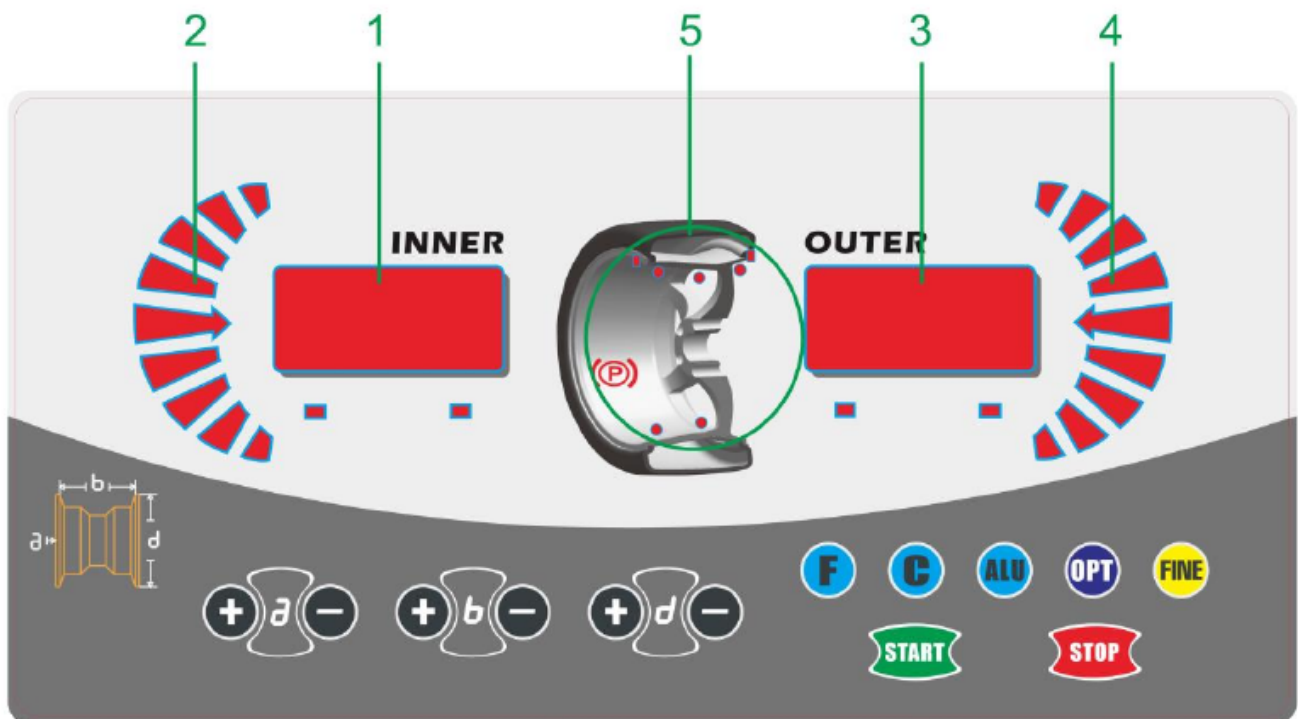


Operating manual

CWB 525

Semi-automatic wheel balancer



English

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Scope and important information

This revised manual applies to the HAMMER TOOLS CWB 525. It is based on the supplied manual, version JH202401.1.0 (AG) HYV. It covers installation, operation, calibration and troubleshooting. Read the entire manual before use, keep it with the machine and pass it to subsequent users.

IMPORTANT: The source manual specifies a maximum wheel weight of 65 kg; the shop specifies 70 kg. Until technically confirmed, use the lower 65 kg operating limit; any lower limit marked on the machine takes precedence. This manual does not approve the shop's 70 kg figure. Check motor power and supply voltage on the rating plate: the shop states 0.25 kW, while the source manual lists different versions.

The shop describes a manual measuring arm and three ALU programs. The source manual also includes ALU4, ALU5, ALUS, adhesive-weight guidance and an optional pedal brake. These functions are included for completeness and may be used only if fitted to the actual machine. Displays and controls must match the illustrations. This manual does not apply to the CWB 525 PRO.

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1. Safety

Only trained personnel may operate the machine. Do not use it in potentially explosive atmospheres. Wear suitable eye protection and safety footwear; remove loose clothing and jewellery and secure long hair. Keep hands, tools and other people clear of the rotating wheel. Centre and clamp the wheel securely; close the guard before every measuring spin. Never bypass guard switches. Wait for a complete stop before touching or correcting the wheel.

Do not use damaged wheels, clamping parts, cables or guards. Stop if unusual noise, vibration or errors occur and identify the cause. Switch off, unplug and prevent reconnection before cleaning, assembly or repair. Electrical tests and circuit-board work are for qualified personnel only. Do not make unauthorised modifications. Use suitable lifting assistance for heavy wheels; never use the shaft as a lever.

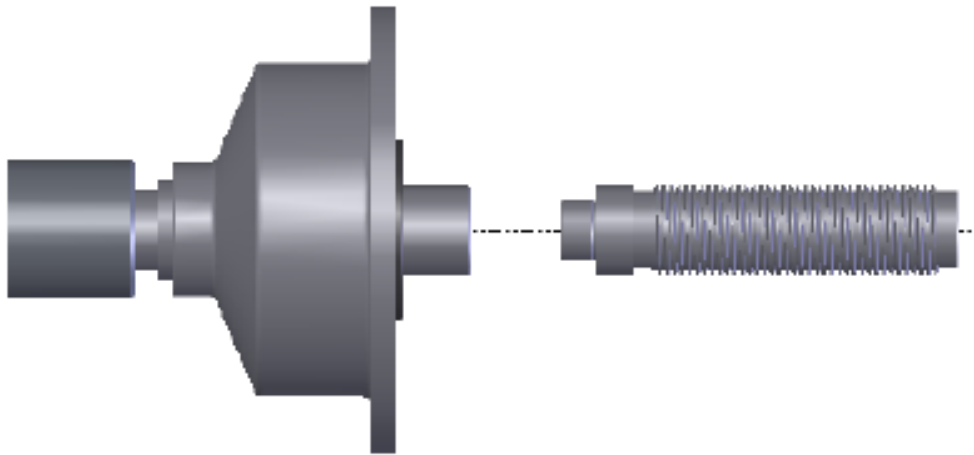
2. Technical data

Wheel weight, operating limit	65 kg
Rim diameter	10"-24"
Max. tyre diameter (shop)	1 000 mm
Width (shop)	1.5"-16"
Shaft diameter (shop)	36 mm
Balancing accuracy	±1 g
Balancing speed	200 min ⁻¹
Measuring cycle in source	8 s
Motor power in shop*	0.25 kW*
Sound pressure in source	<70 dB
Ambient temperature	5-50 °C
Altitude	≤4 000 m

Shop data supplement the source manual: maximum tyre diameter 1,000 mm, width 1.5"-16" and 36 mm shaft. The actual configuration and rating plate must agree. Connect only to a suitable earthed supply. The source manual lists variants of 0.2/0.37 kW, 110/220/230/240 V and 50/60 Hz; these are not user-selectable settings.

3. Installation and accessories

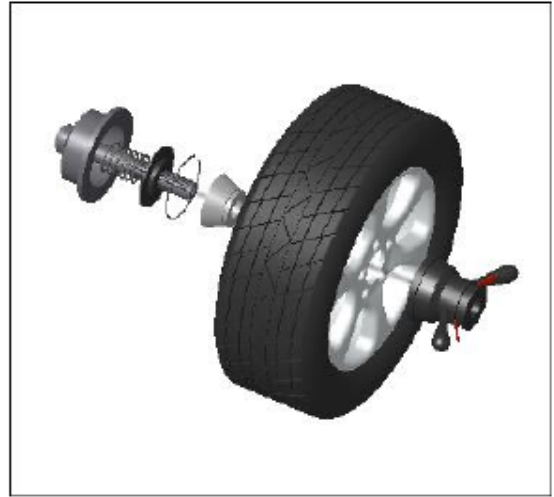
Unpack and check completeness. Install on a level, load-bearing, stable floor; do not operate on a wooden pallet. Leave at least 0.6 m behind the machine for ventilation and sufficient working space at both sides. Secure the machine to the floor through the base fixing points using suitable fixings. Fit the clean, matching threaded adapter to the main shaft as illustrated.



Source manual: one width gauge, four centring cones Nos. 1-4, quick-release nut, threaded adapter, pressure cup and protective pad, weight pliers and 100 g calibration weight. The shop lists the pliers as optional and a cone spring as standard; the agreed scope of delivery applies. M12 floor anchors, weights, flange protection and pre-assembly are optional according to the shop.

4. Preparing and clamping the wheel

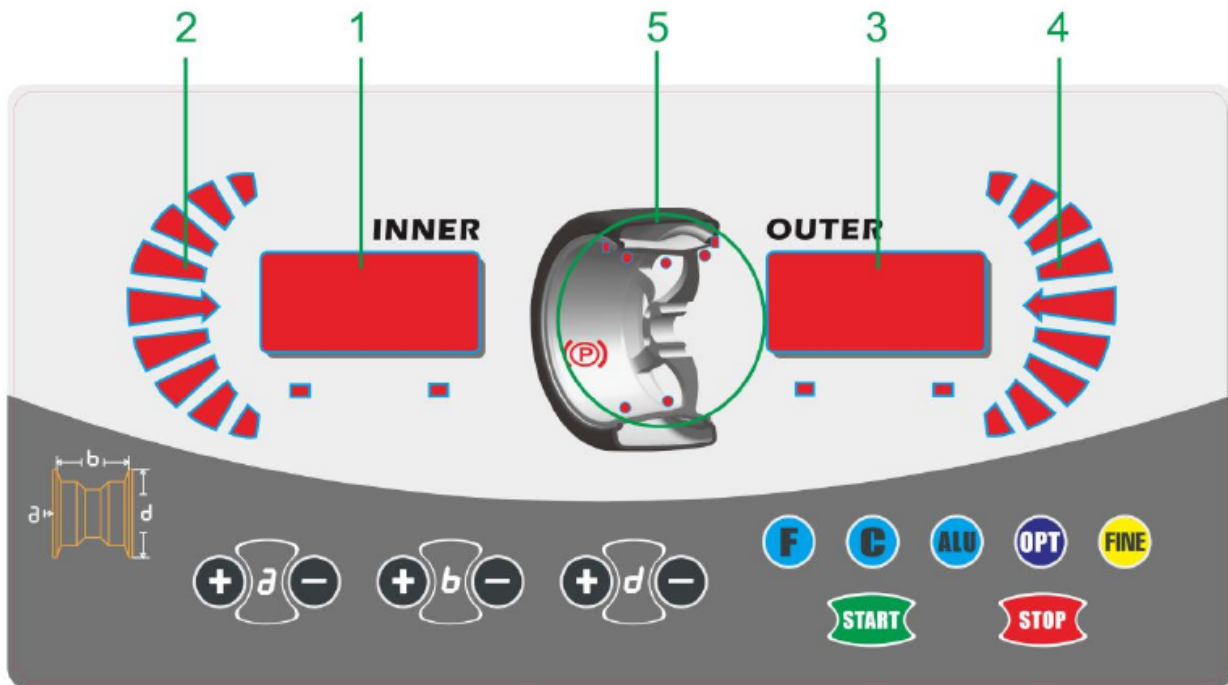
Clean the wheel, remove old balance weights and check tyre pressure against tyre/vehicle requirements. Rim, centre bore, cone and contact surfaces must be clean and undamaged. Select the correct cone and clamping direction for the rim. Support the wheel during fitting and removal; do not drag it along or drop it onto the shaft. Tighten the quick-release nut securely. Before starting, check centring, secure clamping and free rotation under the closed guard.



Left: shaft → wheel → cone with its small end towards the wheel → quick-release nut. Right: shaft → cone with its large end towards the machine → wheel → pressure cup/quick-release nut. The illustrations show the two basic arrangements; use only clamping components suitable for the rim. Observe the 65 kg wheel limit.

5. Controls and display

Components listed in the source manual: A power switch; B control head with tool tray; C gauge head; D main shaft; E pedal brake (optional); F guard; G control panel. The supplied file does not contain a separate overall illustration with these letter labels.

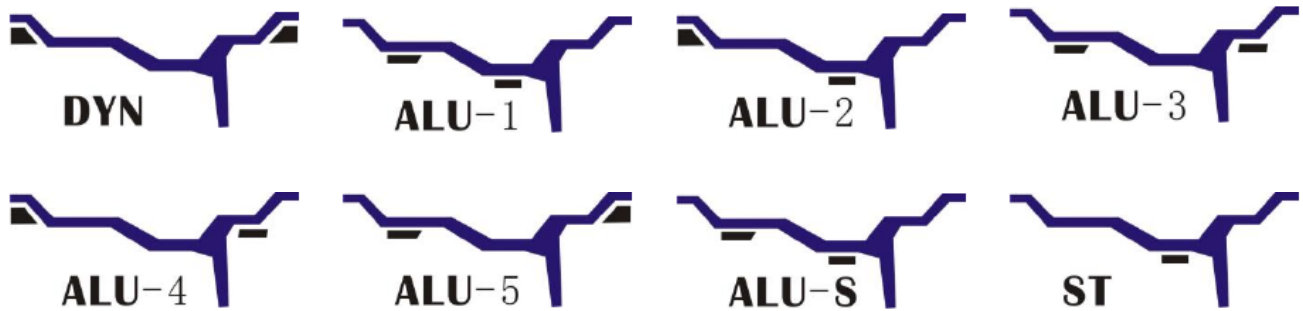


Display 1: inner imbalance mass (INNER). Display 2: inner angular position. Display 3: outer imbalance mass (OUTER). Display 4: outer angular position. Display 5: selected balancing program. Numbers in illustrations are examples, not values to enter.

Keys: a+/a- = distance; b+/b- = rim width; d+/d- = rim diameter; C = recalculation; START = measuring spin; STOP = stop/cancel; OPT = optimisation; ALU = ALU program selection; F = static mode or context-dependent function; FINE = fine imbalance display below the display threshold. Key combinations are explained in the relevant chapters.

6. Balancing programs

Black marks in the sections indicate weight planes. DYN: clip-on weights on both rim edges. ALU1 and ALU3: adhesive weights on two different planes. ALU2 and ALU4: inner clip-on and outer adhesive weight, with different geometry. ALU5: inner adhesive and outer clip-on weight. ALUS: two individually measured adhesive-weight planes FI/FE. ST: static correction in one plane, including suitable motorcycle wheels; a suitable secure wheel adapter is required.



Switch on and enter the required dimensions. DYN is the default. Select the required ALU program with ALU and check its indicator. For ST, use F as listed in the key table; the source program overview inconsistently says ALU. Therefore verify that ST is actually displayed and do not use an unconfirmed mode. Use additional programs only if present on the machine.

7. Entering wheel dimensions

a = distance between the machine and inner measuring plane. Bring the arm to the rim edge, read the distance and set it with a+/a- (Fig. 1). b = rim width; measure with the width gauge and enter with b+/b- (Fig. 2). d = rim diameter from the wheel marking; set with d+/d-. Do not enter the tyre's overall diameter as d. Check the selected unit and return the measuring arm before spinning.

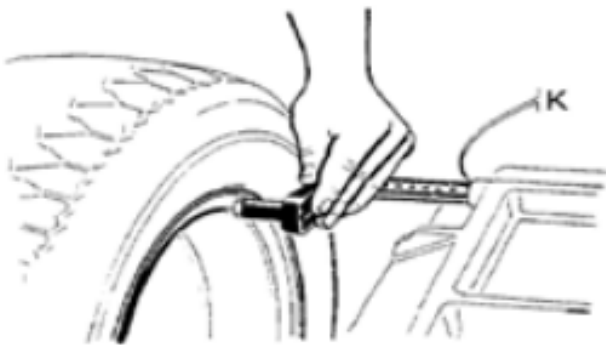
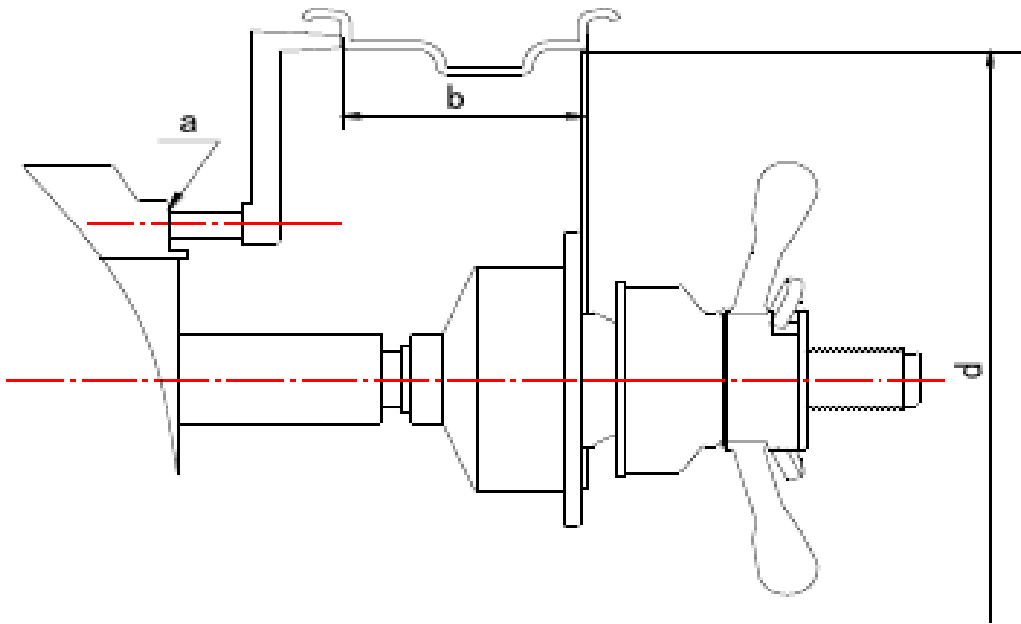


Fig. 1

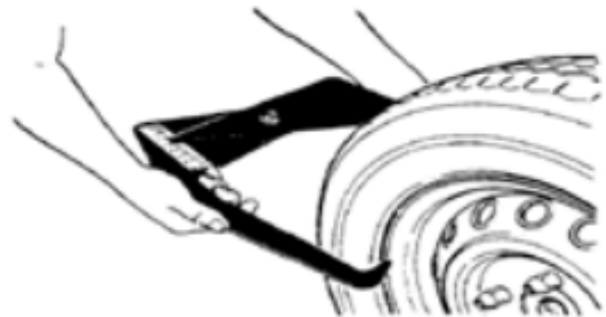


Fig. 2

8. Dynamic balancing (DYN)

1. Prepare and securely clamp the wheel; enter a, b and d. Check DYN. Close the guard. Depending on the start setting, the spin starts on closure or after START. 2. Wait for a complete stop. The left and right displays show the required weights. FINE displays residual imbalance below the threshold. 3. Slowly turn the wheel anticlockwise by hand until all right-hand position LEDs light. Fit the indicated outer clip-on weight at 12 o'clock on the outside (Fig. 3).

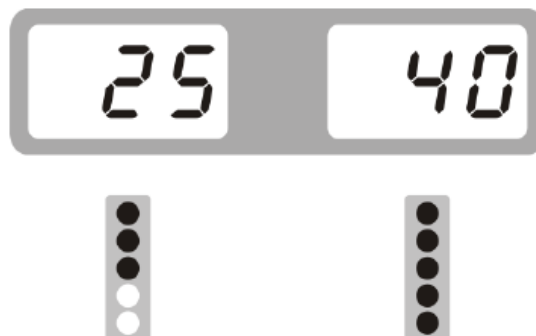
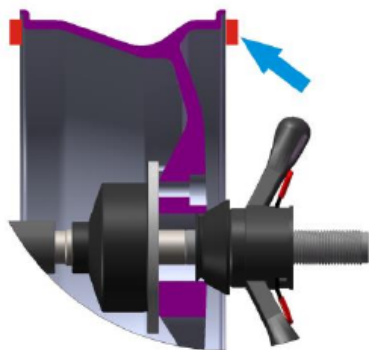


Fig. 3

4. Continue turning slowly anticlockwise until all left-hand position LEDs light. Fit the indicated inner clip-on weight at 12 o'clock on the inside (Fig. 4). 5. Close the guard and perform a check spin. 00/00 means balanced within the selected display threshold, not mathematically exact zero (Fig. 5). If imbalance remains, check and correct dimensions, centring, weight and position.

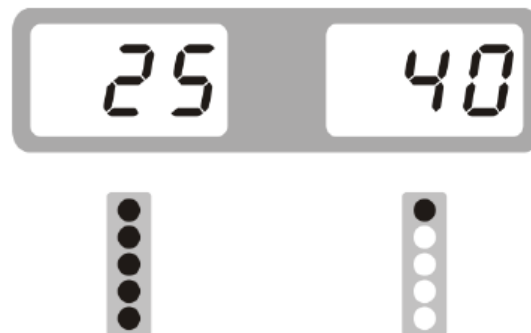
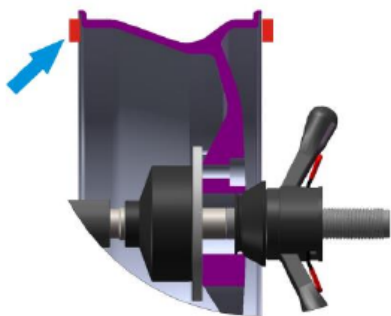


Fig. 4



Fig. 5

9. ALU programs

ALU2 example: enter a, b and d; press ALU until ALU2 lights. Close the guard and perform a measuring spin. After stopping, read the weights; use FINE if needed. Slowly turn anticlockwise until all right-hand position LEDs light. Apply the outer adhesive weight in the ALU2 plane (Fig. 6). For adhesive weights, 9H=OFF uses 12 o'clock; 9H=ON uses 9 o'clock. Check the setting first.

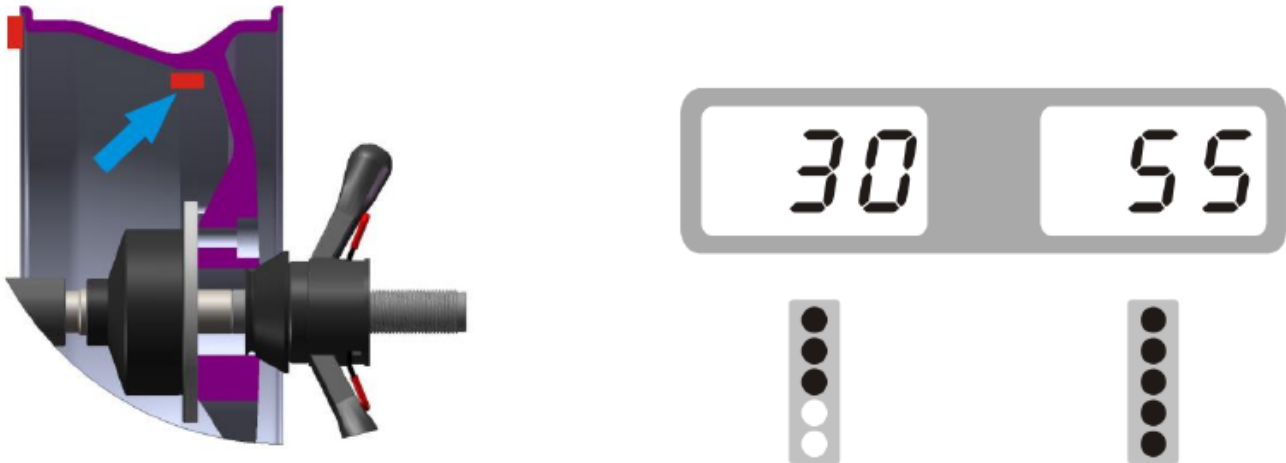


Fig. 6

For the inner plane, continue rotating until all left LEDs light; fit the weight required by the selected program (Fig. 7). Fit clip-on weights at 12 o'clock and adhesive weights according to the confirmed 9H setting. The source describes the same procedure for ALU1/ALU3 with different weight planes. For other available ALU programs, follow the displayed geometry. Clean and dry adhesive surfaces. Finish with a check spin to 00/00 within the display threshold (Fig. 8).

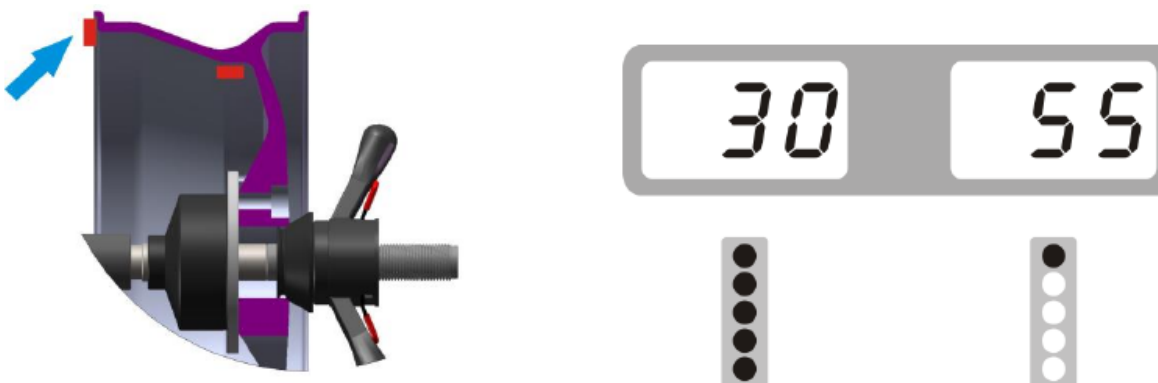


Fig. 7



Fig. 8

10. ALUS with individual planes

Use ALUS if the fixed ALU geometries do not suit the rim and the machine supports ALUS. Press ALU until ALUS lights. First bring the gauge to inner adhesive position FI, read distance a_I and enter with $a+ / a-$. Then measure outer adhesive position FE and enter a_E with $b+ / b-$. Set diameter d with $d+ / d-$ (Fig. 9). Return the arm, close the guard and measure.

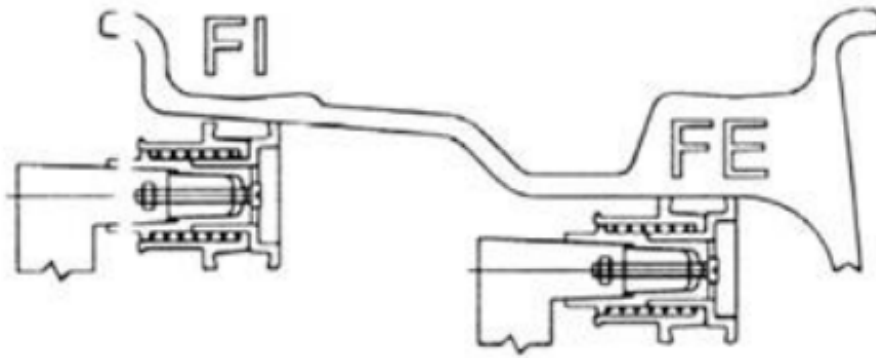


Fig. 9

Manual application: set SLC=OFF. Slowly turn anticlockwise until all right LEDs light; apply the outer weight at 12 o'clock in the measured plane (Fig. 10). Then align all left LEDs and apply the inner weight at 12 o'clock in its measured plane (Fig. 11). Close the guard and check with START; target 00/00 within the display threshold (Fig. 12).

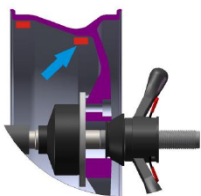


Fig. 10

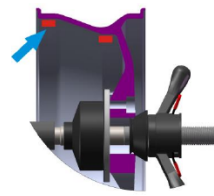


Fig. 11

Fig. 11



Fig. 12

ALUS: application with the gauge head

Only with the required gauge guidance fitted: set SLC=ON (Fig. 13). After the spin, turn the wheel anticlockwise by hand until all right position LEDs light. The inner display now shows the distance to the outer adhesive position (Fig. 14). Prepare the correct weight and hold it in the gauge head (Figs. 15/16). Extend the arm until the position square appears in the middle window (Fig. 17); press the weight onto the rim and release it from the holder (Fig. 18).

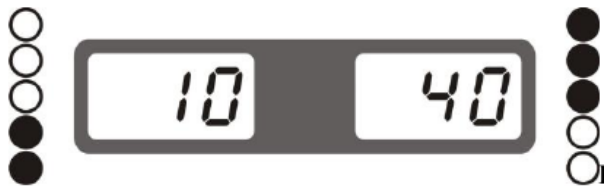


Fig. 13



Fig. 14

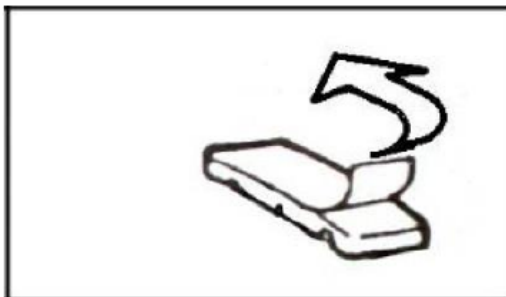


Fig. 15

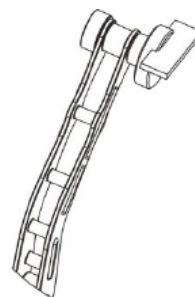


Fig. 16

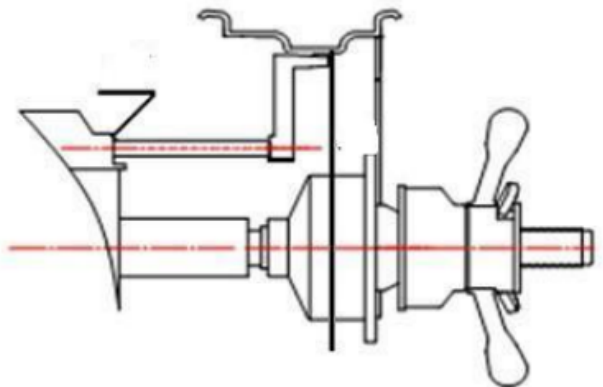


Fig. 17

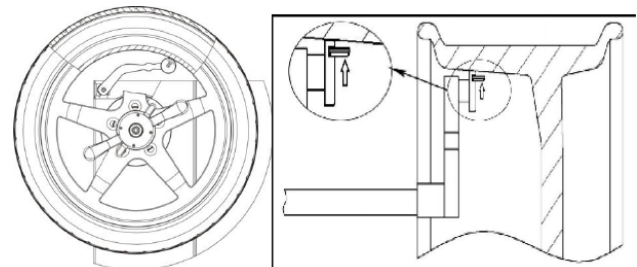


Fig. 18

ALUS: application with the gauge head

For the inner weight, rotate until all left LEDs light. The outer display now shows the distance to the inner adhesive position (Fig. 19). Load the gauge head, extend to the position square (Fig. 20), press on and release the weight (Fig. 21). Return the arm. Close the guard, press START and check for 00/00 within the display threshold (Fig. 22). If guidance is absent or displays differ, do not use guessed positions.



Fig. 19

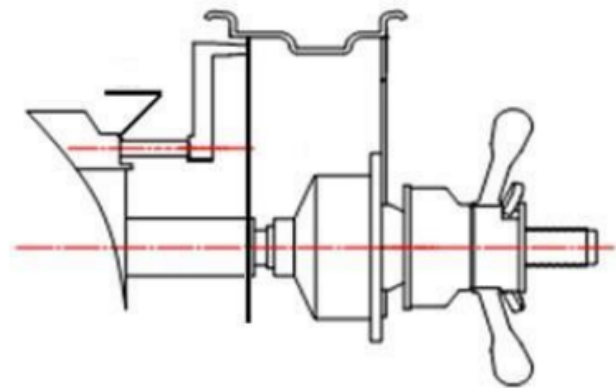


Fig. 20

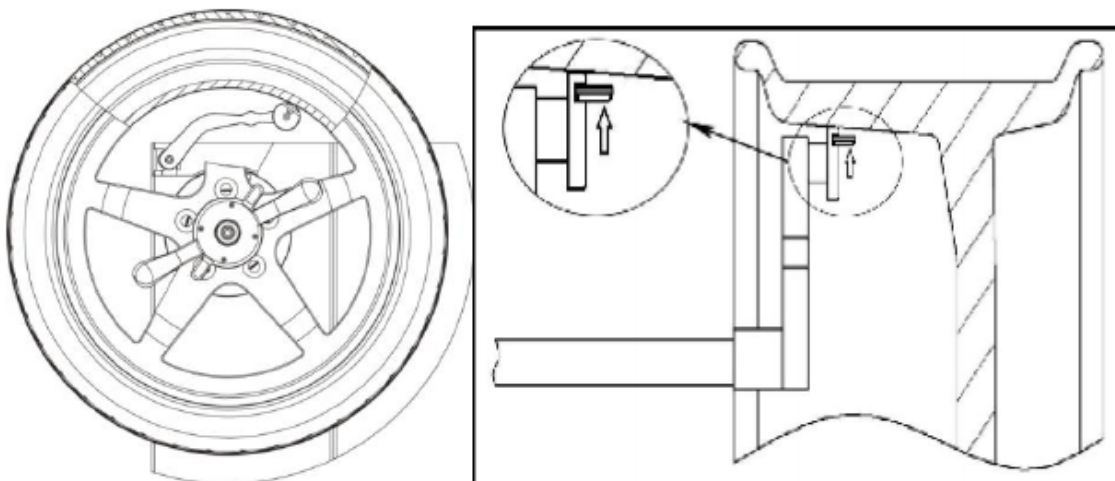


Fig. 21



Fig. 22

11. ALUS: splitting weights behind spokes

For experienced operators only, in ALUS mode only. After the ALUS result, press F; "nr." appears. Enter the number of spokes with d+/d- and confirm with F. Place any spoke at 12 o'clock and press F. Slowly turn anticlockwise to the fully lit SP1 position and apply the first split weight. Then turn to the fully lit SP2 position and apply the second. Close the guard, press START and perform a check spin.

Caution: the source split section inconsistently assigns 9/12 o'clock positioning to SLC, while the settings chapter assigns it to 9H and describes SLC as gauge guidance. Confirm the split-weight application position for the actual configuration before use. Until then, balance without split using the normal ALUS planes. Do not resolve this ambiguity by guessing.

12. Calibration

Calibrate whenever measurement accuracy is in doubt. Use an accurate 100 g test weight and a suitable medium-sized wheel with a 13"-15" rim accepting clip-on weights. Clamp securely and enter correct a, b, d values. 1. Hold C and press F: "CAL / CAL". 2. Close the guard and press START; after stopping, "Add / 100" appears.

3. After stopping, open the guard and fit the 100 g weight outside at 12 o'clock. Close the guard and press START; then "100 / Add" appears. 4. After stopping, move the test weight from the outside to the inside at 12 o'clock; do not use two test weights simultaneously. Close the guard and press START. "CAL / End" indicates completion. Remove the test weight and perform a check measurement. Investigate any error or continuing implausible results.



CAL / CAL → Add / 100 → 100 / Add → CAL / End

13. Error messages

Stop operation on an error. First check wheel clamping, tyre pressure and the guard. The following table gives the causes and checks listed in the source. Board testing/replacement, switch adjustment and work inside the housing require qualified personnel; disconnect power first. If the error persists, stop using the machine and contact Hammer Tools.

Err 1	No spin: check power board. Shaft rotates: check position-sensor board and mainboard; have sensor bracket adjusted.
Err 2	Wheel absent or loose: fit and tighten correctly. Otherwise have the position-sensor board checked.
Err 3	Low tyre pressure or distorted wheel. Restore specified pressure and check wheel for damage.
Err 4	Have the position-sensor board or mainboard checked and replaced if necessary.
Err 5	Have the microswitch or mainboard checked and replaced if necessary.
Err 6	Have the power board or mainboard checked and replaced if necessary.
Err 7	Lost calibration/program data or mainboard fault. Calibrate; if the fault remains, have the mainboard checked.
Err 8	100 g calibration weight missing, or mainboard/power-board fault. Use the weight at the correct calibration step; otherwise have boards checked.
OFF / OFF	Have microswitch or mainboard checked (row 9 in source; not "Err 9").
Display blank	Have mainboard and power board checked (row 10 in source).

14. Self-diagnosis

Hold F and press FINE. Use ALU for the next test and STOP to exit. 1. Display test: all segments must light. 2. Position sensor: "POS" must cycle through values 0 to 63 when the shaft is turned slowly by hand. 3. Force sensor: gently loading the main shaft by hand must change the sensor readings (source: ranges 4X-4X or 6X-6X). Do not strike, lever or apply excessive force. This diagnosis does not replace qualified repair; keep the housing closed.

15. Settings

Hold STOP and press C to open settings. Change the value with b+/b- and use a+ for the next item. Change only settings that are appropriate and understood. Record the original values before changing them.

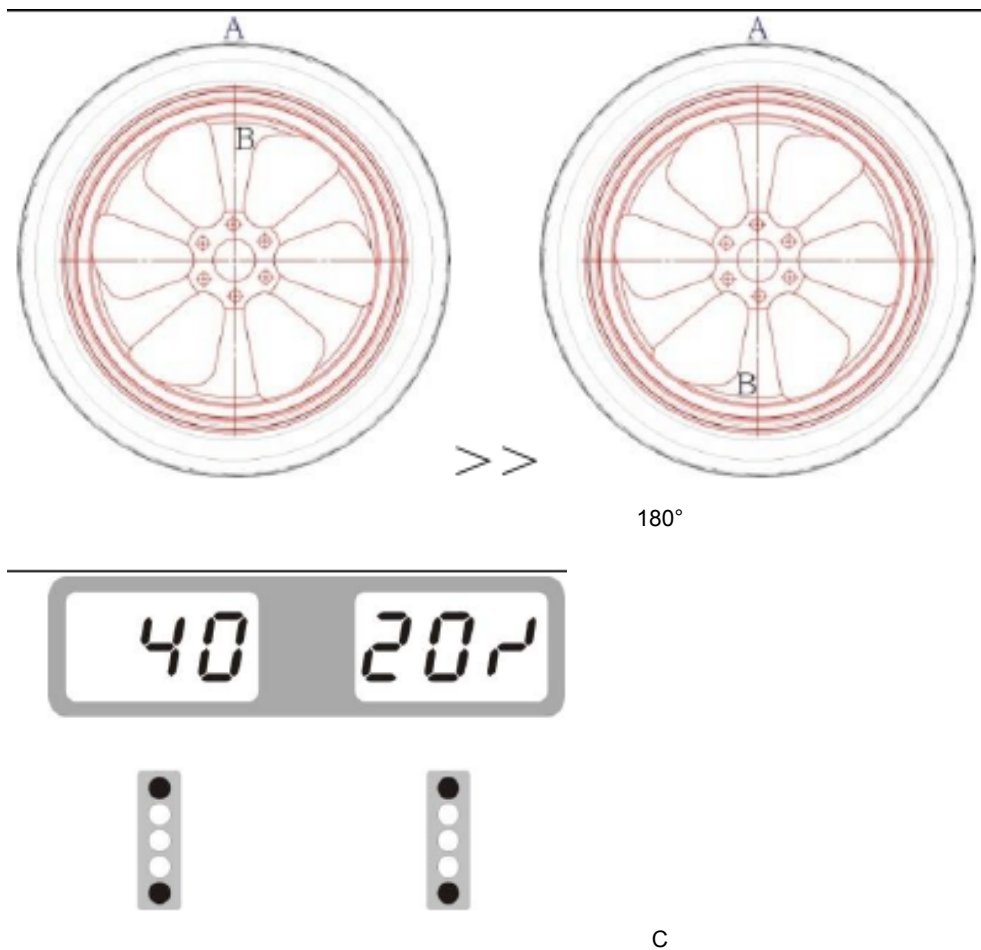
Fin	Display threshold: 5 / 10 / 15. FINE shows smaller residual values.
SP	Sound ON/OFF.
LH	Display brightness 1-8.
Inh	Inch/mm: ON = inch, OFF = mm.
9H	Adhesive-weight position: ON = 9 o'clock, OFF = 12 o'clock.
SLC	ALUS: OFF = manual application at 12 o'clock; ON = application with suitable gauge head.
Er2	Called "tyre weight" ON/OFF in the source; function not explained further. Retain the factory setting.

Guard start: hold F and press STOP. ASt ON: closing the guard starts the spin. ASt OFF: first close the guard, then press START. OFF does not disable the safety function or permit operation with the guard open. Weight unit: F + a+ switches between "Unt Gr" (grams) and "Unt Oz" (ounces).

16. OPT: tyre/rim matching

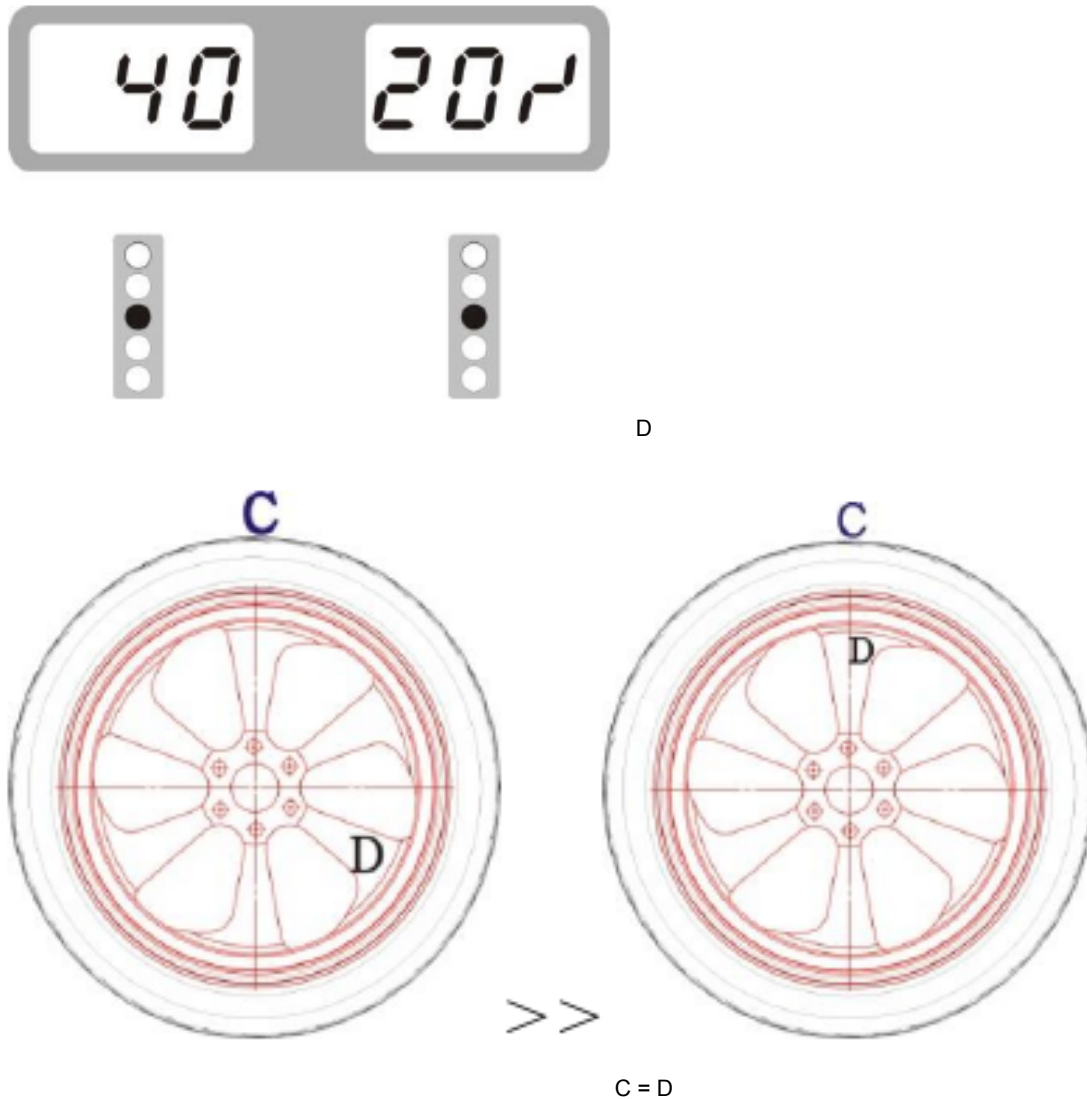
For experienced operators when imbalance is high. A suitable tyre changer is required to rotate the tyre relative to the rim. Tyre work must follow proper procedures: completely deflate before demounting, then refit and inflate as specified. Securely clamp the wheel on the balancer and enter a, b and d. 1. Press OPT: "OPT". 2. Close the guard and press START; the display requests the 180° rotation.

3. Use the tyre changer to rotate tyre and rim by 180° relative to each other (A/B). 4. Clamp the wheel securely again, close the guard and press START. 5. After stopping, turn by hand until four position indicators light (two on each side, as illustrated). Mark position C on the tyre with chalk.



16. OPT: tyre/rim matching

6. Continue rotating until two indicators light (one on each side). Mark position D on the rim. 7. Use the tyre changer to rotate the tyre until C and D coincide. 8. Clamp the wheel securely again, close the guard and press START. If imbalance is lower than before, OPT has succeeded. Correct remaining imbalance with the appropriate balancing program.



17. Care and documentation

Disconnect power before cleaning or maintenance. Keep shaft, cones and contact faces clean and dry; check the arm and guard for free movement and damage. Keep liquids away from electronics. Have damaged clamping parts replaced. For repeated measurement discrepancies, first re-centre on clean surfaces and enter correct dimensions, then calibrate. The source gives no fixed maintenance intervals or lubricant specifications; none are invented here.

This linguistically and visually revised manual does not replace rating plates, machine safety labels or relevant conformity documents. Sources: supplied CWB 525 manual and shop comparison on 07 October 2026. For support, provide model, serial number, error and operating step. Contact: Hammer AG, Schnydersacker 453, 8262 Ramsen; +41 52 345 00 00; info@hammer-tools.ch; hammer-tools.ch.