SECTION Q

SERVICE TOOLS

Every Distributor servicing Morris cars is recommended to maintain the Service tools detailed in this list, as by their use damage to parts will be obviated and repairs generally will be greatly facilitated. For additional information refer to the Service Tool Catalogue (Part No. AKD 770). When ordering Service tools always quote new part numbers.

Description	*Old Part No.*	*New Part No.*
Extractors		
Valve spring compressor with foot (Series MM)	38378	**18G 270**
Detachable foot for above (Series MM)	68821	**18G 271**
Valve spring compressor with foot (Series II and Minor 1000)	68820	**18G 45**
Front and rear hub remover (basic tool)	AJA 5019	**18G 304 E**
Bolts for above ($\frac{7}{16}$ in. B.S.F.)	AJA 5025	**18G 304 C**
Bolts for above ($\frac{7}{16}$ in. UNF.)	AJA 5022	**18G 304 F**
Bolts (for use with $\frac{3}{8}$ in. UNF. wheel studs) (Series II and Minor 1000)	AJA 5033	**18G 304 H**
Axle end plug (for use with 18G 304 F) (Series II and Minor 1000)	AJA 5034	**18G 304**
Axle shaft (B.S.F.) (semi-floating axle only)	68823	**18G 374 A**
Axle shaft (UNF.) (semi-floating axle only)	301203	**18G 284**
Crankshaft pulley remover adaptor (Series MM)	68824	**18G 374**
First motion shaft remover (Series MM)	68825	**18G 318**
Steering-wheel remover	68827	**18G 310**
Bevel pinion bearing inner race (remover and replacer)	301224	**18G 285**
Rear axle bevel pinion outer race (fitting and withdrawing) (semi-floating axle)	301587	**18G 264**
Rear axle pinion outer race fibre box	—	**18G 264 K**
Adaptor for use with 18G 264 (three-quarter-floating axle)	AJE 5003	**18G 264 E**
Rear axle bevel pinion outer race (remover adaptor) (three-quarter-floating axle)	AJE 5005	**18G 264 D**
Front hub inner bearing and crankshaft gear	68895	**18G 309**
Attachment for use with 18G 309 (up to Car No. 228267)	68985	**18G 309 A**
Camshaft liner remover and replacer (basic tool)	AJA 5060	**18G 124 A**
Adaptors for use with 18G 124 A (Series II and Minor 1000)	18G 147	**18G 124 K**
Differential cage bearing remover (basic tool) (Series II)	AJA 5061	**18G 47 C**
Adaptors for use with 18G 47 C (Series II and Minor 1000)	18G 172	**18G 47 M**
Gearbox rear oil seal remover (basic tool) (Series II and Minor 1000)	—	**18G 389**
Gearbox rear oil seal remover adaptor (Series II and Minor 1000)	—	**18G 389 A**
Bearing and oil seal remover and replacer (basic tool) (Series II and Minor 1000)	—	**18G 134**
Timing case oil seal replacer adaptor	—	**18G 134 BD**
Gearbox rear oil seal replacer adaptor (Series II and Minor 1000)	—	**18G 134 L**
Rear hub replacer and adaptor (Series II and Minor 1000)	—	**18G 134 Q**
Camshaft liner remover and replacer (basic tool) (Series II and Minor 1000)	—	**18G 124 A**
Camshaft liner remover adaptor (Series II and Minor 1000)	—	**18G 124 K**
Assembly tools		
Clutch plate centralizer (Series MM)	39371	**18G 275**
Clutch plate aligning tool (Series II and Minor 1000)	GT 139	**18G 139**
Assembly clutch gauging fixture	AJA 5010	**18G 99 A**

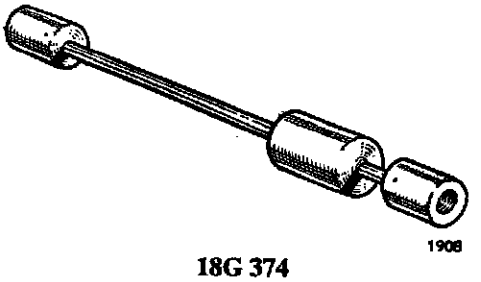
Description	*Old Part No.*	*New Part No.*
Bevel pinion checking fixture (with mandrel) (semi-floating axle only)	39879	**18G 280**
Bevel pinion bearing preload gauge (see page Q.7)	—	**18G 207**
Crankshaft gear, pulley and propeller shaft flange replacer (Series II and Minor 1000)	GT 138	**18G 138**
Synchromesh assembly ring (Series II and Minor 1000)	GT 144	**18G 144**
Valve rocker bush remover and replacer ('A'- and 'B'-type engines)	—	**18G 226**
Valve rocker bush drift (Series II and Minor 1000)	—	**18G 226 A**
Water pump bearing (Series II)	GT 60	**18G 60**
Drift for first motion shaft (Series II and Minor 1000)	GT 140	**18G 140**
Bevel pinion and differential bearing setting gauge (three-quarter-floating axle)	AJA 4004	**18G 191 and 18G 191A**
Piston ring clamp (all models)	—	**18G 55 A**
Dummy layshaft (Series II and Minor 1000)	—	**18G 471**
Engine (later type) front cover centralizer	—	**18G 1044**
Spanners		
Lockheed bleeder screw wrench	46746	**18G 353**
Cylinder head nut (Series MM)	68830	**18G 330**
First motion shaft nut (Series MM)	39880	**18G 317**
Tappet spanner (Series MM)	68945	**18G 334**
Tappet head wrench with sockets 18G 307 B and 18G 307 A (Series MM)	68834	**18G 307**
Socket for tappet head wrench (Series MM)	39881	**18G 307 B**
Steering tie-rod pin spanner	68965	**18G 312**
Steering tie-rod 'C' spanner	300813	**18G 313**
Starter nut spanner (Series II and Minor 1000)	GT 98	**18G 98**
Bevel pinion flange wrench	AJA 5062	**18G 34 A**
Rear hub nut spanner (Series II and Minor 1000)	—	**18G 152**
Torque wrench—30 to 140 lb. ft.	—	**18G 372**
Reamer		
Oil pump bush (Series MM)	68828	**18G 329**
Camshaft liner reamer (basic tool) (Series II and Minor 1000) ..	AJE 5001	**18G 123 A**
Camshaft liner reamer cutter (Series II and Minor 1000)	18G 151	**18G 123 W**
Camshaft liner reamer pilot (Series II and Minor 1000)	18G 123 X	**18G 123 AH**
Camshaft liner reamer pilot (Series II and Minor 1000)	18G 123 Y	**18G 123 AJ**
Camshaft liner reamer component fibre box	18G 123	**18G 123 AL**
Miscellaneous		
Valve grinder (suction) (Series MM, Series II, and Minor 1000) ..	—	**18G 29**
Valve grinder suction pad	—	**18G 29 B**
Valve seat finishing cutter (Series MM)	—	**18G 375**
Valve seat narrowing cutter (top) (Series MM)	—	**18G 25 B**
Valve seat narrowing cutter (bottom) (Series MM)	—	**18G 25 C**
Valve seat cutter pilot (Series MM)	—	**18G 375 A**
Valve seat cutter and pilot handle (Series MM, Series II, and Minor 1000)	—	**18G 27 A**
Fibre box—valve seat cutters	—	**18G 27 B**
Valve seat glaze breaker (Series II and Minor 1000)	—	**18G 167 A**
Valve seat narrowing cutter (top) (Series II and Minor 1000) ..	—	**18G 167 B**
Valve seat narrowing cutter (bottom) (Series II and Minor 1000) ..	—	**18G 167 C**
Valve seat cutter pilot (Series II and Minor 1000)	GT 678	**18G 167 D**

Description	Old Part No.	New Part No.
Valve seat finishing cutter (Series II and Minor 1000)	GT 167	18G 167
Swivel pin die nuts (·015 in. undersize)	AJA 4003	18G 305 A
Swivel pin die nut holder (basic tool)	AJA 5051	18G 305
Mono body jack (universal) and metal case	—	18G 308 B
Oil pump relief valve grinding tool	—	18G 69

NOTES ON THE USE OF SERVICE TOOLS

18G 374. Axle Shaft Extractor (B.S.F.)

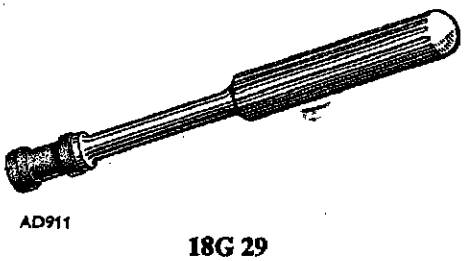
The use of this impulse-type extractor is essential when withdrawing one of the rear axle shafts from the semi-floating axles. It is attached to the threaded end of the axle shaft and withdraws the shaft complete with its bearing and oil seal.



18G 374

18G 29. Suction Valve Grinder

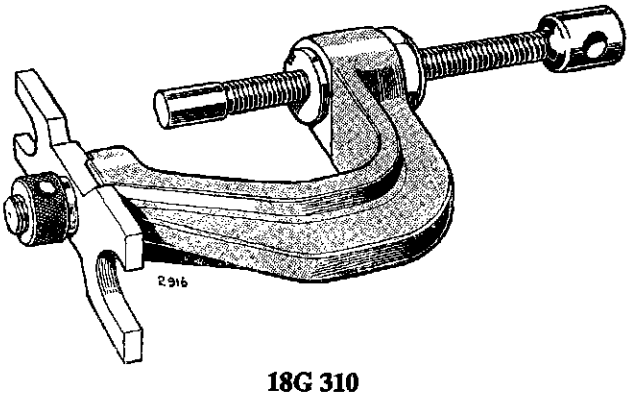
As the valves on the Morris Minor are not provided with a screwdriver grinding slot, it is necessary to use a rubber suction tool when grinding in the valves. An additional suction pad 18G 29 B is available for use on Minor engines (Series MM, Series II, and Minor 1000).



18G 29

18G 310. Steering-wheel Remover

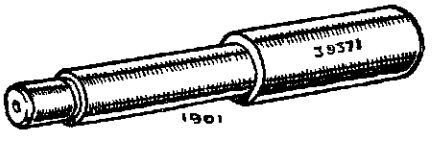
This extractor has been specially designed to remove most Morris, Wolseley, or M.G. steering-wheels without damage. Dealers who already possess tool No. 55418 and the attachment (Part No. 56052) will find that this may also be used to withdraw the steering-wheel.



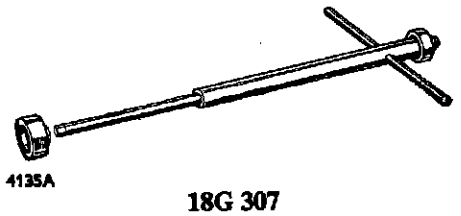
18G 310

18G 275. Clutch Plate Centralizer

When reassembling the single-plate clutch of the Series MM cars it is essential to use this tool to ensure that the clutch plate is concentric with the spigot bearing in the flywheel centre, otherwise it is impossible to assemble the gearbox to the engine.



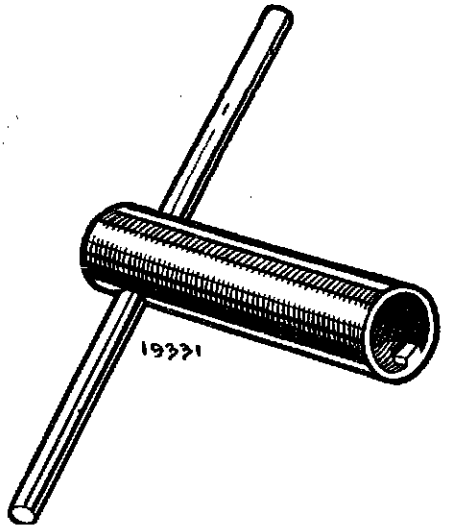
18G 275



18G 307

18G 307. Tappet Head Wrench

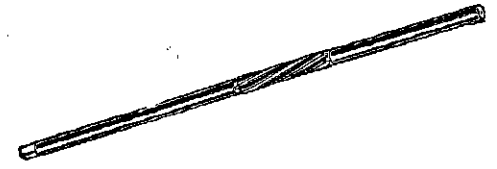
This tool becomes exceedingly useful when the occasion arises to change the tappet adjusting screws on the Morris Minor (Series MM) or Morris Oxford (Series MO) models. It will be noted that the socket (tool No. 18G 307 B) is detachable from the stem. The socket (tool No. 18G 307 A) for use on the Oxford (Series MO) models is secured to the top of the tool to prevent loss. In use the socket is placed on the tappet screw first and the 'T'-handled stem connected to it through the valve guide. It is claimed that a set of tappet screws can be replaced in less than 10 minutes by the aid of this tool.



18G 317

18G 317. First Motion Shaft Nut Spanner (Series MM)

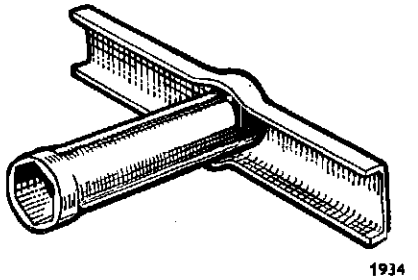
Removal of the drive gear bearing locknut without damage can only be accomplished by using this spanner. A hammer and punch should never be used for this purpose.



18G 329

18G 329. Oil Pump Bush Reamer

This reamer has been specially designed by Service Department to ream in line the oil pump bushes of the Morris Minor (Series MM) and the Morris Oxford (Series MO).



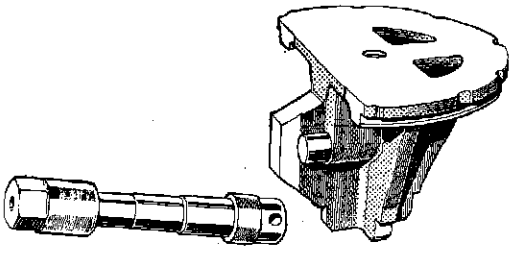
18G 353

18G 353. Lockheed Bleeder Screw Wrench

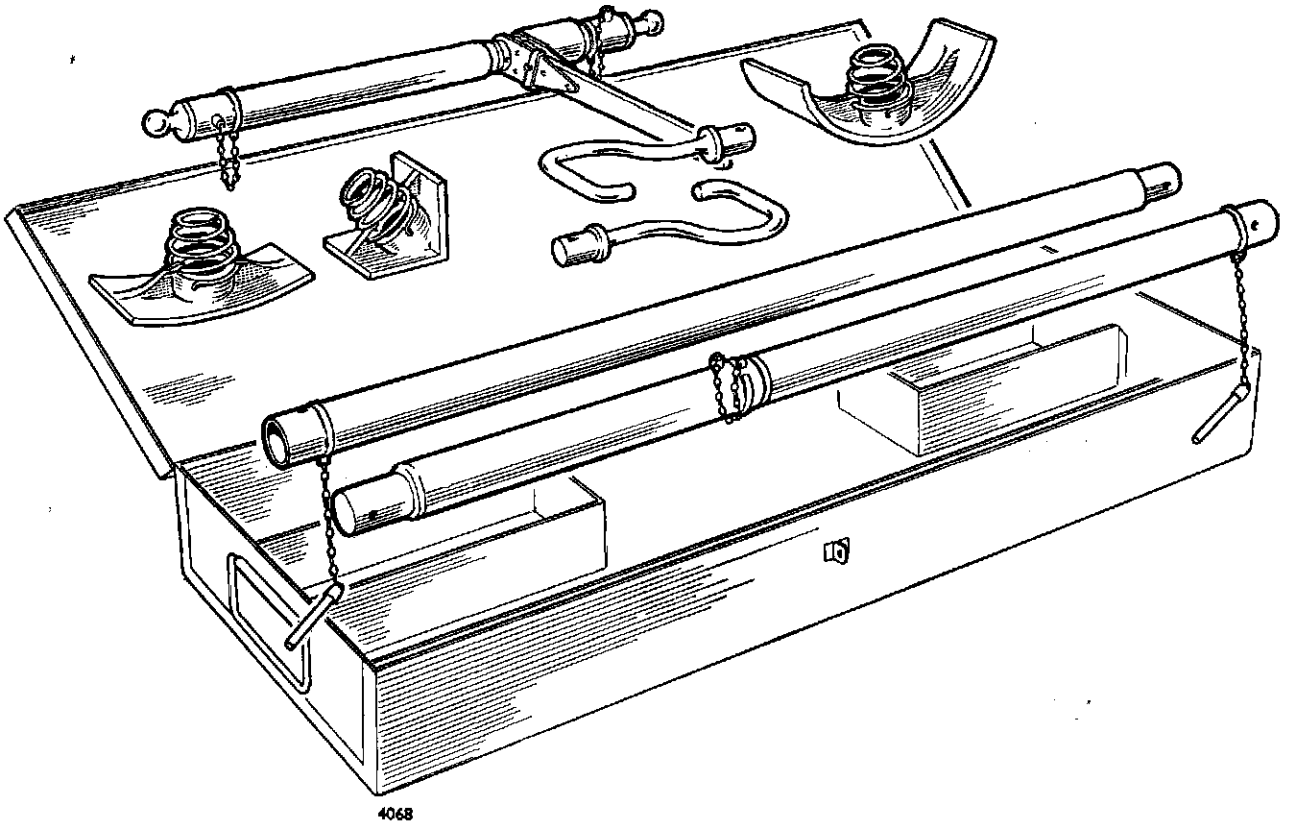
This specially designed tube spanner and integral tommy-bar greatly assists the brake bleeding operation. The spanner remains square on the bleeder screw without disturbing the bleed tube.

18G 280. Bevel Pinion Checking Fixture

Adjustment of the pinion position is not possible without the aid of this special tool. Instructions for its use are detailed in Section H of this Manual.



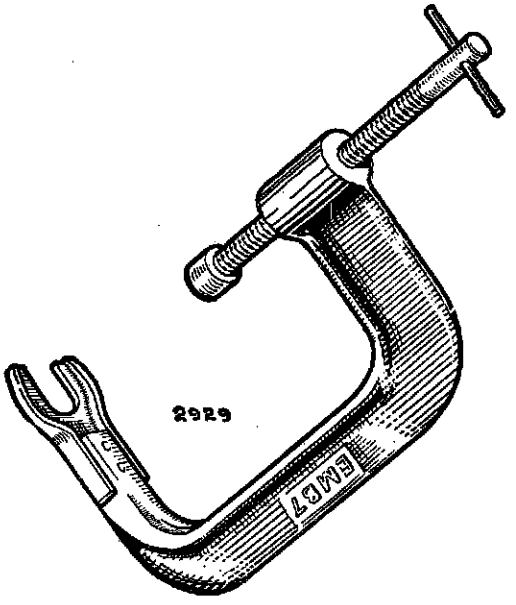
18G 280



18G 308 B

18G 308 B. Morris Mono Body Jack and Metal Case

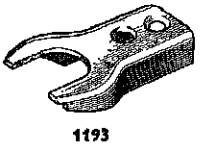
The jack is a tool which has been designed to deal with repairs to bodies of all-steel construction. It is supplied in a metal case complete with the various attachments and will be found capable of dealing with all normal requirements.



18G 270

18G 270. Valve Spring Compressor

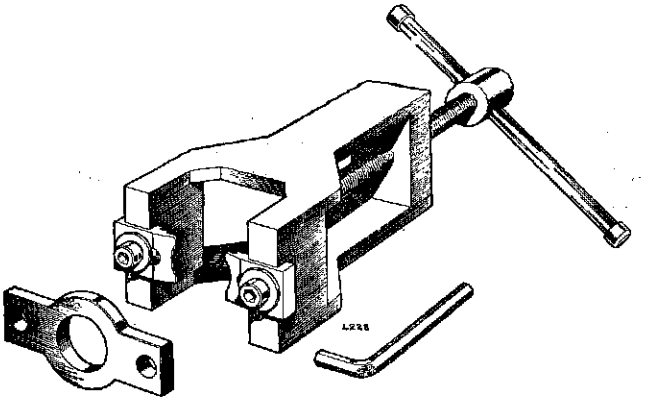
This tool has been specially designed to suit all the Eight models and the Morris Minor (Series MM). It will be noticed that it is sufficiently robust to prevent fracture in normal usage, and the foot is detachable, making it possible to fit a replacement if the original is damaged.



18G 271 A

18G 271 A. Valve Spring Compressor Foot

A detachable foot for use with 18G 270.



18G 285

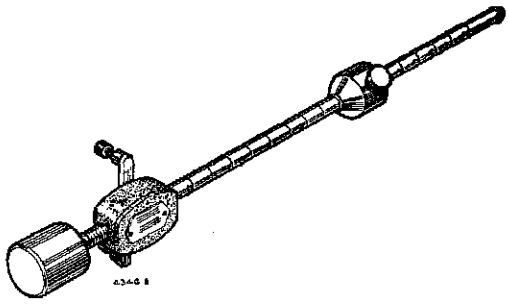
18G 285. Bevel Pinion Bearing Inner Race Remover and Replacer

This tool is necessary for withdrawing the inner bearing race from the pinion shaft. It can also be used for replacing the race on the shaft without damage.

This is a universal tool for use with all hypoid-type axles.

18G 207. Bevel Pinion Bearing Preload Gauge

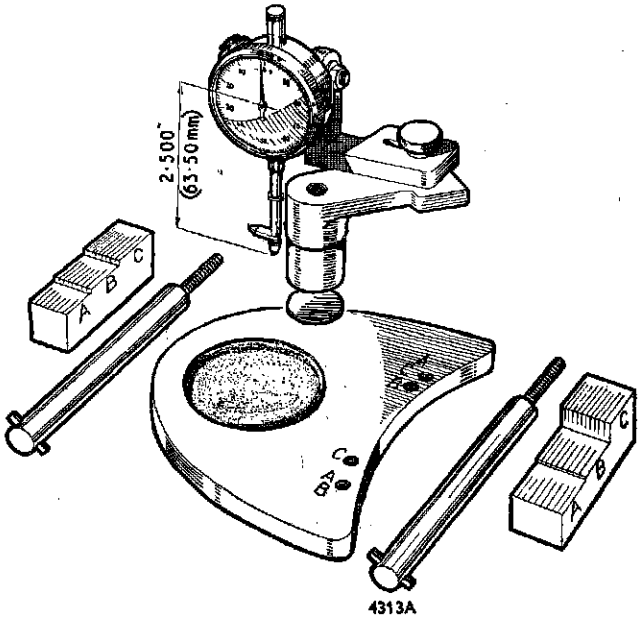
The movable arms of the tool are located in opposite holes of the bevel pinion flange and the weight moved along the rod to the poundage required.



18G 207

18G 191 and 18G 191 A. Bevel Pinion and Differential Bearing Setting Gauge

Correct assembly and adjustment of the rear axle pinion and differential gear on the Morris Minor (Series II and 1000) is impossible without this special tool. Its full use is detailed and illustrated in Section HH.

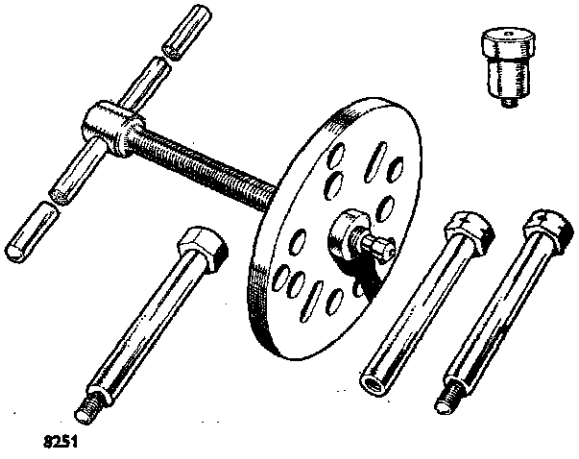


18G 191 and 18G 191 A

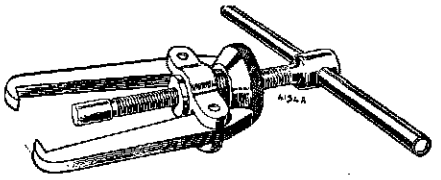
18G 304. Front and Rear Hub Remover (basic tool)

This assembly supersedes tool No. 68822 and is universal. The bolts for use with it are obtainable only under their own part numbers. The bolts for use on the Morris Minor are (B.S.F.) 18G 304 E or (UNF.) 18G 304 C. Only two bolts are required for hub withdrawal.

For use on later hubs incorporating $\frac{3}{8}$ in. UNF. wheel fixing studs use bolts 18G 304 F and axle end plug 18G 304 H.



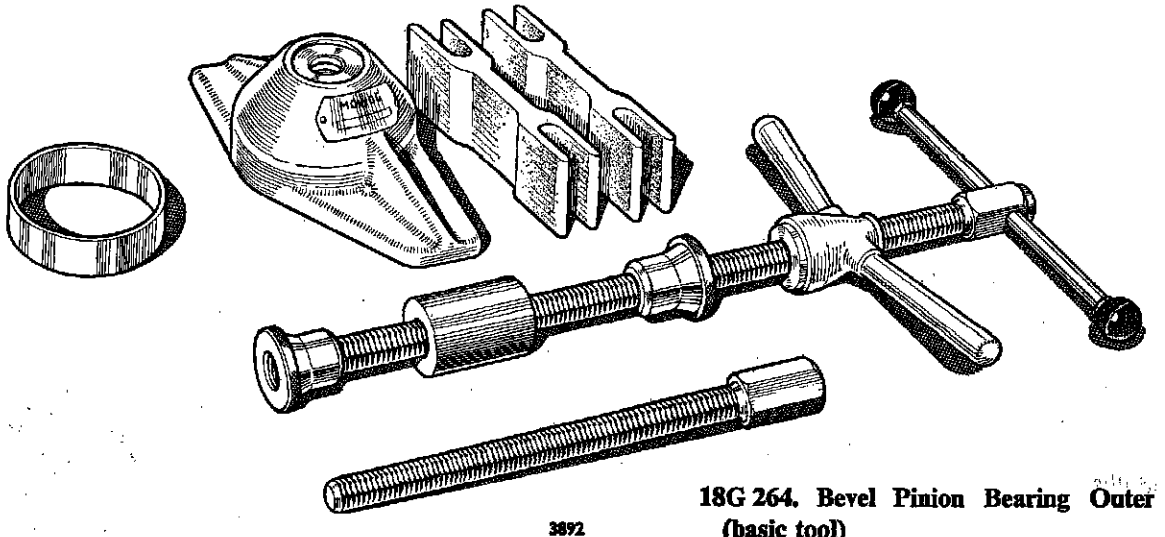
18G 304, 18G 304 E (B.S.F.), 18G 304 C (UNF.), 18G 304 F ($\frac{3}{8}$ in. UNF.), 18G 304 H (plug)



18G 309
Use with attachment 18G 309 A

18G 309. Front Hub Inner Bearing and Crankshaft Gear Extractor (up to Car No. 228267)

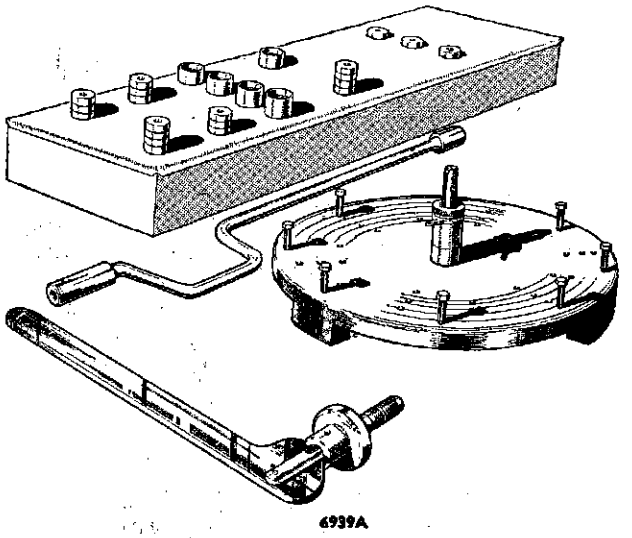
Should the inner bearing remain on the stub axle after removing the front hub and brake-drum assembly, this extractor and attachment must be used to remove the bearing without damage to the oil seal behind it. This tool may also be used to withdraw the crankshaft drive gear from Wolseley models and from the Morris Six.



18G 264

18G 264. 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. Use with adaptor 18G 264 D.



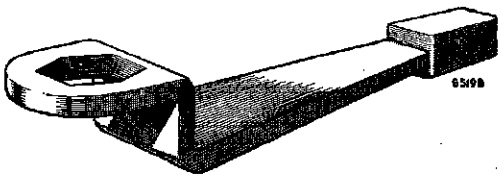
18G 99 A

18G 99 A. Clutch assembly Gauging Fixture

This tool may be used to adjust the release levers of all clutches from 6¼ in. dia. to 11 in. dia. (15·9 to 28 cm.) before the clutch unit is fitted to the flywheel.

18G 98. Starter Nut Spanner

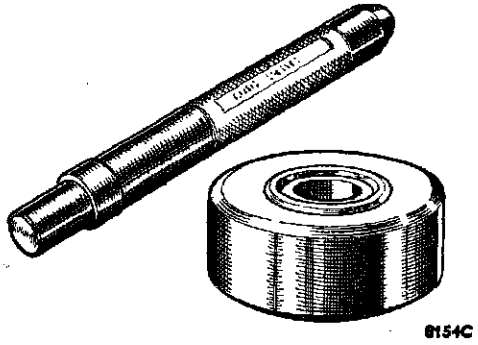
This shock-type spanner enables the starter nut on Series II and Minor 1000 models to be removed without the need for locking the crankshaft with improvised means, which may cause damage to the components. The tool may also be used on the M.G. Magnette.



18G 98

18G 226. Valve Rocker Bush Remover and Replacer

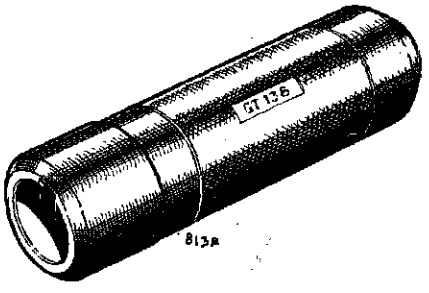
This tool prevents damage to the valve rocker bush when it is being fitted or removed. When servicing Morris Minor engines (Series II and 1000) it is necessary to use a separate bush drift (Service Tool 18G 226 A).



18G 226

18G 138. Crankshaft Gear, Pulley, and Propeller Shaft Flange Replacer

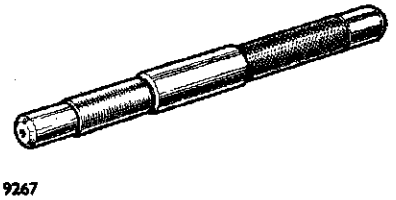
This tool is used for driving on the crankshaft gear and for lining up the timing cover on the Morris Minor (Series II and 1000).



18G 138

18G 139. Clutch Centralizer

The driven plate in the Morris Minor (Series II and 1000) clutch may readily be centralized with the aid of this tool.



18G 139

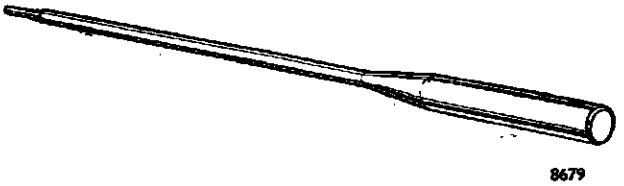
18G 144. Synchromesh Assembly Ring

This tool retains the balls and springs in the synchronizer while it is being pushed into the sleeve or first speed wheel on the Morris Minor (Series II and 1000).

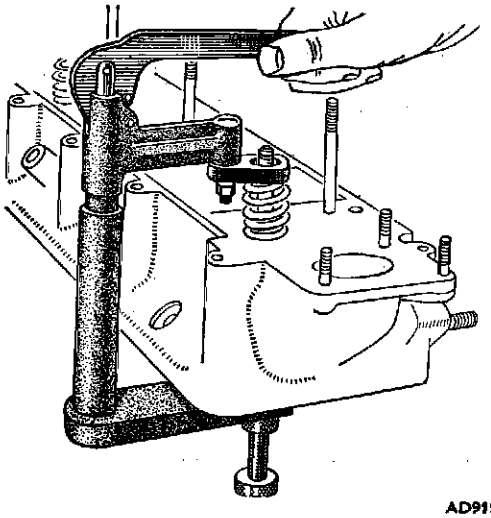
18G 144

18G 471. Dummy Layshaft

The fitting of a layshaft to the lay gear on the Morris Minor (Series II) is simplified by the use of this tool.



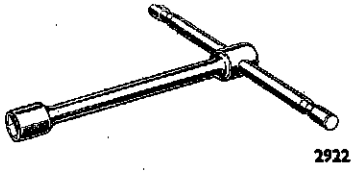
18G 471



18G 45

18G 45. Valve Spring Compressor

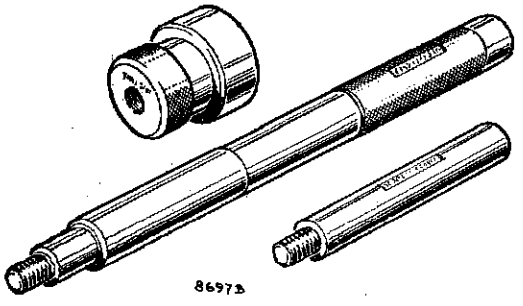
This tool is designed for o.h.v. engines. It has a cam and lever action and screw adjustment. The adaptor ring is shaped to facilitate the fitting of cotters.



18G 330

18G 330. Cylinder Head Nut Spanner

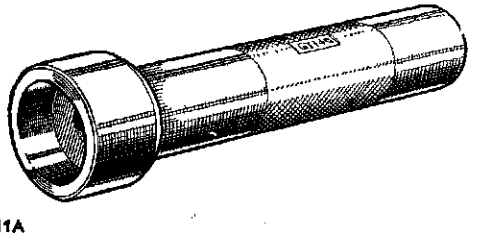
A strong socket spanner with a tommy-bar designed to give the recommended maximum torque to the cylinder head stud nuts with normal hand pressure (Series MM).



18G 60

18G 60. Water Pump Bearing Remover and Replacer

To safeguard against broken pump bodies this tool should be used when removing and replacing bearings. Comprising a drift and two pilots, it aligns each bearing with its housing before the bearing is pressed into position (Series II).



18G 140

18G 140. First Motion Shaft Assembly Replacer

When threaded over the first motion shaft this tool registers with the outer race of the bearing, which then can be driven home without damage (Series II and Minor 1000).

18G 334

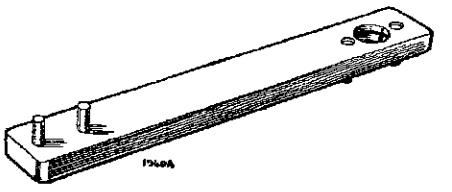
18G 334. Tappet Spanner

This is a thin spanner specially designed for easy adjustment of the tappets (Series MM).

18G 312. Steering Tie-rod Spanner

This tool is necessary when removing the bolts which secure the rear spring front shackle and may be used on other Morris and Wolseley models.

The opposite end of the tool is essential when dismantling the rack and pinion steering gear fitted to the Minor and many other models.

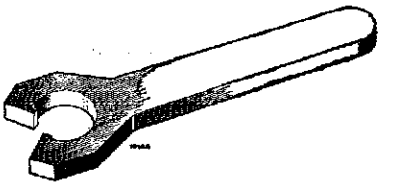


18G 312

18G 313. Steering Tie-rod 'C' Spanner

A tool with jaws designed to engage the shallow splines of the steering rack ball housing cup and remove it without damage.

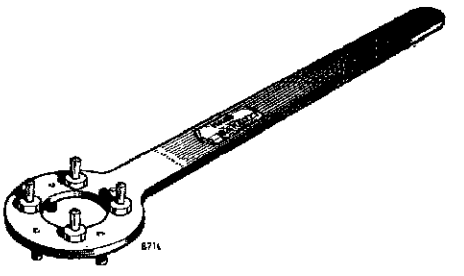
This spanner may also be used on the ball housing of the rack and pinion steering gear on many other models.



18G 313

18G 34 A. Bevel Pinion Flange Wrench

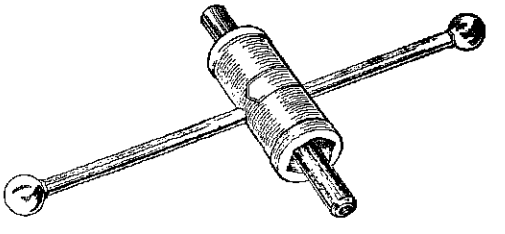
The two sets of tapered pins on this tool ensure that it will hold the propeller shaft flange against rotation while the flange nut is released or tightened on semi-floating or three-quarter-floating axles.



18G 34 A

18G 152. Rear Hub Nut Spanner

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



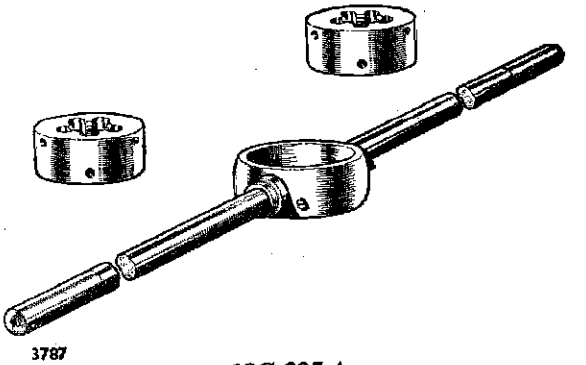
9194

18G 152

18G 305 A. Swivel Pin Die Nuts (·015 in. undersize)

18G 305. Swivel Pin Die Nut Holder (basic tool)

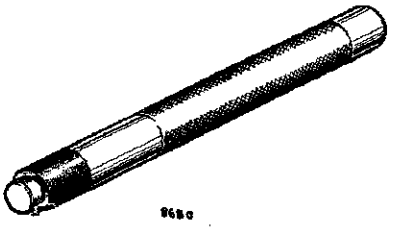
Detailed instructions for the use of this tool are given in Section K.16, together with the part numbers of the undersize swivel pin links which will be necessary.



3787

18G 305 A

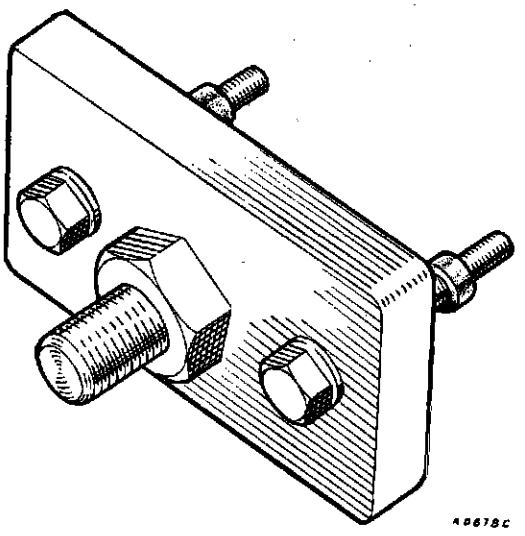
18G 305



18G 69

18G 69. Oil Pump Relief Valve Grinding Tool

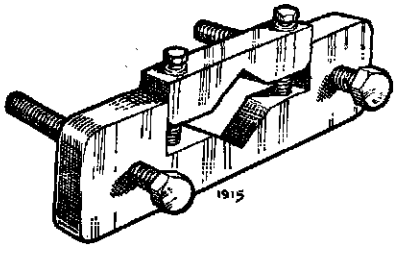
The small knurled knob at the end of this tool is turned to compress the rubber sleeve and increase its diameter until, when pressed into the valve, the rubber will hold the valve securely while it is lapped to its seat.



18G 374 A

18G 374 A. Crankshaft Pulley Remover Adaptor

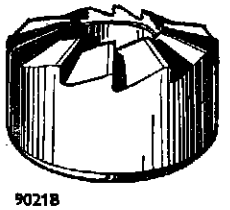
Specially designed to fit the axle shaft extractor, this tool may be used to withdraw the crankshaft pulley from Series MM cars without damage to the pulley flange.



18G 318

18G 318. First Motion Shaft Remover

The use of this extractor is essential if the drive gear is to be withdrawn from the gearbox of a Series MM car without damage to the bearing guard. The extractor is clamped to the drive gear shaft and withdraws the drive gear and bearing.



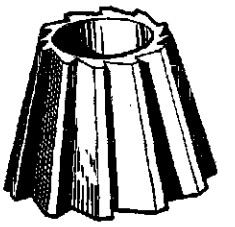
18G 25 B, 18G 167 B

18G 25 B and 18G 167 B. Valve Seat Narrowing Cutter—Top

Designed to enable seats of the Series MM and II and Minor 1000 to be maintained at their original dimensions. Use with pilot 18G 375 A and handle 18G 27. These cutters must not be used on hardened valve seat inserts—the inserts must be renewed.

18G 25 C and 18G 167 C. Valve Seat Narrowing Cutter—Bottom

Use with pilot 18G 375 D and handle 18G 27 for the Series MM and II and Minor 1000.

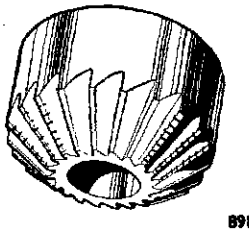


9021A

18G 25 C, 18G 167 C

18G 375 and 18G 167. Valve Seat Finishing Cutter

Use with pilot 18G 375 D and handle 18G 27 for the Series MM and II and Minor 1000.

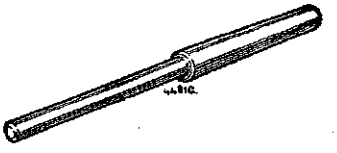


8988

18G 375, 18G 167

18G 375 D. Valve Seat Cutter Pilot

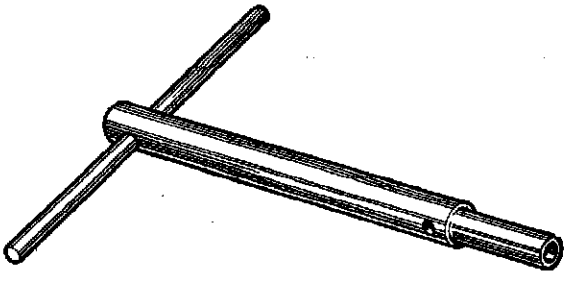
Use with cutters 18G 25 B, 18G 25 C, and 18G 375 and handle 18G 27 for the Series MM.



18G 375 D

18G 27. Valve Seat Cutter and Pilot Handle

A standard type of handle for use with a wide range of cutters.

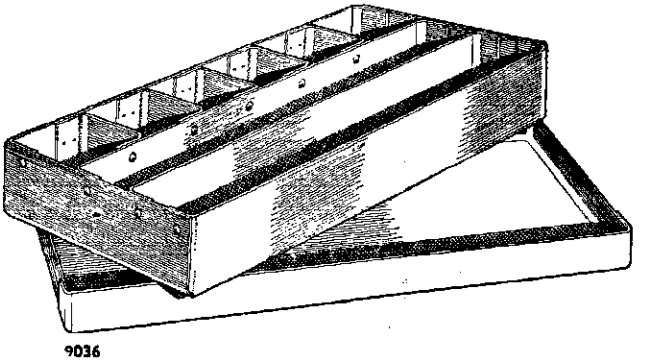


4361D

18G 27

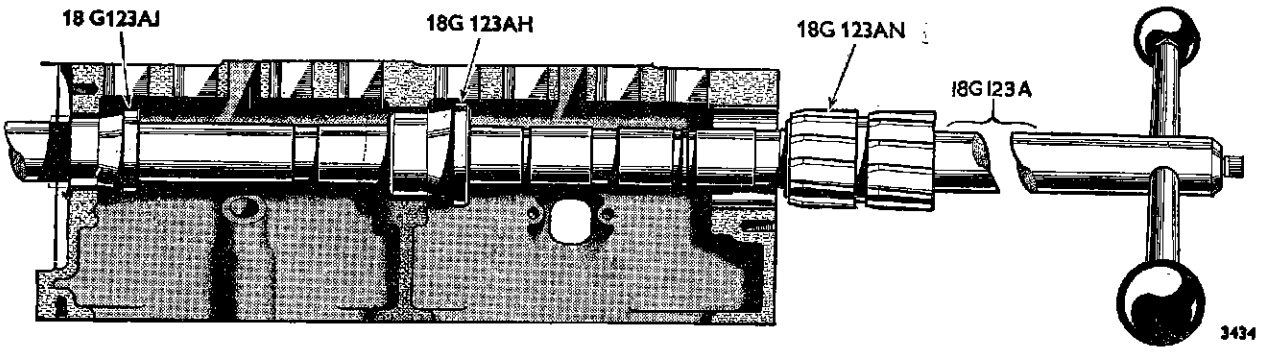
18G 27 B. Fibre Box—Valve Seat Cutters

A fibre box for the storage of valve seat cutting tools. Partitioned to protect the machined edge of the cutters.



9036

18G 27 B



18G 123 A, 18G 123 AN, 18G 123 AH, and 18G 123 AJ

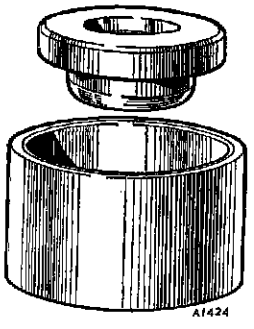
18G 123 A, 18G 123 AN, 18G 123 AH, and 18G 123 AJ. Camshaft Liner Reamer

This equipment is essential when reconditioning cylinder blocks on the Series II and Minor 1000, otherwise camshaft liners cannot be reamed in line, and in consequence the clearance between the camshaft journal and liner will be incorrect. This basic tool 18G 123 A must be used with the cutter 18G 123 AN and pilots 18G 123 AH and 18G 123 AJ. Full instructions for using the equipment will be supplied with each basic tool.

18G 134

18G 134. Bearing and Oil Seal Remover and Replacer (basic tool)

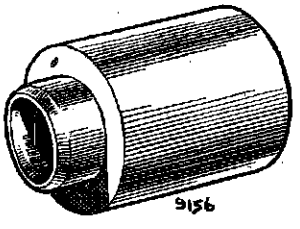
For use with adaptors 18G 134 BD, 18G 134 L, and 18G 134 Q.



18G 134 BD

18G 134 BD. Timing Case Oil Seal Replacer Adaptor

These tools enable the oil seal to be pressed into the engine front cover without distorting the front cover.



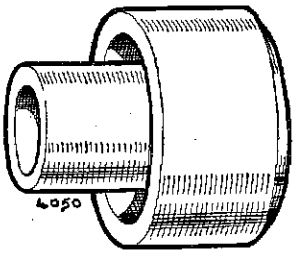
18G 134 L

18G 134 L. Gearbox Rear Oil Seal Replacer Adaptor

For the replacement of gearbox extension oil seals. Use with handle 18G 134 on the Series II and Minor 1000.

18G 134 Q. Rear Hub Replacer and Adaptor

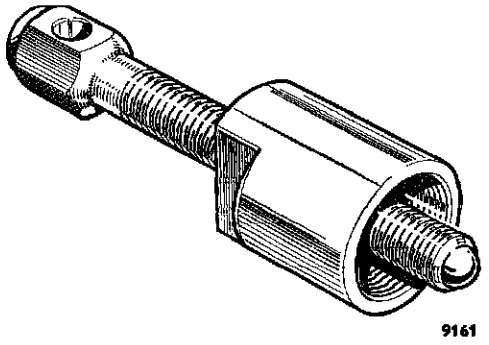
Use with handle 18G 134 on the Series II and Minor 1000.



18G 134 Q

18G 389. Gearbox Rear Oil Seal Remover (basic tool)

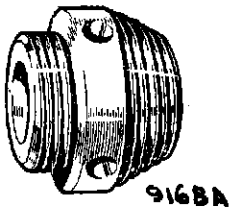
This basic tool, together with the appropriate adaptor, is essential for removing the gearbox extension oil seal easily and without damage to the extension on the Series II and Minor 1000.



18G 389

18G 389 A. Gearbox Rear Oil Seal Remover Adaptor

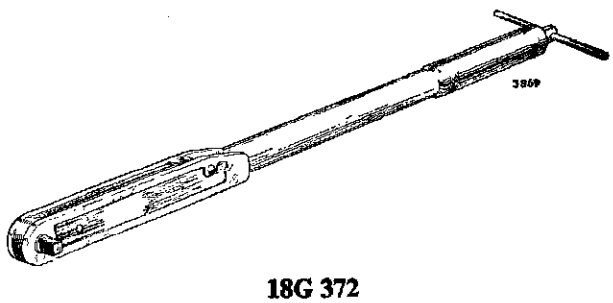
Use with basic tool 18G 389 on the Series II and Minor 1000.



18G 389 A

18G 372. Torque Wrench—30–140 lb. ft.

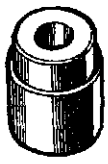
A universal torque spanner for use with standard sockets. This tool is essential if the recommended maximum torque for various studs is not to be exceeded.



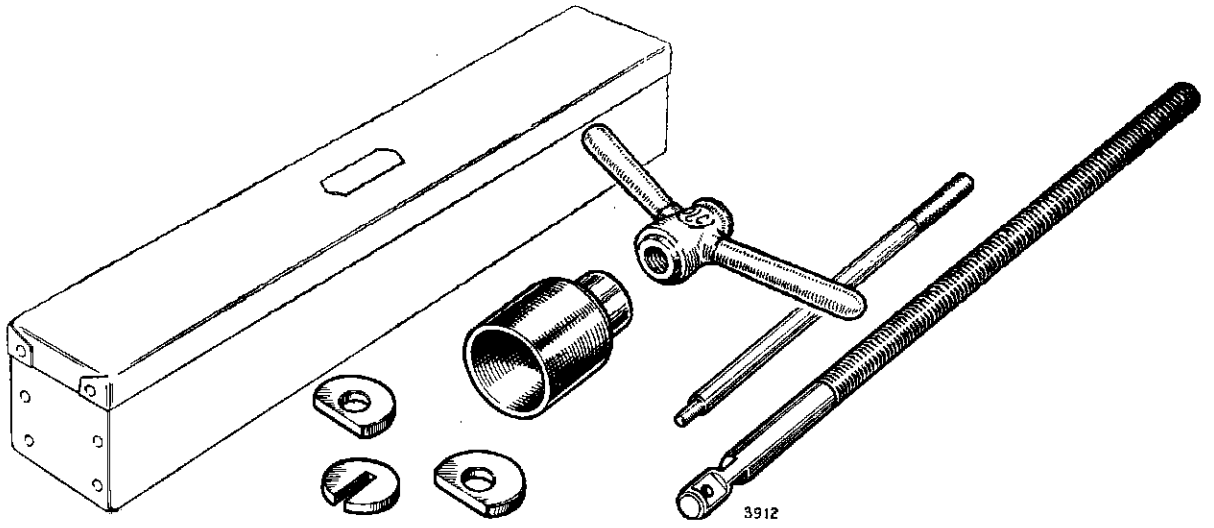
18G 372

18G 124 K. Camshaft Liner Remover Adaptor

For use with basic tool 18G 124 A on the Series II and Minor 1000.



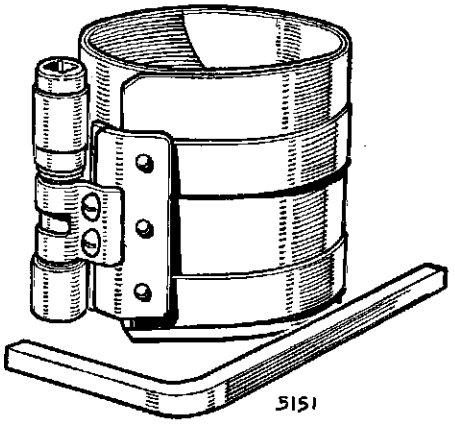
18G 124 K



18G 124 A

18G 124 A. Camshaft Liner Remover and Replacer (basic tool)

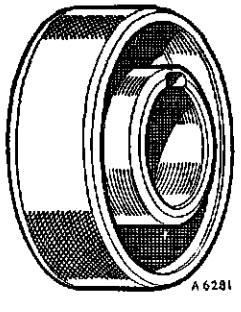
The equipment consists of a basic tool 18G 124 A and various adaptors for different types of engine supplied separately. The adaptor for the Minor (Series II) and Minor 1000 is shown on page Q.15. Liners can be renewed without the damage invariably associated with the use of improvised drifts. Full instructions for using the equipment will be supplied with each basic tool.



18G 55 A

18G 55 A. Piston Ring Clamp

Designed to cover a wide range of pistons, it is easy to operate and will compress the strongest piston ring, making assembly to the bore a quick and easy operation.



18G 1044

18G 1044. Engine Front Cover Centralizer

This tool ensures that the oil seal and the front cover (later type) are concentric with the crankshaft, thus guarding against oil leaks.