

ISSUE	MODIF. ORDER NO.	WEEK	ISSUE	MODIF. ORDER NO.	WEEK	ISSUE	MODIF. ORDER NO.	WEEK
1	SME-2377	0218	2	SME-5633	0712			

0 SUMMARY

The still pipe used with TankRadar RTG 3960 Radar Tank Gauge is not supplied by RTR but is to be manufactured by the customer according to the RTR drawing 9150072-924 or 9150072-925. Additional information is given in this instruction.

1 FUNCTION

The still pipe guides the radar waves to ensure a safe measurement undisturbed by structures in the tank and by the possible boiling of the liquid gas. The still pipe is perforated to equalise the liquid level inside and outside of the pipe and due to the function it is important that the still pipe is manufactured according to the drawing 9150072-924 or -925 with respect to holes, diameter, orientation etc. One of the holes in the still pipe is used to locate a reference pin which provide a possibility to verify a known distance while the tank is under pressure. Two installation alternatives are possible. For the alternative according to 9150072-925 the still pipe is attached to the bottom and for the alternative according to 9150072-924 it is hung at the top flange.

2 STILL PIPE

Either a 100 mm inner diameter stainless steel pipe with 2-3 mm wall thickness or a 4" sch 10 stainless steel pipe may be used and the choice must be specified at order as the RTG 3960 hardware differs (different transition cones). The holes can be chosen to 20 mm or 3/4" and are located in one single row. The position of the row of holes (i.e. the position of the reference pin) must be in the same direction, within 1⁰, as a bolt hole in the customer flange (pressure vessel). The centre of that hole should be marked. The marking must be in line with the 4 mm marking hole in the closing of the RTG 3960. See dwg 9150072-986. The position of the row of holes must be possible to verify from the top of the still pipe by suitable marking on the customer flange and on the upper end of the pipe (9150072-925). The joints of the still pipe should be made with an outer sleeve to avoid burrs or irregularities which can cause disturbances on the measuring performance (see dwg 9150072-924/-925).

At the lower end of the still pipe a reference measurement reflector kit shall be mounted according to instuction 9150 071-651, both to allow a small reference echo from the pipe end and to avoid echoes from the tank bottom.

The still pipe should be vertical within 0,5⁰, see figure 1 (bottom attached pipe) or figure 2 (top flange hung pipe).

If the 4" pipe are installed into a 6" pipe, then it must passing through the top flange opening.

Product Discontinued

ISSUED BY GSP-AJ	WEEK 0219	DOC. TYPE 2	PRODUCT CODE REX	TITLE Requirements on Still Pipe and its installation.				
APPROVED GSP	WEEK 0219	FILE						
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3 MOUNTING OF REFLECTOR AND REFERENCE PIN

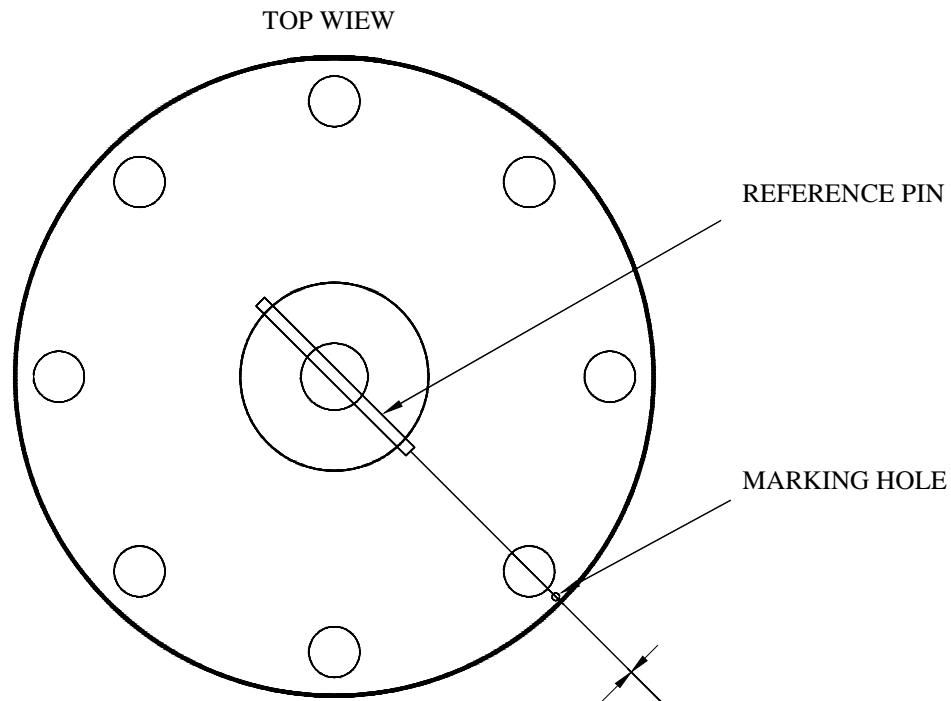
RTR delivers a Reference Measurement Reflector Kit (one reflector and one reference pin) to each Radar Tank Gauge and they are to be mounted on the still pipe before installation of the still pipe. Reflector is to be mount on end of pipe (see dwg 9150 071-651). The reference pin consist of a small plate with a pin. The pin is mounted through the holes in the still pipe and attached to it by a hose clamp (supplied by RTR but most stainless models will do) ensuring that the plate is well aligned by the pipe around the hole. The position of the reference pin is determined by the following guideline (see dwg 9150 072-924 / -925):

- One pin at 2000 ± 500 mm from the pressure vessel flange.

The actual position of the reference pin must be measured accurately at the installation as referred to the pressure vessel flange as indicated on dwg. 9150072-924 / -925. The pin position should be noted on the form delivered together with the pin. The value in mm will be used for verifications of the reference pin in the test mode operation.

4 PRESSURE VESSEL FLANGE

Requirements on the pressure vessel flange with respect to alignment with the still pipe is given by figure 1 (bottom attached pipe) and figure 2 (top flange hung pipe).



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NOTED SO THAT
THE MARKING HOLE IN THE RTR CLOSING
CORRESPONDS TO THE MARKING ON THE
ROOF FLANGE AND THE REFERENCE PIN
DIRECTION WITHIN 1°

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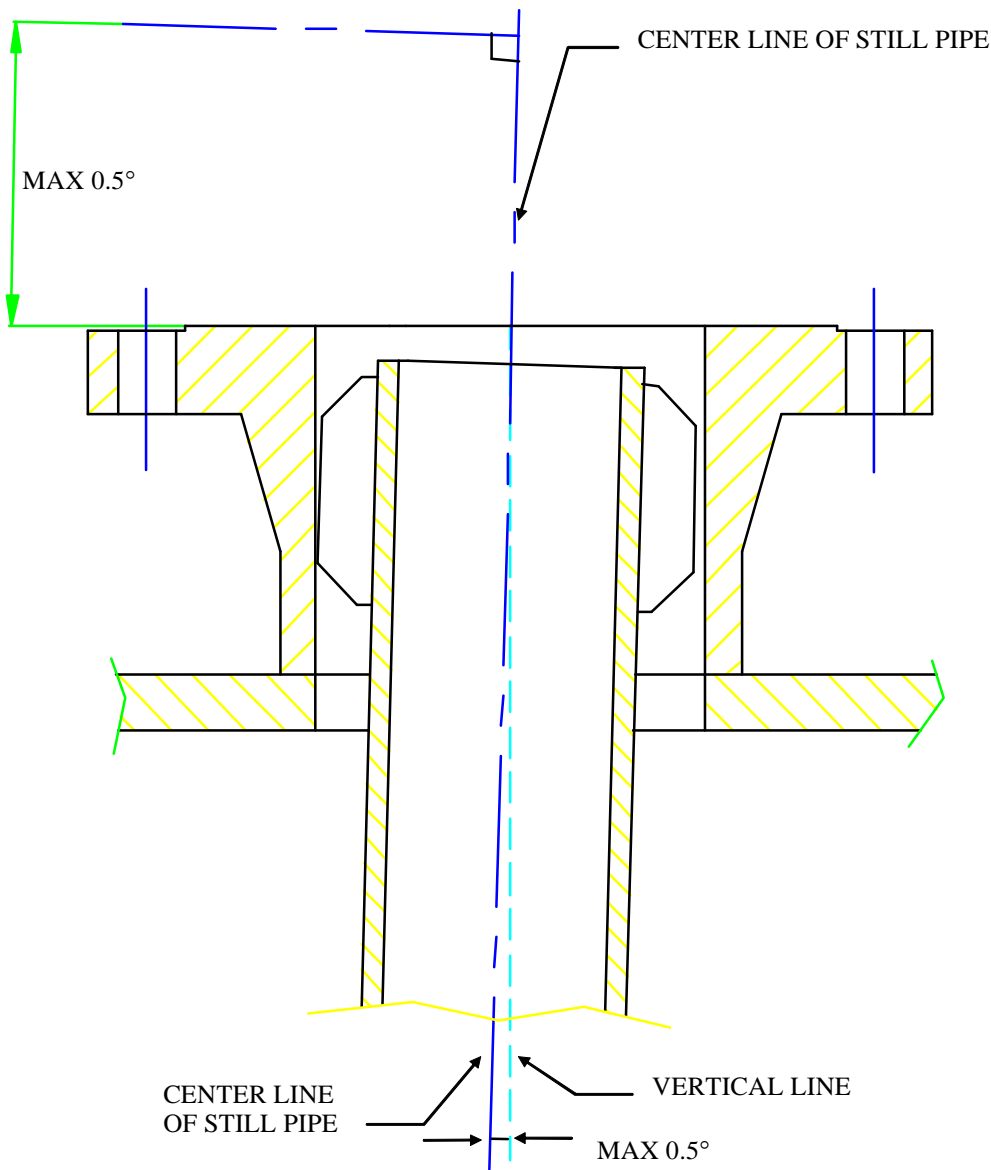


Figure 1: Alignment requirements for still pipe and vessel flange, pipe attached to vessel bottom.

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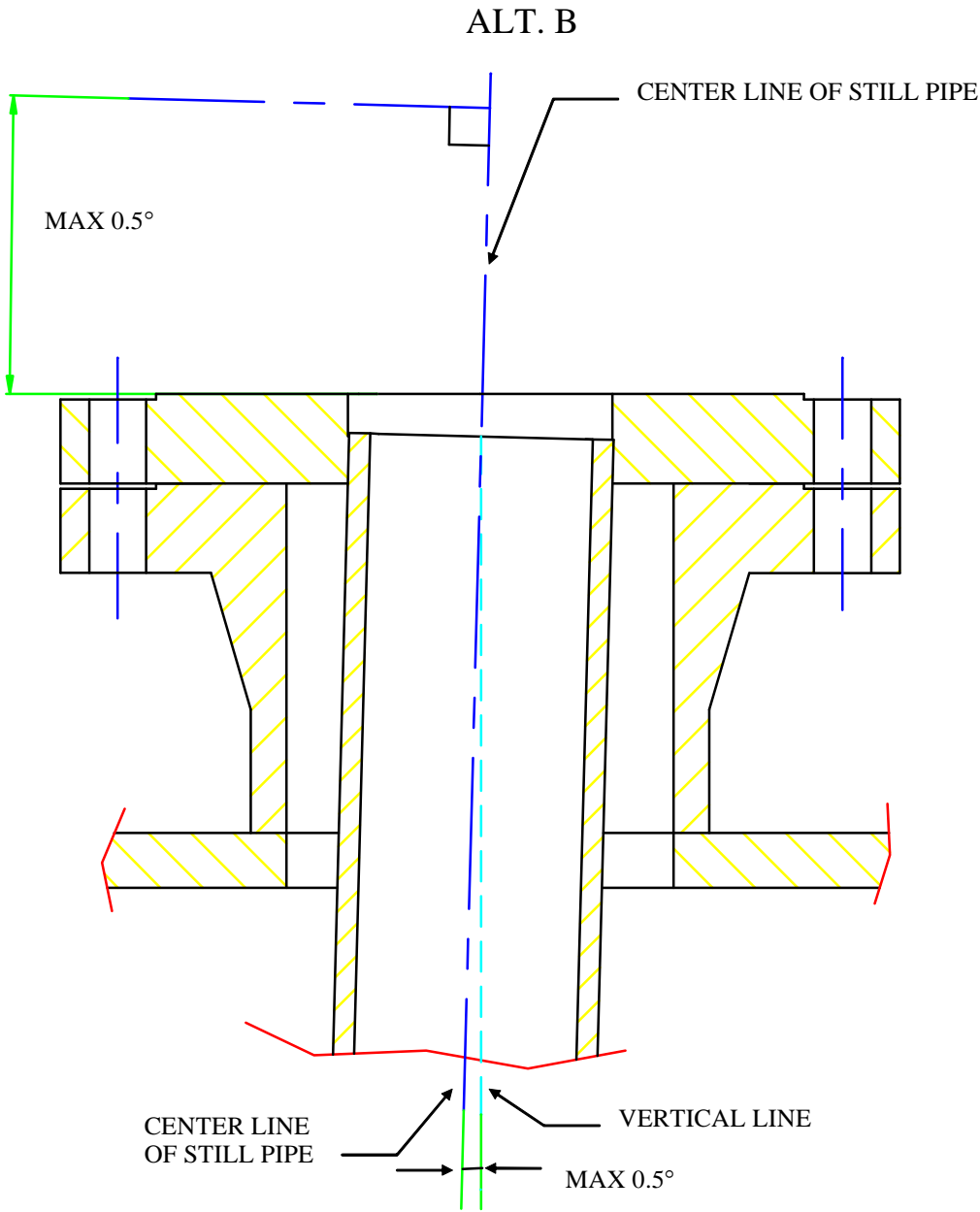


Figure 2: Alignment requirements for still pipe and vessel flange, pipe hung at vessel flange.

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