

PERFORMANCE · EFFICIENT · RELIABLE

GQ-45

Steel Bar Cutting Machine — Electric Type

OPERATION MANUAL

For your safety, **BEFORE** operating or servicing this machine, **YOU MUST READ** and **STUDY** this manual carefully. Keep this manual readily available for reference.

GQ-45 Product Identification	
Model	GQ-45 Electric Steel Bar Cutting Machine
Product Type	Stationary Electric Rebar Cutter (Foot-Clutch Control)
Power Source	Electric Motor, 3 kW
Rated Voltage	380 V / 50 Hz (or 230 V / 60 Hz for US version)
Serial Number	_____

IMPORTANT: This manual contains important safety, operation, maintenance and product information. Read all instructions before operating this machine. Keep this manual with the machine at all times.

To ensure safe use, install a leakage protector (residual-current device) and ground the machine reliably. After reading, please keep this manual properly for reference when necessary.

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1. Safety Information

1. **Electrical safety first.** Always connect the machine through a leakage protector (residual-current device) and ensure the grounding terminal is reliably earthed. Never operate the machine with damaged cables or loose terminals.
2. **Qualified wiring.** All electrical connection work must be carried out by a qualified electrician. The machine must be correctly grounded before the first start-up.
3. **Keep guards in place.** Never remove the belt guard or touch rotating parts (pulleys, V-belt, gears) while the motor is running.
4. **Keep hands clear of the cutting area.** Never place fingers between the blades. Hold the steel bar only at a safe distance from the cutter mouth.
5. **Wear personal protective equipment.** Safety goggles, safety shoes and gloves are required during operation. Remove ties, rings and loose clothing that may be caught by rotating parts.
6. **Stable footing.** Place the machine on firm, level ground. The machine must stand stable on its wheels and base before cutting.
7. **Disconnect before service.** Always switch off and unplug the machine before adjusting blades, checking bolts or performing any maintenance.

2. Purpose and Characteristics

The STARVOX GQ-45 electric steel bar cutting machine is designed for cutting ordinary carbon steel and hot-rolled steel used in reinforced concrete works, including round steel bars and threaded (deformed) steel bars. It can also cut flat steel, square steel and angle steel. The machine is suitable for various construction projects, rebar processing yards and hardware workshops.

Main advantages:

1. **Small size, light weight, compact and reliable** — easy to move around the job site on its traveling wheels.

2. **Good lubrication performance** — a box-type closed structure with gear splash lubrication allows continuous operation for more than one month before refilling. Keep the oil level not lower than the oil mark at all times so that the machine is always in good lubrication condition.
3. **Low power consumption** — thanks to the improved lubrication and rolling bearings at the gear-shaft ends, the required power is significantly reduced compared with cutting machines of the same class.
4. **Fast cutting and accurate positioning** — powerful driving force and excellent consistency in mass production; easy single-person operation; sturdy and durable, safe and reliable.

Figure 1 STARVOX GQ-45 Steel Bar Cutting Machine

3. Main Technical Parameters

Item	Specification
Model	GQ-45
Motor power	3 kW
Motor speed	2 840 r/min
Rated voltage	380 V / 50 Hz (230 V / 60 Hz for US version)
Cutting capacity — round steel	Ø 6–36 mm (tensile strength ≤ 450 MPa)
Cutting capacity — Grade III deformed steel bar	Ø 6–32 mm
Max. flat steel	70 × 15 mm / 80 × 18 mm
Max. angle steel	32 × 32 – 40 × 40 mm (Q235-A)
Max. square steel	50 × 50 – 63 × 63 mm
Fixed blade (rectangular)	84 × 70 mm
Blade gap (horizontal planes of the two blades)	0.2 – 0.5 mm
Overall dimensions	1 310 × 470 × 770 mm
Net weight	330 kg
Shipping weight / shipping size	360 kg / 1 410 × 570 × 890 mm

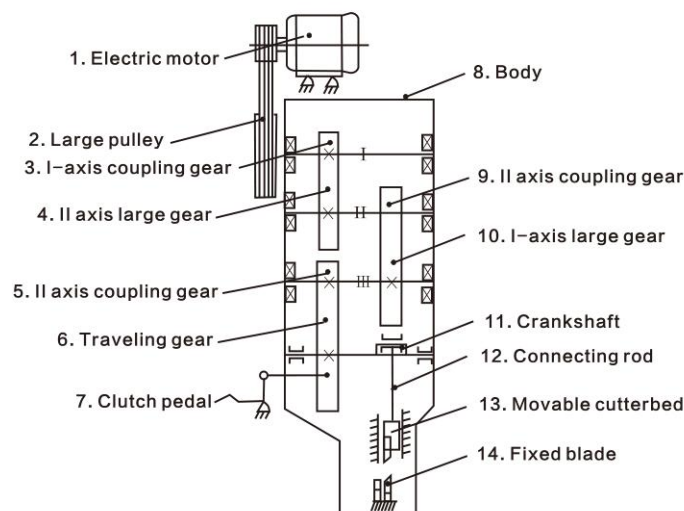
Note: Where the original series manual (GQ40/42/45/50/55/60) lists several values, the figures above correspond to the GQ-45 configuration. In case of any discrepancy, the nameplate of the actual machine prevails.

3.1 Recommended Table for Cutting Several Bars Simultaneously

Rebar diameter (mm)	6–8	9–13	14–18	19–20	20 ↑
Number of pieces cut at each time	6	5	3	2	1

4. Structure of the Machine

This machine consists of the traveling wheel group, transmission structure, body, clutch device, cutterhead and cutter (see the transmission system diagram



As shown in the transmission system diagram:

below). The electric motor 1 is driven by a V-belt to rotate the large pulley 2 while the large pulley 2 rotates the I-axis coupling gear 3. The I-axis coupling gear 3 meshes with the II-axis large gear 4. The II-axis large gear 4 meshes with the II-axis coupling gear 5. The II-axis coupling gear 5 meshes with the I-axis large gear 10. The I-axis large gear 10 meshes with the crankshaft 11. The crankshaft 11 drives the connecting rod 12, which pushes the movable cutter bed 13 against the fixed blade 14 to complete the shearing action.

Figure 2 Transmission system diagram

Power flow (as shown in the transmission system diagram):

- The electric motor (1) drives the large pulley (2) through a V-belt; shaft I is mounted on the same axis.
- The coupling gear (3) meshes with the shaft-II large gear (4); the shaft-I coupling gear meshes with the shaft-III large gear (10).
- The shaft gear (5) then meshes with the crankshaft (11).
- The torque of the crankshaft drives the shear connecting rod (12), which pushes the movable cutter bed (13) against the fixed blade (14) to complete the shearing action.

5. Operation



Figure 3 GQ-45 working on site

5.1 Preparation Before Use

1. Rotate the machine by hand and check that the gear meshing is normal and that there is no jamming.
2. Check that the blades are installed correctly and firmly. The gap between the horizontal planes of the two blades must be within 0.2–0.5 mm.
3. Check the tightening of the bolts in all parts. In particular, the 7/8 bolts of the large side cover must be checked regularly to prevent loosening.
4. Check that the electrical equipment is normal and the insulation is in good condition. Use three-phase power with reliable grounding. After wiring, test-run the machine and check that the motor rotation direction matches the direction indicated by the arrow on the belt cover.
5. Before using a new machine, open the refueling cap on the cover plate of the machine bore and add N150–220 gear oil into the machine cavity up to two-thirds of the diameter of the oil window.
6. Run the machine at no load for 10 minutes. If any abnormality is found, shut down the machine immediately for maintenance.

5.2 Precautions During Use

1. **Cut at the middle and lower part of the cutting tool.** Do not use the upper part of the cutting tool unless necessary, to avoid excessive fatigue at the rear of the machine body.

2. **Blade usage.** The fixed blade is rectangular (84 × 70 mm). When cutting steel bars below Ø 32 mm, use the long edge as the cutting edge; when cutting larger bars, use the short edge. During use, check regularly whether the blade is loose. After the blade edge collapses or becomes blunt, replace or reposition the blade in time — a blunt edge increases cutting resistance and may damage other parts. When the machine leaves the factory, the fixed blade is set for shearing bars below Ø 32 mm.

5.3 Use of the Foot Clutch

1. **Single cut.** Place the steel bar to be cut into the cutting position and adjust the eccentric blocking iron (octagonal iron) so that its edges are tightly pressed against the bar. Press the clutch pedal with your foot to make the cut. Step once to cut once. After the bar is disconnected, the pedal must not be kept pressed for more than 2 seconds, otherwise the machine will continue to cut.
2. **Continuous cutting.** To cut continuously, tighten the M8 bolt on the fork appropriately and pull out the brake pin; the machine can then cut continuously.
3. **Cutting angle steel.** Remove the inner cushion block of the tiger mouth and replace it with the special blade for cutting angle steel (angle-steel blades must be ordered separately).
4. **Press the clutch fully.** When stepping on the clutch, press it fully into place. If the pedal cannot be pressed into place, the clutch will be damaged prematurely.

6. Maintenance

1. Clean dust, debris and rust-prone areas of all parts in time, and apply oil for rust prevention.
2. Check regularly that the oil level in the machine chamber is above the oil mark (never below it).
3. If the machine stops working for a long time, remove the electric motor and store it properly.
4. After the first month of initial refueling, replace the oil with new oil. After every 6 months of use, replace the oil with new oil. Press calcium-based grease into each bearing once.

7. Inspection Certificate

Inspection Certificate	
Product model	GQ-45 Steel Bar Cutting Machine
Product name	STARVOX Electric Steel Bar Cutting Machine
Factory number	_____
Examination clerk	_____

Date	_____
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This product has passed the inspection and is allowed to be released at the factory.

The contents and data in this manual are subject to change without further notice. Due to continuous innovation of our products, some parts may be inconsistent with this manual when the products are upgraded. Please take the real object as the standard.