

Drive Axles

PEUGEOT SPLIT HOUSING — I.R.S.

504, 505, 604

DESCRIPTION

Hypoid type differential is housed in ribbed aluminum alloy split case which is bolted to rear suspension crossmember. A torque tube houses the propeller shaft which is splined to the drive pinion. Drive axle shafts are driven by differential side gears through tripod type constant velocity joints.

AXLE RATIO & IDENTIFICATION

Two basic design axle housings are used on all models. One type has thrust plates on both sides of housing; the other has thrust plate on 1 side only. To determine axle ratio, divide number of ring gear teeth by number of pinion gear teeth.

REMOVAL & INSTALLATION

AXLE SHAFTS & BEARINGS

Removal

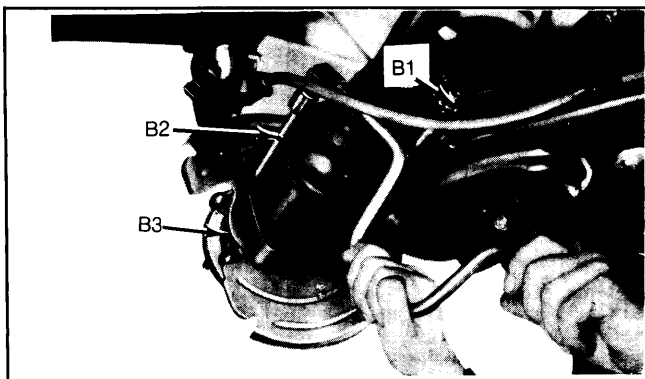
1) Raise rear of vehicle and support under rear suspension arms. Remove rear wheels. Loosen but do not remove hub nut.

2) On drum brake models, remove brake drum. Disconnect parking brake cable from operating lever. Remove 4 axle hub bearing support-to-suspension arm bolts.

3) On disc brake models, disconnect brake line from clip on suspension arm. Remove brake caliper and suspend from vehicle without distorting brake line. Mark position of rotor retaining screw and remove screw, if equipped. Remove 4 axle hub bearing support-to-suspension arm bolts.

4) To remove axle with hub and bearing support, work from rear and use 2 bolts and plate (special tools B1, B2 and B3 of tool set 8.0521). See Fig. 1. With plate installed between hub and bearing support, insert both bolts, as illustrated. Alternately tighten both bolts until axle assembly is pressed free of lower control arm.

Fig. 1: Removing Rear Axle Assembly



Axle hub and bearing support are removed with axle shaft.

5) With axle assembly pressed out of control arm, remove axle assembly from rear housing without damaging housing seals. Remove axle assembly through lower control arm. With axle removed, place axle assem-

bly in press with adapter plate located just below hub. Remove hub nut and washer. Press axle out of hub.

Installation

To install, reverse removal procedure and observe the following precautions:

1) Before assembling hub to axle bearing support, grease spline of axle stub. Before installing axle assembly into housing, make sure housing side seal is in perfect condition. Apply grease between lips of seal and to drive axle splines.

2) Use new washer when assembling bearing support-to-lower control arm. Tighten bolts to specifications. Install brake caliper with new washers. Install brake anti-chatter spring onto caliper with arrow facing normal direction of rotation.

3) When installing hub nut, tighten to specifications and peen the nut. After installing road wheels, check level of lubricant in housing.

PINION FLANGE & SEAL

Removal

1) Raise and support vehicle. Remove exhaust pipe assembly and allow it to rest on rear crossmember. Remove both Allen screws securing housing. Allow housing to rest on rear crossmember.

2) Inside vehicle, remove rear seat cushions. Loosen 3 nuts on "T" shaped metal bracket and remove first nut. Bend up "T" bracket and remove plastic plug from guide hole. Insert special guide pin (K1) into guide hole and tighten pin with special bar (K2).

3) Leave special bar (K2) in guide pin and remove other 2 lock nuts. Lower crossmember until special bar (K2) is resting on floorboard. Repeat operation on opposite side. Remove 4 nuts securing housing to propeller shaft tube. Move housing rearward and allow it to rest on wooden block.

4) Remove spring located inside propeller shaft. Remove seal support plate from front of housing. Place housing in vise. Clean front oil seal housing. Remove oil seal with pry bar. Do not damage insert deflector while removing oil seal. Damage to deflector requires replacement of complete oil seal housing.

5) Use seal driver to seat new oil seal in housing. Drive seal inward until flush with oil seal housing. Coat new seal in engine oil and place seal housing on housing.

Installation

To install, reverse removal procedure and note the following precautions: Use all new washers and tighten all bolts to specifications.

DIFFERENTIAL ASSEMBLY

Removal

1) With axle shafts removed, follow procedure described for Pinion Flange & Seal removal and continue as follows: Drain differential. Remove rear muffler flexible mounting nuts and lower heat baffle (if equipped).

2) Remove assembly by pulling to rear and then to the left. Propeller shaft must be held in position to prevent it from moving back with differential.

Installation

To install, reverse removal procedure. Grease splines before installation. Ensure propeller shaft spring is placed into rear end of propeller shaft.

Drive Axles

PEUGEOT SPLIT HOUSING — I.R.S. (Cont.)

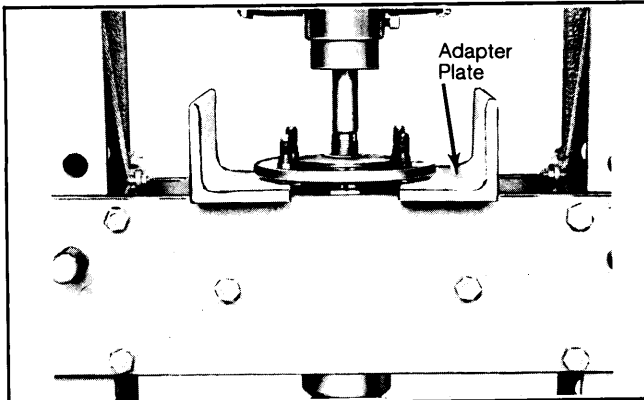
OVERHAUL

REAR HUBS & HUB CARRIER BEARING & SEALS

Disassembly

1) Remove axle and hub assembly as previously outlined. With hub and axle removed, place assembly in press with adapter plate beneath hub. Remove hub nut. Press axle assembly out of hub. See Fig. 3.

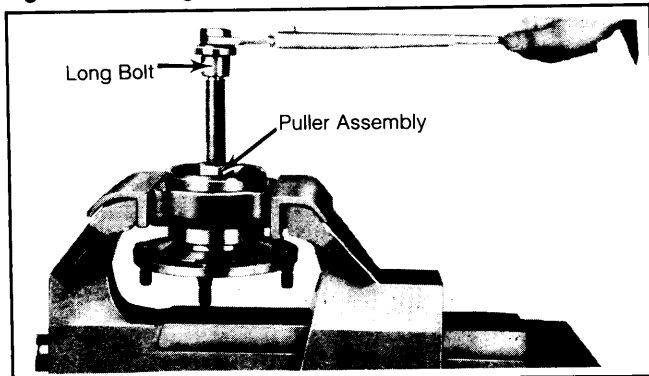
Fig. 3: Pressing Axle Shaft from Hub Assembly



Press must be used. Do not use a hammer.

2) Place hub carrier assembly in soft-jawed vise. To remove carrier nut, install spanner nut plate (special tool D) over carrier nut. Lock spanner nut in place by inserting long bolt (special tool C1) upward through hub assembly. Use open end wrench on spanner and fulcrum advantage extension. See Fig. 4. Remove nut.

Fig. 4: Removing Carrier Nut from Hub Assembly



Use an extension to gain fulcrum advantage.

3) Place thrust pad (C3) inside hub carrier and install puller (special tool C4 and C1) into hub carrier. Tighten puller bolt (C4) until hub is completely withdrawn. Remove puller and thrust pad (C3). Remove bearing using nut (C2) and press. Turn carrier over in the vise and pry out seal.

Reassembly

1) Use drift (special tool E) to install oil seal into back side of hub carrier. Drive seal inward until seal is flush with hub carrier.

NOTE: All new bearings are fitted with plastic retainer (inside) which holds inner and outer races together. This retainer must be remov-

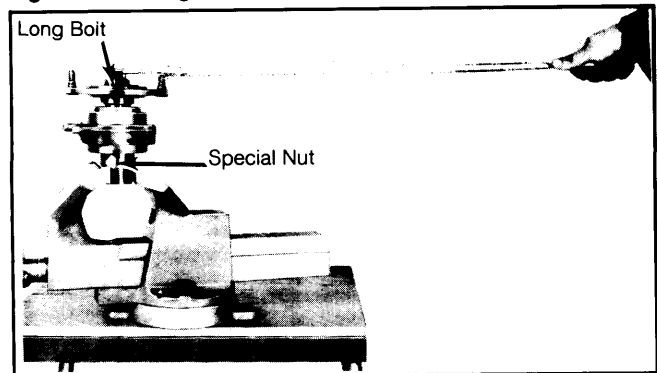
ed before attempting to install new bearing. Grease bearing with Esso Multiple Purpose Grease H or equivalent before installing.

2) Insert double lipped seal into carrier nut assembly using same drift (E). Insert bearing, with inner and outer races held together, into hub carrier assembly.

NOTE: Installation of bearing must be completed with use of press or special tool. Procedure for using special tools will be only procedure described.

3) Tighten carrier nut until it contacts bearing. Install puller (C4) onto nut (C1). Place spanner head "D" on carrier nut. Insert bolt (C1) fitted with puller (C4) into hub carrier. Tighten carrier nut to 181 ft. lbs. (246 N.m) and remove tools. Lock carrier nut by peening with punch.

Fig. 5: Installing Hub into Support Housing



Lock nut in position by peening with punch.

4) Install bolt (C1) and nut (C2) into carrier assembly. Install hub and tighten nut (C2) until nut contacts bearing. Coat splines of stub axle with Molycote 321, and insert stub axle into carrier assembly. Install washer and hub nut, hand tight. Install assembly onto vehicle in reverse order of disassembly.

AXLE SHAFTS

Disassembly

1) With axle shafts removed and hub assemblies removed from axles, clamp axle shaft vertically in soft jawed vise. Place adhesive tape on oil seal bearing surface. Using pliers, uncrimp edge of metal cover.

2) Using soft faced hammer, gently tap downward on cover to expose constant velocity joint. Place adhesive tape around constant velocity joint. Constant velocity joint is not repairable and must be replaced as a unit.

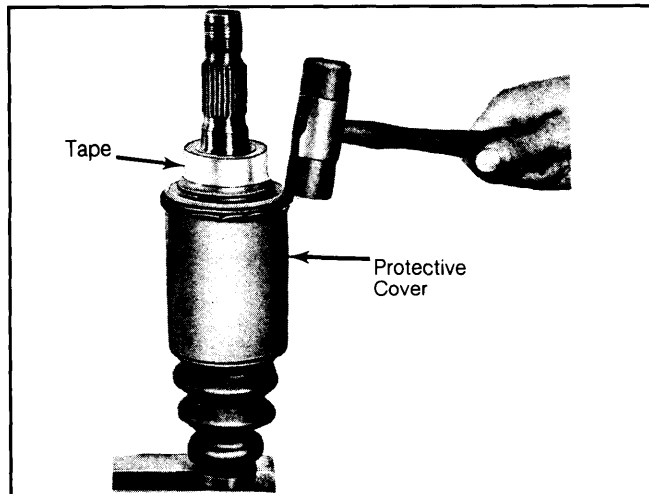
3) Remove as much grease as possible, but do not dip components in degreasing agent. Use press to remove constant velocity joint. There is no need to remove 3 punch marks on end of shaft as they will disappear during removal procedure.

4) Remove protective metal cover and rubber ring. Remove other constant velocity joint in same manner as previously described. From outside joint housing, remove "O" ring. From inside, remove all grease. If nylon bushing on inside of constant velocity joint housing is damaged, remove bushing with chisel.

5) Remove retaining washer with screwdriver. Use small stone and drill to remove any burrs in housing.

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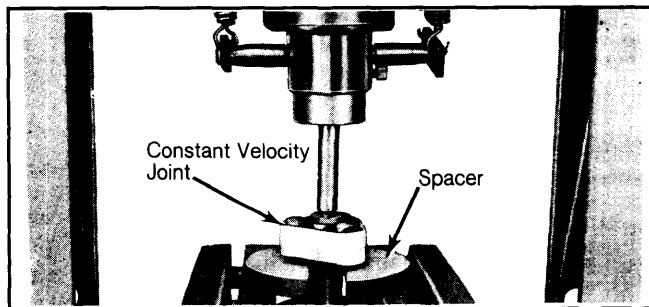
Fig. 6: Removing Axle Shaft Protective Cover



Protect oil seal surface with tape.

When this operation is complete, clean inside of housing. Blow dry with compressed air.

Fig. 7: Removing Constant Velocity Joint



Wrap tape around constant velocity joint.

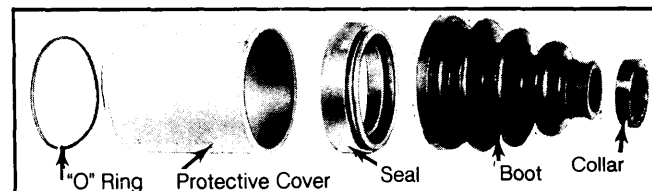
Reassembly

1) To reassemble, reverse disassembly procedure with the following precautions: When installing metal cover, note there are 2 different sizes. Shorter one fits on differential side of axle shaft. Protective stopper must be installed on wheel side of axle shaft.

2) After installing constant velocity joints onto respective shafts, use punch topeen shaft at 3 equidistant places on shaft end. If nylon bushing was removed, insert new bushing. Insert washer over bushing and peen washer in 3 equidistant places.

3) Before installing the cover over the constant velocity joint housing, grease inside of housing and replace "O" ring. With cover over housing and assembly placed in press to hold tension, peen over cover. Install axle assembly as previously outlined.

Fig. 8: Disassembled View of Constant Velocity Joint Protective Covers



Shorter cover fits on differential side of axle shaft.

DIFFERENTIAL

Disassembly

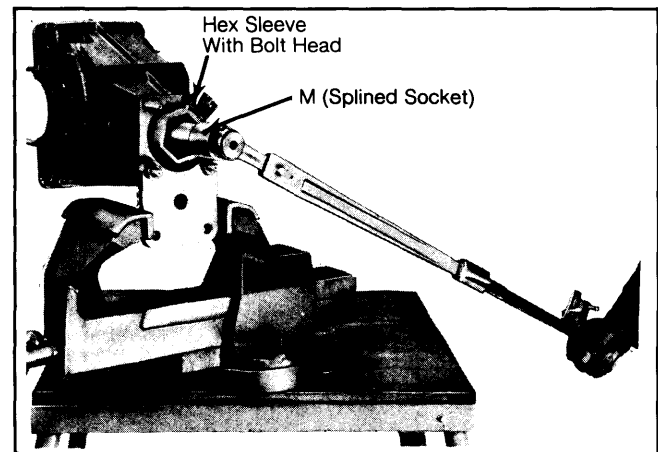
1) With differential removed, remove front oil seal support plate and gasket. Install mounting plate on bottom 2 studs of housing. Place housing in vise (rear of housing up) by clamping mounting plate. Loosen all bolts and nuts on rear housing.

2) Remove front attaching screws of bearing side plates. Remove 6 bolts and 4 nuts holding housing halves together. Lift off rear half of housing. If necessary, use soft faced mallet to assist in removing rear housing half.

3) Loosen vise and rotate housing to allow front of housing to be in horizontal position. Install special spanner tool (N), hex sleeve with bolt tang, over end of drive pinion nut. Secure spanner tool to front oil seal support plate stud with a nut. See Fig. 9.

4) Install drive pinion holder (M), splined socket, over pinion spline. To loosen drive pinion nut, pinion spline is turned clockwise while holding nut steady.

Fig. 9: Using Special Socket to Remove Drive Pinion



Lock nut does not have to be unstaked.

5) Remove housing from vise and rotate housing. Press on drive end of pinion to remove drive pinion assembly. Do not use a hammer to remove pinion assembly.

6) To remove drive pinion rear bearing outer race, install parts of special puller/driver (tool L). Install bolt (L1), extractor (L4) and support plate (D). Turn bolt counterclockwise to remove outer race.

7) To remove drive pinion front bearing outer race, install parts of special puller/driver (tool L). Install bolt (L1) and extractor (L3). Turn bolt clockwise to remove front outer race.

8) Place drive pinion in vise and press off drive pinion rear bearing. Special collar (SZ) is designed for this purpose and fits over drive pinion gear and against rear bearing shoulder.

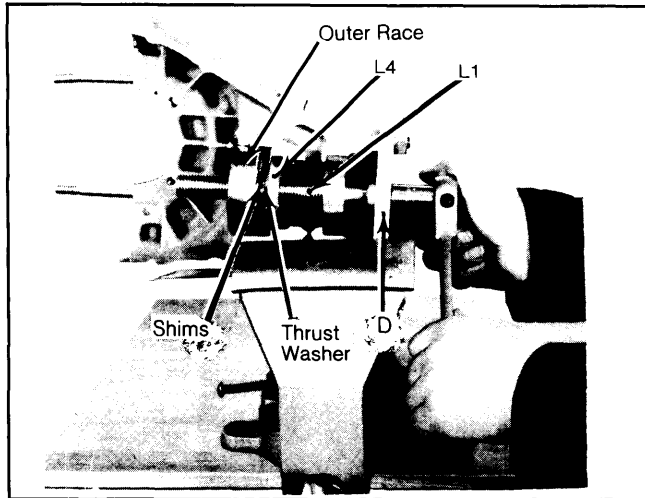
CAUTION: As parts are separated in following step, catch differential side gear and thrust washer to prevent damage.

9) To disassemble differential assembly, remove ring gear-to-case bolts. Remove ring gear. Insert 4 extractor clamp support rods (H3) into 4 diagonally opposed holes of ring gear. Place adapter (H1) around bearing. See Fig. 11.

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Fig. 10: Removing Pinion Rear Outer Bearing Race

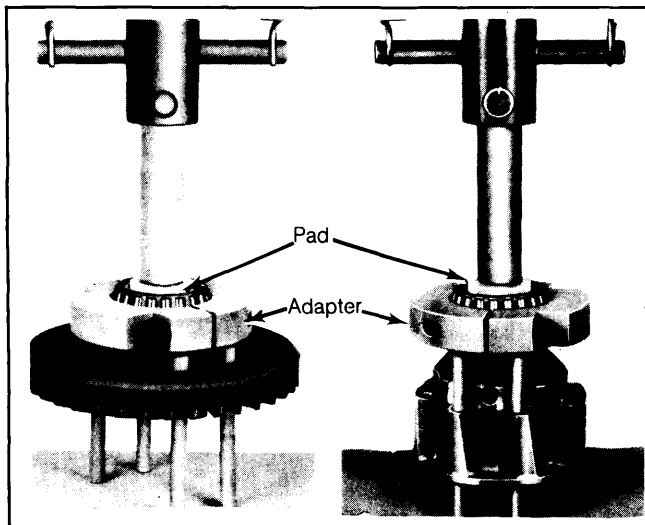


Case is split to show assembled view of tools.

10) Place press pad (H2) on ring gear, in center of bearing. Using a press, remove ring gear. Use same procedure to remove bearing from differential case.

11) Use drift punch to remove differential pinion shaft-to-pinion gear retaining pin. Then remove pinion shaft, pinion gears, spacer washers, differential side gears and thrust washers. Emery cloth or sharp tools should NEVER be used to clean housing or other differential parts.

Fig. 11: Removing Differential Side Bearings



Never use a hammer to remove bearings.

Reassembly & Adjustment

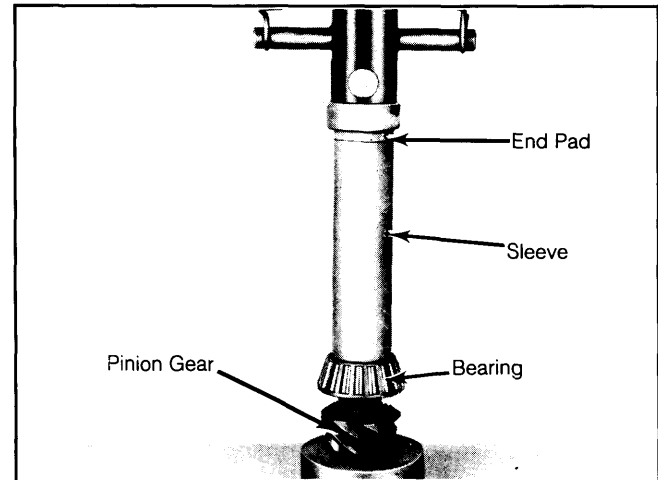
1) Clean all parts in solvent and blow dry with compressed air. Spray Molykote 321 into drive pinion housing. Do not heat housing.

2) Ring gear and drive pinion must be replaced as an assembly. The following parts should also be changed: differential side bearings, drive pinion bearings, flex washers, drive pinion nut, differential assembling bolts, drive pinion seal and all other "O" rings and differential seals.

3) Before installing drive pinion rear bearing, check that front bearing slides freely on drive pinion shaft. If any difficulty is experienced, polish shaft bearing surface with fine abrasive until bearing just slides (as free fit) onto shaft.

4) Smooth front of drive pinion shaft with stone to remove any burrs. Front end of shaft serves as contact point during various adjustments. With front bearing fit correct, install pinion rear bearing by using special sleeve (C) and end pad (H2).

Fig. 12: Installing Drive Pinion Rear Bearing



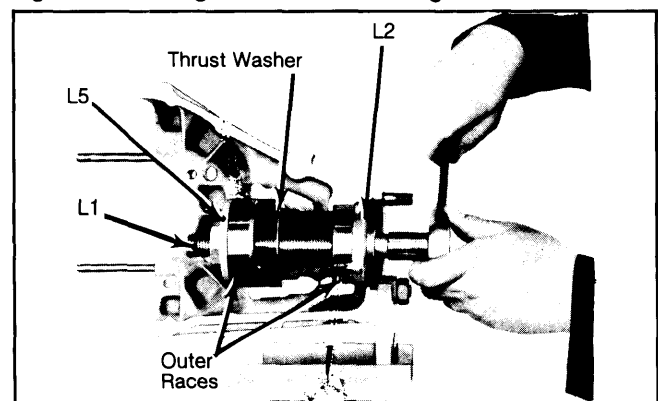
Press until bearing contacts drive pinion gear shoulder.

5) Install mounting plate on front housing half. Place housing in vise in horizontal position. Using puller/driver, install thrust washer, outer bearing races (back-to-back) into housing. Use bolt (L1), thrust plate (L2) and nut (L5). Tighten bolt head of (L1) to 101 ft. lbs. (137 N.m). Oil bearing with Esso Extra Oil 20 W 30/40.

6) Install drive pinion into housing with rear bearing, long spacer, front bearing and nut. Install spanner tool (hexagon sleeve with bolt tang) over end of drive pinion nut. Secure spanner tool to stud bolt with nut. See Fig. 13.

7) Install splined drive pinion holding socket (M) over pinion spline. Torque nut to 7.2 ft. lbs. (10 N.m). Rotate drive pinion in both directions and again tighten nut. Continue operation until nut can no longer be tightened without exceeding the torque specification.

Fig. 13: Installing Drive Pinion Bearing Outer Race



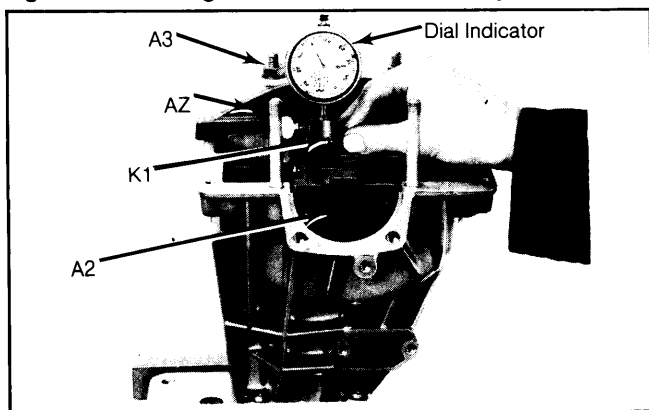
Case is split to show assembled view of tools.

PEUGEOT SPLIT HOUSING — I.R.S. (Cont.)

Pinion Depth Adjustment

1) Install pinion depth measuring tool (AZ) into front half of housing. Retain in position with bridge clamp (A3). See Fig. 14. Tighten nuts of clamp to 7.2 ft. lbs. (10 N.m). Equalize distance between bridge pads and housing on both sides by using feeler gauges. Free feeler assembly (A2) and ensure there is contact with drive pinion.

Fig. 14: Measuring Drive Pinion Installed Depth



Equalize distance between bridge pads and housing.

2) Install dial indicator on holder (K1). Position indicator so foot is resting on upper surface of feeler assembly (A2). Adjust height of indicator so small hand reads "3" (for example). Zero dial indicator. Slide holder (K1) so indicator foot contacts machined surface of pinion depth measuring tool (AZ). Movement of dial indicator indicates depth of feeler assembly (A2). Record value obtained.

3) There are 2 reference marks on hypoid gear end of drive pinion; 1st indicates pinion depth and 2nd corresponds with number of ring gear (matched set). Write down reference number (bottom number). To this number, whether positive or negative, add +.012" (+.30 mm) to find corresponding guide number.

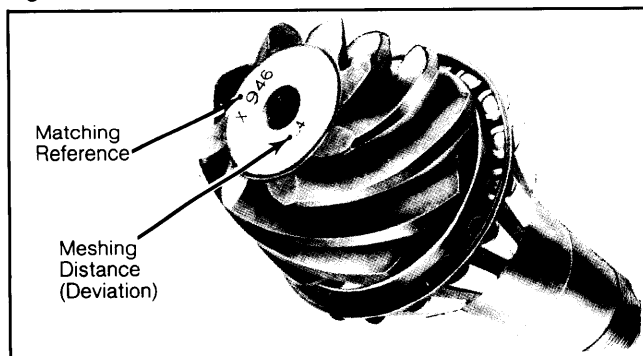
4) Compare dial indicator reading previously obtained with guide number. The difference between 2 numbers represents thickness of shims to be installed between drive pinion rear bearing outer race and thrust washer. To find corresponding guide number and to calculate thickness of shims, use sample calculation:

SAMPLE CALCULATION

Dimension	Measurement
Constant Added to Determine Guide Number012" (.30 mm)
Number on End of Drive Pinion	- .0015" (.04 mm)
Resulting Guide Number010" (.26 mm)
Dial Indicator Reading from Step 2)026" (.67 mm)
Subtract Guide Number (Obtained Above)	- .010" (.26 mm)
Total Shim Thickness Required016" (.41 mm)

5) Remove tool (AZ) and drive pinion from housing. Use puller/driver tool to remove drive pinion rear bearing outer race from housing. Install thrust washer and shims (previously determined). Reinstall rear bearing outer

Fig. 15: Identification Marks on Drive Pinion Gear



Always replace ring and pinion in matched pairs.

race. Torque puller/driver tool to 101 ft. lbs. (137 N.m) to seat.

6) Place drive pinion vertically on work bench and make colored chalk mark down full length of 1 spline. Install long spacer, front bearing and nut (J). Place holding fixture (N) over nut (J). Use socket (C) to torque pinion to 203 ft. lbs. (276 N.m).

7) Screw dial indicator onto extension (K2). Place dial indicator on end of drive pinion. Make sure extension (K2) faces chalk mark on pinion spline and rests on machined surface of nut J. Move dial indicator to bring small hand to "1" and big hand to "0".

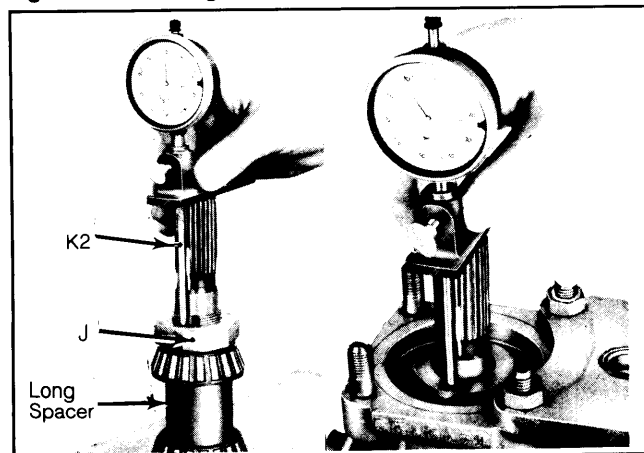
8) Remove dial indicator and lay aside, making sure reading is not changed. Remove nut (J) and front bearing. Place pinion into front housing with long spacer and front bearing. Torque nut (J) to 7.2 ft. lbs. (10 N.m). Rotate pinion 10 turns counterclockwise and retorquer.

9) With colored chalk mark as reference, take another reading. Place dial indicator between end of shaft and nut J. Find difference between 2 readings and subtract .002" (.06 mm). The number obtained is the thickness of shims necessary between front bearing and long spacer.

10) Install pinion into housing with long spacer, adjusting shims and new nut. Torque nut to 203 ft. lbs. (276 N.m). Use speed wrench attached to tool (socket) C to turn pinion by hand.

11) Use tools (AZ and K1) and dial indicator as described in steps 1) and 2) to check pinion depth. Resulting number obtained should correspond to guide

Fig. 16: Measuring Drive Pinion Depth



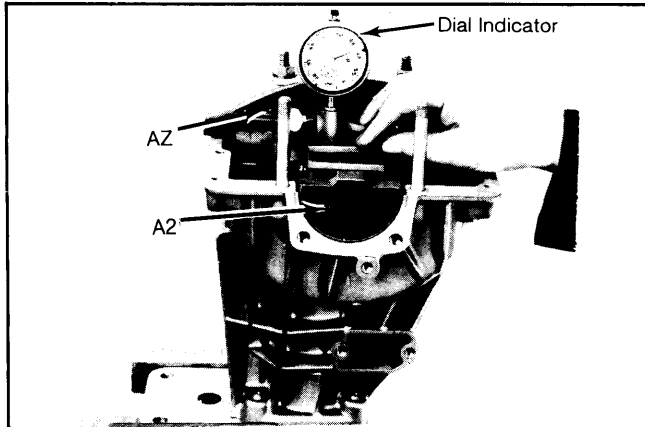
Subtract difference to determine shim size.

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number, within the following tolerance: $+.002"$ (.05 mm) or $-.001"$ (.03 mm.) Shims are available in increments of $.001"$ (.03 mm). Use shim closest to measurement.

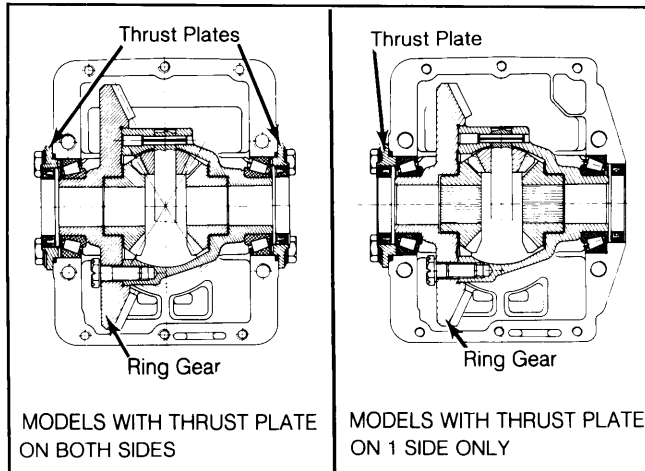
Fig. 17: Measuring Drive Pinion Depth Shim Thickness



This final measurement should be within $+.002"$ (.05 mm) or $-.001"$ (.03 mm).

NOTE: Differential backlash and bearing preload adjustments differ between housing design. Follow the appropriate procedure for applicable housing. See Fig. 18 for differences.

Fig. 18: Differential Housing Design Characteristics



Use appropriate procedure to adjust backlash and bearing preload.

Differential Backlash Adjustment (Thrust Plate on Both Sides)

1) Reassemble differential side gear and pinion gears into differential housing, using appropriate thrust washers. Dimples on thrust washer should face gear. Install differential side gear on ring gear. Mount ring gear on differential housing with new bolts.

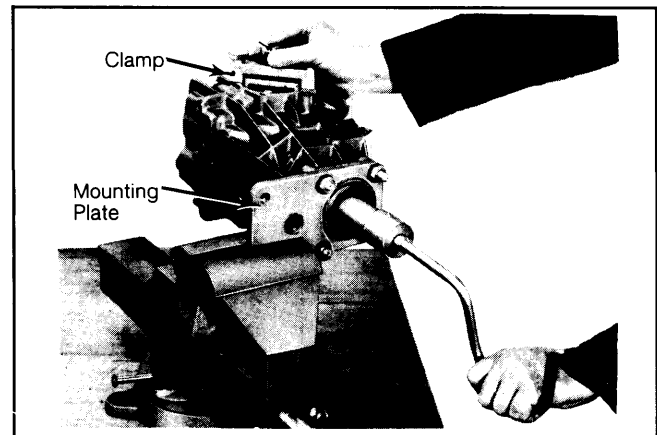
2) Clamp assembly in soft jawed vise. Tighten ring gear bolts in criss-cross pattern. Press new bearings onto differential assembly and oil bearings with Esso Extra Motor Oil 20 W 30/40.

3) Install mounting plate on front housing. Mount assembly in vise with rear housing up. Coat

machined surfaces of housing with sealant. Apply oil to bearing recesses. Install differential assembly. Install and tighten rear housing cover with 4 nuts and new washers.

4) Install bearing left side thrust plate (without shims) with new bolts and washers. Tighten bolts. Loosen 4 nuts on rear cover and retighten by hand. Loosen vise and install housing in vertical position with right side up. See Fig. 19.

Fig. 19: Installing Clamp on Right Side



Hand tighten clamp.

5) Install clamp (P) and hand tighten only. Rotate pinion spline 5 turns in both directions and recheck tightness of clamp. Retighten rear cover nuts to 4 ft. lbs. (5 N.m). Move assembly in vise to its normal upright position.

6) Install backlash measuring tool (R) horizontally. Ensure 1 radial groove in ring gear face is aligned with double quotation marks (" ") of device. Lock central screw of measuring tool. Install support rod in front upper housing.

7) Mount dial indicator using holder. Dial indicator feeler (foot) should rest between 2 marks found on flat side of tool (R); feeler and tool (R) should form a right angle. Carefully turn pinion counterclockwise to set dial indicator small hand to "5". Adjust dial indicator face to "0" while applying upward pressure on arm 1. See Fig. 20.

8) Carefully press downward on arm 1 until it seats. In this position, dial indicator reads backlash between drive pinion and ring gear. Note and record reading. Repeat operation at 3 different gaps in tool (R). Before taking each reading, make sure dial indicator has been set to zero.

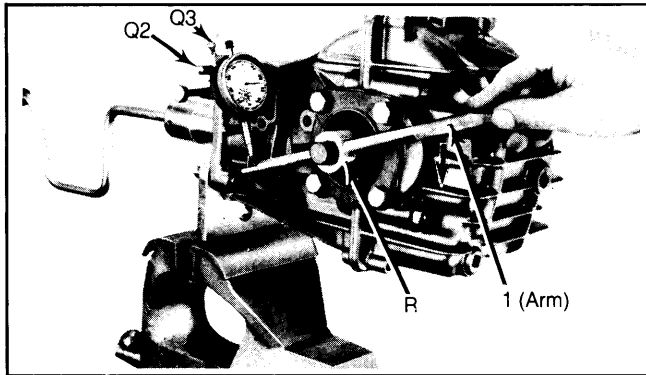
9) Write down 2 extreme readings. If difference between maximum and minimum reading exceeds $.004"$ (.10 mm), check for dirt or burrs on teeth. Subtract minimum reading from maximum reading. Subtract $.004"$ (.10 mm) from this difference to determine thickness of shims to be installed under left side thrust plate.

10) Remove backlash measuring tool (R), dial indicator and left thrust plate. Loosen clamp. Soak new oil seal in oil. Install seal in left thrust plate with seal installer. Place shims of calculated thickness into housing on bearing outer race.

11) Install new greased "O" ring between thrust plate and housing. Install thrust plate and tighten bolts. Reinstall assembly into vise with right side up. Hand tighten central screw on clamp, while turning drive pinion.

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Fig. 20: Measuring Ring-to-Pinion Gear Backlash



Perform measurement at 3 different locations.

Bearing Preload Adjustment (Thrust Plate on Both Sides)

1) Place tool (KZ) on flat surface of right front housing with dial indicator long feeler (foot) resting on outer bearing race. Make sure dial indicator does not rest on both front and rear housings, only on front or rear. Adjust dial indicator to obtain "1" on small hand and zero dial face.

2) Remove dial indicator and place on machined surface of tool (AZ) to determine difference in 2 readings, which indicates depth of outer race. To obtain correct calculation, add .010" (.25 mm) to difference between dial indicator reading and preset depth of "1". See sample calculation:

SAMPLE CALCULATION

Measurement	Reading
On Machined Surface281" (7.15 mm)
In Housing	- .039" (1.00 mm)
Difference242" (6.15 mm)
PLUS	+ .010" (.25 mm)
Total252" (6.40 mm)

3) Place dial indicator on right side thrust plate with feeler (foot) on outside machined surface. Adjust dial indicator to obtain reading of "1" on small hand and zero face. Place indicator on machined surface of AZ and note reading. Displacement of needle gives height of collar on plate. To calculate height, see sample calculation.

SAMPLE CALCULATION

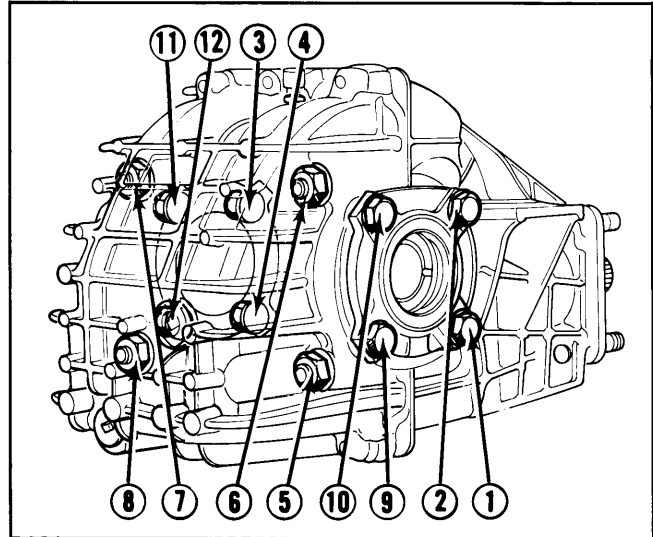
Measurement	Reading
On Machined Surface287" (7.29 mm)
On Thrust Plate	- .039" (1.00 mm)
Height Of Collar248" (6.29 mm)

4) Subtract amount obtained in step 3) from number obtained in step 2). The resulting number is correct thickness of shims to be placed between outer bearing race and right thrust plate. Shims are available in thickness increments of .039" (.10 mm).

5) Coat new oil seal with oil and install in right thrust plate. Install shims of calculated thickness on outer race of right bearing. Install new greased "O" ring between thrust plate and housing. Install thrust plate and tighten bolts.

6) Mount housing assembly in vise in its normal upright position. Tighten bolts to 4 ft. lbs. (5 N.m) in sequence. See Fig. 21. Rotate differential gear train in both directions. Tap housing with soft mallet to ensure mating. Tighten bolts to specification.

Fig. 21: Tightening Sequence for Housings With Thrust Plates on Both Sides



Tighten bolts to specifications.

7) Using steps described above, check backlash specification. If backlash is not within specifications, repeat backlash adjustment. Install and tighten 6 housing retaining bolts.

8) Remove and clean oil seal plate. Remove and discard gasket and oil seal. Ensure oil deflector is staked in position. To stake deflector, use a center punch and stake at 3 points at 120° intervals. Soak new seal in oil and install. Install gasket and oil seal plate.

Differential Backlash Adjustment (Thrust Plate on 1 Side Only)

1) Install mounting plate on bottom 2 studs of front housing and mount housing in vise with rear housing up. Oil bearing housings. Install differential assembly. Install base shim of .053" (1.35 mm) behind bearing without thrust plate. Measure and record thickness of shim with micrometer before installation.

2) Install and hand tighten rear cover with 4 nuts and new washers. Loosen vise and install housing in vertical position with right side up. See Fig. 19.

3) Install clamp (P) and hand tighten only. Rotate pinion spline 5 turns in both directions and recheck tightness of clamp. Retighten rear cover nuts to 4 ft. lbs. (5 N.m). Move assembly in vise to its normal upright position.

4) Install backlash measuring tool (R) horizontally. Ensure 1 radial groove in ring gear face is aligned with double quotation marks (" ") of device. Tighten central screw of measuring tool. Mount dial indicator holder on front housing.

5) Mount dial indicator in holder. Dial indicator feeler (foot) should rest between 2 marks found on flat side of tool R and feeler and tool R should form a right angle. Carefully turn pinion counterclockwise to set dial indicator small hand to "5". Adjust dial indicator face to "0" while applying upward pressure on arm 1. See Fig. 20.

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6) Carefully press downward on arm 1 until it seats. In this position, dial indicator reads backlash between drive pinion and ring gear. Note and record reading. Repeat operation at 3 different gaps in tool R. Before taking each reading, make sure dial indicator has been set to zero.

7) Write down 2 extreme readings. If difference between maximum and minimum reading exceeds .003" (.07 mm), check for dirt or burrs on teeth. Record minimum backlash reading. From the Backlash Adjustment Table, determine amount to be added or subtracted from base shim.

BACKLASH ADJUSTMENT TABLE

Reading Recorded In. (mm)	Adjustment to Base Shim In. (mm)
.0070-.0086 (.18-.22)	+ .0039 (.10)
.0090-.0106 (.23-.27)	+ .0020 (.05)
.0110-.0126 (.28-.32)	0
.0129-.0138 (.33-.35)	- .0020 (.05)
.0150-.0165 (.38-.42)	- .0039 (.10)
.0169-.0185 (.43-.47)	- .0059 (.15)
.0189-.0205 (.48-.52)	- .0079 (.20)
.0209-.0224 (.53-.57)	- .0098 (.25)
.0228-.0244 (.58-.62)	- .0118 (.30)
.0248-.0264 (.63-.67)	- .0157 (.40)
.0268-.0283 (.68-.72)	- .0177 (.45)
.0287-.0303 (.73-.77)	- .0197 (.50)
.0307-.0323 (.78-.82)	- .0236 (.60)

Bearing Preload Adjustment (Thrust Plate on 1 Side Only)

1) Install a .79" (20 mm) stem to dial indicator. Mount dial indicator on mounting plate (K1). Place mounting plate over thrust plate with feeler (foot) touching outer bearing surface. Set small hand of dial indicator to "5" and zero dial face.

2) Place mounting plate on flat surface of left front housing with dial indicator feeler (foot) resting on outer bearing race. Make sure mounting plate does not rest on both front and rear housings, only on front housing. Record reading.

3) Subtract readings obtained in steps 1) and 2) to determine difference; round to nearest .002" (.05 mm). To this figure, add the amount recorded during Backlash adjustment for final shim thickness (step 7) of Backlash adjustment). Also add .0059" (.15 mm). The final figure is shim thickness required.

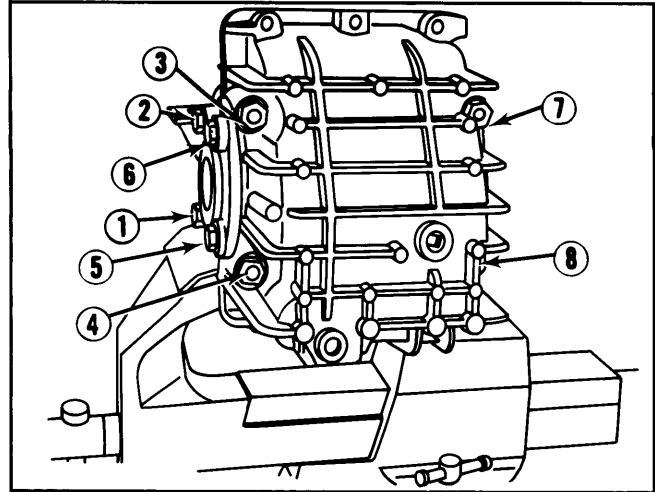
4) Mount assembly in vise with rear housing up. Remove backlash measuring tool (R), dial indicator, clamp and rear housing half. Remove base shim. Do not use a shim pack of more than 2 shims to obtain required shim thickness.

5) Coat rear housing half with sealant. Attach rear housing to front housing with 4 nuts and new washers. Hand tighten nuts. Coat new oil seal with oil and install in thrust plate. Install shims of calculated thickness between right bearing and housing (end opposite ring gear).

6) Install new greased "O" ring between thrust plate and housing. Install thrust plate and hand tighten bolts. Tighten bolts to 4 ft. lbs. (5 N.m) in sequence. See Fig. 22. Rotate differential gear train in both directions.

Tap housing with soft mallet to ensure mating. Tighten bolts to specification in sequence.

Fig. 22: Tightening Sequence for Housings With 1 Thrust Plate Only



Tighten bolts to specifications.

7) Using steps described above, check backlash specification. If backlash is not within specifications, repeat backlash adjustment. Install and tighten 6 housing retaining bolts.

8) Coat new oil seal with oil and install in left side of case (ring gear side). Remove mounting plate on front housing. Remove and clean oil seal plate. Remove and discard gasket and oil seal.

9) Ensure oil seal deflector is staked in position. To stake deflector, use a center punch and stake at 3 points at 120° intervals. Soak new seal in oil and install. Install gasket and oil seal plate.

AXLE ASSEMBLY SPECIFICATIONS

Application	Specification
Pinion Depth	
All Models	1 - .001" to + .002" (- .03 to + .05 mm)
Ring Gear-to-Pinion	
Gear Backlash	2 .008" (.20 mm)
1 — Deviation from guide used.	
2 — Maximum. With deviation from	- .0020" to + .0023" (- .05 to + .06 mm)

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Hub Carrier-to-Lower Control Arm	29 (40)
Rear Caliper Retaining Bolts	37 (50)
Rear Hub Nut	189 (257)
Differential Housing-to-Subframe	
Allen Heads	27 (37)
Ring Gear-to-Differential Assembly	96 (130)
Differential Side Plate Bolts	6 (8)
Propeller Shaft (Torque Tube Nuts)	44 (60)
Body-to-Crossmember Bolts	48 (65)
Rear Housing-to-Front Housing	
Nuts	48 (65)
6 Bolts (3 Upper & 3 Lower)	7 (10 N.m)
Bolts	26 (35)