Tank Wagon Overfill protection probe Setting Procedure (Petroleum Ground Fuels)

Note – for Aviation Fuels refer to Oil Company Specific requirements & procedures

Objective is to obtain a minimum of 230 Litres Ullage from the compartment overfill Probe to the compartment Gross capacity.

To establish the current probe setting for Liquip or Treloar Manlid
Reference to Drawing # 1

1. Using the master dipstick, insert into the dip tube scribe a mark across the top of the camlock onto the dipstick. This will be the main reference point.

(Note: if the Tank wagon Master dipstick is missing, use the individual compartment dipsticks)

2. Open the compartment hatch, with a measuring Rule measure the distance from the bottom of the probe holder to the very bottom of the Scully probe this is your **"Dimension"**

3. Carryout the mathematics using the following Formula
   A= B + DIMENSION -X

Refer to the Overfill probe style (refer Appendix page7 of this document) to establish **X**
Note: As the reference measurements can very, these should be checked on each compartment hatch.

4. Using measurement "A" measure from the scribed line on the dipstick, this will indicate the approximate Litres the Probe is set at.Check the required Ullage has been meet.

To Reset the Probe to the required minimum 230 litres Ullage

1. Establish the new required setting
   E.g.: 5300 litres gross – 230 litres ullage = 5070 litres

(Gross markings are normally found stamped on each compartment hatch, or on the dipstick. If these can not be located it is recommended that 3% on top of the Safe Fill Level be used as the Gross).

2. Locate the new setting on the dipstick and mark, measure from the camlock Scribe mark at the top of the dipstick to the new setting. This is the new **"A"** dimension. .

3. Using the formula below calculate the new probe measurement
   "**Dimension" = A – B – 15 + X**

   E.g.: 167mm. = 280mm – 105mm – 15mm + 7mm

Tank Wagon Overfill protection probe Setting Procedure (Petroleum Ground Fuels)

4. Reset the probe by measuring from the bottom of the probe holder to the very bottom of the probe. **(E.g. 167mm)**

5. Important - If the new Probe setting falls below the old SFL, the compartment will require down grading and retagging. Recommended to use the nearest 50 or 100 litres below the probe setting.

Scully probe holder and bolt down hatches

Reference drawing # 3

1. Remove the cap from the Scully probe holder. Scribe the probe at the top of the holder.

2. Remove the probe from the holder. (Disconnection of the wiring not normally required)
Measure from the scribe mark on the probe to the very bottom of the probe. This will be Measurement "B"

3. Insert the dipstick into the dip tube; scribe across the camlock onto the dipstick to obtain a reference line.

4. Using a spirit level place across the dip tube camlock over to the probe holder, measure the difference in height. This will be measurement "A"

5. Use the following formula

"Dimension" = A + B – X

E.g.: 225mm = 82mm + 150mm – 7mm

6. Using the "Dimension" (E.g. 225 mm) measure from the camlock scribe mark down the dipstick to locate the approximate litres the probe is currently set at. Check the required Ullage has been meet.

Tank Wagon Overfill protection probe Setting Procedure (Petroleum Ground Fuels)

To Reset the Scully probe to minimum 230 litres Ullage if required

1. Establish the 230 litres from the Gross and mark on the dipstick.
Measure from the camlock scribe mark at the top of the dipstick to the new mark.
This will be the "**Dimension".**

2. Using the formula below
B = "Dimension" – A –15+X
(E.g. 160mm = 250 – 82-15 +7)

3. Using measurement **"B"**, measure from the bottom of the probe and scribe the new mark, insert the probe into the holder upto the new mark.

4. If the new Probe setting falls below the old SFL, the compartment will require down grading and retagging. Recommended using the nearest 50 or 100 litres below the probe setting.

5. Refit Caps. Using a Scully tester check the system is in working order.

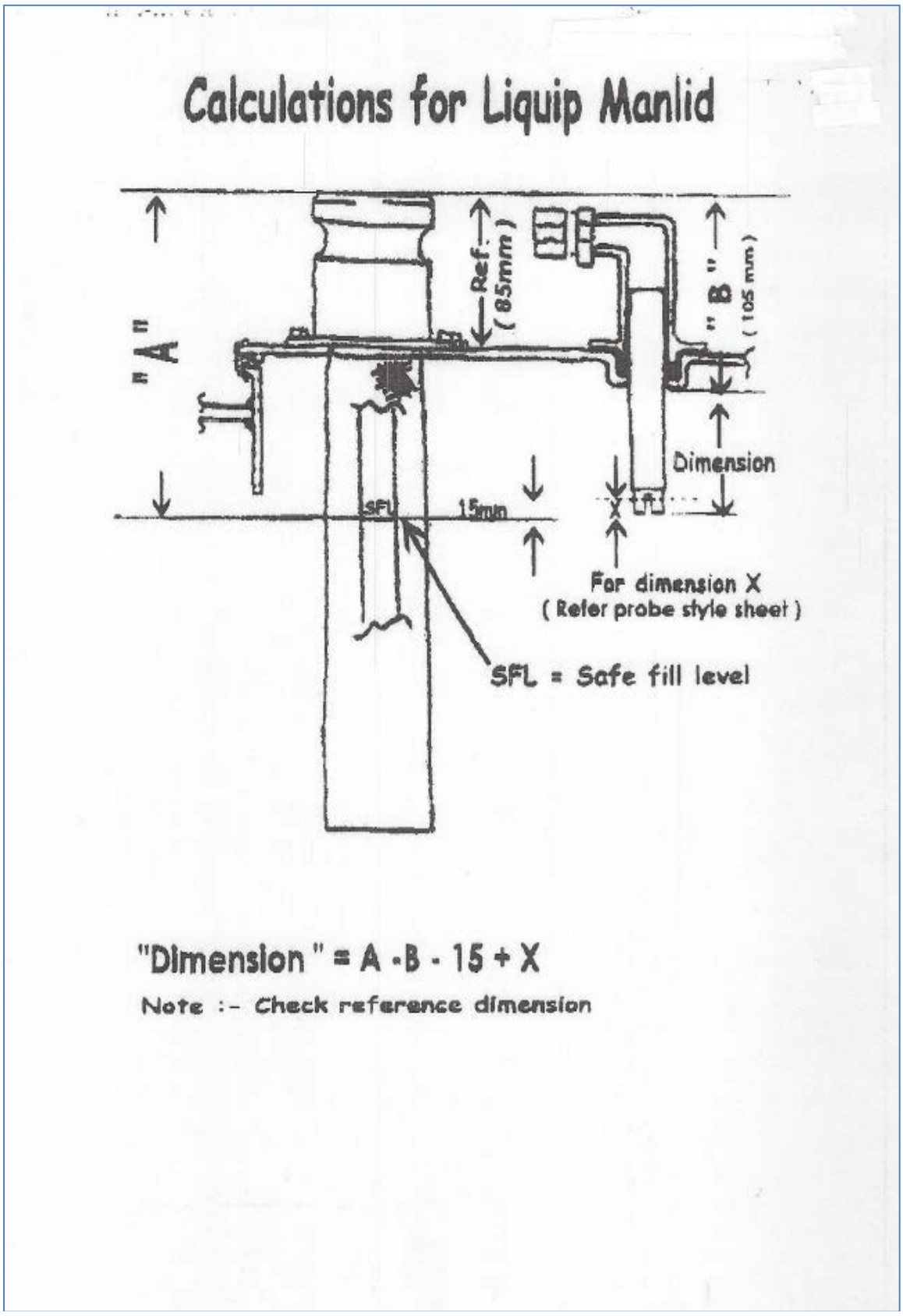
Note1:
Some Probes may require extending to reach the required ullage.

Note2:
Due to the 'margin of error' that can occur in measuring equipment (dipsticks), you must allow a minimum of 20 litres of additional ullage, between the probe setting/activation point and the compartment SFL.
The intent of this is to prevent an early activation of the scully shut-down system, due to any product movement/splashing in the compartment.
This quantity is to be recorded in the "Probe set above SFL (L) section of the NZ Oil Industry – "Overfill Probe Setting Form".

Note3:
If the new Probe setting falls below the old SFL, the compartment SFL will be required to be reduced in volume accordingly and retagged. It is recommended to round this new SFL to the nearest 50 or 100 litres below the probe setting.

Note4:
Appropriate Safety precautions/permits/operating procedures etc must be in place to address potential hazards such as working at heights, confined space etc.

Tank Wagon Overfill protection probe Setting Procedure (Petroleum Ground Fuels)



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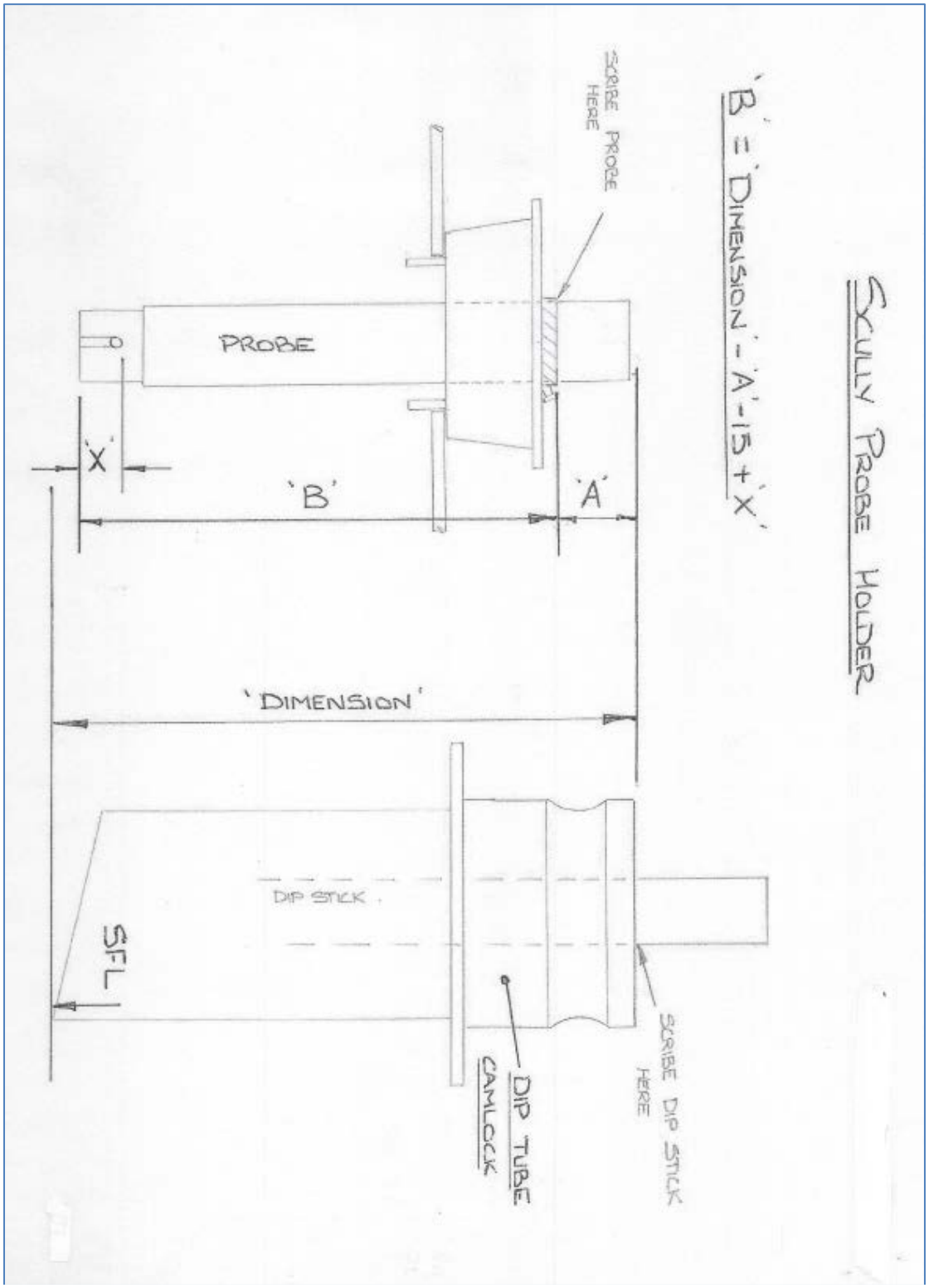

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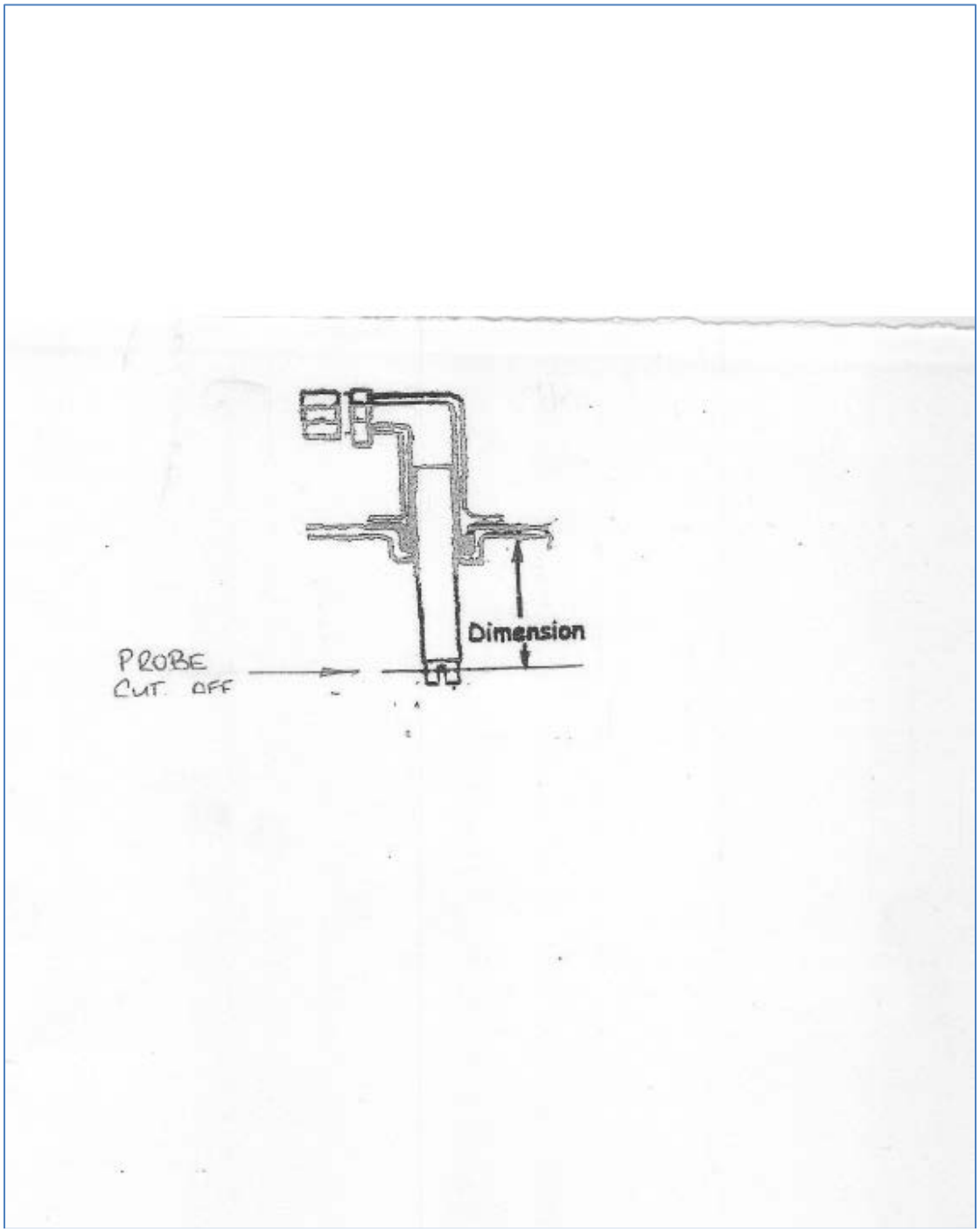

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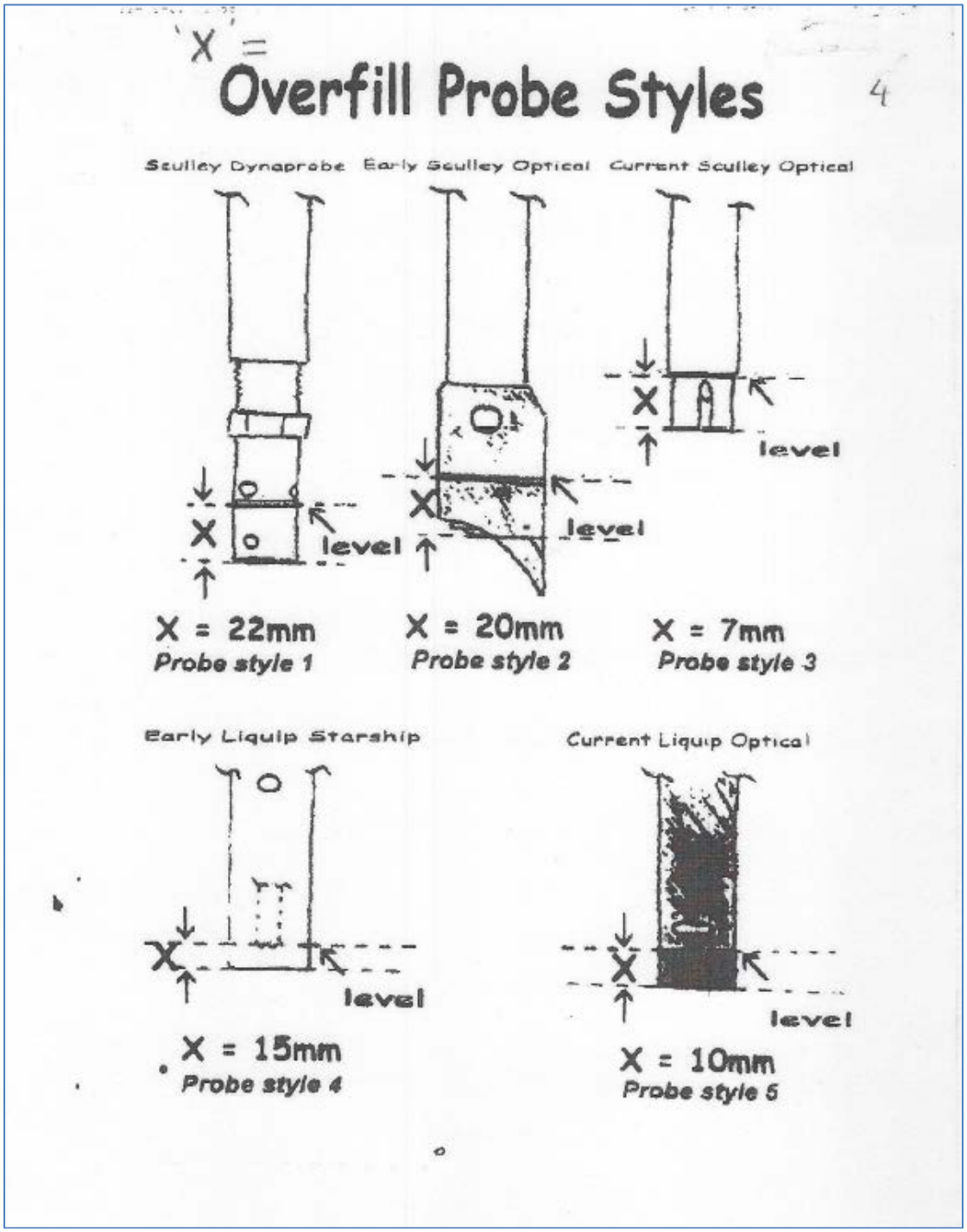
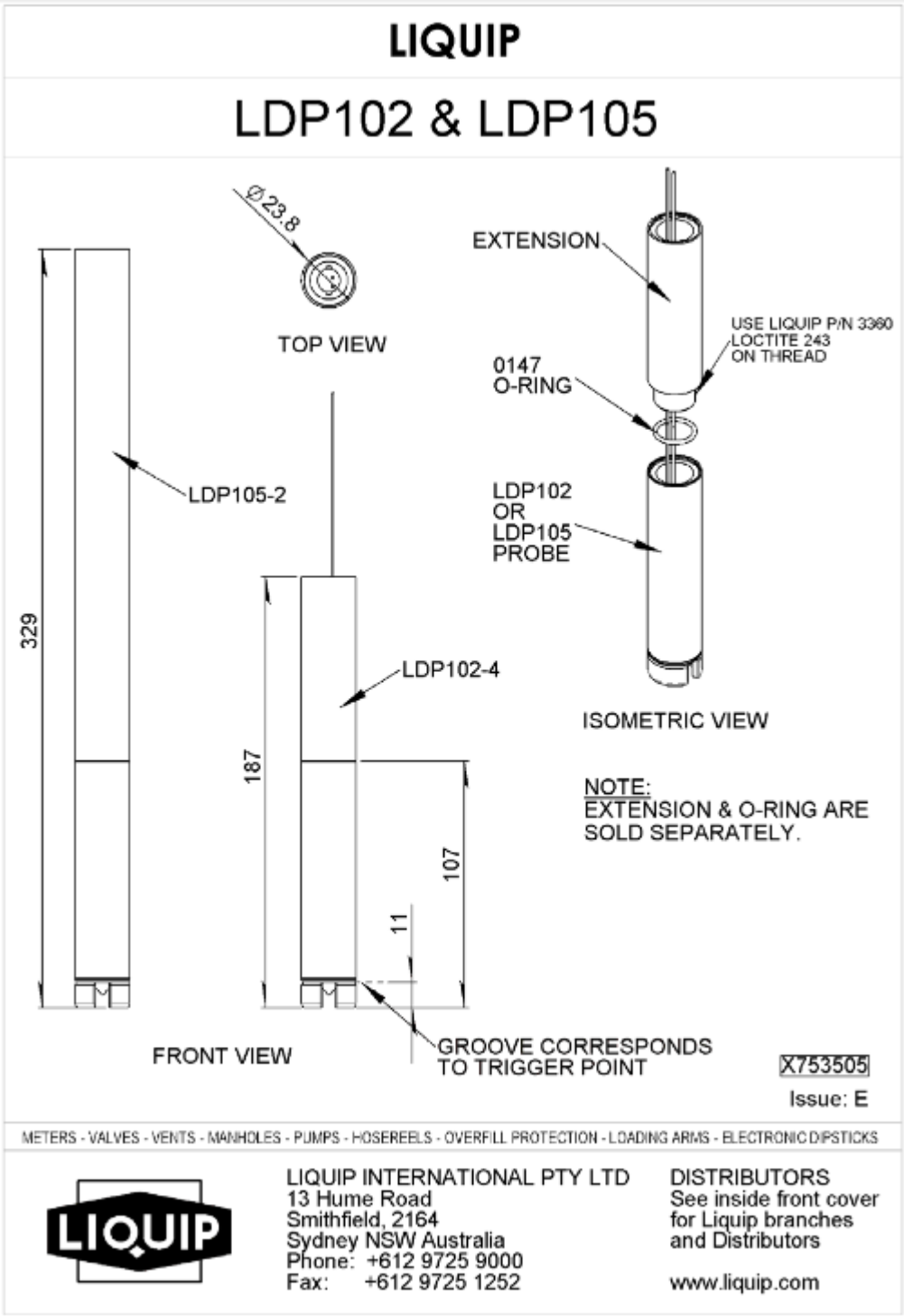


Tank Wagon Overfill protection probe Setting Procedure (Petroleum Ground Fuels)



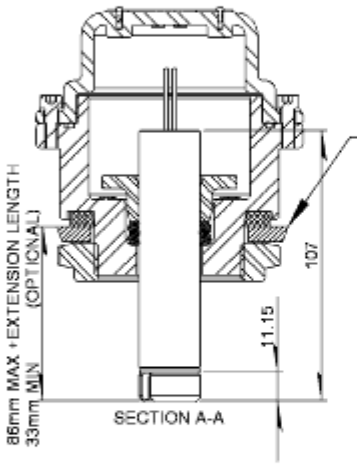
Tank Wagon Overfill protection probe Setting Procedure (Petroleum Ground Fuels)

LIQUIP

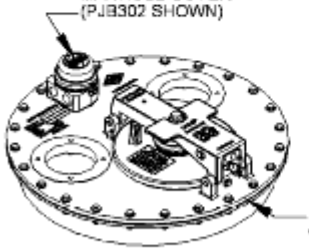
PJB301 & PROBE INSTALLATION

TOP VIEW

ITEM	PART No.	DESCRIPTION	QTY	MATERIAL
1	PJB300-2	BODY	1	ALUMINIUM
2	PJB300-3	BUSH COMPRESSION FOR PROBE JUNCTION BOX	1	ALUMINIUM
3	PJB300-1	LID FOR PROBE JUNCTION BOX	1	ALUMINIUM
4	3114	O-RING	2	NITRILE
5	4631	O-RING	1	NITRILE
6	8502	CAPSCREW METRIC	2	STEEL
7	8499	CAPSCREW METRIC	2	STEEL
8	8498	WASHER SPRING	4	ZP STEEL
9	0380	SEAL - MOUNTING FOR PJB300	1	NITRILE
10	8724	HAMMER DRIVE SCREW	2	STEEL
11	8544	NUT 2" BSPP	1	ALUMINIUM
12	7277	LABEL FOR PROBE JUNCTION BOX PJB301	1	ALUMINIUM,
13	LDP102&105	PROBE ASSY	1	REFER ABOVE



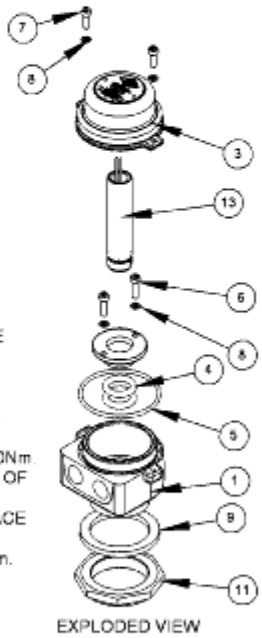
PROBE INSTALLED INTO MANHOLE COVER (PJB302 SHOWN)



LIQUIP MANHOLE COVER (VOH500 SHOWN) WHICH MOUNTS TO TOP OF TANK

ASSEMBLY PROCEDURE

1. FIND THE CORRECT HEIGHT FOR THE PROBE.
2. REMOVE THE LID FROM THE PROBE HOUSING
3. LOOSEN THE BUSH RETAINING SCREWS.
4. PUSH THE PROBE THROUGH THE BUSH (ITEM 2) & O-RINGS. HOLD ONTO THE WIRES OF THE PROBE SO THAT THE PROBE DOES NOT FALL INTO THE TANK.
5. POSITION PROBE AT THE CORRECT HEIGHT, USING THE GROOVE AT THE TIP OF THE PROBE AS THE TRIP HEIGHT.
6. TIGHTEN THE 2 BUSH RETAINING SCREWS EVENLY TO A TORQUE OF 15-20Nm.
7. FEED THE PROBE WIRES OUT OF ONE OF THE PORTS IN THE BODY.
8. CHECK LID SEAL IS IN PLACE & REPLACE LID.
9. TIGHTEN SCREWS EVENLY TO 15-20Nm.



EXPLODED VIEW

X752306
Issue: B

METERS - VALVES - VENTS - MANHOLES - PUMPS - HOSEREELS - OVERFILL PROTECTION - LOADING ARMS - ELECTRONIC DIPSTICKS

LIQUIP

LIQUIP INTERNATIONAL PTY LTD
13 Hume Road
Smithfield, 2164
Sydney NSW Australia
Phone: +612 9725 9000
Fax: +612 9725 1252

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Tank Wagon Overfill protection probe Setting Procedure (Petroleum Ground Fuels)

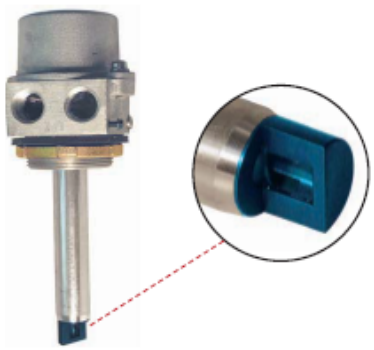
civacon
AN OPW FLUID TRANSFER GROUP COMPANY

Optic Sensors

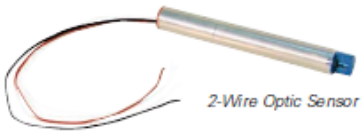
Optic Sensors are designed for overfill detection of liquid petroleum products. They are instantly permissive and specially designed for safe, trouble-free use with all Rack Monitors.

Features and Benefits

- Conforms to API RP 1004 and EN13922 standards.
- Intrinsically safe.
- Instant permissive signal (no warm-up time).
- Easy adjustable shaft when shorter length is necessary.
- UL approved for use in Class I, Division II, Groups C and D hazardous locations.
- ATEX approved for Zone 0 hazardous locations Ⓔx II 1 G EEx ia II BT4.
- Continuous self checking system operation.
- Withstands steam cleaning of the tank.



5-Wire Optic Sensor



2-Wire Optic Sensor

Optic Retain Bottom Sensor w/ weld coupling

Ordering Specifications

Optic Sensors

1110-1110	Adjustable 5-Wire Optic Sensor, with 2" NPT Housing, 7" Shaft Length
1300-1300	Replacement 5-Wire Optic Sensor, 7" Shaft Length, No Housing
1051-007	Adjustable 2-Wire Optic ROM Overfill Top Sensor, with 2" NPT Housing, 7" Shaft Length, (replaces 1050-1050)
1351-007	Replacement 2-Wire Optic ROM Overfill Sensor, 7" Shaft Length, No Housing (replaces 1350-1350)
1551-007	Adjustable 2-Wire Quick Start™ (Thermo-Optic) Sensor, with 2" NPT Housing, 7" Shaft Length
1651-007	Replacement 2-Wire Quick Start™ (Thermo-Optic) Sensor, 7" Shaft Length, No Housing (replaces 1650-1650)
1000R	Optic Retain Bottom Sensor with Bottom In-Line Housing and Weld Coupling

Sensors also available in other lengths upon request.

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