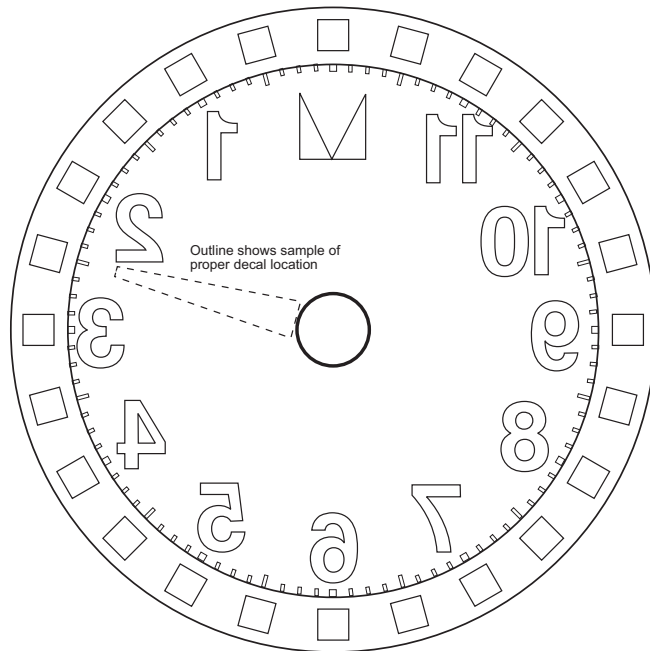## Template for Indicator Decals


Outline shows sample of proper decal location

Instructions

1. Remove front (clear) lens cover.
2. Place lens onto template aligning outside edge to outside circle.
3. Remove decal backing and place decal on lens as shown on template. Align wide end against inside circle and narrow end pointing toward level you want to indicate. (NOTE: template is set for inside reading out and lettering on decal will read backwards.)
4. Decals represent small hand on clock which indicates feet. If both high level and low level decals are used, make sure each points to the correct level you want to indicate.
5. Reinstall lens cover with decals on the inside. Make sure indicators are in correct location and wording is readable before putting gauge in service.

Installation and Operation Instructions

Morrison Clock Gauge and Clock Gauge Alarm
Fig No. 818 and 918
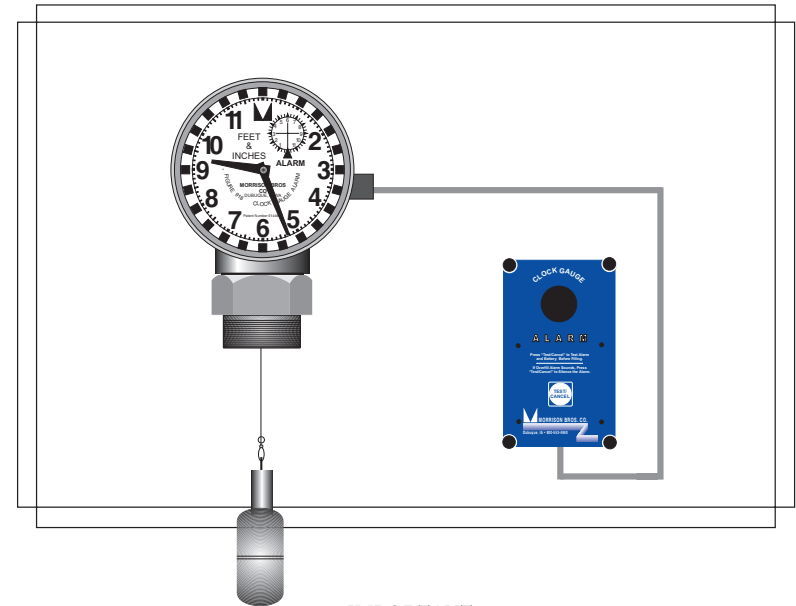
IMPORTANT

This device is to be used only as an "auxiliary warning" to the operator of a possible overfill situation, and should not be relied upon to prevent tank overfill. It is the responsibility of the operator to continuously monitor the tank filling process and to prevent any spillage regardless of the situation or status of any gauge or alarm apparatus.

WARNING

Morrison Bros. Co. will not accept any responsibility or warranty claim if this product is physically modified in any way or used in any way other than as originally intended.

Morrison Bros. Co.
325 East 24th Street
Dubuque, Iowa 52001
800-553-4840

① CLOCK GAUGE INSTALLATION - Fig 818/918

Unit mounts on top of an aboveground storage tank.

12 ft (3.66 M) = maximum measurement. Float rides up and down with change in liquid level which is indicated on Clock Face by rotation of hands.

12 Ft (3.66 M) Max

TANK

STANDARD VERSION:
SMALL HAND = FEET
LARGE HAND = INCHES

EXAMPLE:
Clock reads 9:25,
Liquid Level is
9 feet, 5 inches

METRIC VERSION:
SMALL HAND = METERS
LARGE HAND = CENTIMETERS (x10)

EXAMPLE:
Liquid Level is
2 Meters, 40
Centimeters

WARNING!!!
Do not pull and release cable quickly like a Yo-Yo. This can cause spring to unload. Always wind and unwind the cable in a slow steady motion.

FOLLOW THESE STEPS

1. MEASURE LIQUID - Record liquid level in the tank to the nearest 1/8" (1 cm for Metric Version) using a gauge stick.

2. INSTALL FLOAT- Open large end of snap. Put wire through the ball bearing swivel. Close snap.

3. MOUNT CLOCK GAUGE - Guide float carefully through the tank opening. Slowly lower it into the tank until it rests at the liquid level. Apply pipe sealant and thread the Clock Gauge into the 2" opening until it is snug. Swivel the face of the Gauge to the desired orientation.

4. SET CLOCK - Remove the retaining ring and back metal cover of the Clock Gauge. Hold the large pulley wheel in place & loosen the nut. Using a screwdriver, rotate the shaft and set the hands of the clock to the liquid level recorded in step one.

5. SECURE SETTING - When hands are set, hold the screwdriver firmly in the slot of the shaft and tighten the nut.

6. If installing Clock Gauge only, reinstall back cover with retaining ring, insuring it snaps securely into place.

If installing the Clock Gauge Alarm, keep back plate off and proceed to the next section.

Shaft & Lock Nuts
Large Pulley Wheel
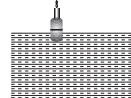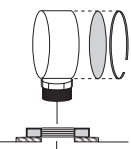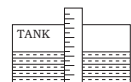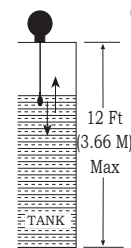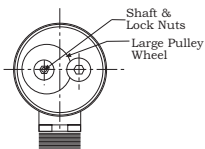
② CLOCK GAUGE ALARM INSTALLATION

Clock Gauge Alarm consists of the Clock Gauge and the Alarm Unit.

Clock Gauge must already be installed upright on tank and set. See instructions in first section.
NOTE: High Level Alarm requirements may differ from one location to the next. Be sure to follow all Federal, State, and Local Code Requirements governing this installation.

ALARM DIAL
JUNCTION BOX
SIGNAL WIRE
Clock Gauge
ALARM UNIT

FOLLOW THESE STEPS   (Failure to do so may void warranty)

1. SET THE ALARM

Select OPTION A or OPTION B - "Setting Alarm Dial" on the facing page and follow the instructions provided. GAUGE MUST BE INSTALLED UPRIGHT ON TANK PRIOR TO SETTING ALARM.

2. INSTALL THE ALARM UNIT

NOTE: As defined in article 501 - Class 1 Locations of the National Electric Code, this apparatus and it's interconnect wiring are intrinsically safe. Under normal conditions this apparatus and it's wiring cannot release sufficient energy to ignite a specific ignitable atmospheric mixture by opening, shorting, or grounding.

WARNING: Interconnect wiring between the gauge and the alarm unit must be kept totally isolated and separate from any other wiring. This wiring must not share any junction box, conduit, raceway, or fixtures with circuits other than those defined by NEC as being intrinsically safe for all class 1 locations.
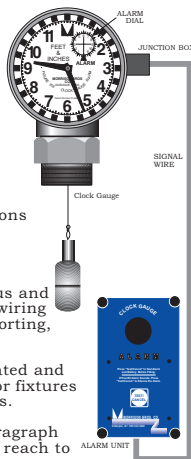
LOCATION: NEC ARTICLE 501-3-CLASS 1 Locations exempt intrinsically safe enclosures in paragraph 501-3(b)(1)(c), and therefore may be placed in the most convenient location but must be within reach to the operator and within audible range.

MOUNTING: Since a general purpose NEMA 4X enclosure is used to protect the alarm circuits and batteries, any mounting holes, conduit, or fasteners must be sealed in order to maintain the weatherproof integrity of the enclosure. All penetrations into enclosure must be made at the bottom of alarm unit.
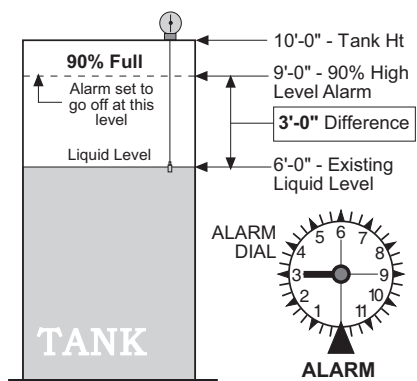
Separate the two halves of the Alarm Unit box. Attach the rear cover of the box to a suitable fixture.

Connect the two wires from the Clock Gauge to the two screw terminals located on the alarm circuit board in the box.

The wires should be gas and oil resistant. Although not required, it is recommended to run the wires in some type of conduit in order to protect them against possible damage during tank filling operations.

Setting The Alarm Dial OPTION A

90% Full
Alarm set to go off at this level

Liquid Level

TANK

10'-0" - Tank Ht
9'-0" - 90% High Level Alarm
3'-0" Difference
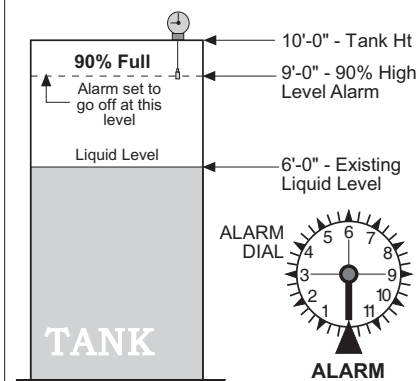6'-0" - Existing Liquid Level

ALARM DIAL

ALARM

Compute the difference between the required high level alarm limit and actual liquid level in the tank. (Example shown 9Ft. - 6Ft. = 3Ft.)

Remove lens plate on the Gauge Unit and set the Alarm Dial to the mark.
(Example set to numeral(3).)

Set Alarm Dial by pulling it out, rotating it to desired setting, and letting it "snap back in gear". The gear spread allows settings to the nearest 4 inches.

Do not disrupt the position of the clock hands. If the clock hands are in the way with this option, use OPTION B for setting dial. Once Alarm is set, go back and proceed at step 2 "Install the Alarm Unit".

Setting The Alarm Dial OPTION B

90% Full
Alarm set to go off at this level

Liquid Level

TANK

10'-0" - Tank Ht
9'-0" - 90% High Level Alarm
6'-0" - Existing Liquid Level

ALARM DIAL

ALARM

Remove lens plate and back plate off of the Clock Gauge. Clock Gauge should be set for current liquid level in tank. If not, do so. Using thumb tips rotate large pulley wheel counter-clockwise lifting float off of the liquid as if filling the tank.

When clock reaches point of high level alarm, hold it on that mark. (In this example it would be 9:00.)

Set Alarm Dial by pulling it out, rotating it to the arrow (pointing directly down) as shown, and letting it "snap back in gear". Slowly lower float back to tank level.

Take care not to disrupt the position of the clock hands. If the clock hands are in the way with this option, use OPTION A. Once Alarm is set, go back and proceed at step 2 "Install the Alarm Unit".

Clock Setting Examples:

If Liquid Level = 6"
Set Clock to read 12:30

If Liquid Level = 4'- 6" (54")
Set Clock to read 4:30

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3. TEST THE SYSTEM

ALARM SIGNAL - Test the connection by shorting the two wires together at the gauge end. This will cause the alarm to sound until the "Test/Cancel" button is pushed. If the alarm fails to sound, check the connections and the batteries and retest until results are satisfactory.

Reassemble the two halves of the box. Connect the wires to the Clock Gauge at the junction box and replace cover.

TRIGGER ALARM - Rotate large pulley wheel in back of gauge with thumb tips in a counter-clockwise direction to lift float and simulate filling the tank.

Keep thumb-tip control on the wheel. If it slips and unwinds freely, spring can uncoil. Observe hands and Alarm Dial to verify that they are moving with gear movement. Allow clock hands to pass over "Point of Alarm". Alarm should sound. If Alarm fails to sound at the correct level, adjust dial until operation is satisfactory. Once satisfied, let float down slowly to liquid level and replace back plate on Clock Gauge.

Attach warning tag at fill point with supplied cable tie, in a location visible to operator.