

1931

OAKLAND SERVICE SHOP MANUAL

1931 Supplement

To Section Two

REAR AXLE

This Supplement contains full Information and Specifications for the 1931 Oakland Eight and Pontiac Six not included in the 1930 Edition of the "Oakland Service Shop Manual." Specifications not listed herein are the same as for 1930 and will be found in the 1930 Section of the "Oakland Service Shop Manual."

Insert this supplement in the "Oakland Service Shop Manual" following Section 2



Illustration 31-2-1. 1931 Exploded View of Differential Carrier Assembly Showing All Parts in Their Relative Positions

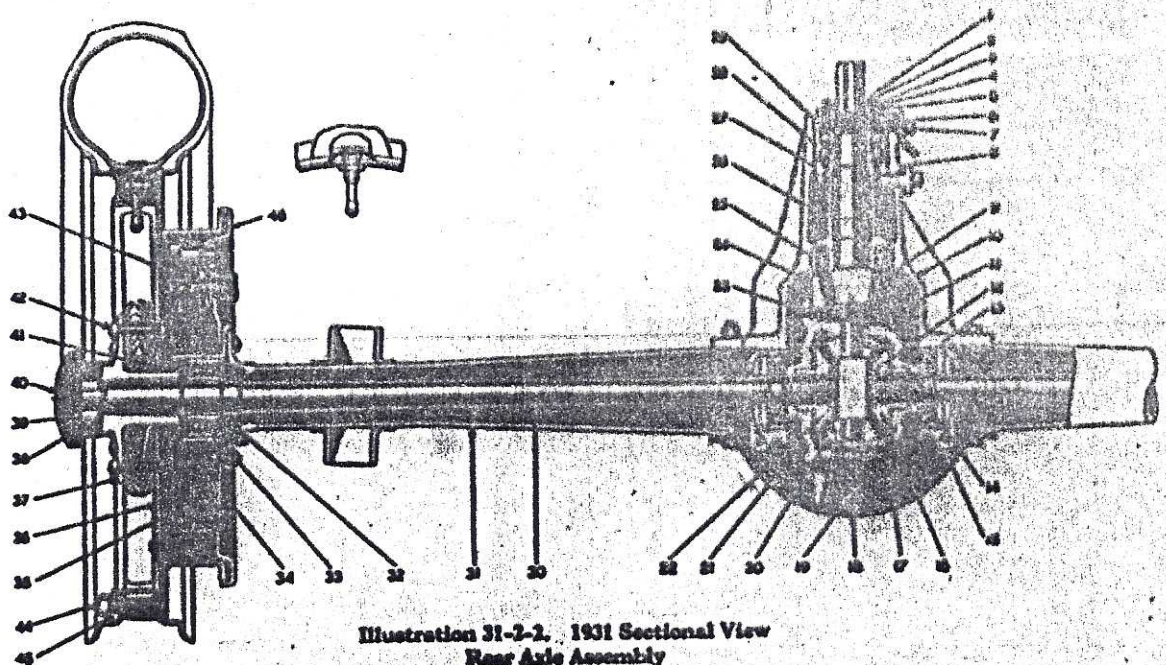


Illustration 31-2-2. 1931 Sectional View
Rear Axle Assembly

Rear Axle Assembly

- | | |
|---|--|
| 1. Pinion bearing retainer sleeve cover | 24. Differential ring gear |
| 2. Spring washer | 25. Rear pinion bearing |
| 3. Drive pinion nut retainer | 26. Pinion bearing spacer |
| 4. Pinion bearing retainer sleeve | 27. Pinion adjusting nut |
| 5. Spiral bevel drive pinion nut | 28. Front pinion bearing |
| 6. Drive pinion bearing packing nut | 29. Bevel drive pinion bearing packing |
| 7. Bearing packing nut lock | 30. Axle shaft |
| 8. Differential adjusting nut locking plate | 31. Axle housing |
| 9. Spiral bevel drive pinion | 32. Wheel inner bearing felt |
| 10. Differential carrier | 33. Rear wheel bearing |
| 11. Differential cross pin | 34. Wheel outer bearing felt |
| 12. Main shaft split washer | 35. Brake shoe anti-rattle spring |
| 13. Differential bearing | 36. Rear wheel brake drum |
| 14. Differential bearing adjusting nut | 37. Rear wheel hub |
| 15. Differential bearing adjusting nut lock | 38. Axle shaft nut star washer |
| 16. Differential side gear | 39. Axle shaft nut |
| 17. Differential cross pin lock screw | 40. Wheel hub cap |
| 18. R. A. housing cover | 41. Rear wheel oil slinger |
| 19. Oil filler plug | 42. Rear wheel hub bolt |
| 20. Differential cross pin pinion | 43. Brake shoe |
| 21. Differential case | 44. Demountable rim bolt nut |
| 22. Differential cross pin pinion spacer | 45. Demountable rim bolt lug |
| 23. Differential ring gear rivet | 46. Brake support plate |

1931 Rear Axle

The differential used in 1931 Oakland and Pontiac cars has an exceptionally stiff ribbed carrier and Hyatt roller rear pinion bearing. The pinion felt washer is $\frac{3}{8}$ " in thickness with a $2\frac{1}{32}$ " diameter which prevents oil leakage at the back of the pinion.

The drive pinion nut retainer is assembled as an integral part of the differential carrier assembly on all 1931 cars, but the mechanic must make absolutely sure that this lock is in place before installing a differential assembly under a car.

Disassembly of Differential

With the roller type of rear pinion bearing, the pinion bearing spacer has been redesigned to act as a mandrell for pressing out the bearing when necessary to tear down the differential assembly. This means that the following procedure should be followed when disassembling the pinion:

1. Before removing the ring gear and case from the carrier assembly, take off the pinion bearing lock nut retainer and loosen the pinion bearing lock nut. (The pinion can be most easily prevented from turning while loosening the nut by locking the ring gear in place with a wooden block between the differential case and the carrier.)

2. Remove the ring gear and case.

3. Remove pinion nut.

4. Remove the pinion bearing packing nut lock.

5. Remove the pinion bearing packing nut.

6. Replace the pinion nut.

7. Loosen the inner pinion bearing adjusting nut by turning through the hole in the carrier until it is absolutely loose and riding free on the bearing spacer inside the carrier housing.

8. Place the differential carrier assembly in an arbor press and force out the pinion bearing assembly by pressing down on the pinion shaft.

9. Remove pinion bearings and bearing spacer. (The rear pinion bearing inner race should be removed from the pinion shaft in an arbor press.)

Specifications—Rear Axle 1931 Pontiac Six and Oakland Eight

Type.....	Semi-floating
Housing material.....	Pressed steel
Final drive.....	Spiral bevel gears
Axle shafts.. $1\frac{1}{8}$ "	forged chrome nickel steel
Differential carrier	
.....	Malleable—heavily ribbed
Differential pinions.....	Hardened steel
Wheel bearings.....	Hyatt No. 307

Pinion shaft bearing, outer..	N.D. No. 5306
Pinion shaft bearing, inner.....	
.....	Hyatt No. 1307-A
Differential side bearing....	N.D. No. 0208
Lubrication required to fill.....	$1\frac{1}{2}$ qts.
Type of drive.....	Hotchkiss
Spacer block—Production—	1.133×1.140
overall length	2.4375
Service.....	1.155×1.140

Gear Ratio

Oakland Eight

Standard.....	41-9	4.55 to 1
Speed.....	51-13	3.92 to 1

Pontiac Six

Standard.....	41-9	4.55 to 1
Hill climb.....	52-10	5.20 to 1
Speed.....	51-13	3.92 to 1

Number of Teeth In Speedometer Gears

(When using above gear ratios)

Oakland Eight

41-9.....	Driving 5	Driven 16
51-13.....	Driving 5	Driven 14

Pontiac Six

41-9.....	Driving 5	Driven 16
52-10.....	Driving 5	Driven 18
51-13.....	Driving 5	Driven 14

Tools



Illustration 31-2-3. HM-525 Rear Wheel Bearing Sleeve Puller

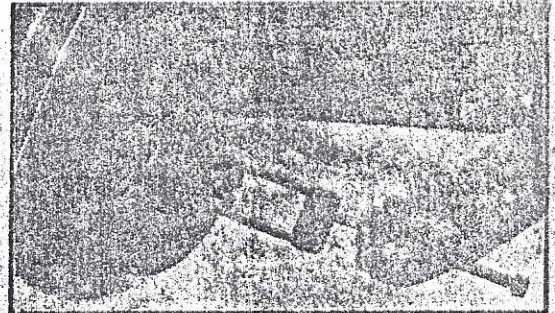


Illustration 31-2-4. Showing HM-525 Tool in Operation

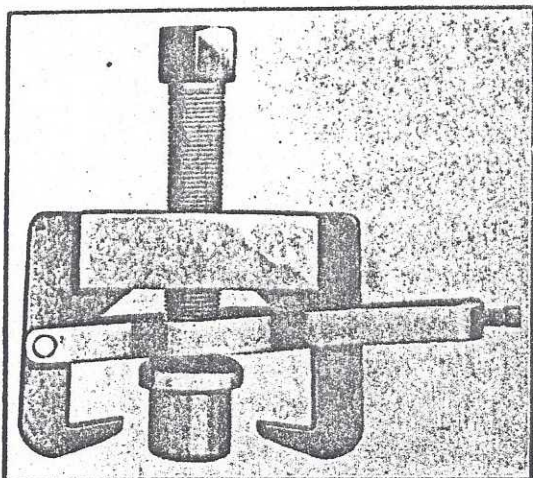


Illustration 31-2-5. HM-483A Differential Side Bearing Puller, redesigned for new models

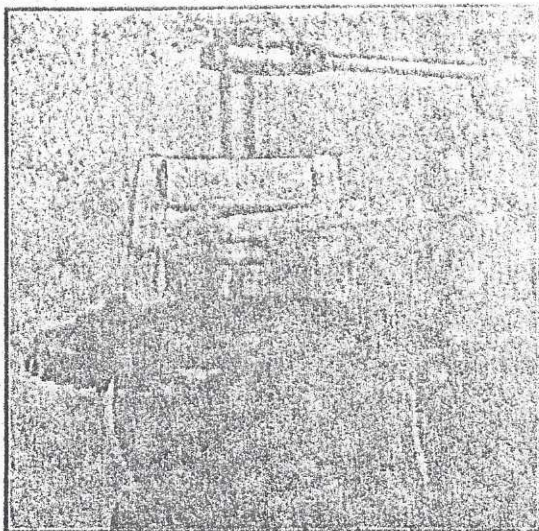


Illustration 31-2-6. Showing HM-483A Tool in Operation

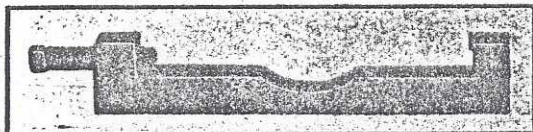


Illustration 31-2-7. HM-483X Swivel Plug to Fit Old Type Clamp

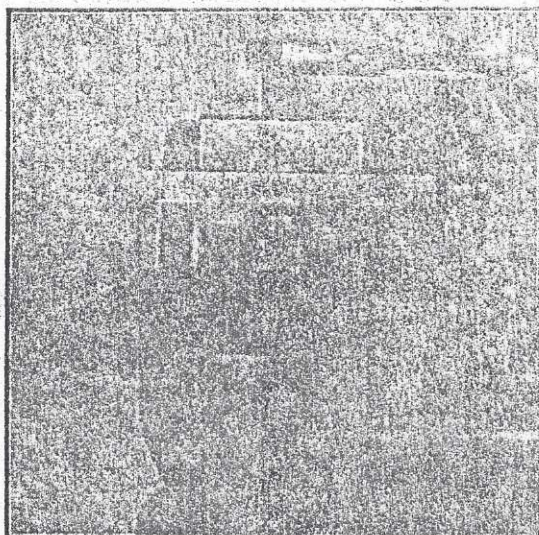


Illustration 31-2-8. Showing HM-483X Tool in Operation

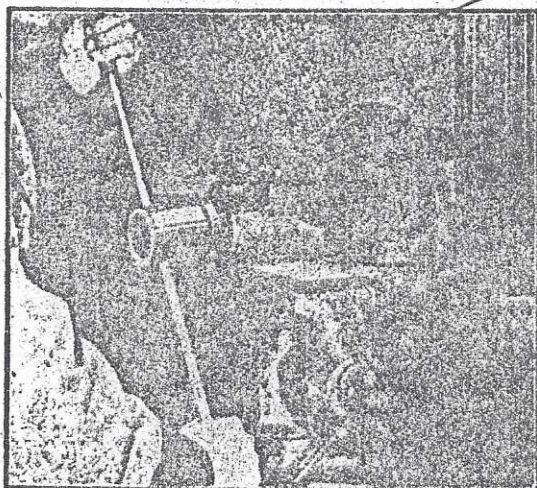


Illustration 31-2-9. HM-472 Packing Nut Drive Pinion Wrench in Operation

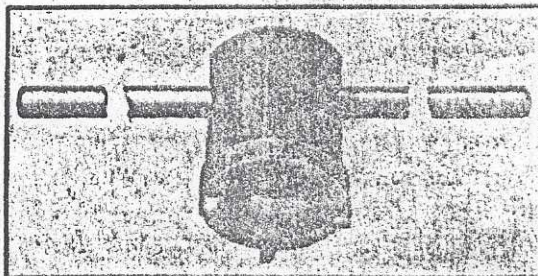


Illustration 31-2-10. HM-472 Packing Nut Drive Pinion Wrench