

SHOP MANUAL

BINDER

GRADER

GALION MANUFACTURING COMPANY, Galion, Ohio 44833, U.S.A.

DIVISION OF DRESSER INDUSTRIES, INC.

FILE**G****SECTION****1.10** ^{R2}

5/74

FRONT AXLE SPINDLE AND YOKE ASSEMBLY

Instructions in this section apply to the Front Axle Spindle and Yoke Assembly of models indicated and effective with serial numbers shown.

104
104-H
118
160
T-400
T-500
T-600

05790 to 07245
06757 to 07245
05790 and Up
01860 and Up
01001 and Up
02054 and Up
01350 and Up

Standard torques apply in this section unless otherwise indicated.

CAUTION

- ALL** COMPONENTS MUST BE PROPERLY SUPPORTED DURING DISASSEMBLY AND ASSEMBLY.
- ALL** JACKING, HOISTING AND GENERAL WORKSHOP EQUIPMENT REQUIRED FOR THIS OPERATION MUST BE IN GOOD WORKING ORDER.
- EXTREME** CAUTION TO BE OBSERVED AT ALL TIMES TO PREVENT INJURY.
- SAFE** WORKSHOP PRACTICES ARE A MUST.

R2

DISASSEMBLY

Remove eight lug nuts, lugs, tire and rim assembly.

Remove four cap screws, lock washers and wheel hub (1).

Front axle must be adequately supported on blocks or stands prior to removal of wheels.

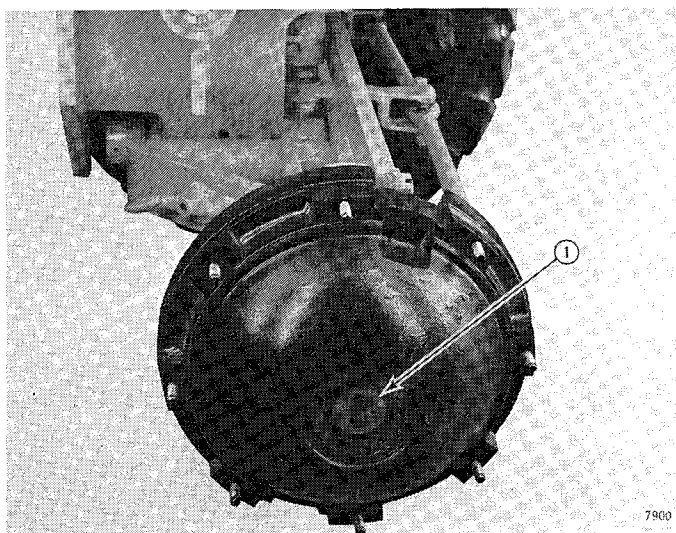


Figure 2

With suitable puller, remove inner bearing cone (1).

Inspect grease seal (2). Replace, if necessary, at time of assembly.

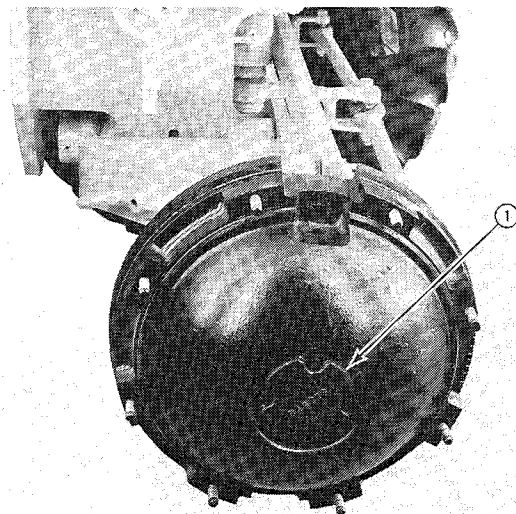
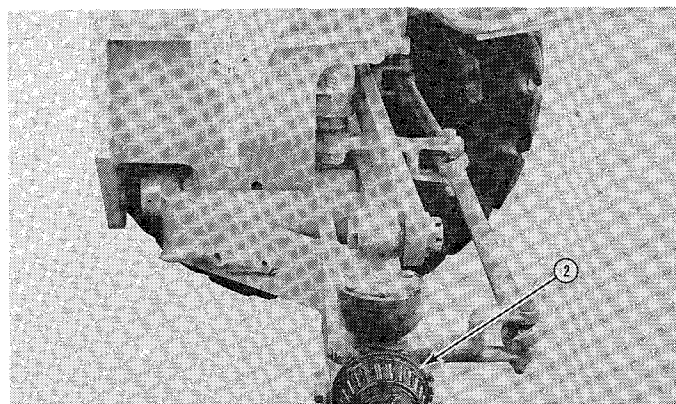


Figure 1

Remove lock wire, two cap screws, bearing retainer plate (1) and shims.

Remove outer bearing by shaking wheel. Bearing will move free.

Remove wheel.



For ease of illustration, the spindle and yoke assembly have been removed from the grader. It is not necessary to remove from the machine for service. The entire servicing steps listed from this point on can be done with the spindle and yoke assembly on the grader.

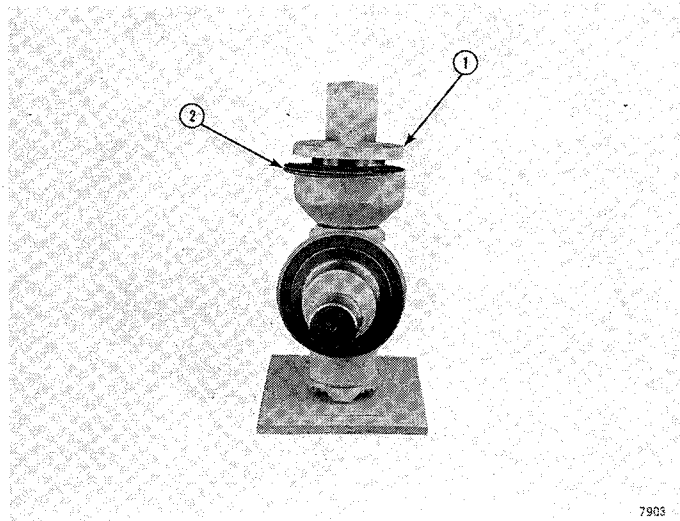


Figure 4

Remove lock wire, three cap screws and bearing retainer (1).

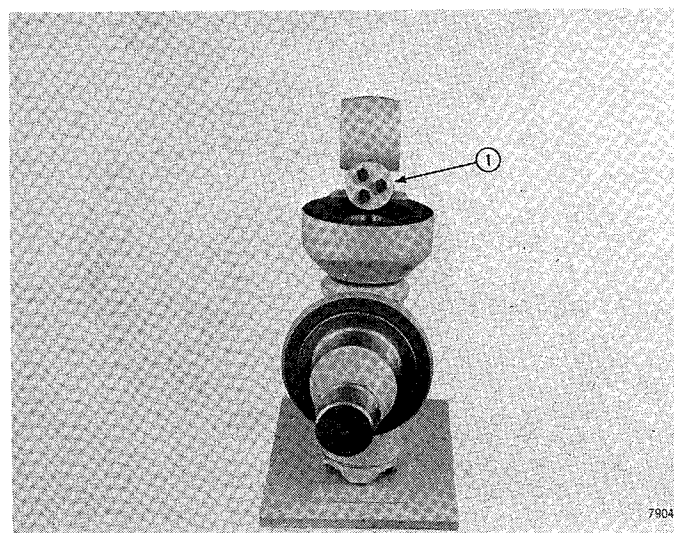
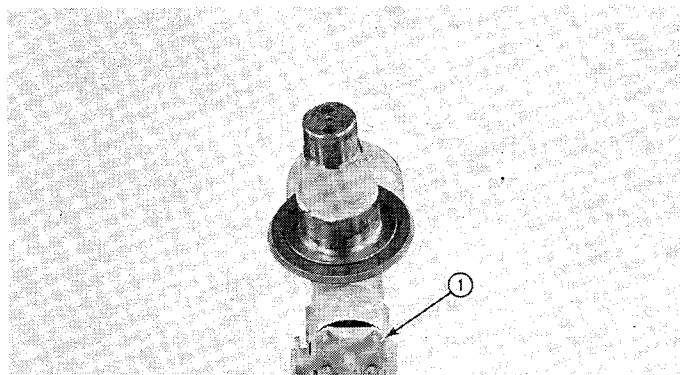


Figure 5



Remove four fillister head cap screws and lower spindle bearing retainer cap (1).

Remove roll pin (1) and remove pivot pin (2) from spindle.

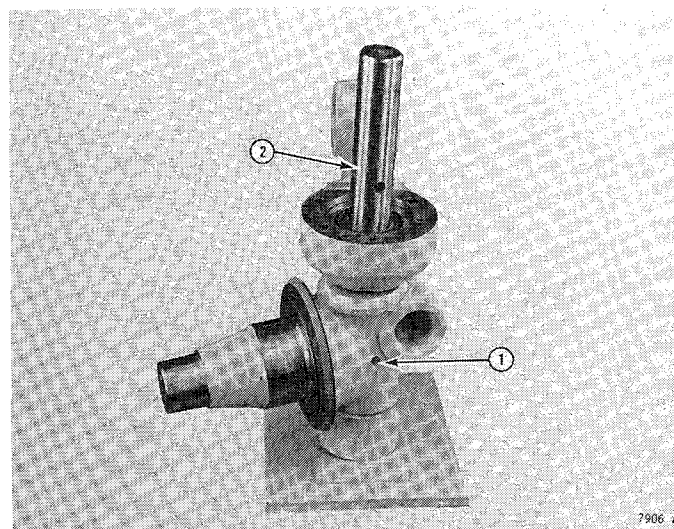


Figure 7

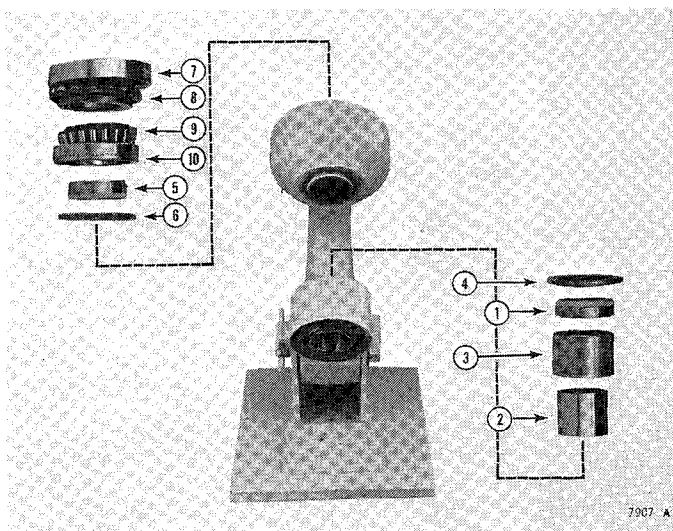


Figure 8

Remove lower seal collar (1), lower pivot pin bearing race (2), pivot pin bearing (3) and bearing seal (4).

Remove upper seal collar (5), pivot pin seal (6), top cup (7), cone (8) lower cone (9) and cup (10).

INSPECTION AND CLEANING

Prior to assembly, bearing cups and cones should be inspected for wear. If excessive wear is indicated, replace bearing cups and cones as a matched set.

Internal surfaces of castings should be inspected for wear and metal filings. Replace casting or dress all surfaces found to be damaged with crocus cloth. Determine cause of damage to casting and remedy at this time, rather than at time of assembly.

ASSEMBLY

Install lower taper bearing cup (1), lower bearing cone (2), upper tapered bearing cone (3), upper bearing cup (4), upper bearing seal (5), seal collar (6).

Install lower pivot pin bearing (7), seal (8) race (9), seal collar (10).

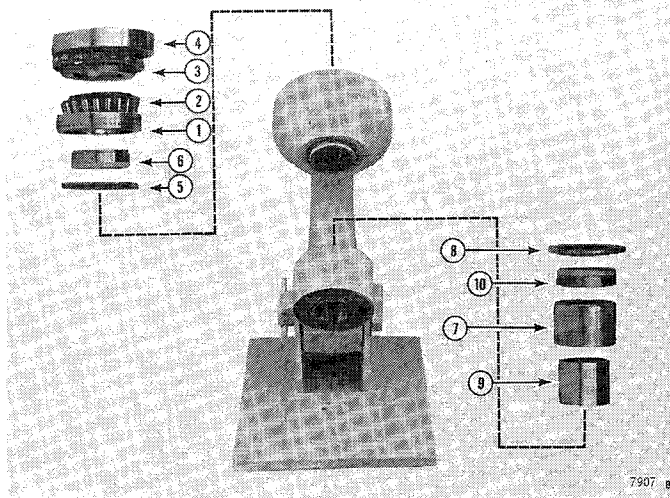


Figure 9

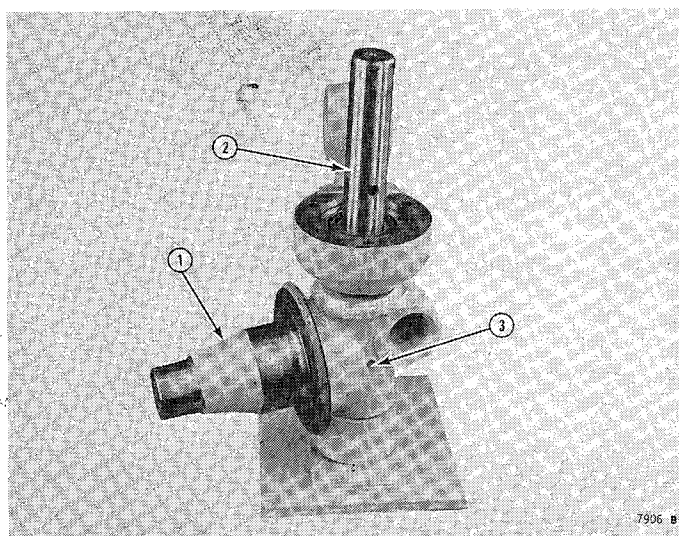
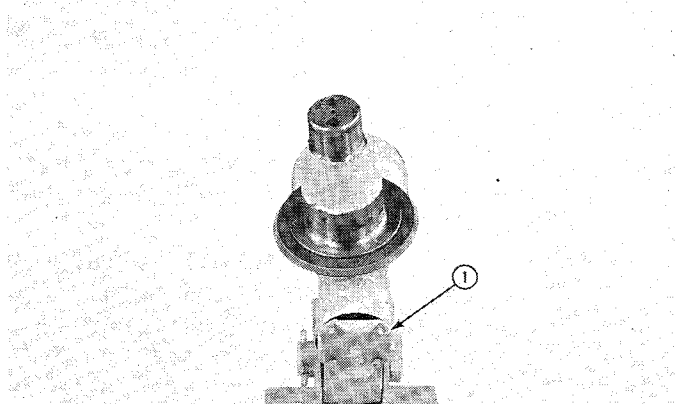


Figure 10

Place spindle (1) in yoke. Install pivot pin (2).

Install roll pin (3) through spindle and pivot pin.

Install lower pivot pin gasket and cap (1) with four fillister head cap screws.



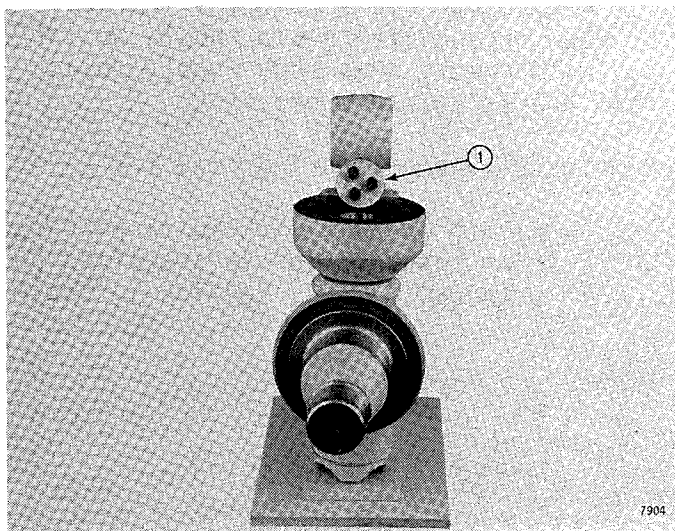


Figure 12

Install pivot pin bearing retainer (1) with three cap screws and lock wire.

Before making bearing adjustments, check for rough edges or burrs along machined surfaces of bearing cap and spindle yoke. Remove with crocus cloth.

With bearing cap (1) in position, install and torque five cap screws to 50 ft. lbs. DO NOT OVER-TORQUE

Measure gap between bearing cap and yoke with feeler gauge. Determine amount of shims (2) required for a zero to .003" preload on pivot taper bearings.

After adjustment is made, move spindle back and forth. A slight drag should be felt.

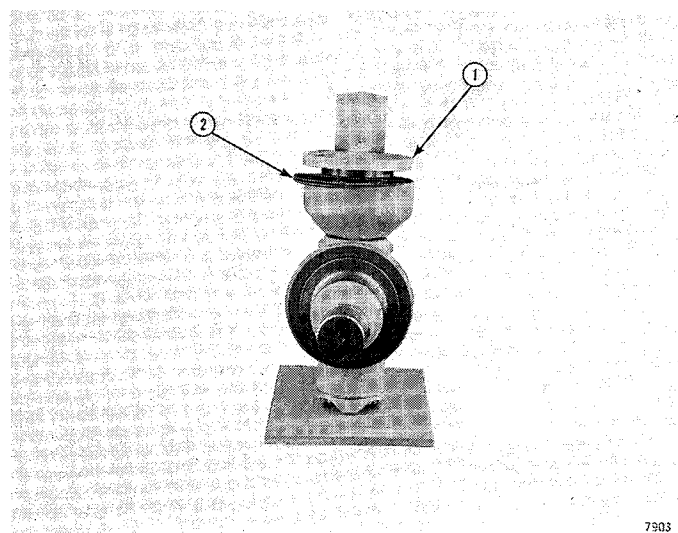


Figure 13

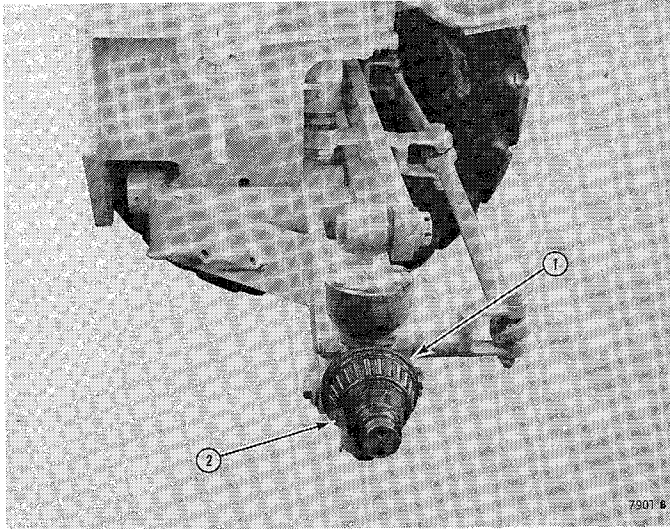


Figure 14

Replace grease seal (1) if necessary. New type Hytrel seals should be installed with groove away from wheel; black inserts toward wheel.

Install inner bearing cone (2).

Lubricate spindle with multi-purpose lithium base grease (as specified in Shop Manual File J, Section 1, Table Q).

Install wheel, outer bearing cup and retainer plate (1) without shims. Install two cap screws. Cross tighten and torque to 10 ft. lbs. only to eliminate end play in bearings.

With depth micrometer measure gap between retainer plate and spindle hub. Install shims required to achieve zero to .003" preload on wheel bearings. Torque cap screws to 60 ft. lbs. and lock wire.

Install tire and rim assembly with eight lugs and lug nuts. Torque to 150 ft. lbs.

On tire tread, measure rolling resistance with spring scale. Due to change in oil seals (explained in Figure 14) rolling resistance will vary. Old style grease seals will give a resistance of ± 5 to 10 lbs. New style grease seals will give a rolling resistance of ± 8 to 12 lbs.

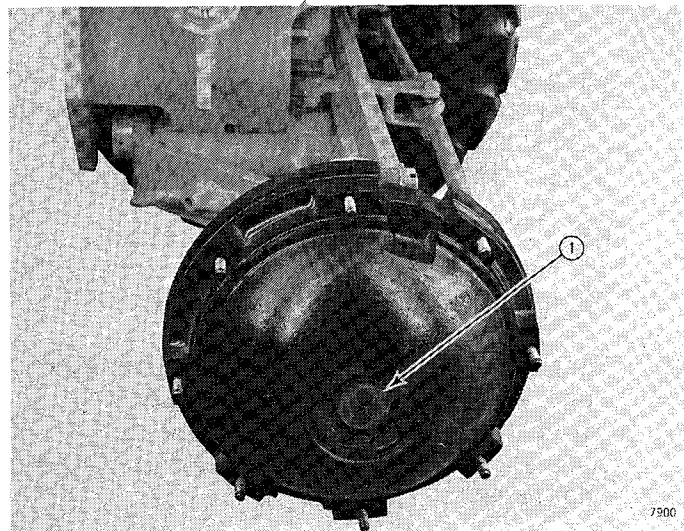


Figure 15

Install wheel hub (1) with four cap screws and lock washers.

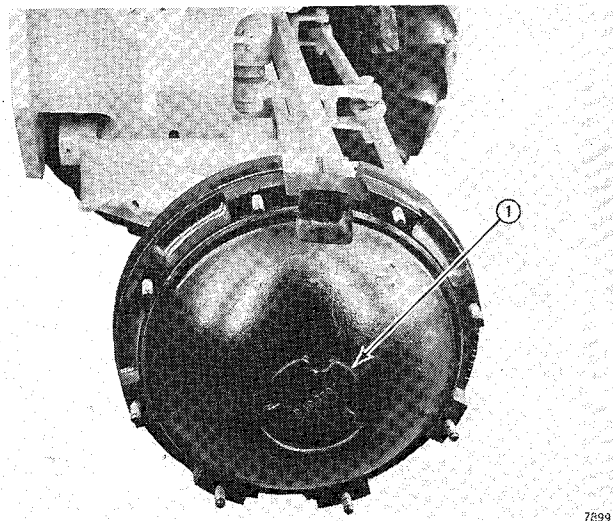


Figure 16

