

WEIGHLOG INSTALLATION

NEW HOLLAND LM 630 TELEHANDLER

Introduction

These instructions detail fitting of a strain sensor instead of a pressure sensor on a New Holland LM 630 telescopic handler. The rest of the Weighlog system is as the standard installation described in the generic Weighlog Installation Manual.

Installation procedure

IMPORTANT ! The installation involves welding. Before you commence welding, disconnect the vehicle battery by means of the battery isolator switch adjacent to the battery box.

Install the strain sensor before the other components. This will give the adhesive time to cure sufficiently before working the machine. On the LM 630, position the middle of the sensor 0.41 metres (16 $\frac{1}{8}$ ") from the end of the boom on the centre line of the box (fig. 1).

Figure. 1

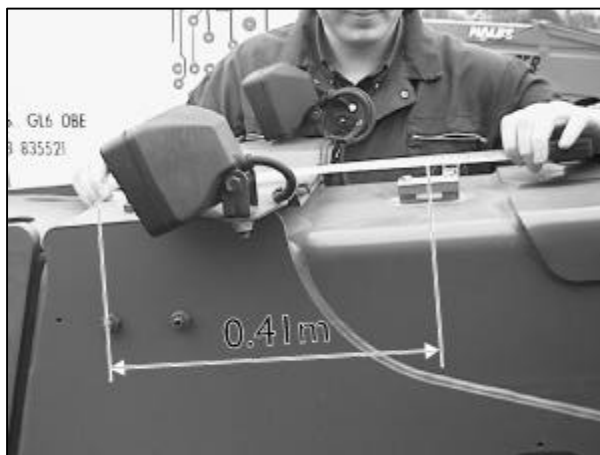


Figure. 2

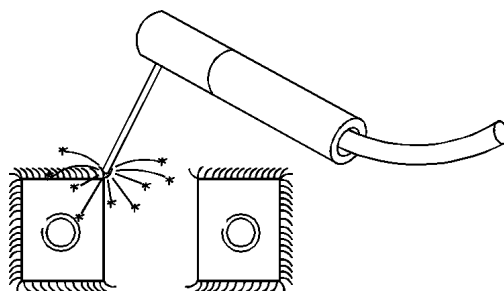


Clean the area around the mounting point back to bare metal (fig.2). Install the sensor mounting blocks into the welding jig block and place centrally at the marked position (fig 1).

IMPORTANT! The strain sensor is extremely sensitive to bending forces. Correct operation depends on it being bolted down to as flat a surface as possible, so take care to ensure that the welding jig, mounting blocks and surface of the box section are cleaned beforehand.

Weld the blocks with a continuous seam weld around the outer 3 sides of each block (fig. 3).

Figure 3 Welding mounting blocks



Allow to cool fully before removing the welding jig to prevent the possibility of the mounting blocks warping. Check the faces are flat using a suitable straight edge (e.g. a steel rule). In the event that the blocks have warped slightly, carefully file across both faces until they are flat and parallel. Mask the top face of the mounting blocks and around the mounting area, and make good with primer/top coat paint.

Check the mounting faces on the sensor are clean and flat. Use emery cloth if necessary and thoroughly degrease with proper solvent degreaser (not petrol or white spirit). Mix a quantity of adhesive (Devcon "Devweld 531") preferably using the correct adhesive gun (fig. 3) and apply some around the sensor fixing screws (fig 4) and the mounting faces (fig 5).

Figure 3



Figure 4



Figure 5



Figure 6



Degrease the mounting blocks and fasten the sensor on with the cable facing forwards (fig. 6, 7). Torque the screws to 35 Nm.

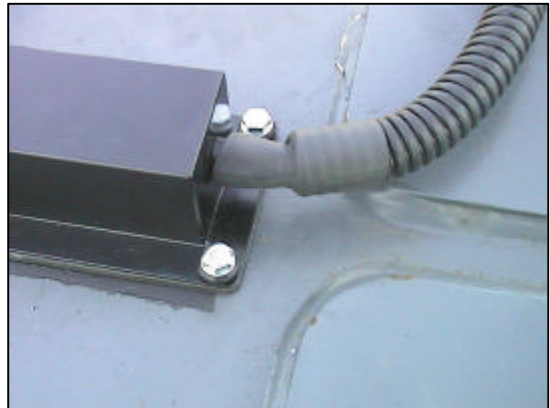
Position the sensor cover, mark through and drill and tap M6. Slip the heat shrink and conduit over the sensor cable, then shrink together over the cable protection gland (fig. 8). Mate the 3-way connector using grease to protect against the possibility of any corrosion.

Fit the sensor cover using rubber washers (or suitably sized rubber grommets) under the screw heads (fig. 8). Do not over tighten the screws.

Figure 7



Figure 8



Fasten the conduit from the strain sensor down the side of the boom using a 'P' clip (fig. 9). Cable-tie the conduit back along the hydraulic pipe along the underside of the boom and around the boom pivot point to where it will meet with the cable from the Reference/Direction sensor.

Reference / Direction Sensor

Please refer to the Weighlog Installation manual for guidelines on sensor/magnet positioning to ensure correct operation. On the LM 630 the sensor mounting bracket should be modified and attached as shown (fig. 10). Tie the cable securely back to the point where it meets up with the strain sensor cable. Remove the top panel over the instrument facia to gain access to the fuse box. Remove the cover plates on the chassis and cab (fig. 11) and route the cables into the cab behind the instrument facia (fig. 12).

Figure 9



Figure 10



Figure 11

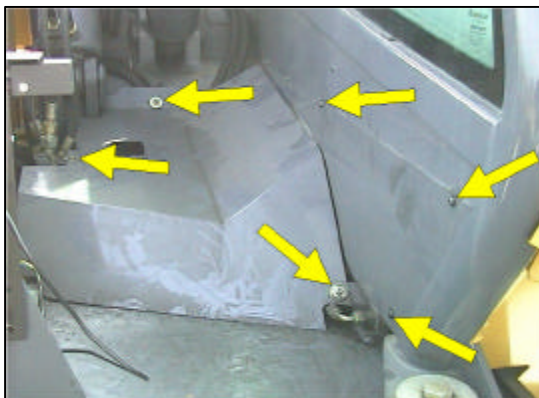
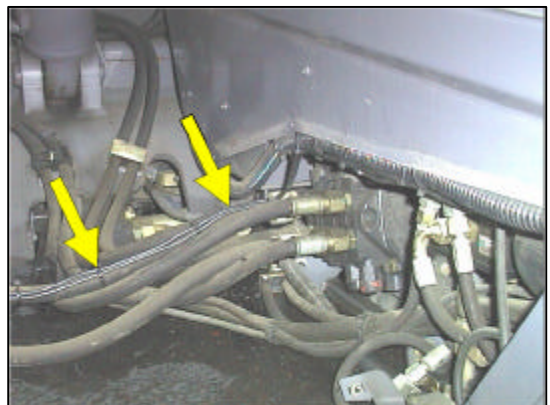


Figure 12



Fit the head unit to the top panel. Fasten the mounting foot using mudwing washers (fig. 12). Mount the Remote Enter switch adjacent to the control lever (fig. 13). Route the cable forward and behind the instrument facia.

Figure 12



Figure 13



Wiring connections

Please refer to the Weighlog Installation manual for the wiring connections onto the Harting connectors. The strain sensor uses the same Harting connections as for the pressure sensor.

Switched 12v power supply and Ground

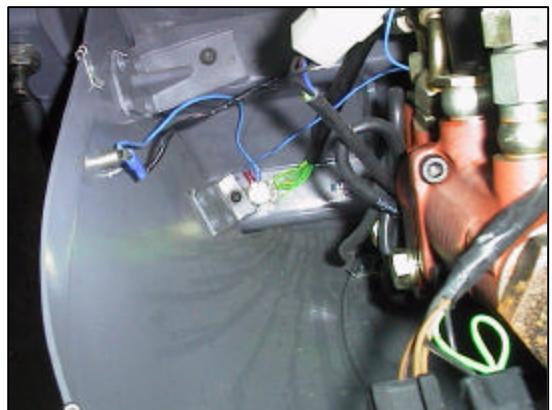
Using a ¼" male crimp terminal, connect a 12v feed wire with an in-line fuse, from the fuse socket in the fuse box as shown in figure 14, to terminal 4 of the BLUE harting connector. This provides a switched 12v via the ignition switch.

Connect a 0v wire from terminal 1 of the BLUE Harting to the 0v grounding point shown in figure 15.

Figure 14



Figure 15

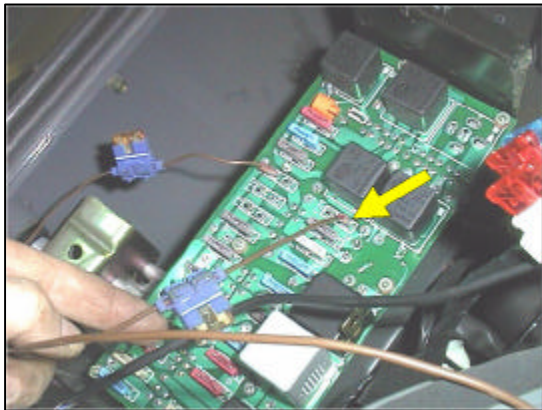


Permanent 12v power supply to early type strain sensors

Any sensor *without* the Part No. S/SR500-2-042 on its label needs a permanent 12v supply to reduce sensor “warm up” time. Check the sensor label to identify its type.

Using a ¼” male crimp terminal, connect an *additional* 12v feed wire, also with an in-line fuse, from the fuse socket in the fusebox as shown in figure 16, and piggyback into the 12v supply wire to the strain sensor (terminal 4 of the grey Harting connector shell).

Figure 16



That conclude the installation.

Once the epoxy has hardened (minimum 2 hours with “Devweld 531”) the machine should be worked for at least 10 minutes to release residual stress created in the sensor and metalwork during installation. Following this the tare and calibration is done as normal. After a period of normal operation it may be necessary to fine adjust the calibration figure based on a weigh bridge reading.

Installation on other models

Installation of a strain sensor is not recommended on any telescopic handler where the extending boom section retracts against stops on the end of the main boom section, because this will result in a large compressive stress which is undesirable for the strain sensor. In this event it is recommended to install a pressure sensor.

So long as boom retraction is limited by the stroke of the hydraulic ram rather than stops on the box section, then this problem should not arise.

At present, installation of the strain sensor on other models in the range of New Holland telescopic handlers is subject to a satisfactory test installation. For further information please contact RDS Technology Ltd.