

MAGNETIC TYPE FLUID GAGES INSTRUCTIONS

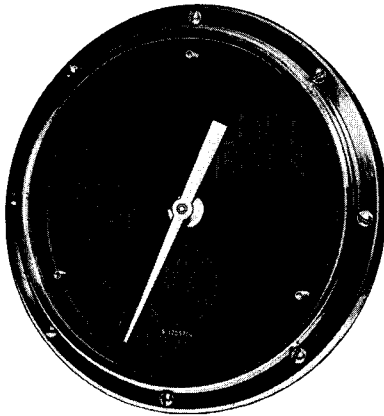


FIG. 1—MAGNETIC TYPE FLUID GAGE
FRONT VIEW

GENERAL

The magnetic type fluid gage permits the visible reading, from a reasonable distance, of the fluid level in oil or inerted insulated apparatus. The gage consists of a magnet, attached to a float operated lever on the inside of the tank which in turn operates a magnetic needle in front of a non-magnetic dial plate to indicate the fluid level. The gage is weather proof and it is only necessary to maintain a tight joint, by means of a gasket, between the tank wall and the gage flange. The size of the magnetic type gage used is determined by the distance from which visible reading is desired, variation of fluid level, and clearances. Fig. 1.

Figures 2 and 3 show a magnetic type fluid gage, with the float, equipped with low level alarm contacts which are arranged for opening or closing an alarm circuit, whenever the fluid level falls below a predetermined level.

CONSTRUCTION AND OPERATION

The gage is constructed so that it is impossible for the fluid to reach or affect the scale on the etched dial. The float is limited in its travel to 15 degrees

from the vertical in the "down" position to 15 degrees from the vertical in the extreme "up" position. The "Normal" level on the dial corresponds to the cold oil 25° fluid level. The complete gage with float attached can be withdrawn from the tank by removing the four mounting bolts.

Gage with Alarm Contacts

Fig. 4 is a cut away view of the gage with alarm contacts. The gage mounting flange has an extension to which is bolted the switch housing within which is a pivoted arm having a permanent magnet mounted on its upper end and on the lower end a small roller that engages the switch arm of a S.P.D.T. Microswitch.

Mounted on the float arm shaft is a permanent magnet with its pole faces close to the cylindrical wall of the gage housing.

When the magnet "B" on the rotating shaft partially covers the magnet "A" on the switch arm, the attraction between the two magnets is sufficient to operate the switch. This switch is of the toggle type, giving snap action so that slowly rising or falling fluid level does not cause the contacts to open or close slowly.

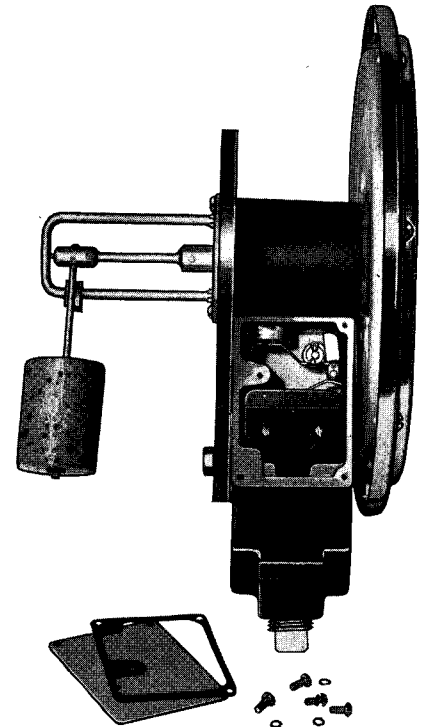


FIG. 3—MAGNETIC TYPE FLUID GAGE, COVER
REMOVED FOR INSPECTION OF MICROSWITCH.

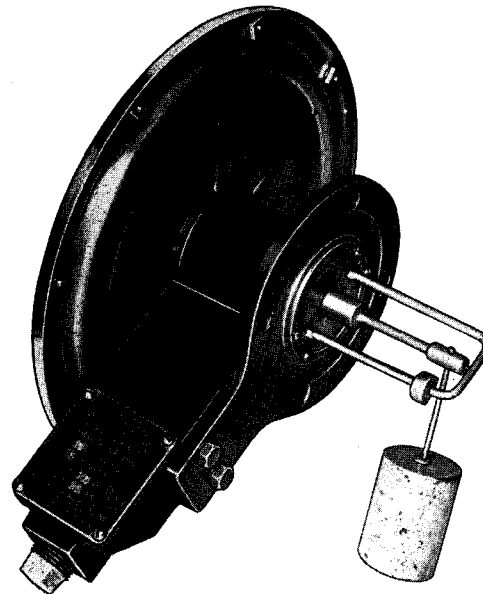


FIG. 2—MAGNETIC TYPE FLUID GAGE—REAR VIEW

MAGNETIC TYPE FLUID GAGES—Continued

INSTRUCTIONS—Continued

A second magnet, "C" for use as checking magnet, may be furnished. By moving a strong permanent magnet close to the checking magnet the gage pointer will be caused to move slightly and indicate whether any of the parts are binding. The movement will be limited since the magnet is not strong enough to depress the float below or raise it above the liquid level.

The checking magnet can also be used to operate the microswitch to give high liquid level alarm.

The liquid level at which the switch operates is adjusted at the factory by rotating the magnet or magnets on the

float arm shaft and then securing the magnets to the shaft.

The switch housing has an inspection plate for access to the microswitch for inspection. The bottom of the switch house has an opening tapped for $\frac{1}{2}$ inch pipe.

INSTALLATION

The gage is usually shipped mounted in place on the transformer. If shipped separately or if a replacement is made, check operation of float over its entire range to see that it operates freely and that the pointer follows the movement of the float. The gage flange should be drawn up tightly against the gasket be-

tween it and the tank to make a tight joint.

MAINTENANCE

The gage will ordinarily require no attention.

If for some reason the gage becomes inoperative it should be replaced.

ORDERING INFORMATION

If a new gage is required, order from nearest Westinghouse Electric & Manufacturing Co. office giving style number of gage or stock order and serial number stamped on nameplate attached to the transformer tank.

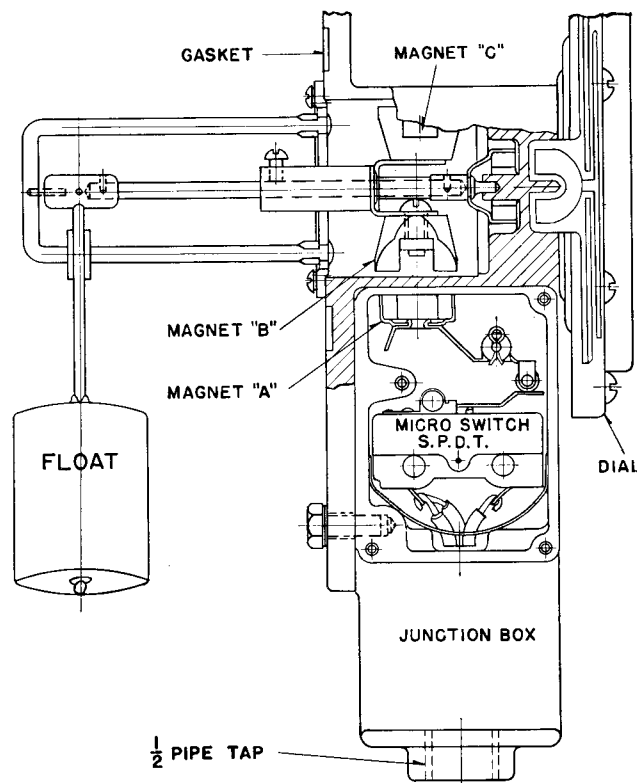


FIG. 4—4 AND 8 INCH MAGNETIC LEVEL GAGE WITH LOW LEVEL ALARM ON VERTICAL CENTER

MAGNETIC TYPE FLUID GAGES

INSTRUCTIONS

fluid temperature. If this is not done; excessive pressures may be built up in sealed tank transformers or excessive breathing may be produced in Inertaire Transformers, causing excessive use of nitrogen, or the low level alarm may be caused to operate unnecessarily due to insufficient fluid.

The complete gage with float attached can be withdrawn from the tank by removing the four mounting bolts.

Gage with Alarm Contacts

Fig. 4 is a cut away view of the gage

hange has an extension to which is bolted the switch housing within which is a pivoted arm having a permanent magnet mounted on its upper end and on the lower end a small roller that engages the switch arm of a S.P.D.T. Microswitch.

Mounted on the float arm shaft is a permanent magnet with its pole faces close to the cylindrical wall of the gage housing.

When the magnet "B" on the rotating shaft partially covers the magnet "A" on the switch arm, the attraction between the two magnets is sufficient to operate the switch. This switch is of the toggle type, giving snap action so that slowly rising or falling fluid level does not cause the contacts to open or close slowly.

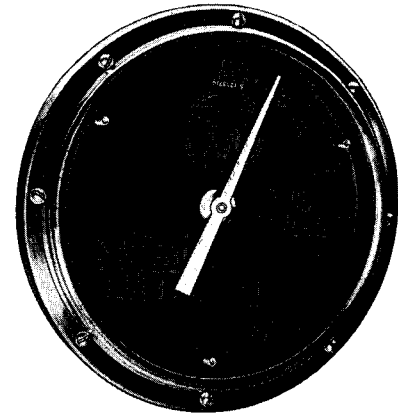


FIG. 1—MAGNETIC TYPE FLUID GAGE FRONT VIEW

GENERAL

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Figures 2 and 3 show a magnetic type fluid gage, with the float, equipped with low level alarm contacts which are arranged for opening or closing an alarm circuit, whenever the fluid level falls below a predetermined level.

CONSTRUCTION AND OPERATION

The gage is constructed so that it is impossible for the fluid to reach or affect the scale on the etched dial. The float is limited in its travel to 15 degrees from the vertical in the "down" position to 15 degrees from the vertical in the extreme "up" position. The "Normal" level on the dial corresponds to the 25° fluid level.

If the tank is filled with fluid at any other temperature it must be filled to the level indicated in Table I for that

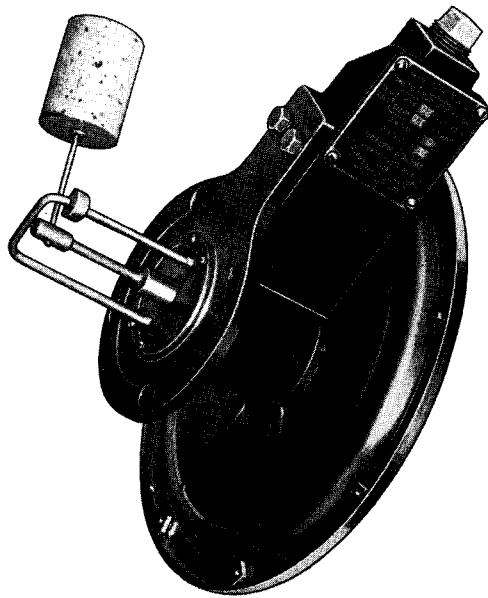


FIG. 2—MAGNETIC TYPE FLUID GAGE—REAR VIEW

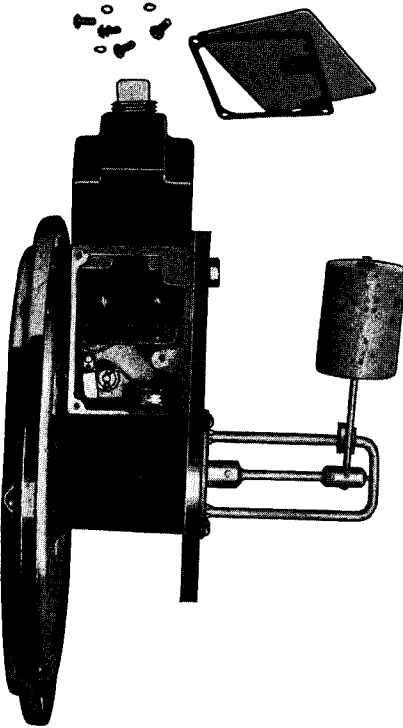


FIG. 3—MAGNETIC TYPE FLUID GAGE, COVER REMOVED FOR INSPECTION OF MICROSWITCH.

EVERY HOUSE NEEDS WESTINGHOUSE

MAGNETIC TYPE FLUID GAGES—Continued

INSTRUCTIONS—Continued

A second magnet, "C" for use as check- float arm shaft and then securing the between it and the tank to make a tight joint.

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The gage will ordinarily require no attention.
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If a new gage is required, order from nearest Westinghouse Electric & Manufacturing Co. office giving style number of gage or stock order and serial number stamped on nameplate attached to the transformer tank.
The gage is usually shipped mounted in place on the transformer. If shipped separately or if a replacement is made, check operation of float over its entire range to see that it operates freely and that the pointer follows the movement of the float. The gage flange should be drawn up tightly against the gasket be-

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The checking magnet can also be used to operate the Microswitch to give high liquid level alarm.
The liquid level at which the switch operates is adjusted at the factory by rotating the magnet or magnets on the

INSTALLATION

The switch housing has an inspection plate for access to the Microswitch for inspection. The bottom of the switch house has an opening tapped for 1/2 inch pipe.

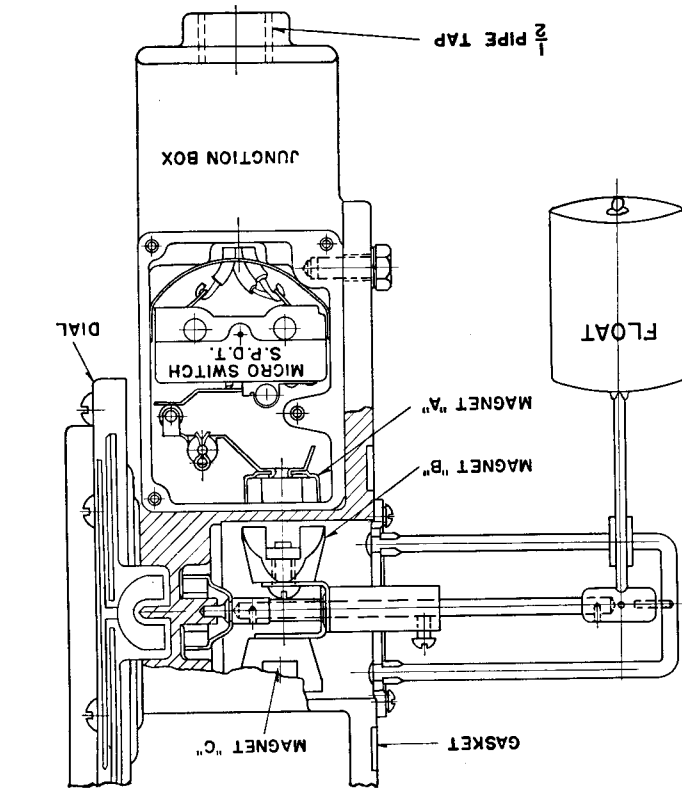


FIG. 4—4 AND 8 INCH MAGNETIC LEVEL GAGE WITH LOW LEVEL ALARM ON VERTICAL CENTER

| CORRECT LEVEL FOR FILLING | | | | Average Fluid Temp. C. |
|---------------------------|----------|----------|----------|------------------------|
| Scale 2 1/2" | Scale 4" | Scale 6" | Scale 8" | 85 |
| .. | 4 | 6 | 8 | 80 |
| .. | 3 | 4 1/2 | 6 | 75 |
| 2 1/2 | 2 | 3 | 4 | 70 |
| 1 1/4 | 1 | 1 1/2 | 2 | 65 |
| 0 | 0 | 0 | 0 | 60 |
| 1 1/4 | -1 | -1 1/2 | -2 | 55 |
| 2 1/2 | -2 | -3 | -4 | 50 |
| .. | -1 | -1 1/2 | -2 | 45 |
| .. | 0 | 0 | 0 | 40 |
| .. | 0 | 0 | 0 | 35 |
| .. | 0 | 0 | 0 | 30 |
| .. | 0 | 0 | 0 | 25-Normal |
| .. | 0 | 0 | 0 | 20 |
| .. | 0 | 0 | 0 | 15 |
| .. | 0 | 0 | 0 | 10 |
| .. | 0 | 0 | 0 | 5 |

TABLE I