



Reflex 40SC Rebar Cutting Machine

Operation Manual



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1. Prospective Usage

This horizontal cutting machine is designed to cut steel bars, including ordinary carbon steel and hot-rolled round bars used in construction.

Refer to the table below for details on cutting diameter parameters and bar quantities. The diameter of the steel bar depends on its hardness and the number of bars being cut at once.

| φ mm | R.65Kg/mm ² 650N/mm ² | | | R.85Kg/mm ² 850N/mm ² | | | cutting speed R/m | Motor Power | | Size(mm) | kg |
|------------------|--|----|----|--|----|----|-------------------------|----------------|----|--------------|-----|
| Quantity of bars | 1 | 2 | 3 | 1 | 2 | 3 | | HP | KW | | |
| Reflex 40SC | 40 | 28 | 20 | 36 | 25 | 18 | 40 | 4 | 3 | 1250X580X900 | 500 |

2. Unexpected Usage

Unexpected usage refers to using the machine in ways not outlined in its intended use, such as:

- Using materials different from those specified.
- Using steel bars with a diameter different from the recommended size.
- Operating the machine in poor environmental conditions.

3. Technical parameter

| | | |
|------------------------|-------------------------------------|-------------------------------------|
| CUTTING CAPACITY | 6-40 mm (ob ≤450N/mm ²) | 6-36 mm (ob ≤650N/mm ²) |
| CONTROL MODE | REMOTE CONTROL | |
| MOTOR POWER | 3 KW-2P | |
| MOTOR ROTATION SPEED | 2840 R/min | |
| CUTTING SPEED | 40 T/min | |
| NOISE VALUE (1 m away) | ≤75dB(A) | |
| WEIGHT | 500 Kg. | |
| EXTERNAL DIMENSIONS | 1250*580*900 mm | |

4. Operating Principle

The steel bar cutting machine operates using a motor. The working principle is outlined below:

- a. The motor drives the rotation of the large pulley via the triangle belt pulley.
- b. The large pulley is driven by the belt, which then powers the input gear.
- c. The input gear drives the large gear.
- d. The connecting rod is powered by the clutch through the crankshaft, with the blade securely fixed to the connecting rod.
- e. The clutch guide is operated by an electromagnet, which controls the connecting rod via a controller or foot switch.
- f. The steel bar is cut by the blade in conjunction with the fixed blade.
- g. Adjust the block to align the steel bar with the blade for precise cutting.

5. Safety Standard

The design and manufacture of steel cutting machines follow standards and measures that meet the basic safety requirements of the Machinery Directive 98/37EEC (European Standard).

6. Protective Measure

The frame is designed to protect surrounding parts from the gear, belt, and running blocks. The motor is started using an AC contactor and is safeguarded by an Emergency Stop button.

7. Operator Protection Device

Always wear gloves when handling rebar to avoid scratches or cuts.
Wear protective shoes to prevent injuries from falling steel bars.

8. Preventive Measure

Keep hands and other body parts away from the cutting area to avoid the risk of crushing or cutting fingers.

Adjust the block to ensure the steel bar is positioned correctly.

Repair work on the machine is only allowed when the machine is powered off and completely shut down.

9. Risk of Electric Shock

- a. Ensure the machine is properly grounded and connected to the power system for electric shock protection.
- b. The power outlet must include user protection, managed by a leakage circuit breaker with a trip threshold of no more than 30mA.
- c. Do not split or modify the wire.
- d. Make sure the cable between the plug and the machine is not in a transfer zone, remains undamaged, and is free from mechanical stress.

10. Location

Before positioning the machine, ensure that its structure has not been damaged by any crashes to guarantee proper operation and reliability.

In addition to checking the machine's dimensions, follow these instructions:

- a. Install the power supply close to the machine.
- b. Ensure the surface supporting the machine is flat and strong enough to hold its weight, ensuring stability.
- c. The workspace should be well-lit to allow for safe and secure machine operation.
- d. There must be enough space for loading the machine and materials. Leave at least one meter of clearance between the machine and the wall. Materials should be easy to load, and remote control or a foot switch should be used to prevent excessive pressure. The power switch should be easily accessible.
- e. Operating temperature range: -5°C to +40°C.
- f. Relative humidity range: 30% to 90% at a temperature of 20°C.

- g. Protect the area from adverse environmental conditions, such as rain or snow.
- h. Place a stop block under the machine's wheel to prevent sudden movement.

11. Electrical Data Checking

The electrical system of the steel bar cutting machine must comply with user requirements and align with the specifications of the power system. It is critical to ensure that the voltage (V), frequency (Hz), current (A), and power (kW) are consistent with the power system's parameters. Careful attention to these factors is essential to maintain operational consistency and reliability.

12. Machine Grounding

The supply of cables and voltage plugs is connected to the ground wire.

DANGER: The machine must be properly grounded to ensure safety and prevent the risk of electric shock.

If the grounding resistance of the cable is too high or the resistance value is unclear, the special earthing terminal provided with the utility model can be used:

- a. Attach the bare copper wire (with a cross-section of at least 16mm²) to the bolt located on the back of the machine's switch board, securing it firmly with a nut.
- b. Connect the other end of the wire to a ground connection. The ground wire must be buried in a damp, conductive area or attached to a deeply buried copper plate.

Ensure the power supply is disconnected before carrying out any of the steps above.

13. Connection Wire Assembly

To connect the power bus, follow these instructions for the cable:

- a. Ensure it is equipped with a plug that matches the socket type.
- b. Use a cable with sufficient capacity (each wire should be at least 2.5mm²).
- c. Make sure it is isolated from the working environment.

14. Initial Start

Ensure the rotation direction aligns with the arrow indicated on the pulley shield. If it does not, exchange any two-phase wires connected to the power supply.

Cutting Steel Bar

Precautions:

- Avoid placing your hands in the cutting area at all times.
- Ensure the block is properly adjusted to secure the reinforcement in place.
- Consider the following factors based on the size of the steel bars being cut:
 - a. Clean the steel head beneath the unloading side of the slide before operation.
 - b. For long steel pieces, ensure proper safety support is used on the unloading side.
 - c. For long and bulky rebar, a strip sliding roller can be utilized to easily position the reinforcement as needed.

Operating Procedure:

- Open the cutter cover.
- Place the rebar between the two blades and position it at the desired cutting point.
- Adjust the block to align the steel with the blade.
- Lower the blade cover.
- Use the remote control to press the cut button or step on the foot switch to initiate the cutting operation.
- For subsequent cuts, press the remote control button or foot switch again to repeat the process.

Shut Down Procedure:

- Turn off the motor and unplug the power supply to safely power down the machine.
- Always ensure the knife guard is in place before leaving the equipment.

15. Maintenance Notes

Caution: Maintenance must be performed by trained personnel following all relevant safety regulations.

| | |
|------------------|---|
| Maintenance Plan | Checking |
| Everyday | Keep the work area clean |
| 40 hours | Lubricate the left and right sleeve |
| 200 hours | Check the oil level of the gearbox through the oil window. If necessary, remove the plug and inject the oil |
| Yearly | Completely replace the oil |

Refill Oil and Replace Oil

Check the oil level using the indicator located on the side of the machine when the machine is in a stopped state.

Add oil through the plug at the top of the machine.

Oil can be drained through the plug near the oil window or at the bottom of the machine. Waste oil must not be discarded arbitrarily and should be handled by an authorized recycling unit with proper processing capabilities.

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|---------------|-------------------|
| Machine Model | Injection Oil (L) |
| Reflex 40SC | 6 |

| Lubricate Oil | Ambient temperature around 10° | Ambient temperature around 20°C | Ambient Temperature More than 20°C |
|---------------|--------------------------------|---------------------------------|------------------------------------|
| ROL OIL | SPARTAN EP 320 | SPARTAN EP 460 | SPARTAN EP 680 |
| ESSO | SPARTAN EP 320 | SPARTAN EP 460 | SPARTAN EP 680 |
| MOBIL | MOBIL GEAR OIL 632 | MOBIL GEAR OIL 634 | MOBIL GEAR OIL 636 |
| SHELL | Omala 320 | Omala 460 | Omala 680 |
| AGIP | BLAS1A 320 | BLAS1A 460 | BLAS1A 680 |

Replace Blade

To remove and replace the blades, follow these steps:

- Turn off the machine.
- Make sure the cutter cover is properly closed.

- c. Power on the machine, press the start button, then immediately stop, and press the cut button.
- d. Press the cut button repeatedly to control the blade movement until the lever is fully exposed and touches the set screw.
- e. If needed, repeat steps 3 and 4.
- f. Disconnect the power supply before performing any further steps.
- g. Use the provided wrench to loosen the blade fixing bolts and replace the blades on both the mounting surface and the moving surface.
- h. Ensure both blades are installed symmetrically, with aligned cutting edges.

This machine and its accessories may undergo changes at any time to enhance performance. Please note that these updates may be made without prior notice. We appreciate your understanding.