

Electric Motor Repair Equipment



Dismantling and
Cleaning



Winding
Accessories



Insulating
and Testing



Coil Cutting,
Cleaning
and Extraction



Accessories for
Motor Repair



DC and High
Voltage Coil
Manufacturing



Coil Winding
Machines



Impregnation
and Curing

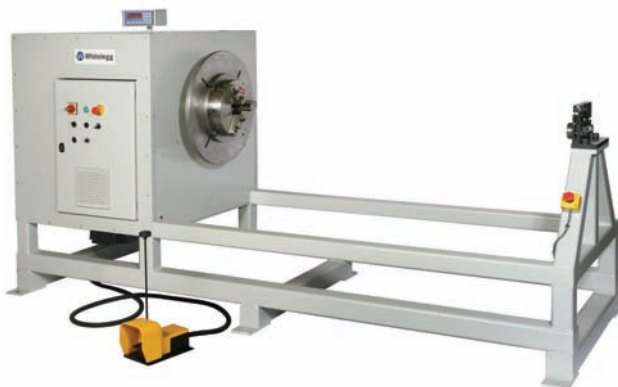


Armature and
Commutator
Processing

Introducing Whitelegg Machines Ltd

Whitelegg Machines Ltd is based in Crawley, handy for the M25 and Heathrow and Gatwick airports, with their own manufacturing and workshop facilities nearby.

Whitelegg began manufacturing coil winding machines and accessories in 1940. This established a link with the manufacture and repair of electric motors and over the years Whitelegg have consistently added to their range of equipment to mirror the changes in technology and customers' requirements.



More than 70% of turnover is exported to over 100 countries with many complete motor rewind workshops being supplied.

This brochure shows an overview of some of the product lines that we supply. For full information please go to our website or contact us.



Whitelegg now offer an unrivalled range of equipment to the electric motor repair industry. At every stage of the repair, we seek to offer goods that will add value to our clients' business. Our range of experience and expertise is focused on providing the right technological solution and the integration of these into a seamless repair process from reception of the machine through to final testing and despatch.



EQUIPMENT FOR ELECTRIC MOTOR REPAIR

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Dismantling and Cleaning

1. BLC Blaster for cleaning components with various media types including sand and glass beads. Economic bench model includes fluorescent light, foot-operated blast gun, internal extraction, good access and media filtration.



2. CCM-3 Industrial Cleaning Unit with component basket, automatic cycle 150 litre of water per minute, quick drying due to water heater. Stainless steel internal construction, 2-stage filter and separator. Various sizes available. Rotating spray boom prevents component damage with rotating basket. Hand-held spray pistol can be used for quick cleaning jobs, so cutting out the automatic cycle.



3. Ultimate Quality Cleaning. Superblast combined de-greasing and cleaning action. Less aggressive than dry blasting. Superb surface finish. Cleans by the flow of water and media slurry. Promotes longer life of media. Ideal for components related to electric motor repair – removes paint, rust and carbon and prepares surface for repainting or bonding.



4. VARIOMAT-V Hydraulic Bearing/coupling Extractor. Hand-operated hydraulic pump giving up to 20 tonnes power. Extraction height adjustable by hand crank operated rack and pinion. 2-arm and 3-arm extraction units are easily interchangeable. For components up to 750mm diameter. Set of 6 mandrels included. Positive locking grippers require no chain to hold them!



5. Bearing Extractor/Component Press with electric pump and table height adjustment. Remote control makes one man operation possible. For components up to 960mm diameter. 50 and 100 tonne machines are also available.



Coil Cutting and Extraction Equipment

6. WH-CEM Hydraulic Coil Cut-off and Extracting Machine.

The best machine for quick and safe coil removal. Four models in the range for stators up to 1500mm diameter. Model shown is No 2 for stator up to 600mm diameter. Shown with heating table, burners and tongs. One man can easily strip a motor in record time.

DEM electric combined coil cut-off and extraction machine also available for motors up to 1100mm diameter.



7. CE-M-01A Hand-Operated Coil Extraction Device with coil extracting tongs, stator turntable with clamping device for stators up to 650mm diameter.



8. SCC-01 Stator Coil Cutting-off Machine.

For stators with bore 100 – 450mm diameter. For bench mounting. Self-centring stator clamp handwheel for cutter height adjustment.



9. SCC-03 Stator Coil Cutting-off Machine for very large stators. Maximum bore 950mm. Special elbow-arm cutting head allows working on stators on the table or floor beside the unit.



10. BOV-01 /08. Burn-off Ovens.

Burn off paint and insulation quickly and cleanly. Compact version for gas or oil heating. Controls include accurate temperature control with safety interlocks and water spray to prevent excess heat. Supplied with loading cart and rails. Available in 8 sizes.

From - Inside dimensions 76 x 76 x 80cm.

To - Inside dimensions 240 x 300 x 300cm.



Coil Winding Machines

11. SAW-02 Fully Automatic Sequential Winding Machine with full PC control.

This machine automatically layers winds up to 18 coils in sequence. Colour screen, keyboard and printer socket. Easy creation of special winding sequences. Graphic indication of arbor selection and winding progress. Model SAW-02 for IEC frames 56 – 315 or Model SAW-01 for IEC frames 56 – 225. Model SAW-03 for IEC frame sizes 56-355.



12. HCM-380 Medium Duty Coil Winding Machine for motors up to 200kW. 3-speed gearbox with drive via inverter giving infinitely variable speed. Max. Torque 980 Nm. Auto-stop at accurate number of turns and angular position. Shown with PAC concentric arbors.



13. HN-611 Coil Winding Machine for stator coils up to 50kW. Equipped with PAC and PAE equal and concentric arbors. Inverter control with electronic turns counter. Can be supplied ready for bench mounting or complete with table and storage drawer.



14. HCM-410 Heavy Duty Coil Winding Machine for motors up to 1000kW. 6-speed gearbox with inverter drive giving infinitely variable speed 0 – 375 rpm. Drive via heavy duty gearbox with six speed ranges. Gears run in an oil bath. Cast iron frame. Digital revolution counter with stop at precise angular position.

Max torque 6500 Nm



15. HDi Coil Winding Machine.

High torque winding machine with bed and tailstock.

1600mm between centres, 2000kg max coil weight and 1000mm max coil diameter.

Ideal for electric motor and transformer winding.

A variety of wire/strip tensioning and de-reeling.

Different versions and sizes available according to needs.



16. BW Coil Winding Machine for stator coil winding up to 100kW. Budget model with 3-speed drive or inverter variable speed drive. Shown with type U adjustable winding fixture.



17. BVB-01 Hand Winder for coils up to 30cm diameter. Ideal for training colleges. Add type PAC and PAE equal and concentric arbors for winding small electric motor coils. Many versions available with or without tensioning. Optional turns counter. Some versions supplied with chuck and spindle for winding small coils.



18. BVB-05 Hand Winder with 2:1 and 4:1 gear ratios. Suitable for small solenoid and transformer coils. Very robust high quality unit.



19. BM Coil Winding Machine with Automatic Wire Guide; for transformers and solenoid coils. Three versions available for coils up to 300mm diameter x 440mm long. Wire ranges 0.05 – 4.00mm. Can be supplied ready for bench mounting or complete with table, guarding and integrated foot-pedal as a complete production unit. New version available with automatic wire guide for precision layer winding with full CNC control of both axis. 5 inch screen for part programming and part storage.



Winding Accessories

20. AJ-1 Adjustable Winding Fixture for coils up to about 200kW. Shown with a set of type A arbors fitted with quick-release mechanism.

Wide range of straight and concentric arbors available.



21. Type U Adjustable Winding Fixture for concentric coil groups fhp – about 20hp.

Easily adjustable fixture for winding numerous coil sizes.

Supplied with winding bar, quick setting chart and adaptor for fitting to the winding machine faceplate.



22. Type PAE and PAC Plastic Winding Arbors for both equal pitch and concentric coil groups. Supplied with mandrels which fit into slots on our 500mm diameter faceplates.



23. Type LW-1 Loop Winding Bar for loops up to 1 metre long. Various versions for loops up to 3 metres.



24. Set of four Winding Heads with adjustable segments 6- 20mm , 6 spaces, 25mm x 15mm. Very high quality fabrication. Also available with four adjustable segments 10-30mm, 4 spaces 18mm x 22mm.



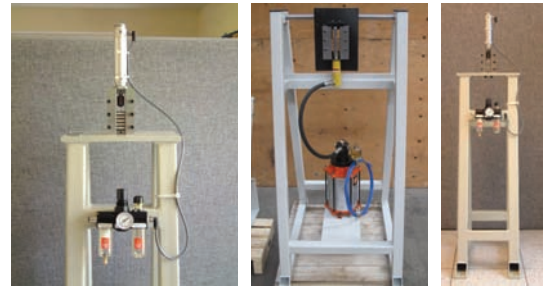
25. Large Pair of Concentric Arbors. 28mm slot width. Winding diameters 80/120/160/200/240/280/320/360mm with mandrels 20 x 20 x 332mm long.



26. AJ-2 Winding Fixture with faceplate mounting. Can be fitted with many different types of winding arbors for producing rectangular, diamond, concentric and equal coils. For heavier duty winding applications.



27. Hydro-pneumatic Tensioner for strip up to 20 x 10mm. Various versions for multiple wires and strips for high voltage stator coils and transformers. Smaller version use only air cylinders.



28. Type DR-UHT Wire Tensioning and De-reeling Unit
For wire range 0.3 – 3.5mm. Other versions available for wire down to 0.05mm.

DR-UJ De-reeler. For use with wire drums and containers. Spring tensioned felt pad with adjustable braked capstan wheel. Can be mounted in multiples. Wire range 0.5-4.0mm.



29. Type ST-6 Wire Tensioner/ De-reeler for winding with up to 6 wires in parallel. Second unit fits on top to give possibility of 12 wires in parallel. Ideal for stator winding.



30. FTD Heavy Duty De-reeler. Adjustable friction brake tension. 600mm maximum reel diameter.



31. DBW De-reelers. Available in 2 or 3 spindle formats with mechanical or pneumatic tension controls. 650 x 300mm maximum reel size with 200kg max weight



FOR FULL DETAILS OF WIRE TENSIONERS SEE LEAFLET FS

Accessories for Electric Motor Repair

32. Type SLT Heavy Duty Hydraulic Stator Lifting Table with hydraulic power unit to raise and lower the table to give the best working height. Fitted with a turntable for easy rotation of the stator.

Maximum weight capacity: 1400kg.



33. SHR-04 Stator Holding Ring with 3-plane adjustment. For stators up to 250mm diameter fixing with 3 expanding clamps. Many sizes available.



34. SHR-13 Stator Holding Ring for stators up to 400kg weight. Internal ring diameter 1400mm. Floor standing unit with heavy duty base and electrical stator rotation. Various sizes available.



35. Stator and Armature Holder. Stator clamp rotates in 2 planes. For stators up to 300mm diameter, Armatures are held between centres.



36. KOBAC Pneumatic Chisel for cutting off stator coils with a case holding 5 chisel bits.



37. Wire Stripper with self-adjusting cutter blades. Wire range 0.3 - 4.0mm. Direct on mains 115V or 230V power.



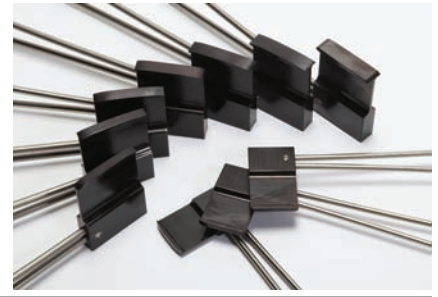
38. Wire Stripper with self-adjusting cutter with small cutter head for stripping very close to terminals. Low voltage unit with plugable power supply. Stripping heads for wire sizes 0.2 – 4.0mm. Available with carbide burr for stripping enamel from flat conductors.



39. Heavy Duty Stripper for flat conductor. Contra-rotating wire brushes in several grades. Bench vice holder available.



40. Wire Inserting Tools in 10 tongue sizes, from 3 – 12mm.
Best used with handles shown.



41. ALLFIT Bearing Heater. Quickly expands bearings, pulleys etc. for fitting onto shafts. Available with timer and temperature controller. Versions with 3, 4 and 8kW power, according to the maximum bearing size.



42. RHD-1000 Rotor Handling Device, makes it easy and safe to fit rotors of up to 1000kg into stators. Novel method of balancing. Tubes 50, 60, 80 and 100mm diameter.
RHD-4000 also available for rotor weights up to 4000kg.



43. Slot Cleaning Torches. Sold as a pair: one torch for heating the slot with oxygen and acetylene and the pistol for blowing the slot clear with oxygen. Much more effective than compressed air as it does not cool the slot but boosts the temperature.



44. Wire Inserting Tool for slots of small bore stators. Widths 2-10mm available. Especially useful for pressing down slot closures so that wedges can be quickly and easily inserted.



45. Winders' pliers. Very useful tool allowing access into stator slots to pull insulation and slot closures through.



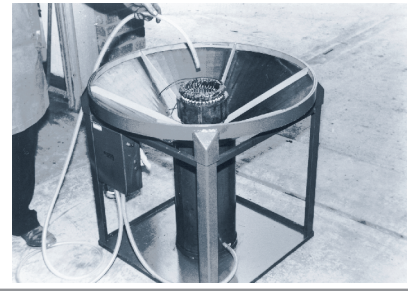
46. Winding Sticks. Compressed nylon sticks made in four different sizes and shapes. Very useful for guiding windings into stator slots or for guiding wire whilst winding coils, to push the wire into the corner of a former.

For more information on hand tools see catalogue.

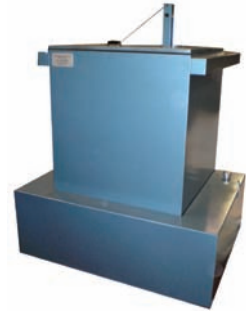


Impregnation and Curing Equipment

47. RE-NU Trickle Impregnation Device.
700mm diameter. Single phase motor and gear pump.
Compact and inexpensive. Ideal for a small workshop.
Very economical and particularly appropriate for hot climates to reduce solvent evaporation.



48. IMPREG-M-B Impregnation Tank.
Immersion compartment 120 x 120 x 120mm. Storage tank - 3400 litres. Extra safety devices include drop-down lids in case of fire and fume extraction system. 3-phase TEFC motor and gear pump with filters.



49. VPI Impregnation Plants. For better quality resin fill of motors with the well proven method. Available as compact pre-configured units for motors up to 100cm. Larger VPI system up to 400cm diameter. VI units also available.



50. COV Electric Curing Ovens. Temperature range ambient to 225°C or 300°C on request. 21 models in range. Excellent temperature uniformity. Silicon sealed interior prevents the ingress of varnish. Excellent insulation with efficient ventilation and low heat loss. Loading trolleys 1000-10,000 kg available with electric tug.



51. SM-333 Curing Oven for large motors with air circulation, fume extraction, process timer with alarm, temperature range ambient to 300°C. Supplied fully built or in modular form for assembly on site. Available for either electric or gas firing. This type is particularly competitive for export where it can be packed into a container, saving £££'s in packing and transport costs.



Insulating and Test Equipment

52. WHG-1100E Heavy Duty Guillotine for cutting all kinds of insulation material. Cutting length 1100mm. Material thickness max. 4mm. Counterbalance shear. Heavy duty cast iron frame for rigid cutting off tough insulation. Strip cutting device and off-cut tray.

Other sizes available.



53. WHG-1100S Guillotine with foot-operated material clamp for thickness up to 4mm. Cutting width 1100mm. Strip cutting device and off-cut tray. Many smaller models are available.



54. ICM-1 Hand-Operated Insulation Creasing Machine for material up to 200mm wide.

For manual throughput of the insulation via a hand wheel
Robust and very heavy cast iron base.

Maximum insulation width: 200mm

Strip length: unlimited

Insulation thickness: 0.15mm-0.8mm



55. ICM-2A Motorised Insulation Creasing Machine for material up to 150mm wide x 0.15 - 0.8mm thick.

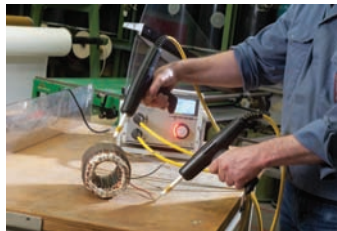
Available with side cuffing unit.



56. ICM-3 Automatic Insulation Creasing and Cutting Machine. Produces slot insulations and closures direct from the roll. This is a must for every workshop!



57. Flash Tester for testing electric motor coils. Infinitely variable 0-5000V Many sizes available up to 100,000V



58. Slot Wedge and Closure Cutter. Saves time on every motor!



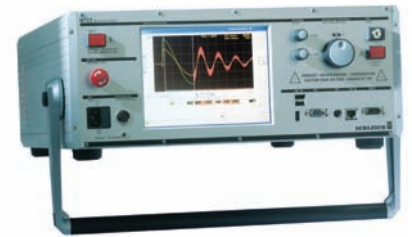
59. MOTATEST Universal fully automatic tester for electric motors with up to 11 different test methods. Surge, Resistance, Insulation Resistance, PI/DAR, Inductivity, PE Resistance. Quick Go/No Go results. Report printing and test data storage. Version 1 has high frequency surge test and 400VDC flash test. Version 2 has 3kV surge test and 6000VDC flash test.



60. AST Surge Tester. State-of-the-art PC based surge tester with remote access. Unique 4 wire testing reduces potential damage to motors from surge current.

Best resistance measurements on the market.

Models up to 50kV. Available as desktop or caddy format for ultimate protection and transport. Add high voltage AC option or integrate partial discharge for ultimate motor testing.



61. AST Surge Tester. Options: partial discharge, bar-to-bar test device, rotor/stator test check kit. The tester can be integrated into a portable field case with rollers and a handle.



62. Motatest – Dynamic. For online monitoring of motors and their power supply and load. Very easy to use with full built in data analysis and storage/report generation. Get the full picture of your motor's efficiency.

Can be integrated into SAF test panels and dynamometer applications to give a complete set of running results before the motor is returned to service. Collect data for frequency, efficiency, rotary speed, torque, spectrum voltages and current, mains voltage analysis and much more.



63. Core Loss Tester for testing stator laminations for eddy currents and hysteresis (up to 25% energy loss!) Various models up to 50,000hp. Also used for testing rotors and armatures.



64. Dynamometer for load testing motors. Eddy current versions for motors up to 400kW. With full software for data analysis and software. Available with hydraulic lift tables to align motors to dyno shaft. Combine with Motatest Dynamic to record and report how the motor performs under load.



65. SAF Test Panels - For the running up of motors in the workshop. Different models available for motors up to 1000kW. Soft start or inverter control. Tapping selection for different voltages or variac. AC and DC options. Combine with Motatest Dynamic for ultimate motor data capture whilst the motor is running. Additionally connect to a Whitelegg dynamometer for load testing.



DC and High Voltage Coil Manufacturing Equipment

66. AZ-1000 Loop Edge Bending Table for conductors of up to 15 x 2.5mm cross-section.



67. MCS-1000 Coil Spreading Machine for armature coils. For forming pre-formed loops. Pneumatic loop clamp, with six adjustable hand operated clamps.



68. Edge Bender. For bending around pins 6 – 25mm diameter. Pneumatic operation Max. cross section 25 x 3.5mm.



69. Straightening, Cutting and Stripping Machine. For preparing conductors for bending into loops. Fully automatic operation direct from the reel. Rotating magazine for holding pieces of different lengths. 200 different cutting and stripping programs. Maximum Cross-section 17 x 3mm. All 4 sides are stripped.



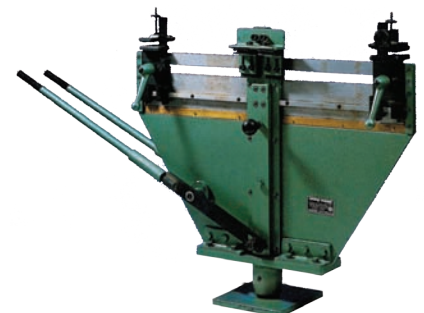
70. HD-IS Heavy-Duty Loop Winding Machine. Speed range 0-5 and 0-16rpm. Remote foot pedal operation. For loops up to 3m long. Choice of loop winding fixture sizes. 675kgm torque. Digital revolution counter with automatic stop. This very powerful machine has a 6-speed gearbox so speeds of up to 370rpm can be selected, making it useful also for winding stator coils.



71. WSA-2 Wire Stripping Machine with twin motor drive. Designed for stripping insulation from pre-formed coils, loops or bar ends, it is unique in having two preset dimensions so, by the operation of a foot pedal, the stripping wheels are moved apart for stripping the edges.



72. WAS-1200 Coil Winding and Spreading Apparatus for mounting on a simple hand or motor-driven winding machine. The winding pins are set at the desired length and locked in position; when the loop is wound, the locks are released and a lever is fixed to the spreading bar, allowing the coil to be spread to the preset width. Models available for loops from 500 to 2000mm long.



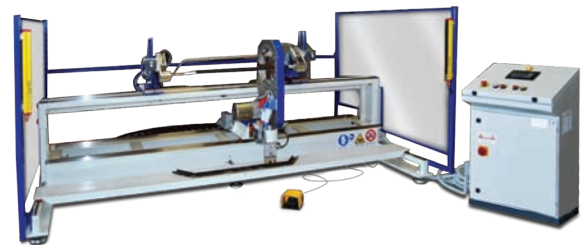
73. Pneumatic Coil Spreader. For loop length up to 2500mm.
For quick and easy forming of closed stator coils.
Various sizes available.



74. HCP1 Hydraulic Coil Press.
For high precision coil compression. Manual loading/
unloading of the coil once taped.
Simple to operate and maintain.
Maximum section 30x70mm and 1200mm long
Maximum heat 300°C.



75. TAL2800 Coil Taping Machine.
Semi-automatic. Highly manoeuvrable and flexible with quick
changeover from one coil sized to another, different versions
available according to application.
Coil length 500-2800mm.
Coil section min 10x10mm max 30x60mm.
Active side opening max 900mm.



76. HAR1 Coil Forming Machine.
Hydraulic operation high capacity machine.
Fully automatic forming cycle.
Coil length 380-3560mm.
Coil section 10x10mm to 30x60mm.
Opening side length 0-1000mm.
Eye Lift 0-400mm, eye diameter 16-25mm.



77. AST High Voltage Surge Testing.
PC controlled high tech surge tester.
Very high accuracy for the most demanding of applications.
Surge, IR,PI/DAR, Resistance tests.
12,15,25, 30,40, 50kV models available.
Optional partial discharge up to 25kV.

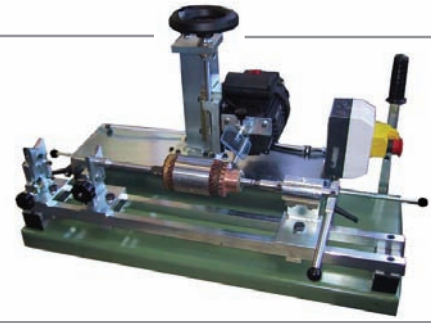


78. GLP2 High Voltage Testers.
AC and DC testing up to 100kV.
The most accurate on the market.
Extremely low residual ripple at HVDC tests.
Insulation resistances with high voltage DC up to 10TΩ
Fully configurable. Manual or fully automatic test modes
Integrated PC for data storage, test programming and
network connections.



Armature and Commutator Processing Equipment

79. UCM-02 Commutator Undercutting Machine for commutators up to 160mm diameter. Bench model with single phase motor. Both smaller and larger models available.



80. UCM-04 Commutator Undercutting Machine with floor stand for commutators up to 400mm diameter. Armature diameter up to 500mm and weight 250kg. Cutter speed 5000rpm. Dust extraction unit.



81. UCM-08 Automatic Commutator Undercutting Machine for armatures 100 – 1000mm diameter. Fully automatic cycle with cutter traverse, lift and armature rotation with accurate spacing by laser. Armature weight max. 4000kg. Larger and smaller versions available. Very high precision machine with magnifying camera and video screen for ease of use. Can be combined with turning, TIG welding and brushing modules to give an integrated commutator processing machine.



82. TIG Welding Machine for Commutator riser welding of armatures up to 1000mm diameter and 4000kg weight. Fully automatic control: after each weld, the torch moves to the next circumference until each riser is completely welded. Other sizes available. Very safe operation with welding completely hidden. Work piece can be viewed via a magnifying camera and LCD screen.



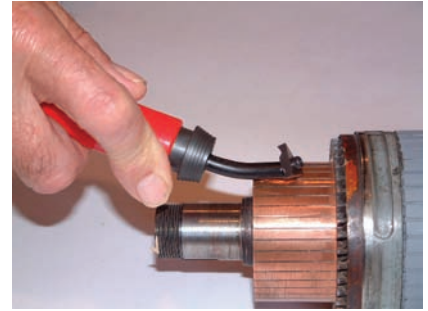
83. PCU Air Driven Commutator Tool. For the manual undercutting of the commutator. High rotation speed (20,000 rpm) with tool position guide for easier movement. Uses 19 and 22mm OD diamond tipped cutting wheels.



84. Lathe-Mounted Undercutting Attachment for fixing to a lathe toolpost. Two sizes for max. 400 or 600mm commutators. Uses high-speed steel or carbide cutters.



85. Commutator Chamfer Tool.
Fitted with a 3-cornered carbide insert.



86. AST Bar-to-Bar Armature Tester.
For low inductive DC armatures. Fully automatic procedure guides the operator through the test process.
Automatic Go/No Go results.
Supplied as option to the AST Surge Testers.



87. WHGR4 Growler. External meter type for locating short open circuits and grounds in armatures 12-200mm diameter.
230V 50/60 Hz supply.



88. HHG Hand-Held Growler made in two sizes for armatures and stators. With pole spread 9 or 19mm. Both plug into a power supply unit for UK, EU or US sockets.



89. WHGR2 Heavy Duty Hand Held Growler (internal/external).
For testing short circuits in armatures 150-300mm in diameter and stators 60-300mm diameter. 230V 50/60 Hz supply.



90. HN-711 Coil and Armature Winding Machine.
Equipped with adjustable armature tooling and with a set of arbors for stator winding up to 50kW. Can be supplied ready for bench mounting or complete with table and storage drawer. Inverter control with electronic turns counter.





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