HYDRAULIC MULTIPLIER KIT

PARTS LIST

Part #EH200KL

Installation Guide

HYDRAULIC MULTIPLIER KIT
Part No. EH200KL

RANKIN EQUIPMENT CO.

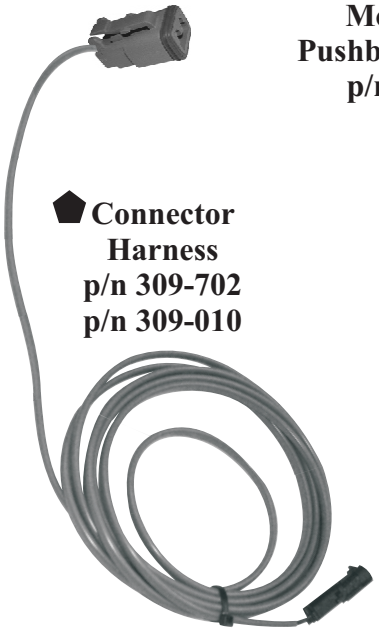
Parts List

- Valve Body p/n 302-606

- V-Back Momentary Pushbutton Switch p/n 309-704

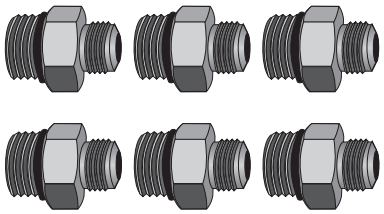
- Fuse Kit w/ Terminals p/n 300-010

- Connector Harness p/n 309-702 p/n 309-010



- Installation Guide p/n 233-606

- Fittings (6) p/n210-496



Warning

TO AVOID DEATH OR SERIOUS INJURY:

- Park the tractor on level ground, apply parking brake, disengage PTO, lower all implements to the ground, shut off engine and remove the key.
- Read and thoroughly understand tractor and implement or attachment owner's manual before installing or operating this valve.
- Escaping hydraulic fluid under pressure can have sufficient force to penetrate skin, be sure to relieve all pressure before disconnecting lines. Before applying pressure, be sure all connections are tight and lines not damaged. Fluid escaping from a very small hole can be almost impossible to see. Use a piece of cardboard or wood, rather than your hands, to search for suspected leaks. If injured by escaping fluid, see a doctor at once. Serious infection or allergic reaction will develop if proper medical treatment is not administered immediately.

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VALVE BODY MOUNTING

Caution

Before installation, please:

- Lower loader to ground, level bucket, and shut off engine. Relieve hydraulic pressure by activating control levers several times.
- Disconnect the negative (-) cable at the battery before assembling.

Note: All ports in the valve are -10 SAE O-ring, 7/8-14. Do not use Teflon tape, pipe dope, etc. on threads in this body. Lubricate threads and O-rings on fittings with hydraulic oil before installing into valve body. Valve mounting is unrestricted. It can be installed with solenoid up, down, or horizontal. Make sure that the top of the solenoid does not contact metal.

Use the two integral mounting holes in the valve body to attach to existing framework..

ELECTRICAL INSTALLATION

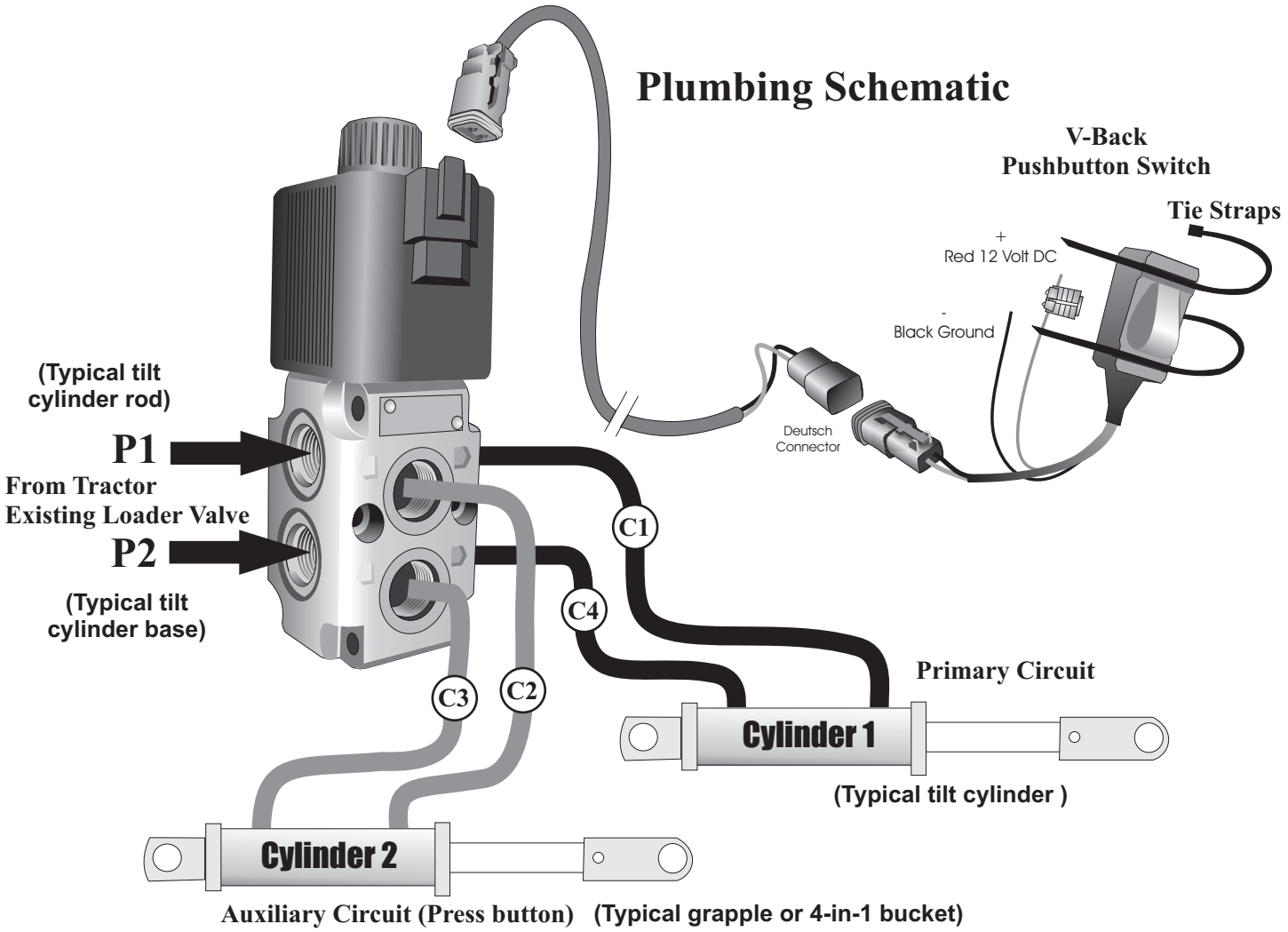
The V-Back Pushbutton switch is mounted to an existing control handle such as the SCV lever. Mount the switch to the handle with the tie straps so that the button can be easily pressed while operating the lever. Route wiring from the switch to the valve and secure it with the cable ties provided.

CAUTION: The valve should be mounted and connected to the wire harness before the control switch is connected to a power source. This will prevent accidental shorting of the control wires to ground.
The valve and control are designed to operate on a 12-volt NEGATIVE GROUND or POSITIVE GROUND systems only. Connection to any other type of electrical system will likely result in severe and immediate damage to the control and/or solenoid.
Power should be taken from a location at the fuse panel or key switch that is only “hot” when the engine is running. This is to prevent the battery from being drained when tractor is not in use. The power connection (red wire) MUST BE FUSED (provided in kit) to protect the wiring in case of a short. Locate the fuse as close to the source of power as possible. Connect the black wire to the chassis for ground.

TYPICAL HYDRAULIC ROUTING

Disconnect the bucket cylinder hoses from the loader control valve at the hydraulic steel lines. Install the fittings on the diverter valve. Install the disconnected hydraulic cylinder hose to P2 (tilt cylinder base) and the P1 (tilt cylinder rod) ports on the diverter valve. Install hydraulic hoses (dealer supplied) from the C4 port (tilt cylinder base) and the C1 port (tilt cylinder rod) to the corresponding loader steel lines. The hydraulic hoses from the 4 in 1 bucket or grapple assembly should be connected to the C3 and C2 ports on the diverter valve. The illustration top right can be used for quick reference as well.

Safety check all connections before reconnecting the negative cable to the battery.



OPERATION

In the neutral state, the flow path to the primary circuit (C1, C4) is open. By pressing the V-Back pushbutton the operator de-energizes the primary circuit and energizes the auxiliary circuit (C2, C3) for as long as the button is pressed. By energizing either circuit the operator can direct hydraulic oil down that circuit with the existing control valve. This valve selects the circuit, the existing lever extends and retracts the cylinder. This valve uses spool-type cartridge valves for controlling the flow of oil. These cartridges have a small amount of internal leakage. Loads held in place for extended periods of time may eventually settle.

CAUTION: Do not loosen or remove any fittings or the valve cartridge while there is pressure in the system or a load is being held up by the valve.

MAINTENANCE

As with any pieces of equipment, periodic maintenance will help provide longer life and trouble-free operation of your valve.

Periodically inspect those electrical connections which are exposed to the elements for signs of corrosion or other damage. Replace any terminals that look as if they might fail in the field.
Inspect the cable connecting the switch to the valve. Normal operation over time can cause a cable to move to a dangerous area. If the cable is in any danger of being crushed or cut, move it to a safer area and secure it. Check the hydraulic hoses connected to the valve. Wipe the body of the valve off and look for leaks. Tighten or replace any fitting you suspect of leaking. Inspect the hydraulic hoses for signs of leaking, cracking, or bulging. Replace any hose that shows these signs of impending failure.

TROUBLESHOOTING

If the valve was previously working the trouble is most likely the result of a blown fuse, damaged wiring, or a bad switch. If this is a new installation, carefully check the hydraulic connections to make sure that the valve has been installed as shown in the diagram. Also inspect tips and couplers for proper mating. Incompatible couplers will usually not allow the ball to seat properly and prevent a good hydraulic connection.

ELECTRICAL TROUBLESHOOTING

A simple way to determine if a solenoid is being energized is by touching the large mounting nut on the top of the coil with a screwdriver. The coil is an electromagnet and will attract the screwdriver when the power is on. If the screwdriver does not stick to the top of the coil, use a voltmeter to check for voltage between the coil terminal and mounting nut. If the voltage is at least 11 volts, the valve should be functioning. When the coil is energized, a click should be heard from the valve. The sound may be muffled, however, if the valve is full of oil or under pressure. If the voltage is low, check the voltage at the source where the power wire for the control was connected. If no voltage is found, try measuring the voltage between the coil terminal and the tractor frame. If voltage is indicated, the valve is not being grounded. Check the black ground wire. If no voltage is indicated between the coil wire and the ground, first check the fuse and then the hot wire to the control.

HYDRAULIC TROUBLESHOOTING

If none of the circuits work and the solenoid coils are being operated with at least 11 volts (measured at the coils), check that the supply connections from the tractor remote to the valve are correct. Check that the cylinders are connected to the valve as shown in the diagram. If necessary, remove the valve and connect the cylinder/motor to the remote outlet to confirm that the supply hoses and tips are in working order.

WARNING

To avoid serious injury or death, use extreme care to make sure all individuals are safely clear from equipment and the nearby area whenever operating remote valve control switches! Operating electrical controls (even when the remote lever is in neutral or the engine is stopped) will result in the valves operating and may result in equipment moving suddenly without warning. Stay clear of all valves, lines and cylinders when operating controls.

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