

VERTICAL TIG WELDING FOR COMMUTATORS



*WTIG
60B*

Stepper motors for independent vertical positioning of the brushing and welding arms



Micrometric positioning of the electrode of welding by electric drive on 3-axis.



Powerful aspirator of welding fumes

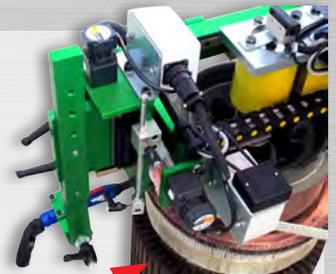
All the operating controls are grouped in the same area and can quickly be reached from the working position. An intuitive HMI (human machine interface), touch-screen, gives the possibility to store an unlimited number of welding programs. During the operation, the display shows the phase that the machine is performing. In case of irregularities, the necessary checks and tests are suggested to the operator. Routine inspections to carry out correct preventive maintenance are also available.



Easy vision and on-line control of the welding area by a camera and a large monitor.

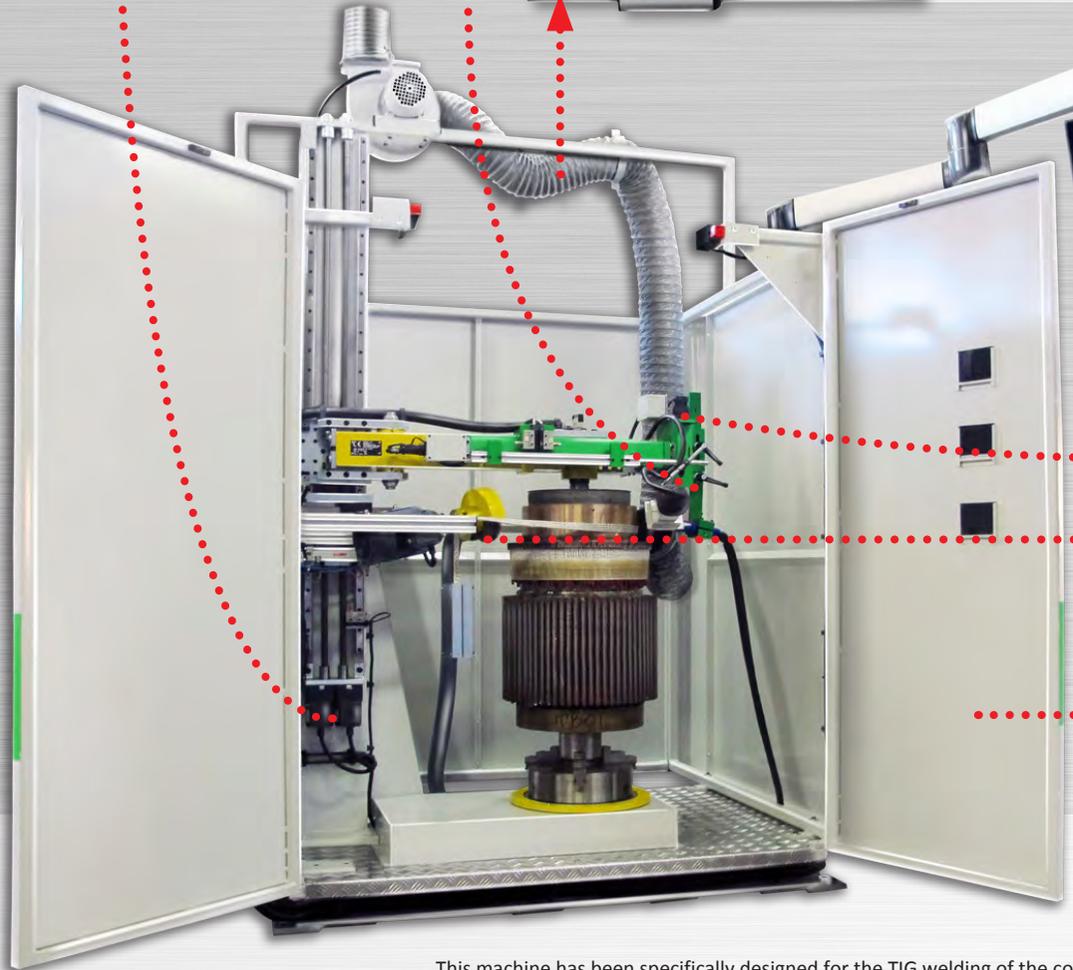


Micrometric positioning of the welding torch on the 3 axes, by independent motors.



Constant cleaning of the welding area by an effective brushing device.

Welding area completely isolated to protect the surrounding environment and the operator from welding radiation and from welding fumes. Easy loading and positioning of the armature by the wide front doors.



This machine has been specifically designed for the TIG welding of the collectors. Particularly suitable for armatures with very high rotation speed as in railway traction, its features have been designed, developed and tested collaborating with leading electric motors manufacturers and repair shops.

400 AMP TIG WELDER WITH WATER COOLED TORCH AND DOUBLE GAS CYLINDER.



TIG WELDING after filling of welding spots one riser circumference, the torch automatically moves to the prefixed race (Adjustable from 0 up to 10 mm) until riser is completely welded.

BRUSHING DEVICE automatically clean the commutator during the welding cycle.

The brushing is controlled by a electro-pneumatic drive that allows to set the suitable working speed.

The waste is sucked by a powerful vacuum system VS2-159, providing a work environment always clean and healthy.



EXTRACTION OF WELDING FUMES

welding fumes are captured by a nozzle positioned close to the torch and vented outside by the exhaust fan



VACUUM CLEANER DUST BRUSHING mod. VS2-159

MISCELLANEOUS

Machine painting: Light Grey RAL 7035 (Other colors available on request)

Machine foundations: any foundations is required

Machine handbooks : available in two copies in the following languages:

Italian, English, Russian.

COOLING DEVICE

The machine can be equipped with a cooling unit which cool down the temperature of the commutator reducing stops during the welding due to the copper over-temperature.

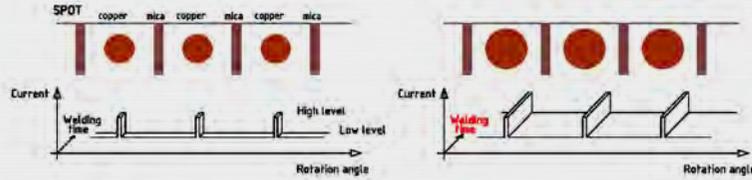
The temperature of the armature is constantly monitored during the welding and will automatically stop the cycle in case commutator oversteps the programmed temperature.



Welding methods

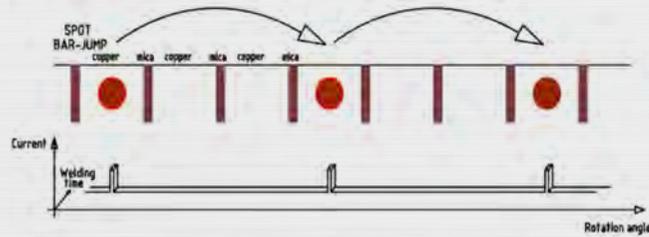
SPOT WELDING

Commutator turn from one bar to the next one with low current level in the middle of the bar rotation. The commutators stops and current is increased to high level for the copper melting. More time the commutator is stopped, bigger is the spot.



SPOT WELDING WITH BAR JUMP

In order to obtain a better distribution of the temperature on the commutator circumference, reducing the local overheating, program to jump one or more than one bar is available.



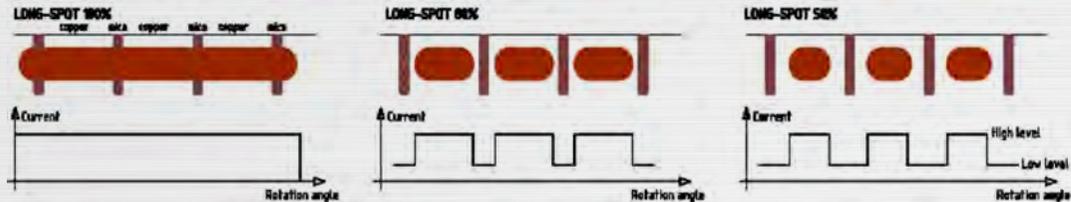
More revolutions are needed to complete the commutator welding.

LONG-SPOT WELDING

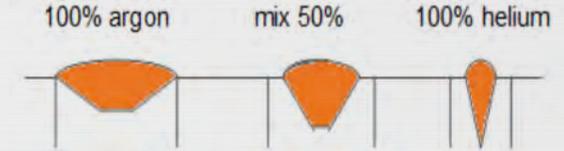
Commutator turn continuously with adjustable speed.

Copper bar width can be set to obtain the requested welding length.

The welding control, synchronously with the rotation, automatically switch from low to high current as needed.



Welding gas



The welding process uses two gas bottles. Argon for easy arc ignition, Helium for better copper melting

Best welding results are obtained using 100% Helium or a mix of Argon-Helium as cheaper solution. With pure Helium gas is obtained a better copper melting and penetration specially in case of traction motors.

The machine is able to automatically switch between Argon and Helium in order to obtain the best welding result.

	WTIG 60 B	WTIG 100 B	WTIG 150 B
Armature core diameter	80 - 600 mm	100 - 900 mm	150 - 1500 mm
Riser Commutator diameter	0 - 500 mm	100 - 1000 mm	120 - 1400 mm
Commutator riser height	0 - 200 mm	0 - 200 mm	0 - 250 mm
Shaft length	500 - 1600 mm	700 - 1800 mm	750 - 1950 mm
Max armature weight	2500 Kg	4000 Kg	5000 Kg
Number of bars	0 - 999	0 - 999	0 - 999