Service Bulletin

High consumption of strain gauges as a spare part

Task

Timing	Category	Scope
Next service as agreed with customer	○ **Apply at all sites** ○ **Apply at affected sites as listed below** ◉ **Optional to improve functionality of product**	**PowerHelp complaint / HQ issue: PR1310150002**

Task Tracking

After completion of your task the following entry in your Service Report is required: **DD+DIS152.14E** *

* Insert the document number into the field "Comment" (SMS form).

Purpose of this document:

- This document announces the introduction of new, upgraded gauge stops for the DX-D 100 / DX-D 100 Wireless handles.
- It contains the replacement instructions for the new gauges.
- It contains the solution for the listed PR case.

The signatures on the approval page indicate the solutions described in this Service Bulletin have been reviewed and are NOT reportable because no actions are taken to reduce a "Risk to Health" according to our risk assessment process.

1 Introduction/purpose

Symptom PR_ 1310150002

Over the last 12 months, there has been a high consumption rate of the strain gauges in the handles of the DX-D 100 / DX-D 100 Wireless.

Cause

Wear and tear of the material:

- The gauges could be over-bent because they are being continuously bent backwards and forwards in the normal use of the DX-D 100 / DX-D 100 Wireless.
- Continuous strong push/pull movements of the handle.

Solution

Mount the gauge stop handle mobile kit. For details refer to section 3 in this document.

2 Prerequisites

SPARE PARTS:

- SC+A10886-01
  GAUGE STOP HANDLE MOBILE KIT

Figure 1

TOOLS:

- Standard service engineer's tool kit
- 2mm gauge commercially available

REFERENCED DOCUMENTS:

- DX-D 100 / DX-D 100 Wireless Mobile X-ray Unit Service Manual
  Direct Radiography > DX-D 100 > Service Manual

3 Instructions

REQUIRED TIME:
2 hours for mounting the gauge stop handle mobile kit.

3.1 Mounting the Brackets

(1) Turn OFF the DX-D 100 / DX-D 100 Wireless.

(2) Remove the front and back covers of the unit. For details, refer to the *Troubleshooting* chapter in the *DX-D 100 / DX-D 100 Wireless Mobile X-ray Unit Service Manual*. See 'Referenced Documents' in chapter 2 of this bulletin.

(3) Remove the screws that hold the mobile door and the generator door to be able to access the gauges.

(4) Remove the screws located in the lower part of the left gauge.
See dashed circle marks in figure 2.

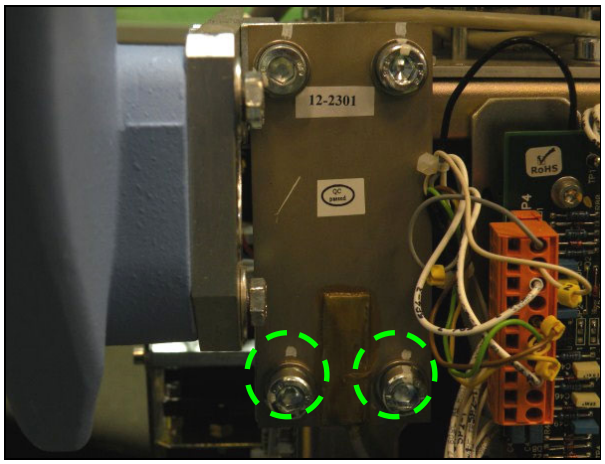

Figure 2

(5) Mount the bracket with the screws delivered in the kit on the unit, using the screw holes on the lower side of the gauge.
See dashed box mark in figure 3.

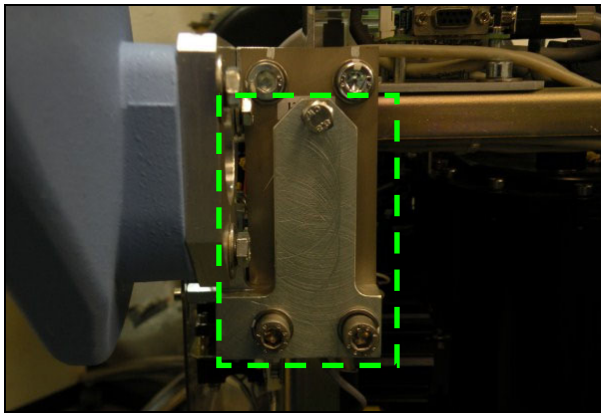

Figure 3

(6) Turn ON the unit.

3.2 Adjusting the Gauge Stand-By Voltage

(1) Disconnect the J9 connector of the DMC board in order to disable the dead man switch.

See figure 4 for the location of J9.

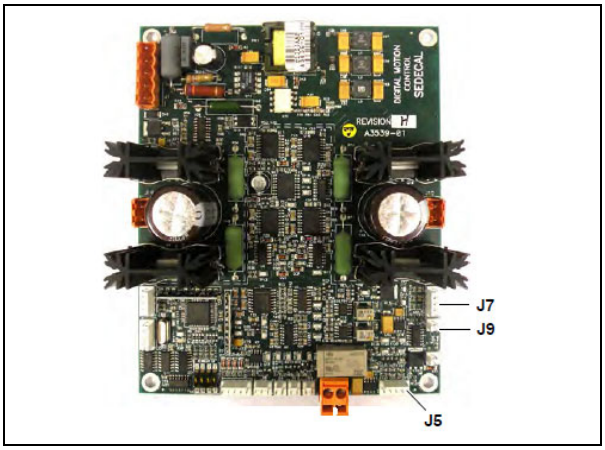

Figure 4

(2) Measure the DC voltage between TP-8 and TP-19 of the DMC board.

(3) With the handle in stand-by position, adjust the voltage measured in TP-8 to 2.5Vdc ±100mV, using the potentiometer R29 of the DMC board.

(4) Push the left-hand side of the mobile unit's handle bar and check that the voltage increases proportionally to the force applied to the handle bar.

(5) Check that the voltage on TP-8 increases from 2.5Vdc to 5Vdc.

(6) Pull the left-hand side of the mobile unit's handle bar and check that the voltage decreases proportionally to the force applied to the handle bar.

(7) Check that the voltage on TP-8 decreases from 2.5Vdc to 0Vdc.

(8) Push and pull the left-hand side of the mobile unit's handle bar several times and check that the voltage measured on the TP8 is 2.5Vdc ±100mV when the mobile handle bar is in stand-by.

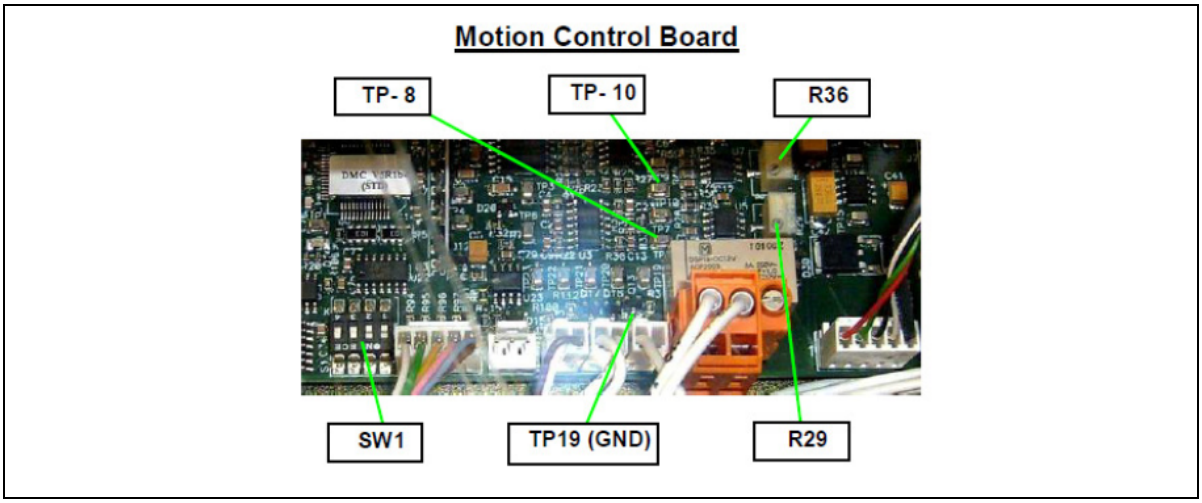

Figure 5

3.3 Adjusting the straight Gauges

(1) Place a 2 mm gauge between the straight gauge of the mobile unit and the adjust bolt as shown in figure 6.

(2) Adjust the bolt to have it in contact with the 2mm gauge.

(3) Secure the adjust bolt by tightening the secure nut.

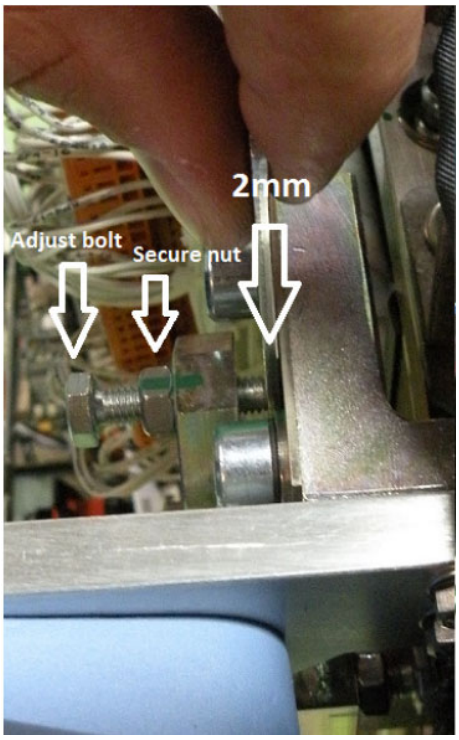

Figure 6

(4) Place the 2mm gauge between the handle of the mobile unit and the adjust bolt as shown in figure 7.

(5) Adjust the bolt so that it has contact with the 2mm gauge.

(6) Secure the adjust bolt by tightening the secure nut.

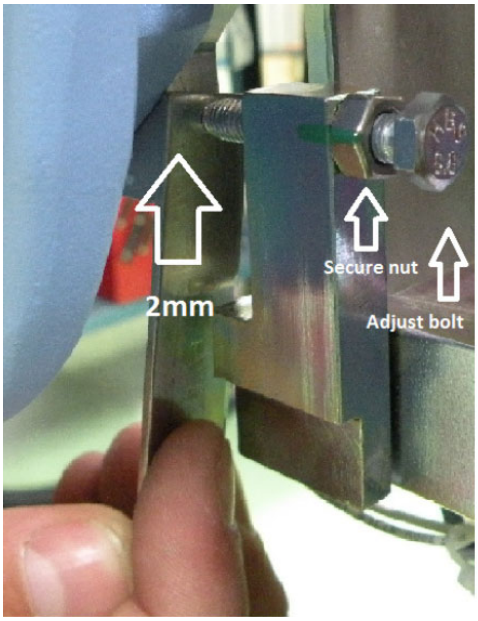

Figure 7

(7) Push the left-hand side of the handle.

(8) Check that when the adjust bolt is in contact with the handle, the voltage on TP-8 reaches 4.5Vdc.
If the voltage doesn't reach 4.5Vdc, loosen the secure nut of the adjust bolt and slightly modify the position of the adjust bolt to measure 4.5Vdc on TP8 when the handle is fully pushed.
Tighten the secure nut of the adjust bolt to secure the adjustment.

(9) Pull the left-hand side of the handle.

(10) Check that when the adjust bolt is in contact with the straight gauge, the voltage on TP10 reaches 0Vdc.
If the voltage doesn't reach 0Vdc, loosen the secure nut of the adjust bolt and slightly modify the position of the adjust bolt to measure 0Vdc on TP10 when the handle is fully pulled.
Tighten the secure nut of the adjust bolt to secure the adjustment.

(11) Turn OFF the unit.

(12) Repeat steps 4 on page 3 to step 10 on this page,
but connect the voltmeter between TP10 and TP19 instead of TP8 and TP19, using R36 instead of R29 to adjust the stand-by position of the right-hand gauge and using the right-hand side of the mobile unit's handle bar.

Pull and push the right-hand side of the mobile's handle bar to adjust the right-hand side gauge.

(13) Reconnect the J9 connector of the DMC board that was disconnected in step (1) of the section *Adjust the gauge stand-by voltage on the Digital Motion Control (DMC) board*.

(14) Close the doors of the mobile unit and tighten the screws.

(15) Install the covers of the mobile unit.

(16) Turn ON the unit.

4 Verification

(1) Perform a functional test of the movement of the mobile unit.

5 Keywords

DMC board; gauge; bracket; mobile unit

6 Version history

Version	Change	Date
1.0	Initial version	10-2014

Details as of PDF Creation Date

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Signatures:

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2. Paul Merckx (amdag) on 2014-10-30 09:30 AM CET
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