

**INSTRUCTIONS FOR INSTALLATION OF A FUEL LEVEL SENDING UNIT INTO PERMANENTLY INSTALLED FUEL TANKS MANUFACTURED WITH AN SAE STANDARD 5-HOLE SENDER FLANGE PATTERN OPENING. THESE SENDERS ARE NOT RECOMMENDED FOR USE IN PORTABLE TANKS, TANKS MANUFACTURED WITHOUT THIS OPENING, OR IN TANKS WHERE MOUNTING SCREW HOLES ARE THROUGH-DRILLED.**

**Additional equipment needed to complete installation:**

No. 16 **stranded** insulated wire.

Insulated terminal lugs as required (1/4" Push-on or #10 Ring, depending on Sender style. See Figure 1)

*(Note: Various Standard-making Organizations have promulgated rules or standards for wiring. Those applicable to your area should be followed.)*

**CAUTION:**

**GASOLINE IS EXTREMELY FLAMMABLE. KEEP SPARKS AND FLAME AWAY FROM TANK AREA. PURGE TANK OF FUEL AND FUMES BEFORE PROCEEDING. READ THESE INSTRUCTIONS THOROUGHLY BEFORE PROCEEDING WITH INSTALLATION. DO NOT DEVIATE FROM WIRING INSTRUCTIONS. INCORRECT WIRING COULD CAUSE ELECTRICAL SHORT AND POSSIBLE FIRE. ALWAYS DISCONNECT BATTERY BEFORE MAKING ANY ELECTRICAL CONNECTIONS.**

**PREPARATION FOR INSTALLATION**

1. If tank is equipped with a sender, remove it and note float arm position. Refer to Fig. 1. Note that the screw hole patterns in the Flange and the top of the tank are not

symmetrical. This may require re-positioning the float arm relative to the Flange Index Mark to prevent interference with baffles or side of tank.

2. Determine mounting flange position required by comparing screw hole pattern on fuel tank to patterns shown in Fig.

1. Sender Unit (Item 1) is assembled at factory with float arm positioned as shown in Fig. 1.

3. Check clearance to baffles or side of tank. If necessary to reposition float arm for your installation, remove two Phillips head screws from boss of flange. Remove channel from boss, rotate 90, 180, or 270 ° as required and re-insert fully into boss. Drill 1/8" diameter pilot holes and secure with the two Phillips head screws. See Figure 2.

**ADJUSTING SUPPORT CHANNEL LENGTH**

1. Determine Tank Depth by measuring from inside bottom to inside top of tank.

2. Refer to Figure 2, Dimension "C". Measure from underside of flange, along channel. Mark and cut channel at 1/2 Tank Depth dimension plus 1"(2.5 cm).

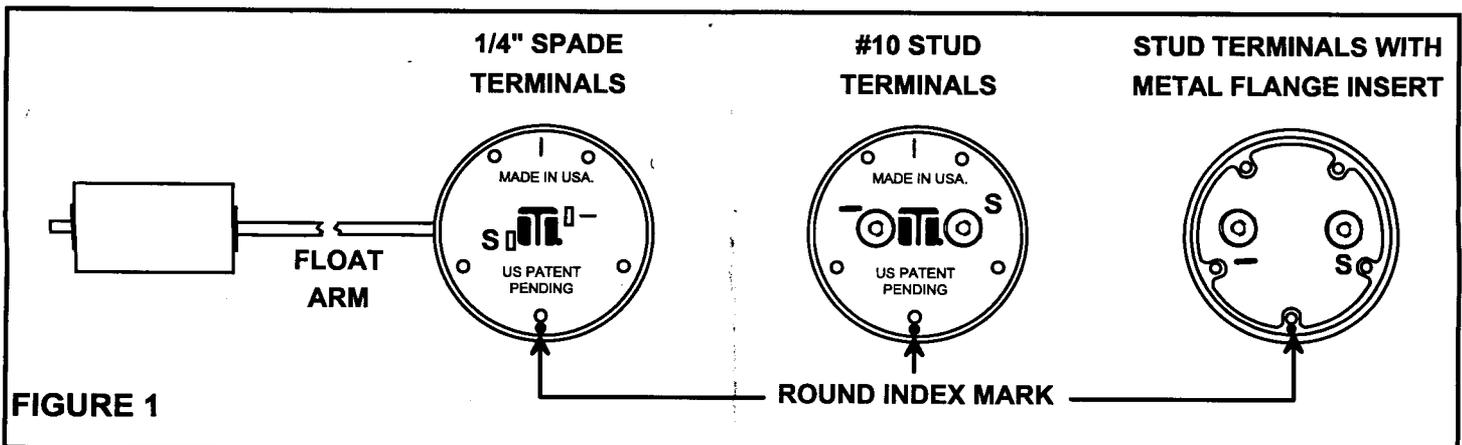
**RESISTOR HOUSING LOCATION**

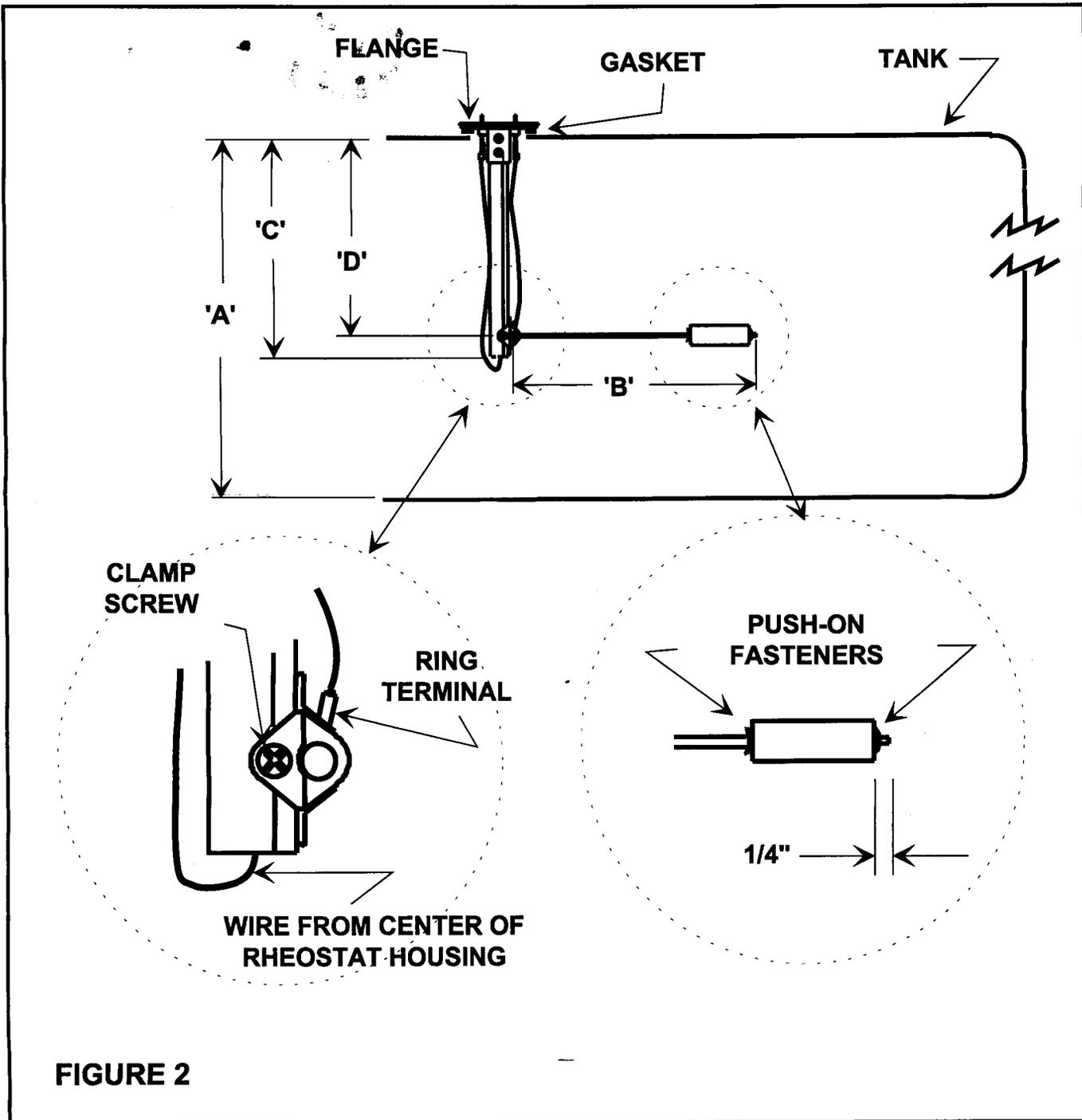
**NOTE: WIRE FROM RING TERMINAL ON SIDE OF RESISTOR HOUSING MUST POINT TOWARDS FLANGE (SEE FIG. 2).**

240-33 OHM SENDERS (PART NUMBERS BEGINNING WITH 87 OR 90) AND 73-9 OHM SENDERS (PART NUMBERS BEGINNING WITH 92) - WIRE FROM CENTER OF RESISTOR HOUSING POINTS AWAY FROM FLANGE (AS SHOWN IN FIGURE 2).

0-90 OHM SENDERS (PART NUMBERS BEGINNING WITH 88 OR 91) - WIRE FROM CENTER OF RESISTOR HOUSING POINTS TOWARDS FLANGE (INVERTED FROM VIEW IN FIG. 2)

1. Loosen Resistor Housing clamp screws and place Resistor Housing in channel as shown in Figure 2. Refer to Fig. 2, Dimension 'D'. Location should be 1/2 tank depth





**FIGURE 2**

plus 1/4" (6.35mm) when measured from bottom of flange to center of Resistor Housing. Tighten clamp screws.

2. Make certain wires from Resistor Housing are securely connected to Terminals in Flange, and are dressed and secured with the tie-wrap (provided) so they will not interfere with movement of float arm, or installation of sender into tank. Either wire may connect to either terminal.

**ADJUSTING FLOAT ARM LENGTH  
TANK DEPTH OF 6" OR MORE:**

1. Refer to Figure 2 and Table 1. Using Tank Depth Dimension previously determined (Column 'A'), find Float Arm Length in Column 'B'.
2. Slide Float and push-on fasteners toward Resistor

Housing until outer end of float is 1/4" (6.35 mm) less than Dimension 'B'. Float should pivot freely on arm.

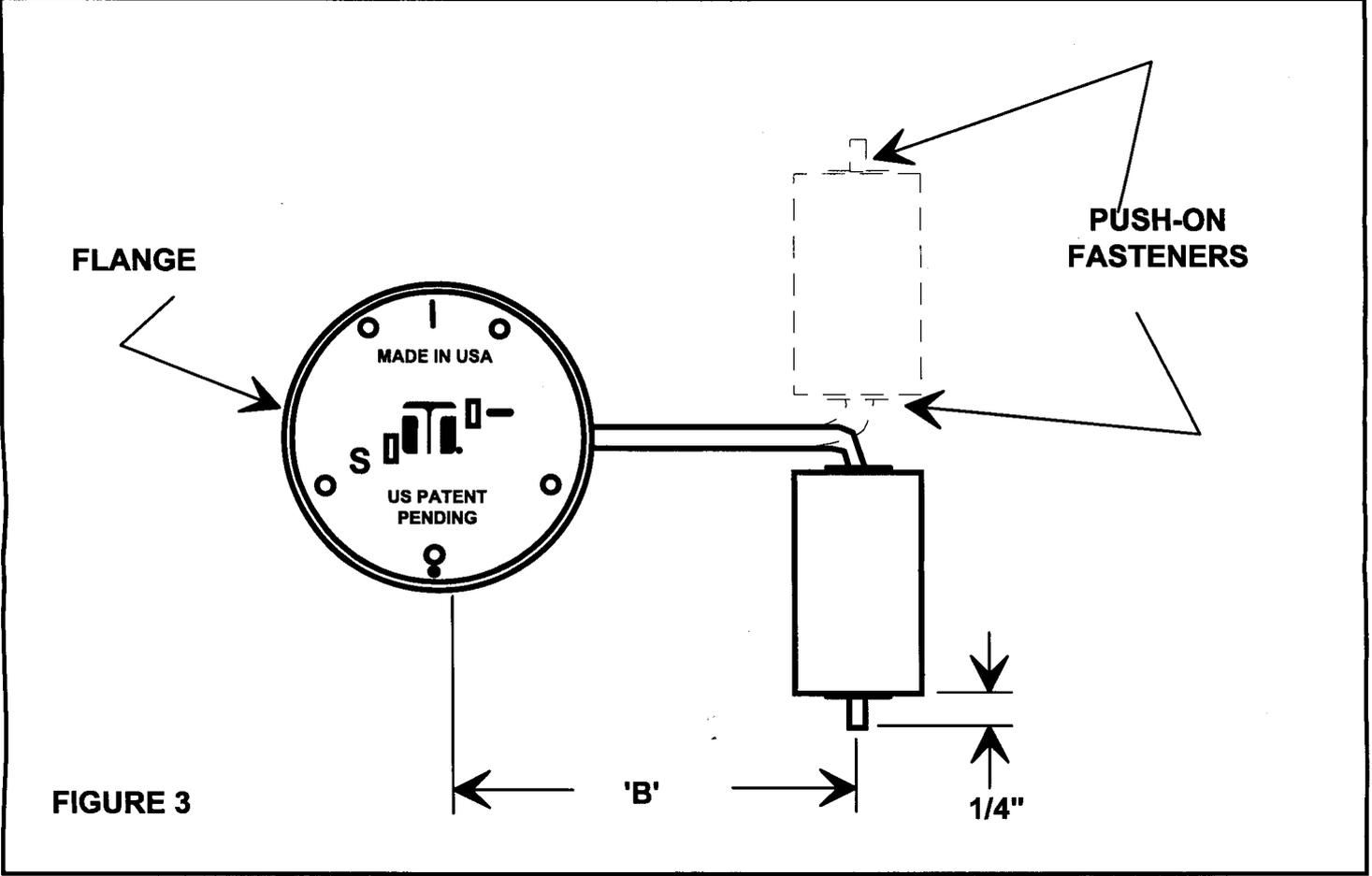
3. Cut Float Arm at Dimension 'B'.

**TANK DEPTH LESS THAN 6":**

1. Refer to Figure 3 and Table 1. Using Tank Depth Dimension previously determined (Column 'A'), find Float Arm Length in Column 'B'. Mark Float arm.
2. Carefully bend Float arm 90° (left or right as needed for clearance from tank side or baffles) at mark.
3. Slide Float and push-on fasteners towards bend until first fastener touches bend. Float should pivot freely on arm.
4. Cut Float Arm 1/4" beyond other fastener.

**INSTALLING SENDER INTO TANK**

1. Carefully slide Gasket over Float Arm and Sender Unit to



**FIGURE 3**

fit flat against underside of flange. Align holes in Gasket with holes in flange.

2. Install completed unit into tank by carefully fitting Float Arm and Sender through hole in top of tank. Align hole patterns in Flange and Gasket with holes in tank.
3. Insert machine screws through holes in flange and Gasket and thread fully into holes in top of tank. Tighten screws to 25 in.lbs torque.

**CAUTION:**

***Sending Unit (and Metal Tanks) must be grounded.***

4. Using No.16 wire (not furnished) and suitable terminal (1/4" push-on or #10 ring), run a lead from '-' (minus) terminal of sender to electrical system ground. If tank is metal, be sure it is grounded.
5. Using No. 16 wire (not furnished) and suitable insulated terminal (1/4" push-on or #10 ring), run a lead from 'S' terminal of sender to 'S' terminal of fuel gauge (not included with this kit).

**CAUTION:**

**BEFORE RECONNECTING BATTERY TO ELECTRICAL SYSTEM, RECHECK WIRING TO ENSURE ALL CONNECTIONS ARE PROPERLY MADE. INCORRECT CONNECTIONS OR ELECTRICAL SHORTS COULD CAUSE DAMAGE OR FIRE IN SYSTEM. ELEMENTS OF ELECTRICAL SYSTEMS SHOULD HAVE PROPER FUSES INSTALLED.**

**PARTS LIST**

Item	Description	Quantity
1.	Sender Unit	1
2.	Gasket	1
3.	Screws	5
4.	Tie-wrap	1

*"C" = 10.5"*  
*"B" = 15 7/8"*

**TABLE 1**

Tank Depth "A"		Float Arm Length "B"		Tank Depth "A"		Float Arm Length "B"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm
4	101.6	2-1/4	57.2	14.5	368.3	10-1/4	260.4
4.5	114.3	2-5/8	66.7	15	381	10-5/8	270
5	127	2-7/8	73	15.5	393.7	11	279.4
5.5	139.7	3-1/4	82.6	16	406.4	11-3/8	288.9
6	152.4	4-1/8	104.8	16.5	419.1	11-3/4	298.5
6.5	165.1	4-1/2	114.4	17	431.8	12-1/8	308
7	177.8	4-3/4	121.9	17.5	444.5	12-1/2	317.5
7.5	190.5	5-1/8	130.2	18	457.2	12-7/8	327.03
8	203.2	5-5/8	142.9	18.5	469.9	13-1/4	336.6
8.5	215.9	6	152.4	19	482.6	13-5/8	346.1
9	228.6	6-1/4	158.8	19.5	495.3	14	355.6
9.5	241.3	6-1/2	165.1	20	508	14-3/8	365.1
10	254	7	177.8	20.5	520.7	14-3/4	374.7
10.5	266.7	7-1/4	184.2	21	533.4	15-1/8	384.2
11	279.4	7-5/8	193.7	21.5	546.1	15-1/2	393.7
11.5	292.1	8	203.2	22	558.8	15-7/8	403.2
12	304.8	8-3/8	212.7	22.5	571.5	16-1/4	412.8
12.5	317.5	8-3/4	222.3	23	584.2	16-5/8	422.3
13	330.2	9-1/8	231.8	23.5	596.9	17	431.8
13.5	342.9	9-1/2	241.3	24	609.6	17-3/8	441.3
14	355.6	9-7/8	250.8				