



Application Bulletin The KM26 in Boiler Drum Applications



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Summary from ASME Section 1 (1998 edition, 2000 addenda), PG-60.1.1

- Boilers operating at 400 psig or below must have at least one sight glass
- Boilers operating over 400 psig must have two (2) sight glasses, which both may be connected to the same water column or connected to the boiler drum.
- For boilers with all drum safety valves set at or above 400 psig (changed from 900 psig by Code Case 2109), two (2) remote level indicators may be used instead of one of the sight glasses. When both remote level indicators are in reliable operation, the remaining sight glass may be shut off, but shall be maintained in serviceable condition.

Our Comments:

1. A magnetic level gauge in this case is considered a remote (indirect) level indicator. Therefore, a KM26S can be used along with some other level measuring device or another KM26S to replace one of the two sight glasses required for boilers operating at or above 400 psig. If both remote (indirect) level indicators are working properly (reliable operation) the remaining sight glass can be valved out but cannot be removed.
2. The use of a MLG requires knowing the specific gravity of the process fluid. Water within a boiler will change density between ambient and full load, so what density do you size the float for? You will note on the KM26 Quotation Request form that is on the back of the KM26 Configuration Guide our request for the client to provide both the operating and minimum specific gravity. This ensures we properly size the float for the application and reduce reading errors as much as possible due to density changes. K-Tek's current float designs, done in house by staff engineers, allows use of the KM26S on boilers operating up to 2200 psig.
3. Another expressed concern is the effect of high heat on the magnets over prolonged periods. Magnets used in K-Tek's "standard" and "high-temperature" floats are Cast Alnico V which have a maximum practical operating temperature of 1004°F and a curie point (temperature at which magnetism is lost) of 1634°F.
4. Per ASME Section 1, PG-60 KM26's used on boiler drums must be designed and fabricated in accordance with ASME B31.1. K-Tek is an ASME Code U, UM and S stamp holder ensuring compliance with design and fabrication standards. A code stamp for the KM26S used on a boiler drum is not required, however if your clients desire and are willing to pay we can provide code stamped equipment.
5. Clients who have used the KM26S in lieu of a sight glass have claimed six-month payback based on maintenance savings alone! Initial cost for a sight glass may be lower, but maintenance costs will be substantially higher!
6. ASME code makes accommodations for the use of new techniques for drum level monitoring by allowing the use of alternate level indicators such as the KM26S magnetic liquid level gauge. In addition such devices shall be in "reliable operation", be dependable and use an equal or superior technique.

Some Technical Selling Points to Remember:

- Full time staff engineers to ensure quality design
- KM26 floats are designed and fabricated in house to clients' specific process application, no "off the shelf" floats which may not be the best suited for the application.
- THE only North American manufacturer capable of providing Extruded Outlets for the branch connections. This process provides:
 1. full bore outlets,
 2. eliminates "sink in" distortion that can interfere with float travel and
 3. eliminates chamber flame straightening, eliminates one weld while increasing quality and reducing costs.
- Per ASME B31.1, Paragraph 104.5.1(A), slip on flanges are only allowed up to and including Class 300# rating. If your application falls under the guidelines of ASME B31.1 (boiler applications), you can not use slip on flanges beyond 300# flange class ratings.
- ***A design change has been recently made to the indicator tube. Where glass is used the thickness of the glass has been increased substantially reducing the number of broken indicator tubes in transit.***

