

Operating manual

CTC 13-28 HPR850

Installation, operation and maintenance

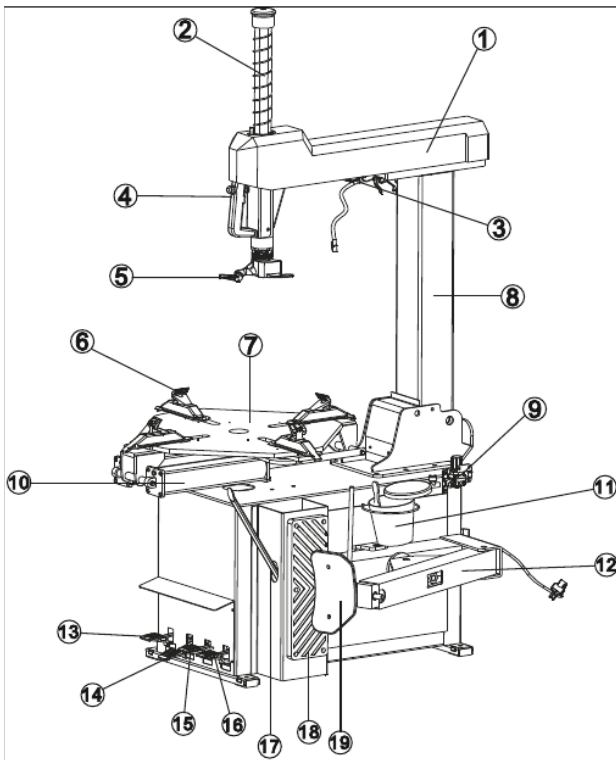


Fig. 3

Edition 07.10.2026 | English

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About this manual

This manual applies to the HAMMER TOOLS CTC 13-28 with HPR850 assist arm. Read it completely before installation, commissioning or maintenance and keep it with the machine. Only trained personnel may operate the machine. Do not use the machine in an explosive atmosphere.

Version note: The assigned older source lists a 1,150 mm wheel diameter, 14" wheel width, 0.75/1.1 kW and 220/380 V. These have not been presented as current product specifications. The clamping ranges in the original drawings also refer to variants. Before working at capacity limits, check the approval for the machine actually delivered. Safety pressure limits have not been increased.

These diagrams are retained unchanged to document the source. A: 220 V, single-phase, 1.1 kW. B: 380 V, three-phase, 0.75 kW. They are not confirmed connection diagrams for the 230/400 V, 1.5 kW machine offered in the shop. Before connection or repair, a qualified electrician must identify the correct diagram using the rating plate, motor version and controls. Do not adopt voltages, protection ratings, cable sizes or terminal assignments from these reference diagrams without verification.

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1. Application and technical data

The machine is designed for mounting and demounting tyres for cars, vans, light commercial vehicles and, with suitable accessories, motorcycles. Use it only within its intended operating limits. Damage caused by incorrect or unintended use is not covered by the warranty described in the source manual.

CTC 13-28 product data

External clamping range	13"-26"
Internal clamping range	15"-28"
Maximum tyre diameter	1 200 mm
Tyre width	3"-15"
Bead-breaking force (shop specification)	2 700 kg
Operating pressure	8-10 bar
Power supply (depending on version)	230 V / 50 Hz / 1 PH 400 V / 50 Hz / 3 PH
Motor power (shop specification)	1.5 kW
Speed, 230 V, variable	4-14 min□ ¹
Speed, 400 V, two stages	6 / 12 min□ ¹

The following table reproduces the Hammer Tools shop specifications as of 07.10.2026. For electrical connection, use the machine rating plate and the wiring diagram for the delivered version. The retained appendix diagrams show different motor variants and must not be used for the 1.5 kW version without verification.

Dimensions and working envelope

Original drawings 1 and 2 show the range of movement of the machine series. Dimensions are in mm, rim sizes in inches. They do not replace a verified installation or fixing plan for the delivered version. The source gives an operating temperature of 0-45 °C and a net weight of 247 kg for its version; this is not a confirmed weight for the current machine.

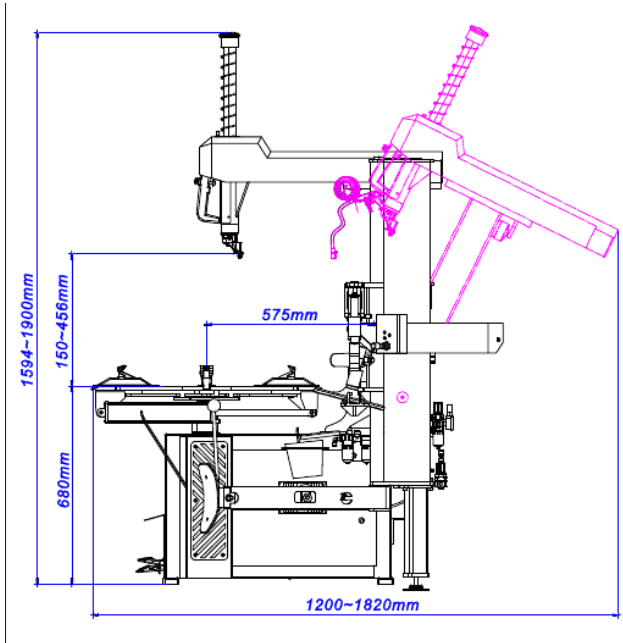


Fig. 1

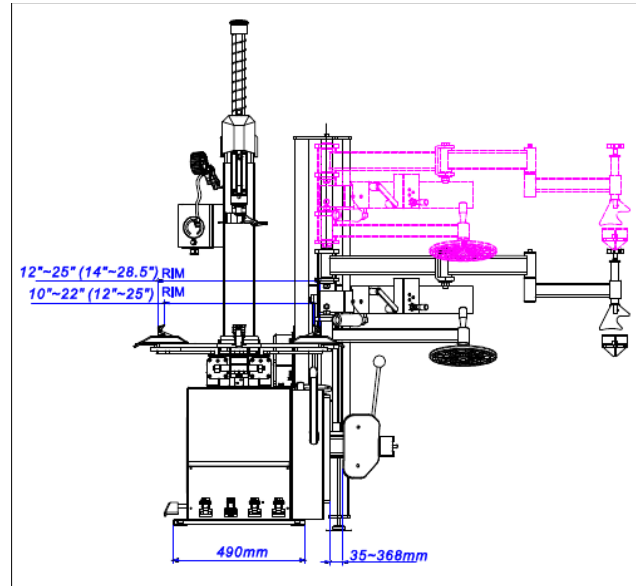


Fig. 2

2. Components and controls

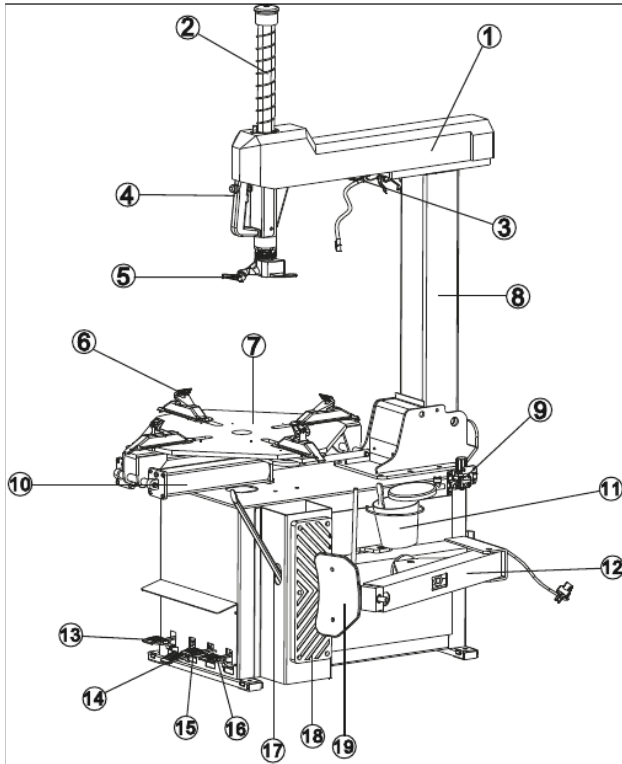


Fig. 3

Fig. 3

Fig. 3: 1 Horizontal arm; 2 vertical tool shaft; 3 inflation gun; 4 locking button; 5 mounting/demounting head; 6 clamps; 7 turntable; 8 tilting column; 9 air service unit; 10 cylinder; 11 lubricant pot; 12 bead-breaker arm; 13 column-tilting pedal; 14 clamping pedal; 15 bead-breaker pedal; 16 turntable pedal; 17 tyre lever; 18 rubber pad; 19 bead-breaker blade.

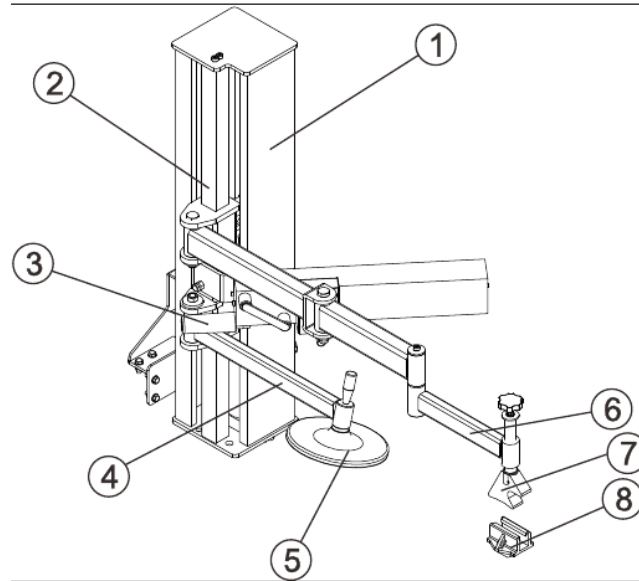


Fig. 4

Fig. 4: 1 Column; 2 sliding guide; 3 pressing roller; 4 lifting-disc swing arm; 5 tyre lifting disc; 6 bead-presser swing arm; 7 bead pressing block; 8 centring/pressing cone.

3. Safety and warning labels

Crushing hazard: Keep clear of the bead-breaker arm. Never put hands between the breaker and housing, between tyre and clamps, or in the mounting-head working area. Keep the clamps closed during bead breaking. Do not stand behind the machine: the tilting column can injure personnel.

Wear eye protection, suitable gloves and work clothing. Disconnecting compressed-air hoses can release high-pressure air. Bead seating and inflation can eject dirt, liquids or debris. Maximum machine operating pressure is 10 bar; this is not an allowable tyre inflation pressure.

Electric-shock hazard: Dangerous voltage is present inside the housing. Do not open covers during operation. Before intervention, disconnect power and air and release all stored compressed air. Electrical work is restricted to qualified personnel. Protect the machine from rain, water and wet conditions; do not tamper with components.

Read, understand and follow all warnings. Do not cover warning labels. Replace missing or unreadable labels immediately and do not use the machine until this is done. Failure to comply can cause serious injury or death. Keep the work area clean, tidy and well lit. Remove jewellery, secure loose clothing and tie back long hair; keep hands and body clear of moving parts.

Explosion hazard during inflation

Never exceed 40 psi (approximately 2.76 bar) when seating beads. After seating, never exceed the pressure specified by the tyre manufacturer. Any lower limit imposed by the tyre or rim manufacturer takes precedence. The machine and clamps do not provide containment for an exploding tyre.

An exploding tyre and rim can be thrown upwards and outwards with lethal force. Never lean or reach over the tyre or rim. Stand clear and keep bystanders away. Inflate in short bursts while continuously monitoring pressure.

Causes of explosion include mismatched tyre/rim diameters, damaged tyres or rims, excessive bead-seating pressure, exceeding the specified inflation pressure and failure to follow safety rules. The tyre size on the sidewall and the size marked on the rim must match exactly. Do not mount if sizes cannot be identified or defects are found.

Before bead breaking, release all air and remove the valve core. Remove all balance weights before mounting or demounting. Use only suitable approved tyre lubricant for demounting, mounting and bead seating. Inspect the tyre and rim carefully. These operations are restricted to trained operators.

The following original overview shows label positions. All warning text is explained in the preceding safety section. Labels on the delivered machine must be complete and legible.



4. Transport and positioning

Transport the machine in its original packaging and follow the package markings. Use a forklift of adequate capacity and insert the forks as shown in Fig. 5. The source specifies a transport temperature of -25 to +55 °C. Protect against moisture, vibration and impacts.

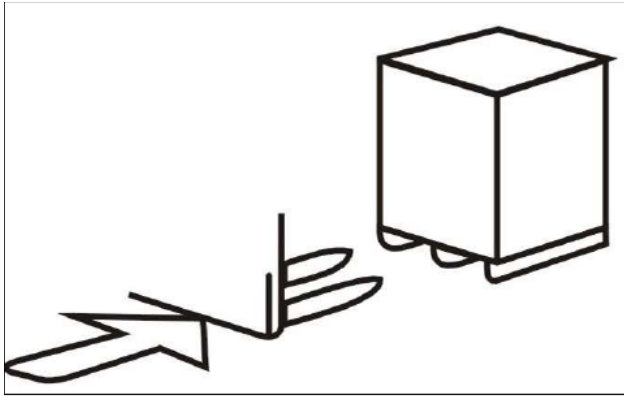


Fig. 5

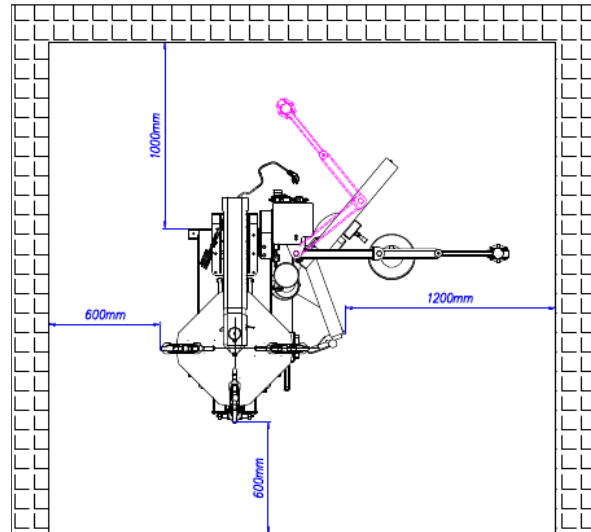


Fig. 6

The installation site must meet applicable safety requirements. Electrical and compressed-air supplies must be accessible. Provide at least the clearances in Fig. 6: 1,000 mm behind, 1,200 mm on the assist-arm side and 600 mm on each of the other illustrated sides. All movements must be unobstructed. Protect against weather; a roof alone does not replace a dry, suitable installation site.

After unpacking, inspect the machine and accessories for visible transport damage; report any damage to Hammer Tools. Wear gloves when unpacking. Dispose of plastic, nails, screws, wood and cardboard in accordance with local requirements. The machine is supplied partly dismantled; assemble the column and other components as follows.

5. Installing the tilting column

Unpack the accessory boxes, bead-breaker arm and column. Position the machine body as in Fig. 6. Remove the bolt, spring washer and flat washer from the body. Remove the front protective cover (Fig. 7) and withdraw the pivot pin from the column bracket (Fig. 8).

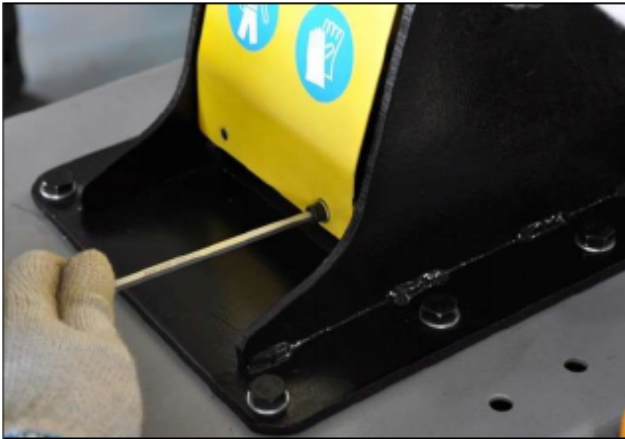


Fig. 7



Fig. 8

Place the column in the bracket with warning labels facing forwards (Fig. 9). Align the holes and refit the pivot pin (Fig. 10). Tighten using the appropriate wrench (Fig. 11) and secure against rotation (Fig. 12). The source does not specify a tightening torque for this connection.

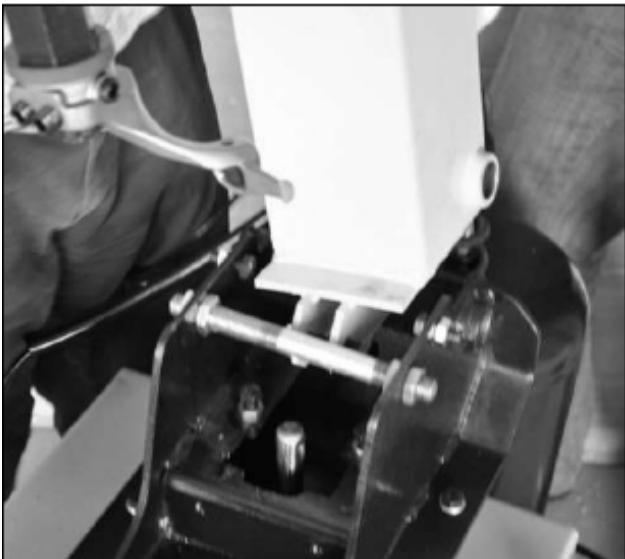


Fig. 9

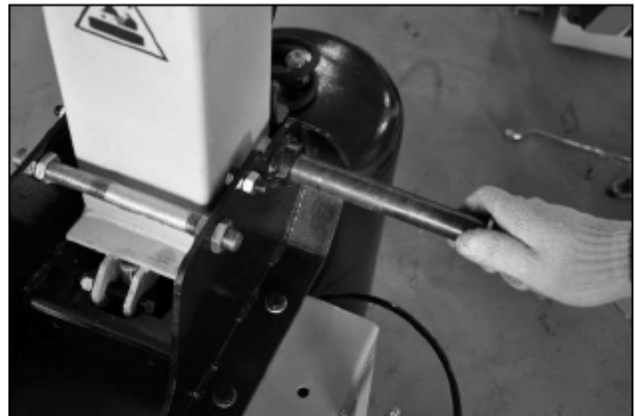


Fig. 10



Fig. 11



Fig. 12

Remove the bolt and nut from the column connecting plate (Fig. 13). Align the plate hole with the cylinder-end hole and refit the bolt and nut (Fig. 14). Do not clamp this pivot rigidly: the source instructs screwing the nut flush with the bolt end or approximately 2 mm below it. Check free movement and secure retention.

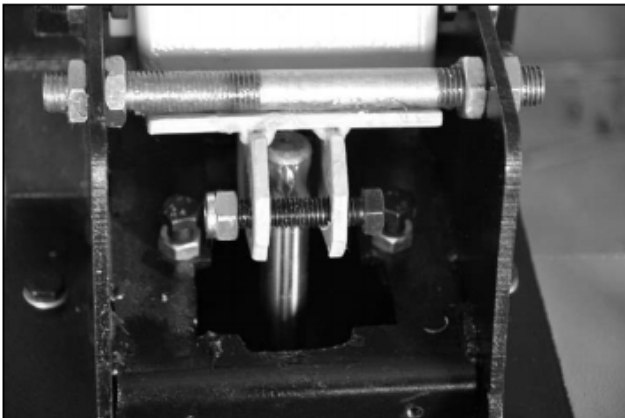


Fig. 13

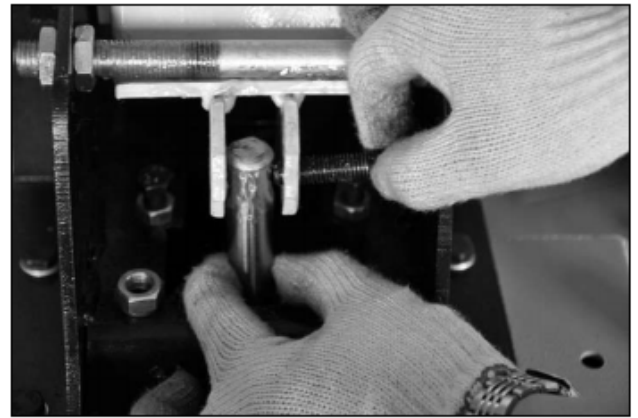


Fig. 14

Refit the protective cover (Fig. 15). Move the lower edge of the rubber guard outside the bracket (Fig. 16). Connect the column air hose to the fitting at the rear of the body (Fig. 17). Fit the horizontal-arm cover (Fig. 18).



Fig. 15



Fig. 16



Fig. 17



Fig. 18

Lock the vertical tool shaft before removing its cap so it cannot slide down and injure personnel or damage the machine. Remove the screw (Fig. 19-2) and cap (19-1) from the shaft (19-3). Fit the spring (Fig. 20), then refit the cap and screw.

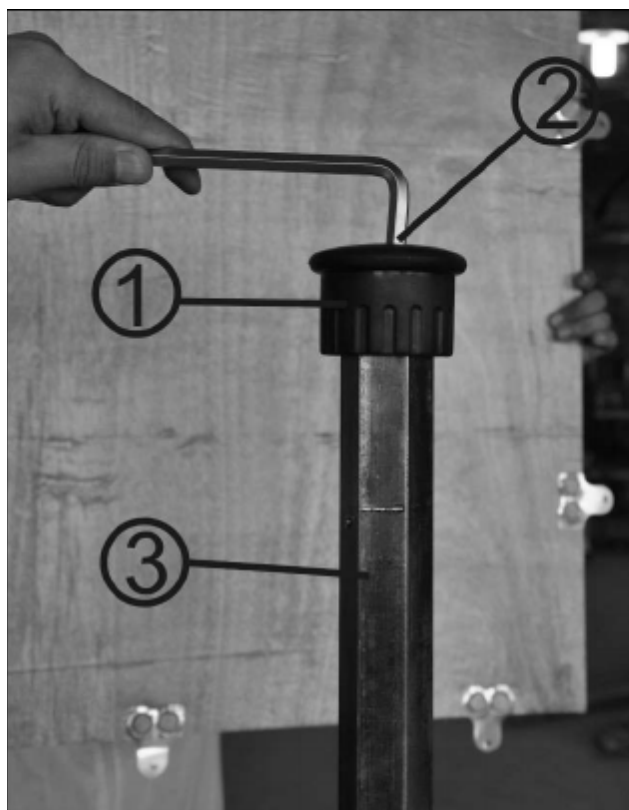


Fig. 19



Fig. 20

6. Installing the bead breaker

Remove the locknut at the front of the bead-breaker cylinder rod (Fig. 21). Remove the arm nut and bolt and attach the spring. Position the arm bush in the body support, align the holes and fit the bolt and securing nut (Fig. 22).



Fig. 21



Fig. 22

Pass the piston rod through the sliding bush (Fig. 23), with its bearing surface facing outwards. Refit the nut at the front of the rod (Fig. 24). Set the clearance between blade edge and rubber pad to 30-40 mm. Attach the spring (Fig. 25).

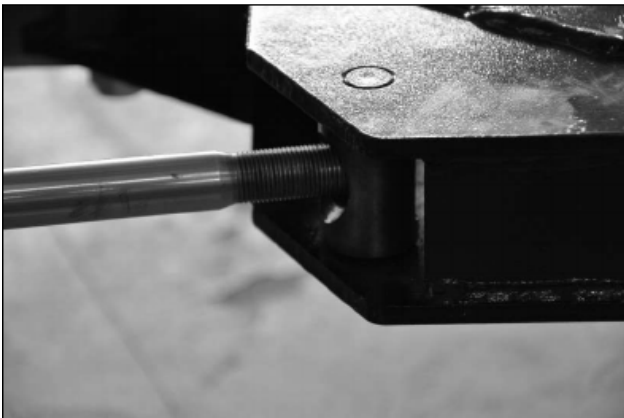


Fig. 23



Fig. 24

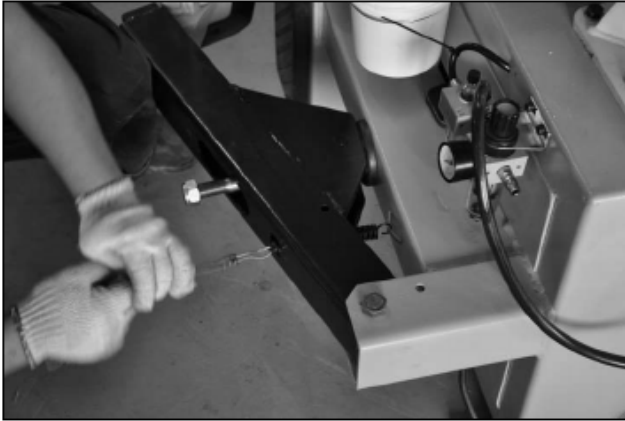


Fig. 25

Loosen the bead-breaker blade locknut (Fig. 26), position the blade correctly and retighten the nut (Fig. 27).

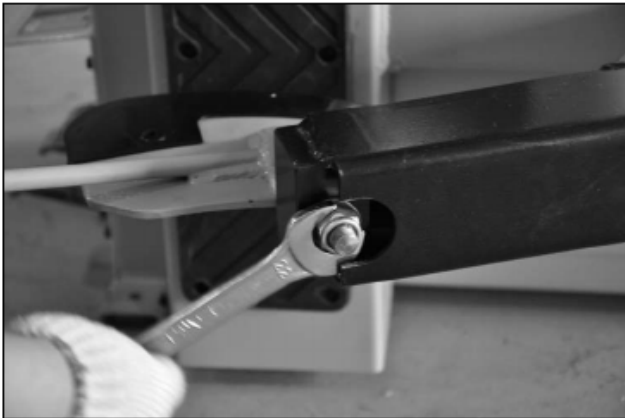


Fig. 26



Fig. 27

7. Installing the HPR850 assist arm

Remove the four bolts from the mounting base (Fig. 28) and the bolt underneath the assist arm (Fig. 29). Place the assist arm on the base, align the holes and fit the bolts (Fig. 30).



Fig. 28



Fig. 29



Fig. 30

Install the bead-presser swing arm (Figs. 31-33). Install the tyre lifting-disc arm (Fig. 34), then the pressing roller (Fig. 35). Tighten all bolts with suitable sockets or wrenches. Check that all pivoting and sliding parts move freely and smoothly.



Fig. 31



Fig. 32



Fig. 33



Fig. 34



Fig. 35

8. Air service unit and accessories

Take the separately packed air service unit from the accessory box. Installation is restricted to qualified personnel. Excessive pressure can cause serious injury and machine damage. Prepare a crosshead screwdriver and two M4 screws, inspect the unit and clean the mounting surface.

Fasten the unit at the rear with the M4 screws, level it and tighten both screws (Fig. 36). Connect the hoses as in Fig. 37: labelled left outlet to the assist arm, upper-right to the main machine and lower-right to the tilting column. Check the routing on the delivered machine.



Fig. 36



Fig. 37

Insert the lubricant-pot holder into the two holes on the right side (Fig. 38) and fit the pot (Fig. 39). Before connecting air, keep everyone clear of the movement area and ensure the turntable is empty. After connection, check every joint for leaks (Fig. 40). The source states that pressure and oil feed are factory-set; do not alter them unnecessarily.



Fig. 38



Fig. 39



Fig. 40

9. Commissioning and functional checks

Secure the machine against movement and ensure it rests fully on the floor. Check all fasteners. All four pedals must be in their resting positions. Clear the turntable and movement area. Connect air (Fig. 41), check for leaks and verify an operating pressure of 8-10 bar. The clamps may open automatically when air is connected.

Press pedal 13: the column tilts back; press again: it returns. Press pedal 14: the clamps close; light operation allows incremental movement; operating again opens them. Press pedal 16 down: turntable rotates clockwise; lift it: anticlockwise. Press pedal 15: bead-breaker blade moves; release it: blade returns. If functions differ, stop and have the cause checked by qualified personnel.

Operate locking button 4: the horizontal arm and vertical shaft lock. Observe oil feed: approximately one drop after 5-6 pedal operations. Adjust oil metering with a screwdriver only if it differs. Check pivoting and sliding arms for smooth travel. Move the assist-arm lever up/down: the slide must rise/lower smoothly (Fig. 42).



Fig. 41



Fig. 42

10. Demounting tyres

Before every tyre change, follow the manual and warnings. Clean and inspect the rim and remove all adhesive and clip-on weights. The tyre must be clean and dry, with undamaged beads. Replace the rubber valve or the O-ring on a metal valve. Any inner tube must be dry and undamaged. Use suitable mounting lubricant. Tyre and rim sizes must match exactly.

Completely deflate the tyre and remove the valve core. Place the wheel between blade and rubber pad. Position the blade on the bead about 2 cm from the rim edge; keep the valve away from the blade. Operate the bead-breaker pedal (Fig. 43) and repeat around the wheel and on the other side until both beads are released. Note: the source incorrectly refers here to pedal 16; the component list identifies pedal 15 as the bead-breaker pedal. Follow the function markings on the machine.



Fig. 43

Clamp the rim securely on the turntable. Move the tool shaft into working position and bring the head close to the rim. Set the head roller about 2 mm clear of the rim to avoid scratching (Fig. 44). Lock the shaft and keep hands out of the danger area.

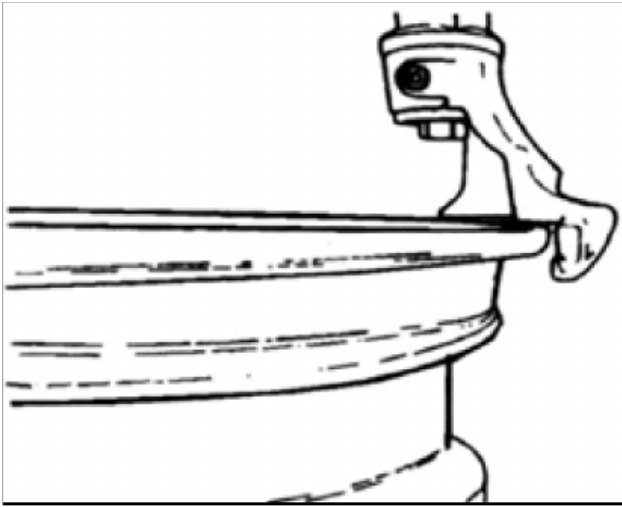


Fig. 44

Lift the bead over the mounting head with the tyre lever. Operate turntable pedal 16 and rotate clockwise until the bead clears the rim completely (Fig. 45). For tube-type tyres, the source recommends positioning the head about 10 mm to the right of the valve to protect the tube. Remove the tube if fitted. Lift/position the wheel so the other bead is at the head and demount it in the same way (Fig. 46).

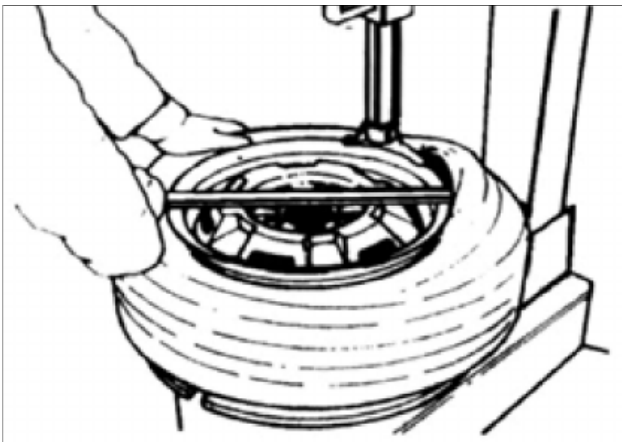


Fig. 45

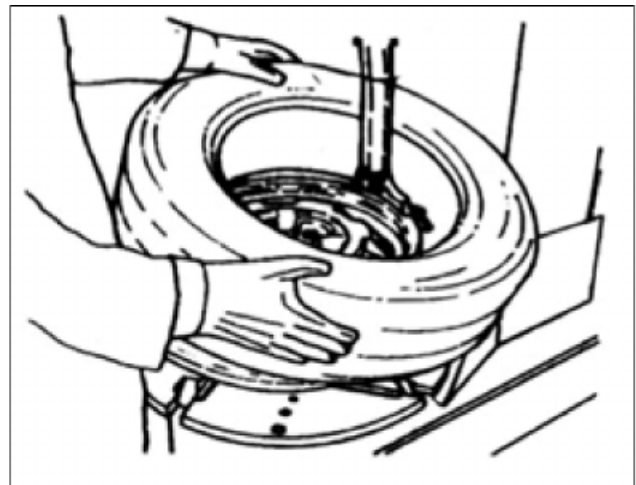


Fig. 46

11. Mounting tyres

Check tyre and rim sizes again before mounting. Clamp the rim on the turntable. Lubricate the beads with approved tyre lubricant; the source refers to a suitable soap solution. Place part of the lower bead above the tail of the mounting head and press the opposite side below the head and into the rim drop centre (Fig. 47).

Use pedal 16 to rotate clockwise and mount the lower bead. Fit the inner tube where required without trapping it. Mount the upper bead in the same way. Never place hands between tyre and clamps. Do not adjust the internal pressure-control valve; doing so can damage the locking function.



Fig. 47

12. Inflating tyres

Follow the explosion warnings in section 3. Before inflation, check tyre and rim for defects and exact size compatibility. Keep hands and body clear. The machine has no device to contain an exploding tyre. Release the wheel from the turntable clamps. Attach the inflator to the tyre valve (Fig. 48).

Operate the inflation gun slowly in short bursts and continuously watch the gauge. Never exceed 40 psi (approximately 2.76 bar) when seating beads or the specified tyre inflation pressure afterwards; lower manufacturer limits take precedence. Never lean over the tyre or rim. If seating or behaviour is abnormal, stop, deflate and investigate.



Fig. 48

13. Maintenance

Maintenance is restricted to trained personnel; electrical work to qualified electricians. Regular maintenance is necessary for safe operation and service life. Before any maintenance, disconnect electrical and air supplies and release all stored air. Prevent unintentional reconnection.

Keep the machine and work area clean so dust does not enter moving parts. Check the air lubricator oil level regularly. Isolate and depressurise before filling; the source specifies SAE 30 oil. Clean and lubricate all moving turntable parts (Fig. 49). Check joints and bolts regularly and retighten where necessary.

Keep the horizontal arm and tool shaft clean and lubricate regularly (Fig. 50). Oil sliding and friction surfaces weekly. Provide a water separator near the compressor to reduce moisture in the air supply.

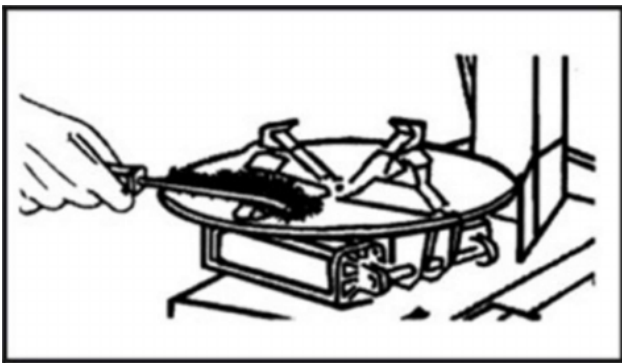


Fig. 49

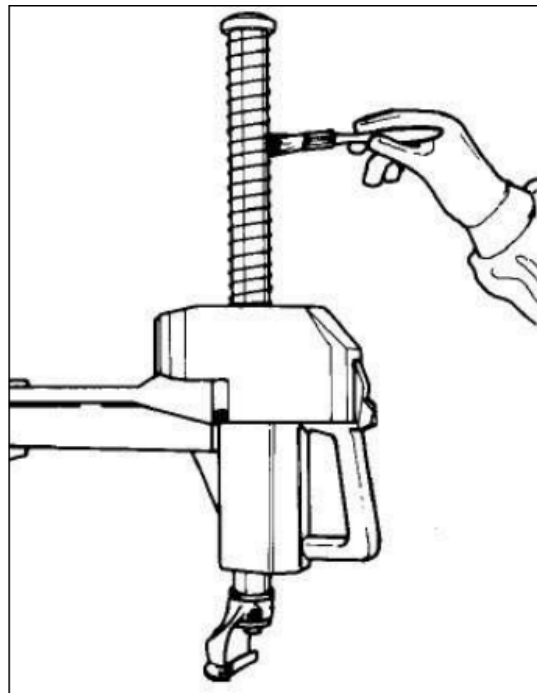


Fig. 50

Check belt tension to ensure correct turntable operation. With power and air disconnected, undo the left cover screws and remove the cover. Adjust the motor nut to loosen or tension the belt (Fig. 51). Refit the cover before restarting. The source provides no numerical belt-tension value.

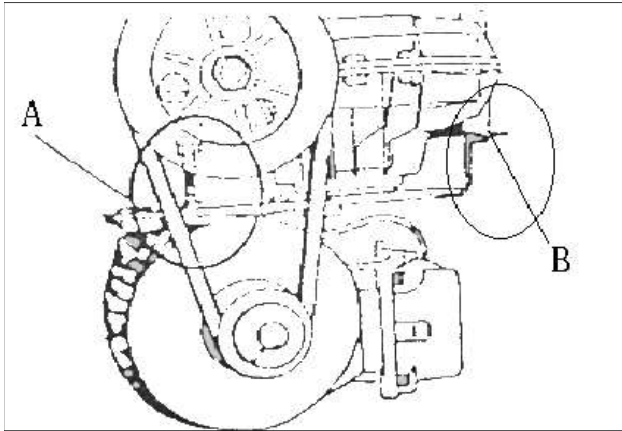


Fig. 51

If the vertical shaft does not lock securely, disconnect and release air, then remove its cover. Adjust the nut by the threaded rod or the screw behind the locking plate as appropriate to the installed version. Ensure protection and clearance before reconnecting air for the test. The shaft should rise approximately 3-4 mm on locking. If locking remains insecure, keep the machine out of service.

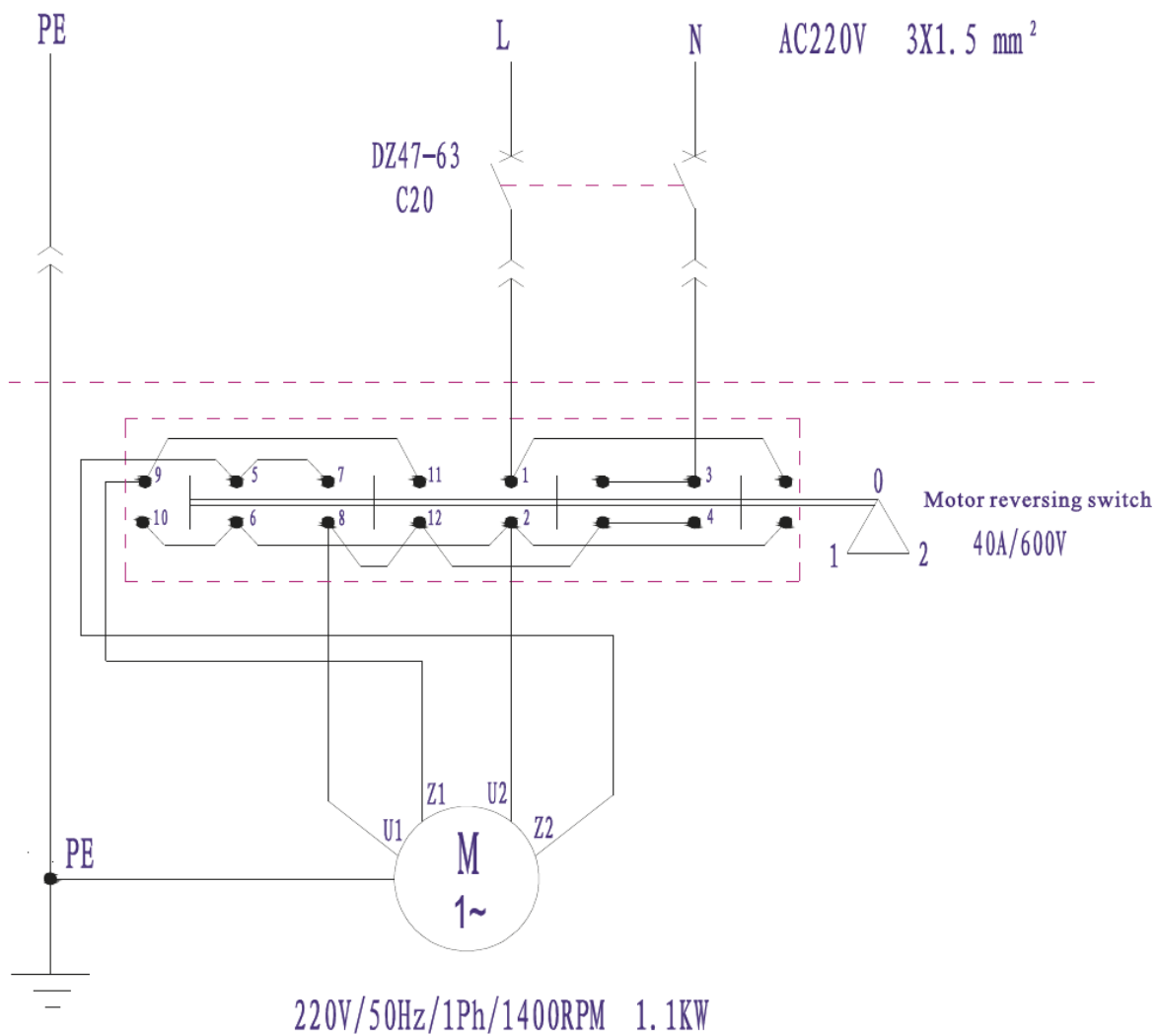
14. Appendix: original electrical diagrams

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Legend: Motor reversing switch; PE = protective earth; L/N = line/neutral; L1/L2/L3 = three-phase lines; M = motor; 1~ = single-phase; 3~ = three-phase. Numbers and terminal designations remain unchanged.

A | 220 V · 1 PH · 1,1 kW

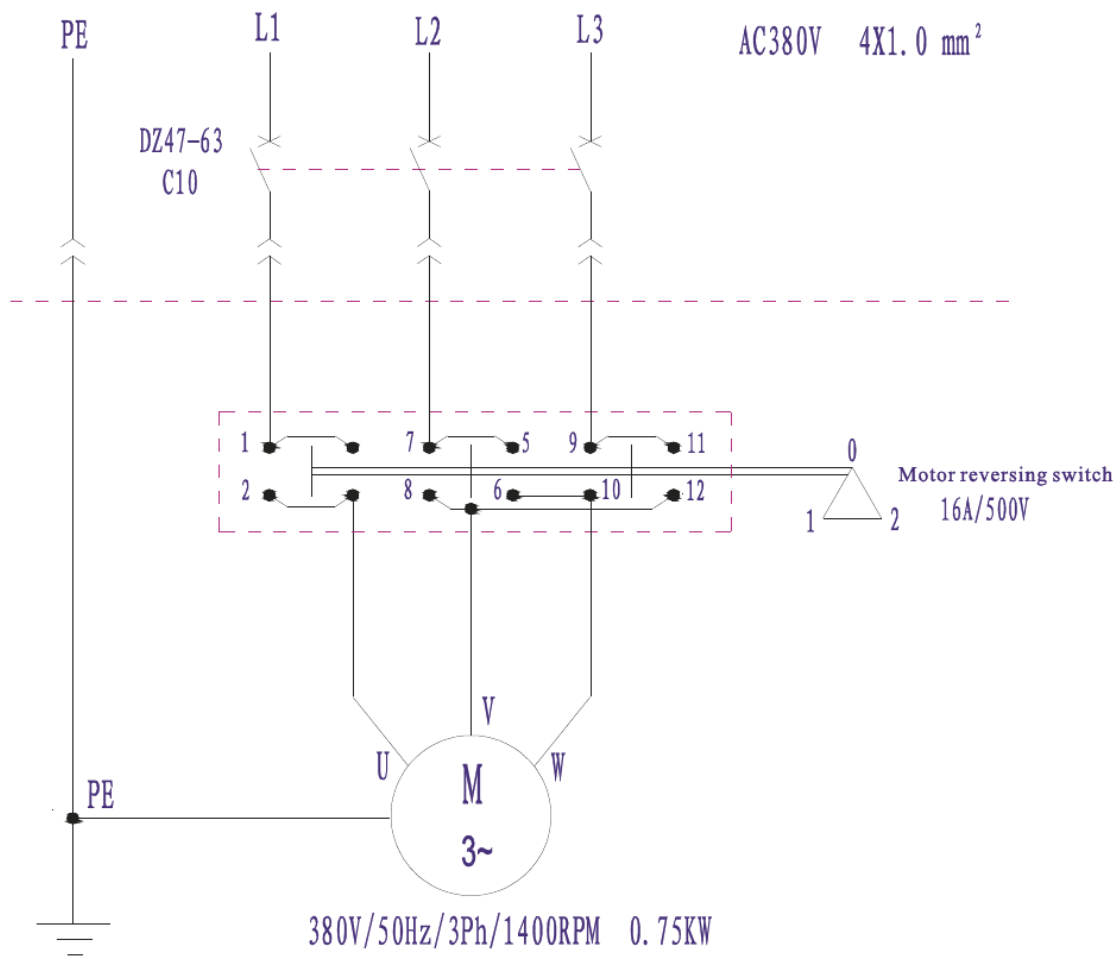
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B | 380 V · 3 PH · 0,75 kW

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