



Positive Displacement Meters

Users Manual

For Service Call

West Coast Facility

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POSITIVE DISPLACEMENT METERS

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5/8" THROUGH 2" POSITIVE DISPLACEMENT METERS

5/8" THROUGH 2" POSITIVE DISPLACEMENT METERS

FEATURES:

- The Neptune principle is time proven for accuracy and dependability.
- Innovative floating chamber design of the nutating disc measuring element protects chamber from frost damage.
- Low flow accuracy is assured by an "O" ring seal to outlet port.
- Interchangeable measuring element allows for in-line service.
- Magnetic coupling between meter and transmitter eliminates leakage.
- 5/8" through 1" threaded inlet and outlet spuds.
- 1-1/2" and 2" meters, oval flanges, inlet and outlet ports.



TRANSMITTER:

- 100% Solid State Pulse Transmitter with Opto-interrupter Sensor for High Resolution.
- Scaling and Calibration easily effected by utilizing a four (4) L.E.D. visual readout with a rotary switch to set Scaling. No hand tool is required.
- Power Protection with Self-resetting fuse.
- Scaling Resolutions .0001 to .9999.
- Easily Convertible from 115VAC Input Power and AC Switching to 10-24VDC Input Power and DC Switching by simply moving jumpers.
- Special Water Proof Electrical Disconnect simplifies in-line Interchangeability without shutdown of power supply.
- Bayonet Meter Mounting allows rotation to 180° Setting.
- Optional Reed Switch transmitter is available if desired.



METER SIZE	OPERATING RANGE G.P.M.	LENGTH INCHES	WIDTH INCHES	HEIGHT INCHES	WEIGHT POUNDS
5/8"	1/4 to 20	7-1/2	3-5/8	5-3/8	4
3/4"	1/2 to 30	7-1/2	4-5/8	5-7/8	5
1"	3/4 to 50	10-3/4	6-1/2	6-5/8	9
1-1/2"	1 to 100	13	8-1/16	8-9/16	22
2"	2 to 160	17	9-7/16	9-3/4	31

METER, TRANSMITTER & QUICK DISCONNECT



METER BODY & TRANSMITTER



COUPLINGS, FLANGES, REPAIR KITS, SOLENOID VALVE

Couplings

3/4" x 1/2" Coupling	See page 5
3/4" x 3/4" Coupling	See page 5
3/4" x 1" Coupling	See page 6
3/4" Washer (Only)	See page 5&6
1" Coupling	See page 6
1" Washer (Only)	See page 6

Flange Sets - Include Bolts, Nuts, Washers, & Gaskets

1-1/2" C.I. Oval Flange	
1-1/2" Bronze Oval Flange	See page 7
1-1/2" Gasket (Only)	

2" C.I. Oval Flange	
2" Bronze Oval Flange	
2" Gasket (Only)	

3" C.I. Round Flange	
3" Round Gasket (Only)	

Bolts, Nuts, & Washer Assy. (Only)	See page 7
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Repair Kits

5/8" Repair Kit	See page 8
3/4" Repair Kit	See page 8

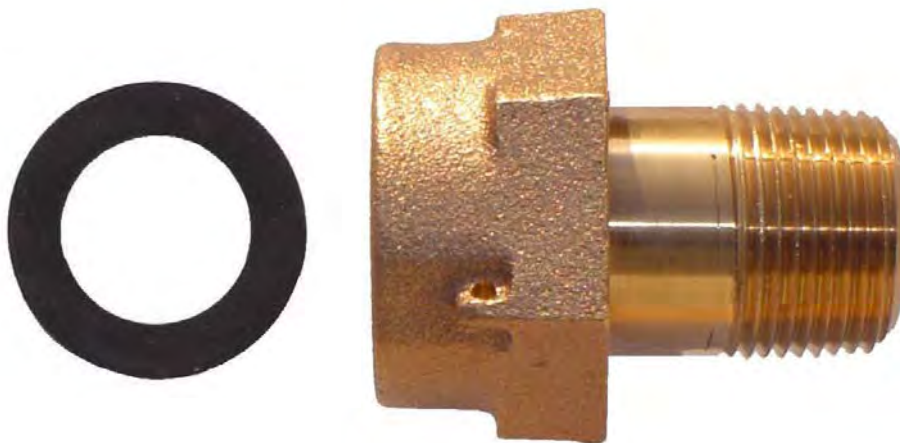
Solenoid Valve

1-1/2" Valve	See page 9
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3/4" x 1/2" COUPLING & 3/4" x 3/4" COUPLING

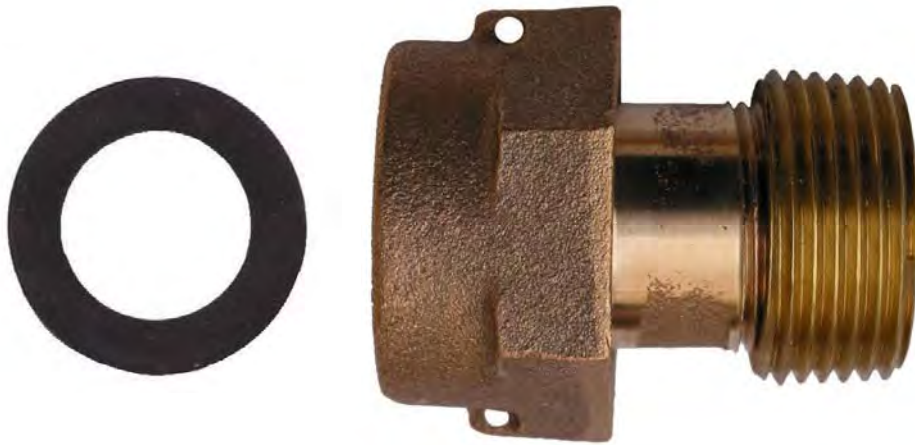


3/4" X 1/2" COUPLING & WASHER

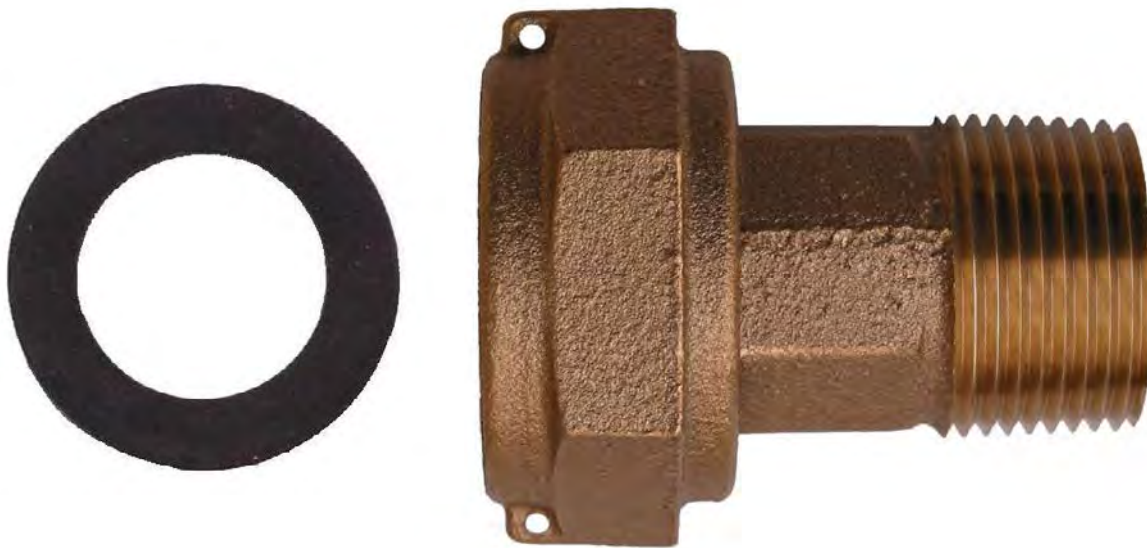


3/4" X 3/4" COUPLING & WASHER

3/4" x 1" COUPLING & 1" x 1" COUPLING

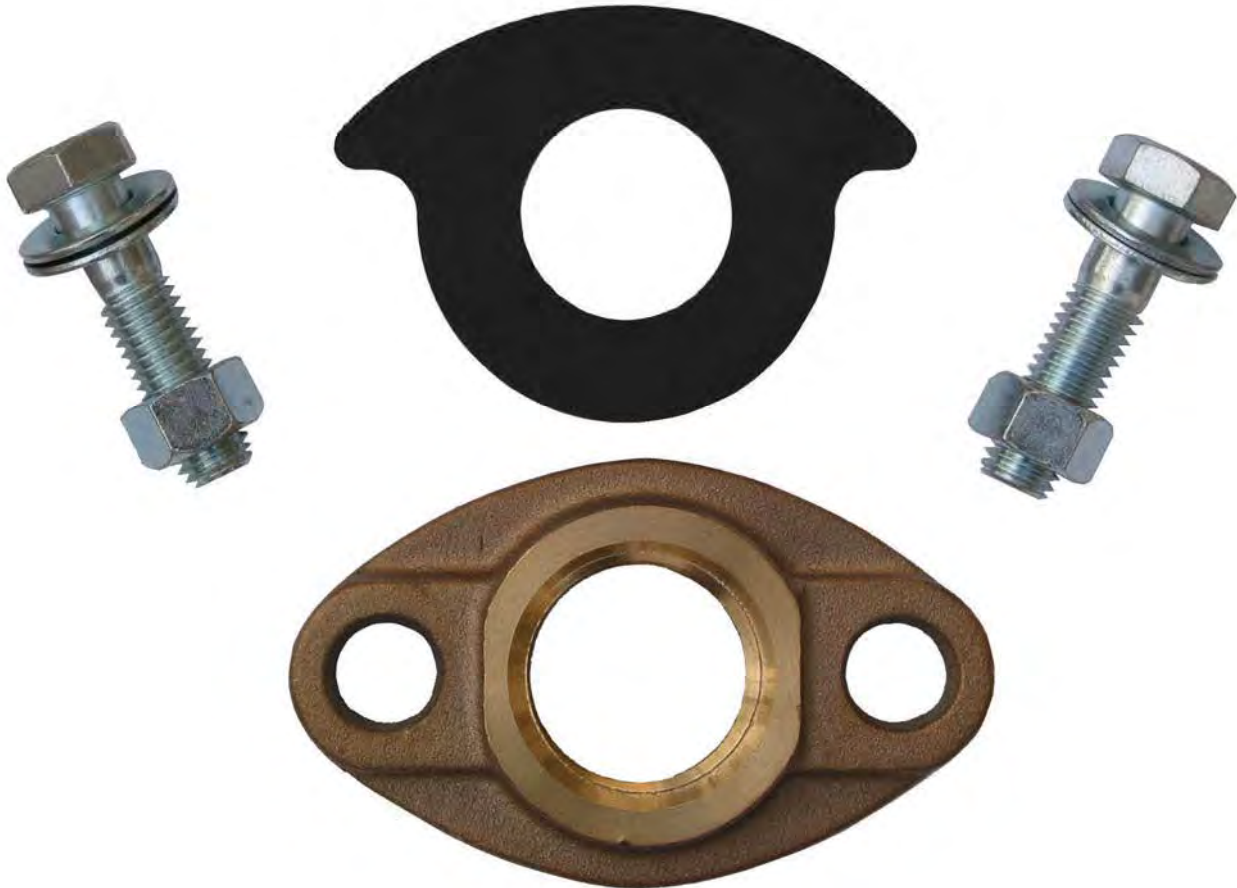


3/4" X 1" COUPLING & WASHER



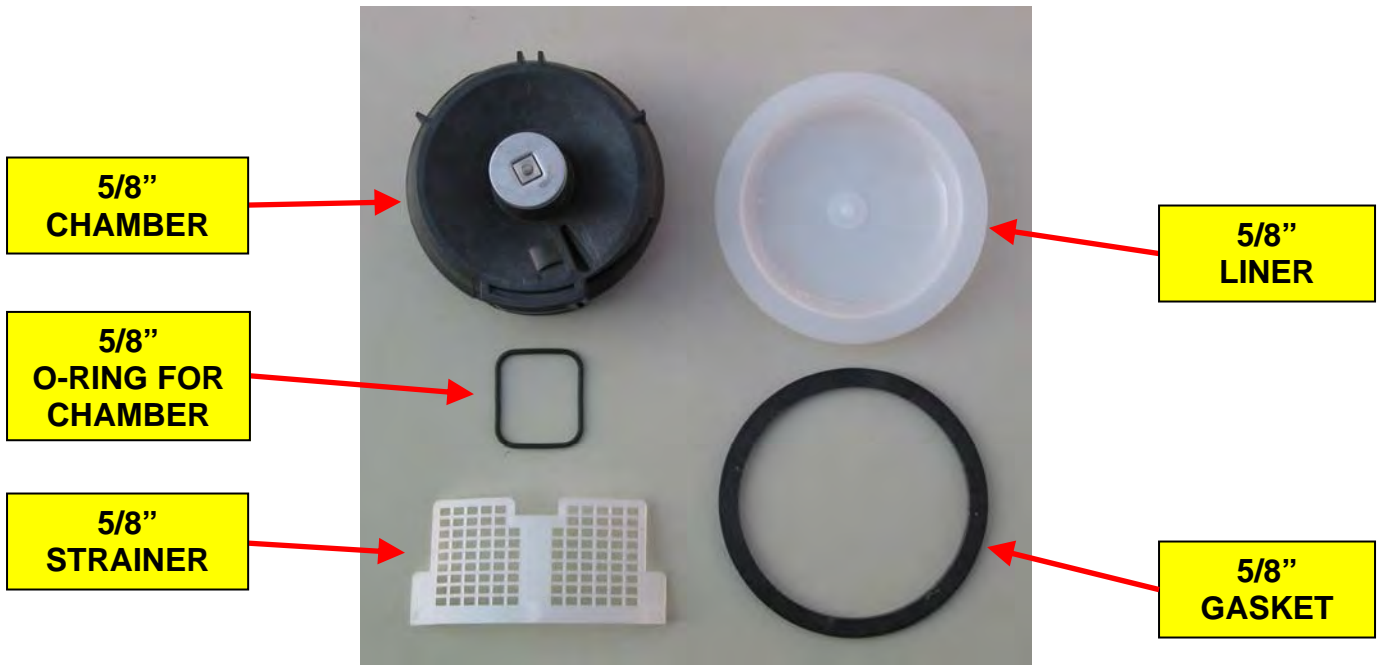
1" X 1" COUPLING & WASHER

1-1/2" & 2" BRONZE OVAL FLANGE

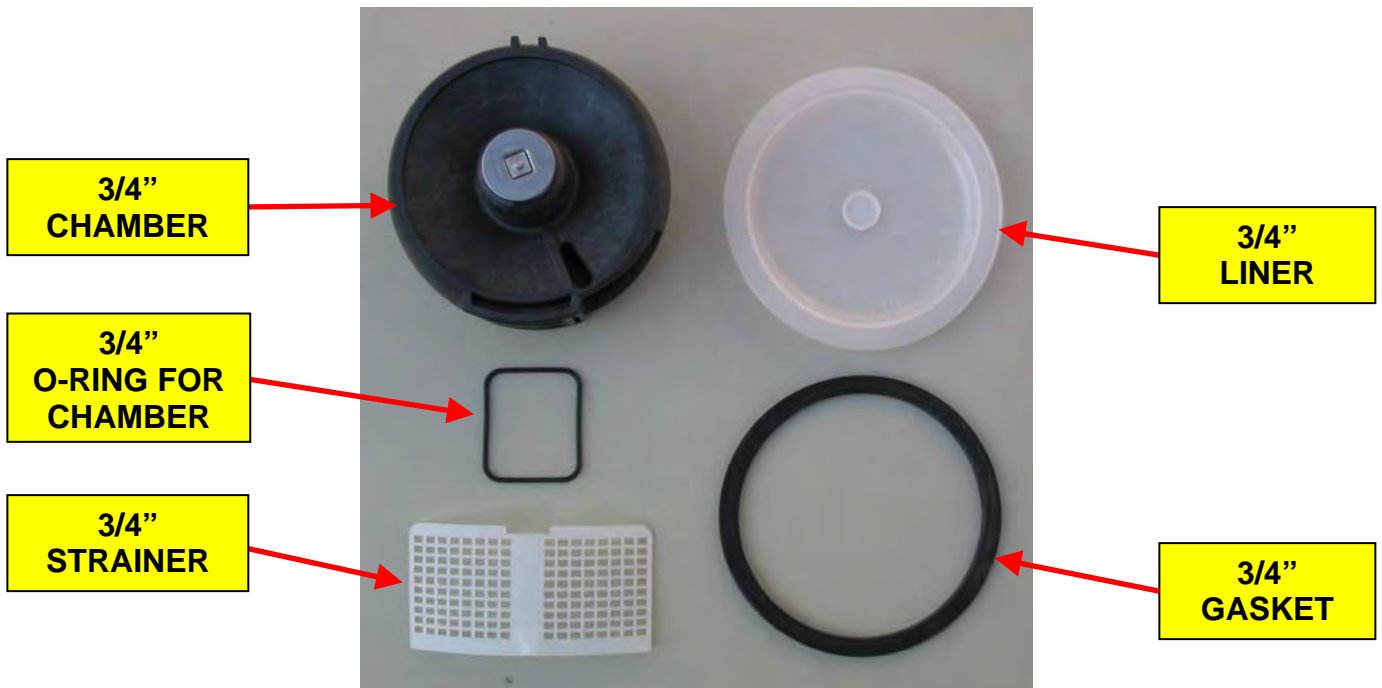


1-1/2" & 2" BRONZE OVAL FLANGE WITH GASKET, BOLTS, NUTS & WASHERS

5/8" & 3/4" REPAIR KITS

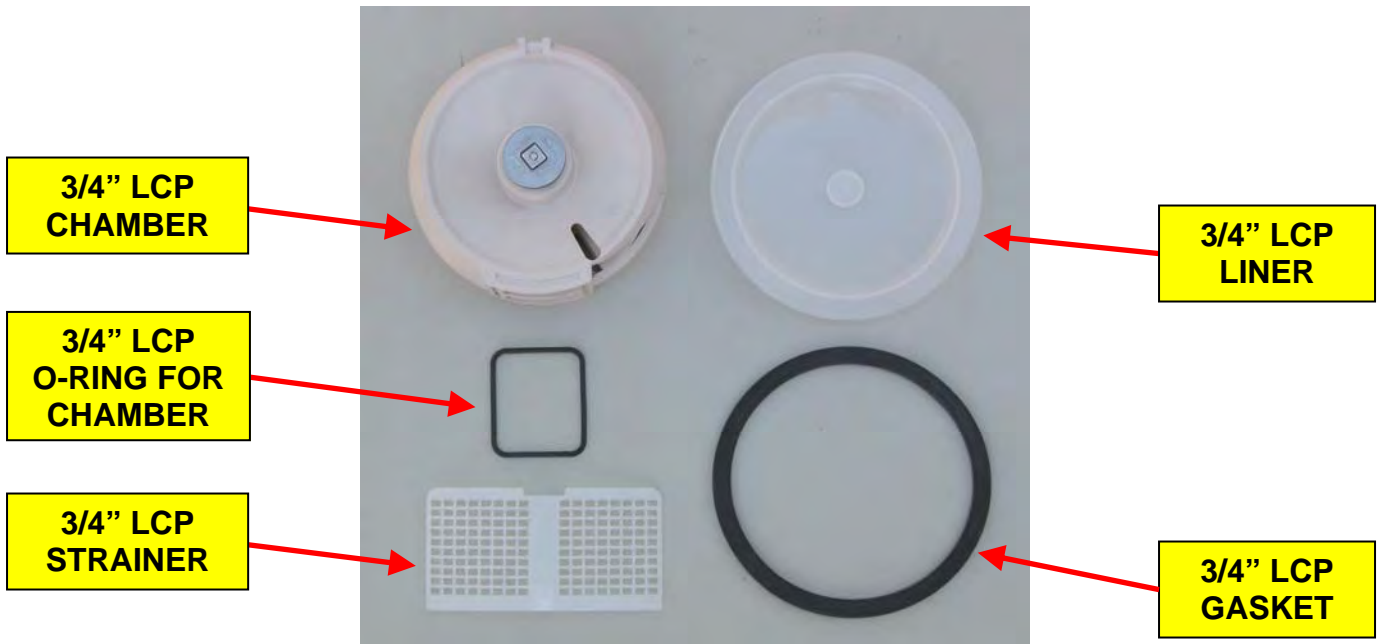


5/8" REPAIR KIT

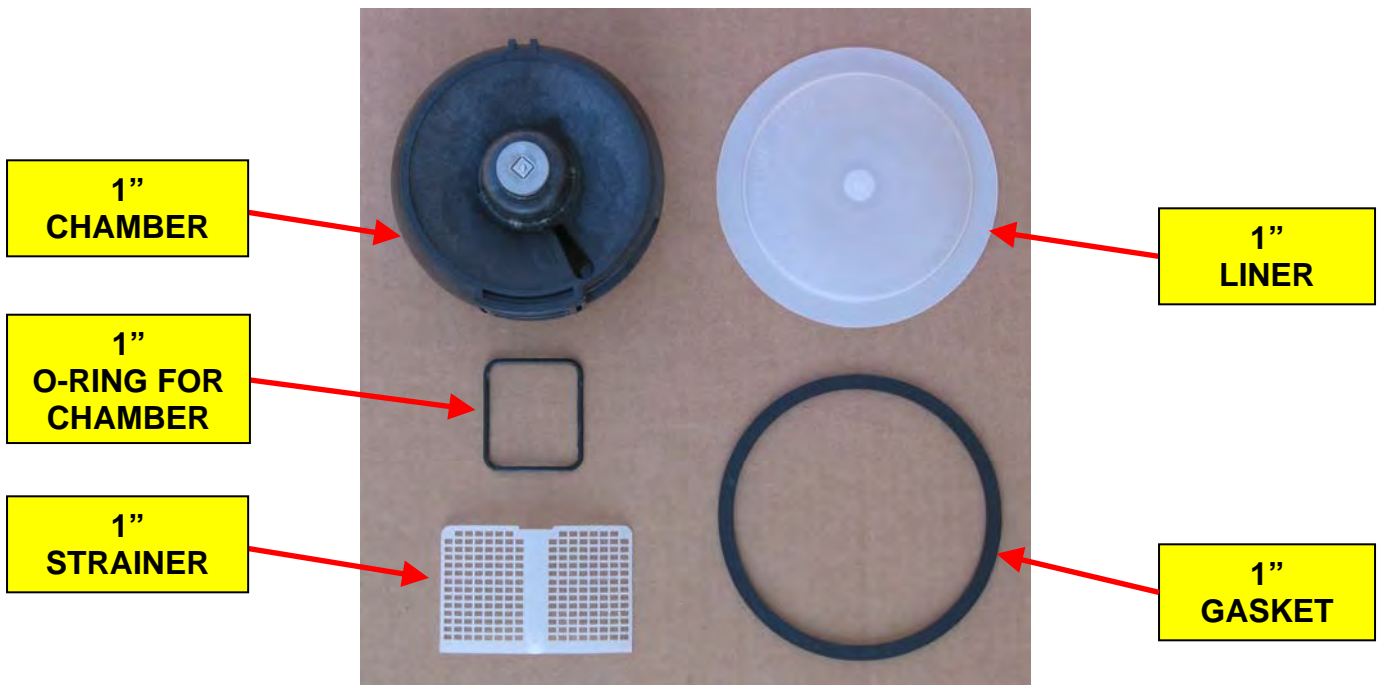


3/4" REPAIR KIT

3/4" LCP & 1" REPAIR KIT

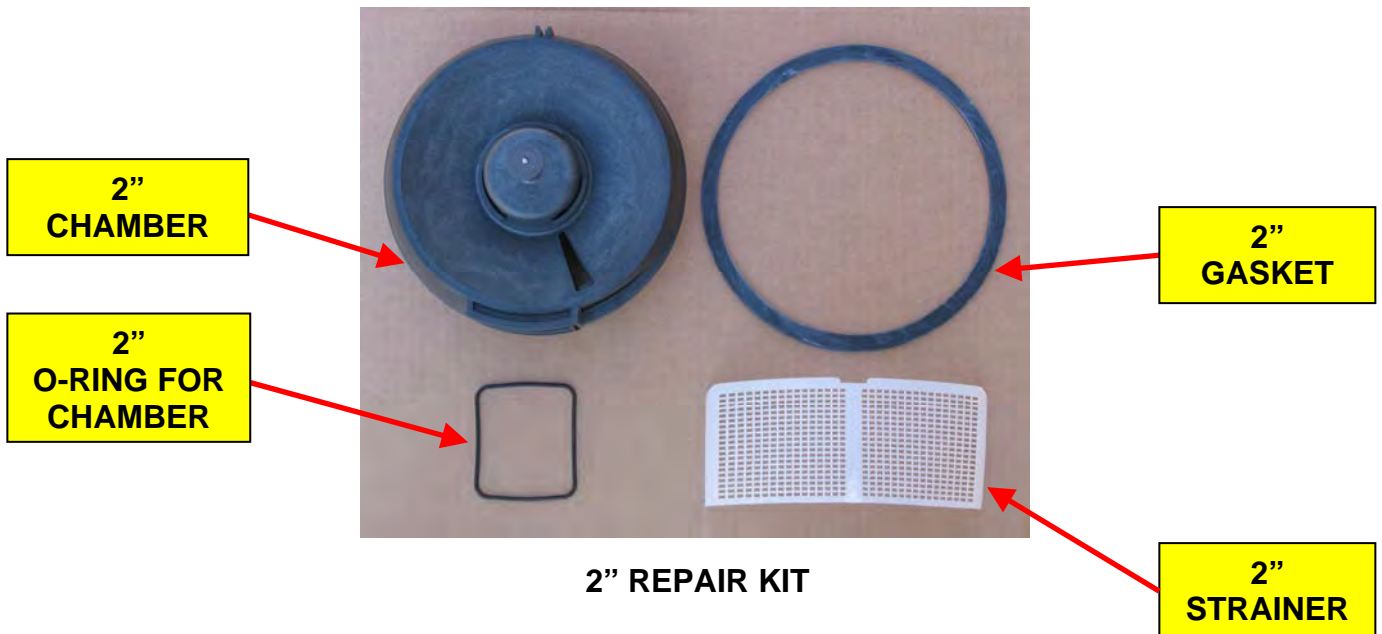
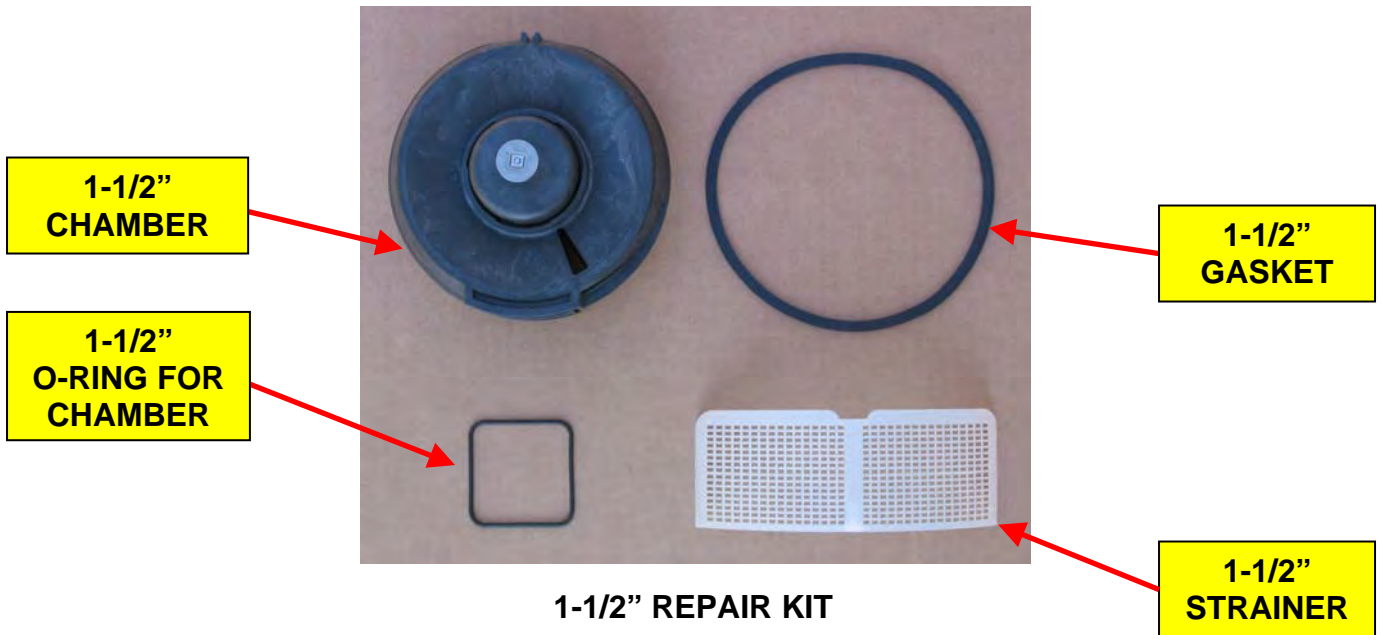


3/4" LCP REPAIR KIT



1" REPAIR KIT

1-1/2" & 2" REPAIR KITS



1-1/2" SOLENOID VALVE (120 VAC)



FRONT VIEW



REAR VIEW

EP2000-HDD SPECIFICATIONS

EP2000-HDD SPECIFICATIONS SCALABLE ELECTRONIC TRANSMITTER

HOUSING:

The transmitter is enclosed in non-conductive, high impact strength resin housing that is UV, temperature and chemical resistant. An L.E.D pulse indicator is clearly visible through a clear lens, located at the top of the housing. The transmitter housing, contains a Bayonet Mounting that can be rotated at 90 degree settings for convenience and accessibility. The housing includes a weatherproof quick disconnect electrical cable connector.

OPERATION:

A 100% solid state microprocessor Pulse Transmitter with its magnetic interrupter sensor provides high resolution, reliability and longevity. Scaling & calibration are easily set and displayed on a bright four (4) digit LED display module. Permissible scaling resolutions may range from .0001 to .9999 The output signal is optimized for interfacing to the widest range of external devices, thus making manual adjustments unnecessary.

OPERATING TEMPERATURE:

-10 Degrees to 130 Degrees Fahrenheit

ELECTRICAL:

AC Input Power: 115 -125VAC

AC Switching: Opto-Isolated Triac Rating: 2 Amps @ 115 VAC

DC Input Power: 10-30VDC

DC Switching: Opto-Isolated Open Collector Transistor Rating: 2 Amps @ 24 VDC

The EP-2000 transmitter is protected with an auto-resetting fuse for both AC and DC power inputs.

The Amtec Model EP-2000 Transmitter can be configured for any combination of 115-125VAC input power or 10-30VDC input power. Easily accessible AC Switching and DC switching transfer jumpers make AC and DC settings a snap. See illustrations on the reverse side of this form. The default shipment configuration is AC Power Input and AC Switching, unless otherwise requested.

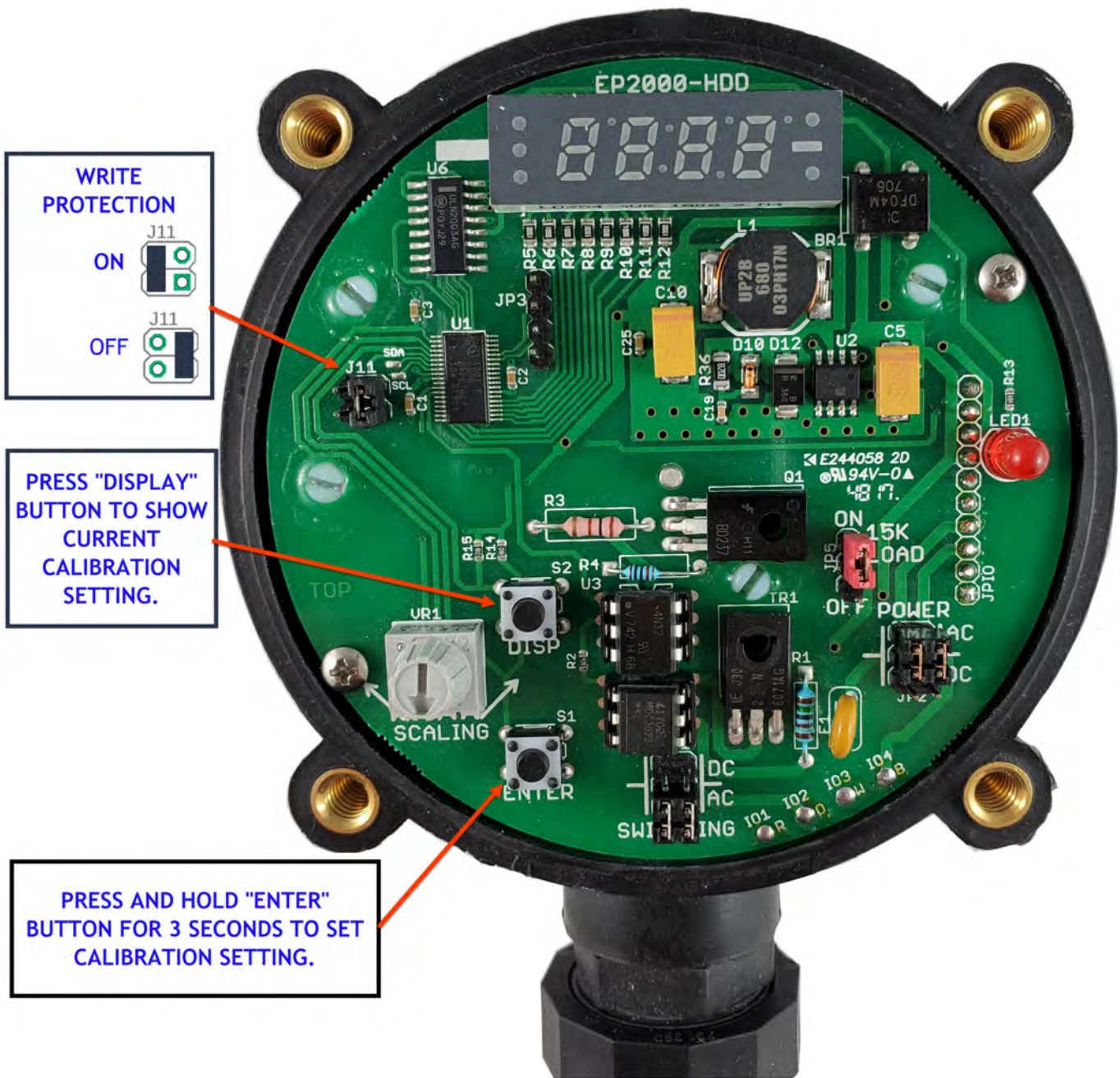
A 15K Ohm "Pull Down" resistor (**Red Jumper**) is included in the AC output circuit to accommodate a wide range of available equipment in the field. This resistor is generally beneficial for operation, or requirements of most peripheral equipment. The 15K resistor can be removed, however, from the circuit by moving jumper from IN to OUT position as illustrated on reverse side of this form. In some cases, removal of this resistor may enhance external equipment operation.

Wiring information to the Quick Disconnect coupling and jumper settings are illustrated on reverse side of this form.



EP2000-HDD NEW FEATURES & UPGRADES

EP2000-HDD FEATURES & UPGRADES



EP2000-HDD NEW FEATURES & UPGRADES

EP2000-HDD SCALING ADJUSTMENT PROCEDURE

EP2000-HDD SCALING ADJUSTMENT PROCEDURE

See the attached circuit board layout diagram for location of switches and LED displays on the transmitter circuit board.

1. On power up dashes will be displayed across center of the LED DISPLAY. This is power saver mode. The SCALING CONTROL will not function in this mode.
 2. Upon pressing the "DISP" button, the LED DISPLAY will illuminate a four digit number for approximately 3 minutes. Now, the SCALING CONTROL is functional.
 3. By moving the SCALING CONTROL to right or left of center while the LED DISPLAY is showing an actual numerical set of digits, the four digit display number will increase or decrease accordingly, by turning the knob clockwise or counter clockwise. By increasing the off center movement of the SCALING CONTROL, the rate or speed of change will increase accordingly.
 4. By centering the SCALING CONTROL and "freezing" a desired scaling factor, one can press the "ENTER" button to force the SCALER SETTING into the ELECTRONIC SCALER. The LED DISPLAY will blink once, as per all previous versions of the EP2000. You have now stored the new calibration setting into the scaler of the EP2000.
 5. By simultaneously holding down the "DISP" and "ENTER" button, an automatic scaling of .3984, (which is one (1) pulse per ounce, when the transmitter is mounted on a standard $\frac{3}{4}$ " meter) will preset as a convenient method of setting this popularly used setting. A decimal point is assumed to precede the left most digit, and is not displayed actively.
4. If the LED DISPLAY is incrementing or decrementing (drifting) on its own while the display is set, the SCALING CONTROL is not centered, and the displayed reading may not agree with the actual stored scaling factor. It can be verified and then adjusted (if necessary) in one of two ways:

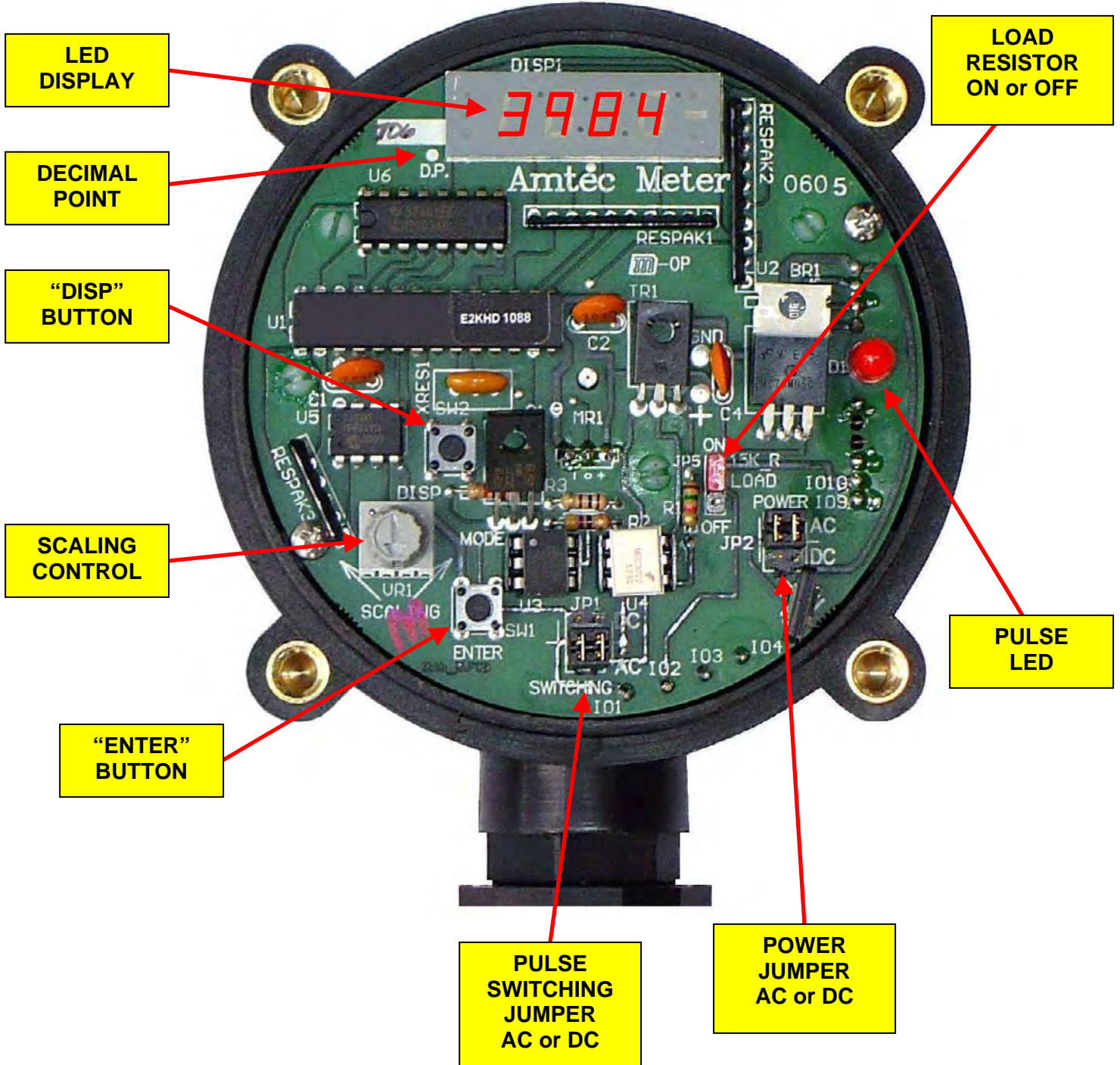
Method 1: Center the SCALING CONTROL to stop the drift. Turn the EP2000 power off, then turn power back on. This can be accomplished by removing the quick disconnect connector for a few seconds and then reconnecting. PRESS the "DISP" button – DO NOT PRESS THE "ENTER" BUTTON. The display will show the actual stored scaling factor.

Method 2: Set, a new scaling factor, or duplicate original intended scaling factor. Center the SCALING CONTROL and press "ENTER". Doing so will store the displayed scaling factor. You may turn power off, then turn power back on to verify the desired stored scaling factor is truly stored. When the "ENTER" button is pressed, the LED DISPLAY blinks off, then on. This BLINK is also confirmation that the value displayed has been stored into memory.

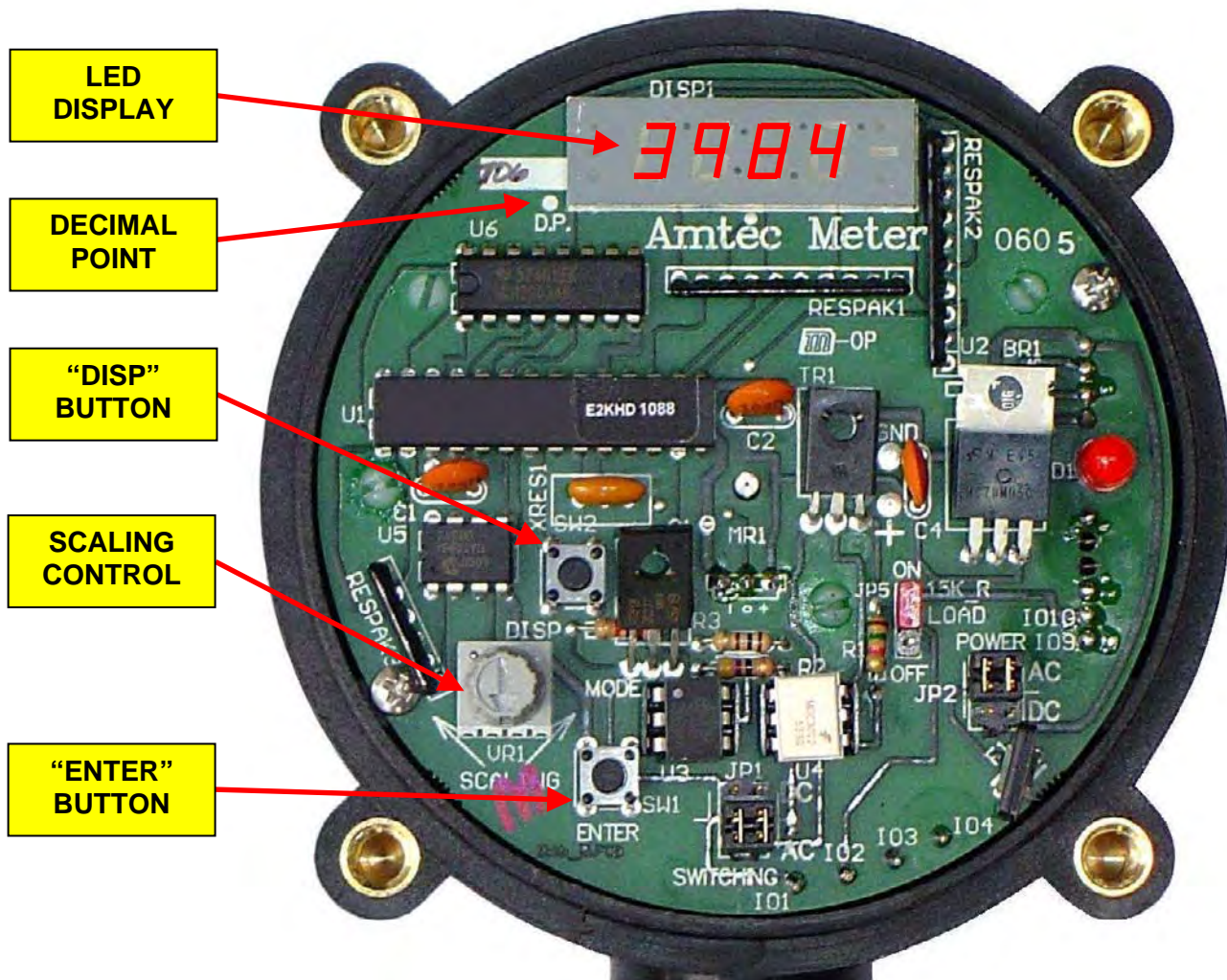
Turning power off, and then turning power back on is the best way of confirming, the stored value.

EP2000-HDD CIRCUIT BOARD LAYOUT DIAGRAM

EP2000-HDD CIRCUIT BOARD LAYOUT DIAGRAM



EP2000-HDD QUICK SCALING ADJUSTMENT PROCEDURE



1. Determine the calibration setting from the charts or by the formula.
2. Note the decimal point. Scaling ranges from .0000 to .9999
3. Check that the "POWER", the "SWITCHING" and the "LOAD" jumpers are in the correct position.
4. Apply power to the unit. Four dashes will appear on the display.
5. Start with the "SCALING" knob in the center position.
6. To activate the scaling adjustment, press the "DISP" button.
7. Turn the "SCALING" knob clockwise to increase the setting. The farther clockwise you turn the knob the faster the setting increases.
8. Turn the "SCALING" knob counterclockwise to decrease. The farther counterclockwise you turn the knob the faster the setting decreases.
9. As you approach your target setting begin to turn the "SCALING" knob back to center. Once the target has been reached place the "SCALING" knob back in the center position.
10. Press the "ENTER" button to accept the setting. The display will blink to confirm the setting was accepted.
11. The display will return to four dashes after 3 minutes. To confirm your settings after the dashes have come on just press the "DISP" button and the current settings will be displayed. If you would like to confirm the settings before 3 minutes cycle the power off and on. Four dashes will appear on the display. Press the "DISP" button and the current settings will be displayed.
12. To enter the default setting press both the "DISP" and the "ENTER" buttons simultaneously. The default setting is **.3984** which is the setting for (1) ounce per pulse for a 3/4" meter.

CALIBRATION FORMULA

For easy reference, Amtec publishes a form sheet that indicates the starting settings for desired quantity, ounces or milliliters per pulse for meters from 5/8" to 1" in size equipped with the Amtec scalable solid state transmitter.

The settings on this form are a close approximation, but may vary slightly because of the variation of pressure and flow that may exist in a specific installation. As a result the form indicates the following:

If less quantity is desired in the container - Increase the rotary switch setting.

If a greater quantity is desired in the container - Decrease the rotary switch setting.

Some of the technicians may prefer to actually calculate the primary or starting setting of the scaling rotary switches and the formula for the calculations is as follows:

$$\text{Transmitter setting} = \frac{1}{\text{Number of Ounces or Milliliters Required} \times \text{Meter Factor}}$$

For example if a pulse for every 5 ounces is desired for a 3/4" meter the formula for setting would be:

$$\frac{1}{5 \text{ (Oz)} \times 2.51 \text{ (3/4" factor)}} = \frac{1}{12.55} = 1 \text{ divided by } 12.55 = .0796$$

If the desired amount in the container is not achieved exactly then further calibration can be effected by utilizing the formula:

$$\frac{\text{Quantity in container (Oz or ml)}}{\text{Quantity desired in container (Oz or ml)}} \times \text{Present switch setting} = \text{New switch setting (or)}$$

The Quantity in container Divided by the Quantity desired, then multiply the result by the present rotary switch setting (including the period) and this will equal new setting for the rotary switches.

For example if a setting for a pulse/ounce for a 3/4" meter is .3985 and this resulted in a quantity of 290 ounces when 300 ounces was desired, the correction would be 290 ounces divided by 300 ounces and the result (.9666) multiplied by the present switch setting (.3985) for a corrected setting of .3852

<u>SIZE METER</u>	<u>FACTOR FOR OUNCES</u>	<u>FACTOR FOR MILLILITERS</u>
5/8"	4.50	.1522
3/4"	2.5	.0845
1"	1.1764	.0403

EP2000-HDD CALIBRATION SETTINGS

EP2000-HDD CALIBRATION SETTINGS

5/8" METER Factor (Oz) 4.5		5/8" METER Factor (ml) .1522		3/4" METER Factor (Oz) 2.51		3/4" METER Factor (ml) .0845		1" METER Factor (Oz) 1.1764		1" METER Factor (ml) .0403	
Ounce / Pulse	L.E.D. Setting	Milliliter / Pulse	L.E.D. Setting	Ounce / Pulse	L.E.D. Setting	Milliliter / Pulse	L.E.D. Setting	Ounce / Pulse	L.E.D. Setting	Milliliter / Pulse	L.E.D. Setting
1/4	.8870										
1/2	.4428	10	.6570	1/2	.7968						
1	.2220	30	.2190	1	.3984	30	.3925	1	.8500	30	.8271
2	.1115	50	.1314	2	.1992	50	.2359	2	.4250	50	.4963
3	.0740	60	.1095	3	.1328	60	.1965	3	.2830	60	.4136
4	.0563	100	.0657	4	.0996	100	.1181	4	.2125	100	.2481
5	.0455	150	.0438	5	.0790	150	.0758	5	.1700	150	.1654
6	.0370	200	.0330	6	.0663	200	.0558	6	.1417	200	.1241
8	.0278	250	.0263	8	.0499	250	.0450	8	.1080	250	.0993
10	.0222	300	.0220	10	.0399	300	.0392	10	.0850	300	.0827
12	.0185	450	.0145	12	.0330	450	.0225	12	.0700	450	.0551
16	.0140	1000	.0066	16	.0250	1000	.0117	16	.0535	1000	.0248
32	.0069			32	.0125			32	.0265		

A certified test bench is utilized to factory test all meters and pulse transmitters, to determine the standard initial calibration setting, as shown on this form. Flow rates, pressure and the operation of valves, may effect the actual volumetric results. Therefore, all meters should be tested in each specific installation and calibrated accordingly.

If a lesser quantity is desired in the container, increase the rotary switch setting.
If a greater quantity is desired in the container, decrease the rotary switch setting.

If the desired amount in the container is not achieved exactly, then further calibration can be effected by utilizing the formula:

$$\frac{\text{Quantity in container (oz or ml)}}{\text{Quantity desired in container (oz or ml)}} \times \text{Present L.E.D. setting} = \text{New L.E.D. setting}$$

In other words, divide the Quantity of the amount in the container by the quantity desired and then multiply the result by the present rotary switch setting (including the decimal point) and the result will equal the new L.E.D. setting.

EP2000–HDD SETTINGS FOR 3/4” METER WITH LCP CHAMBER

AMTEC 3/4” METER WITH LCP CHAMBER

EP2000-HDD TRANSMITTER L.E.D. SETTINGS

OUNCES/ PULSE	L.E.D. SETTING	MILLILITERS/ PULSE	L.E.D. SETTING
1	.4132	30	.4090
2	.2066	50	.2455
3	.1385	60	.2045
4	.1033	100	.1220
5	.0826	150	.0805
6	.0680	200	.0595
8	.0505	250	.0475
10	.0410	300	.0398
12	.0335	450	.0250
16	.0250	750	.0160
32	.0125	1000	.0120

A certified test bench is utilized to factory test all meters and pulse transmitters, to determine the standard initial calibration setting, as shown on this form. Flow rates, pressure and the operation of valves, may effect the actual volumetric results. Therefore, all meters should be tested in each specific installation and calibrated accordingly.

If a lesser quantity is desired in the container, increase the L.E.D. setting.
If a greater quantity is desired in the container, decrease the L.E.D. setting.

If the desired amount in the container is not achieved exactly then further calibration can be effected by utilizing the following formula:

$$\frac{\text{Quantity in container (Oz or MI)}}{\text{Quantity desired in container (Oz or MI)}} \times \text{Present L.E.D. display} = \text{New}$$

In other words, divide the Quantity of the amount in the container by the quantity desired and then multiply the result by the present rotary switch setting (including the decimal point) and the result will equal the new L.E.D. setting.

EP2000-HDD SETTINGS FOR 1", 1-1/2", 2" METERS

GALLON AND LITER SETTINGS

1", 1-1/2", & 2"

SIZE	PULSES	SETTING
1" T-10	1P / 1/2 GAL	.0134
1" T-10	1P / GAL	.0066
1" T-10	10P / GAL	.0669
1" T-10	1P / LITER	.0252
1-1/2" T-10	1P / GAL	.0148
1-1/2" T-10	10P / GAL	.1487
1-1/2" T-10	1P / LITER	.0560
2" T-17	1P / GAL	.0261
2" T-18	10P / GAL	.2638
2" T-19	1P / LITER	.0999

A certified test bench is utilized to factory test all meters and pulse transmitters, to determine the standard initial calibration setting, as shown on this form. Flow rates, pressure and the operation of valves, may effect the actual volumetric results. Therefore, all meters should be tested in each specific installation and calibrated accordingly.

If a lesser quantity is desired in the container, increase the rotary switch setting.
If a greater quantity is desired in the container, decrease the rotary switch setting.

If the desired amount in the container is not achieved exactly, then further calibration can be effected by utilizing the formula:

$$\frac{\text{Quantity in container (oz or ml)}}{\text{Quantity desired in container (oz or ml)}} \times \text{Present L.E.D. setting} = \text{New L.E.D. setting}$$

In other words, divide the Quantity of the amount in the container by the quantity desired and then multiply the result by the present rotary switch setting (including the decimal point) and the result will equal the new L.E.D. setting.

EP2000-HDD WIRING & JUMPER SETTINGS

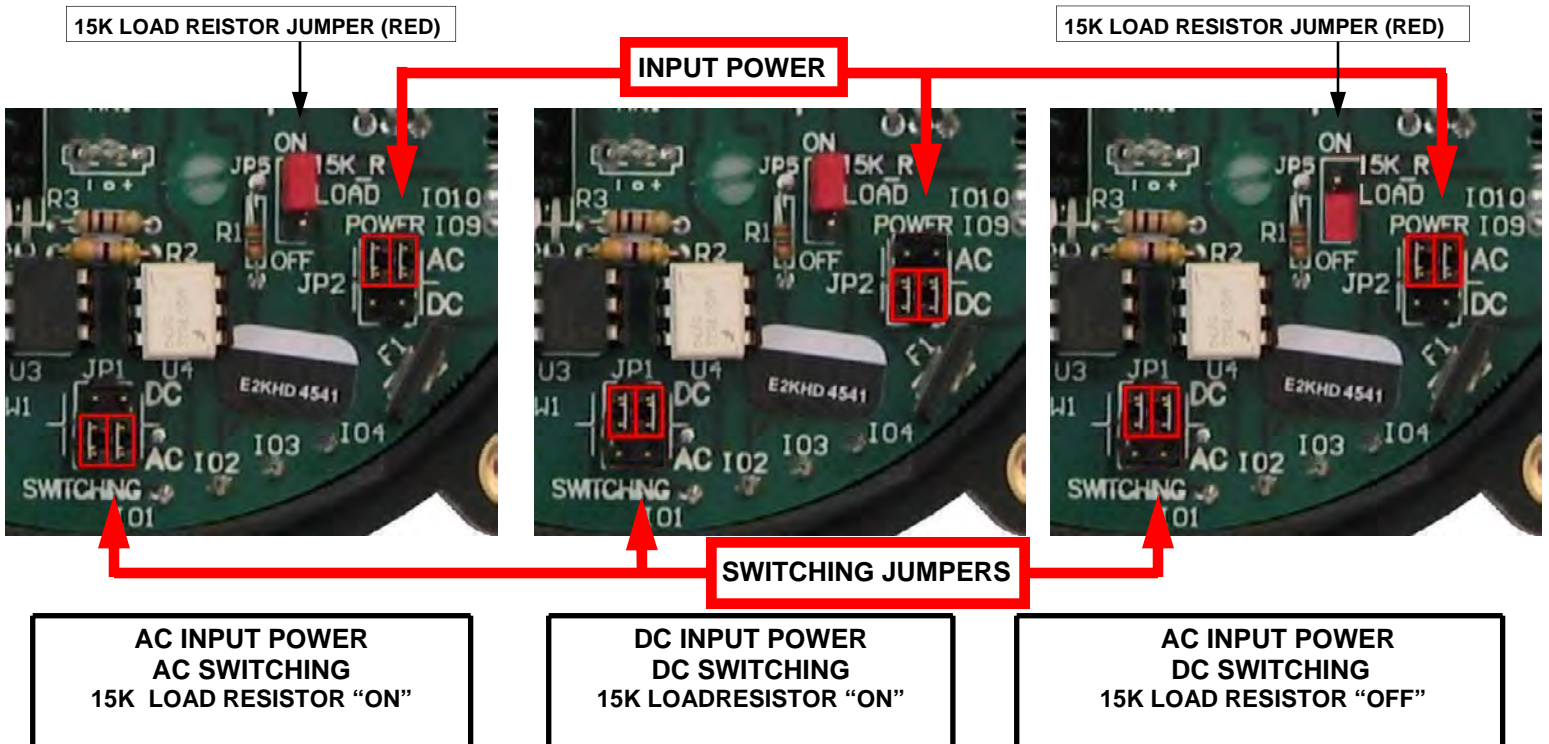
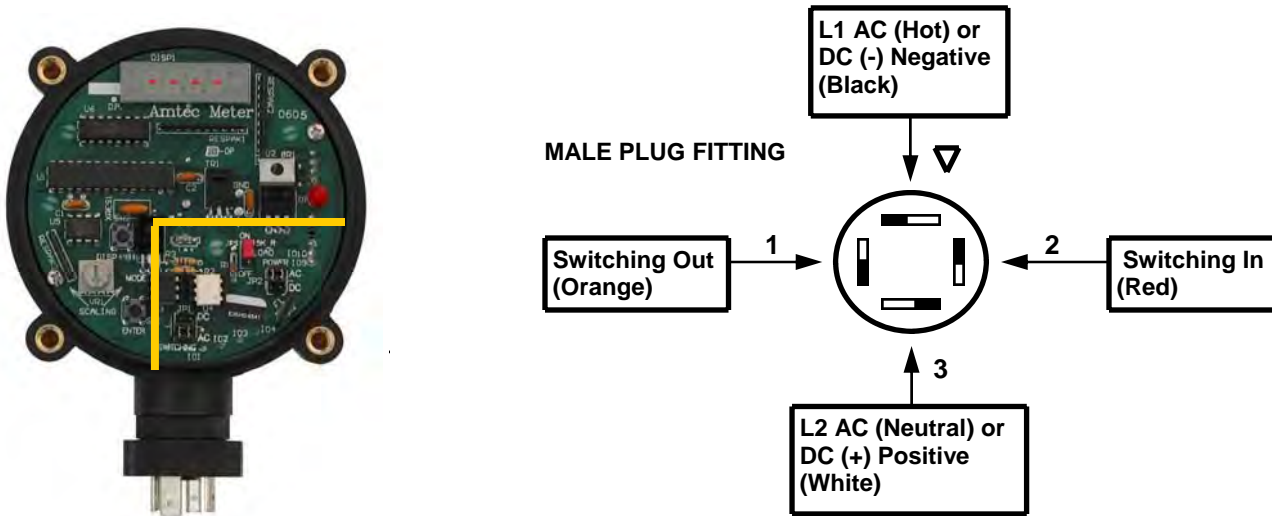
SWITCHING WIRE CONNECTIONS AND JUMPER POSITIONS EP2000-HDD PROGRAMMABLE TRANSMITTERS

AC INPUT L1 HOT (In Male, Black Wire)	PIN MARKED	→ ▽
AC INPUT L2 NEUTRAL (In Male, White Wire)	PIN MARKED	→ 3
DC INPUT (-) NEGATIVE (In Male, Black Wire)	PIN MARKED	→ ▽
DC INPUT (+) POSITIVE (In Male, White Wire)	PIN MARKED	→ 3

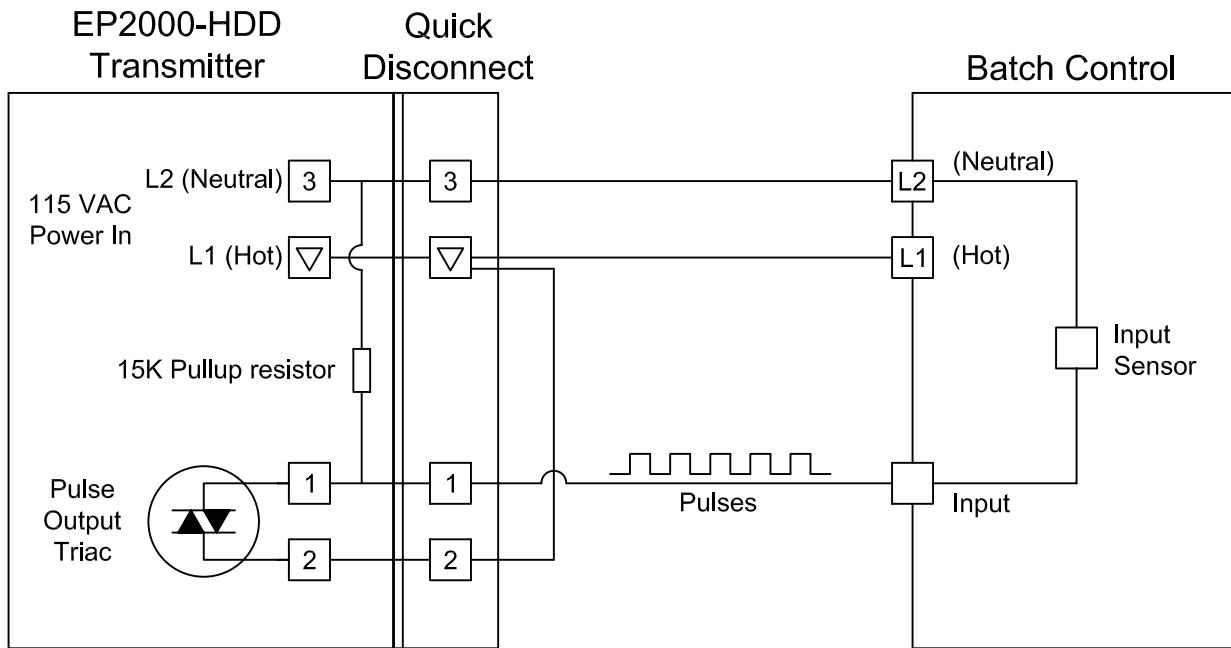
If AC Hot Switching is desired, place a jumper wire in the back of the female plug in-between Pin Marked ▽ and Pin Marked 2. Use Pin 1 for line back to computer.

If AC Neutral Switching place a jumper wire in the back of the female plug in-between Pin marked 3 and Pin 1. Use Pin 2 for line back to computer. **NOTE: Neutral Switching requires that the red resistor jumper on the power bar must be placed in the off position**

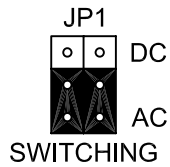
For DC Switching it is preferable to use negative for Switching. For DC power input and DC negative (-) switching placing the 15K Ohm Load resistor in the "ON" position will act in a beneficial manner as pull up. However, if DC positive (+) switching is utilized, then it is necessary to place the 15K Ohm load resistor in the "OFF" position.



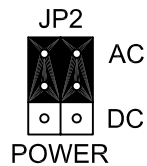
EP2000-HDD WIRING AC POWER & AC (HOT) SWITCHING



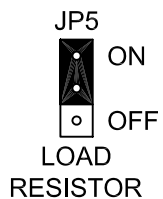
Before applying power set the jumpers as follows.



JP1 Power = AC

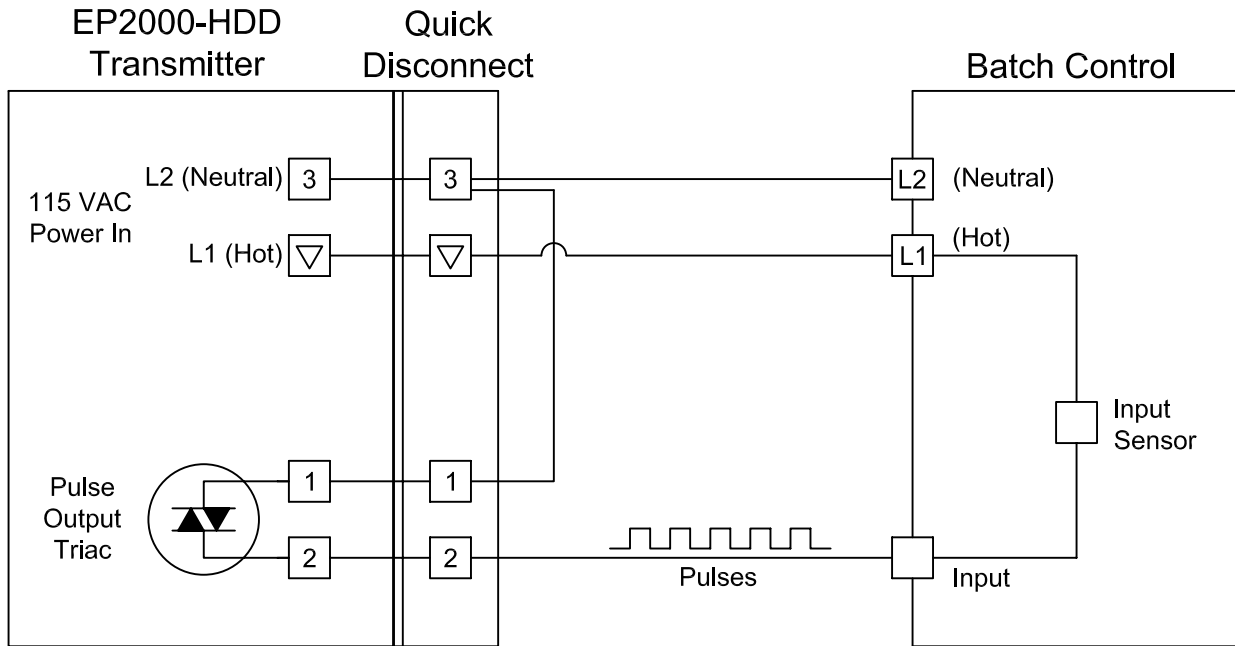


JP2 Switching = AC

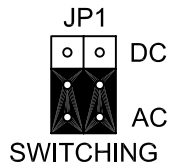


JP5 Load Resistor = ON

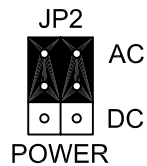
EP2000-HDD WIRING AC POWER & AC (NEUTRAL) SWITCHING



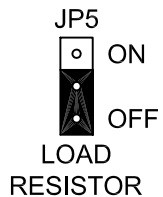
Before applying power set the jumpers as follows.



JP1 Power = AC

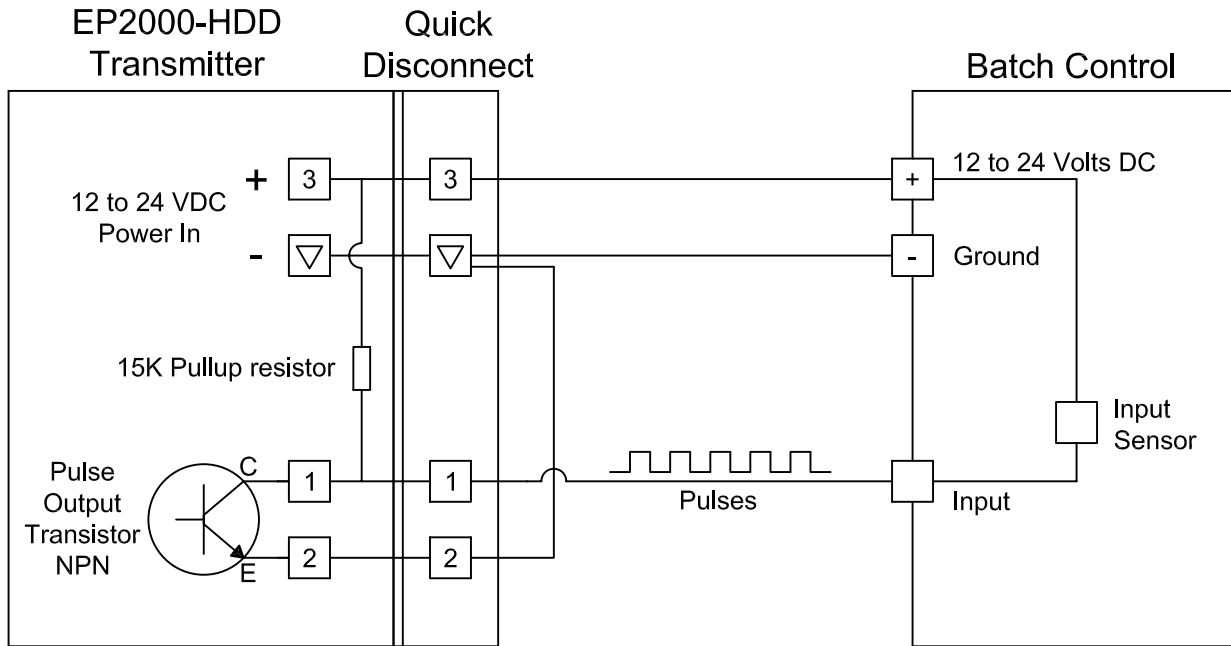


JP2 Switching = AC

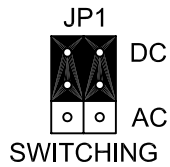


JP5 Load Resistor = OFF

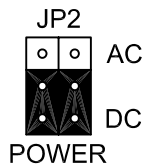
EP2000-HDD WIRING DC POWER & DC (-) NEGATIVE SWITCHING



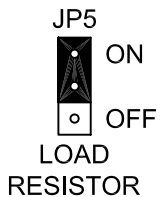
Before applying power set the jumpers as follows.



JP1 Power = DC

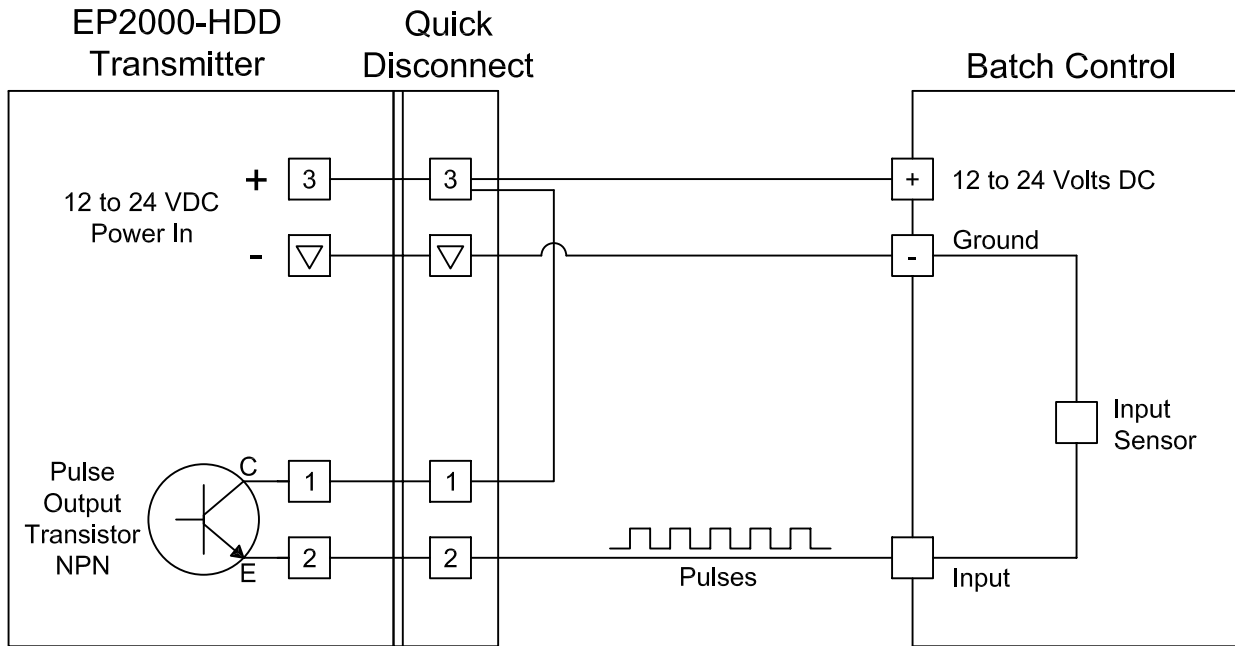


JP2 Switching = DC

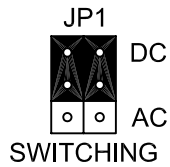


JP5 Load Resistor = ON

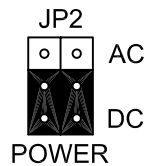
EP2000-HDD WIRING DC POWER & DC (+) POSITIVE SWITCHING



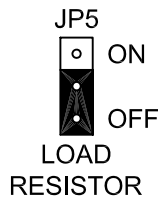
Before applying power set the jumpers as follows.



JP1 Power = DC

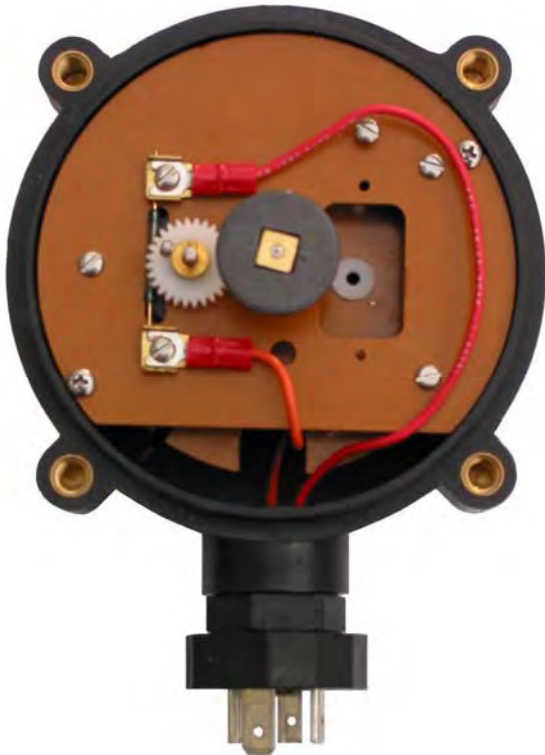


JP2 Switching = DC



JP5 Load Resistor = OFF

MECHANICAL TRANSMITTER WITH REED SWITCH



Standard Mechanical Transmitter



Mechanical Transmitter with Gear Train Installed

MECHANICAL RC WIRING HARNESS

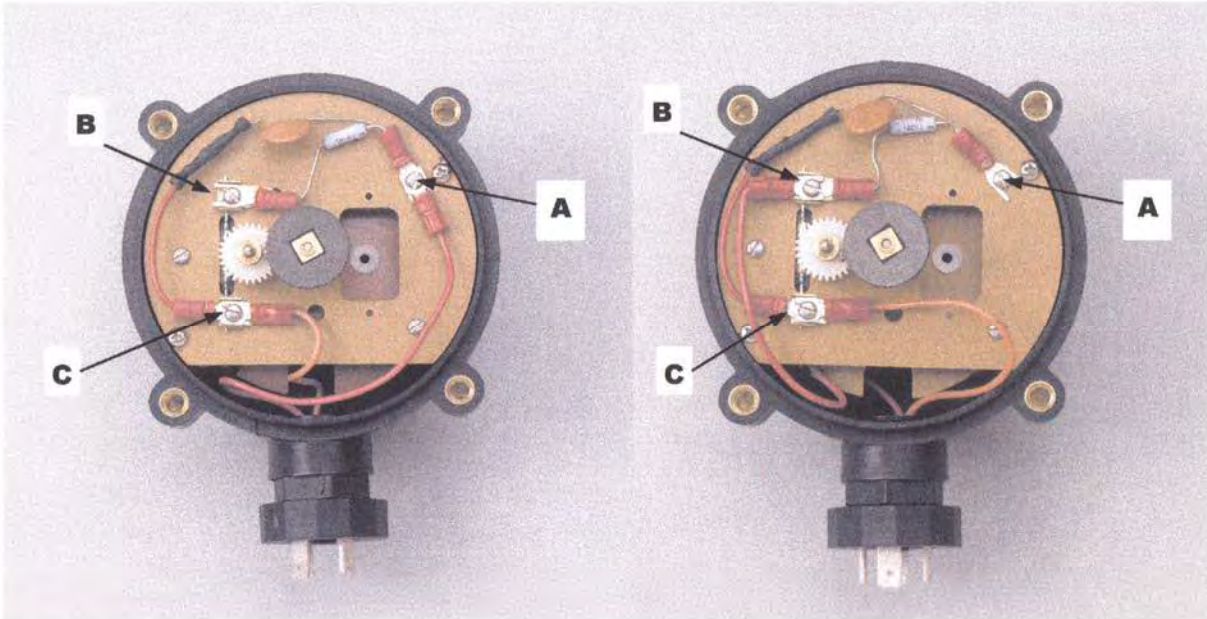


FIGURE 1

FIGURE 2

Figure 1 is illustration of Amtec Transmitter as shipped with the input switching wire (red) located at Terminal A.

In this configuration resistor and ceramic capacitor are across circuit.

Figure 2 is illustration of Amtec Transmitter modified to remove resistor from circuit. To accomplish this the input switching wire (red) is removed from Terminal A and secured to Terminal B. In this configuration the ceramic capacitor is across circuit. **Therefore, if resistor is not required, ceramic capacitor should remain installed at all times to limit reed switch arcing as illustrated in Figure 2.**

Amtec transmitters in stock or in service can be modified to Figure 1 or Figure 2, by ordering and field installing RC wiring harness. The harness is shipped assembled with parts and terminals and only requires transferring input switching wire (red) from Terminal B to Terminal A and installing harness, as illustrated on attached form.

MECHANICAL GEAR TRAIN KIT

THE AMTEC KIT CONSISTS OF THE FOLLOWING:

- 1 — A Shaft w/Gear Train Gear
- 1 — Gear Train Plate
- 2 — Gear Train Plate Screws
- 1 — A Gear
- 1 — B Shaft Idler Bushing
- 1 — B1 Gear
- 1 — B1 Spacer
- 1 — B2 Gear
- 1 — C Shaft Spacer (long)
- 1 — C Gear

To change the Amtec Transmitter from a pulse per 2 ounces or less to a pulse per 3 ounces or more proceed as follows:

Remove existing magnet and set aside for later use. Gears on B and C Shaft should be removed and placed in box for future use or thrown away. The Kit can now be opened and checked with above parts list.

Proceed by placing Gear Train Gear & A shaft in rectangular opening of transmitter and securing shaft in the bushing staked in lower plate. This can be most easily accomplished by tilting gear away from B and C shaft and once gear is under plate, securing shaft in bushing.

Then place Gear Train Plate over A Shaft with locating hole furthest from B and C Shaft. In this position hold down screw holes will line up with the holes in the upper plate. Secure Plate with the two small screws provided.

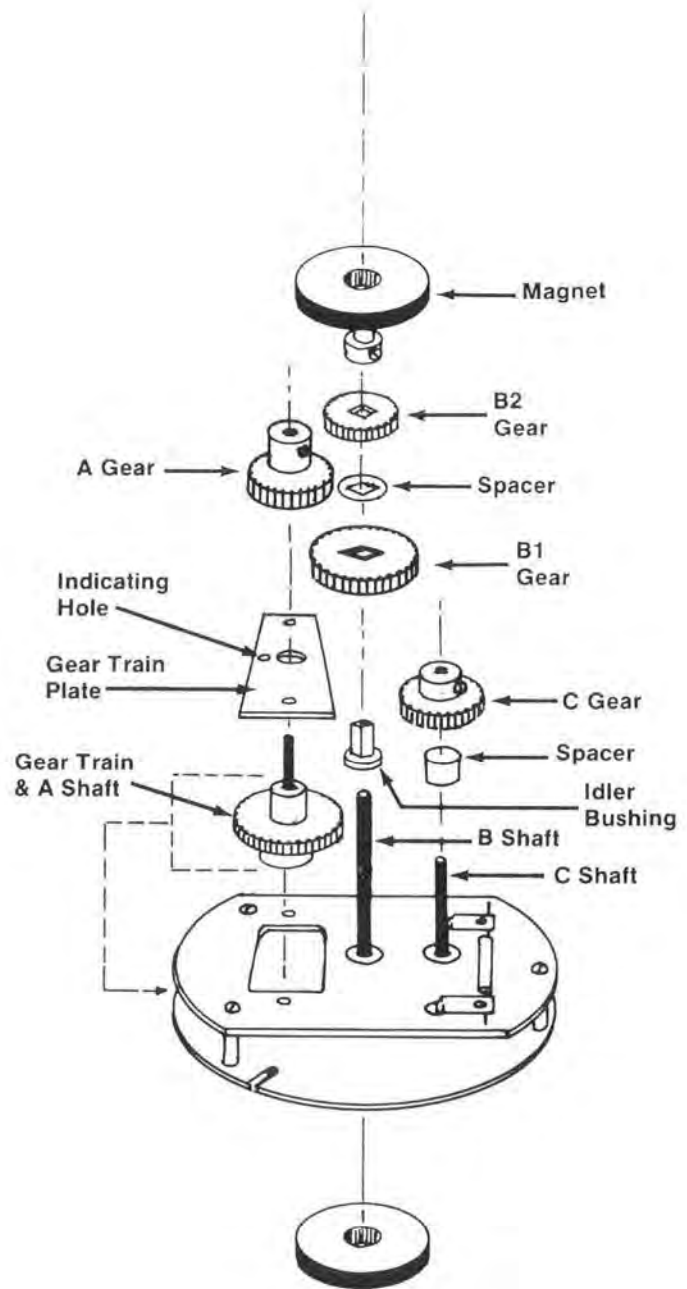
The A Gear can now be secured to the A Shaft. This gear will have a screw to secure to shaft and generally has a higher bushing than the C Gear. It can also be identified by referring to Gear Chart and checking the diameter of the gear.

The B Shaft Gears should now be assembled by placing the B1 Gear on the Idler Bushing, next, the thin spacer with the square hole and finally the B2 Gear. Slide this assembly onto the B Shaft.

Now, place C Shaft Spacer and C Gear on C Shaft and tighten screw.

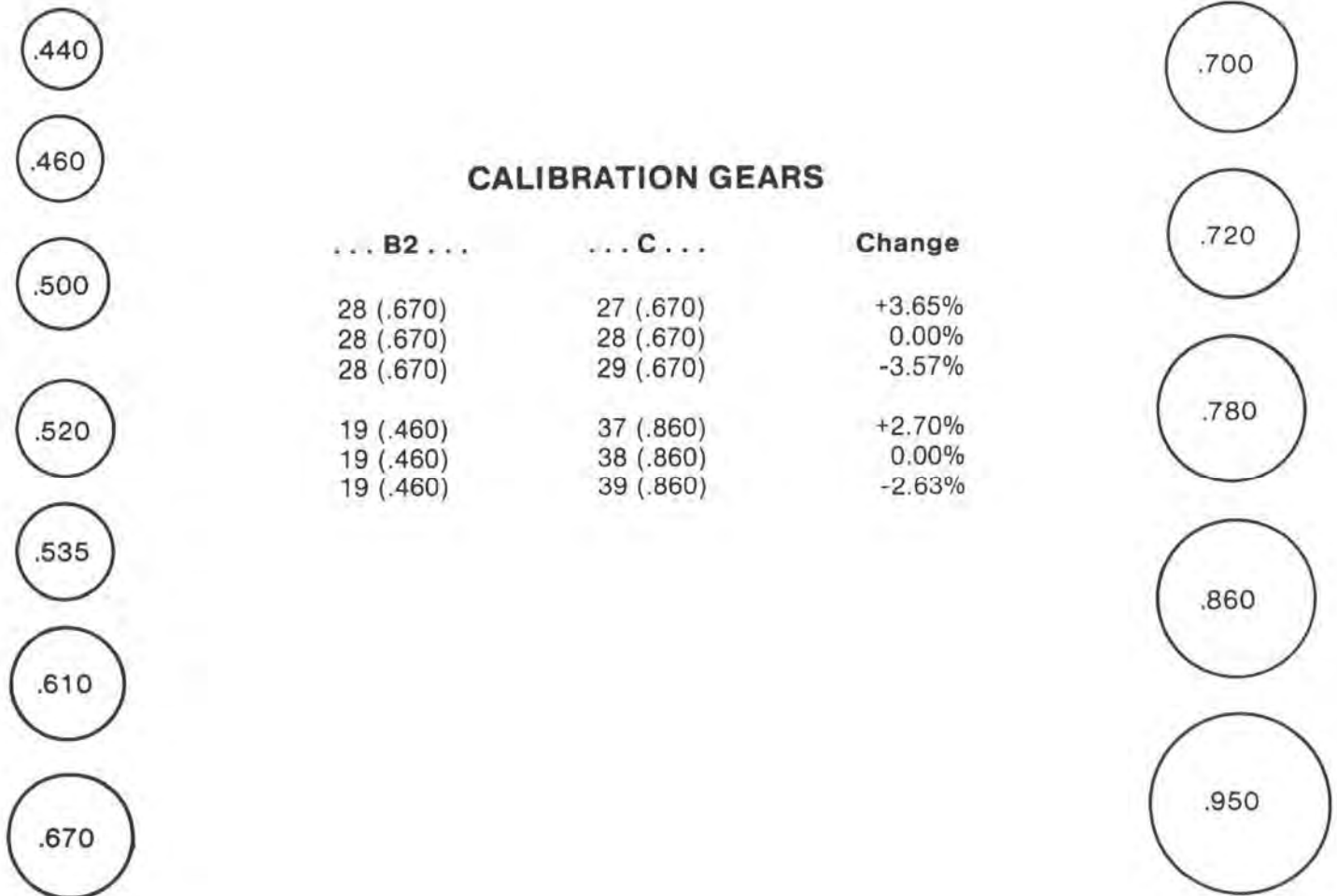
The final operation is to replace Upper Magnet on B Shaft with the bushing and screw facing down and lightly pressed against top of Idler Bushing. (This prevents movement of B Shaft Gears and assures proper meshing of gears.)

If you have any questions regarding Amtec's Pulse Transmitters or the above instructions, please do not hesitate to contact us on our toll free number — 1-800-826.3837.



MECHANICAL GEAR CHART FOR 3/4" METER

Ounce/ Pulse	Gear Train	Gear Train Gears		Calibration Gears	
		.....A.....	.....B1.....	.....B2.....	.....C.....
1/2	None	.....	.....	38T (.860 Dia)	19T (.460 Dia)
1	None	.....	.....	28T (.670 Dia)	28T (.670 Dia)
2	None	.....	.....	19T (.460 Dia)	38T (.860 Dia)
3	None	.....	.....	13T (.360 Dia)	39T (.965 Dia)
4	4:1	27T (.610 Dia)	27T (.610 Dia)	28T (.670 Dia)	28T (.670 Dia)
5	5:1	24T (.535 Dia)	30T (.670 Dia)	28T (.670 Dia)	28T (.670 Dia)
6	6:1	20T (.500 Dia)	30T (.720 Dia)	28T (.670 Dia)	28T (.670 Dia)
8	8:1	19T (.440 Dia)	38T (.780 Dia)	28T (.670 Dia)	28T (.670 Dia)
10	5:1	24T (.535 Dia)	30T (.670 Dia)	19T (.460 Dia)	38T (.860 Dia)
12	6:1	20T (.500 Dia)	30T (.720 Dia)	19T (.460 Dia)	38T (.860 Dia)
16	16:1	11T (.265 Dia)	44T (.950 Dia)	28T (.670 Dia)	28T (.670 Dia)
32	16:1	11T (.265 Dia)	44T (.950 Dia)	19T (.460 Dia)	38T (.860 Dia)



MECHANICAL GEAR CHART FOR 3/4" METER WITH (LCP CHAMBER)

Ounce/ Pulse	Gear Train	Gear Train Gears		Calibration Gears		LCP
		.....A.....	.....B1.....	.....B2.....	.....C.....	.....C.....
1/2	None		...LCP...	40T (.860 Dia)	19T (.460 Dia)	
1/2	None	.....	.....	38T (.860 Dia)	19T (.460 Dia)	
1	None	.....	.....	28T (.670 Dia)	28T (.670 Dia)	27T(.670 Dia)
2	None	.....	.....	19T (.460 Dia)	38T (.860 Dia)	37T(.860 Dia)
3	None	.....	.....	13T (.360 Dia)	39T (.965 Dia)	38T(.965 Dia)
4	4:1	27T (.610 Dia)	27T (.610 Dia)	28T (.670 Dia)	28T (.670 Dia)	27T(.670 Dia)
5	5:1	24T (.535 Dia)	30T (.670 Dia)	28T (.670 Dia)	28T (.670 Dia)	27T(.670 Dia)
6	6:1	20T (.500 Dia)	30T (.720 Dia)	28T (.670 Dia)	28T (.670 Dia)	27T(.670 Dia)
8	8:1	19T (.440 Dia)	38T (.780 Dia)	28T (.670 Dia)	28T (.670 Dia)	27T(.670 Dia)
10	5:1	24T (.535 Dia)	30T (.670 Dia)	19T (.460 Dia)	38T (.860 Dia)	37T(.860 Dia)
12	6:1	20T (.500 Dia)	30T (.720 Dia)	19T (.460 Dia)	38T (.860 Dia)	37T(.860 Dia)
16	16:1	11T (.265 Dia)	44T (.950 Dia)	28T (.670 Dia)	28T (.670 Dia)	27T(.670 Dia)
32	16:1	11T (.265 Dia)	44T (.950 Dia)	19T (.460 Dia)	38T (.860 Dia)	37T(.860 Dia)

MECHANICAL INDUSTRIAL TRANSMITTER GEAR CHART

QUANTITY PULSE/GAL	MAGNET	A-SHAFT	B1-SHAFT	B2-SHAFT	C-SHAFT
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3/4" NEPTUNE

10 Pulse/Gal	4 Pole	20T(500)	30T(720)	19T(460)	41T(860)
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1" NEPTUNE

1 Pulse/Gal	2 Pole	11T(265)	44T(950)	19T(460)	35T(860)
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1-1/2 NEPTUNE

1 Pulse/16 Oz	4 Pole	27T(605)	27T(610)	30T(670)	24T(670)
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1 Pulse/32 Oz	4 Pole	18T(420)	38T(800)	30T(670)	24T(670)
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10 Pulse/Gal	[Not determined at this time]				
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1 Pulse/Gal	4 Pole	12T(312)	40T(900)	19T(460)	38T(860)
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Note: A litre is 32.8 OZ so by altering 32 Oz calibration gears should be able to get 1 Pulse/litre.

2" NEPTUNE

10 Pulse/Gal	4 Pole	None	None	25T(570)	38T(780)
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1 Pulse/Gal	4 Pole	11T(265)	44T(950)	28T(670)	26T(670)
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1 Pulse/Ltr.	4 Pole	27T(610)	27T(610)	28 T(670)	28T(670)
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2" NEPTUNE TURBINE

1 Pulse/1 Gal	4 Pole	None	None	35T(860)	21T(460)
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1 Pulse/10Gal	4 Pole	20T(500)	30T(720)	28T(670)	28T(670)
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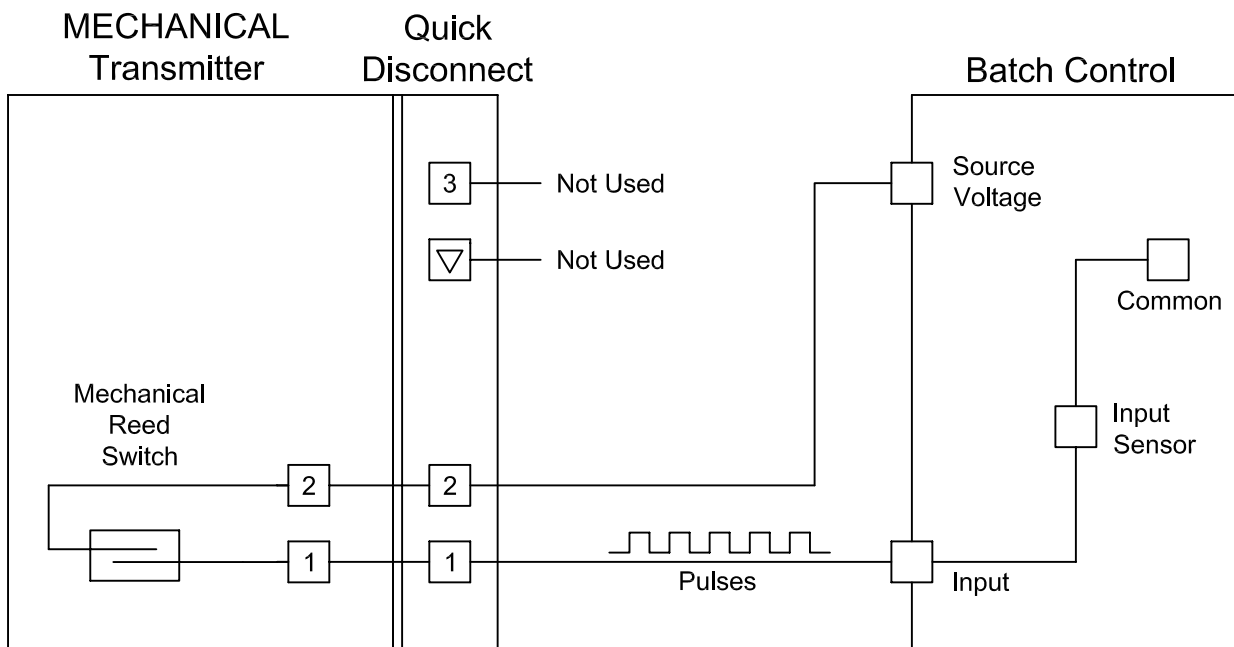
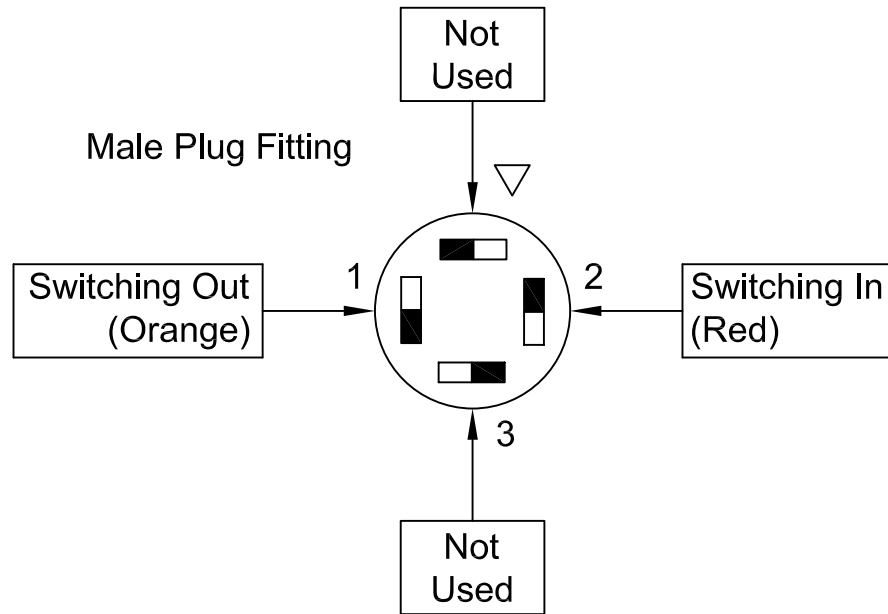
1 Pulse/100Gal	2 Pole	11T(265)	44T(950)	24T(520)	34T(780)
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3" NEPTUNE TURBINE

1 Pulse/10Gal	4 Pole	32T(700)	24T(520)	28T(670)	27T(670)
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1 Pulse/100Gal	2 Pole	11T(265)	44T(950)	28T(670)	25T(670)
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MECHANICAL REED SWITCH WIRING DIAGRAM



Source Voltage can be 120 VAC or 5 to 24 VDC



For Service Call

West Coast Facility
(760) 602-4200
Canadian Facility
(780) 450-0591

Contact Information

West Coast Facility

2080 Las Palmas Drive
Suite 101
Carlsbad, CA 92011

(760) 602-4200

Canadian Facility

3124 Parsons Road NW
Edmonton, AB T6N 1L6

(780) 450-0591

AMTEC

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