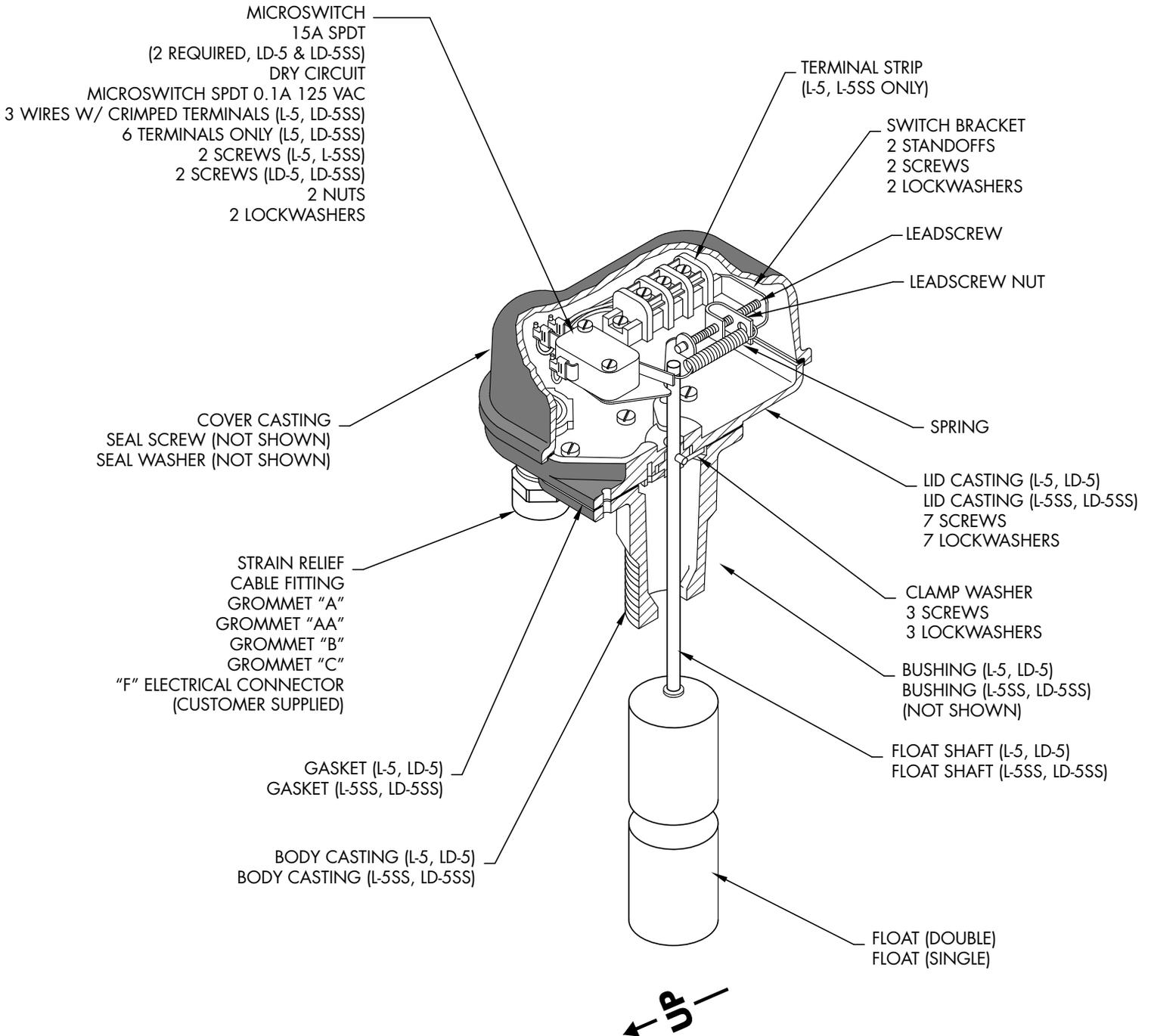


MODEL L-5

L-5, L-5SS, LD-5, LD-5SS

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INSTALLATION INSTRUCTIONS



NOTE: THOSE PARTS NOT SPECIFIED OTHERWISE ARE COMMON TO ALL MODELS: L-5, L-5SS, LD-5, AND LD-5SS

1. The level switches are supplied with a 2" x 1" TT bushing threaded in place with 2 to 3 strips of Teflon tape, which must be intact or renewed if the bushing and switch are separated before assembly in the tank. Apply a minimum of two (2) to a maximum of three (3) wraps of Teflon tape to the male threads of the bushing. This is especially important if the unit is to be used in metal fittings where coarse threads could bind if not lubricated.
2. Thread the unit into the tank and tighten it until a good no-leak seal is obtained, and until the arrows molded onto the body casting and printed on the label are pointed vertically downward.
3. Remove the cover and test for proper switch action by applying multimeter probes to common, NO and NC terminals of microswitch while actuating the switch lever arm.
4. The unit is supplied with the adjusting spring in the relaxed condition. Leave the spring in the relaxed condition and fill the vessel until the float is submerged. If the switch is actuated, proceed with the electrical wiring. If the specific gravity of the working fluid is too low to lift the float and actuate the switch, the buoyancy adjusting feature must be used. Turn the lead screw clockwise until the switches are actuated. Lower the liquid level until the float is clear of liquid and the switch is de-actuated. Raise the liquid level again until the float is submerged and the switch actuates. If no further spring bias adjustment is required, proceed with wiring to local code.

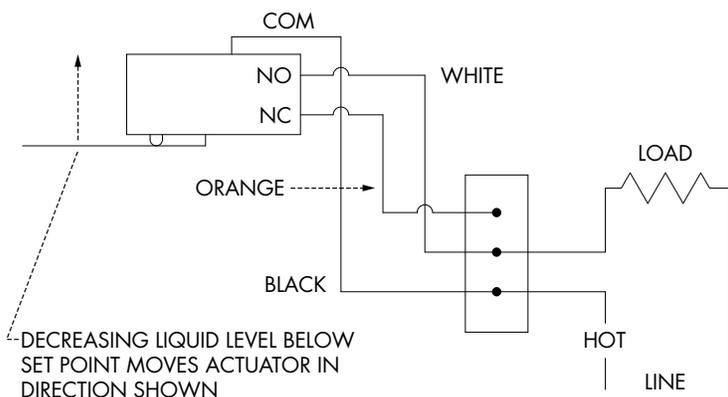
ELECTRICAL WIRING

1. Models L-5 and L-5SS are supplied with Harwil strain relief cable fitting for use with round, rubber or plastic jacketed power cable.
 - a. Remove gland nut and tapered rubber grommet from strain relief cable fitting and slide over cable fitting and slide over cable with gland nut going on first.

Note: Check match outside diameter of cable with inside diameter of grommet. No more than 0.020" of play should be evident.

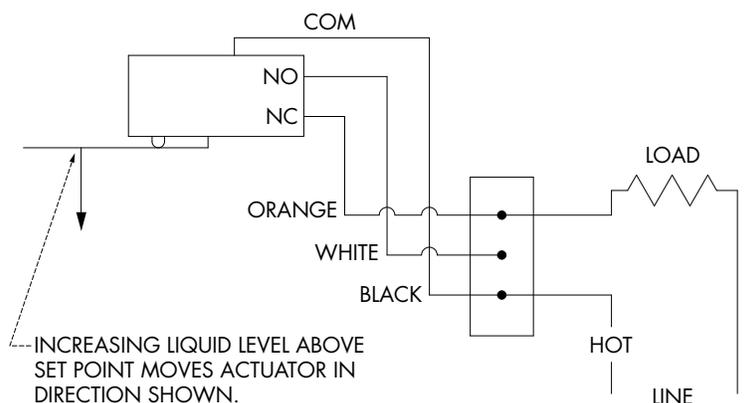
- b. Strip outer jacket of cable back 5½". Strip insulation from individual conductors approximately ¼".

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



Decreasing liquid level below set point moves actuator in direction shown.

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



Increasing liquid level below set point moves actuator in direction shown.

MODEL L-5

L-5, L-5SS, LD-5, LD-5SS

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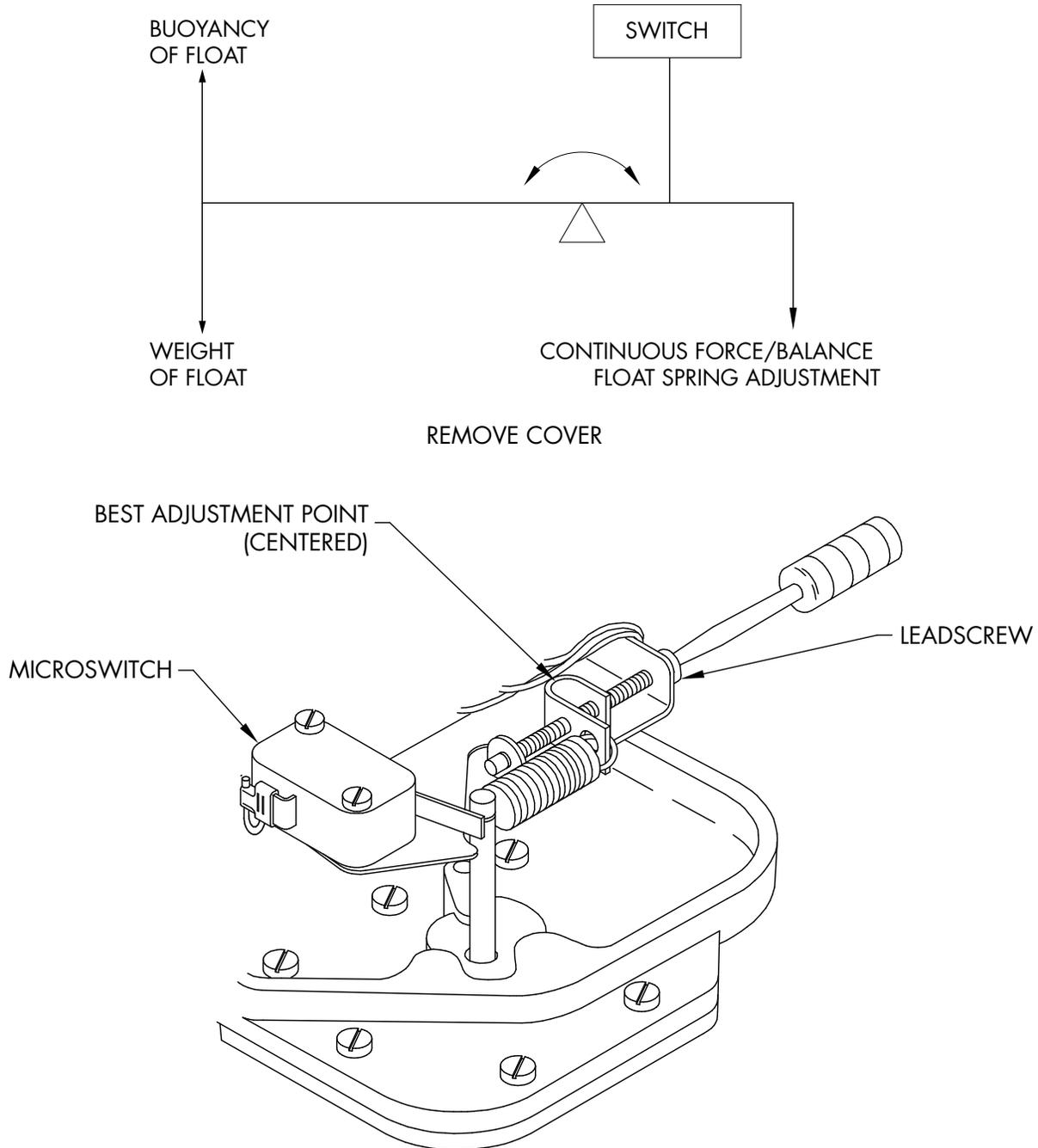
- c. Fork terminals are supplied with each switch. Remove from terminal strip and crimp or solder to appropriate leads.
 - d. Feed cable up through cable fitting and attach leads to terminal strip per wiring schematics. Fig. 1 or Fig. 2 on the previous page.
 - e. Push rubber grommet into conical hole in cable fitting, allowing enough cable to protrude from opposite side to allow some slack in leads attached to terminal strip. Grip cable to prevent rotation and thread gland nut onto the cable fitting to seal grommet tightly to cable.
2. Models LD-5 and LD-5SS are supplied with Harwil strain relief cable fitting for use with round, rubber or plastic jacketed power cable.
- a. Repeat "1-a".
 - b. Strip outer jacket of cable back 2". Strip insulation from individual conductors approximately ¼".
 - c. Each microswitch is supplied with 3 flag slip on terminals. Remove microswitch and crimp or solder to appropriate leads.
 - d. Feed cable up through cable fitting and attach leads to microswitches per wiring schematics. Fig. 1 or Fig. 2 on the previous page.
 - e. Push rubber grommet into conical hole in cable fitting. Side cable through until end of jacket is flush with inboard end of cable fitting. Grip cable to prevent rotation and thread gland nut onto cable fitting to seal grommet tightly to cable.
3. Electrical fitting other than Harwil strain relief fitting.
- a. Attach fitting to body and attach conduit to fitting and wire to local code per wiring schematics Fig. 1 or Fig. 2.
 - b. Microswitch actuation point may be monitored 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-5

L-5, L-5SS, LD-5, LD-5SS

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Models L-5, LD-5, L-5SS, and LD-5SS are provided with a continuous adjustable float buoyancy control to allow use in fluids with specific gravity down to 0.6.



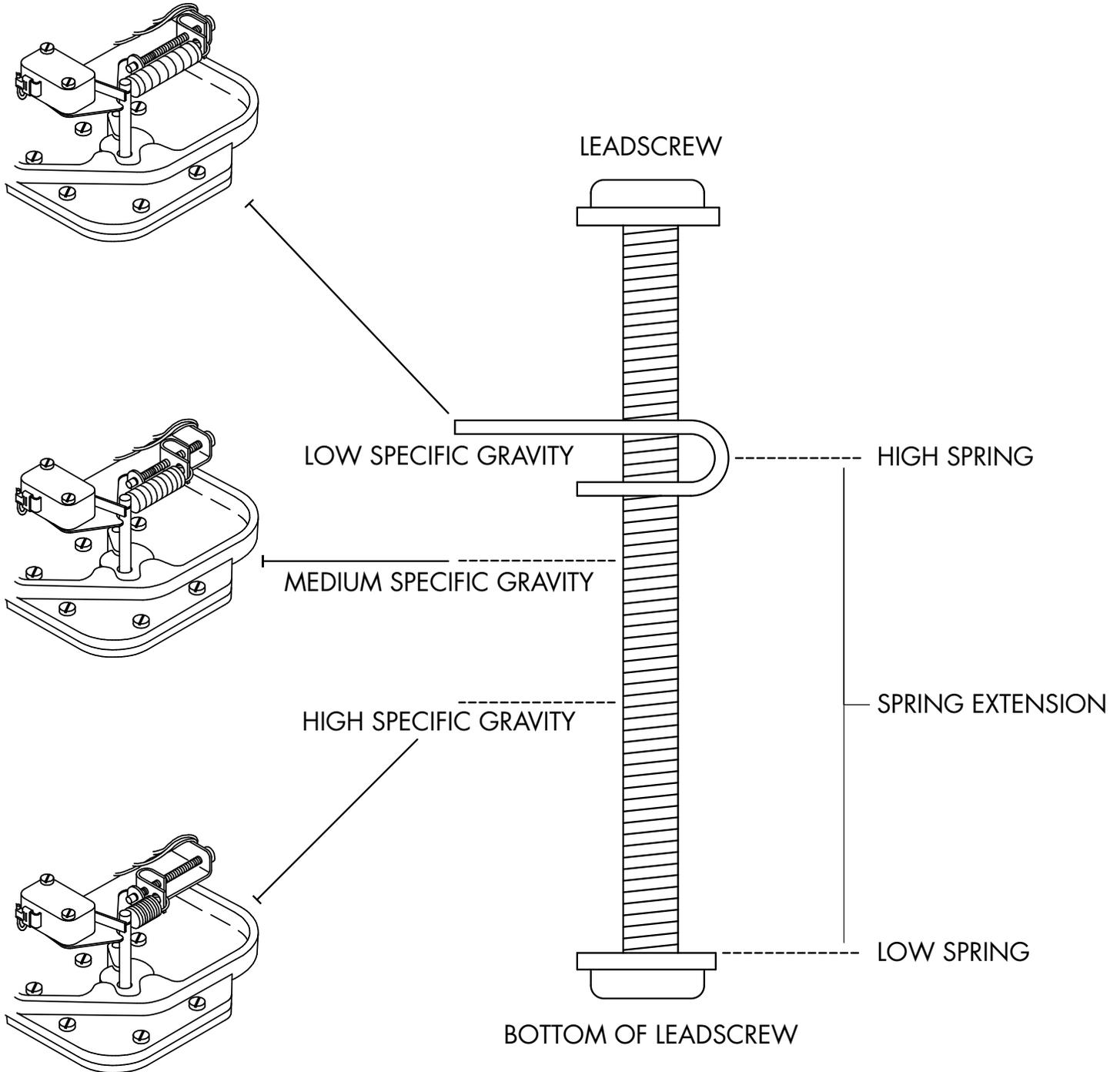
1. Remove cover.
2. All units are delivered with the spring in the fully relaxed condition which corresponds to the maximum specific fluid condition.
3. Insert blade type screwdriver in slotted end of adjusting screw and turn in a clockwise direction. This extends the length of adjusting spring, which in turn adjusts the float net effective buoyancy to respond to lower specific gravity fluids.

MODEL L-5

L-5, L-5SS, LD-5, LD-5SS

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SPECIFIC GRAVITY FLUIDS



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.

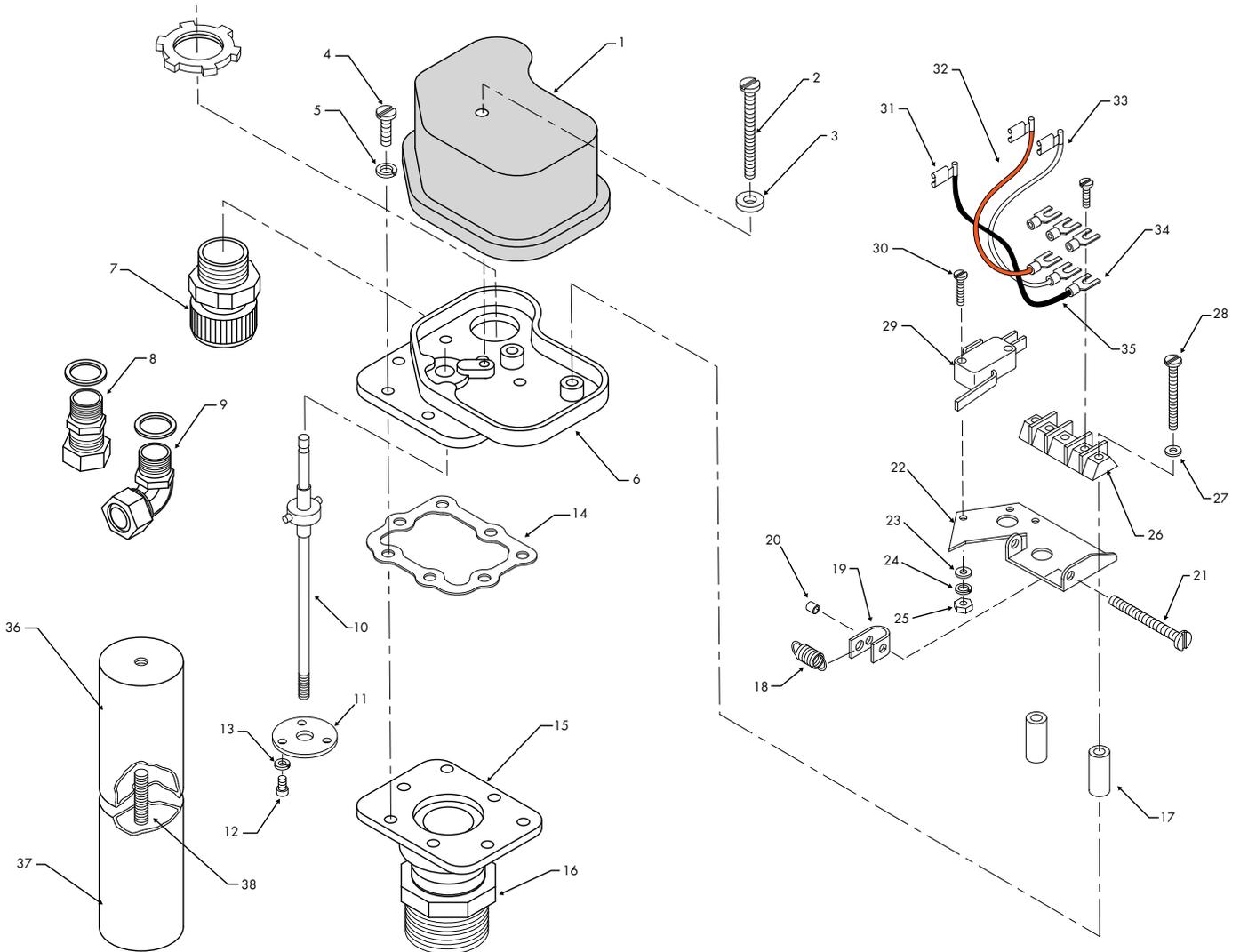
MODEL L-5

L-5, LD-5

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L-5, LD-5 (Brass Body) (Series 20500)

Number.	Part Name	Qty	Part Number	Number.	Part Name	Qty	Part Number
1	COVER CASTING	(1)	20300	14	GASKET	(1)	20307
2	SCREW	(1)	112-S	15	BODY CASTING	(1)	20208
3	LOCK WASHER	(1)	321-W	16	BUSHING	(1)	20505
4	SCREW	(7)	107-S	17	SPACER	(2)	20315
5	WASHER	(7)	319-W	18	SPRING	(1)	20316
6	LID CASTING	(1)	20301	19	LEADSCREW	(1)	20107
7	CONNECTOR CABLE			20	SHRINK WRAP	(1)	901-F
	- Optional			21	SCREW	(1)	132-S
	BODY	(1)	10429	22	BRACKET	(1)	20314
	NUT	(1)	10430	23	WASHER	(1)	300-W
	GROMMET #A	(1)	10440	24	WASHER	(2)	311-W
	GROMMET #AA	(1)	10441	25	NUT	(2)	201-N
	GROMMET #B	(1)	10442	26	TERMINAL STRIP	(1)	20102
	GROMMET #C	(1)	10443	27	WASHER	(2)	313-W
	LOCKNUT	(1)	101-DC	28	SCREW	(2)	117-S
	O RING	(1)	20117	29	MICROSWITCH	(1)	20103
8	CONNECTOR CABLE			30	SCREW	(2)	116-S
	- Optional	(1)	20115	31	TERMINALS	(3)	708-T
9	CONNECTOR CABLE			32	WIRE	(1)	20319
	- Optional	(1)	20116	33	WIRE	(1)	20318
10	FEED THRU SHAFT			34	TERMINALS	(6)	706-T
	- Assembly only	(1)	20501	35	WIRE	(1)	20317
	RUBBER MOLDED	(1)	20134	36	FLOAT	(1)	20504
	PIN	(1)	20135	37	FLOAT	(1)	20502
11	WASHER	(1)	324-W	38	STUD	(1)	20503
12	SCREW	(3)	118-S	39	LABEL	(1)	20320
13	WASHER	(3)	311-W	40	INSTRUCTION SHEETS	(1)	20506



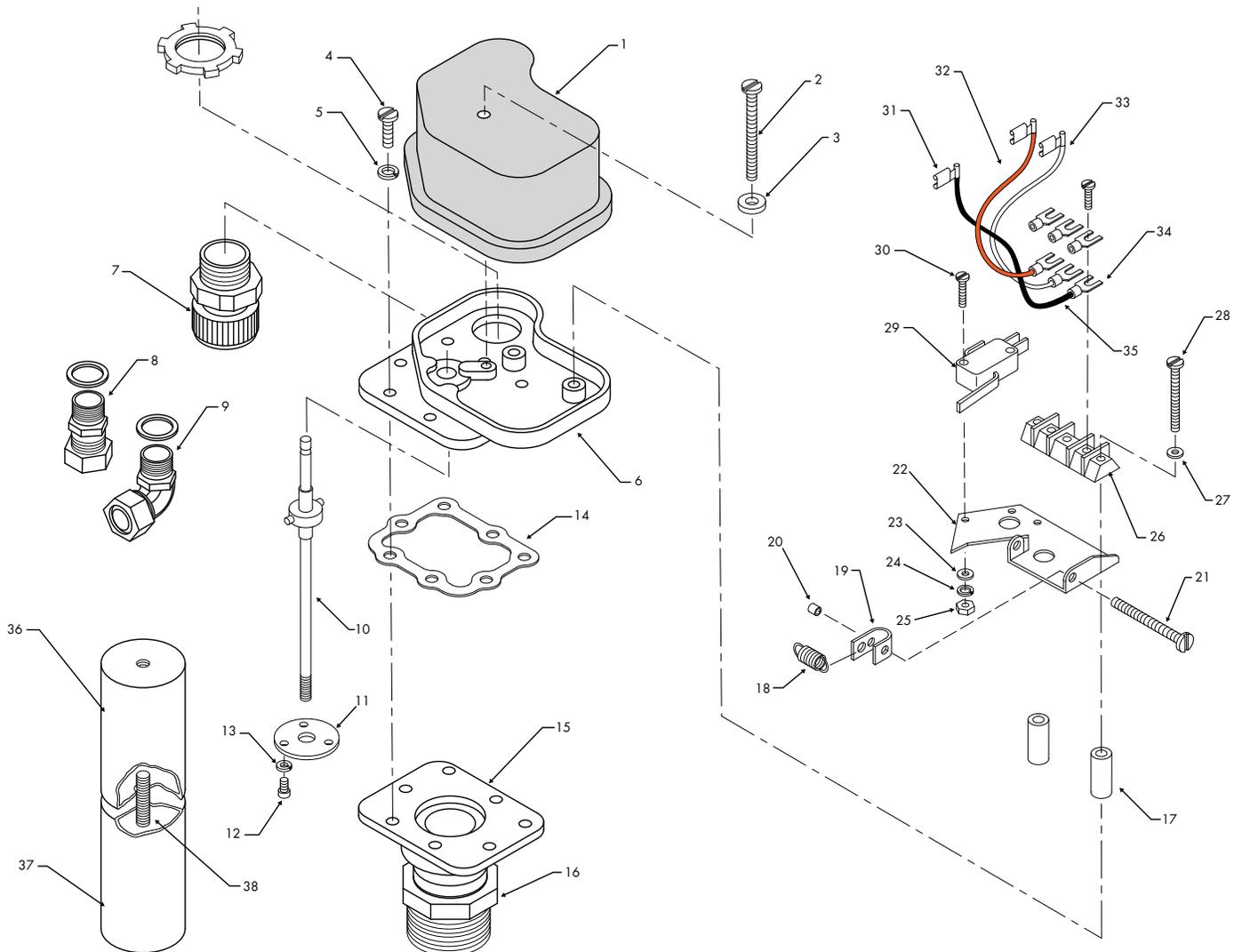
MODEL L-5

L-5SS, LD-5SS

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L-5SS, LD-5SS (316 Stainless Steel Body) (Series 20600)

Number.	Part Name	Qty	Part Number	Number.	Part Name	Qty	Part Number
1	COVER CASTING	(1)	20300	14	GASKET	(1)	20407
2	SCREW	(1)	112-S	15	BODY CASTING	(1)	20408
3	LOCK WASHER	(1)	321-W	16	BUSHING	(1)	20602
4	SCREW	(7)	107-S	17	SPACER	(2)	20315
5	WASHER	(7)	319-W	18	SPRING	(1)	20108
6	LID CASTING	(1)	20401	19	LEADSCREW	(1)	20107
7	CONNECTOR CABLE			20	SHRINK WRAP	(1)	901-F
	- Optional	(1)	60116	21	SCREW	(1)	132-S
	BODY	(1)	10429	22	BRACKET	(1)	20314
	NUT	(1)	10430	23	WASHER	(1)	300-W
	GROMMET #A	(1)	10440	24	WASHER	(2)	311-W
	GROMMET #AA	(1)	10441	25	NUT	(2)	201-N
	GROMMET #B	(1)	10442	26	TERMINAL STRIP	(1)	20102
	GROMMET #C	(1)	10443	27	WASHER	(2)	313-W
	LOCKNUT	(1)	101-DC	28	SCREW	(2)	117-S
	O RING	(1)	20117	29	MICROSWITCH	(1)	20103
8	CONNECTOR CABLE			30	SCREW	(2)	116-S
	- Optional	(1)	20115	31	TERMINALS	(3)	708-T
9	CONNECTOR CABLE			32	WIRE	(1)	20319
	- Optional	(1)	20116	33	WIRE	(1)	20318
10	FEED THRU SHAFT			34	TERMINALS	(6)	706-T
	- Assembly only	(1)	20601	35	WIRE	(1)	20317
	RUBBER MOLDED	(1)	20405	36	FLOAT	(1)	20504
	PIN	(1)	20406	37	FLOAT	(1)	20502
11	WASHER	(1)	324-W	38	STUD	(1)	20503
12	SCREW	(3)	118-S	39	LABEL	(1)	20408
13	WASHER	(3)	311-W	40	INSTRUCTION SHEETS	(1)	20506



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) NEGLIGENCE, 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.