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1.0 INSTRUCTION MANUAL

This manual is supposed to be for the use and maintenance of the test bench for tests of alternators and for starting engines and intends to be a guide for the complete use of the machine and for its periodical maintenance. It is unavoidable to operate the bench correctly to read this manual attentively beforehand.
The machine is donated with protection systems in order to protect damages to the operator.
SPIN srl rejects every responsibility for any improper use of the machine and at the exclusion of the protection systems from the user's side.
The manual is a very import part of the bench and needs to ever accompany it, also in case of sale.

This symbol is used if the instructions are not adhered to or the instructions for the use is interpreted falsely or can cause damages to people.

ATTENTION

The machine is identified via a shield, which identifies the model, the construction year and the serial number. This sign is positioned on the right side of the bench. (fig,1).

Fig.1

1.1 SECURITY

- Before entering into the interior of the bench separate the plug of the current connection from the net and take the battery bridge.
- Avoid to leave the cables inserted in the sockets, danger of short circuit on the flowing current.
- Respect the polarity of the test components.

- Do not touch the security interrupter.
- Do not exceed the power of the alternators and the engines in test of the bench data
- Assure yourself before the connection of the bench that the net tension is equal to the one reported on the shield located on the external panel (fig.2).

Fig. 2

CHAP. 2 TECHNICAL SPECIFICATIONS

TECHNICAL CHARACTERS	
Power supply (on request) Circuit of low tension Ampere meter engine testers Ampere meter (for excitation) Voltmeter for test of alternators Protection low tension (on +30) Rheostat 75 W (14v) – 300W (28v)	220V one-phase inverter or 380V threephase 12-24 Vdc (with 2 batteries non included) 50A max 40V max With automatic interrupter (50A) one-pole With insertion via key (for the alternators test)

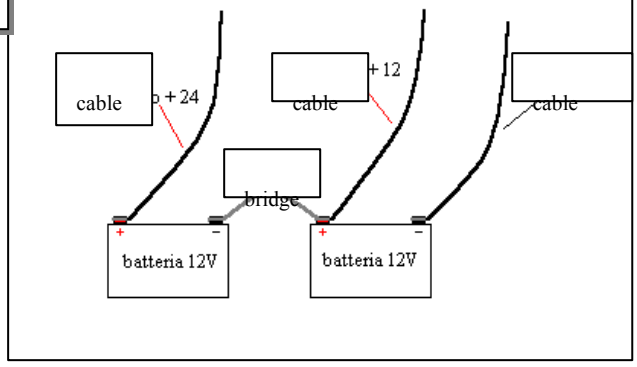
Accessories :
1 copy of cables with pliers (bushing of 4)
1 cable with pliers (bushing of 8)
1 cable engine tests
1 tension exchange bridge
1 fixing block alternators with 3 cylinders;
1 ratchet belt

CHAP. 3 INSTALLATION

3.0 CONNECTIONS

Connect the current cable to a socket, after having identified the tension of the bench current. Connect the 3 cables of the battery connections as demonstrated in picture 3 (the bridges for the series is not included).

Fig.3



Once inserted the tension exchange bridge, you need to insert the general interrupter (which is positioned on the left side) and you need to lift the levers of the automatic interrupter (low tension) on 1.
Press then the key “reset”; in this position the display and the warning light CC has to be switched-on.
Assure yourself that the cover plate is closet. For the various tests see charter 5 (page 5).

CHAP. 4 DESCRIPTION BANCHETTO JUNIOR

1. Emergency mushroom
2. Warning light “general CA”
3. Warning light “general CC”
4. Warning light 24V
5. Volt/ampere meter
6. Selector volt/ampere
7. Ampere meter
8. Interrupter on-off “direct”
9. Bushing “+ direct”
10. bushing “- direct”
11. Bushing + starter test
12. Automatic interrupter
13. General interrupter (CA)
14. Engine commutator (dx-sx)
15. Tension exchange bridge (12V-24V)
16. Speed variator (only mono-phase version)
17. Rheostat key
18. Bushing “common negative”
19. Bushing “-31” (negative)
20. Cover sheet for protection
21. Engine pulley
22. Bushing “+ 30”
23. Bushing warning light“24V”
24. Bushing warning light“12V”
25. key “reset”
26. Warning li
“12V”

Fig. 4

Bench triphase

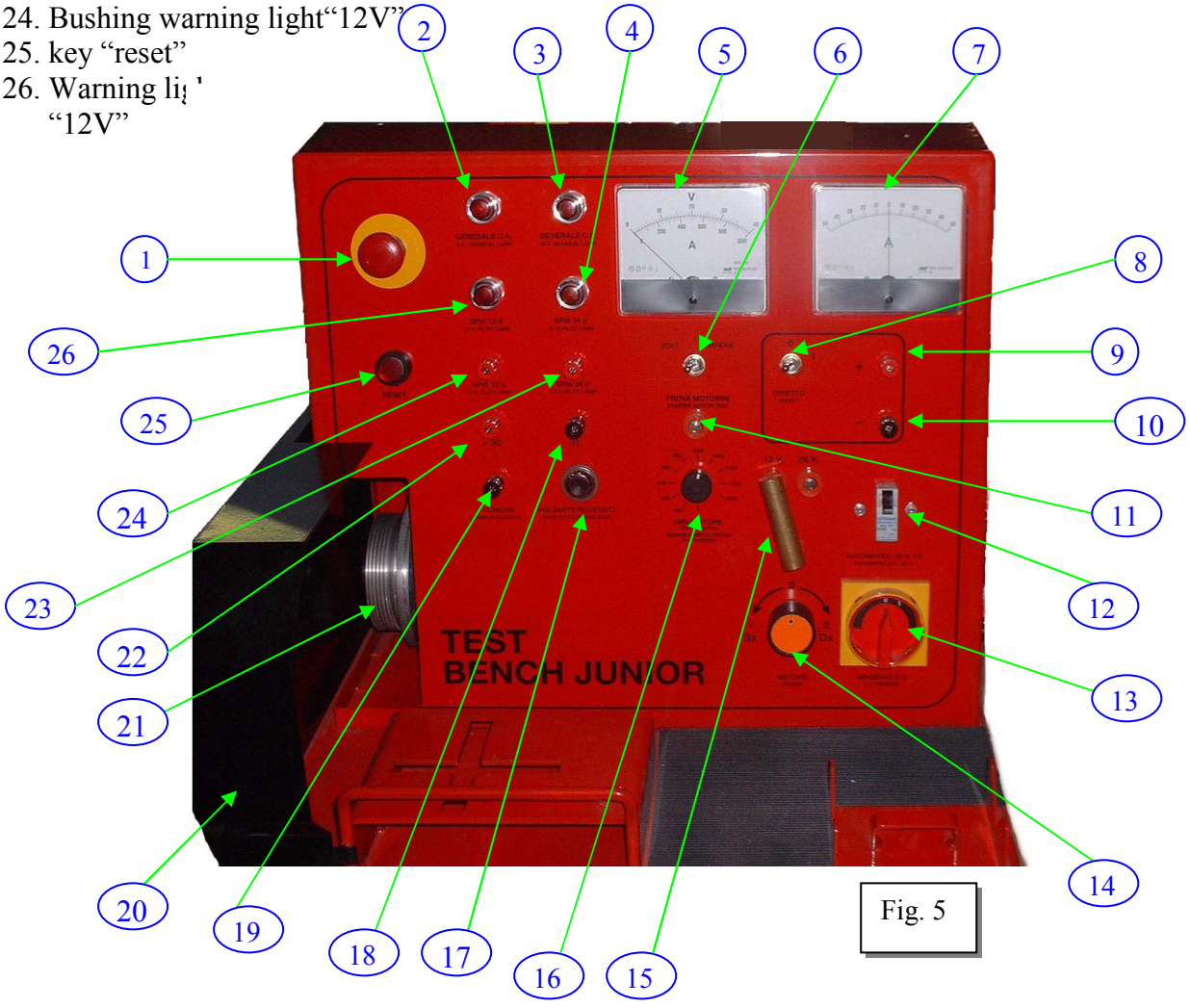


Fig. 5

4.0 SECURITY DEVISES

- Automatic Interrupter 50A (low tension);
- Security opening via cover plate;
- Security fuse (10A) in switched-on mode (version 220V);
- Emergency mushroom

CAP. 5 USE OF BENCH

5.0 EXECUTABLE TESTS

Control of the functioning of an alternator:

- Control of the supplied tension
- Control of the supplied current with the use of the rheostat

Test of starters

- Absorption test in vacuum of a starter

5.1 CONTROL OF ALTERNATORS.

Perform the connection as described in *CHAP.3* before operating.

- Fix the alternator on the bench with the enclosed block;
- Hold the belt of the alternator with the ratchet belt;
- Connect the "B+" of the alternator to the bushing "+30" of the bench.
- Connect the mass of the alternator to the bushing "-31" of the bench.
- Connect the "+ direct" of the alternator to the bushing "23" or "24" (according to the tension);
- Connect the "D+" to the bushing "common negative" (comune spie).
- Change the deviator "direct" in position "1";
- *The connection described is visible in fig. 6.*

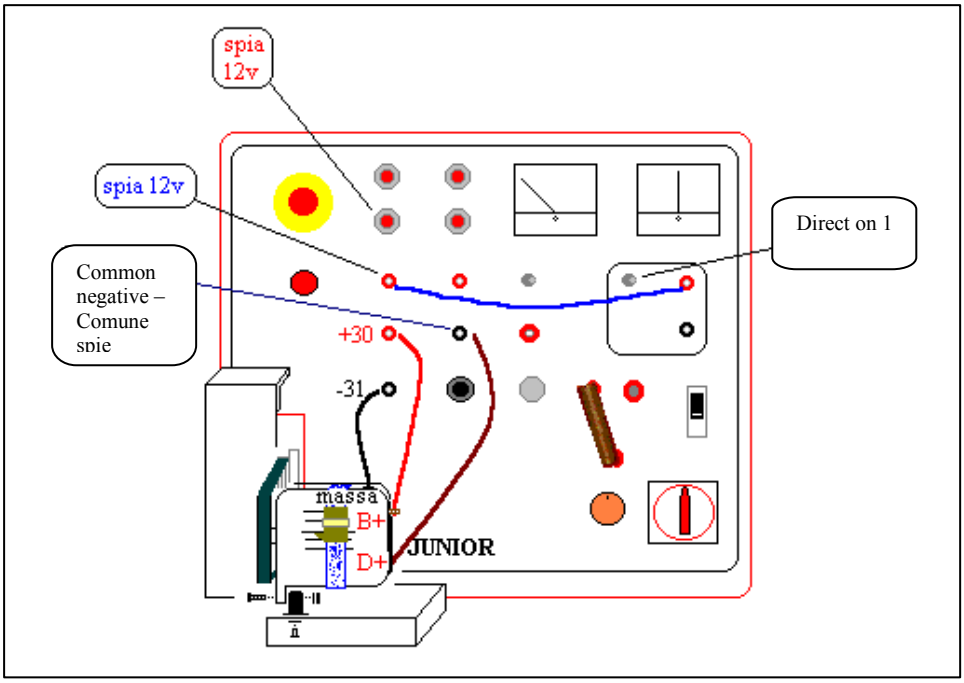


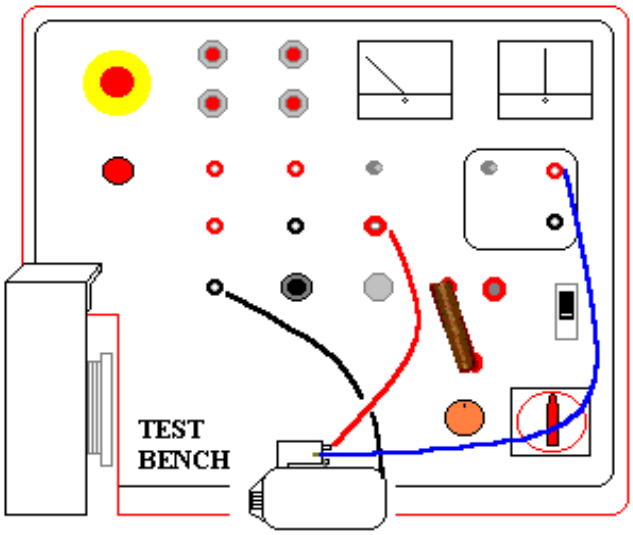
Fig.6

- Start the engine with the commutator (14);
- Make sure that:
  the warning light of the loading is switched-off (12v o 24v);
  the tension of the loading;
  the current of the loading;
  It is possible to insert a loading during the test, when pressing the key (17);

Please note: The rheostat can be inserted only for few seconds.

5.2 CONTROL OF STARTERS.

- Connect the cable for the test of starter between the (positive) starter and the bushing "starter motor test" of the bench;
- Connect the cable with the black pliers, between the mass of the starter and the bushing "- 31" of the bench;
- Connect the excitement cable between the electromagnets of the excitement of the starter and the bushing "+ 30" of the bench (it is possible to use the bushing + direct, change the interrupter directly on 1).
- Carry the selector Volt/Ampere (6) on A;
- Insert the tension exchange bridge on 12V or 24V (corresponding to the testing component).
- See fig. 7 for the connections.



CHAP. 6 ORDINARY MAINTENANCE

The bench junior does not need special maintenances; it is necessary to perform the control of the security devices periodically, to load the external batteries regularly and to control the completeness of the connection cables:
Clean the bench with a soft and dry cloth.
All the maintenance operations have to be carried out after the separation of the bench from the net.

CHAP. 7 GUIDE FOR THE SEARCH OF FAULTS

PROBLEM	SOLUTION
The bench does not switch-on; the general interrupter does not illuminate.	Control the fuse of the mounted line in the switched-on mode. Control if the Banchetto is power supplied correctly
The warning light CC is switched-off; tension is missing between the bushing "+ positive" and "- negative"	- Control the automatic interrupter; - Control the connection of the batteries; - Control the state of the batteries; - Control the correct insertion of the battery bridge.
Pressing the key to reset your warning light remains switched-on	Control whether the cover plate is closed.

CHAP. 8 GUARANTEE

The bench has a period of guarantee of 12 months from the date of delivery on. The guarantee is invalid if the described manual is not properly adhered to or the security devises are disrespected.
The rheostat is not enclosed within the guarantee.