



## TECHNICAL BULLETIN

### 1-800-237-0022

#### Stock No. L75 - DOUBLE SHEAR BEAM LOAD CELL, HOLLAND FIFTH WHEEL, SEVERE DUTY

PART NO. 58-10386-011

#### CONCEPT:

These load cells are designed to fit under Holland severe duty FW70 fifth wheel top plates, replacing the standard risers. The load cells provide immediate weight information without adding substantially to trailer height or tractor weight.

#### APPLICATION:

A system consists of two DSB VULCAN fifth wheel load cells (Stock No. L75) and two fifth wheel mounting kits (Stock No. H83). An optional slide bracket (Stock No. H85) is available for Holland heavy-duty traditional (non-ILS) sliding mounts. The slide bracket is covered by technical bulletin B-152.

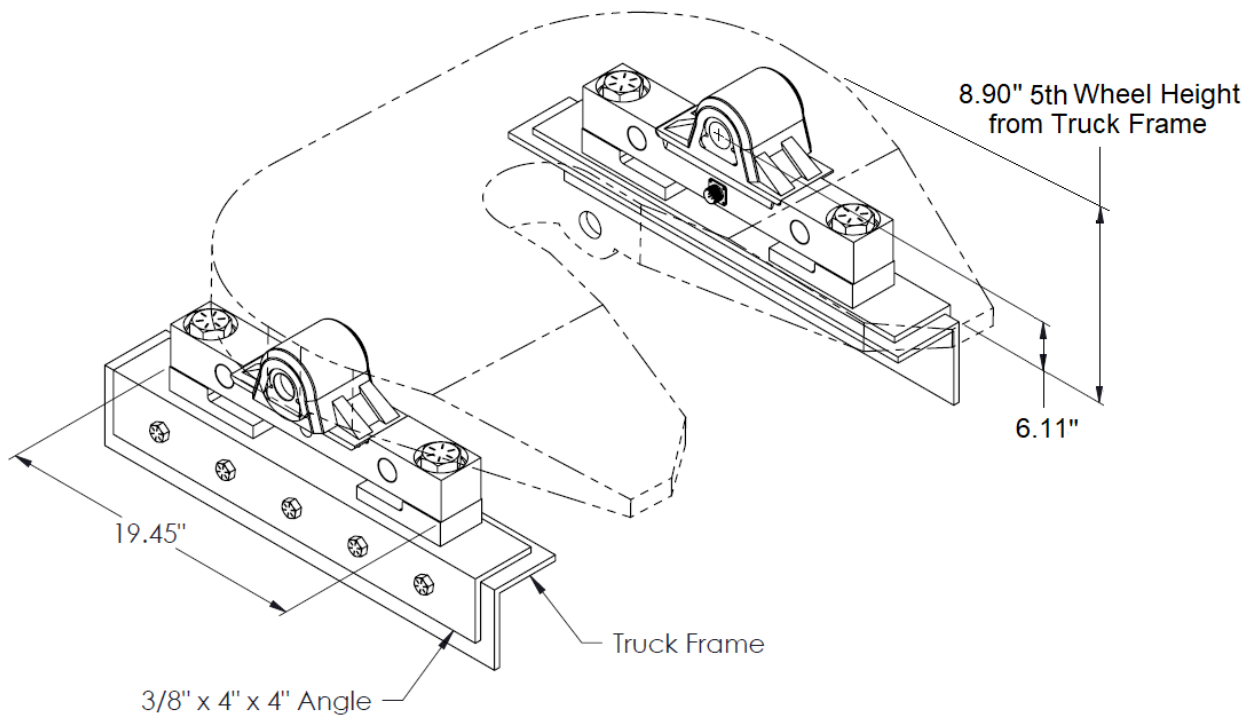


FIG. 150-A



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### SPECIFICATIONS:

- **CAPACITY:** 70,000 lb system vertical load.  
200,000 lb system draw bar pull.
- **OUTPUT:** 0.55 mV/V at 25,000 lb for each load cell.
- **ACCURACY:** Typical system error less than 0.5% full scale.
- **MATERIAL:** High strength alloy steel.
- **PLATING:** Vulcan load cells are plated for increased rust protection.

### INSTALLATION:

#### Step 1 - FRAME PREPARATION

Install a steel mounting angle 1/2" x 4" x 4" x 36" minimum length. Minimum steel grade shall be ASTM A 36 (mild steel). The mounting angles must sit flat and straight on top of the frame rail to prevent flexing and give uniform weight distribution. The fit between the angle and the top of the frame must not have any gaps. Follow Holland fifth wheel installation instructions.

Retrofit tractor frames and fifth wheel top plates shall be cleaned and inspected for cracks, rusting, and other signs of damage or deterioration. Proper repair or replacement must be made prior to the installation of the load cells.

A minimum of five 5/8" diameter Grade 8 cap screws and 5/8" diameter Grade G flanged lock nuts or Grade B or better nuts with hardened steel washers, must attach each mounting angle to the truck frame rail. Distance between cap screws must not exceed 8" except where cut outs are required in the mounting angles. Larger diameter cap screws and fasteners may be used. Cap screws must be adequately tightened to proper torque for the specific cap screw size. See FIG. 150-B.



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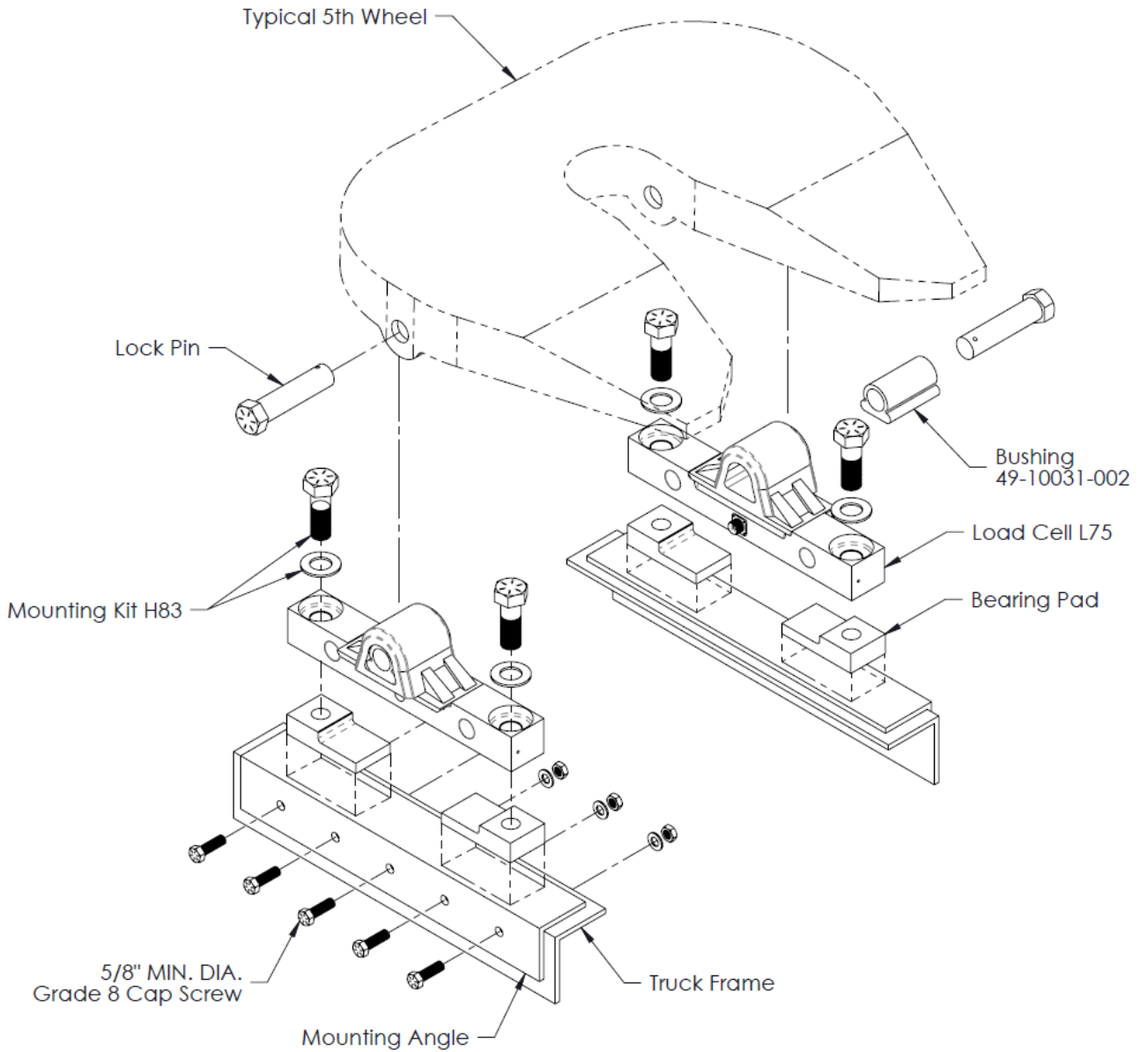


FIG. 150-B



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**Note:** For aluminum frames, be sure to round all mounting angle edges and apply a substance to eliminate electrolysis between the aluminum frame and the steel mounting angle. Follow the tractor manufacturer's recommendations for applying an appropriate corrosion inhibitor. For further details, consult tractor manufacturer.

#### **DO NOT WELD ON THE TRACTOR FRAME.**

#### **Step 2 – LOAD CELL ALIGNMENT**

Assemble the fifth wheel load cells and bearing pads using the 1-1/4" diameter cap screws and washers from the mounting kit. Position assemblies in the pockets of the fifth wheel, ensure all bushings are in place and the bracket pins are lubricated, as required. Center the assembly on the mounting angles of the truck frame. The center of the king pin locks shall normally be positioned on or ahead of the truck suspension trunnion center line.

#### **Step 3 - WELDING LOAD CELLS**

Tack weld load cell bearing pads in place.

**(Caution! Do not exceed 140 degrees Fahrenheit (60 C) on the load cell. Arcing on the body of the load cell may seriously damage the load cell's structural integrity and must NOT be installed if this occurs. This, also, voids manufacturer's warranty.)**

**DO NOT ALLOW the load cells to exceed a temperature of 140 degrees Fahrenheit.**

Remove the fifth wheel and load cell assembly, leaving the bearing pads tacked to the mounting angles. Shim any gaps between bearing pad and mounting angle over 1/32". Complete welding of the bearing pads to the mounting angles on the three outer sides, see FIG. 150-C. All welding and welding procedures must meet American Welding Society (AWS) specifications. Take precautions to ensure the tractor electrical system is not damaged by the welding.

Use "Never-Seez" or equivalent thread lubricant when installing all mounting cap screws.

**DO NOT use the "Never Seez" on the load cell connectors.** Re-assemble the load cells and the fifth wheel assembly to the bearing pads and torque the 1-1/4" diameter mounting cap screws to 1450 - 1780 lb-ft.



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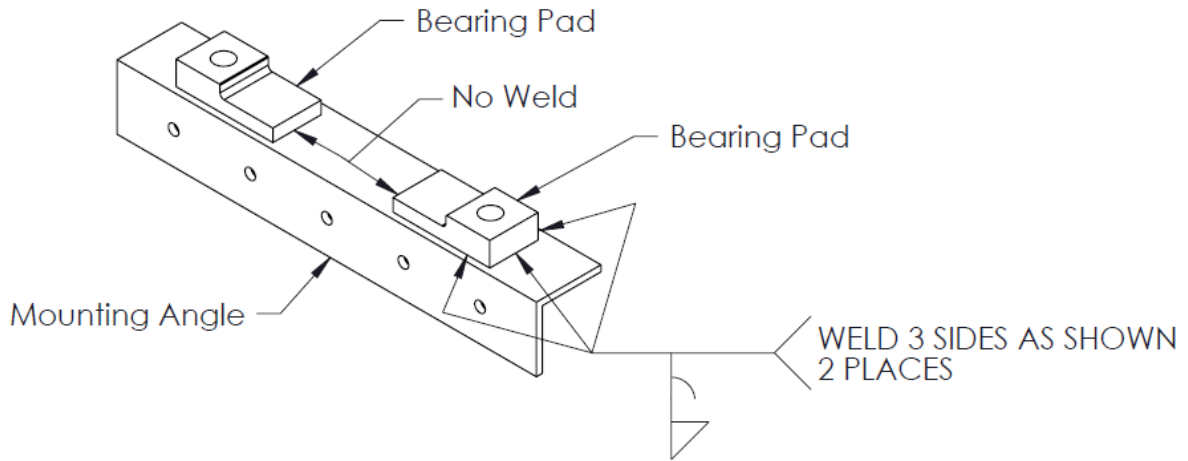


FIG. 150-C

### Step 4 - WIRING AND OPERATION

Secure Vulcorder to tractor and route the black cables to the load cells and the orange cable to the meter in the cab. Route the cables so they will not be damaged by road debris. **Note: Do not** grease or lubricate inside the VULCAN load cell connector or Vulcorder connector. These components are highly sensitive to foreign substances and inaccurate readings will occur if these components are contaminated. **Your manufacturer’s warranty does not cover the failure of VULCAN components due to contamination (use of grease or other conductive substance) in either of these component connectors.** For additional electronic installation notes and operation procedures, see the “*Vulcan Operation And Maintenance Manual*”.

### Step 5 - INSPECTION, PAINTING THE LOAD CELL, AND LUBRICATION

VULCAN load cells are plated for increased rust protection. Certain minimum maintenance will be necessary to claim warranty of load cells. Apply a high quality paint to the load cells, bearing pads and mounting brackets. For environments where high concentrations of salts are used on road surfaces, undercoating is recommended (3M, Universal Rubberized Undercoating, 3M P/N: 8883). Spray undercoating when load cells are connected to electronics and fully assembled with bearing pads. See “Vulcan Load Cell Maintenance” document 44-20006-001 for further details.

**Load cell mounting cap screws must be checked periodically for proper torque.**

	1-1/4"
SAE J429 - Grade 8	1450-1780 lb-ft