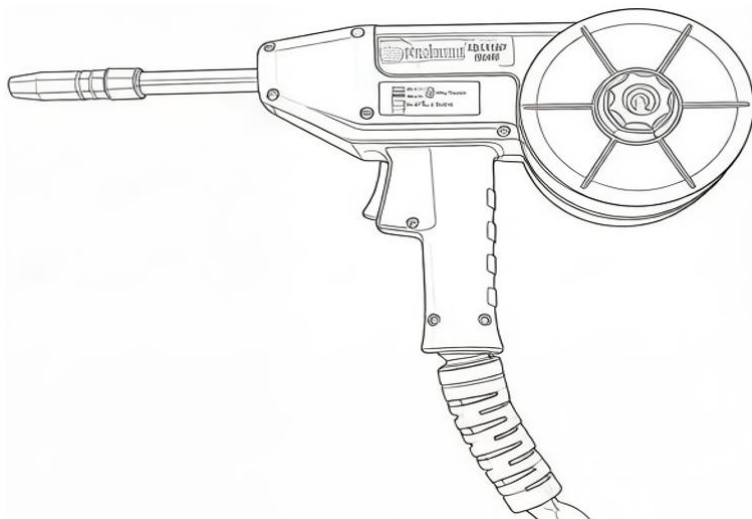


Spool Gun User Guide

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User Manual

Manuel utilisateur

Руководство пользователя

取扱説明書

Manuale utente

Manual de usuario

Benutzerhandbuch



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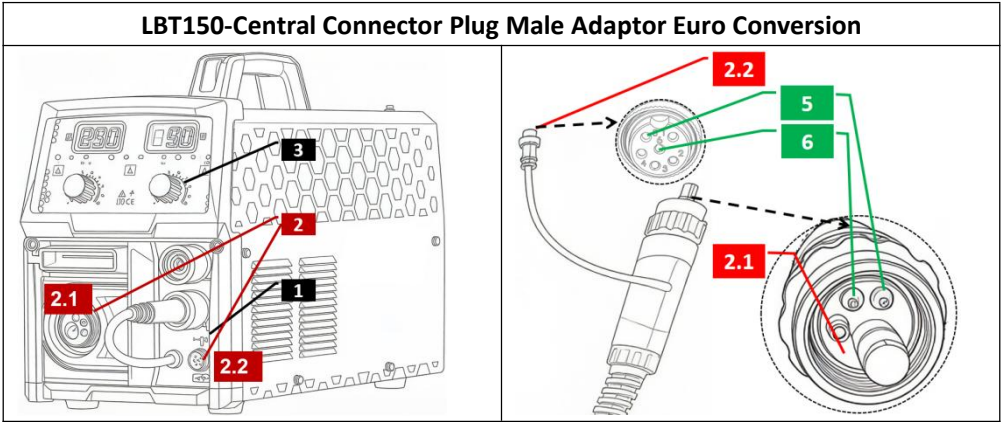
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1. PRODUCT OVERVIEW

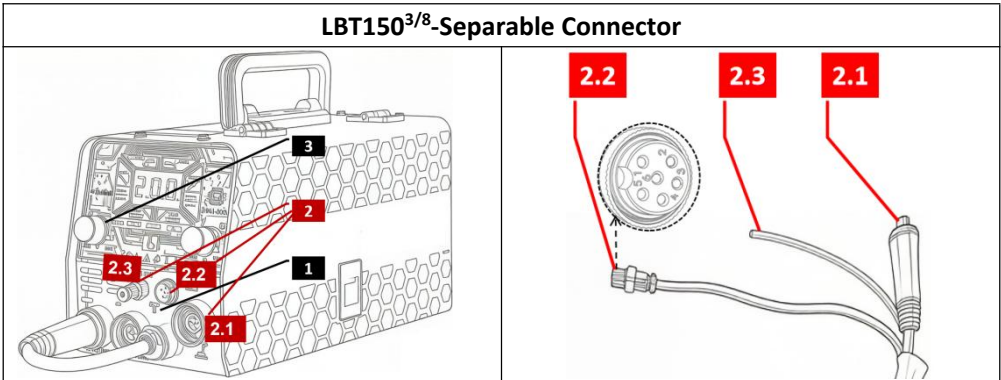
The spool gun features an independent wire feed mechanism with an extremely short wire feed path. This design effectively addresses common issues such as poor wire feeding, jerky feeding, and wire jamming caused by long feed distances, making it a favorite among many welders. Many users rely on the spool gun for aluminum welding.

It is important to note that spool guns have specific requirements and are not compatible with every MIG welder. Before purchasing or using a spool gun, please carefully perform the following checks to ensure your machine is fully compatible with the spool gun.

1.1 Integrated Connection



1.2 Discrete Connection

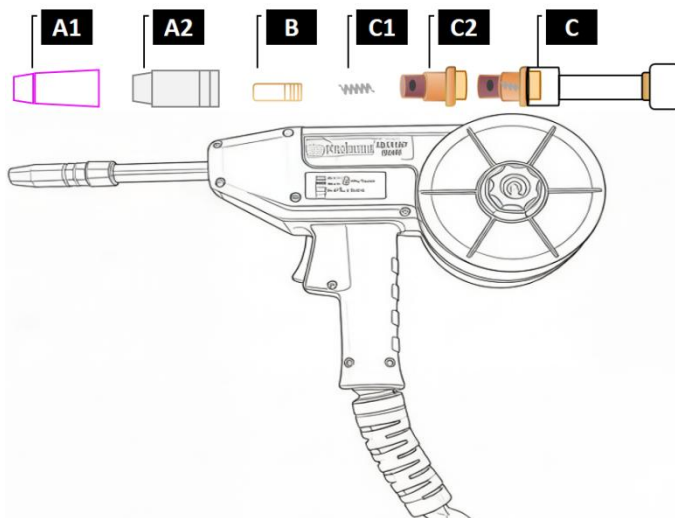


1.3 Three Essential Prerequisites for Spool Gun Compatibility

1	DC 24V Power Supply: The welder must provide an independent and regulated DC 24V output to power the spool gun's wire feed motor.	
	Check if your machine supports the spool gun function. Since the spool gun's wire feed mechanism requires a DC 24V power supply from the welder, ensure the welder is equipped with a corresponding output interface. Machines that support spool guns typically have a clearly marked and dedicated interface on the front panel. This can also be confirmed by checking the welder's manual or consulting the supplier.	
2	Compatible Physical Interface: The welder's front panel must have a matching connector (e.g., a specific aviation or multi-pin receptacle) for the spool gun's integrated power, control, and gas lines.	
	Check if the gas/power/control receptacle on the front panel of the welder matches the connector on the spool gun.	
	2.1	Ensure the gas/power/control receptacle on the welder's front panel is fully compatible with the spool gun's plug.
	2.2	Ensure the DC 24V output interface of the machine is fully compatible with the power input interface of the spool gun.
	2.3	Verify that the quick-connect gas fitting on the welder's front panel is fully compatible with the spool gun's gas hose
3	Adjustable Voltage Control: The welder must support either a Manual (non-Synergic) operating mode or a Synergic mode with voltage fine-tuning capability to properly match the spool gun's unique wire feed characteristics.	
	Verify the machine has adjustable voltage capability. Due to the parameter mismatch between the wire feed motors of the spool gun and the welder itself, the Synergic Mode may cause significant deviation and malfunction when using the spool gun. Ensure your welder is equipped with either a voltage fine-tuning function in Synergic Mode or supports operation in Manual (non-synergic) Mode. Welders with these features typically have a dedicated physical knob for voltage control.	

2. Installation for Spool Gun

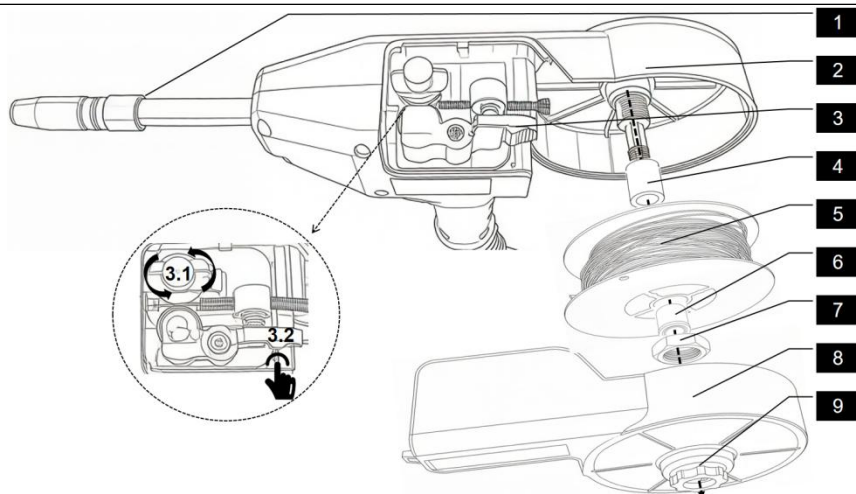
Spool Gun



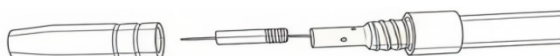
Replacement Parts:

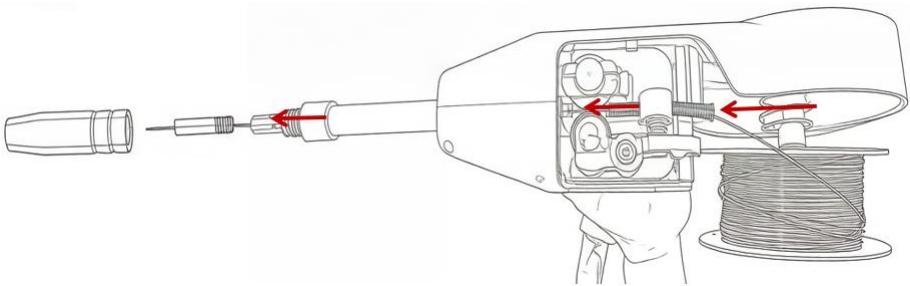
A1	Ceramic nozzle $\phi 12\text{mm}$	A2	Gas nozzle $\phi 12\text{mm}$
B	Contact tip $\phi 0.6, 0.8, 0.9, 1.0 \text{ mm}/\text{M}6 \times 25$	C	Torch head
C1	Gas diffuser	C2	Nozzle spring

Welding Wire Install



- 1 Remove the gas nozzle or ceramic nozzle from the torch head by turning it clockwise. Then, unscrew and remove the contact tip



	from the torch head. For aluminum welding, use a contact tip one size larger.
2	Loosen the protection cover nut and remove the cover.
3	Correct Operation of the Wire Feeder 3.1 Check and install the correct drive roll. To change the drive roll, rotate the retaining cover 45° counterclockwise to remove it. Typically, a V-groove drive roll is used for solid wire, a knurled drive roll for flux-cored wire, and a U-groove drive roll for aluminum wire.To enhance the user experience, a universal drive roll compatible with all wire types is supplied as standard equipment. 3.2 Pull out a 10-15 cm length of wire from the spool. Thread the wire into the wire inlet guide of the feeder. Press down on the tension lever/arm of the feeder, feed the wire through the drive roll and into the torch liner, then release the tension lever. Ensure the wire is securely seated in the groove of the drive roll.
	
4	Mount the rubber damper bushing onto the spool spindle.
5	Load the wire spool onto the spool spindle.
6	Mount the locking bolt onto the spool spindle.
7	Thread the nut onto the spool spindle. The drag (or resistance) of the wire spool can be adjusted by controlling the tightness of this nut.Adjust the drag tension according to the wire diameter and type. Tighten the locking screw just enough to prevent the wire from spooling loosely when released.
8	Practice a few times to master the process. After the wire is loaded, reinstall the protection cover onto the spool gun.
9	Install the wire spool cover and tighten the nut.

3. Connection method/interface for spool gun

Separable Connector	Central Connector Plug Male Adaptor
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4. Spool gun welding for aluminum

4.1 Welding aluminum with a welder not designed for aluminum

1	Set the welder to MIG mode and select Argon as the shielding gas. If argon is not a selectable option, choose CO ₂ or Mixed Gas.
2	The gas used must be 100% Argon.

	Use DCEP (Direct Current Electrode Positive) polarity. For Spool Guns with Separable Connections: ● Connect the gas hose from the gun to the quick-connect gas fitting on the machine's front panel. ● Connect the gun's 10-25 Euro quick-connect plug to the positive (+) output terminal on the front panel. ● Connect the gun's aviation connector to the corresponding receptacle on the front panel. ● Connect the work clamp to the negative (–) output terminal on the front panel.
3	For Spool Guns with Integrated (Euro) Connections: ● Connect the gun's central Euro plug to the corresponding receptacle on the front panel. ● Connect the machine's polarity change cable/jumper to the positive (+) output terminal (on some models, this jumper is located inside the wire feeder compartment). ● Connect the gun's aviation connector to the corresponding receptacle on the front panel. ● Connect the work clamp to the negative (–) output terminal on the front panel.
4	Parameter Adjustment: If your welder has a parameter chart inside the wire feeder compartment, set the Voltage and Wire Feed Speed (current) accordingly. For welders without a chart, operate in Manual (non-synergic) mode. Manually adjust the Voltage and Wire Feed Speed to establish parameters for aluminum. For welders with Synergic mode only, you can only fine-tune the Voltage to set parameters for aluminum. Multiple test runs are required to find satisfactory parameters for aluminum welding.

4.2 Using a welder with dedicated aluminum welding functionality

1	Set the welder to MIG mode and select Argon as the shielding gas.
2	The gas used must be 100% Argon.

	Use DCEP (Direct Current Electrode Positive) polarity.
	For Spool Guns with Separable Connections: ● Connect the gas hose from the gun to the quick-connect gas fitting on the machine's front panel. ● Connect the gun's 10-25 Euro quick-connect plug to the positive (+) output terminal on the front panel. ● Connect the gun's aviation connector to the corresponding receptacle on the front panel. ● Connect the work clamp to the negative (–) output terminal on the front panel.
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4	Parameter Adjustment: Adjust and fine-tune the output voltage and wire feed speed according to the welding performance until optimal results are achieved.

4.3 Effect of Wire Material on Welding

Aluminum welding wire comes in different alloys such as pure aluminum, Al-Mg, and Al-Si. Each alloy may require slight adjustments to the welding parameters. Fine-tune the output voltage and wire feed speed accordingly to optimize performance. Discoloration (darkening) of the weld bead is a typical characteristic when welding with aluminum-magnesium (Al-Mg) alloy wire, primarily due to surface oxidation, and does not necessarily indicate a defect in weld quality.

5. Troubleshooting and Adaptation

If the aviation connector on your machine does not match that of the spool gun, the connection can be adapted as follows:

1

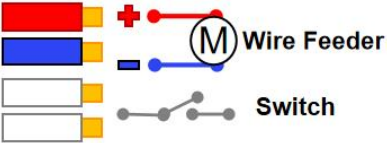
According to the wiring diagram:

One end of the red cable connects to the positive terminal of the spool gun motor, and the other end connects to pin 3 of the 6-pin aviation connector.

One end of the blue cable connects to the negative terminal of the spool gun motor, and the other end connects to pin 4 of the 6-pin aviation connector.

One end of each of the two white cables connects to the two terminals of the spool gun trigger respectively, and the other ends connect to pins 5 and 6 of the 6-pin aviation connector respectively.

For the European central plug, pins 5 and 6 of the 6-pin aviation connector must be left empty. The two white cables have one end connected to the two terminals of the spool gun trigger respectively, and the other ends connected to the two pins of the European central plug.



2

Purchase a connector that matches the aviation receptacle on the machine's front panel, and replace the 6-pin aviation connector according to the spool gun wiring requirements. The positive supply for the spool gun wire feed motor must be brought from the machine to the red cable of the spool gun. The negative supply for the spool gun motor must be brought from the machine to the blue cable of the spool gun. For spool guns with a European central plug interface, the adaptation is now complete, because the spool gun trigger wires have already been brought from the machine to the corresponding white cables of the spool gun via the two pins of the central plug. For spool guns with a separate 10-25 plug interface, the torch trigger signal wires must also be brought from the machine to the white cables of the spool gun.

Warning: Incorrect wiring of the aviation connector can lead to equipment damage or cause the wire feed motor to run in reverse.

1

The 6-pin aviation connector on the spool gun, pin 3 is connected to the positive terminal (+) of the wire feed motor, and pin 4 is connected to the negative terminal (-). Confirm that the polarity of the DC 24V output from the

	welder matches this configuration.
Subpar/Unsatisfactory aluminum welding quality.	
1	For aluminum welding, use a contact tip one size larger. Welding should be performed using 100% argon shielding gas.
2	Work in the aluminum welding program. If the welder does not have a dedicated aluminum program, switch to another shielding gas mode. Then, set the wire feed speed (or current) to maximum and the output voltage to minimum for a trial.
The torch trigger produces no response when pressed.	
1	Check if the machine requires manual switching to spool gun mode.
2	This MIG welder automatically detects the spool gun. When the original factory-supplied spool gun is connected, the machine will automatically switch to spool gun mode in MIG mode.
3	Is the polarity change cable (or jumper) on the welder not connected to either the output positive (+) or negative (–) terminal of the machine?
After connecting the spool gun, the wire feed mechanism starts running automatically.	
1	This type of fault only occurs with spool guns that have a European central plug interface. The cause of the fault is that the white trigger signal wires of the spool gun are simultaneously connected to both the aviation connector and the pins of the central plug. The solution is to open the rear end of the spool gun and disconnect the aviation connector wires that are connected to the white trigger signal wires, leaving only the white trigger signal wires connected to the two pins of the central plug.

Note: Figure for reference only.