

# CENTURY

# CARBOY-SCALE

CITY/ST: \_\_\_\_\_

EQUIP: \_\_\_\_\_

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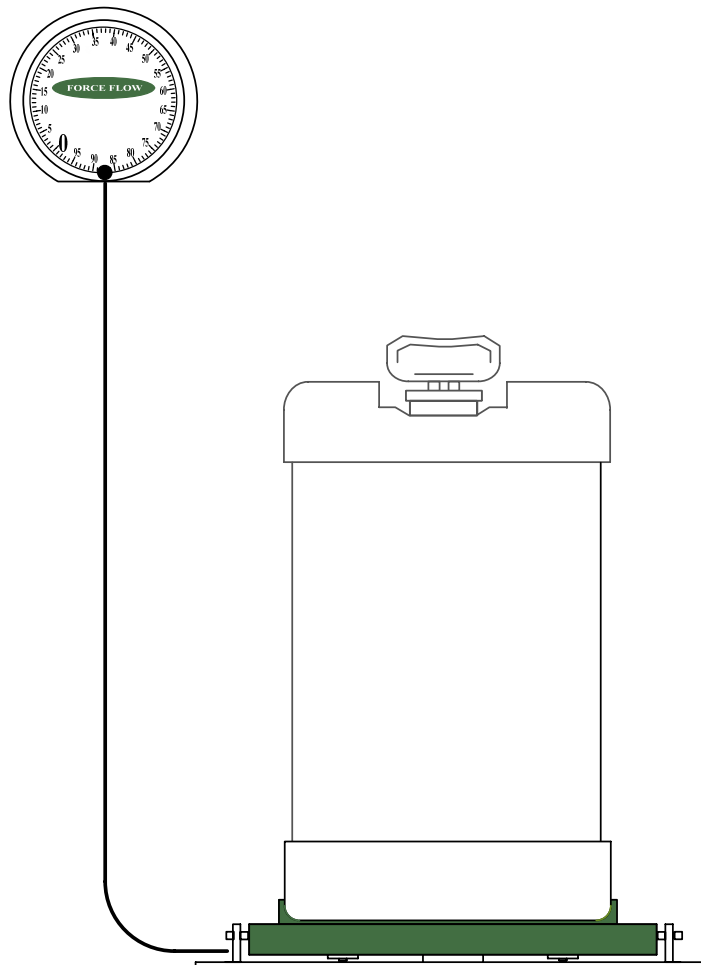
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FACTORY CALIBRATED

S/N \_\_\_\_\_

## INSTALLATION & OPERATION

**HYDRAULIC CARBOY-SCALE**  
For Carboys & Drums 8" to 24" in Dia.



1150-D Burnett Ave, Concord, CA 94520 USA  
1-800-893-6723 Fax: 925-686-6713  
www.forceflow.com / Info@forceflow.com

REF: T4\O&M\CARBHYD\CVRCARHY.tew (LC00.pdf) 11/04/02

# INCLUDES MODELS:

## HYDRAULIC CARBOY-SCALES with CENTURY DIAL INDICATOR

**FOR CAPACITIES:** 5-Gallon to 55-Gallon Carboys & Drums

**FOR CARBOYS & DRUMS:** 8" (203mm) to 24" (610mm) Diameters

<b>COVERING MODELS:</b>	200 lbs.	<b>4D200</b>	(Metric: 4D100K 100 kg.)
	400 lbs.	<b>4D400</b>	(Metric: 4D200K 200 kg.)
	600 lbs.	<b>4D600</b>	(Metric: 4D300K 300 kg.)



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## CENTURY Indicator with CARBOY-SCALE

### SECTION

#### C.1.000

**YOU  
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#### INSTALLATION & OPERATION:

- C.1.101 Dimensional Drawing
- C.1.102 Installation Instructions
- C.1.103 Installation Drawing
- C.1.104 Installation Steps 1 - 4
- C.1.105 Installation Steps 5 - 6

#### OPERATION:

- C.1.201 Operation Instructions

#### C.2.000

#### 4-20mA TRANSMITTER OPTION:

- C.2.101 4-20mA Transmitter Wiring Diagram
- C.2.102 Satellite Transmitter Bulletin
- C.2.103 4-20mA Transmitter Data & Spec
- C.2.104 4-20mA Transmitter Dimensional Drawing
- C.2.105 Computer Set-Up for 4-20mA Output

#### POWER SUPPLY OPTION:

- C.2.111 Power Supply (24 Volt)

#### RS-5 REED SWITCH OPTION:

- C.2.121 RS-5 Adjustable Reed Switch Wiring Diagram
- C.2.122 RS-5 Installation Instructions

#### PS-10 PRESSURE SWITCH OPTION:

- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

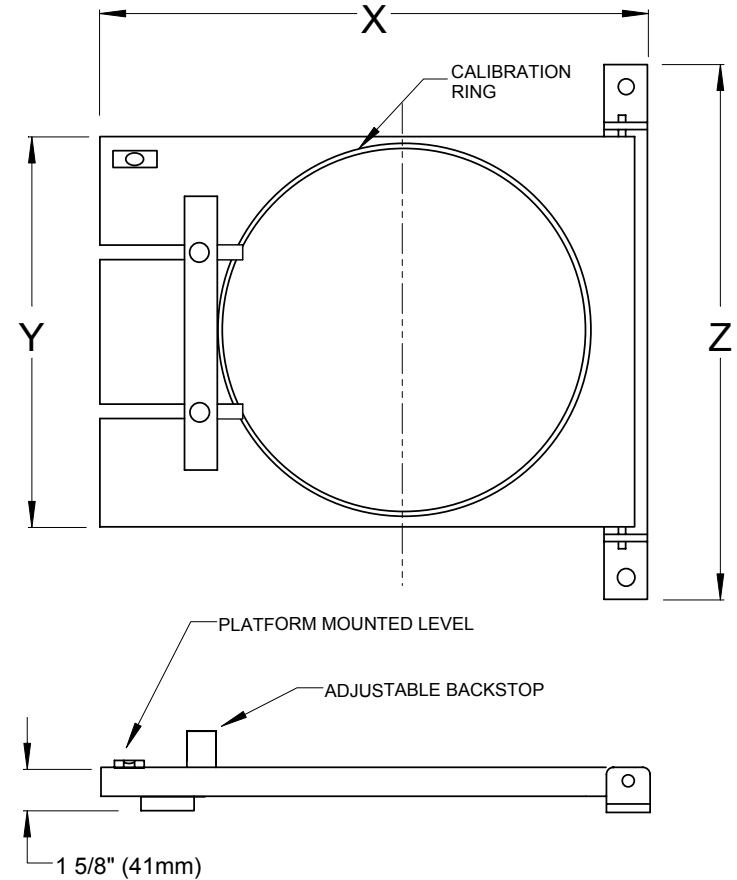
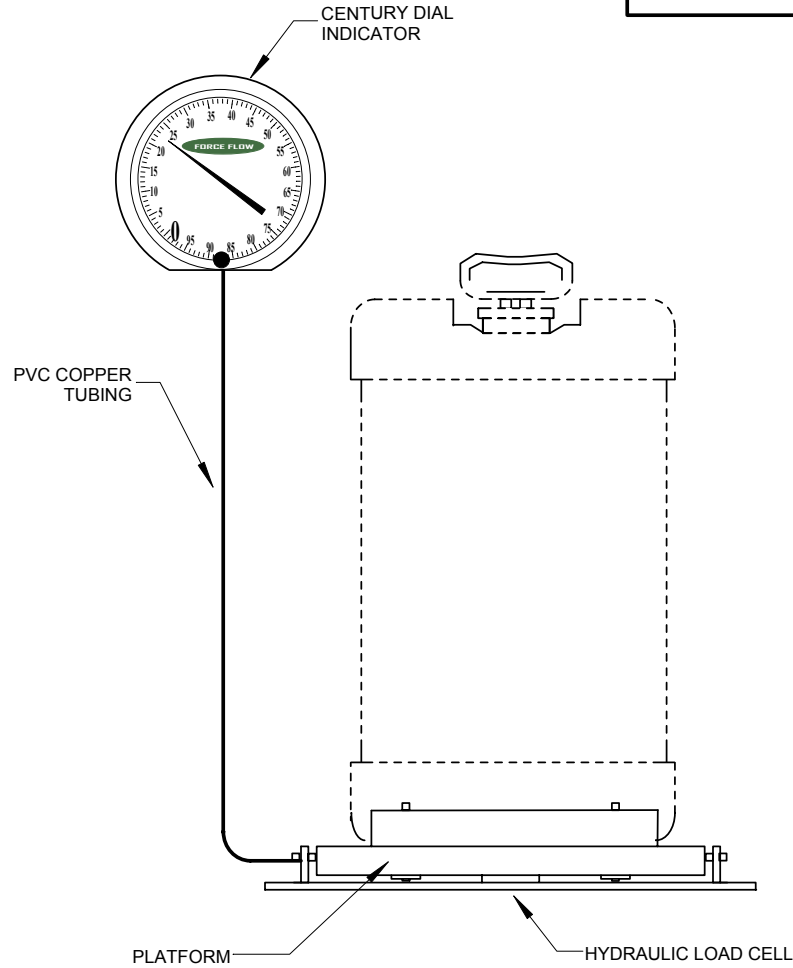
#### C.3.000

#### MISCELLANEOUS

- C.3.101 Calibration of Scale (Slotted Platforms only)
- C.3.303 Load Cell Troubleshooting
- C.3.401 Parts List

**MODEL NUMBERS:**

		<u>X</u>	<u>Y</u>	<u>Z</u>
4D200 (200 lbs)	(Metric 4D100K, 100 kg)	18 1/2" (470mm)	13 1/2"(343mm)	16 1/2" (419mm)
4D400 (400 lbs)	(Metric 4D200K, 200 kg)	21 3/4" (546mm)	15 3/4" (400mm)	18 3/4" (475mm)
4D600 (600 lbs)	(Metric 4D300K, 300 kg)	24" (610mm)	24" (610mm)	27" (686mm)



**C.1.101**



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File: T4/O&M/CARBHYD/CARBHYD.tcw (LC01.pdf) (WEB: CARBHYD.pdf)  
 11/04/02

**HYDRAULIC CARBOY-SCALE with  
 CENTURY DIAL INDICATOR  
 for 8" to 24" dia. Carboys & Drums  
 (Capacities to 600 lbs or 300 kgs)**

Drawn by: SLP  
 Date: 01/02/94  
 Revised: 05/09/00  
 Scale: NONE

Drawing Number  
**29855**

# Hydraulic CARBOY-SCALE

## **INSTALLATION . OPERATION . MAINTENANCE**

If you have any questions regarding the installation, operation or maintenance on your CARBOY-SCALE, please do not hesitate to call our .... HELP HOTLINE 1-800-893-6723

**WARNING:** To prevent possible personal injury or damage to the equipment through misuse, this equipment should be installed, operated and serviced only by trained, qualified personnel who are thoroughly familiar with the entire contents of this Instruction Manual, which should be thoroughly reviewed and understood prior to installing and operating the equipment.

### **ITEMS REQUIRED FOR INSTALLATION**

- Power drills and drill bits
- Hammer drill and masonry Bit (5/16" or 8mm)
- Two (2) 1/4" or 7mm diameter anchors (for platform)
- Three (3) properly chosen anchors (for dial)
- Two (2) adjustable wrenches
- Screwdriver and tape measure
- Hammer (for pounding in anchor bolts)
- Carboy/Drum (for aligning platform)

### **COMMENTS**

Your CARBOY-SCALE consists of 2 basic assemblies:

1. Load Cell System (Indicator, PVC Coated Copper Tubing and Load Cell).
2. PVC Platform (Backstop, Platform with Hinge and Leveling Shims).

NOTE: Shim washers for leveling are also included.

### **INSTALLATION**

#### **CAUTION:**

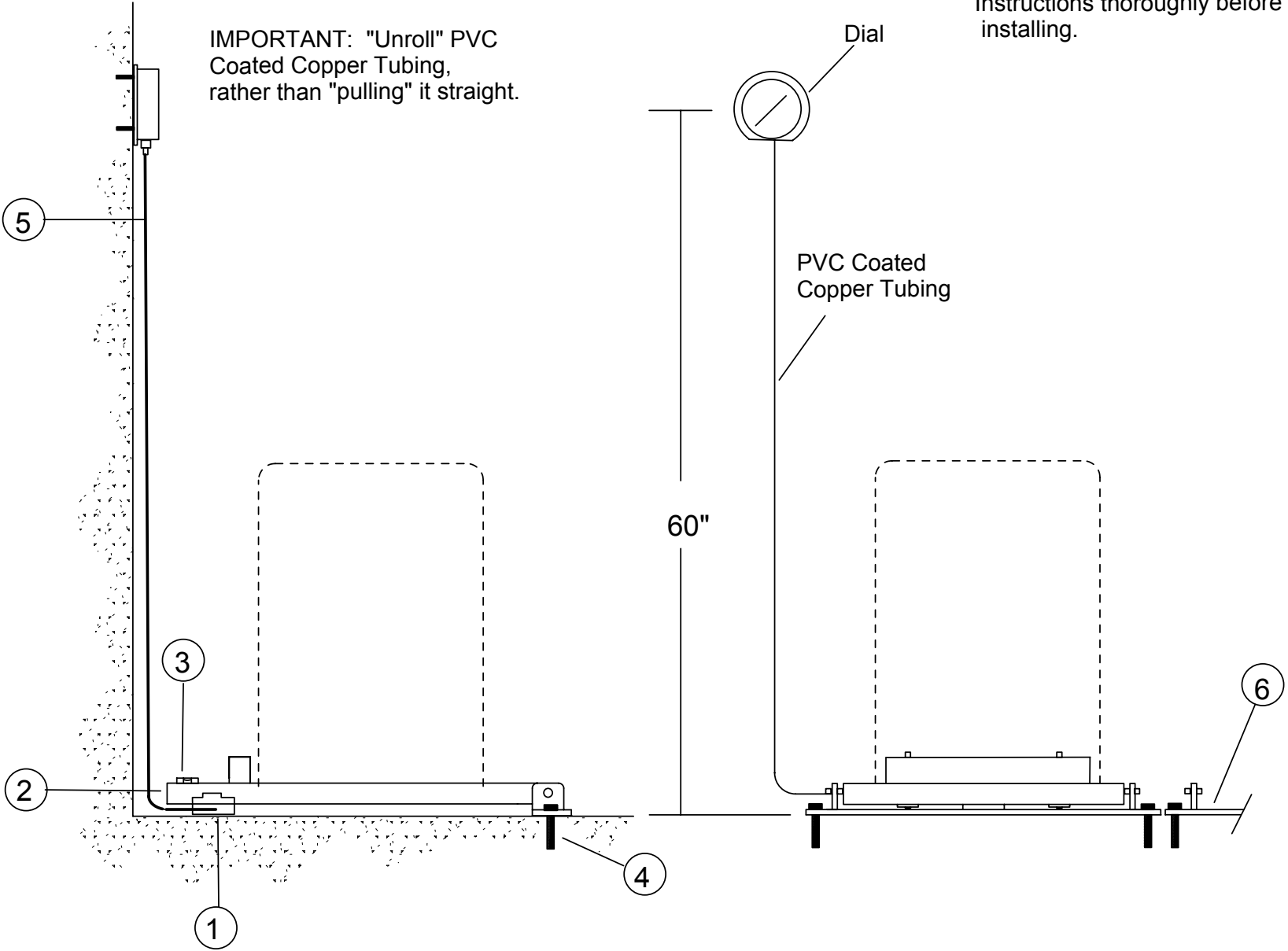
For proper operation and to avoid possible damage to the scale or injury to yourself, you MUST install these items in the following Step-by-Step manner. The standard CARBOY-SCALE is meant to be installed in close proximity to a wall or other upright structure. If this is not possible, please consult factory for proper installation. The CARBOY-SCALE should be used with Carboys with outside diameters of 8"(203mm) to 23" (584mm), and gross weights of 200 lbs. (100 kg) to 600 lbs. (300 kg).

Remove all items from box. The load cell systems is filled and calibrated at the factory. Be careful when handling the load cell system so as NOT TO TWIST, KINK or BREAK TUBING or FITTINGS !

**NOTE: If installing multiple scales, be sure floor area is sufficient to accommodate platform feet (and diameter of tank if overhang).**

IMPORTANT: Read Installation Instructions thoroughly before installing.

IMPORTANT: "Unroll" PVC Coated Copper Tubing, rather than "pulling" it straight.



C.1.103



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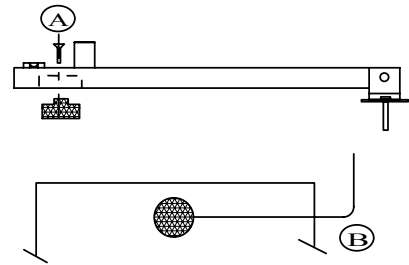
**CARBOY-SCALE**  
 Installation Drawing

Drawn by: SLP  
 Date: 04/01/95  
 Revised: 02/15/02  
 Scale: NONE

Drawing Number  
**30398**

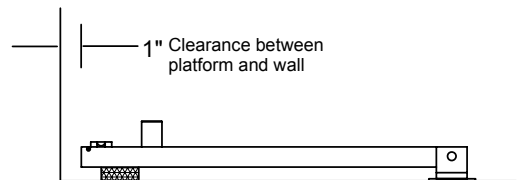
## STEP 1: MOUNTING THE LOAD CELL

- Remove the flathead screw from the load cell and attach the load cell under the back of the platform with this screw.
- Be sure the tubing is running out of the left (or right) side of the platform and does not obstruct platform movement.



## STEP 2: PLACE PLATFORM ON FLOOR

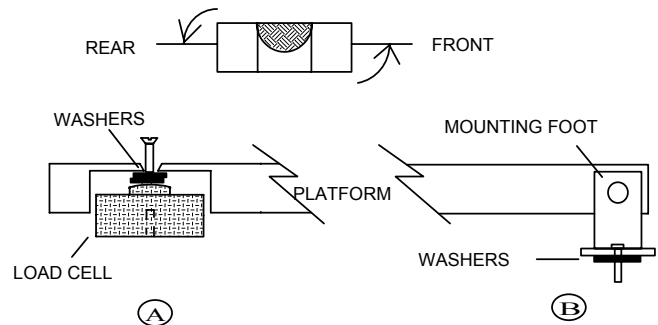
Place the platform on the floor with the backstop side of the platform at the wall. (NOTE: Allow at least 1" clearance between wall and platform)



## STEP 3: LEVEL PLATFORM

Check the platform-mounted level to assure that the scale is level from front to rear. If the platform is not level, either:

- Raise rear of platform by placing shims/washers between load cell piston and platform.
- Raise front by placing shims underneath the hinge on the anchor bolts (shims provided with scale).

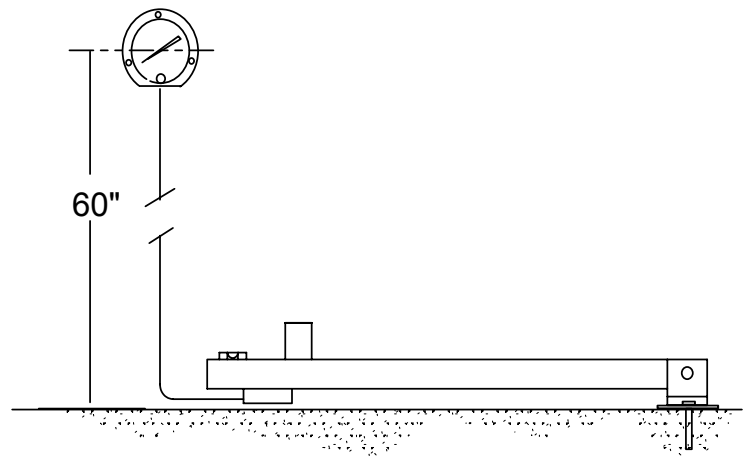


## STEP 4: ANCHORING THE PLATFORM

Platform must not touch wall or scale will not function properly. Mark mounting holes on the floor. Drill holes with proper sized bit and bolt scale to the floor using two (2) 1/4" diameter anchor bolts. Make sure your anchor bolts are properly sized and compatible with your floor material !

### DANGER

To avoid injury caused by tipping carboy or drum, do not use scale until platform is bolted to floor.



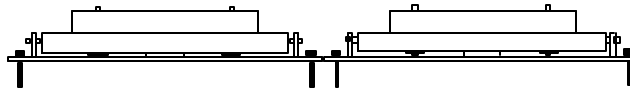


## STEP 5: MOUNTING THE DIAL

- A) Carefully "UNROLL" tubing (avoid pulling like a spring) and mount dial at a convenient height (approximately 60" above floor) using three (3) properly chosen bolts. Make sure your bolts are properly sized and compatible with your wall material !
- B) Be careful not to restrain the platform with the tubing when mounting the dial.

## STEP 6: MOUNTING ADDITIONAL SCALES

To mount additional scales side-by-side, be sure to allow for the frame hinge when determining the distance between platforms (if minimizing floor area) and repeat Step 1 - 6.



## CENTURY Indicator with CARBOY-SCALE

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- C.1.104 Installation Steps 1 - 4
- C.1.105 Installation Steps 5 - 6

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##### OPERATION:

- C.1.201 Operation Instructions

#### C.2.000

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- C.2.122 RS-5 Installation Instructions

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- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS

- C.3.101 Calibration of Scale (Slotted Platforms only)
- C.3.303 Load Cell Troubleshooting
- C.3.401 Parts List

# CENTURY CARBOY-SCALE OPERATION

Your CARBOY-SCALE may be used for 9" to 24" diameter carboys or drums not to exceed 600 lbs. capacity. The pivoted scale platform transfers the load of the drum and its contents to a single hydraulic load cell. The cell consists of a piston and rolling diaphragm over a cylinder of oil. The pressure signal generated in the oil is transferred by the hydraulic hose to the bourdon tube dial readout. Before the oil enters the dial there is a dampening device that prevents shock pressures from entering the dial. In colder weather it may take as long as one minute for the pointer to reach correct zero. One cannot test the accuracy of the scale by standing on the platform.

## 1. TARE/ZERO ADJUST KNOB:

The dial may be operated in 2 ways. Reading either GROSS weight or NET weight.

### READING GROSS WEIGHT:

Zero the dial BEFORE the drum is placed on the scale, then the dial gives the TOTAL weight of the drum and its contents.

### READING NET WEIGHT:

Rotate the dial AFTER the drum is placed on the scale to remove drum tare weight so that the dial reads the content's weight.

## 2. LOADING CARBOYS/DRUMS:

Carboys/Drums may be lifted onto platform; rolled on their "rim" over the front of the platform or loaded via a drum truck. DO NOT load from the sides of the platform.

## 3. CENTER CARBOY/DRUM

For accurate measurement, carboys/drums must be centered on calibration rings.

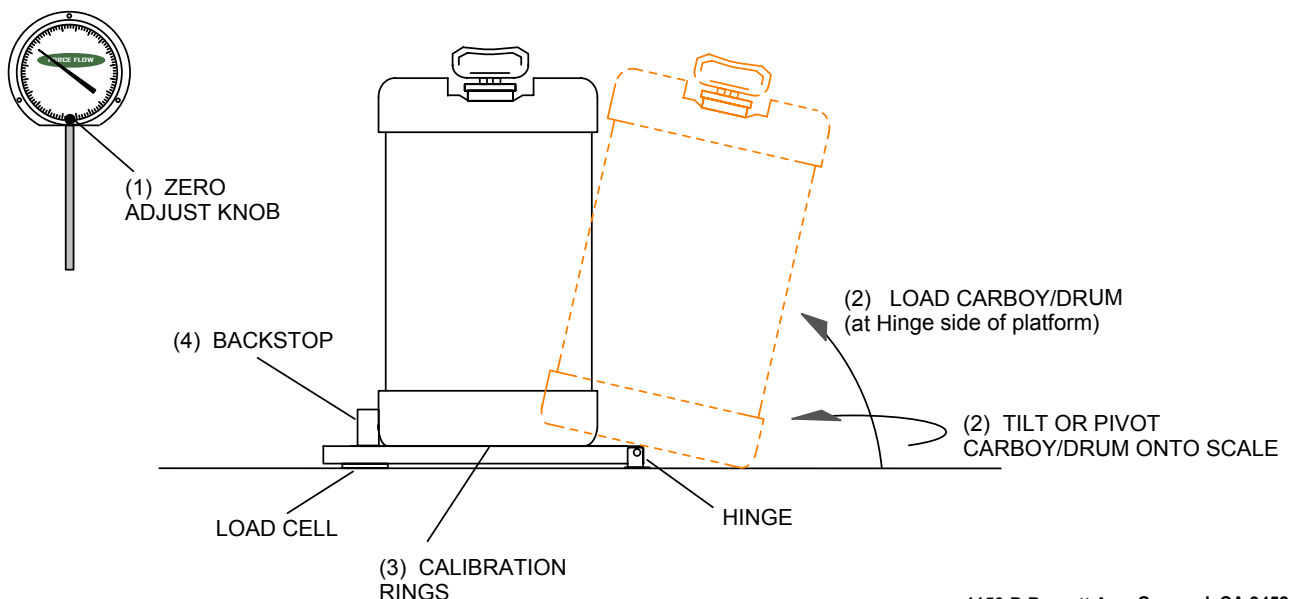
## 4. ADJUST BACKSTOP

Once centered, adjust backstop snug against carboy/drum.

### NOTE:

When replacing carboy/drum, simply load against backstop for accurate measurement. Backstop will only need to be moved if carboy/drum sizes vary. Make sure carboy/drum is centered in the Calibration Rings.

Full scale accuracy is +/- 1% full scale. If scale weighs LIGHT, loosen backstop nuts and move backstop back (away from hinge). If scale weighs HEAVY, move backstop forward (toward hinge).



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## CENTURY Indicator with CARBOY-SCALE

### SECTION

#### C.1.000

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- C.1.103 Installation Drawing
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- C.1.105 Installation Steps 5 - 6

##### OPERATION:

- C.1.201 Operation Instructions

#### C.2.000

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##### 4-20mA TRANSMITTER OPTION:

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- C.2.102 Satellite Transmitter Bulletin
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- C.2.105 Computer Set-Up for 4-20mA Output

##### POWER SUPPLY OPTION:

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##### RS-5 REED SWITCH OPTION:

- C.2.121 RS-5 Adjustable Reed Switch Wiring Diagram
- C.2.122 RS-5 Installation Instructions

##### PS-10 PRESSURE SWITCH OPTION:

- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS

- C.3.101 Calibration of Scale (Slotted Platforms only)
- C.3.303 Load Cell Troubleshooting
- C.3.401 Parts List

## WIRING PROCEDURE

1. The ZERO and SPAN of the Transmitter have been factory calibrated.

NOTE: A flexible conduit is recommended for ease of installation and to incorporate a moisture trap prior to hook-up (see Figure 2)

2. Transmitter is not field repairable. Return to factory if transmitter does not function properly.
3. Transmitter is protected for reverse polarity, but care should be exercised to connect positive excitation to RED lead. Otherwise, transmitter will not work. (see Figure 1)
4. Do not use more than 30 volt DC power supply.
5. This transmitter has a FIVE (5) YEAR WARRANTY from date of shipment (when correctly installed)

Figure 1

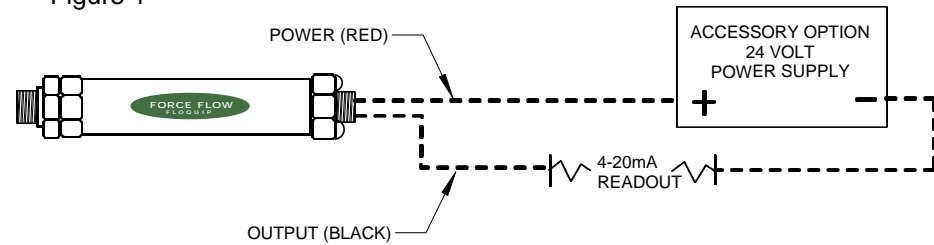
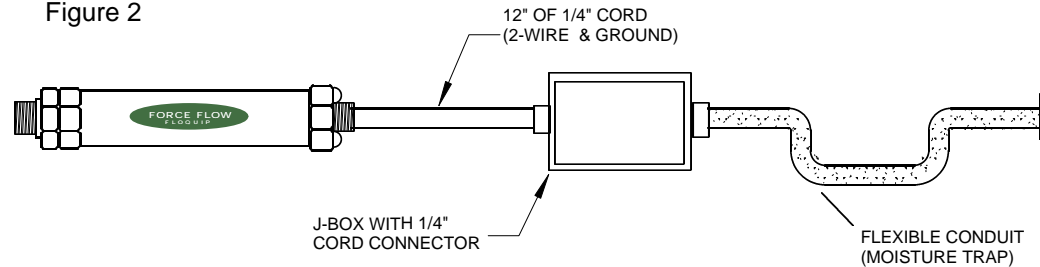


Figure 2



C.2.101



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### TRANSMITTER WIRING DIAGRAM MODELS MA150 and MA400

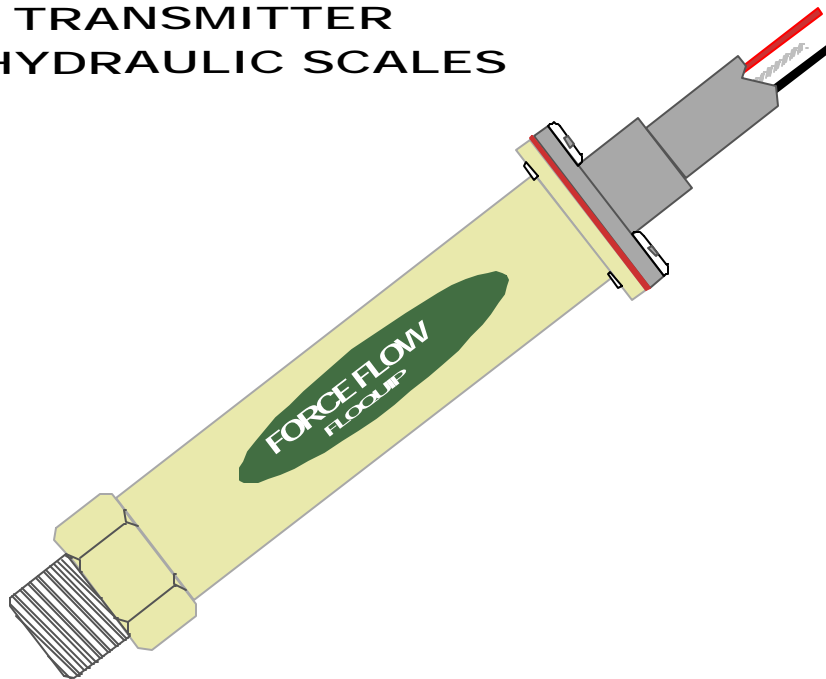
Drawn by: SLP  
Date: 04/01/93  
Revised: 04/01/01  
Scale: NONE

Drawing Number

29840

# MODEL MA-400

## 4-20mA TRANSMITTER FOR HYDRAULIC SCALES



Floquip's transmitter Model MA-400 measures the pressure of the hydraulic load cell system and converts the pressure to a standard 2-wire, 4-20mA analog signal that is proportional to the weight on the scale. This transmitter provides accurate, repeatable and highly reliable performance.

- 1.00% Accuracy
- Compact, Rugged Construction
- Sealed, NIST Traceable Calibration
- Nema 4X Enclosure
- Reverse Polarity Protection
- Use with CHLOR-SCALE 150, CARBOY-SCALE, AMMONIA 150 and CYLINDER-200 Scales

# SATELLITE 4-20mA TRANSMITTER

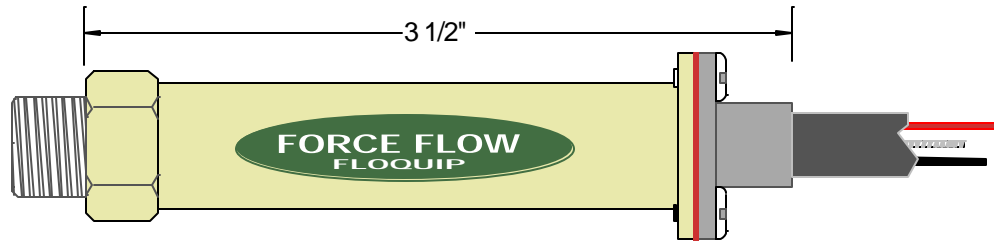
## Model MA400

### PERFORMANCE SPECIFICATIONS

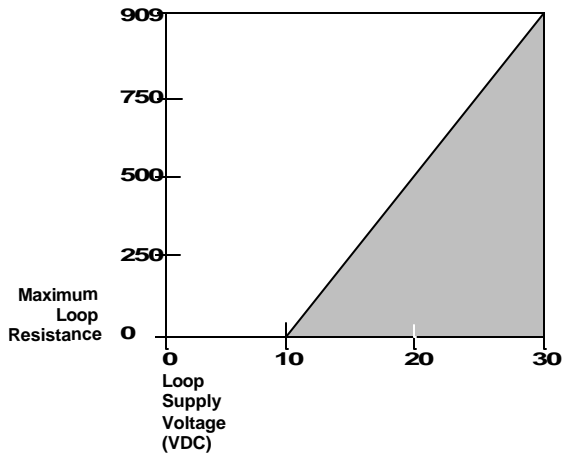
Accuracy	+/- 1.0% (linearity/hysteresis/repeatability)	Hysteresis	+/- 0.2%
Linearity	+/- 0.7%	Response Time	less than 1ms
Repeatability	+/- 0.07%		

### PHYSICAL SPECIFICATION

Electronic Housing	NEMA 4X
Weight	2 oz. (approx. without cable)
Electrical Connection	No. 24 AWG, 36" PVC, shielded, vented, UL approved



### Power Supply & Load Limitations Electrical Characteristics



### OPERATING CONDITIONS

<b>INFLUENCE</b>	<b>OPERATING LIMITS</b>
Ambient Temp.	-20 deg. to +180 deg. F
Supply Voltage	10 to 30 VDC Unregulated
Output Load	0 to 909 OHMS

### TYPICAL SPECIFICATIONS

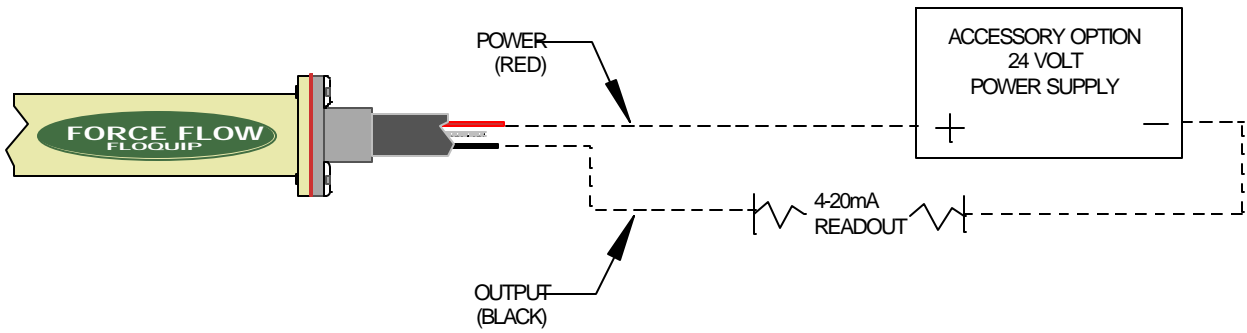
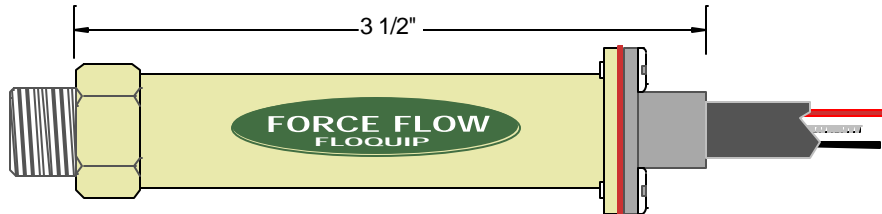
Scale(s) shall be equipped with a transmitter that outputs a 4-20 mA signal which is proportional to the gross weight on the scale.

Transmitter shall be loop-powered by an external source ranging from 10 to 30 VDC. Transmitter shall include internal RFI protection. Transmitter shall utilize a polysilicon strain gage bridge.

Transmitter shall have an accuracy better than +/- 1.0% full scale. Unit shall be factory spanned and calibrated making field adjustment unnecessary. Transmitter shall carry a minimum of a Five (5) Year Factory Warranty. "Limited" Warranties shall be considered unacceptable.

Transmitter shall be model MA-400 as manufactured by floquip, 1150-D Burnett Avenue, Concord, CA 94520 USA.

# SATELLITE 4-20mA TRANSMITTER Model MA400



C.2.104



# COMPUTER SET-UP CYLINDERS & CARBOYS

## 1. WIRE TRANSMITTER TO COMPUTER OR OTHER INTERFACE.

Before proceeding to operational steps, be sure transmitter is wired properly per wiring instructions.

## 2. SET SPAN VALUES ON COMPUTER OR OTHER INTERFACE.

When setting parameters on your computer interface, you must first set the span mode. The following values are used for the different capacity scales as follows:

### PORTABLE TANK APPLICATIONS:

	Dial Readout	@ 4 mA	@ 20 mA
Carboy/Cylinder	100 lbs.	0 lbs.	300 lbs.
Carboy/Cylinder	200 lbs.	0 lbs.	300 lbs.
Ammonia/Carboy/Drum	400 lbs.	0 lbs.	400 lbs.
Carboy/Drum	600 lbs.	0 lbs.	638 lbs.

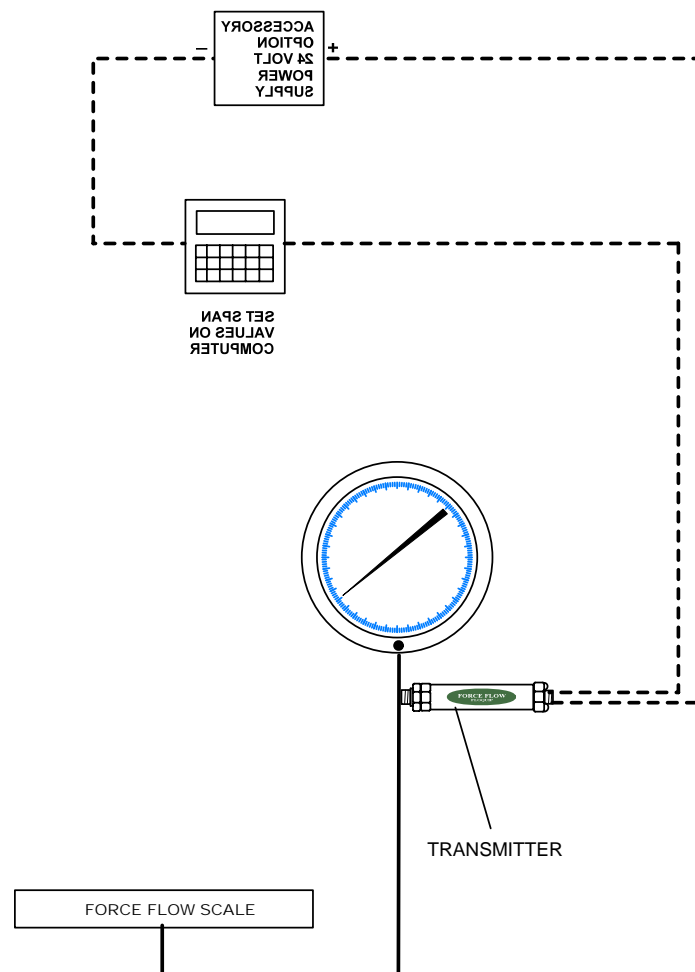
## 3. PLACE FULL TANK ON SCALE

A full tank should give you a readout of tank tare weight plus chemical contents.

## 4. SUBTRACT TARE WEIGHT FROM GROSS READING:

To read weight of chemical only (net wt), place empty vessel on scale before setting zero on computer. If tank or cylinder tare weights vary, there must be provided on the computer a method to adjust or "shift" zero after a new tank/cylinder is loaded.

GROSS WEIGHT, less TANK TARE WEIGHT = NET CONTENT WEIGHT



C.2.105



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COMPUTER SET-UP FOR  
4-20mA TRANSMITTER  
CYLINDER & CARBOY Applications

Drawn by: SLP  
Date: 10/22/02  
Revised: 11/20/06  
Scale: NONE

Drawing Number  
30471

## CENTURY Indicator with CARBOY-SCALE

### SECTION

#### C.1.000

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#### C.2.000

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##### POWER SUPPLY OPTION:

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##### RS-5 REED SWITCH OPTION:

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- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS

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# ACOPIAN Series U

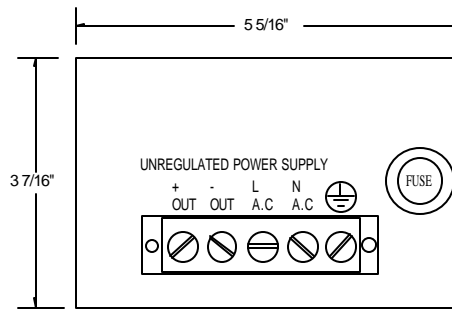
# Unregulated Power Supply

U.L. Recognized

Low-cost DC power suitable for driving loads such as lamps, relays and small motors is provided by Series U unregulated power supplies. All components are generously derated, insuring a long and trouble free life; built-in fusing prevents damage due to prolonged overload or short circuits. They are housed in extruded aluminum cases which can be mounted in any position.

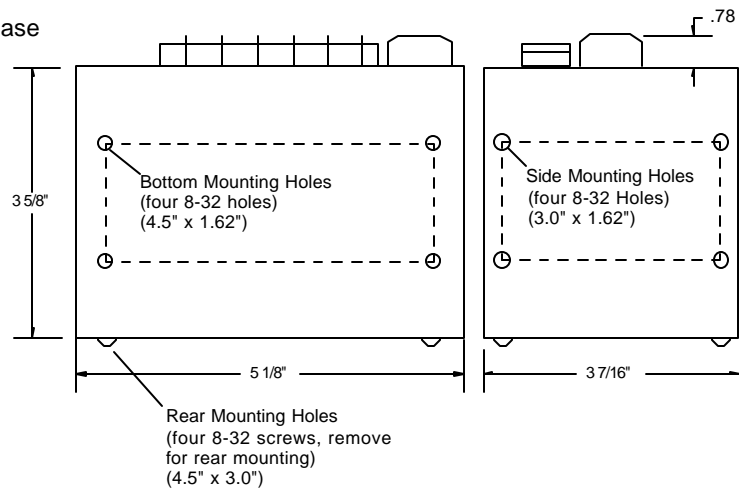
### STANDARD FEATURES:

- Silicon rectifiers
- Capacitive filtering
- Fused input
- May be used in series or parallel
- No derating or heat sinking required
- Completely serviceable



### SPECIFICATIONS:

Input Voltage: 0-125 VAC, 50-400 Hz, Single phase  
Nominal Output Voltage: 24  
Output AMPS: 1.0  
Output Voltage N/L F/L: 26.4 to 21.6  
Ripple Volts: 1.7  
Model: U24Y100  
Size: Y3  
Weight: 2 lbs. 8 oz.



**Load Regulation:** Nominal output voltage is based on 115 VAC input, with approximately 50% of rated output current being drawn.

**Line Regulation:** With fixed load, output voltage change is proportional to input voltage change.

**Output Voltage Adjustment:** An adjustable auto-transformer (not included) may be used to adjust output voltage by varying the AC input voltage to the supply.

**Polarity:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 V above ground.

**Ambient Operating Temperature:** -10 to + 65 degrees C. No derating required.

**Storage Temperature:** -55 to +85 degrees C.

**OPTIONAL 230 Volt Input Available:** Consult factory for model number and price.

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- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS

- C.3.101 Calibration of Scale (Slotted Platforms only)
- C.3.303 Load Cell Troubleshooting
- C.3.401 Parts List

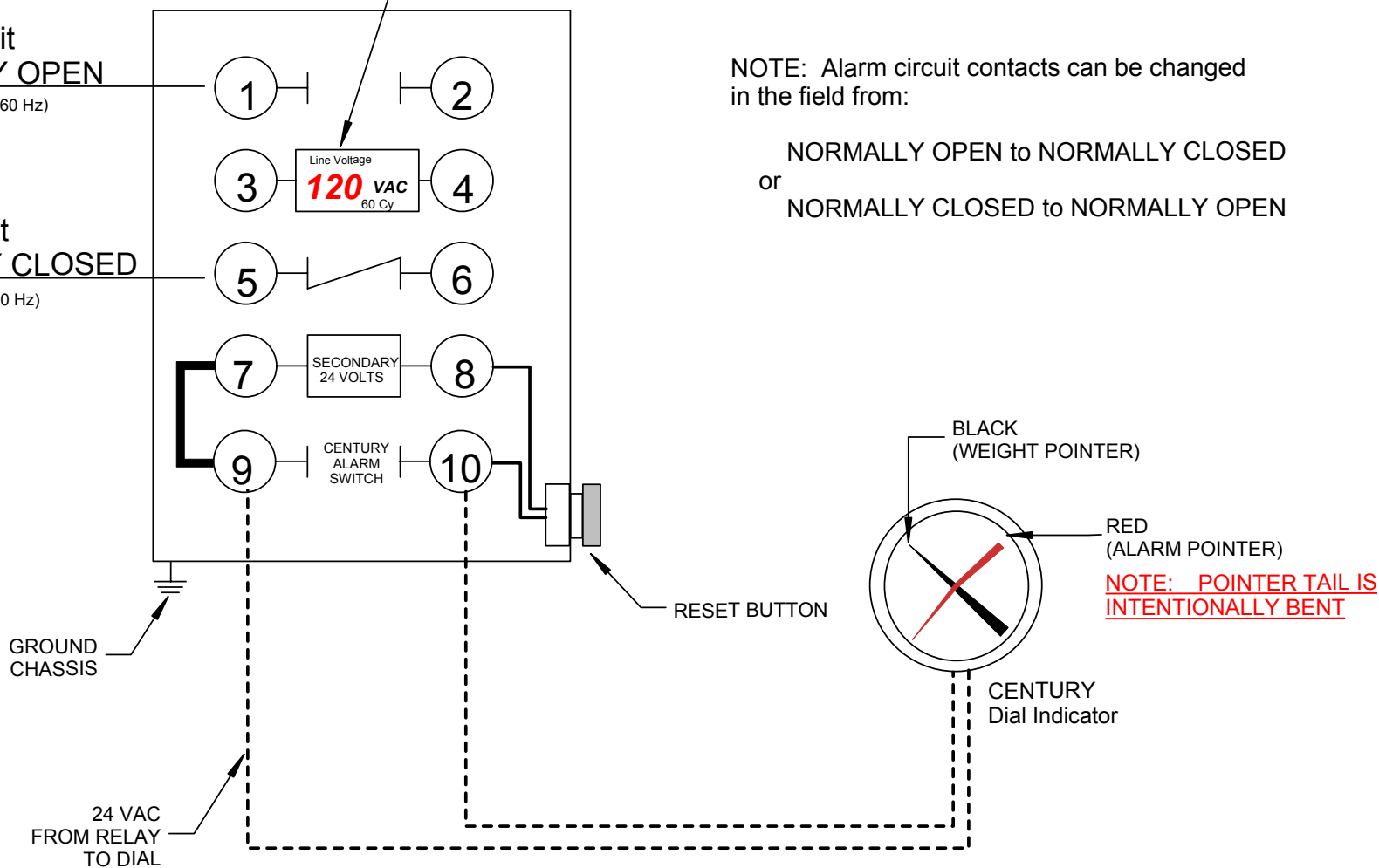
**NOTE: Actual LINE VOLTAGE provided is noted between Terminals #3 and #4 in the relay box, i.e. "120 VAC" or "240 VAC".**

Alarm Circuit  
NORMALLY OPEN

120 Volt (240 Volt/50-60 Hz)  
25 AMP Maximum

Alarm Circuit  
NORMALLY CLOSED

120 Volt (240 Volt/50-60 Hz)  
25 AMP Maximum



NOTE: Alarm circuit contacts can be changed in the field from:

NORMALLY OPEN to NORMALLY CLOSED  
or  
NORMALLY CLOSED to NORMALLY OPEN

**C.2.121**

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File: T4\O&M\ACCESSRY\RS5\_RS150.tcw (A12.pdf) (WEB: RS5&150.pdf)  
08/11/03 MD

**120 or 240 VAC WIRING DIAGRAM**  
**Model RS-5 and RS-150**  
**Adjustable Alarm Reed Switch**

Drawn by: SLP/MD  
Date: 03/15/92  
Revised: 08/11/03  
Scale: NONE

Drawing Number  
**29483**

# MODEL RS-5 & RS-150

## ADJUSTABLE ALARM REED SWITCH with MANUAL RESET RELAY

### I INSTALLATION

Mount the relay box on a convenient surface near the dial. This box is not designed for mounting on the pedestal. Ground the chassis box.

**NOTE:**

Actual LINE VOLTAGE provided is noted between terminals #3 and #4 in the relay box., i.e. "110 VOLT AC" or "220 VOLT AC".

Attach the appropriate line voltage (SEE ABOVE NOTE) to terminals #3 and #4. Attach alarm circuit to terminals #1 and #2 for NORMALLY OPEN (or #5 and #6 for NORMALLY CLOSED). Make sure this alarm circuit does not draw more than 25 amps at the appropriate line voltage (see above "NOTE") or it will burn out the points.

Make sure this alarm circuit does not draw more than 25 amps at the appropriate line voltage (see above note) or it will burn out the points.

### II OPERATION

The assembly consists of a magnet mounted on the black scale pointer, a 1/2 amp NORMALLY OPEN reed switch mounted on the adjustable pointer inside the scale dial glass, and a 24 Volt AC line junctioned from the dial to an electrical box. The box contains 110 VOLT AC (or 220 VOLT AC, see above "NOTE") NORMALLY OPEN relay, and a manual reset relay button.

Position the adjustable pointer (RED) containing the reed switch near the low chemical level on the scale dial. When the scale pointer (BLACK) coincides with the adjustable pointer (RED), the reed switch closes, completing the 24 Volt AC relay circuit which in turn closes the dry SPDT relay to trip an alarm or light (furnished by others). The relay is held in and the circuit is kept closed by a normally closed reset button wired in series. The alarm circuit can be shut off by momentarily depressing the reset button when the pointers are NOT coinciding.

### III MAINETNANCE

Maintenance is very minimal. The reed switch and relay are rated at approximately a million cycles. The circuit is dormant until the magnet activates the reed switch. Normal electrical practices should be used to trace any malfunction.



## CENTURY Indicator with CARBOY-SCALE

### SECTION

#### C.1.000

##### INSTALLATION & OPERATION:

- C.1.101 Dimensional Drawing
- C.1.102 Installation Instructions
- C.1.103 Installation Drawing
- C.1.104 Installation Steps 1 - 4
- C.1.105 Installation Steps 5 - 6

##### OPERATION:

- C.1.201 Operation Instructions

#### C.2.000

##### 4-20mA TRANSMITTER OPTION:

- C.2.101 4-20mA Transmitter Wiring Diagram
- C.2.102 Satellite Transmitter Bulletin
- C.2.103 4-20mA Transmitter Data & Spec
- C.2.104 4-20mA Transmitter Dimensional Drawing
- C.2.105 Computer Set-Up for 4-20mA Output

##### POWER SUPPLY OPTION:

- C.2.111 Power Supply (24 Volt)

##### RS-5 REED SWITCH OPTION:

- C.2.121 RS-5 Adjustable Reed Switch Wiring Diagram
- C.2.122 RS-5 Installation Instructions

**YOU  
ARE  
HERE !**

##### PS-10 PRESSURE SWITCH OPTION:

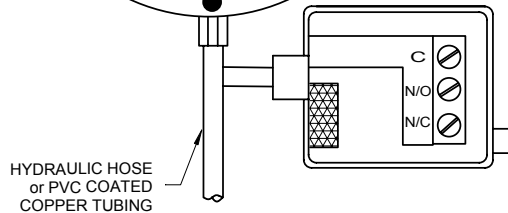
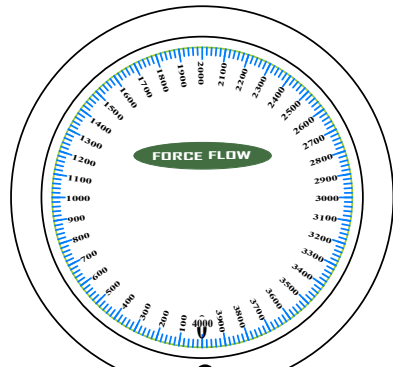
- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

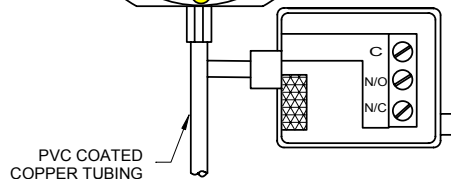
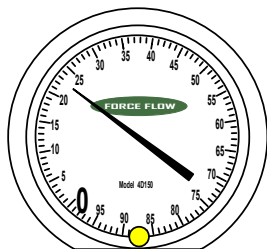
##### MISCELLANEOUS

- C.3.101 Calibration of Scale (Slotted Platforms only)
- C.3.303 Load Cell Troubleshooting
- C.3.401 Parts List



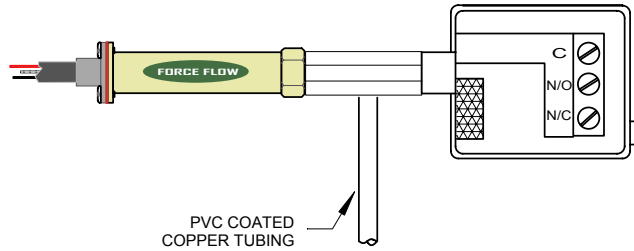


**CENTURY  
Dial Indicator**

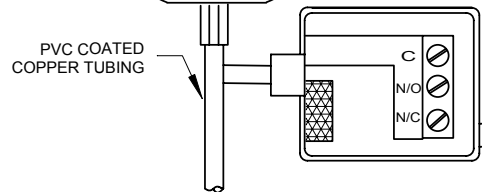


**CENTURY 150  
Dial Indicator**

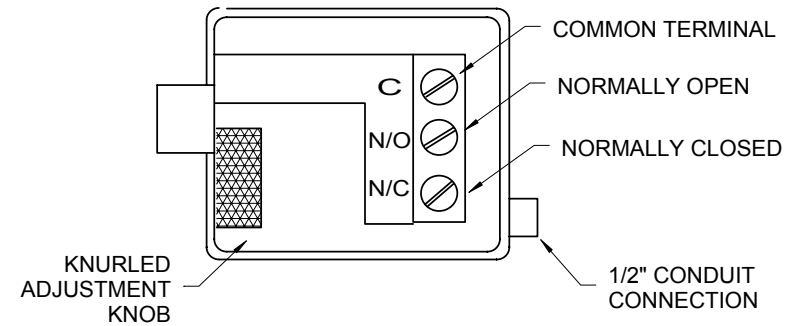
**C.2.131  
X.2.131  
SAT.2.131**



**SATELLITE  
4-20mA Transmitter**



**SOLO XT  
Cross Technology Indicator**



**NOTE:**

Pressure setting adjustments are made by removing pressure switch face plate and turning the knurled knob:  
COUNTERCLOCKWISE to LOWER  
CLOCKWISE to RAISE

**WIRING CONFIGURATION OF SWITCH:**

To wire switch as LOW LEVEL alarm:

- 1) Switch closes on FALLING level = N/C
- 2) Switch opens on FALLING level = N/O

To wire switch as HIGH LEVEL alarm:

- 1) Switch closes on RISING level = N/O
- 2) Switch opens on RISING level = N/C

**TO TEST THE SETTING:**

Remove weight from scale (for descending setting) or apply weight to scale (for ascending setting). Listen for an audible "Click", or use a continuity tester to determine change in switch status.



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File: T4\O&M\ACCESSORY\PS10&150.tcw (A14.pdf) (WEB: PS10&150.pdf)  
11/21/02

**PS-10 and PS-150 PRESSURE SWITCH  
10 AMP @ 120 or 240 VOLT AC  
NEMA 4 ENCLOSURE**

Drawn by: SLP  
Date: 01/15/71  
Revised: 11/21/02  
Scale: NONE

Drawing Number  
**29450-  
PS-10**

## CENTURY Indicator with CARBOY-SCALE

### SECTION

#### C.1.000

##### INSTALLATION & OPERATION:

- C.1.101 Dimensional Drawing
- C.1.102 Installation Instructions
- C.1.103 Installation Drawing
- C.1.104 Installation Steps 1 - 4
- C.1.105 Installation Steps 5 - 6

##### OPERATION:

- C.1.201 Operation Instructions

#### C.2.000

##### 4-20mA TRANSMITTER OPTION:

- C.2.101 4-20mA Transmitter Wiring Diagram
- C.2.102 Satellite Transmitter Bulletin
- C.2.103 4-20mA Transmitter Data & Spec
- C.2.104 4-20mA Transmitter Dimensional Drawing
- C.2.105 Computer Set-Up for 4-20mA Output

##### POWER SUPPLY OPTION:

- C.2.111 Power Supply (24 Volt)

##### RS-5 REED SWITCH OPTION:

- C.2.121 RS-5 Adjustable Reed Switch Wiring Diagram
- C.2.122 RS-5 Installation Instructions

##### PS-10 PRESSURE SWITCH OPTION:

- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS

- C.3.101 Calibration of Scale (Slotted Platforms only)
- C.3.303 Load Cell Troubleshooting
- C.3.401 Parts List

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# FOR SCALES WITH SLOTTED PLATFORM(S) ONLY !

## CALIBRATING THE SCALE

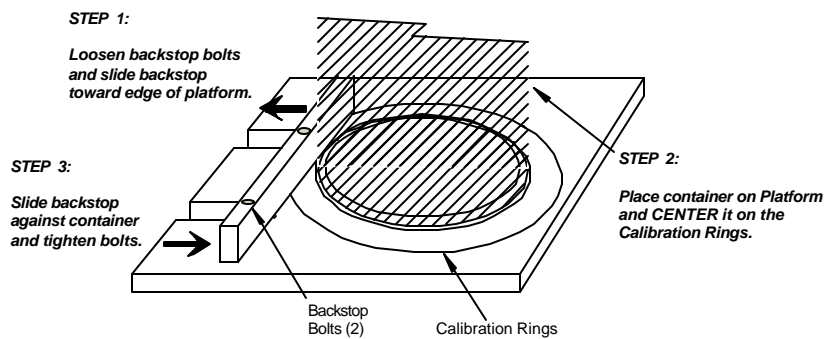
**IMPORTANT !**  
*To insure accurate weight readings, it is critical that the load is properly centered within the "CALIBRATION RING".*

### SCALE CALIBRATION

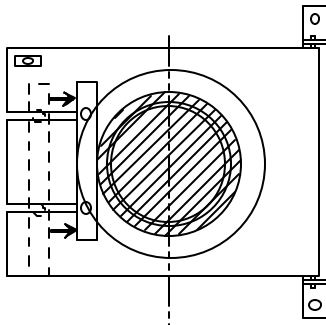
- 1) Loosen the backstop hold-down nuts and slide the backstop toward the edge of the platform.
- 2) Place the container that is to be weighed (or an empty container that is the same diameter of the container to be weighed) on the platform.

Using the CALIBRATION RINGS on the platform as the "target", center the container within the calibration rings.

- 3) Slide the backstop against the container and tighten the backstop hold-down bolts.

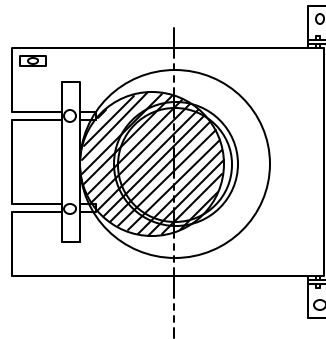


### CORRECT



Container CENTERED in Calibrating Rings

### INCORRECT



Container OFF CENTER of Calibrating Rings

### DAILY OPERATION

When using containers with the same diameter there is no need to readjust the backstop. Simply slide the new container against the backstop making sure the container is centered in the Calibration Rings.



C.3.101  
X.3.101

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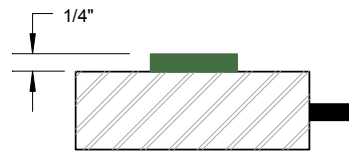
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# CHLOR-SCALE 150, AMMONIA-SCALE & CARBOY-SCALE TROUBLESHOOTING

## MAINTENANCE:

Your Scale requires minimal maintenance. If the platform mounted level is "out of level", this may indicate a loss of hydraulic fluid. Occasionally the load cell should be removed from the platform and checked to assure a full charge of oil.

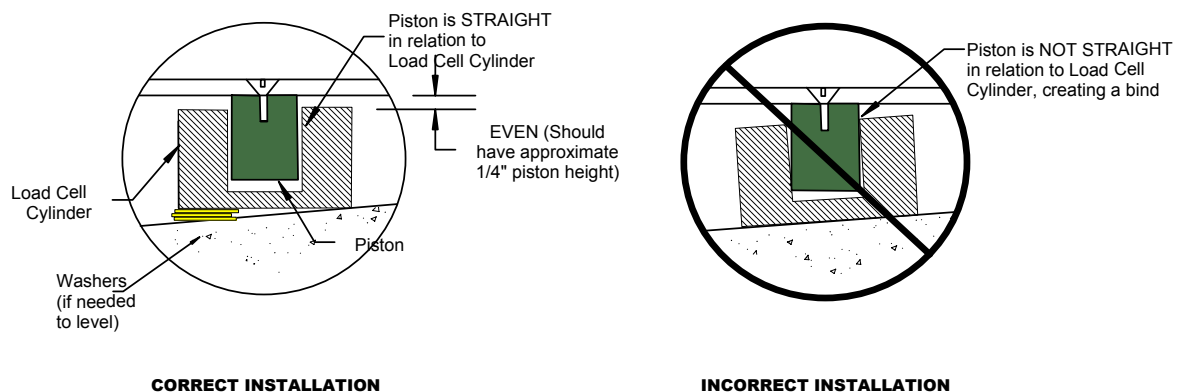
The top of the piston should sit approximately 1/4" above the cylinder of the load cell. If this distance is less than 1/4", or if you experience inaccurate or fluctuating readings, consult factory 1-800-893-6723 or [info@forceflow.com](mailto:info@forceflow.com).



**Piston Gap**

## CHECK THAT LOAD CELL IS LEVEL

If the ground is uneven and the load cell "piston" is not "straight" in relation to the load cell "cylinder", the binding could create inaccurate readings or damage the diaphragm. Shim load cell cylinder, if necessary.



**CORRECT INSTALLATION**

**INCORRECT INSTALLATION**

**PARTS LIST**

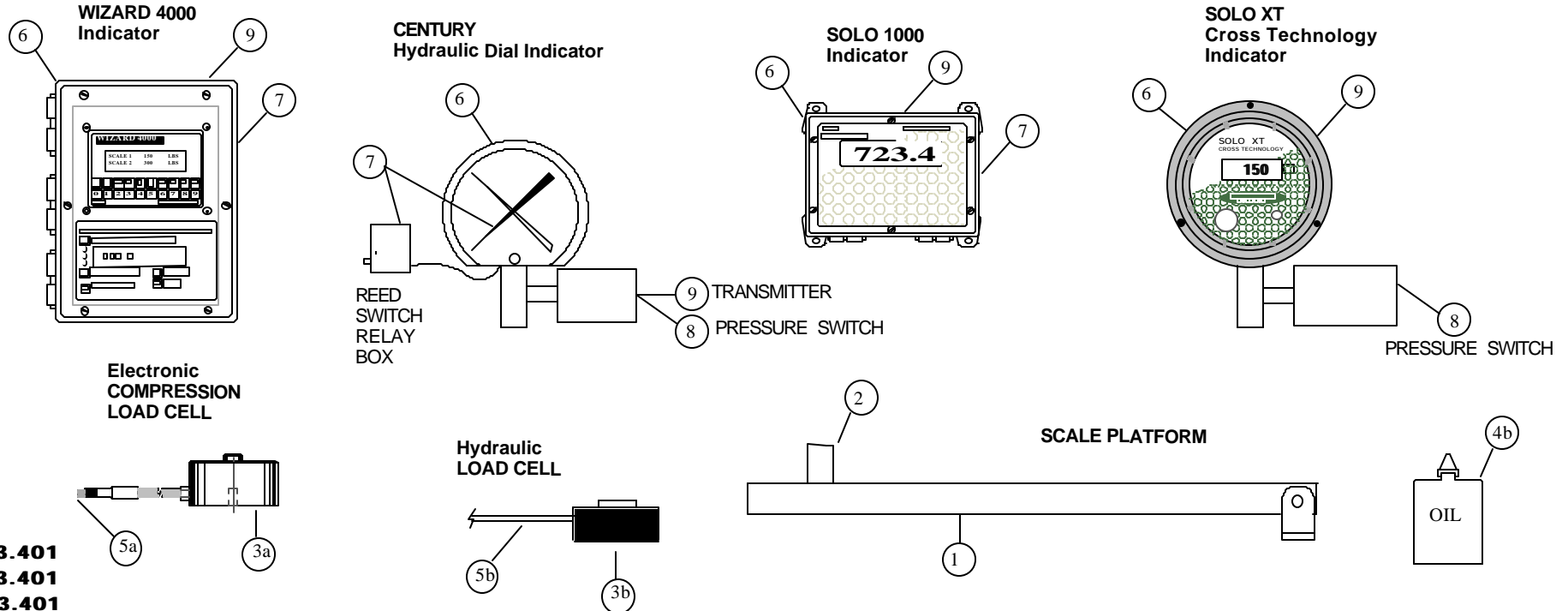
- 1 Carboy Platform:  
200# Capacity  
400# Capacity  
600# Capacity
- 2 Platform Backstop
- 3 ELECTRONIC: Load Cell (#3a) with Cable (#5a) (consult factory)  
HYDRAULIC: Load Cell (#3b) with PVC Copper or XT Tubing (#5b)

- 4 HYDRAULIC or XT SCALES ONLY:  
4a: Internal 1.25 Load Cell Diaphragm  
4b: Pint of RO-5 Oil
- 5 5a: ELECTRONIC: Electronic Cable only  
5b HYDRAULIC or XT: PVC Copper Tubing only
- 6 CENTURY: 4-1/2" dia.meter Dial  
SOLO 1000  
WIZARD 4000-1 or -2  
WIZARD 4000-3 or -4  
SOLO XT (Battery or Loop Powered)

**ACCESSORIES**

- 7 HYDRAULIC only: RS-150 Reed Switch with Reset Relay Box  
ELECTRONIC WIZARD: W5ASP Alarm Switch  
ELECTRONIC SOLO: S5ASP Alarm Switch
- 8 HYDRAULIC or XT:  
PS-10 Fixed Pressure Switch
- 9 HYDRAULIC: MA-150 Transmitter (24 Volt) Power Supply  
XT: Loop Powered 4-20mA Output (Optional)  
ELECTRONIC: Consult Factory

**CONSULT FACTORY FOR CURRENT PRICING**  
1-800-893-6723 Fax: 925-686-6713



**C.3.401**  
**X.3.401**  
**W.3.401**  
**S.3.401**



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REF: T4IO&M\CARBHYD\PARTCARB.tcw (L10.pdf)

**PARTS LIST**  
**for CARBOY SCALE**  
**200# to 600# Capacities**

Drawn by: SLP  
Date: 01/05/89  
Revised: 08/15/00  
Scale: NONE

Drawing Number  
**30174**