

Installation Instructions

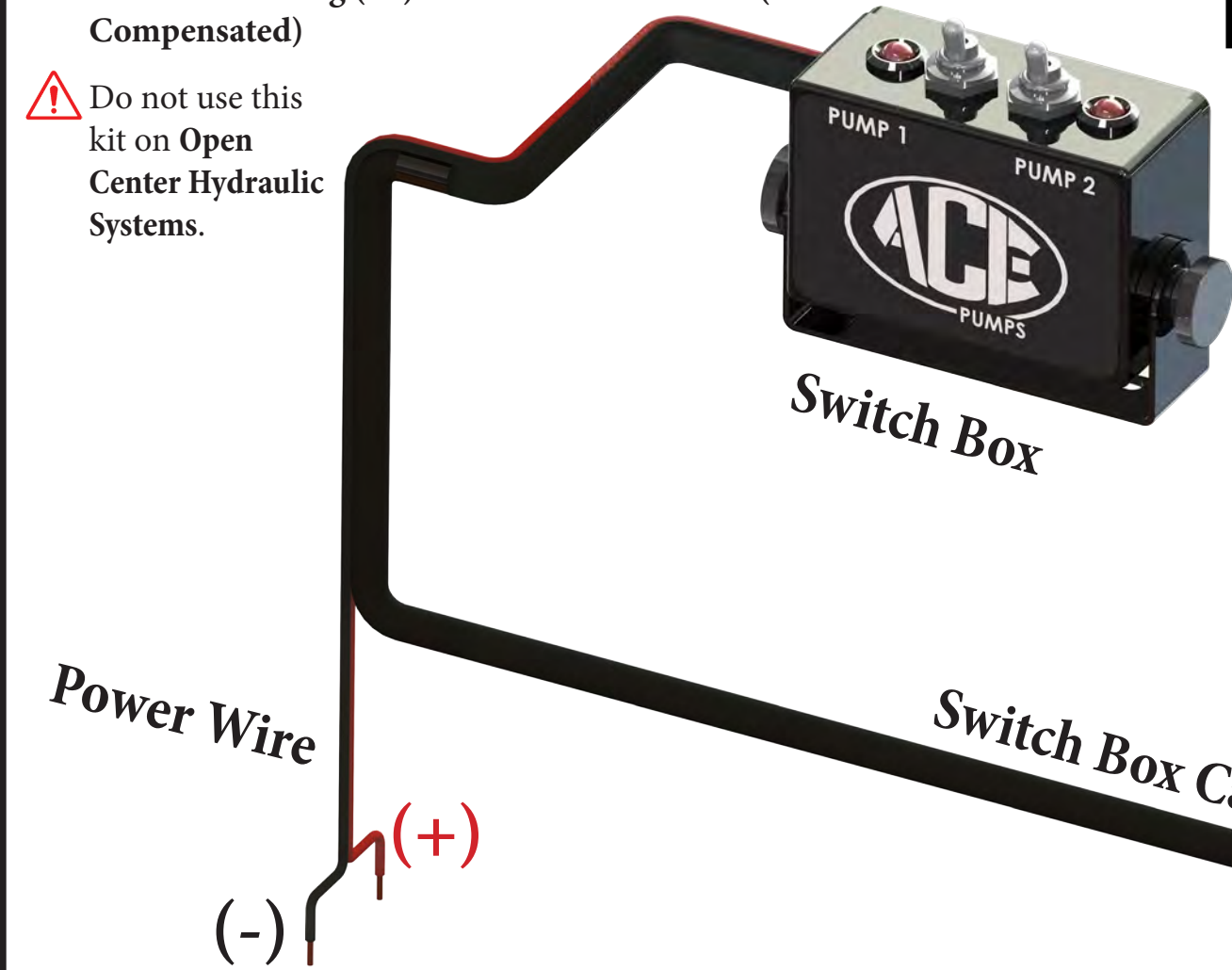
- 1** Determine your tractor's hydraulic system type by consulting the operating manual, Ace HSG (Hydraulic Selection Guide), or Ace iHSG by scanning the QR code.



This kit is for use on the following hydraulic systems:
Pressure Compensated (PC) Closed
and Load Sensing (LS) Closed also called PFC (Pressure and Flow Compensated)



Do not use this kit on Open Center Hydraulic Systems.



- 2** Determine which control method will be used.
Note: It is possible to operate one pump MANUAL and one pump PWM.

MANUAL

The pumps are turned on and off from the cab using the supplied Switch Box. Constant flow rates for each pump are set manually using the flow control valves located on the Valve Manifold.

PWM

The pumps are activated and controlled with a pulse width modulated (PWM) signal supplied by a PWM capable controller (not supplied). This method is commonly used for variable rate applications.

3 MANUAL

- A. Mount the Switch Box in a convenient location for the operator. Use the included mounting template.
- B. Connect the Power Wire to a 12VDC switched power supply rated 10 amps. **Red Wire (+)** install the supplied fuse holder and 10 amp fuse as close to the power supply as possible. Then connect to the positive power supply. **Black Wire (-)** connect to the negative power supply.

- C. Route the Switch Box Cable to the tractor hitch and secure using cable ties.

PWM

The Switch Box is not needed for PWM installations.

4 MANUAL and PWM

Choose a location on the tractor or implement to mount the Valve Manifold considering the following:

- The standard Implement Control Wire allows 15' from the hitch to the Valve Manifold. **Note:** An optional 22' Implement Extension Cable (Part # DPK-EXT) is available.
- Locate close to pumps to minimize pump hydraulic hose lengths.
- For MANUAL control, locate the Valve Manifold for easy operator flow adjustment with liquid pressure gauges in the operators sight.

5 MANUAL and PWM

Choose a location on the tractor or implement to mount two Ace Pumps considering the following:

- Locate pumps below the tank to ensure a flooded suction for proper priming.
- Minimize the number of fittings to reduce plumbing restrictions.
- Use full size hoses and fittings to prevent cavitation.
- Install filters or strainers on the discharge side of the pump.

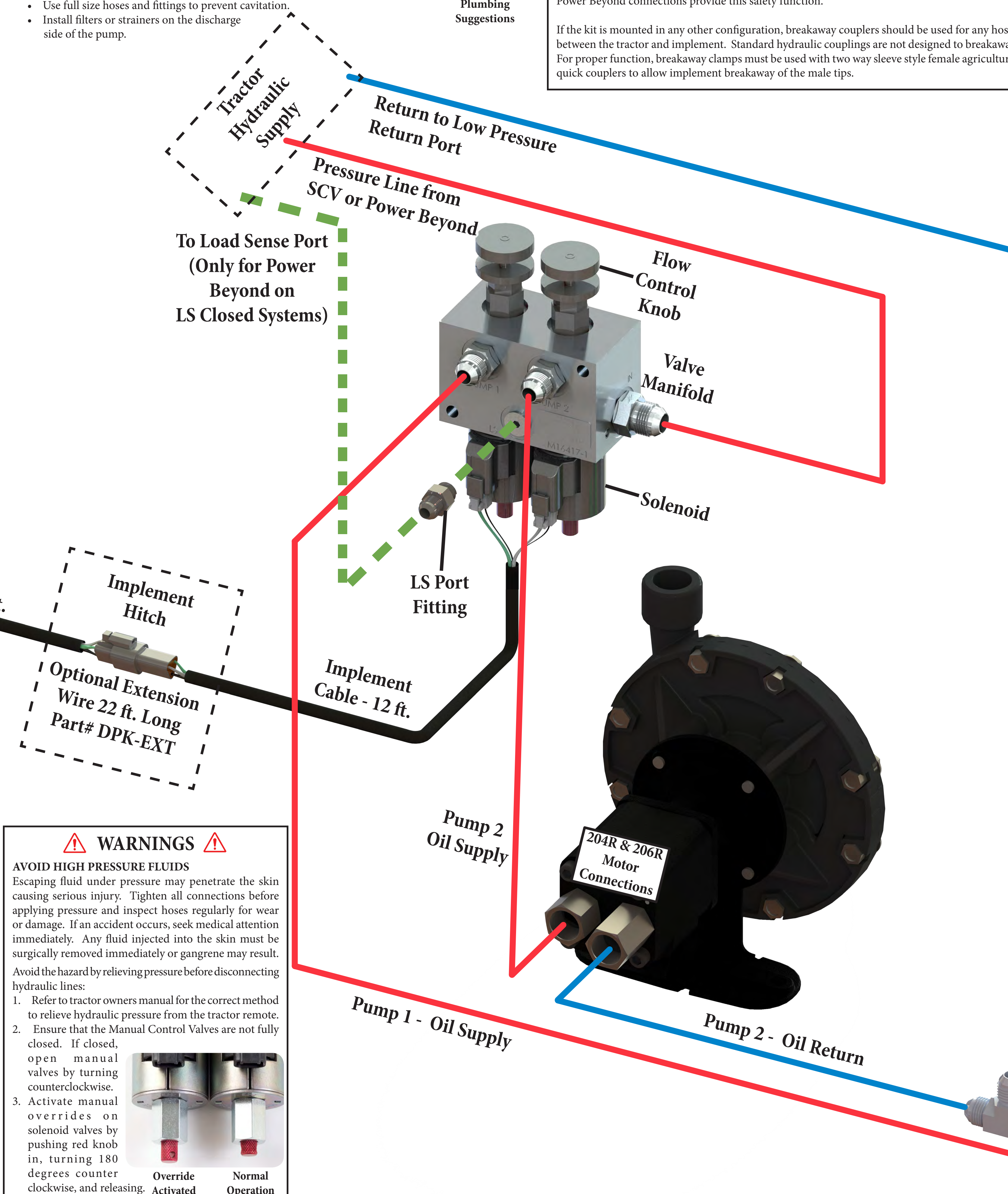


Plumbing Suggestions

BREAK AWAY COUPLERS SHOULD BE USED ON ALL CONNECTIONS BETWEEN THE TRACTOR AND IMPLEMENT

The standard kit is designed for the Valve Manifold and Pumps to be mounted on the towed implement. In this case, the breakaway couplers on the tractor remote, Low Pressure Return, or Power Beyond connections provide this safety function.

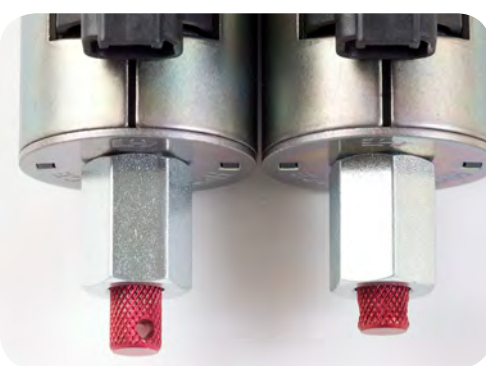
If the kit is mounted in any other configuration, breakaway couplers should be used for any hoses between the tractor and implement. Standard hydraulic couplings are not designed to breakaway. For proper function, breakaway clamps must be used with two way sleeve style female agricultural quick couplers to allow implement breakaway of the male tips.



WARNINGS

AVOID HIGH PRESSURE FLUIDS
 Escaping fluid under pressure may penetrate the skin causing serious injury. Tighten all connections before applying pressure and inspect hoses regularly for wear or damage. If an accident occurs, seek medical attention immediately. Any fluid injected into the skin must be surgically removed immediately or gangrene may result. Avoid the hazard by relieving pressure before disconnecting hydraulic lines:

- Refer to tractor owners manual for the correct method to relieve hydraulic pressure from the tractor remote.
- Ensure that the Manual Control Valves are not fully closed. If closed, open manual valves by turning counterclockwise.
- Activate manual overrides on solenoid valves by pushing red knob in, turning 180 degrees counter clockwise, and releasing.



Override Activated Normal Operation

6 MANUAL and PWM

Mount the Valve Manifold (hardware not included):

- A mounting template is provided.
- Ensure implement frame does not interfere with adjustment of the Flow Control Knobs.
- Ensure there is room to remove the Solenoids for service and to activate the manual override.
- Use two 5/16" grade 5 bolts for mounting.

7 MANUAL

- Route the Implement Cable from the implement hitch to the valve manifold and connect:
- Connect wire marked PUMP 1 to the Solenoid on the Pump 1 side of the Valve Manifold.
 - Connect wire marked PUMP 2 to the Solenoid on the Pump 2 side of the Valve Manifold.
 - Secure cable with cable ties to avoid dragging, snagging, and pinch points.

PWM

Connect PWM control cables (not supplied) from the PWM Controller (not supplied) to the Pump 1 and Pump 2 Solenoids with 2 pin Deutsch connectors (DT06-2S).

Note: Male 2 pin connectors with pigtails are provided for convenience. Pigtails: **RED wire = Signal** **BLACK wire = Ground**

8 MANUAL and PWM

Measure to determine the hose sizes and lengths needed. The tables below are provided to make a shopping list of hoses, couplings, and fittings to complete the installation.

Connect the return line to the tractor's Low Pressure Return Port to prevent motor seal damage.

General hose recommendations:

- Hose diameter is critical to minimize heat generation and ensure efficient, trouble free operation.
- Allow extra length as needed for turning and implement folding.

Tractor → Manifold Hoses

Hose Description	Hose Diameter	Hose Length	**Tractor End	Valve Manifold / Tee
Valve Manifold Supply	5/8"			#10 JIC
Valve Manifold Return	3/4"			#10 JIC
Load Sense Line (optional)	3/8"			#6 JIC

Manifold → Pump Hoses

Hose Description	Hose Diameter	Hose Length	Valve Manifold / Tee	Pump Connection
Pump 1 - Supply	* 1/2"		#8 JIC	1/2" FNPT
Pump 1 - Return	* 1/2"		#8 JIC	1/2" FNPT
Pump 2 - Supply	* 1/2"		#8 JIC	1/2" FNPT
Pump 2 - Return	* 1/2"		#8 JIC	1/2" FNPT

* If longer than 30 feet - increase hose by one size.

** Consult your tractor manual for the proper couplers and connections.

9 MANUAL and PWM

Perform these steps prior to connecting hoses:

PC Closed System:

- Install restrictor insert (supplied with pump) into the motor inlet port fitting of both pumps. The inlet port is marked I.

LS Closed System:

- Flow Limiters are recommended to prevent overspeeding**
 Remove the motor inlet adapter fittings and installing the correct flow limiters (sold separately) in the inlet ports (marked I) of both pumps.
- Power Beyond Connection**
 - Remove plug from LS Port on Valve Manifold and install LS Port Fitting
 - Connect hose to Power Beyond load sense port on tractor.

- 10** Refer to the Instruction Manual for directions on flow settings and operation.