



SECTION Q

SPECIAL TOOLS

Every Distributor servicing the M.G. (Series MGA) is recommended to maintain the special tools detailed in this list, as by their use damage to parts will be avoided and repairs generally will be greatly facilitated. For additional information refer to the Service Tool Catalogue (Part No. AKD770). When ordering service tools always quote the new part numbers.

<i>Description</i>	<i>Original Part No.</i>	<i>New Part No.</i>
Engine and clutch		
Exhaust valve seat finishing cutter	301079	18G25
Exhaust valve seat glaze breaker	—	18G25A
Exhaust valve seat top narrowing cutter	301080	18G25B
Inlet and exhaust valve seat bottom narrowing cutter	301081	18G25C
Valve seat cutter handle	301076	18G27A
Valve seat cutting tool fibre box	AJE5012	18G27B
Inlet valve seat top narrowing cutter	—	18G28B
Inlet valve seat bottom narrowing cutter	—	18G28C
Valve suction tool	—	18G29
Valve spring compressor	—	18G45
Piston ring compressor	—	18G55A
Water pump bearing remover and replacer	GT60	18G60
Oil pump relief valve grinding-in tool	—	18G69
Starting dog nut spanner	GT98	18G98
Clutch assembly gauging fixture	AJA5010	18G99A
Camshaft liner reamer (basic tool)	AJE5001	18G123A
Camshaft liner reamer cutter	—	18G123B
Camshaft liner reamer cutter	—	18G123E
Camshaft liner reamer cutter	—	18G123F
Camshaft liner reamer pilot	—	18G123L
Camshaft liner reamer pilot	—	18G123T
Camshaft liner reamer pilot	—	18G123AB
Camshaft liner reamer pilot	—	18G123AC
Camshaft liner reamer pilot	—	18G123AD
Fibre box	—	18G123AL
Camshaft liner remover and replacer (basic tool)	AJA5060	18G124A
Camshaft liner remover adaptor	—	18G124B
Camshaft liner remover adaptor	—	18G124C
Camshaft liner remover adaptor	—	18G124F
Camshaft liner remover adaptor	—	18G124H
Inlet valve seat finishing cutter	—	18G174
Inlet valve seat glaze breaker	—	18G174A
Valve seat cutter pilot	18G31	18G174D
Valve rocker bush remover and replacer	—	18G226
Clutch plate centralizer	67833	18G279
Impulse extractor—UNF.	301203	18G284
Main bearing cap removal adaptor	AJH5147	18G284A
Valve suction tool	66893	18G328

SPECIAL TOOLS

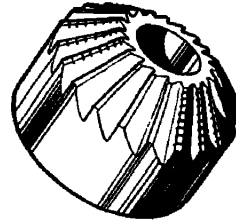
<i>Description</i>	<i>Original Part No.</i>	<i>New Part No.</i>
Gearbox		
Bearing and oil seal replacer adaptor handle (basic tool)	—	18G134
Gearbox extension oil seal replacer adaptor	—	18G134M
Gearbox extension oil seal replacer adaptor	—	18G134N
Gearbox front cover oil seal replacer	—	18G134Q
Synchromesh unit assembly ring—second speed	AJA5055	18G222
Synchromesh unit assembly ring—third speed and top	AJA5056	18G223
Dummy layshaft	AJA5057	18G266
Oil seal remover (basic tool)	—	18G389
Oil seal remover adaptor	—	18G389B
Gearbox front cover centralizer	—	18G598
Front suspension and steering		
Front and rear hub plate remover (basic tool)	AJA5019	18G304
Bolt adaptor— $\frac{7}{16}$ in. UNF.	AJA5021	18G304B
Steering-wheel remover	68827	18G310
Steering tie-rod pin spanner	68965	18G312
Steering tie-rod 'C' spanner	300813	18G313
Wire wheel hub remover.. .. .	—	18G363
Rear axle and rear suspension		
Bevel pinion flange wrench	AJA5062	18G34A
Differential bearing remover (basic tool)	AJA5061	18G47C
Differential bearing remover adaptors	—	18G47T
Bearing and oil seal replacer adaptor handle (basic tool)	—	18G134
Rear hub bearing remover, differential bearing replacer, and rear hub assembly replacer adaptor	—	18G134P
Bevel pinion and differential bearing setting gauge	—	18G191B
Bevel pinion bearing outer race remover (basic tool)	—	18G264
Bevel pinion bearing outer race remover adaptor	—	18G264E
Bevel pinion bearing outer race remover adaptor	—	18G264F
Partitioned fibre box	—	18G264K
Rear hub nut spanner	—	18G152
Bevel pinion bearing preload gauge	—	18G207
Bevel pinion inner race remover and replacer	—	18G285
Front and rear hub plate remover (basic tool)	AJA5019	18G304
Bolt adaptor— $\frac{7}{16}$ in. UNF. (2 off)	AJA5021	18G304B
Hub remover thrust pad adaptor	AJA5146	18G304J
Wire wheel hub remover.. .. .	—	18G363
Body		
Body jack and metal case	—	18G308B
Miscellaneous		
Lockheed bleeder screw wrench	46746	18G353
Torque wrench	AJE5010	18G372

SPECIAL TOOLS



18G25. Exhaust Valve Seat Finishing Cutter

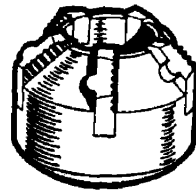
Use with pilot 18G174D and handle 18G27A.



18G25

18G25A. Exhaust Valve Seat Glaze Breaker

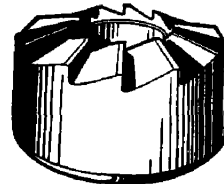
Use with pilot 18G174D and handle 18G27A.



18G25A

18G25B. Exhaust Valve Seat Top Narrowing Cutter

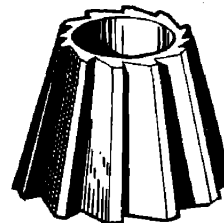
Use with pilot 18G174D and handle 18G27A.



18G25B

18G25C. Inlet and Exhaust Valve Seat Bottom Narrowing Cutter

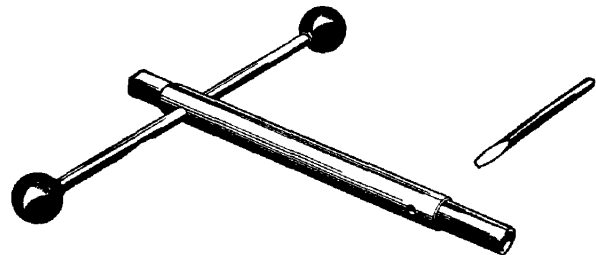
Use with pilot 18G174D and handle 18G27A.



18G25C

18G27A. Valve Seat Cutter Handle

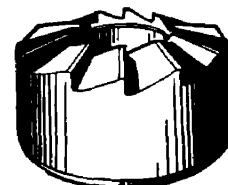
A standardized type of handle for use with a wide range of cutters. A spanner can be used on the square end when cutting valve seats on models where the tommy bar will foul the engine bulkhead.



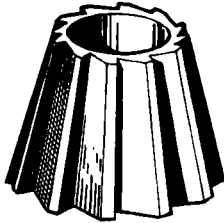
18G27A

18G28B. Inlet Valve Seat Top Narrowing Cutter

Use with pilot 18G174D and handle 18G27A.



18G28B



18G28C

18G28C. Inlet Valve Seat Bottom Narrowing Cutter

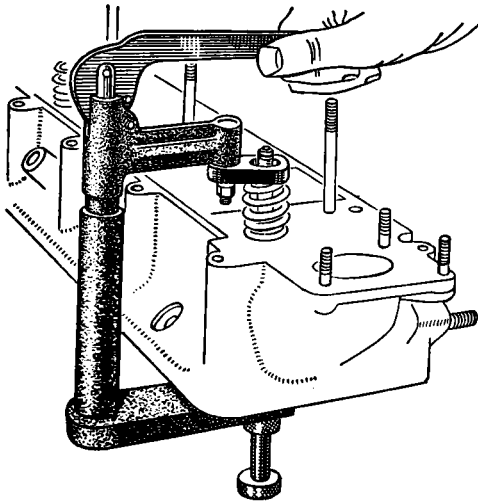
Use with pilot 18G174D and handle 18G27A.



18G29

18G29. Valve Suction Tool

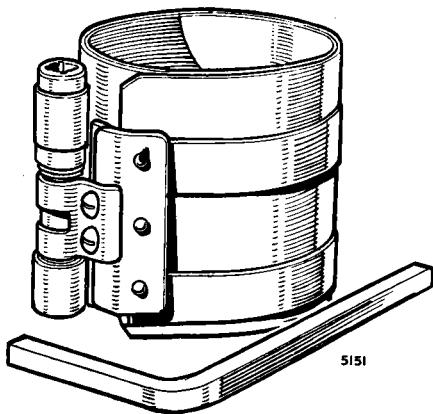
A handle complete with a detachable suction pad 18G29A; a further suction pad 18G29B is available for use on smaller valves.



18G45

18G45. Valve Spring Compressor

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



18G55A

18G55A. Piston Ring Compressor

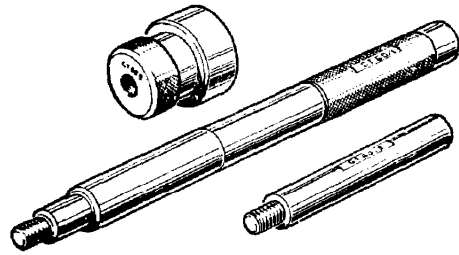
Designed to cover a wide range of pistons, it is easy to operate and will compress the strongest piston ring, making assembly to the bore a quick and easy operation.

SPECIAL TOOLS

Q

18G60. Water Pump Bearing Remover and Replacer

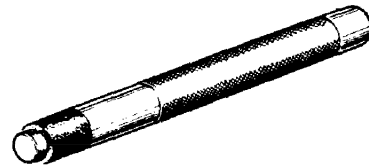
To safeguard against broken pump bodies this specially designed tool should be used when removing and replacing bearings. Comprising a drift, a dummy bearing, and a pilot, it aligns each bearing with its housing before the bearing is pressed into position.



18G60

18G69. Oil Pump Relief Valve Grinding-in Tool

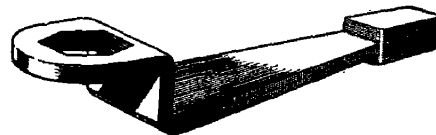
The small knurled knob at the end of this tool is turned to compress the rubber sleeve and increase its diameter until, when pressed into the valve, it will hold it securely while it is lapped to its seat.



18G69

18G98. Starting Dog Nut Spanner

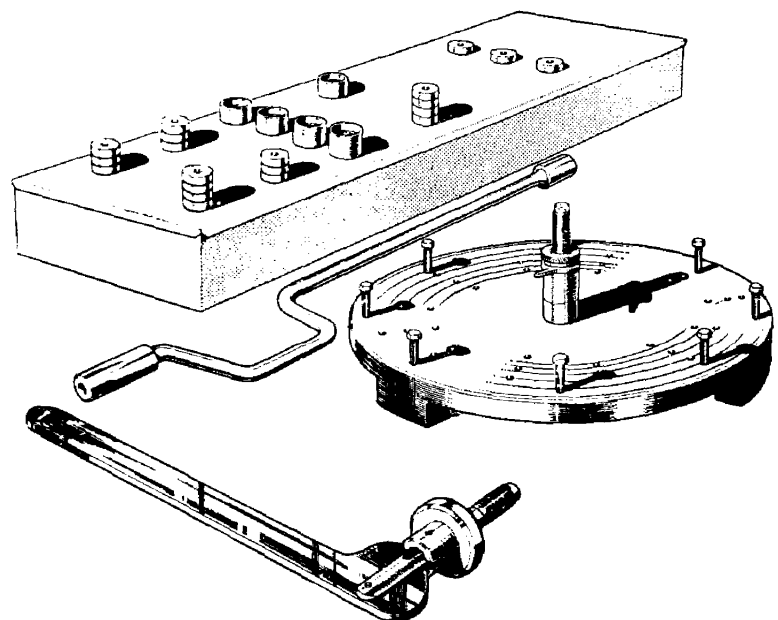
A 'shock-type' spanner designed to enable the starting dog nut to be removed without locking the crankshaft.



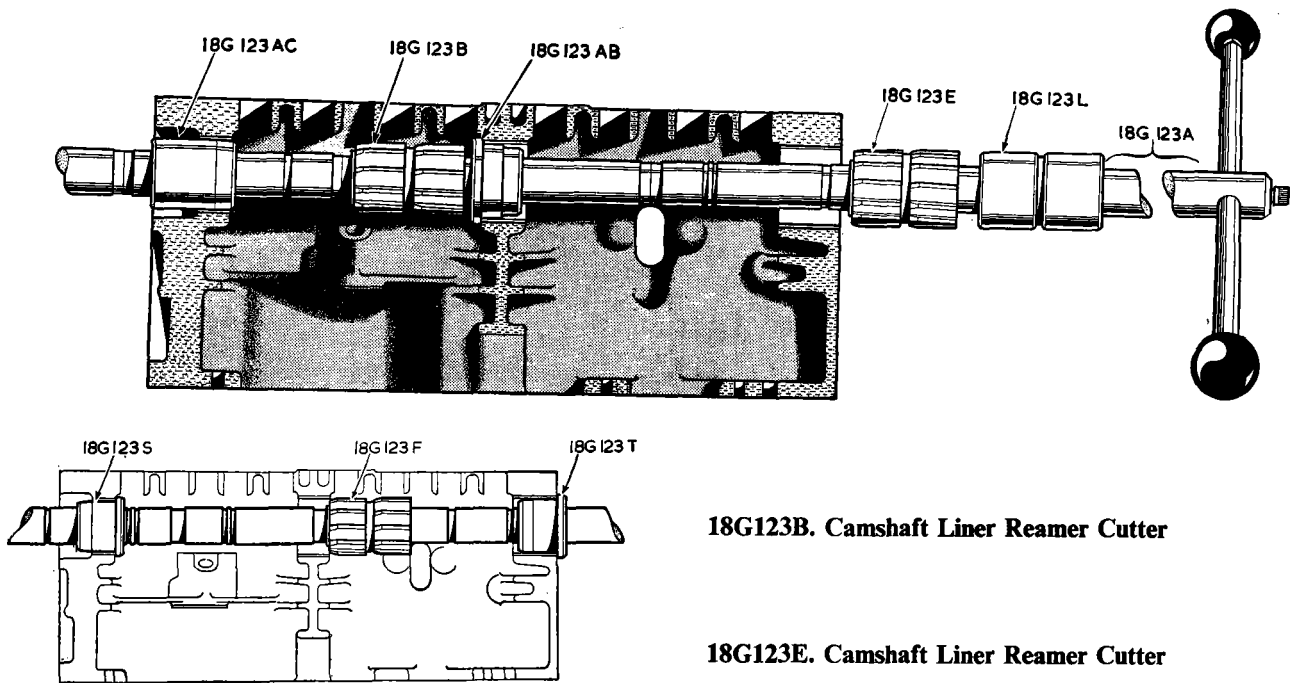
18G98

18G99A. Clutch Assembly Gauging Fixture

This tool provides for accurate adjustment of the levers and, additionally, affords a fixture upon which to dismantle and assemble the unit.



18G99A



18G123A. Camshaft Liner Reamer (basic tool), Cutters, and Pilots

This equipment is essential when reconditioning cylinder blocks, 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 must be used with the cutters and pilots supplied separately and shown on this page. Full instructions for using the equipment will be supplied with each basic tool.

18G123B. Camshaft Liner Reamer Cutter

18G123E. Camshaft Liner Reamer Cutter

18G123F. Camshaft Liner Reamer Cutter

18G123L. Camshaft Liner Reamer Pilot

18G123T. Camshaft Liner Reamer Pilot

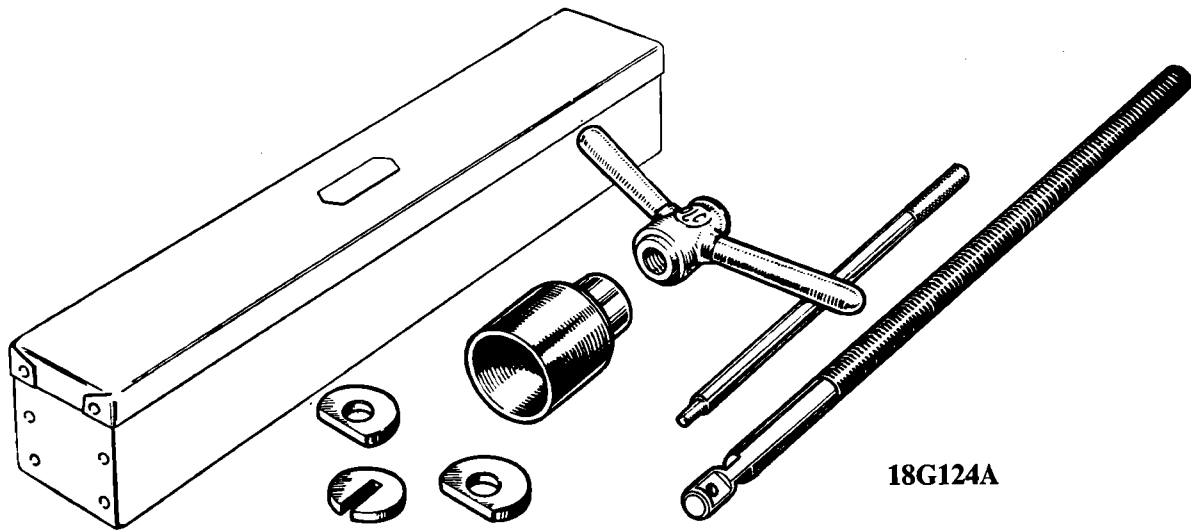
18G123AB. Camshaft Liner Reamer Pilot

18G123AC. Camshaft Liner Reamer Pilot

18G123AD. Camshaft Liner Reamer Pilot

18G123AL. Camshaft Liner Reamer Component Fibre Box

SPECIAL TOOLS

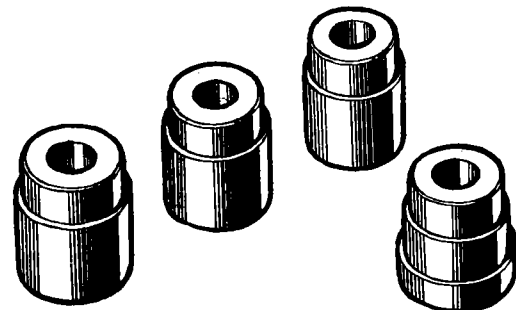


18G124A

18G124A. Camshaft Liner Remover and Replacer (basic tool)

The equipment consists of a basic tool 18G124A and various adaptors (supplied separately) for different types of engines and for this model shown below. Liners can be removed and replaced without the damage invariably associated with the use of improvised drifts. Full instructions for using the equipment will be supplied with each basic tool.

18G124B, 18G124C, 18G124F, and 18G124H. Camshaft Liner Remover Adaptors

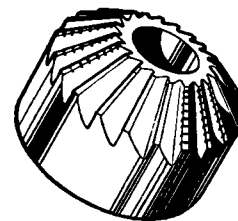


18G124B
18G124C

18G124F
18G124H

18G174. Inlet Valve Seat Finishing Cutter

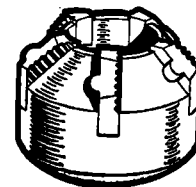
Use with pilot 18G174D and handle 18G27A.



18G174

18G174A. Inlet Valve Seat Glaze Breaker

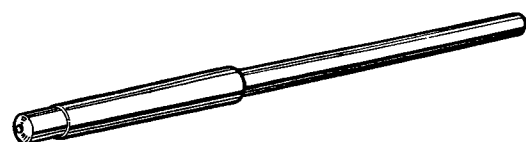
Use with pilot 18G174D and handle 18G27A.



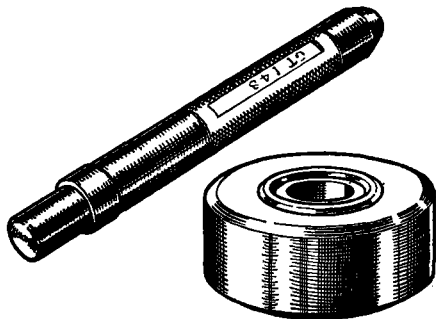
18G174A

18G174D. Valve Seat Cutter Pilot

Use with the cutters listed above and handle 18G27A.



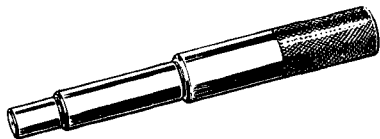
18G174D



18G226

18G226. Valve Rocker Bush Remover and Replacer

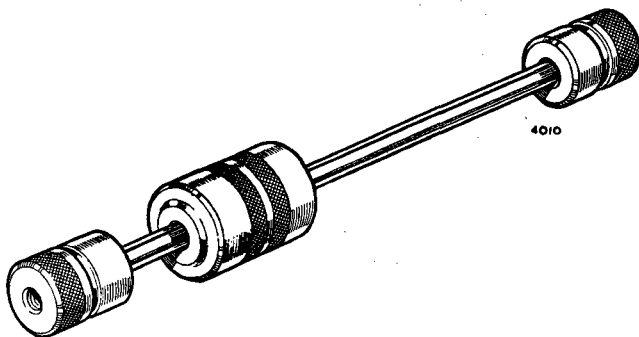
The flange of the driver is recessed to prevent the split bush opening when being driven into position; the anvil is also recessed to retain the rocker during the operation. Use of a light press is desirable when using this tool, alternatively a vice or copper-faced hammer may be used.



18G279

18G279. Clutch Plate Centralizer

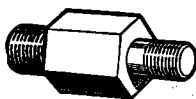
When reassembling the single-plate clutch it is essential to use this tool to ensure that the clutch plate is concentric with the spigot bearing in the flywheel centre, otherwise it is impossible to assemble the gearbox to the engine. This tool will also fit the Wolseley Four-Fifty, Morris Oxford (Series MO), and Morris Six (Series MS) models.



18G284

18G284. Impulse Extractor—UNF.

This universal impulse extractor when used with adaptor 18G284A will remove the main bearing cap.



18G284A

18G284A. Main Bearing Cap Removal Adaptor

The adaptor for use with impulse extractor 18G284.



18G134

18G134. Bearing and Oil Seal Replacer Adaptor Handle (basic tool)

For use with adaptor 18G134M or 18G134N to replace the gearbox extension oil seal.

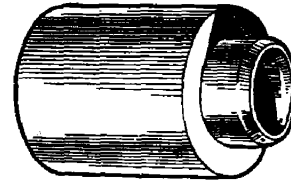
SPECIAL TOOLS



18G134M and 18G134N. Oil Seal Replacer Adaptors

Used with handle 18G134 for the replacement of gearbox extension oil seals.

For later power units (from Engine No. 10990) use adaptor 18G134N.



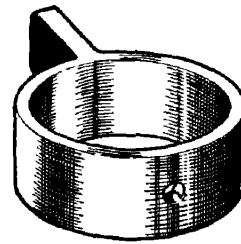
18G134M and 18G134N

Synchromesh Unit Assembly Rings

18G222—Second Speed

18G223—Third Speed and Top

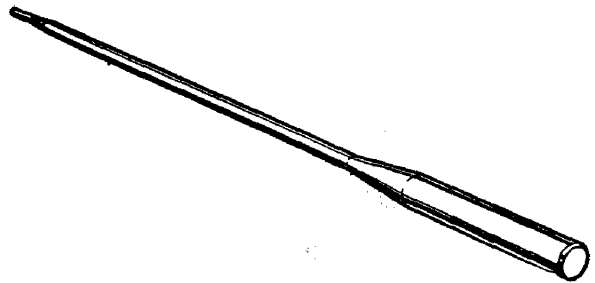
This tool is specially designed to retain the balls and springs in the synchronizer hub while it is being pushed into the sliding sleeve.



18G222 and 18G223

18G266. Dummy Layshaft

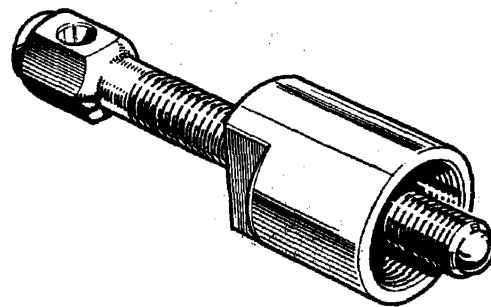
Reassembly of the layshaft into the laygear is greatly simplified by the use of this tool.



18G266

18G389. Oil Seal Remover (basic tool)

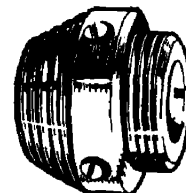
This basic tool together with the appropriate adaptor is essential for removing the gearbox extension oil seal easily and without damage to the extension.



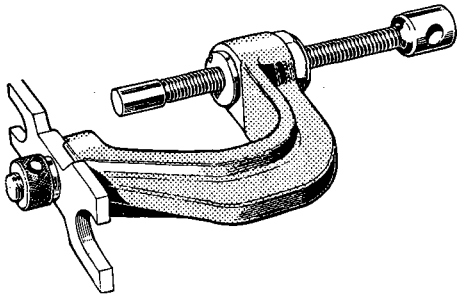
18G389

18G389B. Oil Seal Remover Adaptor

Use with basic tool 18G389.



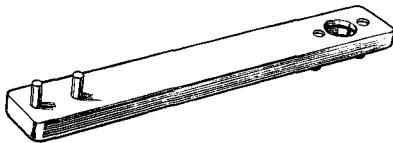
18G389B



18G310

18G310. Steering-wheel Remover

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

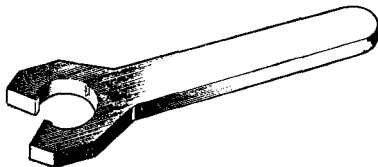


18G312

18G312. Steering Tie-rod Pin Spanner

This tool is designed for use in conjunction with the special spanner 18G313 for dismantling the steering tie-rod ball housing without damage.

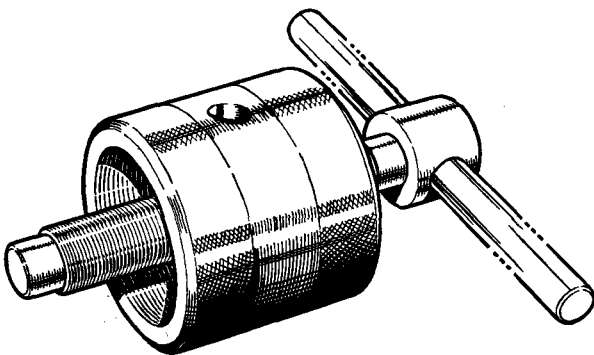
In use it is clamped securely in a vice and the two holes of the ball housing are engaged with the two pins of the extractor, pushing the ball housing into the tool as far as it will go. Using the special spanner 18G313, engage the claws with the ball housing cap and unscrew it from the housing.



18G313

18G313. Steering Tie-rod 'C' Spanner

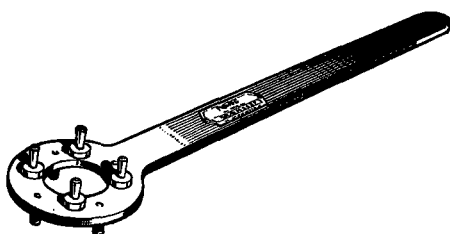
A tool with jaws designed to engage the shallow splines of the steering rack ball housing cap and remove it without damage.



18G363

18G363. Wire Wheel Hub Remover

Designed to withdraw left-hand and right-hand 'knock-on' hubs. The body is internally threaded with a left-hand thread in one end and a right-hand thread in the other.



18G34A

18G34A. Bevel Pinion Flange Wrench

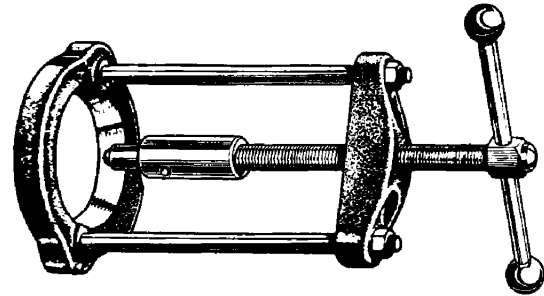
Used to hold the bevel pinion flange when unscrewing the flange retaining nut.

SPECIAL TOOLS



18G47C. Differential Bearing Remover

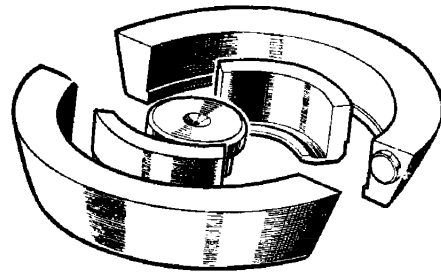
This basic tool simplifies the removal of the differential cage bearings without risk of damage. The adaptor for use on the 'B' type axle is shown under.



18G47C

18G47T. Differential Bearing Remover Adaptors

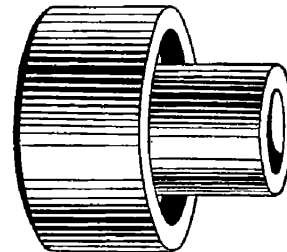
Designed for use with basic tool 18G47C (above), these adaptors must be used when removing the differential cage bearings.



18G47T

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

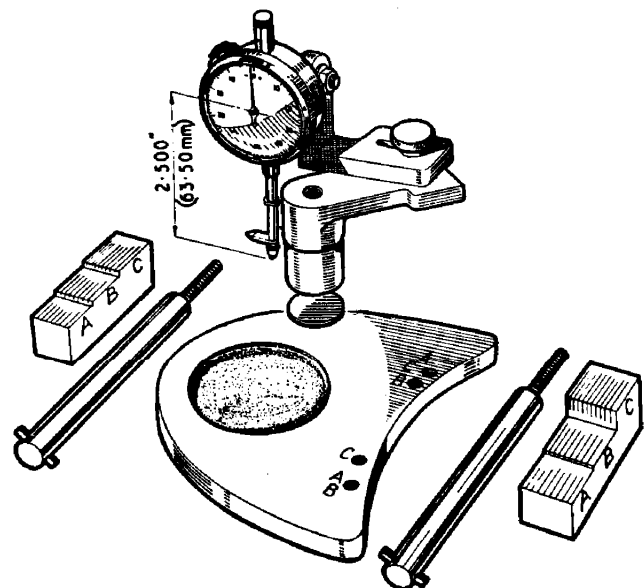
Use with handle 18G134.



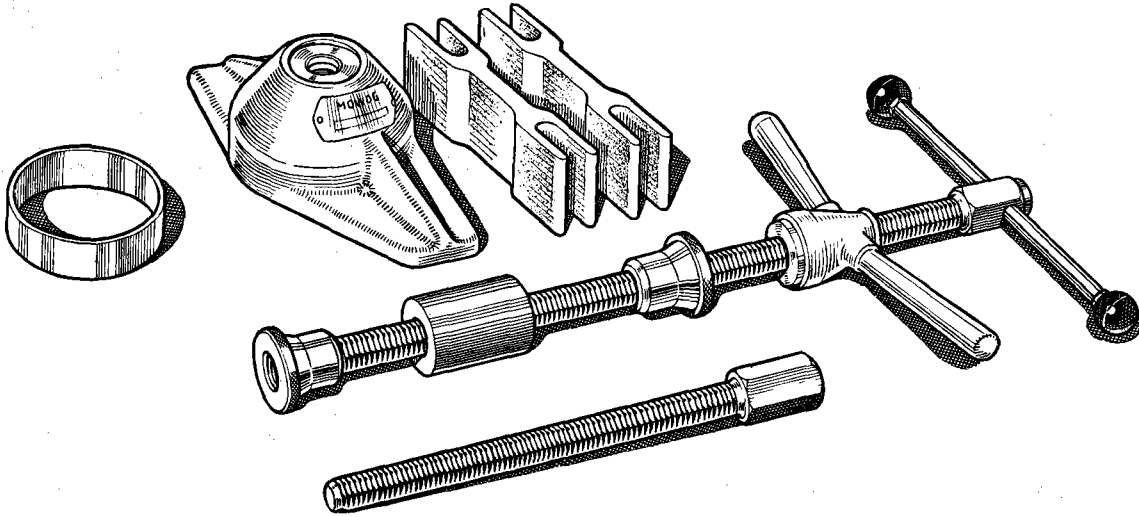
18G134P

18G191B. Bevel Pinion and Differential Bearing Setting Gauge

Indispensable in adjusting and setting 'A', 'B', and 'C' type standardized axles.



18G191B



18G264

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

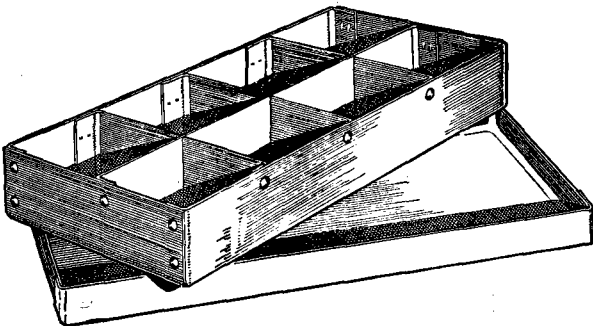
Comprising a body, centre screw with extension and tommy-bar, wing nut, guide cone, and two distance pieces. A plain ring is also included to serve as a pilot when the rear bearing outer races are being replaced. Use with adaptors 18G264E and 18G264F.



18G264E, 18G264F

18G264E and 18G264F. Bevel Pinion Outer Race Remover Adaptors

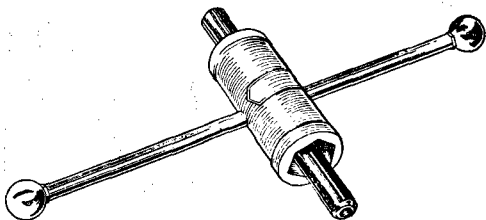
Use with 18G264.



18G264K

18G264K. Partitioned Fibre Box

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



18G152

18G152. Rear Hub Nut Spanner

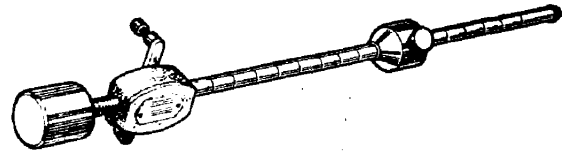
Designed to fit the octagonal nut on 'B' type rear axles. The opposite end may be used on the smaller 'A' type axles.

SPECIAL TOOLS



18G207. 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.

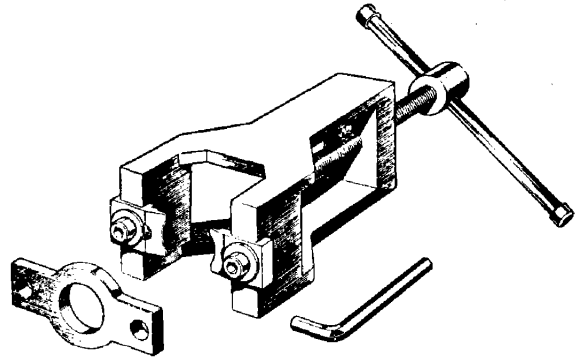


18G207

18G285. Bevel Pinion 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.

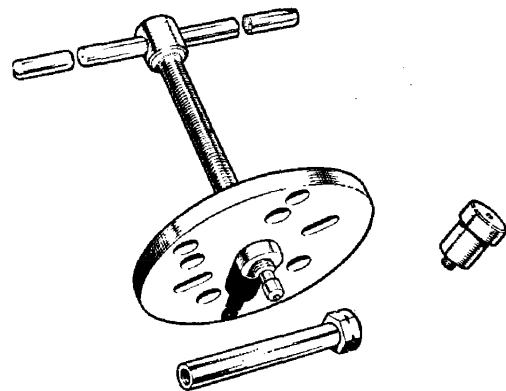
This is a universal tool.



18G285

18G304, 18G304B, and 18G304J. Front and Rear Hub Plate Remover (basic tool)

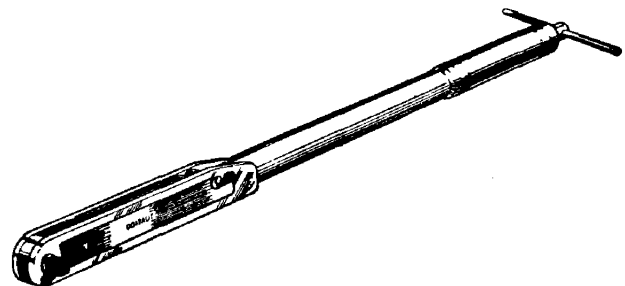
The plate in combination with two bolts and plug will remove the front and rear hubs of the M.G. 'MGA' with pressed-steel wheels.



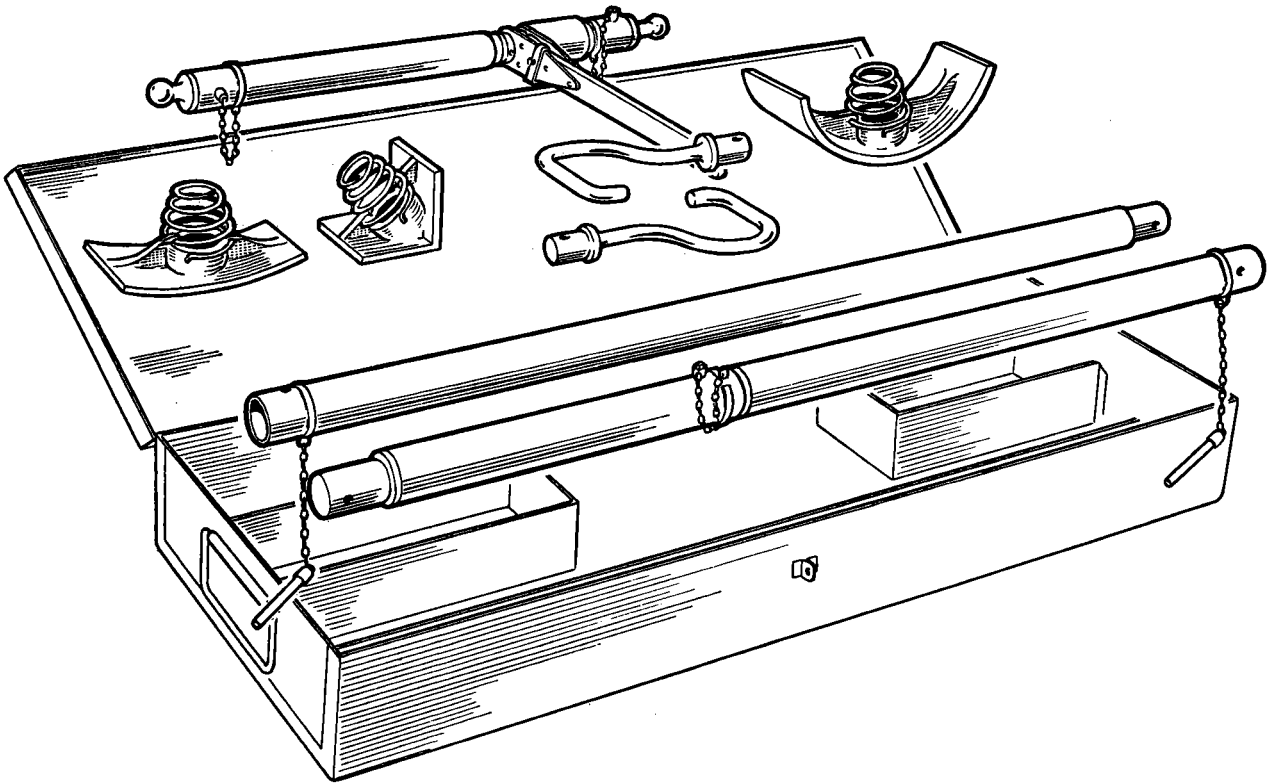
18G304 (Plate and Screw)
18G304B ($\frac{7}{16}$ in. UNF Bolt)
18G304J (Rear Axle Plug)

18G372. Torque Wrench

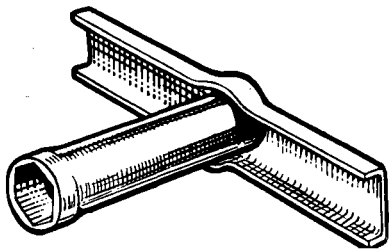
A universal torque spanner for use with standard sockets. This tool is essential if the recommended maximum torque for various studs is not to be exceeded.



18G372

**18G308B. Body Jack**

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.

**18G353****18G353. Lockheed Bleeder Screw Wrench**

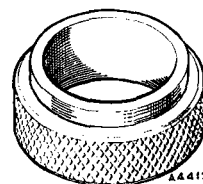
This specially designed tube spanner and integral tommy-bar greatly assists the brake bleeding operation. The spanner remains square on the bleeder screw without disturbing the bleed tube.

SPECIAL TOOLS



18G598. Gearbox Front Cover Centralizing Tool

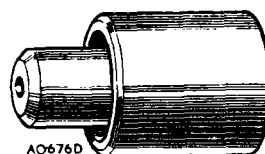
In the case of front covers fitted with oil seals, the use of this tool is essential to ensure concentricity of the front cover with the mainshaft, thereby obviating any possibility of oil leaks.



18G598

18G134Q. Rear Hub Bearing Remover, Differential Bearing Replacer, and Rear Hub Assembly Replacer Adaptor

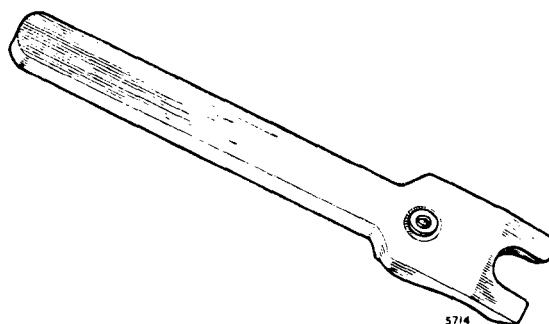
Use in conjunction with detachable handle 18G134 to replace the gearbox front cover oil seal. Its other uses are applicable to other B.M.C. models only.



18G134Q

18G553. Disc Brake Piston Resetting Tool (Dunlop)

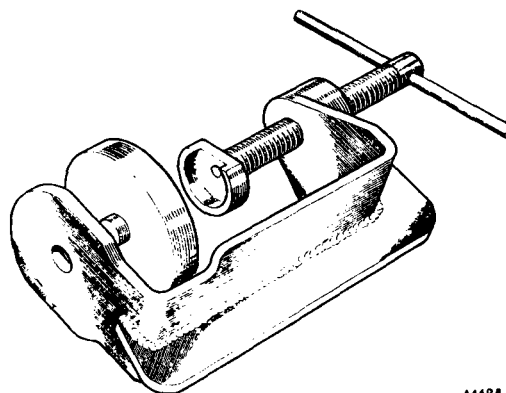
This tool is used to press the operating piston down the cylinder bore before refitting a friction pad.



18G553

18G590. Disc Brake Piston Resetting Tool (Lockheed)

This tool is used for refitting the operating piston and seals. It is also used for resetting the piston to the zero position before fitting a friction pad.



18G590

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is crucial for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent data collection procedures and the use of advanced analytical techniques to derive meaningful insights from the data.

3. The third part of the document focuses on the implementation of data-driven decision-making processes. It provides a detailed overview of the steps involved in identifying key performance indicators (KPIs) and using data to inform strategic decisions.

4. The fourth part of the document discusses the challenges and risks associated with data management and analysis. It addresses issues such as data quality, security, and privacy, and offers strategies to mitigate these risks.

5. The fifth part of the document provides a comprehensive overview of the current state of data science and its applications in various industries. It highlights the growing importance of data in driving innovation and competitive advantage.

6. The sixth part of the document discusses the future of data science and the emerging trends in the field. It explores the potential of artificial intelligence, machine learning, and big data in transforming the way we collect, analyze, and use data.

7. The seventh part of the document provides a detailed overview of the various tools and technologies used in data science. It compares different software solutions and discusses their strengths and weaknesses.

8. The eighth part of the document discusses the importance of data literacy and the need for organizations to invest in training and development programs to ensure that their employees are equipped with the skills needed to work with data effectively.

9. The ninth part of the document provides a detailed overview of the various ethical considerations and best practices associated with data science. It emphasizes the need for transparency, accountability, and respect for individual privacy.

10. The tenth part of the document provides a comprehensive overview of the various applications of data science in different industries. It highlights the impact of data science on healthcare, finance, marketing, and other sectors.