



INSTALLATION OPERATING AND MAINTENANCE INSTRUCTIONS

SEETRU LTD.

ALBION DOCKSIDE WORKS, HANOVER PLACE, BRISTOL BS1 6UT. ENGLAND
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SEETRU QUICKMOUNT GAUGE

GENERAL DESCRIPTION

The Seetru Quickmount gauge consists of a transparent sight tube fixed to the outside of a tank and isolated from it by screwdown valve units which may be fitted with automatic safety valves. They control the flow of liquid to the sight tube when the gauge valves are opened to show the level in the tank.

The sight tube (1) is protected against breakage by the guard tube (2) which surrounds it apart from windows through which the liquid level can be seen. Anti-rattle rings (3) are fitted over the sight tube and fit the inside diameter of the guard tube. The guard tube is in turn supported by the support bracket (4) only fitted on gauges exceeding 3ft, centre distance which is secured by screws (5) to a special pad welded to the tank.

Gauge collars (6/7) are fitted at top and bottom ends of the sight tube. Valveless (6) may be used at both ends whilst the bottom (7) is fitted with a drain valve. The sight tube is sealed by "O" rings (9/10) which are compressed by the polypropylene bushes (8) when the gland nuts (11) are tightened. Slide top gauge collar (6) over valve unit (12) and slide the gauge collar (7) over valve unit (32) which are sealed by "O" rings (7). They are securely retained on the body of the units by retaining nuts (26) and are sealed by "O" rings (22) to prevent leakage.

Samples of the tank content may be taken for examination by unscrewing the drain valve ferrule (18). This drain valve is sealed against leakage by a plunger (14) fitted with "O" rings (15/16) and retained in the ferrule by a circlip (19). It is prevented from being removed from the collar by the pin.

Both valve unit bodies are sealed to the tank boss with fibre washers (27) and contains a screwdown valve (25/29) sealed by "O" rings (24) against leakage. The retaining clip (21) prevents the screwdown from being removed from the unit.

The head of a screwdown valve fitted with an automatic safety valve (29) is marked "ASV". If the sight tube is broken, loss of liquid is prevented by the automatic shut-off valve in the valve body (28). The abnormal flow acting on sealing ball (30) forces it forward to seal on seat in body. When valve is open ball (30) is retained by retaining clip (31).

INSTALLATION INSTRUCTIONS

1. Valve units (12/32) must be screwed into the tank bosses and sealed by use of the fibre washers (27) provided. Once fitted these units should not be disturbed.



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2. The gauge assembly can now be fitted by sliding the collar (6/6) or (6/7) over top valve body and (7) over bottom valve body and attaching by retaining nuts (26).

The gauge assembly can now be adjusted by $\pm 1/16$ " on nominal centre distance. To carry out this adjustment when necessary, slacken gland nuts (11) slide collars on sight tube to obtain correct distance.

IMPORTANT : Centre distance must not exceed nominal distance + $1/16$ ".

3. "0" rings (13) are fitted on either side of the collars, and provide an adequate seal with only gentle tightening of the retaining nuts to give a light metal to metal contact. Excess tightening of the retaining nuts will provide binding between metal faces and could cause damage. Care must be taken to ensure that all faces and diameters are free from burrs and are clean, especially those operating on the "0" rings.

4. Support brackets are fitted to all gauges which exceeds 3' centre distance and these are fixed by screws to special pads (not supplied) welded to the tank.

OPERATING INSTRUCTIONS

TO OPEN GAUGE

1. Open top valve (25) fully.
2. Open bottom valve (29) very slowly until fully open.
The level inside the tank should now register in the sight tube.

TO CLOSE GAUGE

1. Close valves (29) and (25).

TO DRAIN GAUGE

1. Close valves (25) and (29).
2. Unscrew ferrule (18) to full extent.

TO CLOSE DRAIN VALVE

1. Tighten ferrule (18).

TO TAKE SAMPLE

1. Unscrew ferrule (18) to full extent.
2. Open bottom valve (29) very slowly until fully open.
3. Obtain sample.
4. Close valve (29).
5. Tighten ferrule (18).

Note : Head of screw-down valve marked A.S.V. denotes valve unit contains automatic shut-off valve.



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OPERATION FAULTS

Fault	Probable Cause	Rectification	Maintenance Paragraph
Gauge not filling	Empty tank Obstruction in Gauge Obstruction in Valve	Fill Clear Clear	
Filling to incorrect level	Incorrect use of Gauge Incorrectly installed	See note 1 See note 3	
Broken Sight Tube	Mis-use Misalignment	Renew Renew check tank face flat	B B
Valves not sealing	'O' ring damage	Renew	C D or E
Leaks from Collar Seal	Loose retaining nut Damaged 'O' ring	Tighten Renew	A A
Sight Tube Gland Leaking	Loose gland nut Damaged 'O' ring	Tighten Renew	B B
Leaking from Tank Boss	Valve body loose Fibre Washer Damaged	Tighten Renew	G G
Drain valve Leaking	'O' rings damaged	Renew	E

NOTE 1

It must be appreciated that the automatic safety valve the head of which is marked ASV, is very sensitive to a sudden flow of liquid through the valve unit; and that the sudden surge of liquid into an empty gauge from a full tank is a good assimilation of a broken sight tube and, therefore, the safety valve would close preventing the tank contents from reaching the sight tube. In order to prevent this occurring, the lower valve must be opened very slowly. If the automatic safety valve has sealed off the sight tube normal operation may be resumed by the following means:

1. Close bottom valve (29) which when fully closed re-opens the ASV.
2. Open bottom valve (29) a half turn to allow liquid to find its own level, then open fully.

NOTE 2

It should be noted that as this gauge is fitted with valves at the top and bottom, the tank liquid level shown may be incorrect if the bottom valve only is operated. This is due entirely to the upper valve being closed trapping air in the upper part of the sight tube so that the column of liquid is unable to find its natural level. This is corrected by opening the upper valve.

NOTE 3

If the Quickmount gauge is installed on piping runs, the pipes should be rigid and supported so that longitudinal expansion of the gauge is resisted.

In addition the piping runs should be installed so that they run down from tank to gauge and hence be self venting as any trapped air pockets will cause the gauge to read incorrectly.



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PARTS LISTS

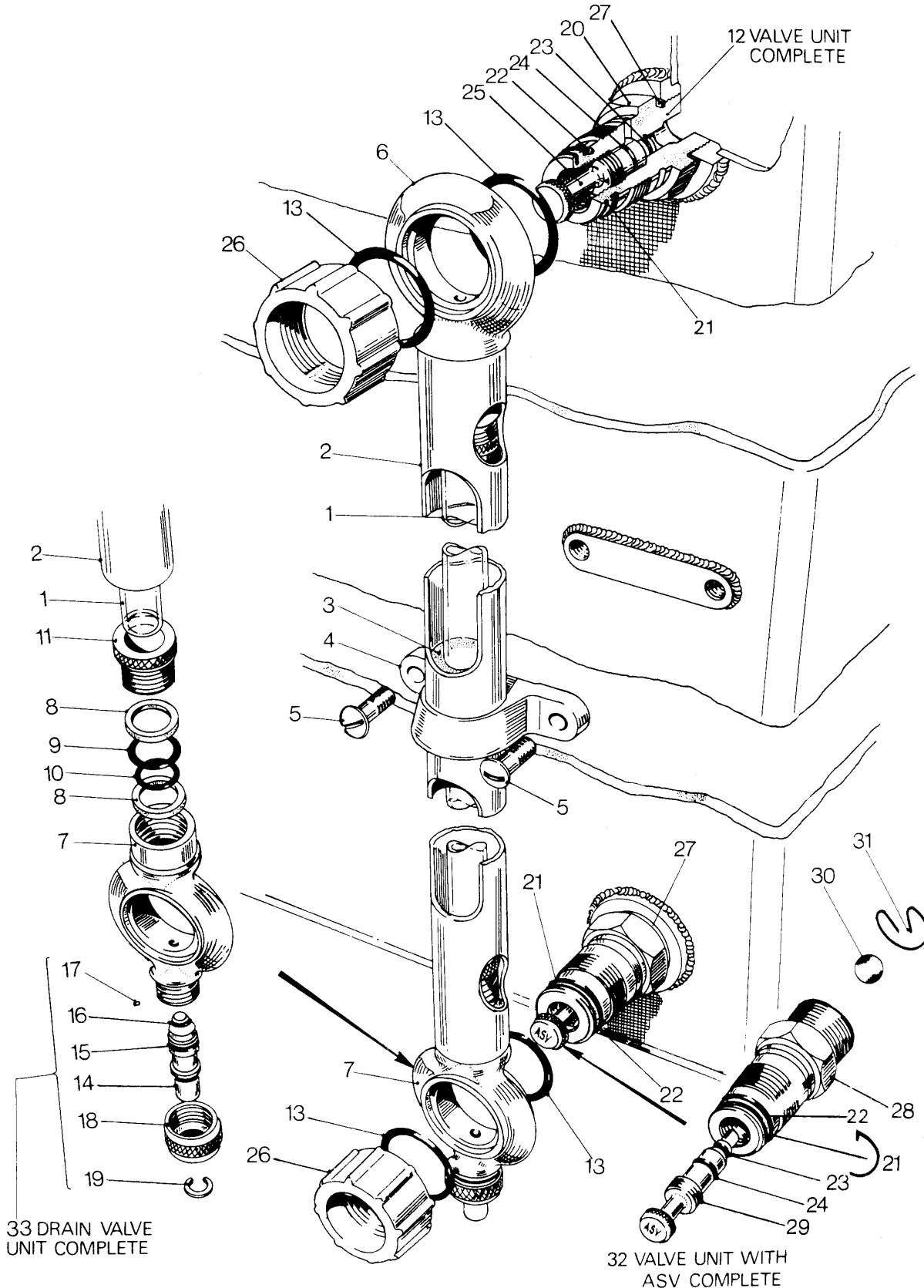
Item No.	Off	Description	Item No.	Off	Description
1	1	Sight Tube	12	1	Screwdown valve unit comprising:
2	1	Guard Tube			
3	3/M	Anti-rattle ring	20	1	Body
4	1	Support Bracket	21	1	Retaining Clip
5	2	Support Bracket screw	22	1	Retaining Nut Seal
6	1	Gauge Collar - Top	23	1	Screw-down Valve Seal
7	1	Gauge Collar - Bottom	24	1	Screw-down Valve Seal
8	6	Bush	25	1	Screw-down Valve
9	2	'O' Ring	26	1	Retaining Nut
10	2	'O' Ring	27	1	Fibre Washer
11	2	Gland Nut			
12	1	Valve Unit complete	32	1	Screwdown valve unit complete with auto safety shut-off valve comprising:
13	4	Collar 'O' Ring	21	1	Retaining Clip
14	1	Plunger	22	1	Retaining Nut Seal
15	1	'O' Ring	23	1	Screw-down Valve Seal
16	1	'O' Ring	24	1	Screw-down Valve Seal
17	1	Pin	26	1	Retaining Nut
18	1	Ferrule	27	1	Fibre Washer
19	1	Circlip	28	1	Body
20	1	Body	29	1	Screw-down Valve
21	2	Retaining Clip	30	1	1/2" Dia Ball St. Steel
22	2	Retaining Nut Seal	31	1	Retaining Clip
23	2	Screw-down Valve Seal			
24	2	Screw-down Valve Seal	33	1	Drain valve unit complete comprising:
25	1	Screw-down Valve	7	1	Collar
26	2	Retaining Nut	14	1	Plunger
27	2	Fibre Washer	15	1	'O' Ring
28	1	Body	16	1	'O' Ring
29	1	Screw-down Valve	17	1	Pin
30	1	1/2" Dia Ball St. Steel	18	1	Ferrule
31	1	Retaining Clip	19	1	Circlip
32	1	Valve Unit complete with ASV			
33	1	Drain Valve unit complete			

Note : 'O' Rings can be made in Nitrile, Butyl or Viton.

For spares please specify sealing material required when order is placed.

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To remove Gauge from Tank :

1. Close all valves (14), (25) and (29).
2. Remove gauge fixing screws (5).
3. Remove gauge retaining nuts (26).
4. Remove gauge from tank complete with 'O' rings.
5. Check and renew 'O' rings if required (13) and (22).
6. Refit gauge to tank complete with 'O' rings (13).
7. Refit gauge retaining nuts (26).
8. Refit screws (5).
9. Refill tank and check for leaks.

To remove or renew Gauge Sight Tube :

1. Remove gauge from tank using steps 1 to 4 of Section A
2. Unscrew top gland nut (11) from gauge collar (6).
3. Remove top gauge collar (6) by pulling straight up.
4. Remove support bracket (4).
5. Remove guard tube (2).
6. Unscrew lower gland nut (11) from lower collar (7).
7. Remove sight tube (1) complete with gland nut (11), 'O' ring (9 & 10) and bushes (8) from lower valve collar (7). Remove anti-rattle rings from sight tube where fitted.
8. Clean or renew sight tube, inspect all seals, renew if required.
9. Check internal passages of collars, clear of obstruction.
10. Refit sight tube (1) complete with top and bottom gland nut (11), 'O' rings (9 & 10) bushes (8) and anti-rattle rings (3) where used.
11. Screw lower gland nut (11) to bottom gauge collar (6).
12. Refit guard tube (2).
13. Refit support bracket (4) where used.
14. Refit to top gauge collar (6).
15. Screw top gland nut (11) to top gauge collar (6).
16. Push anti-rattle rings (3) where used behind bridges of guard tube (2).
17. Refit gauge to tank using steps 6 to 9 from Section A.

To inspect or renew Screw-down Seals (23 & 24) in Top Valve :

1. Drain tank below level of connection.
2. Unscrew retaining nut (26) to facilitate removal of retaining clip (21).
3. Completely remove valve (25) by unscrewing.
4. Inspect and renew 'O' rings (23 & 24) if required.
5. Check internal passages are clear.
6. To re-assemble, screw valve (25) into valve body (20).
7. Refit retaining clip (21), check 'O' ring (13) is in position, screw on retaining nut (26).
8. Refill tank and check for leaks.



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To inspect or renew Screw-down Seals (23 & 24) in Bottom Valve Unit :

1. Drain tank below level of connection.
2. Unscrew retaining nut (26) to facilitate removal of retaining clip (21).
3. Completely remove valve (29) by unscrewing.
4. Inspect and renew 'O' rings (23 & 24) if required.
5. Check internal passages are clear.
6. To re-assemble screw valve (29) into valve body (28).
7. Refit retaining clip (21), check 'O' ring (13) is in position.
Screw on retaining nut.
8. Refill tank and check for leaks.

To inspect or renew Drain Valve Seals (15 & 16) :

1. If inaccessible remove gauge from tank using steps 1 to 4 of section A.
2. Remove circlip (19).
3. Completely remove ferrule (18) by unscrewing.
4. Remove loose pin (17) by easing out from bore.
5. Pull out plunger (14) complete with 'O' rings (15 & 16) if required.
6. Inspect and renew 'O' rings (15 & 16) if required.
7. Check internal passages of plunger (14) and collar (7) are clear.
8. To re-assemble place plunger (14) into collar (7) refit pin (17).
9. Screw up ferrule (18) replace circlip (19).
10. Refit gauge to tank using steps 5 to 9 from Section A.

To inspect or renew Automatic Safety Valve Seal Pad (30) in Bottom Valve Unit:

1. Drain tank below level of connection.
2. Remove gauge from tank using steps 1 to 4 from Section A.
3. Remove valve unit (32) by unscrewing unit from tank boss.
4. Inspect or renew fibre washer (27).
5. Remove retaining clip (31) from back of valve unit (32).
6. Inspect or renew ball (30) and clip (31) if required.
7. Check internal passages are clear.
8. To re-assemble, replace ball (30) and clip (31).
9. Check that tank boss face is smooth and clean.
10. Screw valve unit (32) into tank boss with washer (27) in position.
11. Refit gauge to tank using steps 5 to 9 from Section A.
12. Refill tank and inspect for leaks.



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To inspect or renew Fibre Washers (27) :

1. Drain tank below level of connection.
2. Remove gauge from tank using steps 1 to 4 from Section A.
3. Unscrew and remove valve unit (12 and 32) from tank boss.
4. Inspect and renew washers (27) if required.
5. Check tank boss face is smooth and clean.
6. To re-assemble, screw valve unit (12 and 32) into tank boss with washer in position.
7. Refit gauge to tank using steps 5 to 9 from Section A.
8. Refill tank and check for leaks.

EMERGENCY INSTRUCTIONS :

In the event of an emergency, close all screw-down valves (12 and 32) thereby isolating the gauge completely from the tank.