Installation Instructions – DC 45147 RA
12 VDC, Hydraulic Power Unit, Single-Acting (Power UP / Gravity DOWN)

Diagram A-1

1. Remove the two-button pendant from the power unit at the quick connect.
2. Mount the Power Unit using two 3/8-16 UNC mounting bolts (Diagram A-3).
3. Install 9/16-18 ORB (SAE #6) hydraulic fittings into ports “P” and “T”. Torque the fittings to 18 ft.-lbs.
4. Connect hydraulic hoses to the fittings on ports “P” and “T”. (Diagram A-2 & A-4)
   a. Install flow control LBH-6-8T-M11.5 on or near the base of the cylinder. #8 SAE must be on cylinder side and #6 JIC toward the power unit. Torque to 30 ft.-lbs.
   b. Connect the “P” port hose to the base of the cylinder.
   c. Connect the “T” port hose to the rod end of the cylinder.
5. Connect the battery Ground cable to the Ground terminal of the DC Motor (Diagram A-1 & A-2).
6. Connect the Positive cable from the battery to the start solenoid (Diagram A-1 & A-5).
   (Please see Battery Cable Gauge table (pg. 2) for proper gauge)
7. Using a wrench to hold the bottom nut in place, torque the upper nut to 3 ft.-lbs. to fasten the battery connections.
8. Reconnect the two-button remote pendant at the quick connect.
9. Remove the Filler/Breather Cap and fill the reservoir tank with the recommended hydraulic fluid (see page 2) to the “Full Line” labeled on the side of the reservoir.
10. Operate the power unit while keeping an eye on the fluid level in the reservoir.
    a. When the cylinder is fully extended, the reservoir should be about ½ full.
   Please Note: When running your hydraulic power unit for the first time, do not allow the fluid to drop below the half full level, while raising or extending the hydraulic cylinder. This will cause the power unit to introduce air into the system.
11. Replace the filler/breather cap.

Note: It is recommended that you store the remote pendant portion in your vehicle. This will help prevent theft, damage, and accidental activation of the hydraulic power unit.
Fluid Recommendations
Do Not Mix Hydraulic Fluids.

KTI Hydraulics Inc. recommends using a premium hydraulic oil to ensure optimum performance and system life. Select oil that has anti-wear properties, rust and oxidation inhibitors, foam inhibitors and good stability. Examples of premium grade hydraulic oils: **Chevron Rando HDZ**, **Mobil DTE 10**, **DTE 20 series**, **AMSOIL**, and **Shell Tellus**.

Automotive Transmission Fluid (DEXTRON III) is acceptable under normal conditions. Aviation Oils such as **Valvoline ROYCO** series or **Mobil Aero HF** or **HFA** may be used in prolonged, extreme cold environments.

**Do Not Use Biodegradable Hydraulic Fluid with Buna seal, Biodegradable Hydraulic Fluid is compatible with Viton seals (optional).**

<table>
<thead>
<tr>
<th>Ambient Temperature Range</th>
<th>ISO Viscosity Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20°F to +32°F (-29°C to +0°C)</td>
<td>15</td>
</tr>
<tr>
<td>+14°F to +120°F (-10°C to +49°C)</td>
<td>22, 32, ATF (Dexron III)</td>
</tr>
</tbody>
</table>

Battery Cables

To minimize voltage drop, increase the gauge size of the battery cables as the length of the positive and ground cables increase. Low voltage will cause the motor to run higher amps causing damage to other electrical components.

<table>
<thead>
<tr>
<th>Cable Length</th>
<th>Wire Gauge</th>
<th>Nominal OD (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2 feet</td>
<td>4 gauge</td>
<td>0.43</td>
</tr>
<tr>
<td>3 to 4 feet</td>
<td>2 gauge</td>
<td>0.49</td>
</tr>
<tr>
<td>5 to 7 feet</td>
<td>1 gauge</td>
<td>0.56</td>
</tr>
<tr>
<td>8 to 9 feet</td>
<td>1/0 gauge</td>
<td>0.61</td>
</tr>
<tr>
<td>10 to 12 feet</td>
<td>2/0 gauge</td>
<td>0.66</td>
</tr>
<tr>
<td>13 to 15 feet</td>
<td>3/0 gauge</td>
<td>0.72</td>
</tr>
<tr>
<td>16 to 19 feet</td>
<td>4/0 gauge</td>
<td>0.78</td>
</tr>
</tbody>
</table>
Hydraulic Schematic

Flow control 3 gpm (pressure compensated)

"P"  "T"

Load holding valve (Down)
Primary relief valve
Factory set @ 3200 psi
Back pressure valve
set @ 40 psi

Gear pump
0.1324 in³/r
Motor

HYDRAULIC CIRCUIT

Diagram A-4
Wiring Diagram

Diagram A-5

'UP' = RED WIRE
'DOWN' = GREEN WIRE
'COMMON' = WHITE
'POWER' = BLACK
**Bleed Cycle Instruction Sheet**

1) Remove the breather cap with dip stick, so you may view the hydraulic fluid while operating the Hydraulic Power Unit.
   
   a) Press the up button on the hand-held remote pendant to raise the trailer bed \( \frac{1}{3} \) of the way up. While raising the bed, view the hydraulic fluid through the breather cap opening. You may see the fluid returning into the tank. If you see any air pockets or aeration of the fluid, please stop and allow the fluid to settle. Once settled, continue to raise \( \frac{1}{3} \) of the way up.
   
   b) Once you reach \( \frac{1}{3} \) of the way up, press the down button to return the trailer bed or deck to its fully seated position (down).

   *Please ensure that the fluid level in the reservoir does not drop below the half full level while running the power unit.*

2) Press the up button on the hand-held remote pendant to raise the trailer bed \( \frac{2}{3} \) of the way up.
   
   a) While raising the bed, view the hydraulic fluid through the breather cap opening. You may see the fluid returning into the tank. If you see any air pockets or aeration of the fluid, please stop and allow the fluid to settle. Once settled, continue to raise \( \frac{2}{3} \) of the way up.
   
   b) Once you reach \( \frac{2}{3} \) of the way up, press the down button to return the trailer bed or deck to its fully seated position (down).

   *Please ensure that the fluid level in the reservoir does not drop below the half full level while running the power unit.*

3) Press the up button on the hand-held remote pendant to raise the trailer bed up to the end of the stroke.
   
   a) While raising the bed, view the hydraulic fluid through the breather cap opening. You may see the fluid returning into the tank. If you see any air pockets or aeration of the fluid, please stop and allow the fluid to settle. Once settled, continue to raise the bed to the end of the stroke.
   
   b) Once you reach the full up position, press the down button to return the trailer bed or deck to its fully seated position (down).

   *Please ensure that the fluid level in the reservoir does not drop below the half full level while running the power unit.*

You may have to repeat these 3 steps more than once to completely purge all of the air out of the system.