification sheets, information sheets and product brochures is solely for general background information. This information table has been compiled from literature published by various material suppliers and by equipment manufacturers who use these materials in their products. Inasmuch as these data are based on tests by entities over which HARWIL has no control, HARWIL DOES NOT GUARANTEE AND DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OF SUCH THIRD PARTY TESTING. When using the table, please remember that in any given case several factors such as concentration, temperature, degrees of agitation and presence of impurities influence the rate of corrosion. The information table is intended, in a general way, to rate materials for resistance to chemicals which contain their usual impurities and for types of equipment in common use. Ratings should be used only as a general tool to first approximation of your material requirements rather than as the final answer.

> WHEN IN DOUBT, TEST MATERIALS BEFORE INSTALLATION.
> AFTER INSTALLATION, FOLLOW UP WITH SCHEDULED PREVENTATIVE MAINTENANCE AND PERIODIC INSPECTION.