



# **HPU / Remote Pendant – Control Switch Installation and Operation Instructions**



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# Installation Instructions For 12 VDC, Hydraulic Power Units, Double Acting (Power Up / Powder Down)

Please refer to photos in following pages:

- Install 9/16-18 #6 SAE JIC 37 degree flare hydraulic fittings in ports A and B. Torque fittings to 18 ft lbs.
- Mount the power unit using two 3/8-16 x 3/4 mounting bolts (not included)
- Connect hydraulic lines. Port A is up body/raising port line and Port B is the down body/lowering port line
- Remove the filler/breather cap and fill the reservoir with hydraulic fluid approximately 1" from the top (see hydraulic fluid recommendations)
- Connect the battery ground cable to the ground terminal of the DC motor using 3 ft lbs of torque
- Connect the positive cable from the battery to the start solenoid and torque to 3 ft lbs of torque (see battery cable recommendation based on cable length from motor to battery)
- Connect the remote pedant/power switch unit using the quick connects provided
- Keep an eye on the fluid level in the reservoir when operating the power unit. Insure the that the fluid level doesn't go lower than 1/2 full during initial startup. When the cylinder is fully extended on the jack and/or hoist reservoir should be about 1/2 full.
- See bleed cycle procedure when operating the hydraulic system for the first time. Air will be induced into the system and that air needs to be removed.
- If needed refill the reservoir so it is approximately 1" below the top of the reservoir
- Replace the fill/breather cap
- Best to store the remote pendant/power switch in the tow vehicle when not in use to help preserve this piece
- Wear eye protection when working with hydraulic fluid.
- Full size 12 volt group 27 deep cycle RV/Marine battery to be used to power HPU's (**not supplied**)

## Hydraulic Fluids

See top of reservoir for instruction to ensure optimum performance and system life.. **Do not use biodegradable hydraulic fluid. Do not mix hydraulic fluids.**

**STRONG & RELIABLE**  
**RAM**  
**PREMIUM**  
SERIES

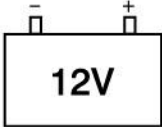
**⚠ CAUTION: RECOMMENDED HYDRAULIC OILS**

RAM recommends using Dexron rated ATF (Automatic Transmission Fluid) as hydraulic oil.

In the case of extremely cold conditions (-20° F and below) an ISO 15 Hydraulic Oil is recommended.

**⚠ ATTENTION: CHECK BATTERY VOLTAGE BEFORE USE. LOWER VOLTAGE WILL COMPROMISE UNIT PERFORMANCE.**

**⚠ WARNING: MIXING HYDRAULIC OILS IS ABSOLUTELY NOT RECOMMENDED AND WILL VOID WARRANTY.**



## 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.

Cable Length	Wire Gauge	Nominal OD (in.)
1 to 2 feet	4 gauge	0.43
3 to 4 feet	2 gauge	0.49
5 to 7 feet	1 gauge	0.56
8 to 9 feet	1/0 gauge	0.61
10 to 12 feet	2/0 gauge	0.66
13 to 15 feet	3/0 gauge	0.72
16 to 19 feet	4/0 gauge	0.78

## Bleed Cycle Instructions

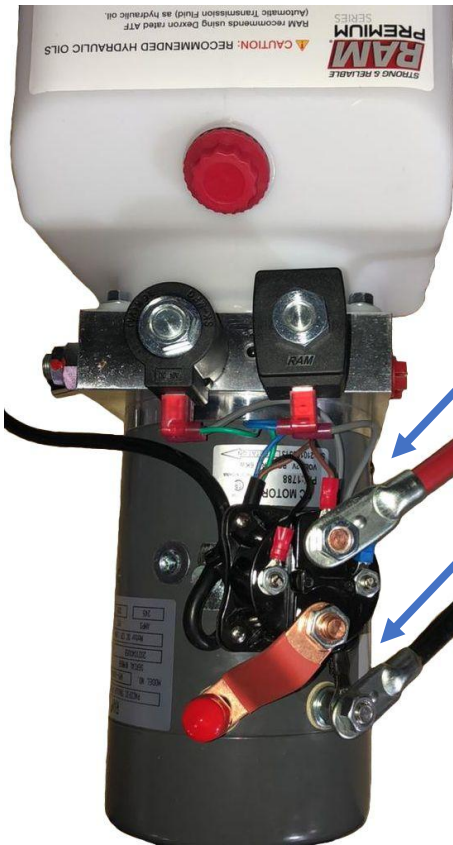
- Remove the breather cap to view the hydraulic fluid while operating the hydraulic power unit
- Press the up button on the remote pendant and run hydraulic jack or hoist cylinder 1/3 of the way up. You may see fluid returning into the reservoir. If you see air pockets or aeration of the fluid, stop and allow the fluid to settle and continue to raise 1/3 way up.
- Once 1/3 of the way up, press the down button to return fully seated position of the hydraulic jack or hoist cylinder.
- Make sure the fluid level does not drop below the half full level of the reservoir while running the power unit
- Press the up button again on the remote pendant and run hydraulic jack or hoist cylinder 2/3 of the way up. Once 2/3 of the way up is reached, press down button on the remote pendant to a fully seated position again.
- Again make sure the fluid level doesn't drop below the half full level of the reservoir
- Press the up button again on the remote pendant and run hydraulic jack or hoist cylinder to full stroke
- While running and if you see any air pockets or aeration of the fluid in the reservoir, stop and let the fluid settle, then continue to raise the hydraulic jack or the hoist cylinder
- You may have to repeat this process more than once to completely purge all the air out of the system
- For bleeding air from any hydraulic system, add oil only when the cylinder, hoist, or jack is retracted to prevent overfilling or spillage.

Breather/Fill  
Cap



Port A

Port B



Positive electrical supply (red)  
Battery connections torque to 3 ft lbs

Negative electrical supply (black)  
Battery connections torque to 3 ft lbs

Quick Connect Remote Pendant to HPU unit

Line up ends on quick connect with  
indentation



After plugging two ends together thread  
connection cup and twist until tight



# HPU Models

- HPU-DA004 Dual acting, power up/power down, 4 quart reservoir
- HPU-DA006 Dual acting, power up/power down, 6 quart reservoir
- HPU-DA006 Dual acting, power up/power down, 8 quart reservoir
- HPU-DA012 Dual acting, power up/power down, 12 quart reservoir

One HPU to operate both scissor hoist and two 15K hydraulic jacks use a six quart reservoir model or greater.



Port A – Extend / Fluid flow out of HPU

Port B – Retract / Fluid flow back into HPU

See Scissor Hoist and/or Hydraulic Jack manuals for more detail for running of hydraulic lines, fittings, etc.

- HPU-DAGD004 Dual acting, power up/power down/gravity down, 3-button switch, 4 quart reservoir
  - HPU-DAGD006 Dual acting, power up/power down/gravity down, 3-button switch, 6 quart reservoir
- One HPU to operate both scissor hoist and two 15K hydraulic jacks use a six quart reservoir model or greater.



Port A – Extend / Fluid flow out of HPU

Port B – Retract / Fluid flow back into HPU

See Scissor Hoist and/or Hydraulic Jack manuals for more detail for running of hydraulic lines, fittings, etc.

- HPU-DAMA004 Dual acting, power up/power down/gravity down, 3-button switch, 4 quart reservoir with manual override
  - HPU-DAMA006 Dual acting, power up/power down/gravity down, 3-button switch, 6 quart reservoir with manual override
- One HPU to operate both scissor hoist and two 15K hydraulic jacks use a six quart reservoir model or greater.



Manual override function for when full loss of battery charge – Loosen 1/2" lock nut and then loosen 4mm (5/32") hex head manual override screw

**Warning: Always loosen hex head manual override screw slowly so scissor hoist retracts slowly.**

# HPU Models (Continued)

HPU-SA006 Single acting, power up/gravity down, 6 quart reservoir

HPU-SA008 Single acting, power up/gravity down, 8 quart reservoir

HPU-SA016 Single acting, power up/gravity down, 16 quart reservoir (to use with 7 ton RAM telescopic cylinders)

HPU-SA007GST Single acting, power up/gravity down, 7 gallon steel tank reservoir (to use with 12 ton RAM telescopic cylinders)



Port A – Extend / Fluid flow out (with motor) and flow back (under gravity) into HPU

If there is a second port it is just a plug. No operation for this with single acting HPU's.

See telescopic cylinder manual for more detail for running of hydraulic lines, fittings, etc.



HPU-SA016



HPU-SA007GST



Telescopic  
Cylinder End  
w/bleed plug

## Single Acting HPU/Telescopic Cylinder Bleed Information

With dump bed on the trailer in down position, remove the bleed plug and cover the hole with a shop rag. Intermittently, energize the single acting pump to fill the telescopic cylinder. Always keep an eye on the hydraulic fluid level. Just before fluid starts to flow out of the bleed plug hole on the telescopic cylinder, reinstall the bleed plug on the cylinder. Operate the cylinder up and down several times. Then check again to make sure no air is in the cylinder.

## HPU Models (Continued)

HPU-DASEL006 Dual acting, power up/power down, 2 to 4 selector (run hydraulic jack(s) and dump hydraulic hoist system without use of a separate manual hydraulic diverter, 6 quart reservoir



Port A – Extend / Fluid flow out of HPU

Port B – Retract / Fluid flow back into HPU

Other side of hydraulic manifold between tank and motor has the other Port A and Port B to run hoses from HPU to hydraulic jack. Ones shown in front can be used to run hoses to hydraulic hoist.

See Scissor Hoist and/or Hydraulic Jack manuals for more detail for running of hydraulic lines, fittings, etc.

To help reduce HPU vibration between the motor/manifold and the tank housing you can place a cushion type piece(s) under the motor housing as shown below.

