



# OPERATORS MANUAL TROUBLESHOOTING SECTION



# 1. TROUBLE SHOOTING PROCEDURES

This Trouble Shooting Chart is provided for reference to possible loader operational problems.

Determine the problem that best describes the operational problem being experienced and eliminate the possible causes as listed by following the correction procedures.

For further assistance contact your dealer.

## 1.1. TROUBLE SHOOTING FOR ALL LOADERS

| PROBLEM  | POSSIBLE CAUSE   | CORRECTION   |
|--|--|--|
| <b>Lift and Tilt Cylinders inoperative</b>   | Low hydraulic fluid level.   | Check and replenish hydraulic fluid.   |
|  | Hydraulic hoses connected improperly.  | Check and correct hydraulic hose connections   |
|  | Hydraulic Hoses to/from loader valve blocked.  | Check for damaged (kinked) hoses, etc.   |
|  | Loader valve or tractor main relief valve stuck open.                                  | Check system pressure. Repair or replace relief valve.   |
|  | Low system pressure supplied from hydraulic pump.                                      | Check system pressure. Repair or replace pump.   |
|  | Loader valve linkage broken.   | Inspect. Repair as required.   |
|  | Quick disconnect coupler(s) are not fully connected.                                   | Check coupler connections. Replace coupler(s) if necessary.  |
|  | Hydraulic hose or tubeline blockage.   | Check all hoses and tubes for leaks, damage, or restrictions. Replace damaged or restricted hoses or tube lines. |
| <b>Lift and/or tilt cylinders operate in wrong direction relative to valve handle position</b>       | Cylinder piston assembly defective (not sealing).                                      | Check cylinders for internal leakage as described in service section under cylinder leakage tests.               |
|  | Loader valve blockage.   | Inspect for blockage. Disassemble valve if necessary.  |
| <b>Lift and/or tilt cylinders operate in wrong direction relative to valve handle position</b>       | Hydraulic hoses connected incorrectly.   | Correct hydraulic hose connections.  |
| <b>Attachment will dump but will not rollback (Only if your loader valve is equipped with regen)</b> | Hydraulic circuit connected incorrectly.   | Refer to plumbing diagram and correct hose connections.  |
| <b>Slow or erratic lift</b>  | Low hydraulic fluid level.   | Check and replenish hydraulic fluid.   |
|  | Cold hydraulic fluid.  | Allow hydraulic system to warm up to operating temperature.  |
|  | Engine R.P.M. too slow (hydraulic pump R.P.M. too slow).                               | Increase engine speed to obtain satisfactory loader operation.   |
|  | Excessive weight in bucket. Material weight exceeds maximum specified loader capacity. | Reduce material load.  |
|  | Loader valve linkage binding/defective.  | Check loader valve linkage and repair if worn/defective.   |
|  | Aeration of hydraulic fluid  | Refer to "Aeration of Hydraulic Fluid".  |

| <b>PROBLEM</b>  | <b>POSSIBLE CAUSE</b>  | <b>CORRECTION</b>  |
|---|--|--|
| <b>Inadequate lifting capacity</b>  | Quick disconnect coupler restriction or coupler.                           | Check coupler connections. Repair or replace.  |
|   | Hydraulic hose or tubeline restriction (hoses/tubeline kinked or pinched). | Check hoses and tubelines for evidence of restriction.   |
|   | Lift cylinder piston assembly leakage.                                     | Check cylinders for leakage. Repair as needed.   |
|   | Relief valve erratic or set below specifications.                          | Check and reset relief valve setting as needed.  |
|   | Loader valve leaking internally. (Bypassing fluid within valve.)           | Replace loader valve and recheck operation.  |
|   | Inadequate hydraulic pump capacity.  | Refer to "Hydraulic Pump Capacity Inadequate".   |
|   | Engine R.P.M. too slow.  | Increase engine R.P.M.   |
|   | Excessive load – material weight exceeds specified loader capacity.        | Reduce Load.   |
|   | Relief valve setting below specifications.                                 | Check and reset relief valve setting as needed.  |
|   | Lift cylinder piston assembly leakage.                                     | Check cylinders for leakage. Repair as needed.   |
| <b>Aeration of Hydraulic Fluid (generally indicated by foamy appearance of fluid).</b>                | Loader valve leaking internally.   | Replace loader valve and recheck operation.  |
|   | Hydraulic pump defective.  | Refer to "Hydraulic Pump Capacity Inadequate".   |
|   | Low hydraulic fluid level.   | Check and refill hydraulic system to proper level.   |
|   | Air leaking into suction side of hydraulic pump.                           | Check for loose or defective connections between reservoir and hydraulic pump.                   |
| <b>System relief valve squeals.</b>   | Hydraulic fluid foaming due to improper hydraulic oil usage.               | Refer to Tractor Operator's Manual and replace hydraulic oil using recommended hydraulic oil.    |
|   | Cold Hydraulic Fluid.  | Allow hydraulic fluid to warm up to operating temperature.                                       |
|   | Excessive load in bucket. Weight exceeds specified loader capacity.        | Reduce load.   |
|   | Relief valve setting below specifications.                                 | Check and reset valve setting as needed.   |
| <b>Loader drops with loader valve spool in "Centered" position (no external oil leakage evident.)</b> | Hydraulic hose, tubeline, or quick disconnect coupler restriction.         | Check for evidence of restriction in hydraulic oil flow. Repair or replace defective components. |
|   | Cylinder Piston assembly leakage.  | Check cylinders for leakage.   |
|   | Loader valve internal leakage.   | Replace loader valve and recheck.  |

| <b>PROBLEM</b>  | <b>POSSIBLE CAUSE</b>   | <b>CORRECTION</b>   |
|---|---|---|
|   | Note: A gradual drop over an extended period of time is a normal condition.                                     | Run Leakage Test to see if hydraulic components meet specification.   |
| <b>Loader valve spool(s) will not return to centered position.</b>                                  | Valve handle linkage binding.   | Determine origin of binding and repair.   |
|   | Loader valve spool centering is broken.   | Replace centering spring.   |
|   | Loader valve spool binding in valve body spool bore.  | Disassemble valve for inspection and repair.  |
| <b>Loader bucket moves freely after dumping load</b>  | Tilt cylinder cavitation has occurred.  | Use of regen function (if equipped) while dumping load will eliminate problem.<br><br>Contact Factory for optional orifice sizes. |
| <b>External hydraulic fluid leakage.</b>  | Loose hydraulic connection.   | Tighten loose connections.  |
|   | Defective hydraulic hose, tubeline, adapter fitting or adapter fitting o-ring.                                  | Check for origin of oil leak and replace defective part.  |
|   | Loader valve o-rings defective.   | Replace defective o-rings.  |
|   | Loader valve spool or body damaged or worn.   | Replace loader valve.   |
|   | Cylinder rod packing set leakage.   | Check cylinders for leakage. Repair as needed.  |
| <b>Hydraulic pump capacity inadequate.</b>  | Cold hydraulic fluid.   | Allow hydraulic fluid to warm up to operating temperature.  |
|   | Engine R.P.M. too slow.   | Increase engine R.P.M.  |
|   | Low hydraulic fluid supply.   | Refer to Tractor Operator's Manual for service recommendations.   |
|   | Hydraulic hose restriction.   | Check for evidence of restriction in hydraulic hoses.   |
|   | Hydraulic pump defective.   | Refer to Tractor Operator's manual for recommended service procedures. Replace hydraulic pump if determined to be defective.      |
| <b>Lift cylinder rods bend when lift cylinders extended.</b>  | Excessive shock load on lift cylinders during transport.  | Replace defective parts. Review and observe proper and safe operational practices.  |
| <b>Bucket cutting edge wear is uneven side to side</b>  | Bucket is not level to ground.  | Check rear tire inflation and adjust to level bucket to ground.   |
| <b>Bucket cutting edge wear rate is excessive. (Wear rate is even across full width of bucket).</b> | Incorrect operational practices. Excessive down pressure placed on bucket when used on hard abrasive surfaces.  | Refer to operation – scraping section for correct operating procedures. Utilize float position.                                   |
|   | Bucket wear pads worn.  | Replace wear pads.  |
|   | Note: Extensive use of bucket on concrete or asphalt surfaces will accelerate wear rate of bucket cutting edge. |   |

| <b>PROBLEM</b>   | <b>POSSIBLE CAUSE</b>                    | <b>CORRECTION</b>  |
|--|--|--|
| <b>Loader is slow and/or will not dump.</b>                  | Hydraulic oil too heavy.                 | Change to proper oil.  |
|  | Oil filter plugged.                      | Clean or replace filter.   |
|  | Hydraulic pump worn.                     | Repair or replace pump.  |
|  | Oil line restricted or leaking.          | Check all hoses and tubes for leaks, damage, or restrictions. Replace damaged or restricted hoses or tube lines. |
|  | Loader valve does not shift properly.    | Inspect clean, repair, or replace valve.   |
|  | Cylinder leaks internally.               | Replace seals.   |
| <b>Loader chatters or vibrates when raising or lowering.</b> | Faulty valve.                            | Repair or replace valve.   |
|  | Air in hydraulic system.                 | Cycle lift cylinders and tilt cylinders.   |
| <b>Slow leakdown.</b>  | Oil level too low.                       | Add oil as required.   |
|  | Worn loader valve.                       | Have authorized KMW dealer replace valve.  |
| <b>Attachment will dump but will not rollback</b>            | Worn cylinder piston seals.              | Have authorized KMW dealer replace seals.  |
|  | Hydraulic circuit connected incorrectly. | Check that loader valve is connected to tilt cylinder correctly if valve is equipped with regen function.        |

## 1.2. TROUBLE SHOOTING OPTIONAL LOADER VALVE

If your loader/tractor combination is equipped with an optional KMW Cable Controlled Loader valve and unit reacts in the following manner.

| <b>PROBLEM</b>  | <b>POSSIBLE CAUSE</b>   | <b>CORRECTION</b>  |
|---|---|--|
| <b>Nothing happens when handle switch is activated</b>                    | Tractor switch is not on.                                       | Turn tractor switch on.  |
|   | Power circuit is not connected.                                 | Connect to tractor power supply that is only activated when tractor switch is on.  |
|   | Switch does not have 12 volts.                                  | Trace circuit and find cause.  |
|   | Solenoid valve does not have 12 volts when switch is activated. | If not, check switch by jumping terminal wires on switch in handle. If 12 volts are at solenoid valve, replace switch    |
| <b>If you have 12 volts at solenoid valve but valve does not function</b> | Spool is sticking.  | Push in on each side of valve spool to free up spool as shown in installation instructions included with your valve kit. |
|   |   | Contamination in hydraulic oil causes spool to stick. Replace oil and filter.  |
|   |   | Solenoid valve section is damaged. Replace solenoid valve section.   |

### 1.3. TROUBLE SHOOTING OPTIONAL COMFORT DRIVE

| PROBLEM                                     | POSSIBLE CAUSE  | CORRECTION   |
|---|---|--|
| <b>Comfort drive does not activate.</b>     | Turn on comfort drive and check to see if 12 volts are at solenoid. | If 12 volts are not available, inspect and repair as follows.                                    |
|   | Solenoid not properly grounded                                      | If not properly grounded, repair.  |
|   | Fuse  | replace if required  |
|   | Wire damaged or cut.  | If damaged repair or replace   |
|   | Switch does not have 12 volts.                                      | Trace circuit and find cause.  |
|   | Tractor switch is not on.   | Turn tractor switch on.  |
| <b>Comfort drive does not work properly</b> | Power circuit not connected.  | Connect to tractor power supply that is only activated when tractor switch is on.                |
|   | Pre-charge pressure is not correct                                  | Check pre-charge pressure of each end of accumulator and correct as required.                    |
|   | Leak in fluid or gas side of accumulator                            | Repair and replace accumulator seals   |
|   | Circuits not connected correctly                                    | Trace circuits and make sure large end of accumulator is connected to base end of lift cylinder. |

### 1.4. TROUBLE SHOOTING OPTIONAL SELF LEVELING

| PROBLEM  | POSSIBLE CAUSE   | CORRECTION   |
|--|--|--|
| <b>Bucket does not maintain level while raising at high idle.</b>      | Flow divider spool stuck.  | *Check flow divider spool for free operation. (Check for contamination.)   |
|  | Raise counterbalance valve stuck.                                  | *Remove and check for contamination.   |
| <b>Bucket does not maintain level while lowering at high idle.</b>     | Flow divider spool stuck.  | *Check flow divider cartridge for free operation.  |
|  | (Open Center system only) Load drop modulator valve stuck.         | *Remove and check for contamination. (Spool should move freely in bore.)   |
| <b>Excessive bucket drift in the dump direction.</b>                   | Bad bucket cylinder seal.  | Repack cylinder.   |
|  | Raise counterbalance valve stuck.                                  | *Remove and check for contamination.   |
|  | Anti-Cavitation relief malfunction.                                | *Check Anti-Cavitation valve cartridge. Remove and check for contamination or replace. Contact factory for adjustment information. |
|  | Excessive loader control valve bucket spool port leakage.          | Check with Factory on acceptable valve spool leakage rate. Replace if required.  |
| <b>Bucket moves freely when putting down pressure on cutting edge.</b> | Pilot operated check is not closing (cartridge plus pilot piston). | *Remove and check for contamination. Replace if required.  |

| <b>PROBLEM</b>  | <b>POSSIBLE CAUSE</b>  | <b>CORRECTION</b>  |
|---|--|--|
| <b>Loader bounces with lowering load.</b>   | Low hydraulic flow.  | Increase tractor RPM to increase hydraulic flow.                       |
| <b>Bucket does not maintain Level while raising</b>   | Bucket self leveling is designed to work optimally at high RPM.  | Run engine at med. To high RPM.  |
| <b>Bucket does not maintain Level while lowering on Open Center system.</b>                   | Loader valve lift spool not fully stroked.                       | Fully stroke the valve spool.  |
| <b>Bucket does not maintain Level while lowering on Load Sense and Closed Center systems.</b> | Loader valve lift spool is fully stroked.                        | Feather the loader lift spool.   |
| <b>Self leveling function is delayed after lowering loader.</b>                               | Loader being lowered with attachment against the rollback stops. | Lowering loader with bucket rolled slightly forward will reduce delay. |
| <b>Self-Leveling does not operate after initial hook-up.</b>                                  | Circuit not hooked up correctly.                                 | Check that circuits are hooked up as follows.                          |

| <b>Self Level Valve Ports to Loader Valve</b> | <b>Self Level Valve Ports to Loader Cylinders</b> | <b>Circuit</b> | <b>Color Tag</b> |
|---|---|----------------|------------------|
| 1   | 5   | Lift Base      | Green            |
| 2   | 6   | Lift Rod       | Blue             |
| 3   | 7   | Tilt Base      | Yellow           |
| 4   | 8   | Tilt Rod       | Red              |

**\*NOTE: This service must only be accomplished by an Authorized KMW Service Person. Failure to follow these instructions will void warranty.**