

NEW HOLLAND

62LB

72LB

**REPAIR
MANUAL**



NEW HOLLAND

SERVICE

SECTION 1 - 62LB/72LB MSL/HSL

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**MSL (MECHANICAL SELF LEVELING)
LOADERS**

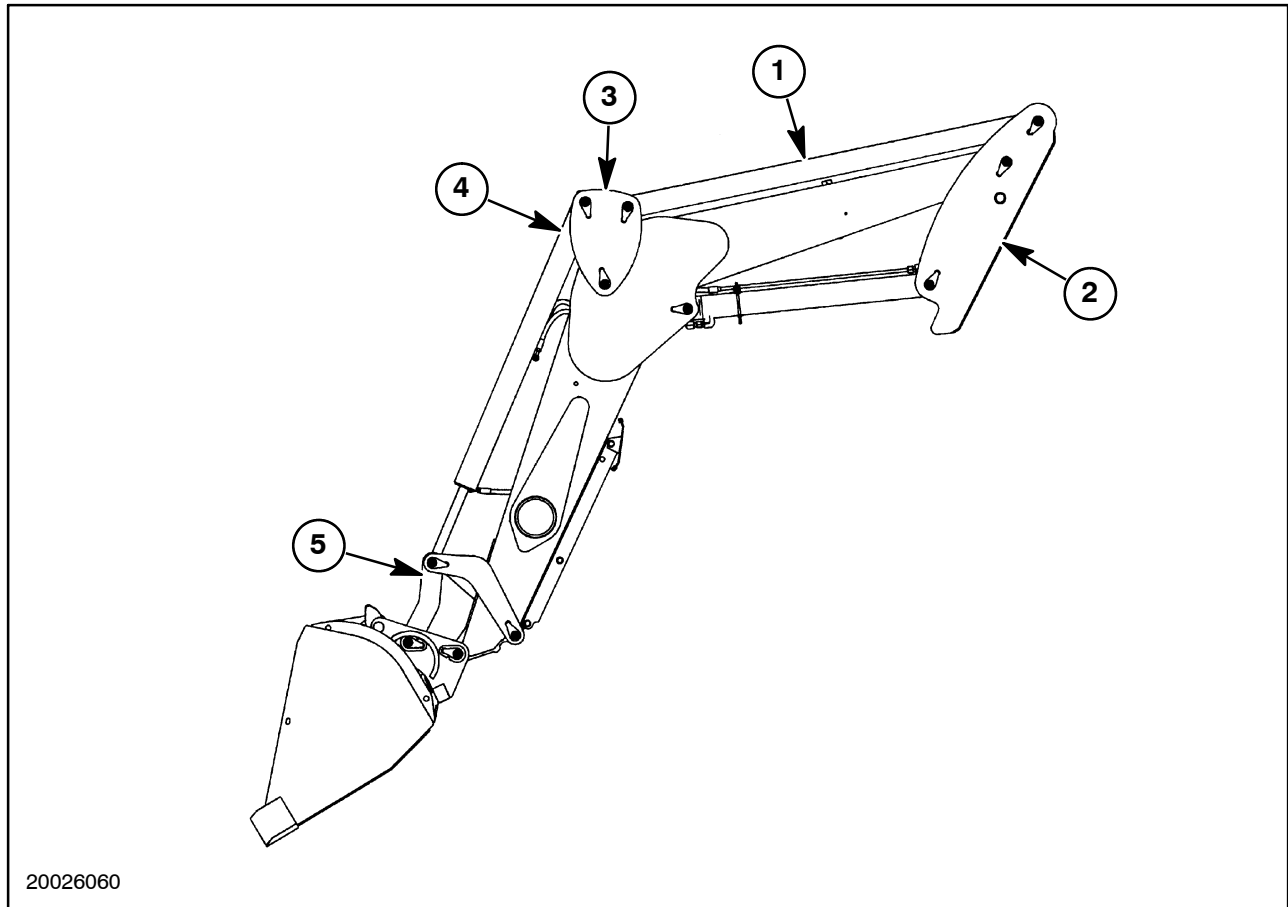
DESCRIPTION OF OPERATION

The 62LB MSL and 72LB MSL loaders are designed to maintain the bucket (or attachment) in a level position as the boom is raised or lowered. The bucket (or attachment) level, is maintained by the MSL system, as long as the bucket cylinders are not activated by the loader control joystick.

The MSL system consists of left and right linkage bars, 1, connected to the loader uprights (towers), 2, extending forward to triangular pivot plates, 3.

The bucket cylinders used on the MSL loaders are longer than the standard loaders, bucket cylinders. The MSL bucket cylinder base ends, 4, are attached to the pivot plates, 3, while the rod ends are attached to a four-bar linkage, 5.

The four bar linkage, which attaches to the bucket or attachment, allows increased dump and rollback (curl) rotation.



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During operation, when raising the loader boom with the bucket fully dumped, hydraulic relief is required.

The bucket (attachment), rests against dump stops on the underside of the loader boom when fully dumped. With the bucket in the fully dumped position, the MSL system pushes the bucket (attachment) tighter against the dump stops when the boom is raised. This increases the pressure at the base end of the bucket cylinders, requiring pressure relief.

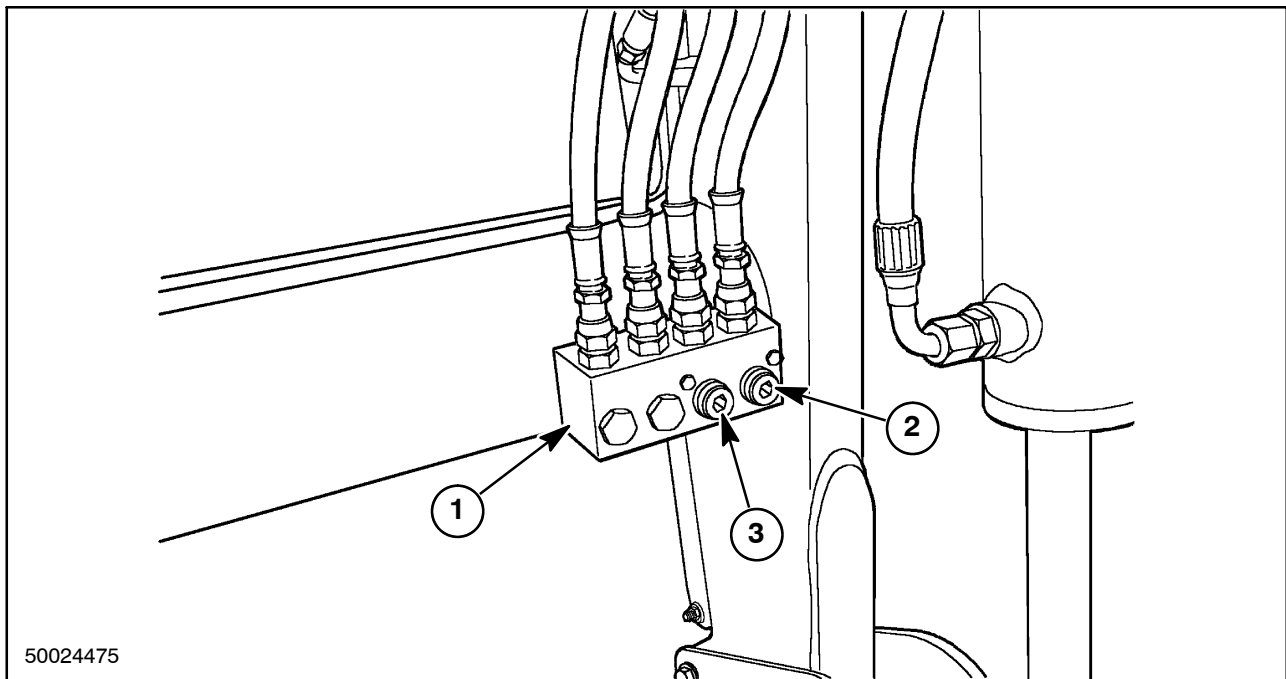
A hydraulic relief block, 1, is incorporated into the system on the mechanical self-leveling (MSL) and hydraulic self leveling (HSL) loaders. The block serves two purposes. The first allows the boom to be raised with the bucket fully dumped (craning operation) (MSL loaders only). The second provides protection to the bucket cylinders from excessive pressure spikes during loader operation (MSL and HSL loaders).

The block incorporates two check valves and two circuit relief valves that can also reverse flow to provide an anti-cavitation function. The two check valves allow oil to flow into either the base end or rod end of the boom cylinders, depending on pressure conditions determined by loader usage.

The two relief valves are connected to the bucket cylinders. The lower pressure relief cartridge, 2, is connected to the bucket cylinder base ends, set at 3200 PSI. The higher pressure relief cartridge, 3, is connected to the bucket cylinder rod ends, set at 3800 PSI. Hydraulic relief is not necessary when lowering the loader boom.

In the first situation described earlier (craning), the block allows the boom to be raised, with the attachment fully dumped against the mechanical bucket stops. When the boom is raised, the MSL linkage compresses the bucket cylinder and forces the attachment against the stops. The pressure in the base end of the bucket cylinders increases until it reaches the relief setting. When this occurs, the oil exits the base ends of the bucket cylinders, through the relief valve. The oil passes through the block to the rod ends of the bucket cylinders, by way of the anti-cavitation function of its relief valve and the rod end of the boom cylinders through its check valve.

In the second situation described earlier (pressure spikes), the block protects the bucket cylinders from excessive pressure spikes during normal loader operation. The following chart shows typical pressure spike situations and the related positions of the check valves.



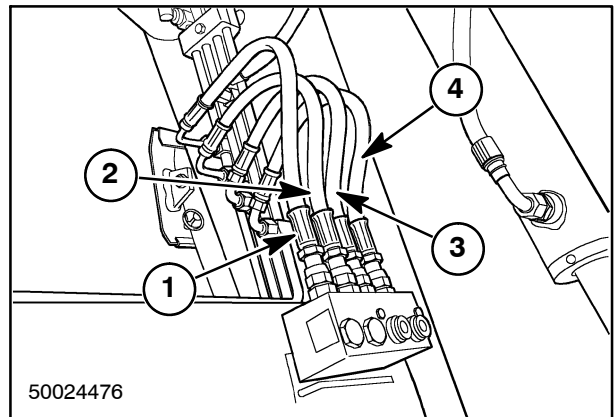
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LOADER OPERATION	BOOM CYLINDER		BUCKET CYLINDER	
	Base	Rod	Base	Rod
Back-dragging w/boom valve in neutral and bucket cutting edge hooks an object	Not Checked	Checked	High Pressure	Not Checked
Back-dragging w/boom valve in float and bucket cutting edge hooks an object	Not Checked	Checked	High Pressure	Not Checked
Filling the bucket w/bucket slightly rolled out	Checked	Not Checked	Not Checked	High Pressure
Filling the bucket w/bucket slightly curled back-bucket sleds up the pile	Not Checked	Checked	High Pressure	Not Checked
Filling the bucket w/bucket slightly curled back-bucket buries in the pile	Checked	Not Checked	High Pressure	Not Checked

IMPORTANT: It is important that the bucket cylinder and boom cylinder hoses are plumbed correctly for proper operation of the MSL relief valve. The pressure settings for the relief valves **MUST** be maintained.

Trace the hydraulic lines from the ports on the relief valve block to the appropriate loader tube fittings as follows:

1. Port C2 - Lift Cylinder (boom) Base
2. Port C1 - Lift Cylinder (boom) Rod
3. Port 2B - Bucket Cylinder Rod
4. Port 2A - Bucket Cylinder Base



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MSL-HSL Relief Block

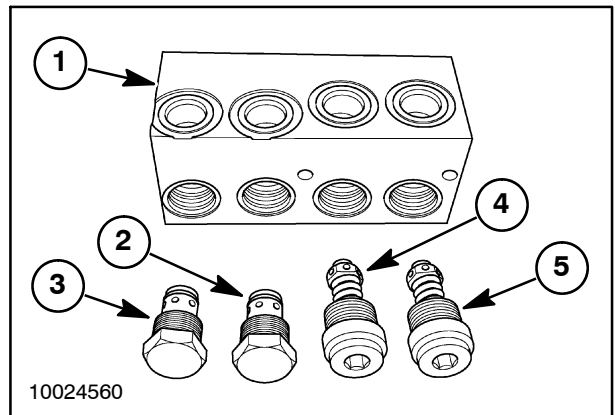
1. Relief Block
2. Check Valve
3. Check Valve
4. High Pressure Relief Cartridge
5. Low Pressure Relief Cartridge

Check Valve Inspection

1. Using a small punch, push in on the check valve plunger. Check plunger for non-binding travel.

NOTE: Plunger is spring loaded.

2. Flush check valve with clean solvent while moving plunger in and out.
3. Use compressed air to clean and dry check valve prior to installation.
4. Reinstall check valve.
5. Check for proper operation. If check valve still does not operate correctly, replace the faulty check valve.



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