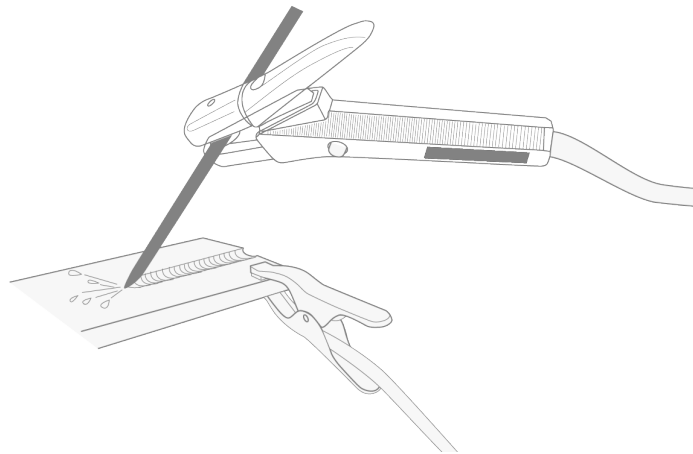


GT4000 BL

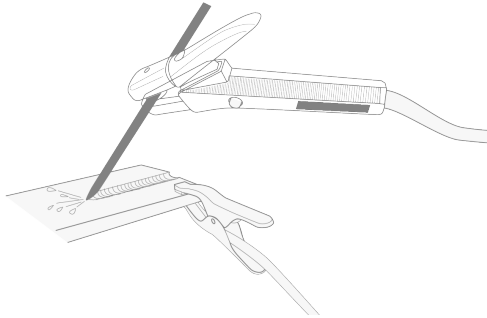


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1. GENERAL

These instructions describe the use of Kemppi's GT4000 BL gouging torch for carbon-arc gouging. GT4000 BL is designed to be used with Kemppi's X3G FastGouge 800 carbon arc gouging power source.




GT4000 BL gouging torch (electrode holder) is delivered with two gouging cable options, DIX 95 and DIX 120. DIX 120 is used with X3G FastGouge 800 equipment.

Carbon arc gouging is a method where metal is removed by melting it with a welding arc and blowing the melted metal away with compressed air. Carbon arc gouging can be used with the majority of metals, such as steel, stainless steel, cast iron, nickel, copper, magnesium and aluminum.

Important notes

Read the instructions through carefully.

Items in the manual that require particular attention in order to minimize damage and harm are indicated with the below symbols. Read these sections carefully and follow their instructions.

 *Note: Gives the user a useful piece of information.*

 *Caution: Describes a situation that may result in damage to the equipment or system.*

 *Warning: Describes a potentially dangerous situation. If not avoided, it will result in personal damage or fatal injury.*

DISCLAIMER

While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions. Kemppi reserves the right to change the specification of the product described at any time without prior notice. Do not copy, record, reproduce or transmit the contents of this guide without prior permission from Kemppi.

2. SAFETY

Welding and carbon arc gouging are always classified as hot work, and the related equipment typically contains high-voltage circuits. If you are not familiar with welding and carbon arc gouging principles, it is recommended that you acquire training or professional guidance before commencing operation. The equipment mentioned in this manual is intended for professional use in an industrial environment.



For your own safety, and that of your working environment, pay particular attention to the safety instructions delivered with the equipment.

You can also access and download the safety instructions by using these links:




- [Safety](https://kemp.cc/safety/general)

(<https://kemp.cc/safety/general>)

- [Welding and gouging torches safety](https://kemp.cc/safety/torches)

(<https://kemp.cc/safety/torches>)

3. INSTALLATION

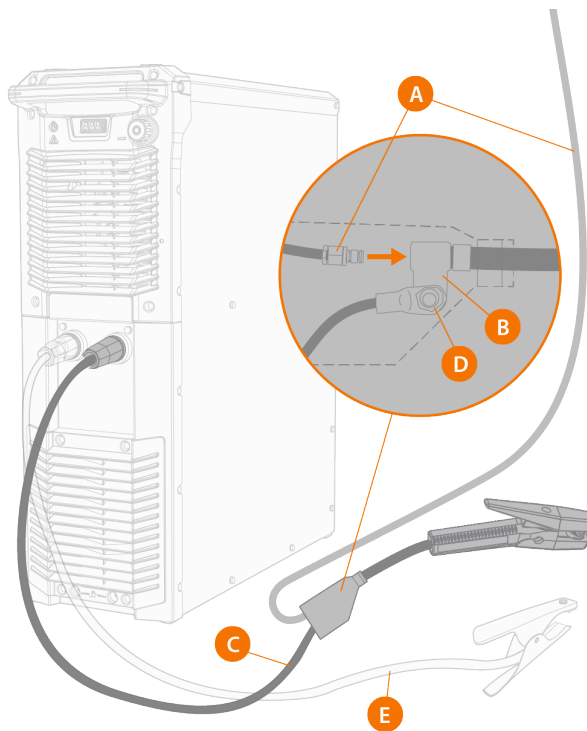
-  Do not connect the equipment to the mains before the installation is complete.
-  Do not modify the equipment in any way, except for the changes and adjustments covered in the manufacturer's instructions.
-  Protect the equipment from rain and direct sunshine.

Before installation and use

- Ensure compliance with your local and national safety requirements regarding the installation and use of high voltage units.
- Check the contents of the packages and make sure the parts are not damaged.
- Note that also a sufficient compressed air supply must be available.

Equipment parts and connections

The GT4000 BL gouging torch equipment consists of:



- 1. Connect the compressed air hose (A) to the gouging torch.**
 - >> Compressed air supply is provided by using an air supply hose with 3/8" NPT connector. It is connected to the gouging torch air/power connector (B). The air valve on the gouging torch will allow the operator to control the air flow as required.
- 2. Connect the gouging torch cable (C) either to the positive (+) or negative (-) DIX connector on the power source.**
 - >> The gouging torch cable (C) is attached to the gouging torch air/power connector (B) with a bolt and nut (D).
- 3. Connect the earth return cable (E) either to the positive (+) or negative (-) DIX connector on the power source and to the work piece.**
 - >> Connect the earth return cable clamp directly to the work piece so that the contact surface is maximized. The point of connection must be unpainted and free of corrosion.

i The earth return cable and the compressed air supply and hose are required for carbon-arc gouging, but they are to be purchased separately.

i Never use oxygen in the compressed air supply.

Selecting gouging polarity

The gouging torch cable is connected to the power source's DIX connector. The cable is connected either to the positive (+) or negative (-) connector on the power source, depending on the metal to be worked on.

- For steel: Positive (+)
- For cast iron: Negative (-)
- For non-iron metal: Negative (-)

Selecting gouging carbon

There are two main types of gouging carbons, round and flat. A round gouging carbon can be used in:

- Opening a root weld
- Opening faulty welds and cracks
- Manufacturing welding grooves
- Cutting metal
- Making holes.

A flat carbon can be used in:

- Arc grading of surface errors in roller slabs
- Cleaning steel casts
- Opening faulty casts
- Arc grading of weld caps.

A round gouging carbon electrode is best suited for general carbon arc gouging applications.

For general guidance only. Current recommendations for different-sized round gouging carbon electrodes:

Round carbon size	4 mm (5/32")	5 mm (3/16")	6.35 mm (1/4")	8 mm (5/16")	9.5 mm (3/8")	13 mm (1/2")
Current (A)	80...150	110...200	170...330	230...450	300...550	460...800

i Do not exceed the maximum current specified for a gouging carbon as it will accelerate carbon wear. The gouging current is too high if the copper coating melts faster than the gouging carbon.

4. OPERATION

Before operation

- Ensure that all the necessary installation actions have been completed according to your equipment setup and instructions.



Welding and gouging is forbidden in places where there is an immediate fire or explosion hazard!



Welding and gouging fumes may cause injury. Take care to ensure sufficient ventilation when working and wear respiratory protection!



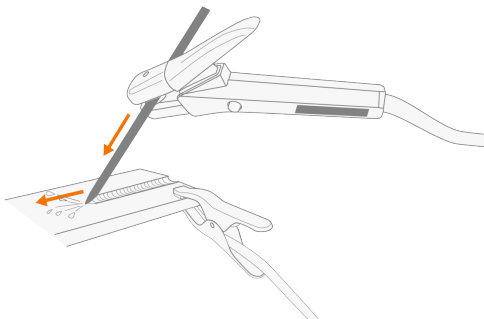
Always be aware of the direction of the molten metal to prevent potential contact with the operator, the equipment and or the surrounding areas.



Always check before use that the cables and hoses are in serviceable condition. Ensure that the connectors are correctly fastened. Loose connectors can impair gouging performance and damage connectors.

Gouging

1. Install the desired carbon electrode in the gouging torch electrode holder with air holes facing in the direction of the arc. Maximum stick-out length is 150 mm and minimum is 75 mm.
2. Turn on the compressed air supply.
3. Take the gouging torch comfortably in your hand so that the carbon electrode is in 15°...70° angle (from the work piece).
4. Strike the arc by placing the electrode in contact with the base material. Once the arc is established, maintain a short arc while moving in the direction of travel and don't pull away from the base material. Continue to steadily move forward (pushing the puddle, not pulling), while maintaining a smooth arc.



Notes

- The depth of the gouging groove is controlled with the travel speed and electrode thickness. If your application requires a deep groove, use a slow travel speed and a thick electrode. To obtain a shallow groove, a faster travel speed and a thinner electrode can be used.
- When the arc melts the base metal, compressed air blows the molten metal away, leaving a clean groove. Smooth and steady speed and arc length will result in a more uniform groove.

5. MAINTENANCE

When considering and planning routine maintenance, consider the operating frequency of the equipment and the working environment.

Correct operation of the equipment, regular maintenance, and the use of original Kemppi spare parts and consumables help you avoid unnecessary downtime and equipment failure, while also maximizing the equipment's service life.

For repairs, find your closest Kemppi service workshop at www.kemppi.com or contact your dealer.



Only an authorized electrician is allowed to carry out electrical work.



Only qualified service personnel is allowed to carry out periodic and annual maintenance.



Disconnect the power source from the mains before handling electrical cables and connectors.



Do not use pressure washing devices.



Where applicable, use the correct tension torque when fastening loose parts.

Daily maintenance

- Check that all covers and components are intact.
- Check all the cables, hoses and connectors. Do not use them if they are damaged.
- Ensure that the connectors are correctly fastened. Loose connectors can impair operating performance and damage connectors.

Weekly maintenance

- Clean the outside parts of the units from dust and dirt, for example, with a soft brush and vacuum cleaner.

Periodic maintenance

- Check the electrical connectors of the equipment at least every 6 months. Clean oxidized parts and tighten loose connectors.

Annual maintenance

The annual maintenance must be carried out by an authorized Kemppi service workshop. Kemppi service workshops complete the equipment maintenance according to your Kemppi service agreement. Find your closest service workshop at www.kemppi.com.

5.1 Disposal



Do not dispose of any electrical equipment with normal waste!

In observance of WEEE Directive 2012/19/EU on waste of electrical and electronic equipment and European Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment, and their implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and taken to an appropriate environmentally responsible recycling facility. The owner of the equipment is obliged to deliver a decommissioned unit to a regional collection center, as per the instructions of local authorities or a Kempfi representative. By applying these European Directives you improve the environment and human health.

For more information:



6. TECHNICAL DATA

GT4000 BL		
Feature		Value
Load capacity		800 A
Type of cooling		Air
Compressed air pressure		5 bar
Air flow rate		900 l/min
Weight		3 kg
Electrode diameters	Round	4...13 mm (5/32-1/2")
	Flat	10...16 mm (3/8-5/8")