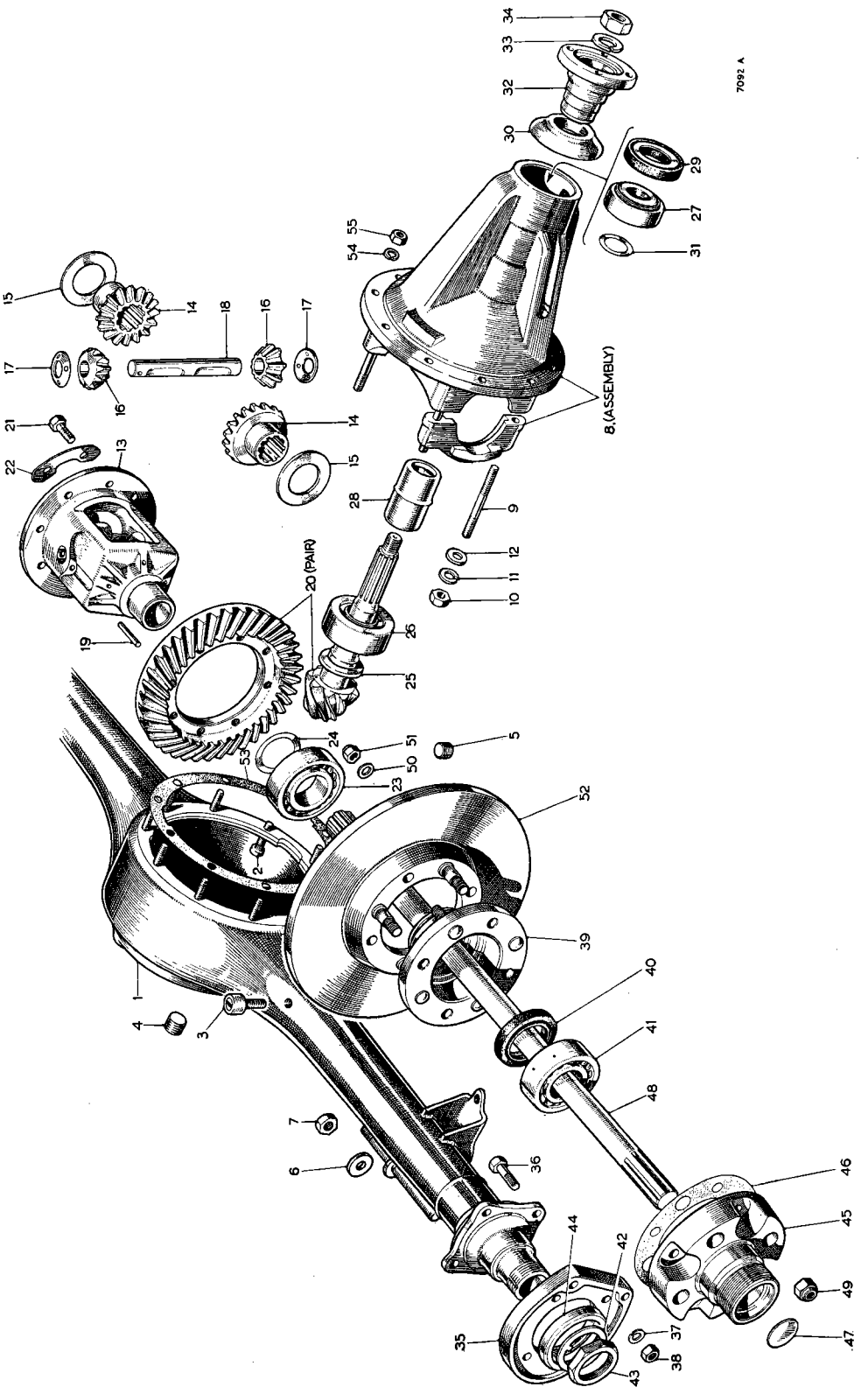
SECTION H

THE REAR AXLE

THE REAR AXLE COMPONENTS



KEY TO THE REAR AXLE COMPONENTS

No.	*Description*
1.	Axle centre case.
2.	Serrated bolt.
3.	Breather.
4.	Filler plug.
5.	Drain plug.
6.	Plain washer.
7.	Nut.
8.	Gear carrier.
9.	Stud.
10.	Nut.
11.	Spring washer.
12.	Washer.
13.	Differential case.
14.	Differential wheel.
15.	Thrust washer.
16.	Differential pinion.
17.	Thrust washer.
18.	Pinion centre.
19.	Peg.
20.	Crown wheel and pinion.
21.	Bolt.
22.	Lock washer.
23.	Differential bearing.
24.	Packing washer.
25.	Pinion head washer.
26.	Pinion bearing.
27.	Pinion bearing (outer).
28.	Pinion bearing spacer.
29.	Oil seal.
30.	Dust cover.
31.	Pinion bearing shim.
32.	Flange.
33.	Spring washer.
34.	Nut.
35.	Adaptor plate.
36.	Bolt.
37.	Spring washer.
38.	Nut.
39.	Wheel bearing housing.
40.	Oil seal.
41.	Rear wheel bearing.
42.	Tab washer.
43.	Locknut.
44.	Dust cover.
45.	Hub extension.
46.	Joint washer.
47.	Welch plug.
48.	Axle shaft.
49.	Pinnacle nut.
50.	Plain washer.
51.	Pinnacle nut.
52.	Rear brake disc.
53.	Differential joint.
54.	Spring washer.
55.	Nut.

Fig. H.1
Unscrew and remove the four self-locking nuts to withdraw the hub extension

GENERAL DESCRIPTION

The rear axle is of the three-quarter-floating type, incorporating hypoid final reduction gears. The axle shafts, pinion, and differential assemblies can be withdrawn without removing the axle from the vehicle.

The rear axle wheel bearing outer races are located in the hubs; the inner races are mounted on the axle tube and secured by nuts and lock washers.

The differential and pinion shaft bearings are preloaded, the amount of preload being adjustable by shims. The position of the pinion in relation to the crown wheel is determined by a spacing washer. The backlash between the gears is adjustable by shims.

Suspension is by semi-elliptic leaf springs, rubber-mounted, and the shackles are fitted with rubber bushes of the flexing type.

LUBRICATION

The axle is filled or topped up with oil through the filler plug in the rear cover by means of an oil gun with a special adaptor.

It is of the utmost importance that only hypoid oils of the approved grades and manufacture be used if satisfactory service is to be obtained from the hypoid gears.

Inspect the oil level every 1,000 miles (1600 km.) and top up as necessary to the level of the filler opening with oil to Ref. B.

After the first 500 miles (800 km.) and subsequently every 6,000 miles (10000 km.) drain off the old oil and refill with new. The capacity of the axle is $2\frac{3}{4}$ pints (3·3 U.S. pints, 1·56 litres).

The hub bearings are lubricated from the axle and no provision is made for any other attention.

Section H.1

REMOVING AND REPLACING A HUB EXTENSION AND AXLE SHAFT

Jack up the car and place blocks under the spring as close as possible to the axle.

Remove the wheel.

Release the hand brake.

Unscrew and remove the four self-locking nuts securing the hub extension driving flange to the hub.

Withdraw the hub extension and axle shaft by gripping the driving flange or the winged hub nut, which may be temporarily refitted for this purpose.

Remove the welch plug and apply pressure to the end of the axle shaft with a hand press to remove the hub extension from the spline on the shaft.

To replace the shaft and driving flange reverse the above sequence of operations. If the welch plug has been distorted on removal a new one should be fitted.

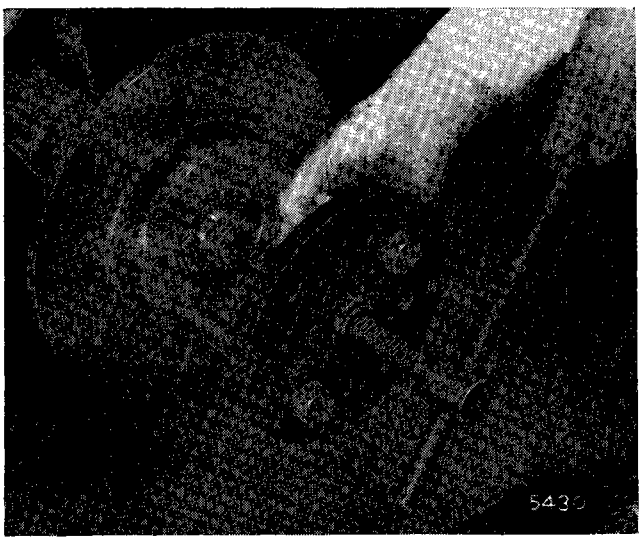


Fig. H.2
Using hub remover 18G304 *with adaptors* 18G304B *and thrust pad* 18G304J

Section H.2

REMOVING AND REPLACING A HUB

Remove the hub extension and axle shaft as detailed in Section H.1. Remove the wheel brake unit by the method described in Section M.7.

Knock back the tab of the hub nut locking washer, unscrew the nut using spanner 18G152, and pull off the washer. The left-hand hub bearing nut has a left-hand thread and is turned in a clockwise direction to unscrew.

The hub and brake disc assembly can then be withdrawn, using rear hub remover 18G304 together with adaptors 18G304B and thrust pad 18G304J. The bearing and oil seal will be withdrawn with the hub.

The bearing is not adjustable and is replaced in one straightforward operation. Replace the hub and drift it into position with replacer 18G134 and adaptor 18G134P. The remainder is a reversal of the above sequence of operations.

Section H.3

RENEWING THE BEVEL PINION OIL SEAL

Mark the propeller shaft and the pinion driving flanges so that they may be replaced in the same relative positions. Disconnect the propeller shaft.

Unscrew the nut in the centre of the driving flange using bevel pinion flange wrench 18G34A to prevent the flange from turning. Remove the nut and washer and withdraw the flange and pressed-on end cover from the pinion shaft.

Extract the oil seal from the casing.

Press a new oil seal into the casing with the edge of the sealing ring facing inwards.

Replace the driving flange end cover, taking care not to damage the edge of the oil seal. Tighten the nut with a torque wrench (special tool 18G372) to a reading of 1,680 lb. in. (19·34 kg. m.).

Reconnect the propeller shaft, taking care to fit the two flanges with the locating marks in alignment.

Section H.4

REMOVING AND DISMANTLING THE DIFFERENTIAL

Drain the oil from the axle casing.

Remove the axle shafts as detailed in Section H.1.

Mark the propeller shaft and pinion shaft driving flanges so that they may be replaced in the same relative positions; unscrew the self-locking nuts and disconnect the joint.

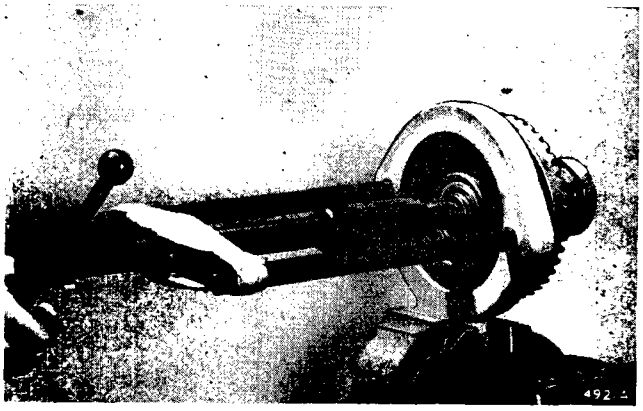


Fig. H.3
Using special tool 18G47C *and adaptors* 18G47T *to remove the differential bearings*

Unscrew the 10 nuts securing the bevel pinion and gear carrier casing to the axle casing; withdraw the gear carrier complete with the pinion shaft and differential assembly.

Make sure that the differential bearing housing caps are marked so that they can be replaced in their original positions, then remove the four nuts and spring and plain washers. Withdraw the bearing caps and differential assembly.

Remove the differential bearings from the differential case, using the differential bearing remover 18G47C together with the adaptors 18G47T.

Note that the word 'THRUST' is stamped on the thrust face of each bearing and that shims are fitted between the inner ring of each bearing and the differential case.

Knock back the tabs of the locking washers, unscrew the nuts from the bolts securing the crown wheel to the differential, and remove the crown wheel.

Tap out the dowel pin locating the differential pinion shaft. The diameter of the pin is $\frac{3}{16}$ in. (4·8 mm.) and it must be tapped out from the crown wheel side as the hole into which it fits has a slightly smaller diameter at the crown wheel end to prevent the pin from passing right through. The metal around the entry hole is peened over after the pin has been inserted. The pinions and thrust washers can then be removed from the case.

Section H.5

EXAMINING AND ASSEMBLING THE DIFFERENTIAL

Examine the pinions and thrust washers and renew as required.

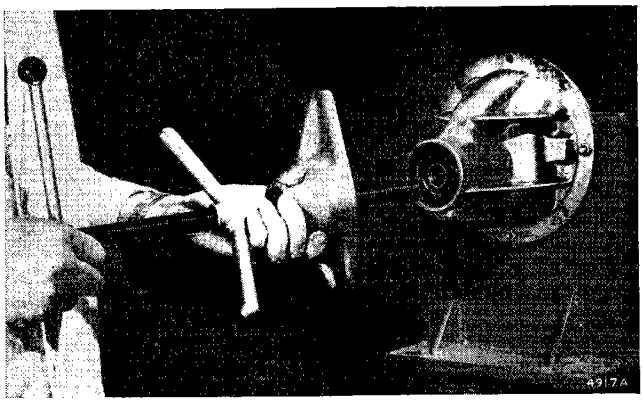


Fig. H.4

Both front and rear bearing outer races may be removed, using special tool 18G264 *with adaptors* 18G264E *and* 18G264F

Examine the crown wheel teeth. If a new crown wheel is needed a mated pair—pinion and crown wheel—must be fitted. (See Section H.7 for adjustment procedure.)

Replace the pinions, thrust washers, and pinion shaft in the differential casing and insert the dowel pin. Peen over the entry hole.

Bolt the crown wheel to the differential case, but do not knock over the locating tabs. Tighten the nuts to a torque wrench reading of 540 lb. in. (6·2 kg. m.).

Fit the shims and differential bearings with the thrust faces outwards.

Mount the assembly on two 'V' blocks and check the amount of run-out of the crown wheel, as it is rotated, by means of a suitably mounted dial indicator.

The maximum permissible run-out is ·002 in. (·05 mm.) and any greater irregularity must be corrected. Detach the crown wheel and examine the joint faces on the flange of the differential case and crown wheel for any particles of dirt.

When the parts are thoroughly cleaned it is unlikely that the crown wheel will not run true.

Tighten the bolts to the correct torque wrench reading and knock over the locking tabs.

NOTE.—If the setting has been disturbed in any way, or a new pinion and crown wheel is being fitted, proceed as indicated in Section H.7.

Section H.6

DISMANTLING THE PINION SHAFT

Remove the differential assembly as detailed in Section H.4.

Unscrew the pinion nut, using a bevel pinion flange wrench (special tool 18G34A) to prevent the flange from turning during this operation.

Remove the spring washer, the driving flange, and the pressed-on end cover.

Drive the pinion shaft towards the rear; it will carry with it the inner race and the rollers of the rear bearing, leaving the outer race and the complete front bearing in position.

The inner race of the front bearing may be removed with the fingers, and the outer race of both the front and rear bearings removed with the special bevel pinion bearing outer race remover (special tool 18G264) together with the adaptors 18G264E and 18G264F. (See Fig. H.4).

Slide off the pinion sleeve and shims; withdraw the rear bearing inner race from the pinion shaft with special tool 18G285, noting the spacing washer against the pinion head.

Assembly and adjustment procedure are detailed in Section H.7.

Section H.7

ASSEMBLING AND ADJUSTING THE PINION AND DIFFERENTIAL GEAR

Whenever the differential assembly used on this three-quarter-floating axle is dismantled and reassembled various adjustments must be carried out unless the only items being replaced are oil seals. Where it is only necessary to fit a replacement oil seal the axle may be reassembled in the reverse order of dismantling, assuming the original shim thicknesses are retained. Where any

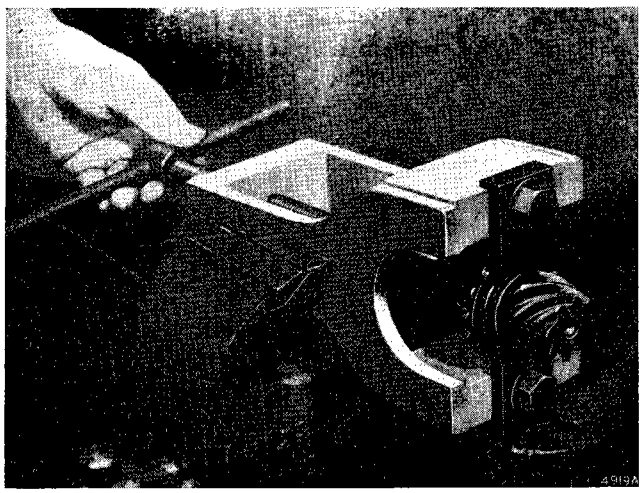


Fig. H.5

Using special tool 18G285 *to remove the bevel pinion bearing inner race*

part is renewed, such as a crown wheel and pinion, pinion bearings, etc., the setting of the pinion (i.e. its position relative to the crown wheel) must be checked. This work should be carried out with the aid of the bevel pinion and differential bearing setting gauge 18G191B shown in Fig. H.6.

To assemble and adjust the crown wheel and pinion the procedure is as follows:

(1) Fit the bearing outer rings to the gear carrier; this is most easily done with a special tool designed to remove and replace the races without damage to the registers, such as special tool 18G264.

(2) Using an oilstone, smooth off any high-spots left by the etching of mating marks, etc., on the pinion head. Take care not to obliterate completely any such marks, since the parts would then lose their identity.

(3) Refit the pinion head washer that was removed on dismantling or, alternatively, select a washer of thickness ·120 in. (3·048 mm.) as a starting-point.

If the mean reading is within +·001 in. (·025 mm.) of the zero setting the washer thickness is correct.

A positive mean reading indicates that the washer is not thick enough, and a negative mean reading indicates that it is too thick.

In addition, allowance must also be made for the mounting distance and the variation in pinion head thickness. Both these figures are etched on the pinion head, the mounting distance in a rectangular bracket and the pinion head thickness variation, if any, unbracketed. Add the two dimensions together; if the result is positive (+) subtract from the washer thickness, and if negative (—) add to the washer thickness.

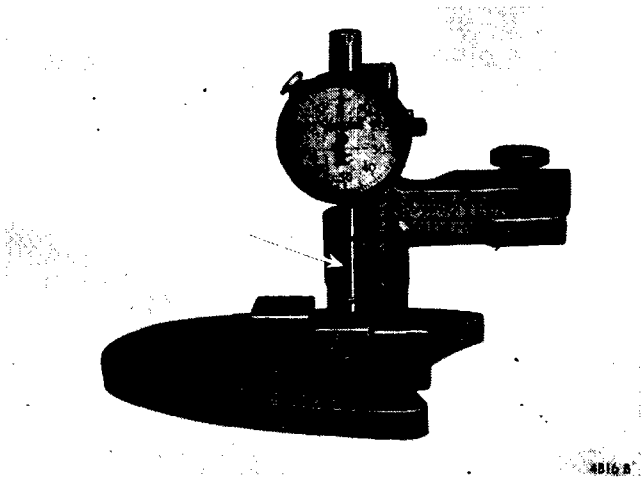


Fig. H.6

Setting the gauge to zero on the special block for determination of the pinion position. The arrow indicates the extension to the contact foot

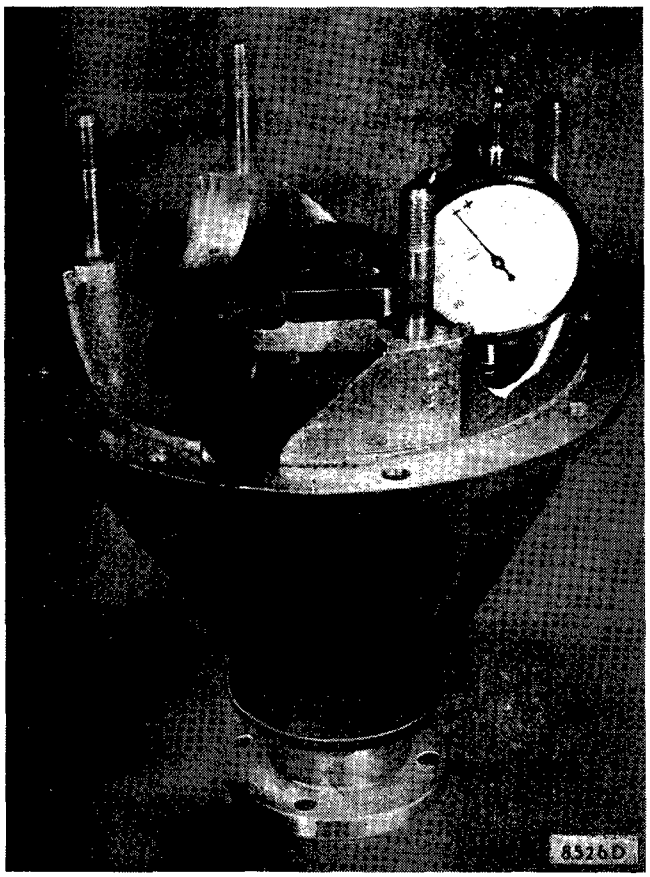


Fig. H.7

The gauge in position on the pinion with the dial indicating a variation from the standard setting

Example

Thickness of washer selected		·120 in.
Add together:		
Variation in pinion head thickness	—·001 in.	
Mounting distance ..	+·003 in.	
Positive figure to be subtracted	+·002 in.	·002 in.
		·118 in.

Fit a washer of this thickness to the pinion with the chamfer towards the pinion head.

With this washer (or the original) fitted to the pinion, fit the pinion bearing inner ring to the pinion shaft and position it in the housing **without** the distance tube, shims, and oil seal. Fit the outer

bearing inner race and the universal joint flange, and tighten the nut gradually until a preload figure of 11 to 13 lb. in. (·126 to ·149 kg. m.) is obtained with the preload checking tool 18G283 and adaptor 18G283A.

Table of washer and shim thicknesses	
Pinion head washer thickness	·112 to ·126 in. in steps of ·002 in.
Pinion bearing preload shims	·004 to ·012 in. in steps of ·002 in., plus ·020 in. and ·030 in.
Crown wheel bearing shims	·002 in., ·003 in., ·004 in., ·006 in. and ·010 in.
Pinion bearing preload ..	11 to 13 lb. in. without oil seal; 14 to 16 lb. in. with oil seal
Crown wheel bearing pinch	·002 in. each side

(4) Using the setting block provided, adjust the clock gauge to read zero on the machined step marked 'B' type. (See Fig. H.6.) Remove the keep disc from the base of the magnet and, after cleaning the head of the pinion, place the tool in position on the end face. Adjustment of the knurled screw will allow the clock arm to move in relation to the main mounting bracket. Ensure that when the clock gauge is at zero the knurled screw is fully tightened, otherwise readings obtained will be inaccurate. Move the clock arm until the foot of the gauge rests on the centre of the differential bearing bore at one side and retighten the knurled screw. Obtain the maximum depth reading and note any variation from the zero setting. (See Fig. H.7.) Make a similar check in the bearing bore on the opposite side. Add the variations together and divide by 2, thus obtaining a mean reading. If this mean reading is within plus or minus (±) ·001 in. (·025 mm.) of the zero setting of the clock gauge, the washer fitted is of the correct thickness. Any larger variation entails further adjustment, carried out as follows:

A positive mean reading indicates that the washer is not thick enough and must be increased by that amount. Assuming that a washer of thickness ·122 in. (3·09 mm.) has been initially selected and the mean reading is +·003 in. (·076 mm.) a washer of thickness ·125 in. (3·18 mm.) will be required. In the range of thickness available for the 'B' type axle there is no suitable thickness, but as there is a tolerance of ·001 in. (·025 mm.) allowable, a washer of ·124 in. (3·15 mm.) or ·126 in. (3·2 mm.) thickness can be used.

Fit the appropriate washer to the pinion head.

(5) Assemble the pinion shaft bearings, distance tube, and shims to the gear carrier; fit the oil seal and driving flange. Shims to a thickness of ·008 to ·011 in. (·2 to ·28 mm.) should be used as a starting-point for adjustment of the bearing preload.

Tighten the driving flange nut gradually with a torque wrench to 1,680 lb. in. (19·34 kg. m.) and check the preload on the bearings during tightening to ensure that it does not exceed 14 to 16 lb. in. (·161 to ·184 kg. m.), i.e. 3 lb. in. (·034 kg. m.) greater than the recommended figure, since the oil seal is now fitted. If the preload is too great more shims must be added. If the preload is too small when the nut is tightened correctly the shim thickness must be reduced.

(6) Before fitting the crown wheel and differential assembly to the gear carrier it is necessary to calculate the shim thickness required behind each bearing to give the required pinch. To facilitate the calculation machining tolerances are indicated by stamped numbers on the carrier adjacent to the

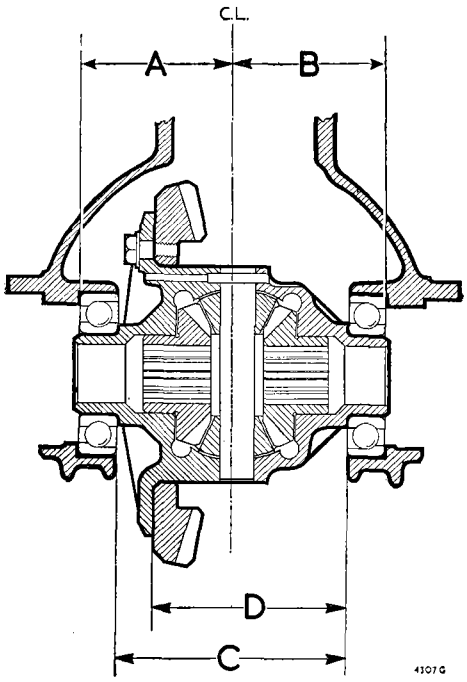


Fig. H.8

The dimensions referred to in the instructions for differential setting

bearing bores. The dimensions to be considered are shown in Fig. H.8, (A) being the distance from the centre-line to the bearing register of the carrier on the left-hand side and (B) the distance from the centre-line to the bearing register of the carrier on the right-hand side. The (C) dimension is from the bearing register on one side of the cage to the register on the other side, while the (D) dimension is from the rear face of the crown wheel to the bearing register on the opposite side. Any tolerance of the (A) dimension will be found stamped on the carrier adjacent to the bearing bore, and similarly with the (B) dimension. The (C) and (D) dimensions are stamped on the machined face of the differential cage.

It is possible to calculate the shim thickness required on the left-hand side by the use of the following formula:

A+D−C+·007 in.

Substituting the actual tolerances shown, this formula gives the shim thickness required to compensate for the variations in machining plus the extra ·002 in. (·05 mm.) to give the necessary

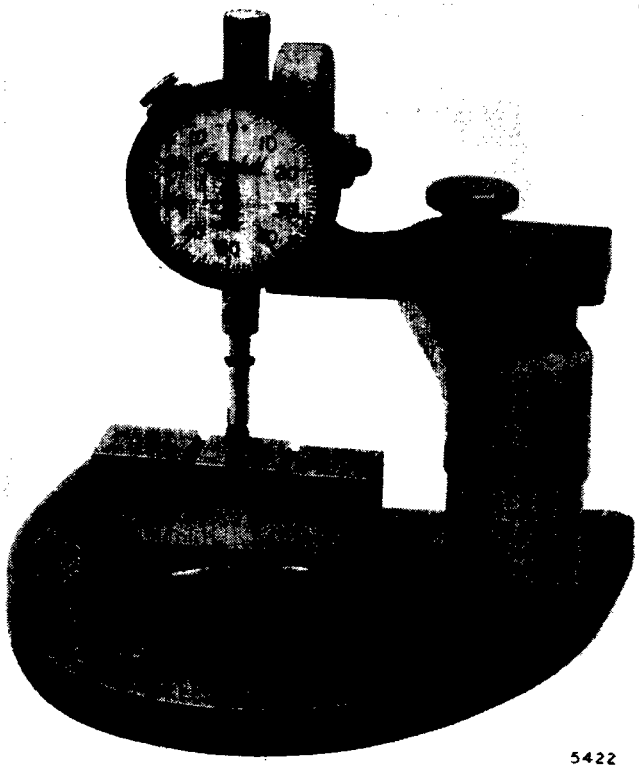


Fig. H.9

To measure variations in bearing thickness first zero the gauge on the portion of the gauge block marked 'B' for the 'MGA' axles

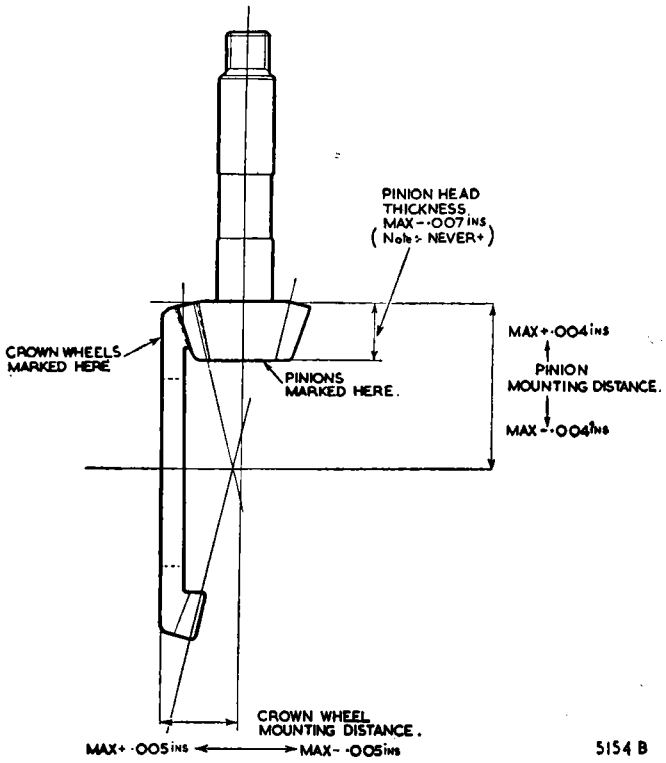


Fig. H.10

Crown wheel and pinion markings

bearing pinch. In addition, allowance must be made for variations in bearing thickness in the following manner.

Rest the bearing, with the inner race over the recess and the outer ring thrust face downwards, on the small surface plate of tool 18G191B. Drop the magnet onto the surface plate and set the clock gauge to zero on the small gauge block on the step marked 'B'. (See Fig. H.9.) This is the thickness of the standard bearing.) Swing over the indicator until it rests on the plain surface of the inner race and, holding the inner race down against the balls, take a reading (Fig. H.11). Normally the bearing will be standard to −·003 in., though in some cases the tolerance may be from standard to −·005 in. A negative tolerance shown by this test indicates the additional thickness of shimming to be added to that side of the differential.

The formula for the right-hand side is:

B−D+·006 in.

and here again final allowance must be made for variation in bearing thickness.

(7) When a framed number is marked on the back of the crown wheel, e.g. $\boxed{+2}$, it must be taken into account before assembling the shims and bearings

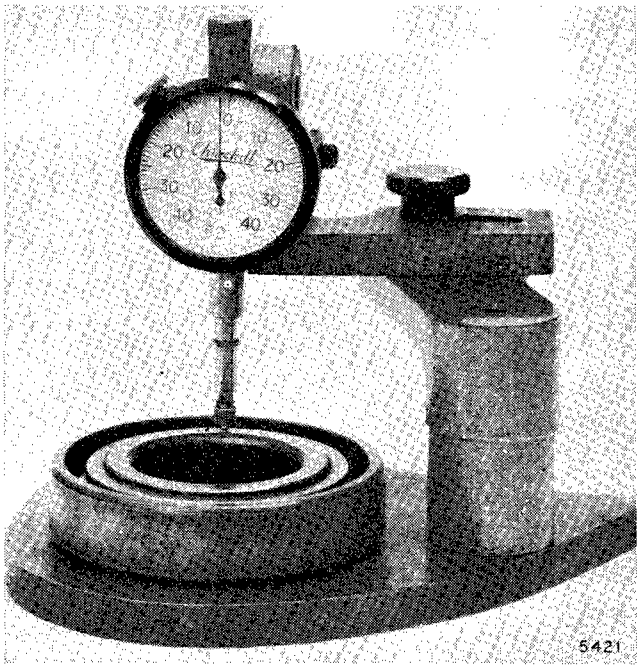


Fig. H.11
Checking the variation in bearing thickness

to the differential cage. This mark assists in relating the crown wheel with the pinion.

If, for example, the mark is +2, then shims to the value of ·002 in. (·05 mm.) must be transferred from the left-hand side (the crown wheel side) to the right-hand side. If the marking is −2, then shims to the value of ·002 in. (·05 mm.) must be moved from the right-hand side to the left-hand side.

(8) Assemble the bearings and shims as calculated to the differential cage and fit the differential to the gear carrier. Replace the bearing caps and tighten the nuts. Bolt the special tool surface plate to the gear carrier flange and mount the clock gauge on the magnet bracket in such a way that an accurate backlash figure may be obtained. (See Fig. H.12.) The minimum backlash allowed in any circumstances is ·005 in. (·127 mm.) and the maximum is ·007 in. (·178 mm.).

Great care must be taken to ensure absolute cleanliness during the above operations, as any discrepancies resulting from dirty assembly would affect the setting position of the crown wheel or pinion.

Section H.8

REMOVING AND REFITTING THE AXLE

Raise the rear of the car.

Mark the propeller shaft coupling flanges so that they may be replaced in the original relative positions. Remove the four bolts and self-locking nuts and release the rear end of the propeller shaft from the axle. Remove the nuts and spring and flat washers securing each end of each check strap to the anchor pins and remove the check straps.

Remove the split pin and clevis pin securing the brake cables to each brake operating lever. Remove the small nut and Phillips recessed-head screw securing the hand brake cable clip to the axle casing. Remove the self-locking nut and large flat washer securing the brake balance lever to the pivot on the axle casing.

Remove the nut and spring washer securing the lower end of each damper link to the rear spring clamp plate.

Unscrew the brake fluid supply pipe union and release the flexible pipe from the battery box support bracket.

Release the exhaust pipe from the exhaust manifold

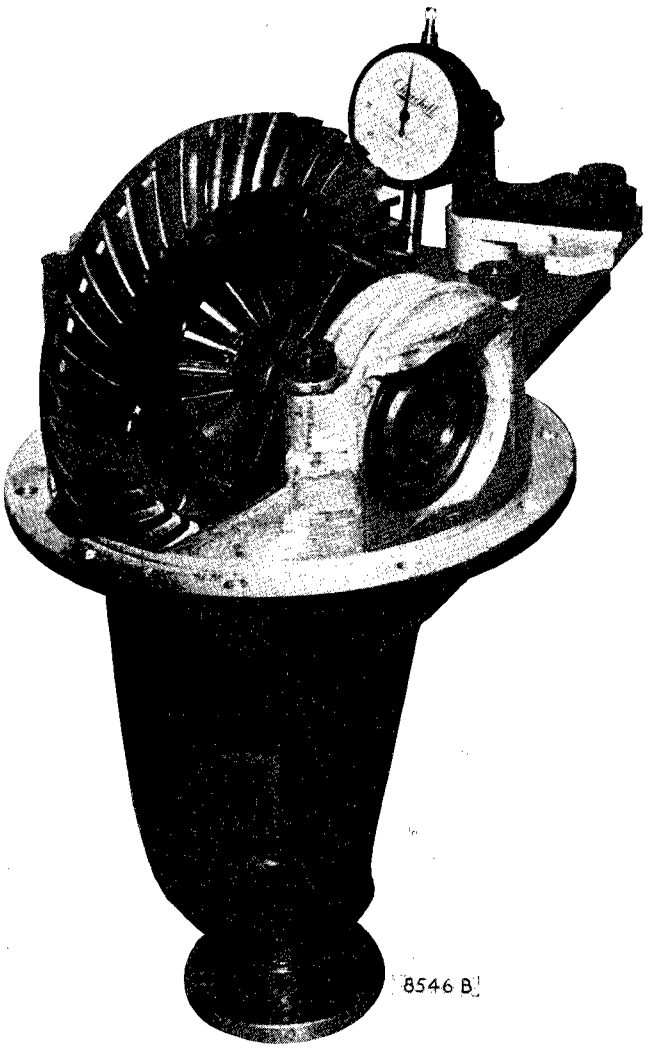


Fig. H.12
Measuring the crown wheel backlash

and the three supporting brackets and remove the exhaust pipe assembly.

Remove the nut and spring washer from the spring front anchor pin.

Support the axle casing and remove the rear shackle plates, brackets, and rubbers. Lower the axle support until the axle and spring assembly rests on the road wheels. Withdraw the front anchor pins and roll the assembly from beneath the car.

Uncouple the propeller shaft at the rear flange by unscrewing the four self-locking coupling nuts and bolts. Support the tail end of the propeller shaft.

Remove the rear shackle nuts and bolts.

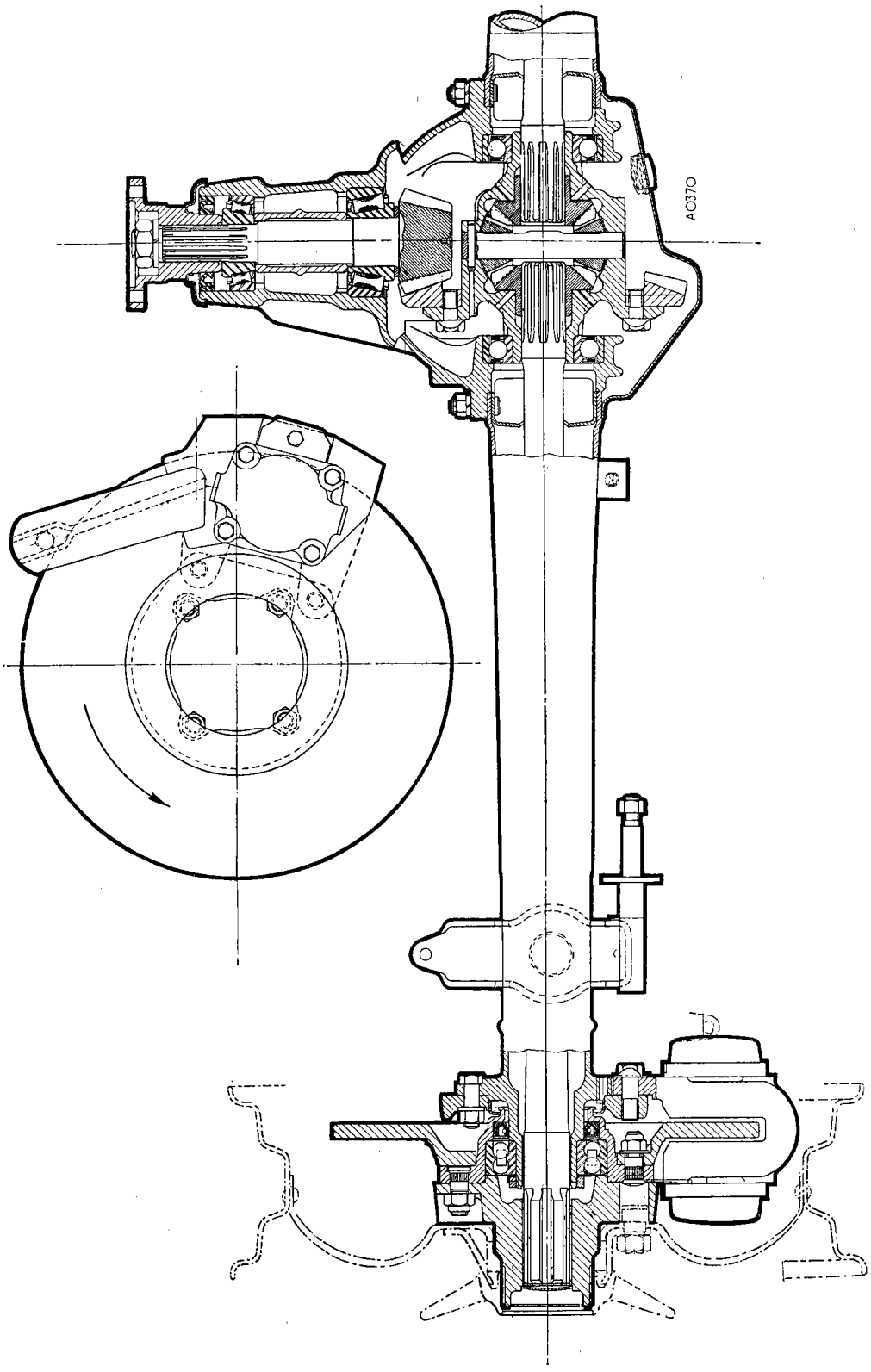
Remove the spring front anchorage bolts after removing the retaining nuts and spring washers.

The axle is now free to be withdrawn on the stand rearwards from the car.

Replacement is the reverse of the above sequence of operations.

(*See pages H.13 onwards for special tools*).

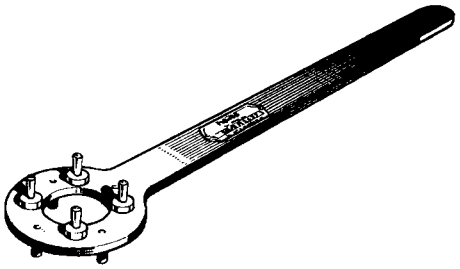
THE REAR AXLE IN SECTION



SPECIAL TOOLS

18G34A. Bevel Pinion Flange Wrench

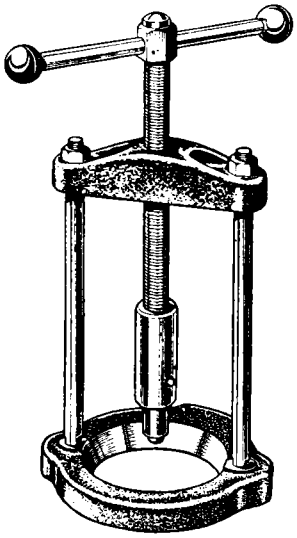
This wrench prevents the rotation of the bevel pinion flange when releasing or tightening the flange securing nut. The pegs of the holding wrench fit into the bolt holes of the flange.



18G34A

18G47C. Differential Bearing Remover (basic tool)

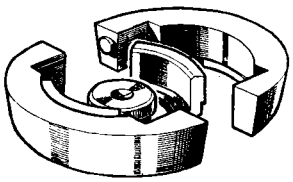
This standardized basic tool used in conjunction with adaptors 18G47T permits easy and safe withdrawal of the differential bearings.



18G47C

18G47T. Differential Bearing Remover—Adaptors

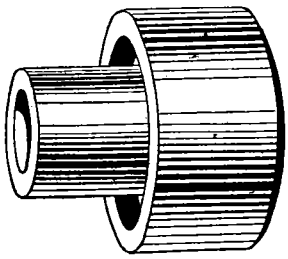
For use with basic tool 18G47C.



18G47T

18G134P. Rear Hub Bearing Remover, Differential Bearing Replacer, and Rear Hub Assembly Replacer Adaptor

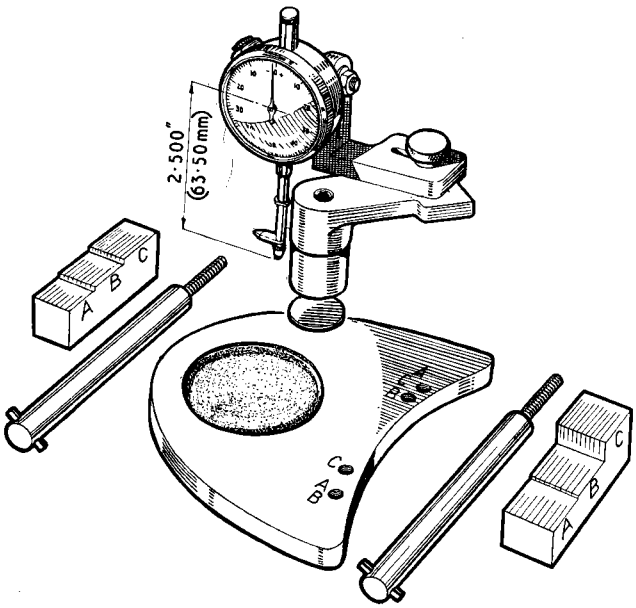
Use in conjunction with detachable handle 18G134.



18G134P

18G191B. Bevel Pinion and Differential Bearing Setting Gauge.

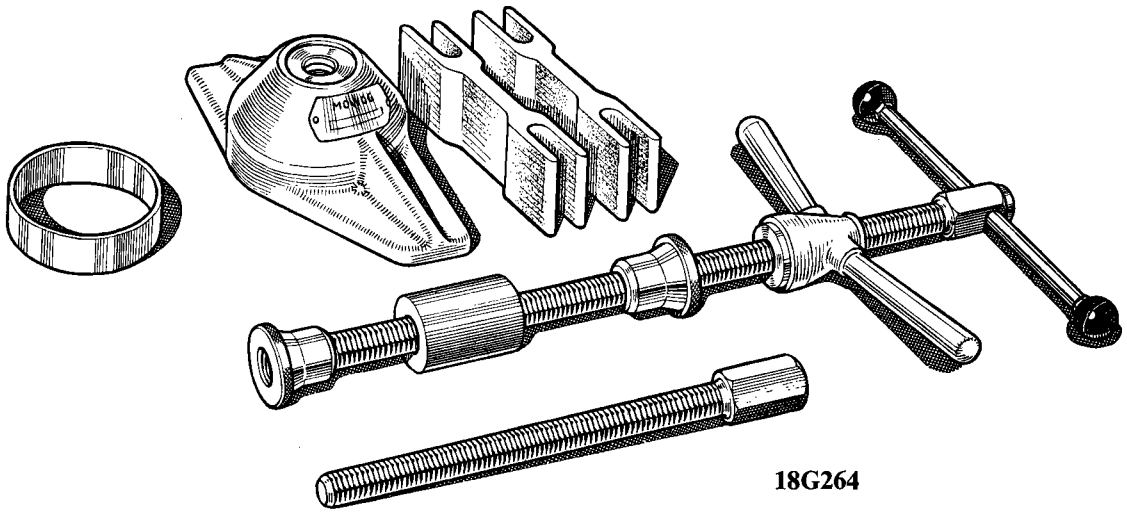
Correct assembly and adjustment of the pinion and differential gear is impossible without this special tool.



18G191B

18G264. Bevel Pinion Bearing Outer Race Remover (basic tool)

Comprising a body, centre screw with extension and tommy bar, wing nut, guide cone, and two distance pieces. A plain ring is also included to serve as a pilot when the rear bearing outer races are being replaced.

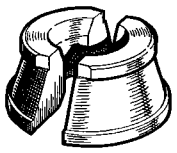


18G264

18G264E. Adaptor for Front Bearing

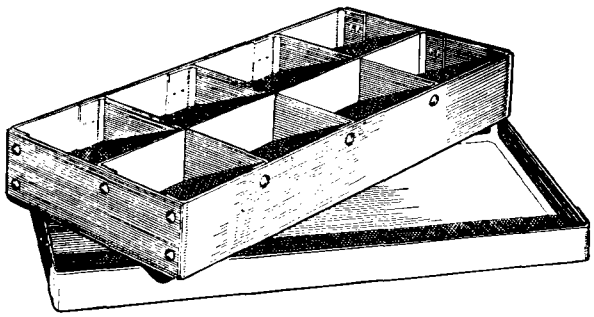
18G264F. Adaptor for Rear Bearing

For use with basic tool 18G264.



18G264K. Partitioned Fibre Box

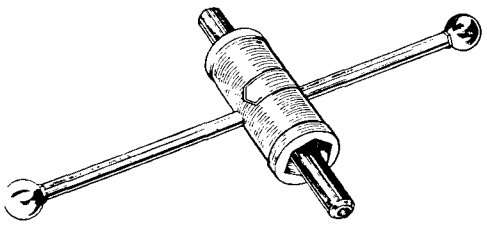
A strong fibre box for storing the bevel pinion bearing outer race remover adaptors.



18G264K

18G152. Rear Hub Nut Spanner

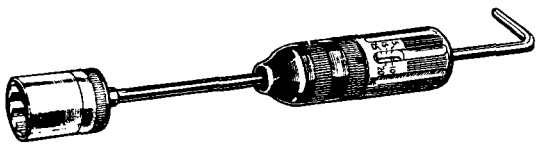
A reinforced tubular spanner complete with tommy bar, designed to pilot in the axle tube with the axle shaft withdrawn.



18G152

18G283. Bevel Pinion Bearing Preload Gauge

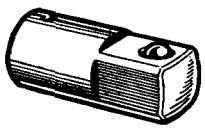
This torque spanner is ideal for measuring the pinion bearing preload. It can be set accurately between 5 and 25 lb. in. (·058 and ·288 kg. m.) with the key provided.



18G283

18G283A. Bevel Pinion Bearing Preload—Adaptor

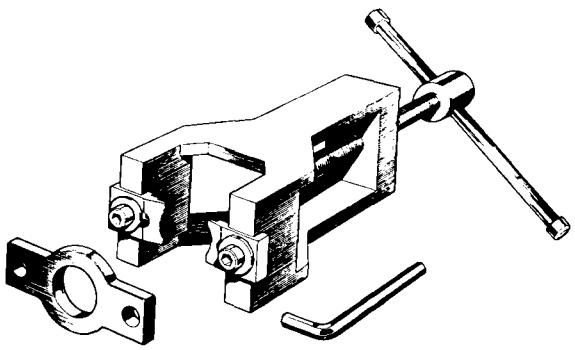
Used in conjunction with 18G283 this adaptor enables standard sockets to be used.



18G283A

18G285. Bevel Pinion Inner Race Remover and Replacer

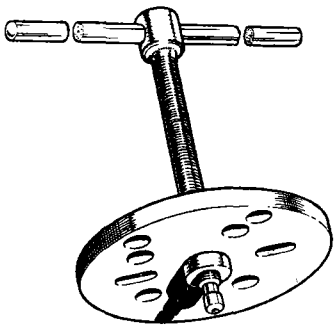
A tool which is essential when withdrawing or replacing the inner bearing race of the pinion shaft.



18G285

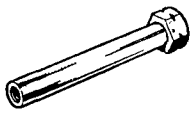
18G304. Hub Remover (basic tool)

The remover 18G304 is a basic tool for use with various adaptor bolts supplied separately. Screw the two adaptor bolts 18G304B onto the wheel studs and insert the thrust pad into the axle tube. The rear hub can then be removed by screwing up the centre screw against the thrust pad.



18G304

18G304B. Adaptor Bolts—$\frac{7}{16}$ in. UNF (2)



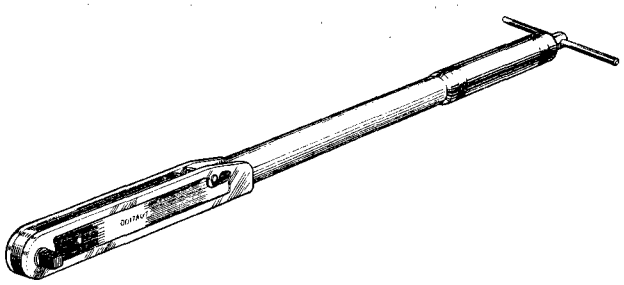
18G304B

18G304J. Thrust Pad

18G304J

18G372. Torque Wrench

This tool is essential if the recommended maximum torque for the bevel pinion flange securing nut is not to be exceeded. This tool is used with a standard-type socket and in conjunction with the flange holding wrench 18G34A.

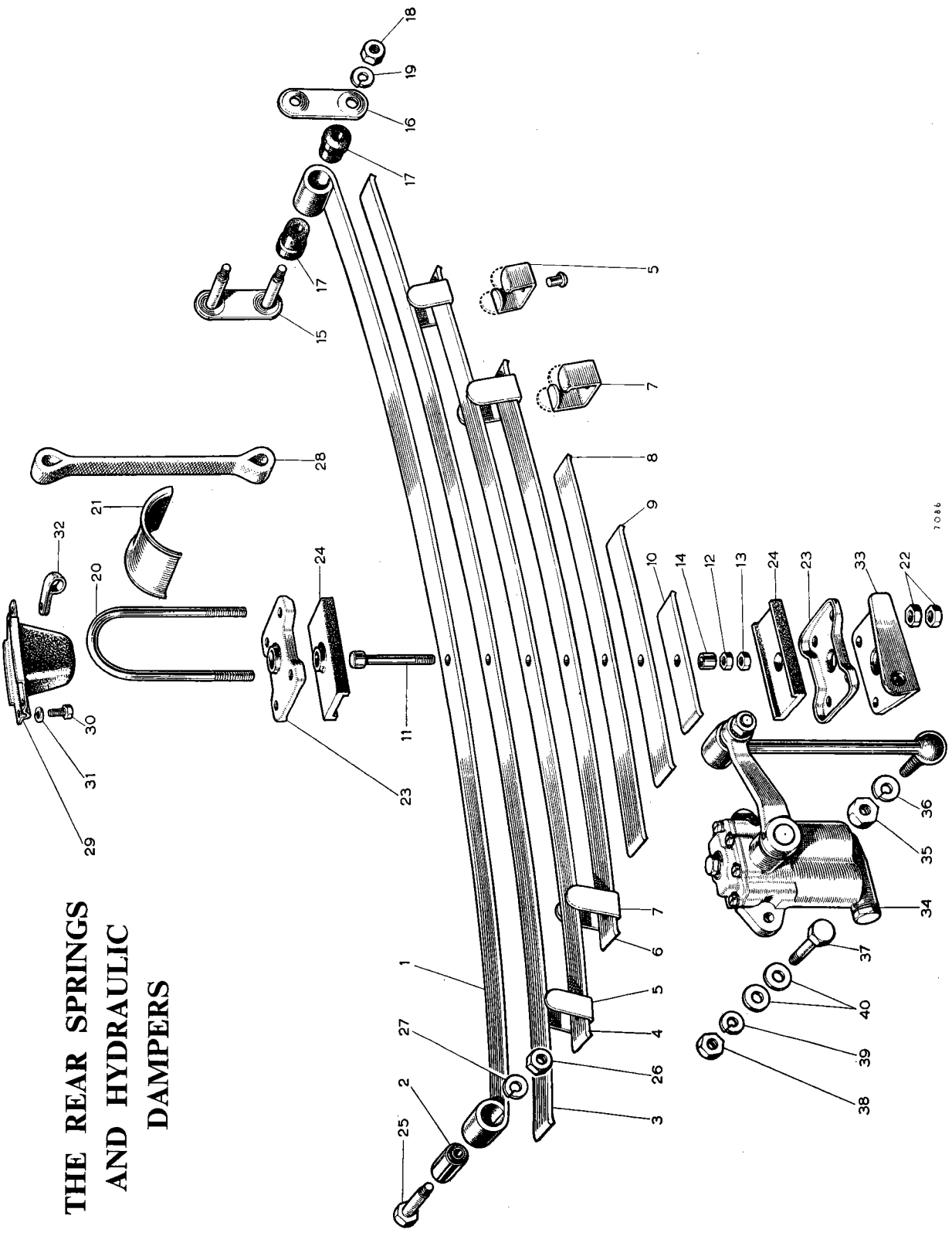


18G372

SECTION I

THE REAR ROAD SPRINGS

General description.


THE REAR SPRINGS
AND HYDRAULIC
DAMPERS
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KEY TO THE REAR SPRINGS AND HYDRAULIC DAMPERS

No.	*Description*
1.	Leaf - main.
2.	Bush.
3.	Leaf—second.
4.	Leaf—third.
5.	Clip.
6.	Leaf—fourth.
7.	Clip.
8.	Leaf—fifth.
9.	Leaf—sixth.
10.	Bottom plate.
11.	Bolt—locating.
12.	Nut for locating bolt.
13.	Locknut for locating bolt.
14.	Distance piece for locating bolt.
15.	Shackle plate and pins.
16.	Shackle plate (inner).
17.	Bush (rubber).
18.	Nut for shackle plate.
19.	Spring washer.
20.	'U' clip for rear spring.
21.	Plate for top 'U' clip.
22.	Nut for 'U' clip.
23.	Plate—spring locating.
24.	Pad—spring seating.
25.	Bolt for spring front end.
26.	Nut for front end bolt.
27.	Spring washer.
28.	Rebound strap.
29.	Bump rubber.
30.	Screw—bump rubber to frame.
31.	Spring washer.
32.	Clip—tail lamp harness (on bump screw).
33.	Bracket—shock absorber arm to rear spring—L/H.
34.	Shock absorber—rear (L/H).
35.	Nut—arm to bracket.
36.	Spring washer.
37.	Bolt—shock absorber to frame.
38.	Nut for frame bolt.
39.	Spring washer.
40.	Plain washer.

I THE REAR ROAD SPRINGS

GENERAL DESCRIPTION

The semi-elliptic leaf springs provided for the rear suspension are secured beneath the rear axle by 'U' bolts.

The front ends of the springs are anchored in flexing rubber bushes and the rear ends are mounted in similar bushes in swinging shackles.

Rubber pads are fitted between the spring and the axle.

Section I.1

REMOVAL OF REAR ROAD SPRINGS

Raise the rear of the car and support the chassis with a sling attached to the rear bumper bolts, or channelled-out or well-padded wood blocks forward of the rear springs. Support the axle on a suitable stand.

Remove the 'U' clip locknuts and nuts and drive up the clips to release the hydraulic damper anchor plate, also removing the spring clamp plates and rubbers.

Remove the rear shackles and front anchor pin and the spring.

Section I.2

DISMANTLING AND REASSEMBLING THE SPRINGS

Remove the locating plates and rubber pads.

Remove the locknut, nut, and distance piece from the spring centre bolt: this will release the three bottom leaves. The remaining leaves are parted by prising open the clips on Nos. 3 and 4 leaves.

Clean each leaf, and examine for cracks or breakage. Check the centre-bolt for wear or distortion. This bolt forms the location for the spring on its axle pad and should be in good condition.

IMPORTANT.—When fitting new leaves it is important that they are of the correct length and thickness, and have the same curvature as the remaining leaves.

It is advisable, even when no leaves are broken, to fit replacement springs when the originals have lost their camber due to settling.

Reassembling

The springs should be assembled clean, dry, and free from any lubricant, unless they are liberally coated with Shell Ensis 260 Fluid.

Place the leaves together in their correct order, locating them with the centre-bolt.

The dowel head of the bolt must be on top of the spring. Replace the distance piece and clamp the leaves together.

Knock down the spring clips to close firmly round the main leaf.

Before replacing the shackle bolts, bushes, and shackle plates they must be inspected for wear and, if necessary, replaced by new components.

Before tightening the spring bolts it is absolutely essential that the normal working load be applied to the springs so that the flexing rubber bushes are deflected to an equal extent in both directions during service. Failure to take this precaution will inevitably lead to early deterioration of the bushes.

Section I.3

MAINTENANCE OF THE REAR SPRINGS

As the rear springs are mounted in rubber, spraying with oil should be strictly avoided.

The only attention required is an occasional tightening of the spring seat bolts to make sure that they are quite tight.