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***Owner's Manual***  
*For the*  
***Load Cell Assembly***  
*on the*  
***EH101 Helicopter***

***System Part Number***  
***200-278-01***

*Owner's Manual Number 120-109-00*  
*Revision 3*  
*February 10, 2020*



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## Record of Revisions

<i>Revision</i>	<i>Date</i>	<i>Page(s)</i>	<i>Reason for Revision</i>
0	03/06/03	All	First issue
1	04/27/06	1-1	Changed manufactures P/N for mating electrical connector
2	3/10/10	4-2	Changed overhaul frequency criteria.
3	02/10/20	2-1, 4-2	Corrected washer positions in Figure 2-1, updated definition of “hours of external load operations” and load cell assembly overhaul instructions to standardize with all Onboard Systems manuals.

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# *Section 1*

## **General Information**

### **Introduction**

The Onboard Systems Load Cell Assembly is a compliment to the helicopter lifting system. Its purpose, when combined with an indicator in the cockpit, is to display the weight of the load carried on the cargo hook.

The 200-278-01 Load Cell Assembly interfaces with the existing hard point on the EH101 helicopter and provides the mounting points for the cargo hook. The Load Cell Assembly features an electrical connector, through which it is connected to the indicator.

### **Specifications**

**Table 1-1 P/N 200-278-01 Load Cell Assembly Specifications**

Design load*	3,000 lb. (1,360 kg.)
Design ultimate strength*	12,000 lb. (5,442 kg.)
Electrical requirements	22-32 VDC, 6.9 – 10 amps
Unit weight	5.0 pounds (2.3 kg.)
Mating electrical connector	MS27499E8B35S

\*Load capacities given are for the equipment described only. Loading limits for your particular helicopter model still apply. Consult your flight manual.

## Inspection

Inspect the kit items for evidence of damage, corrosion and security of fasteners. If damage is evident, do not use the items until they are repaired.

## Bill of Materials

The following items are included with the 200-278-01 Load Cell Assembly, if shortages are found contact the company from whom the system was purchased.

**Table 1-2 Bill of Materials**

<b>Part No.</b>	<b>Description</b>	<b>Quantity</b>
120-109-00	Owner's Manual	1
200-278-01	Load Cell Assembly	1



# Section 2

## Installation Instructions

These procedures are provided for the benefit of experienced aircraft maintenance facilities capable of carrying out the procedures. They must not be attempted by those lacking the necessary expertise.

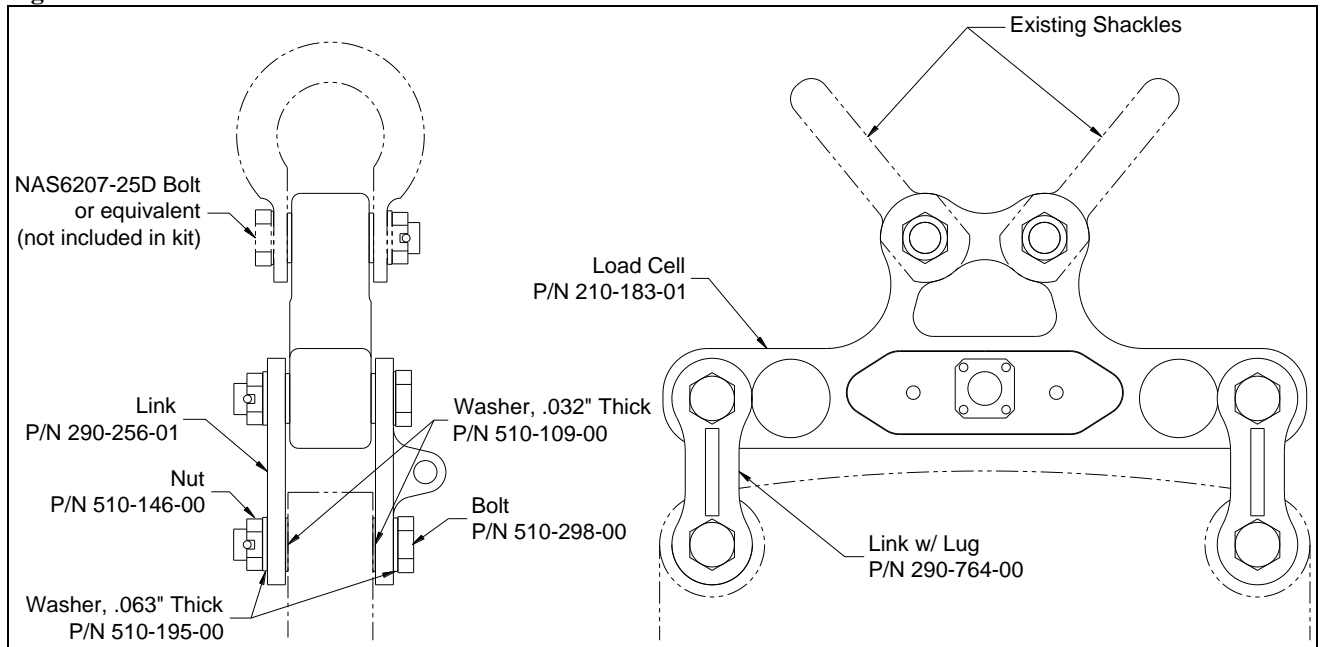
### Load Cell Installation

Remove the cargo hook (if existing) by removing the supporting cables and shackles from it.

Attach the load cell to the existing shackles as shown below.

Attach the hook to the Load Cell Assembly using the fasteners provided. Tighten the hook attaching fasteners so that the hook links are free to pivot and secure with the cotter pins provided. Refer to Figure 2-1.

Figure 2-1 Load Cell Installation



## Installation Check Out

After connecting electrical and release cables to the load cell and hook, swing the load cell and hook assembly to verify that the electrical and mechanical release systems are not stretched and remain functional in all possible operating positions.

## Component Weights

The weight of the Load Cell Assembly is listed below.

**Table 2-1 Component Weights**

Item	Weight
Load Cell Assembly	5 lbs (2.3 kg.)

## Paper Work

In the US, fill in FAA form 337 for the initial installation. This procedure may vary in different countries. Make the appropriate aircraft log book entry.

## *Section 3*

# **Operation Instructions**

### **Operating Procedures**

Daily, prior to each lifting operation, perform the following:

1. Ensure that the Load Cell Assembly has been properly installed and that the manual release and electrical cables do not limit the movement of the Load Cell Assembly and hook.
2. Visually check for presence and security of fasteners. Swing the Load Cell Assembly and hook in fore and aft and side to side directions to check for freedom of rotation at all joints.

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# Section 4

## Maintenance

### Storage Instructions

Clean the Load Cell Assembly components thoroughly before packaging. Pack the unit in a heat-sealable package. If the unit is to be stored for long periods in a tropical climate it should be packed in a reliable manner to suit local conditions. Refer to relevant MIL specifications.

Package the unit in a suitable fiberboard box and cushion the unit to prevent shifting. Seal the fiberboard box with tape and mark the box with the contents and date of packaging.

### Preventive Maintenance

Remove caked-on dirt from the Load Cell Assembly components with a brush and clean exposed surfaces with a mild solvent. Thoroughly dry all surfaces.

Annually remove pivot bolts on load cell and lubricate bronze bushings with Mil-G-23827 grease. Do not lubricate non-metallic or lined bushings.

### Inspection

The inspection of the Load Cell Assembly shall be in accordance with the table below.

**Table 4-1 Inspection**

<b>Seq.</b>	<b>Part Number</b>	<b>Daily Check</b>	<b>Inspection – Annually or 100 hours of external load operations, whichever comes first.</b>
1	200-278-01	<ol style="list-style-type: none"> <li>1. Inspect all items for cracks, wear and corrosion. If worn excessively or cracked, replace parts. Remove corrosion and treat with zinc chromate primer.</li> <li>2. Inspect all mounting fasteners to ensure that they are tight.</li> </ol>	Same as daily check.
2	All fasteners	<ol style="list-style-type: none"> <li>1. Inspect for cracks, excessive wear and security or attachment. If worn excessively or cracked, replace part.</li> </ol>	Same as daily check.

## Trouble Shooting

Table 4-2 Trouble Shooting

DIFFICULTY	PROBABLE CAUSE	CORRECTIVE ACTION
Indicator does not change with changing hook loads.	Defective load cell, indicator failure or damaged internal harness.	Check for damaged internal harness, replace load cell.

## Load Cell Assembly Overhaul Frequency

Time Between Overhaul (TBO): 1000 hours of external load operations (\*) or 5 years, whichever is less.



*Hours of external load operations should be interpreted to be (1) anything is attached to the y cargo hook (whether or not a useful load is being transported) and (2) the aircraft is flying. If these conditions are **NOT** met, time does **NOT** need to be tracked.*

## Load Cell Assembly Overhaul

It is recommended that only minor repairs be attempted by anyone other than the factory. Return the Load Cell Assembly to the factory for inspection and calibration. The factory will inspect the condition of the load cell and perform acceptance test procedures including calibration and zero balance, repairing as necessary.

## Instructions for Returning Equipment to the Factory

If an Onboard Systems product must be returned to the factory for any reason (including returns, service, repairs, overhaul, etc.) obtain an RMA number before shipping your return.



*An RMA number is required for all equipment returns.*

- To obtain an RMA, please use one of the listed methods.
  - Contact Technical Support by phone or e-mail ([Techhelp@OnboardSystems.com](mailto:Techhelp@OnboardSystems.com)).
  - Generate an RMA number at our website: <http://www.onboardsystems.com/rma.php>
- After you have obtained the RMA number, please be sure to:
  - Package the component carefully to ensure safe transit.
  - Write the RMA number on the outside of the box or on the mailing label.
  - Include the RMA number and reason for the return on your purchase or work order.
  - Include your name, address, phone and fax number and email (as applicable).
  - Return the components freight, cartage, insurance and customs prepaid to:  
Onboard Systems International, LLC  
13915 NW 3rd Court  
Vancouver, Washington 98685  
USA  
Phone: 360-546-3072

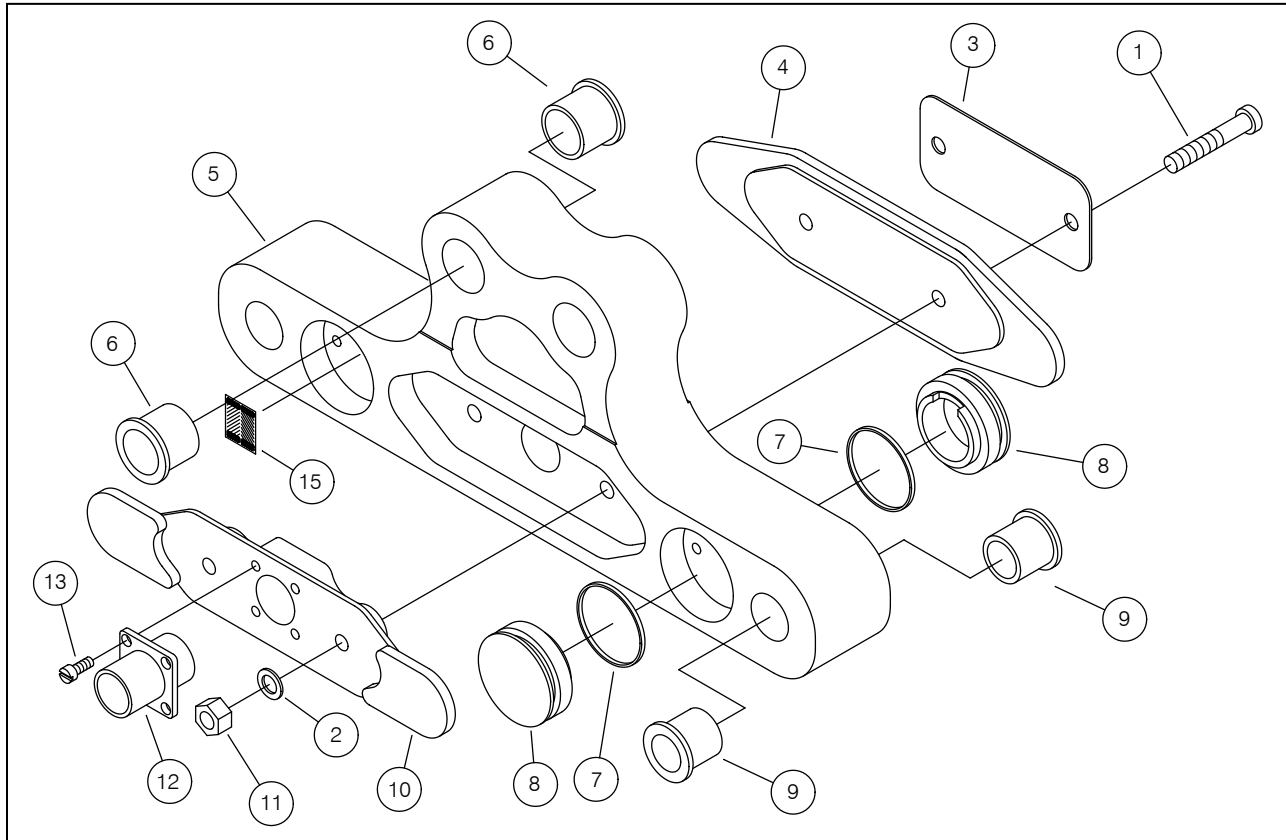
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# Section 5

## System Part Numbers

### 210-183-01 Load Cell Assembly



ITEM	P/N	DESCRIPTION	QTY
1	510-477-00	Side Cover Screw	2
2	510-467-00	Washer	2
3	215-171-00	Serial Number Plate	1
4	290-795-00	Side Cover	1
5	290-493-01	Load Cell	1
6	290-796-00	Bushing	4
7	556-022-00	O-Ring	4
8	290-494-00	Plug	4
9	290-495-00	Bushing	4
10	290-794-00	Side Cover	1
11	510-478-00	Nut	2
12	410-200-00	Connector	1
13	510-132-00	Connector Screw	4