



The Ohmart Corporation

4241 ALLENDORF DRIVE

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CINCINNATI, OHIO 45209

November 16, 1966

Mr. William O. Miller
Division of Materials Licensing
US Atomic Energy Commission
Washington D.C. 20545

Ref: Revision of Ohmart Density Gages
Revision of Specifications of Gages distributed
to Specific Licensees and General Licensees
Revision of GL-101

The Ohmart Corporation is revising its entire line of density gages. The major revisions are the use of an improved radiation detector and improved electronic amplifiers. However, there are some changes in gage configuration and radiation field intensity specifications. These changes necessitate a complete revision of gage model numbers.

The details of the revisions in model numbers, gage configuration, and radiation field intensity specifications are shown on the attached sheets. Please revise your records to reflect these changes and ammend, or re-issue, GL-101. Since we will be shipping both the old and new gages during the transistion period, please do not delete the old gages from GL-101.

Sincerely,

THE OHMART CORPORATION

H.L. Cook, Jr.
H.L. Cook, Jr.
Vice President

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Enclosure

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THE OHMART CORPORATION

DENSITY GAGE MODEL NUMBER COMPARISON

<u>OLD</u>	<u>NEW</u>
PG-0 ¹	CP-0-DE
LR-0	CL-0-DE
LASR-0	CS-0-DE
LSDG-0	CT-0-DE
PGV-0	CP-0-W(E) or (C)
LRV-0	CL-0-W(E) or (C)
ASR-0	CS-0-W(E) or (C)
SDG-0	CT-0-W(E) or (C)
RTSN-4	CC(N) or (P) ²

NOTE: 1. 0 indicates blank for pipe size.
Actual number may be 2 through 20.

2. CC is Ohmart Compensating Cell. N or P designates negative or positive polarity.



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CP SERIES DENSITY GAGE

MODELS CPD AND CPW

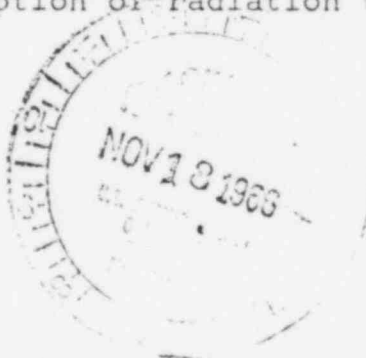
Models CPD and CPW replace models PG and PGV which are used for pipe sizes from 2 inch to 8 inch. As in the past, the major difference between the model CPD (PG) and the CPW (PGV) is in the type of electronic amplifier. The CPD uses a DC amplifier and the model CPW uses an AC amplifier. However, for both the CPD and the CPW the electronic amplifiers are improved and modified. In both the CPD and CPW an improved radiation detector is used.

Both the CPD and the CPW use identical gaging heads. The gaging heads are, essentially, identical to the gaging heads used on the old PG and PGV. There are two minor modifications to the source holder part of the gaging head - there is now a cast boss on the back of the source holder body to accept the source data tag and the rotor has been redesigned for more economical manufacture. Drawing C-1666 (revision 7) shows the details of the modified source holder body and drawing B-9613 shows the details of the redesigned rotor. The complete source holder retains the model number HM-8. Drawing A-8422 shows the tag affixed to the source holder. When the gage is sold to a General Licensee the tag shown in drawing A-8419 is affixed to the cell housing.

Numbers suffixed to the gage series designation continue to indicate the pipe size and type of electronics. Thus, model CP-4-DE indicates a series CP gage for use on a 4 inch pipe utilizing a DC amplifier and electrical zero suppression. A model CP-4-WC indicates a series CP gage for use on a 4 inch pipe with an AC amplifier and an Ohmart compensating cell for zero suppression. However, Specific Licensees will continue to be urged to apply for a license based only on the gage series and pipe size. For the example above, this would be merely CP-4.

For gages sold to Specific Licensees, the radiation field intensity specifications will continue to be 5 MR/HR at 12 inches from the surface of the gage with the source holder open and the pipe filled with the lowest gravity process material or with the pipe empty and the source holder closed.

For gages sold to General Licensees, however, the radiation field intensity specifications are revised from 7 MR/HR on the surface of the gage to 5 MR/HR at 12 inches from the surface of the gage with the source holder open or closed and the pipe empty. The attached chart shows the maximum millicurie content of a cesium 137 sealed source to meet these specifications for pipes having a standard wall thickness. There is little difference between the millicurie content shown in Column B and Column C because the heavy cast iron pipe mounting brackets have more influence on the absorption of radiation than the material in the pipe.



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CL SERIES DENSITY GAGE

MODELS CLD AND CLW

Models CLD and CLW replace models LR and LRV which are used for pipe sizes 10 inch and greater. As in the past, the major difference between the CLD (LR) and the CLW (LRV) is in the type of electronic amplifier. The model CLD uses a DC amplifier and the model CLW uses an AC amplifier. However, for both the CLD and the CLW the electronic amplifiers are improved and modified. In both the CLD and the CLW, an improved radiation detector is used.

Both the CLD and the CLW use identical gaging heads. However, the gaging heads are somewhat different from the gaging heads used on the old LR and LRV. The LR and the LRV used lead shielding to control the radiation field. The CLD and the CLW utilize improved collimation of the radiation emanating from the source holder to control the radiation field - basically by reducing the diameter of the collimating hole in the source holder rotor. The rotor has been redesigned for more economical manufacture. Also, there is now a cast boss on the back of the source holder body to accept the source data tag.

The configuration of the CL series is shown in the attached drawings. Drawing B-9615 shows the configuration for 10 inch and 12 inch pipes; drawing B-9614 shows the configuration for 14 inch through 20 inch pipes. The difference between the two configurations is that the equivalent absorber (used for calibration) is positioned adjacent to the detector housing for the 10 inch and 12 inch sizes, and adjacent to the source holder for sizes 14 inch through 20 inch. Both drawings specify a maximum ambient temperature of 140°F. This specification is based on the temperature at which the detector is thermostatically controlled. For disaster situations, such as a fire, the integrity of the gage would be maintained up to the melting point of lead. Above that temperature loss of lead shielding might result but, since the sealed source is heliarc welded and would be contained within the source holder body, there is no danger of losing the source capsule or dispersing the radioactive material.

Details of the mounting brackets for all pipe sizes are shown in drawing D-9597. Details of the source holder are shown in drawings C-9688, B-9613, C-1666, A-9598, A-1877, C-1665, and A-2511.

Drawing A-8422 shows the tag affixed to the source holder. When the gage is sold to a General Licensee the tag shown in drawing A-8419 is affixed to the cell housing.

For gages sold to Specific Licensees, the radiation field intensity specifications will continue to be 5 MR/HR at 12 inches from the surface of the gage with the source holder open and the pipe filled with the lowest gravity process material or with the pipe empty and the source holder closed.

For gages sold to General Licensees, however, the radiation field intensity specifications are revised from 7 MR/HR on the surface of the gage to 5 MR/HR at 12 inches from the surface of the gage with the source

Models CLD and CLW (Cont'd)

holder open or closed and the pipe empty. The attached chart shows the maximum millicurie content of a cesium 137 sealed source to meet these specifications for pipes having a standard wall thickness. In column C, the millicurie content shown for the CL-14, 16, 18 and 20 are identical due to the limitation of the source holder.

Numbers suffixed to the series gage designation continue to indicate the pipe size and type of electronics. Thus, model CL-12-DE indicates a series CL gage for use on a 12 inch pipe using a DC amplifier with electrical zero suppression. A model CL-12-WE indicates a series CL gage for use on a 12 inch pipe which uses an AC amplifier with electrical zero suppression. However, Specific Licensees will continue to be urged to apply for a license based only on the gage series and pipe size. For the example above this would be merely CL-12.

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CT SERIES DENSITY GAGE

MODELS CTD AND CTW

Models CTD and CTW replace models LSDG and SDG which are used for pipe sizes from 3 inch to 10 inch. As in the past, the major difference between the model CTD (LSDG) and the CTW (SDG) is in the type of electronic amplifier. The CTD uses a DC amplifier and the model CTW uses an AC amplifier. However, for both the CTD and the CTW the electronic amplifiers are improved and modified. In both the CTD and CTW an improved radiation detector is used.

Both the CTD and the CTW use identical gaging heads. The gaging heads are, essentially, identical to the gaging heads used on the old LSDG and SDG. There are two minor modifications to the source holder part of the gaging head - there is now a cast boss on the back of the source holder body to accept the source data tag and the rotor has been redesigned for more economical manufacture. Drawing C-1666 (revision 7) shows the details of the modified source holder body and drawing B-9613 shows the details of the redesigned rotor. The complete source holder retains the model number HM-8. Drawing A-8422 shows the tag affixed to the source holder. When the gage is sold to a General Licensee the tag shown in drawing A-8419 is affixed to the cell housing.

Numbers suffixed to the gage series designation continue to indicate the pipe size and type of electronics. Thus, model CT-6-DE indicates a series CT gage for use on a 6 inch pipe utilizing a DC amplifier and electrical zero suppression. A model CT-6-WC indicates a series CT gage for use on a 6 inch pipe with an AC amplifier and an Ohmart compensating cell for zero suppression. However, Specific Licensees will continue to be urged to apply for a license based only on the gage series and pipe size. For the example above, this would be merely CT-6.

For gages sold to Specific Licensees, the radiation field intensity specifications will continue to be 5 MR/HR at 12 inches from the surface of the gage with the source holder open and the pipe filled with the lowest gravity process material or with the pipe empty and the source holder closed.

For gages sold to General Licensees, however, radiation field intensity specifications are revised from 7 MR/HR on the surface of the gage to 5 MR/HR at 12 inches from the surface of the gage with the source holder open or closed and the pipe empty. The attached chart shows the maximum millicurie content of a cesium 137 sealed source to meet these specifications. Since the flow tube part of the gage head is identical for all pipe sizes, the millicurie content shown is the maximum that will be used for all pipe sizes.

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(3 SERIES DENSITY GAGE)

MODELS CSD AND CSW

Models CSD and CSW replace models LASR and ASR which are used for pipe sizes from 2 inch to 4 inch. As in the past, the major difference between the model CSD (LASR) and the CSW (ASR) is in the type of electronic amplifier. The CSD uses a DC amplifier and the model CSW uses an AC amplifier. However, for both the CSD and the CSW the electronic amplifiers are improved and modified. In both the CPD and CPW an improved radiation detector is used.

Both the CSD and the CSW use identical gaging heads. The gaging heads are identical to the gaging heads used on the old LASR and ASR. Drawing A-8422 shows the tag affixed to the source holder portion of the gaging head. When the gage is sold to a General Licensee the tag shown in drawing A-8420 is affixed to the cell housing.

Numbers suffixed to the gage series designation continue to indicate the pipe size and type of electronics. Thus, a model CS-3-WC indicates a series CS gage for use on a 3 inch pipe with an AC amplifier and an Ohmart compensating cell for zero suppression. However, Specific Licensees who buy gages will continue to be urged to apply for a license based only on the gage series and pipe size. For the example above, this would be merely CS-3.

For gages sold to Specific Licensees, the radiation field intensity specifications will continue to be 5 MR/HR at 12" from the surface of the gage with the pipe empty.

For gages sold to General Licensees, the radiation field intensity specifications will continue to be 7 MR/HR on the surface of the gage with the pipe empty. The attached chart shows the maximum millicurie content of a cesium 137 sealed source to meet these specifications for pipes having a standard wall thickness.

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THE CYMART CORPORATION
SERIES CC COMPENSATING CELL
MODELS CCN AND CCP

Model CCN and CCP replace Model RTSN-4 compensating cell. N designates negative electrical polarity and P, positive polarity. There is no change in physical configuration, radiation field intensity specifications, or maximum millicurie content.

The model number change is the result of the use of an improved radiation detector.

Drawing A-8422 shows the source data tag affixed to the CC series compensating cell. When the device is sold to a General Licensee the tag shown in drawing A-8420 is added.

The attached chart shows the maximum millicurie content of a CS-137 source used in the device.

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