



# GRAPPLE BUCKET



PALADIN HEAVY CONSTRUCTION

## REPAIR AND PREVENTATIVE MAINTENANCE GUIDE



# GRAPPLE BUCKET

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# GRAPPLE BUCKET

## MAINTENANCE

The following maintenance procedures should be performed in order to maintain proper operation of the grapple bucket bucket.

PROCEDURE	INTERVAL	NOTES
Check for cracks	daily	Primarily around bucket mounting bosses and hinges
Check bolts tightness	daily	Refer to torque table for specifications
Check edges and wear pads	weekly	Replace if thinning
Check stops for excessive wear	weekly	Build up with weld as needed
		gpmtrc

### **NOTICE**

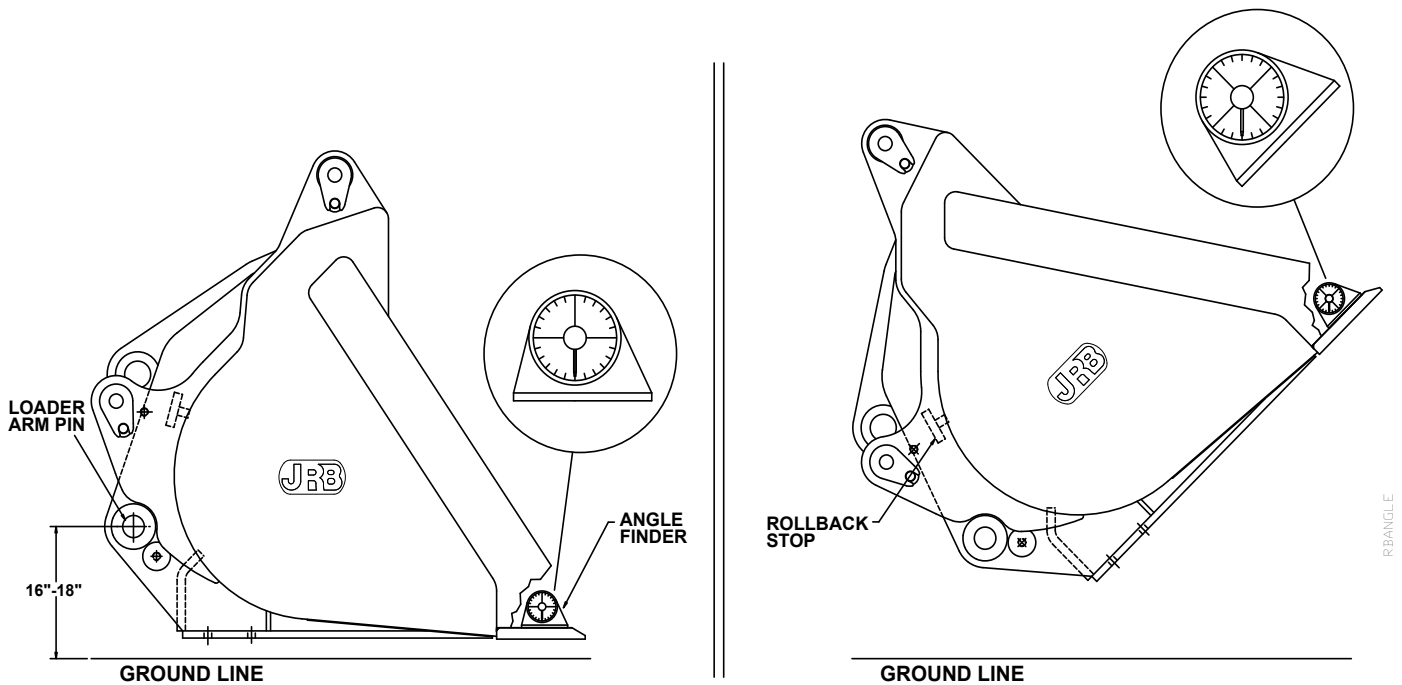
**KEEP AREA BETWEEN CYLINDERS AND BUCKET ASSEMBLY FREE OF DIRT AND DEBRIS. DEBRIS TIGHTLY PACKED BETWEEN CYLINDERS AND THE BUCKET ASSEMBLY WILL RESTRICT NECESSARY MOVEMENT OF THE CYLINDERS AND CAUSE DAMAGE TO THE CYLINDERS DURING OPERATION.**

# GRAPPLE BUCKET

## BUCKET STOP MAINTENANCE ROLLBACK STOPS

The following maintenance procedures should be performed in order to maintain proper degree of dump and rollback. The actual degree of dump for your specific machine is located in the manual for your loader.

Determine the degree of rollback by leveling the bucket and lowering the bucket so that the loader arm pins are 16" to 18" from ground level. Place the degree finder in a level position on the bucket and curl the bucket back to the stops. The reading on the degree finder is the degree of rollback.

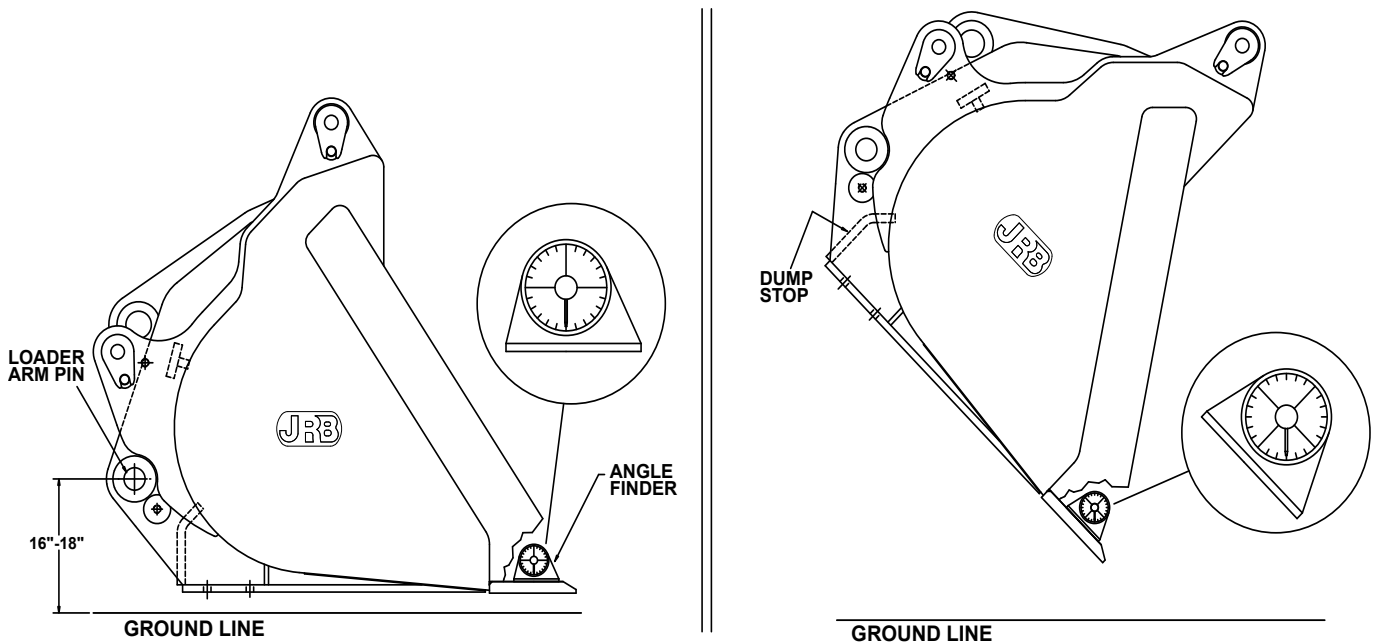


**NOTE: BUCKET SHOWN WITHOUT CLAMPS.**

# GRAPPLE BUCKET

## BUCKET STOP MAINTENANCE CON'T, DUMP STOPS

Determine the degree of dump by leveling the bucket and lowering the bucket so that the loader arm pins are 16" to 18" from ground level. Place the degree finder in a level position on the bucket and dump the bucket to the stops. The reading on the degree finder is the degree of dump.



**NOTE: BUCKET SHOWN WITHOUT CLAMPS.**

To add stop material use a low hydrogen 7018 rod to build up the stop surface. Grind smooth. This may require more than one adjustment until the stop is the correct thickness to obtain the OEM specified degree of dump or roll back.

To remove stop material, grind the stop to the correct thickness to obtain the OEM specified degree of dump or rollback.

# GRAPPLE BUCKET

## COUPLER TO BUCKET FIT MAINTENANCE

The following maintenance procedures should be performed in order to maintain proper fit between the coupler and bucket.

### **WARNING**

**KEEP ATTACHMENT AS CLOSE TO THE GROUND AS POSSIBLE WHEN CHECKING COUPLER-TO-ATTACHMENT FIT. ATTACHMENT MAY DROP WITHOUT WARNING IF NOT PROPERLY SECURED. FAILURE TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH.**

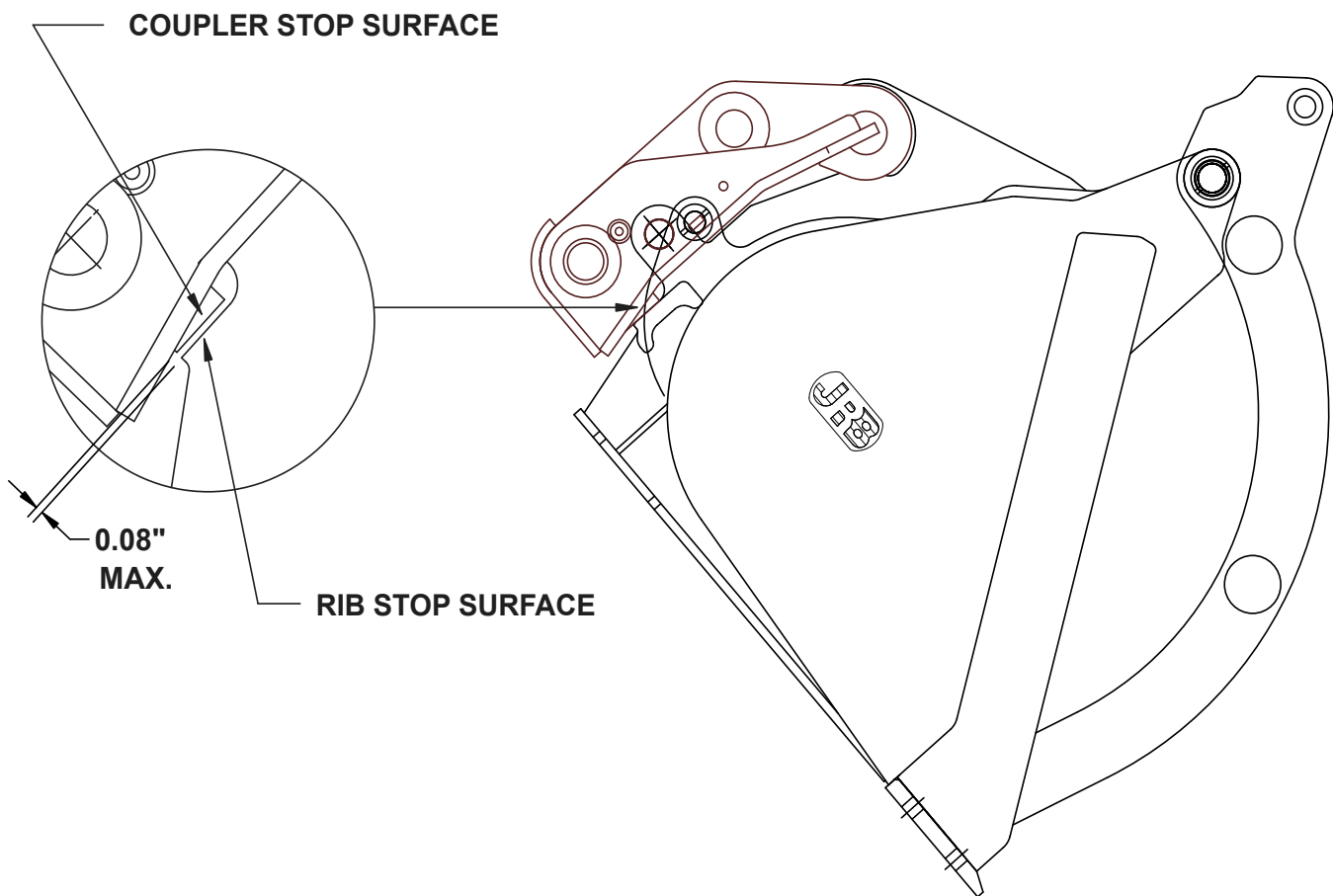
## CHECKING COUPLER-TO-BUCKET FIT

- ❑ Couple bucket to coupler and check that bucket is securely locked into place.
- ❑ Extend the bucket cylinder to roll bucket forward as if to “dump” the bucket.
- ❑ Measure the gap between the coupler stop surfaces and the bucket female rib stop surfaces, the gap should measure between 0.010” and 0.080”.
- ❑ A gap measuring 0.081” and above will need to be repaired in order to improve the coupler-to-bucket fit and eliminate any future fit problems. See “Improving the coupler-to-bucket fit”.

# GRAPPLE BUCKET

## IMPROVING THE COUPLER-TO-BUCKET FIT

- ❑ Disconnect the bucket from the coupler.
- ❑ Use a low hydrogen 7018 rod to add weld build up to the bucket female rib stop surface, grind smooth.
- ❑ Repeat “Checking coupler-to-bucket fit” steps.
- ❑ Repeat “Improving the coupler-to-bucket fit” steps until an allowable maximum gap of 0.080” is reached.



G180CFIT

# GRAPPLE BUCKET

## RELIEF VALVE MAINTENANCE

These instructions apply only to models of the grapple bucket that have a relief valve. Other models have a manifold block only. To determine whether the bucket is equipped with a relief valve or a manifold block, look at the block to see if there is a cartridge installed in the block. For reference see the illustration of the relief valve on the next page.

### NOTICE

**DO NOT OVER TIGHTEN CARTRIDGE WHEN REINSTALLING.  
TORQUE TO 37 FT. LBS. MAXIMUM.**

## REMOVING CARTRIDGE

### STEP 1:

- ❑ Relieve system pressure and position a bucket or other container under the valve to catch any escaping fluid.

### STEP 2:

- ❑ Unscrew cartridge slowly to relieve any trapped pressure.
- ❑ Inspect the cartridge for contamination and seal damage. Make sure the internal springs are not broken by pushing against the ball.

**NOTE: Any time cartridges are removed, seals should be replaced.**

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## REPLACING CARTRIDGE O-RINGS

### STEP 1:

- ❑ Using an o-ring pick or other similar instrument, remove and discard existing backup rings and o-rings (total of 4 per cartridge).

### STEP 2:

- ❑ Slip large replacement main body o-ring (polyurethane) over valve body and seat above nut. Be careful not to damage when passing over threaded portion of valve.
- ❑ Slip replacement cartridge o-ring and backup rings over stem and seat it into the groove closest to the threaded portion of valve as shown.

### STEP 3:

- ❑ Clean cartridge and blow out with air.

### STEP 4:

- ❑ Screw cartridge back into valve body and torque between 33-37 ft. lbs. Once completed, cycle circuit to check operation and for leaks.

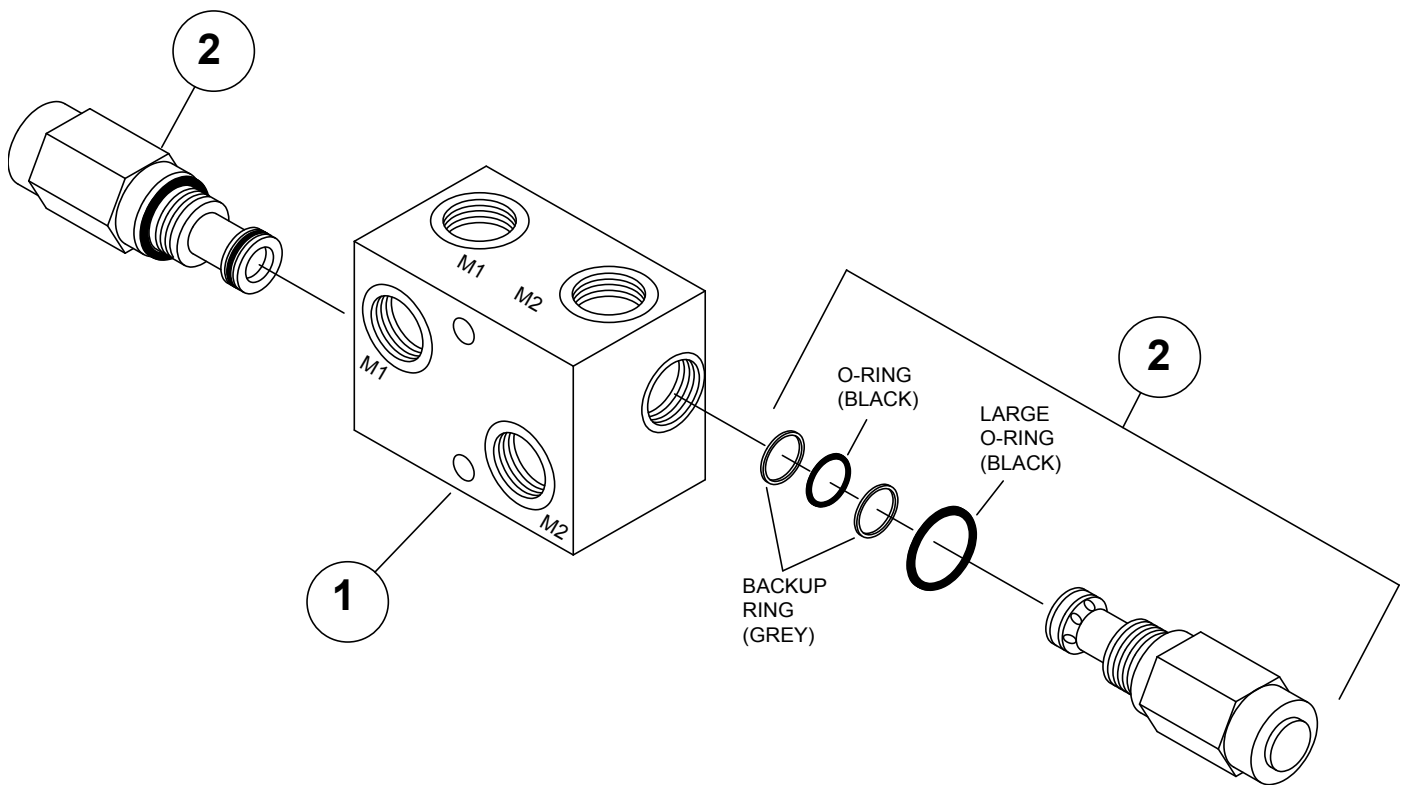
# GRAPPLE BUCKET

## NOTICE

**DAMAGED SEALS OR INCORRECT PLACEMENT COULD ALLOW VALVE TO MALFUNCTION.**

**VALVE BODY:** With the cartridges removed, the manifold can be inspected for contamination. Flush out the manifold and blow out with air.

## RELIEF VALVE ASSEMBLY - A37932

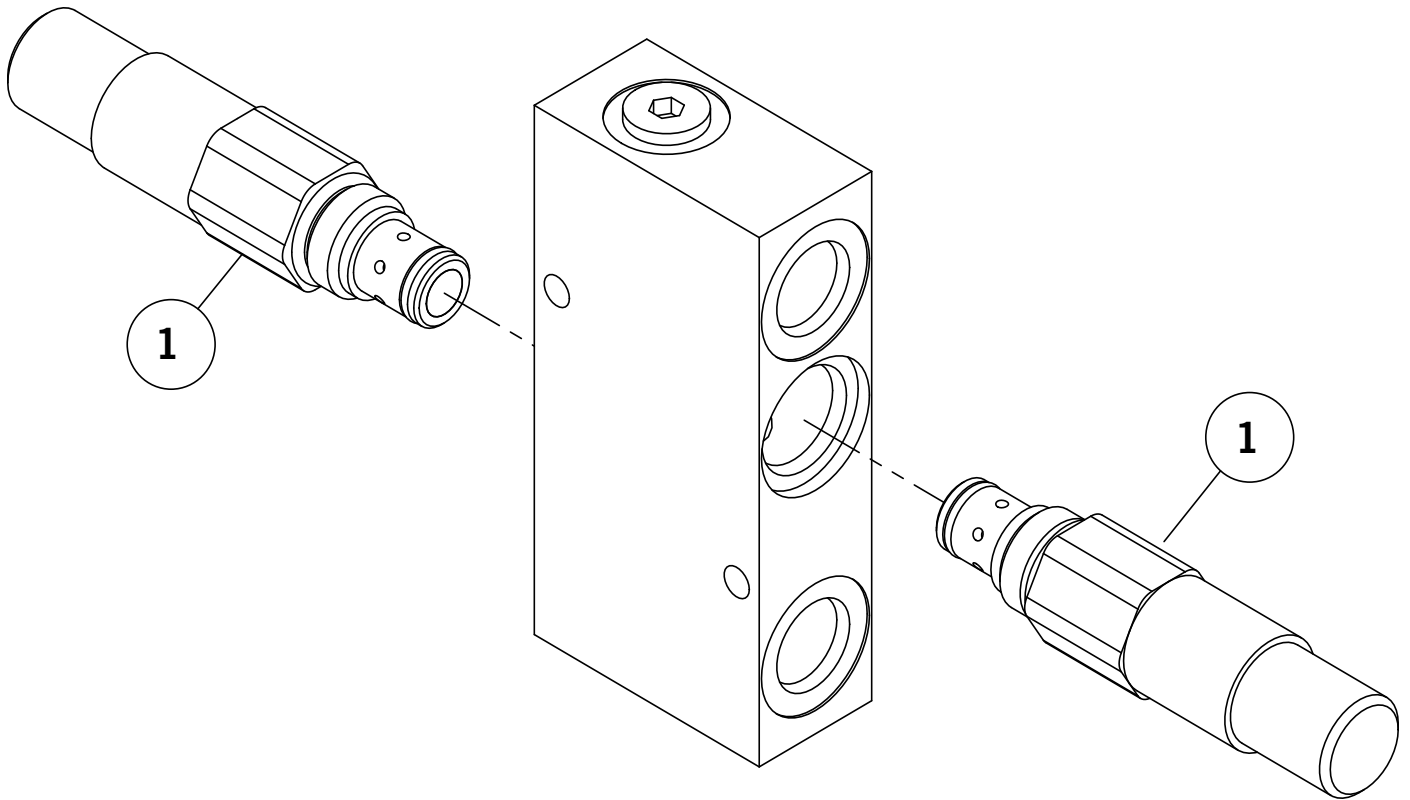


ITEM	QTY.	PART NUMBER	DESCRIPTION
•	1	A37932	RELIEF VALVE ASSEMBLY (includes Items 1 and 2)
1	1	A37823	Valve Body (KFS 3577-01)
2	2	A37776	Cartridge (RV12-26F-0-NC-35/27.5)

Service, maintenance and repair on these products are infrequent and the time involved will vary greatly. Contact JRB® Customer Service at 1-800-428-2538 for assistance in determining the time you should allot for repair.

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## RELIEF VALVE ASSEMBLY - A47436



ITEM	QTY.	PART NUMBER	DESCRIPTION
•	1	A47436	RELIEF VALVE ASSEMBLY (includes Items 1 and 2)
1	2	A47437	Cartridge
2	2	A47448	Seal Kit, Cartridge