



Hoist Installation and Operation Instructions



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RH-310 Hoist Assembly 310 (310 hoist plus installation pivot bars
RH-516 Hoist Assembly 516 (516 hoist plus installation pivot bars
RH-520 Hoist Assembly 520 (520 hoist plus installation pivot bars

See end of instructions for all other accessory items available that are sold separately

RAM hoists and cylinder hoists sold separately and are designed for dump trailer applications only.

Always load and unload trailer when attached to the tow vehicle.

Pacific Rim International/Pacific Trailer Products is not responsible for damages as a result of improper use, installation and care for product.

It is the end users responsibility to determine trailer support member and welding size to properly support the load being lifted. Illustrations are for instructional purposes only.

Make sure trailer builder has included all proper warning instructions they should be providing as a manufacturer.

Never overload a trailer beyond the gross vehicle weight rating (GVW) or gross axle weight rating (GAW) of the trailer or vehicle.

Make sure to follow the instructions carefully that the trailer manufacturer provides with the trailer.

Make sure brake lines, electrical wiring, hydraulic lines, etc do not interfere with the operation of the hoist system. If the hoist system is allowed to rub against those items mentioned could result in damage and therefor an unsafe trailer.

Always use caution while working around hydraulic systems. Make sure to stay away while welding not to ignite fluids which could cause serious injury.

Always install equipment to keep heat from exhaust system away from the hydraulic systems as it could damage components.

Never attempt to jerk or shock the trailer with the dump in a raised position to remove a stuck load. This could cause damage which could cause serious injury.

Maximum pump load to not exceed 3200 psi.

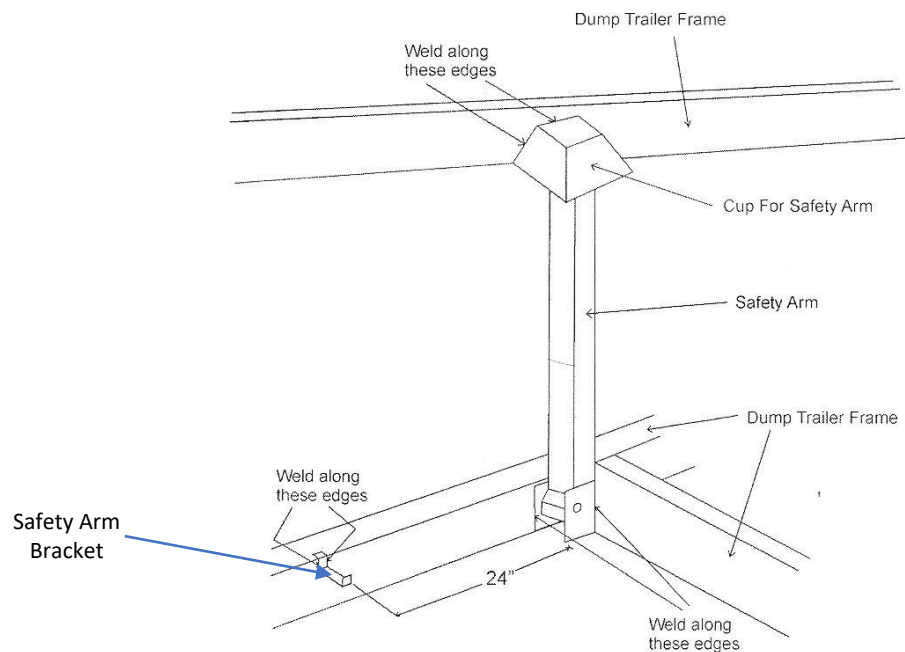
Safety Arm Installation And Use

Always support an unloaded dump trailer body with the safety arm. The safety arm is for supporting an unloaded dump trailer body only.

Never position yourself or others under a loaded dump trailer body as it could result in serious injury or death.

Safety arm use:

- Raise dump trailer body to a sufficient height and shut off the hydraulic power to the cylinder hoist.
- Take safety arm out of the safety arm bracket and rotate up into a vertical position below the safety arm cup.
- Slowly lower the cylinder hoist until the top of the safety arm is seated into the safety arm cup
- To remove the safety arm, reverse this process and place the safety arm back into the safety arm bracket.



Max Unloaded Tilt Body Weight in lbs using one safety arm

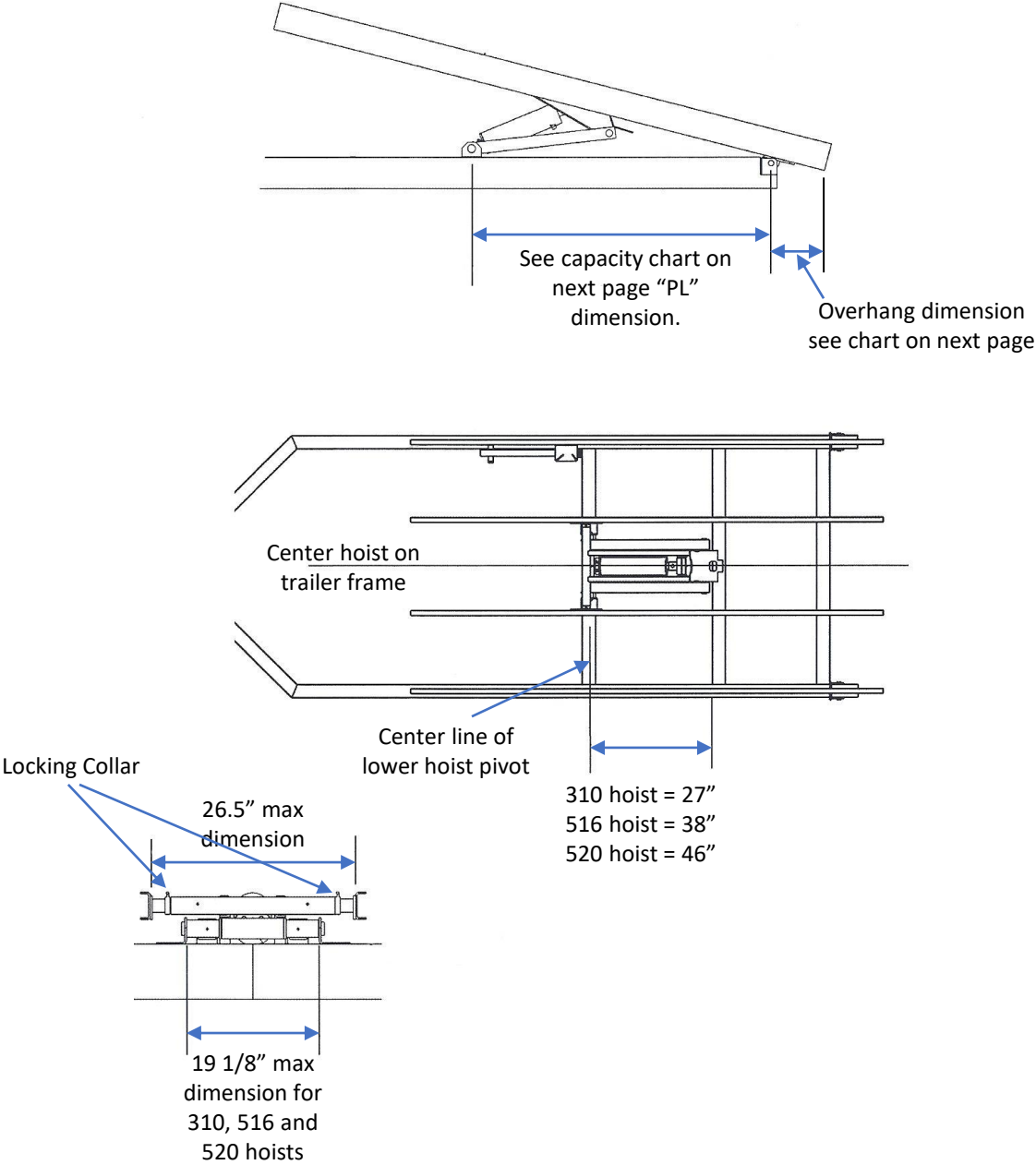
Tilt Body Trailer Length In Feet

Distance from rear hinge to safety arm in inches

	8	10	12	14	16	18	20
50	3854	3083	2569	2202	1927	1713	1542
60	4625	3700	3083	2643	2313	2056	1850
70	5396	4317	3597	3083	2698	2398	2158
80	6167	4933	4111	3524	3083	2741	2467
90	6938	5550	4625	3964	3469	3083	2775
100		6167	5139	4405	3854	3426	3083
110		6783	5653	4845	4240	3769	3392
120		7400	6167	5286	4625	4111	3700
130			6681	5726	5010	4454	4008
140			7194	6167	5396	4796	4317
150				6607	5781	5139	4625
160				7048	6167	5481	4933
170					6552	5824	5242
180					6938	6167	5550
190					7323	6509	5858
200						6852	6167
210						7194	6475
220							6783
230							7092

Hoist Welding and Placement

When welding hoist brackets in place weld on all contact surfaces.



Weight Capacities

Hoist Capacity In Tons

		RH-310	RH-310	RH-516	RH-516	RH-520	RH-520
Dump Compartment Body Length (ft)	Overhang (ft)	Max Angle 45 degrees PL=52"	Max Angle 50 degrees PL=47"	Max Angle 45 degrees PL=76"	Max Angle 50 degrees PL=67.5"	Max Angle 45 degrees PL=96.75"	Max Angle 50 degrees PL=87.75"
8	1	3.8	3.4				
8	1.5	4.5	4.0				
8	2	5.6	5.0				
9	1	3.1	2.9				
9	1.5	3.8	3.4				
9	2	4.5	4.1				
10	1	2.9	2.4	9.7	8.6	12.4	11.2
10	1.5	3.2	2.9	11.1	9.8	14.1	12.8
10	2	3.8	3.4	12.9	11.5	16.5	14.9
12	1			7.8	6.9	9.9	9.0
12	1.5			8.6	7.7	11.0	9.9
12	2			9.7	8.6	12.4	11.2
14	1			6.5	5.7	8.2	7.5
14	1.5			7.0	6.3	9.0	8.1
14	2			7.8	6.9	9.9	9.0
16	1					7.1	6.4
16	1.5					7.6	6.9

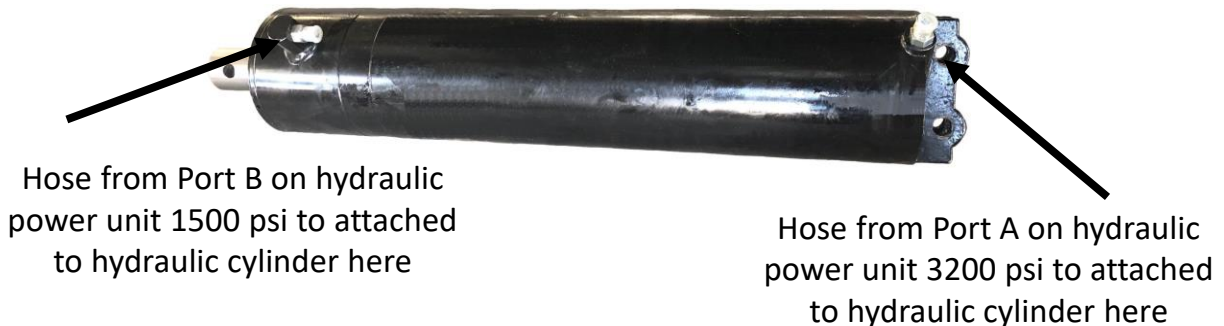
All information above is a general guide. It is trailer manufacturer's responsibility as to overall capacities for a specific trailer design. These calculations are also based on a level/evenly dispersed load.

Cylinder Installation

After trailer with hoist frame is painted or powder coated, bolt into place hydraulic cylinder (hardware not included).

Lubricate the all joints/grease zerks with extreme pressure grease every six months.

Hydraulic Hose Attachment



For hydraulic hose hook up to hydraulic power unit and air bleeding, refer to HPU instructions

Troubleshooting

If hoist is not extending or retracting check the following:

- Make sure all electrical connections are secure and battery is fully charged and grounded.
- Make sure hydraulic fluid is flowing from the HPU unit and through the lines. Check to make sure there are no leaks or pinch points in the hoses and all hydraulic connections are secure.
- If jack retracts after leveled to desired location, check fluid level in the HPU unit and all connections are secure.

HPU / Control Switch – Remote Pendant



- Hydraulic power unit includes control switch / remote pendant (sold separately from RAM 15K Jack HJ-15000-LEG)
- 3200 psi extension / 1500 psi retraction maximum pressure
- Works with RAM 15K hydraulic jack (HJ-15000-LEG) as well as RAM hydraulic dump trailer hoist systems (RH-310, RH-416, RH-516 and RH-520)
- HPU-DA004 dual acting, four quarts usable volume
- HPU-DA006 dual acting, six quarts usable volume
- HPU-DA008 dual acting, eight quarts usable volume

If using *RAM* supplied HPU units and control switch / remote pendant see those instructions for setup and operation.

If using another supplier's HPU unit and control switch / remote pendant see their instructions for setup and operation.

Other Hydraulic Accessories Available - Continued (sold separately)



RH-FIT38 3/8" fitting



RH-FIT38L 3/8" L-shape fitting



RH-LDCTL 3/8" load control valve



HFD-612 Flow Divider



RH-LHG Heavy duty hinge assembly



RH-MHG Medium duty hinge assembly



RH-LKCL-20 2" locking collar
RH-LKCL-25 2.5" locking collar
RH-LKCL-275 2.75" locking collar



RH-BCBL-20G4 Battery cables,
one red, one black, GA 4 20"



RH-STRP rubber battery strap



HCYLND-516 5" diameter x 16" stroke hydraulic cylinder
HCYLND-520 5" diameter x 20" stroke hydraulic cylinder



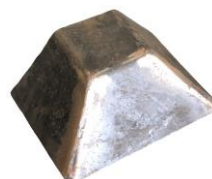
Dump Trailer Hoist with weld on brackets/pivot bars (less hydraulic cylinder)

RH-310 Hoist Assembly 310 (set up for 3" diameter and 10" stroke cylinder)
RH-516 Hoist Assembly 516 (set up for 5" diameter and 16" stroke cylinder)
RH-520 Hoist Assembly 520 (set up for 5" diameter and 20" stroke cylinder)

Hydraulic Hoist Safety Accessories



Safety arm



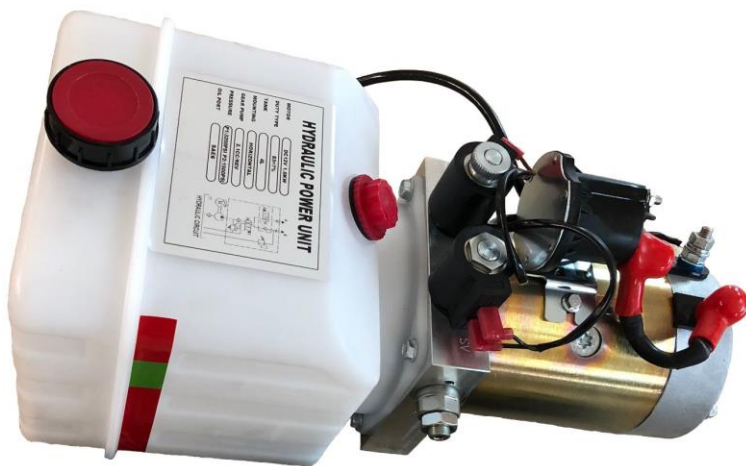
Safety arm cup



Safety arm bracket



HPU / Remote Pendant – Control Switch Installation and Operation Instructions



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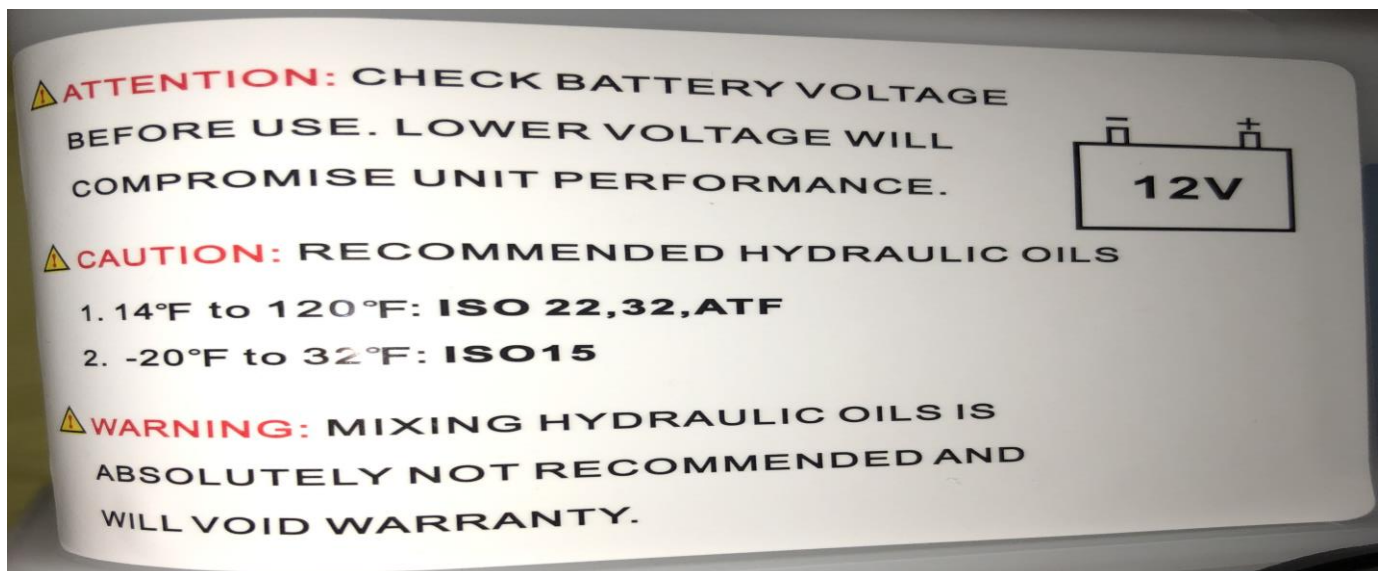
Installation Instructions For 12 VDC, Hydraulic Power Units, Double Acting (Power Up / Powder Down)

Please refer to photos in following pages:

- Install 9/16-18 SAE ORB, SAE #6, 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

Do not mix hydraulic fluids

It is recommended to use a premium hydraulic oil to ensure optimum performance and system life. See top of reservoir for instruction. **Do not use biodegradable hydraulic fluid with buna seal.**



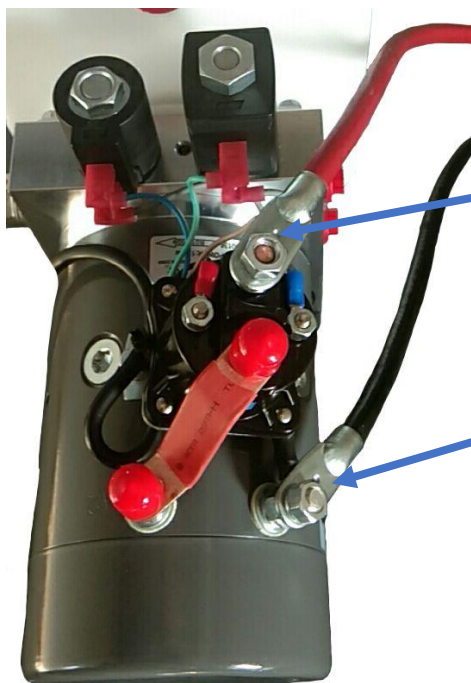
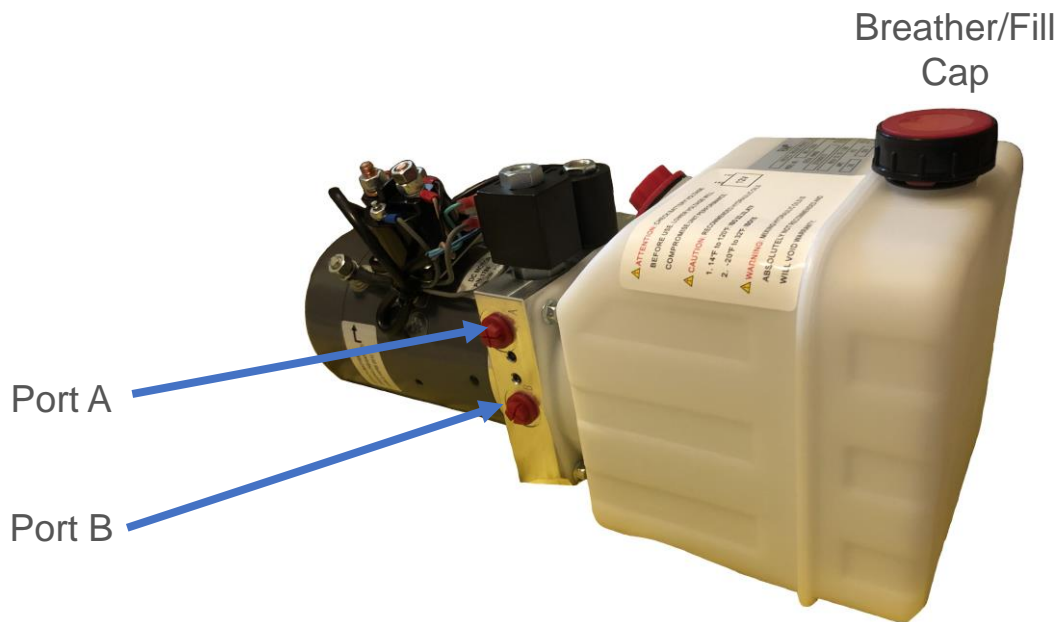
Battery Cables

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 with dip stick in order 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



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 the twist until tight

