



HPRXD®

Short Torch with Integrated Lead



Instruction Manual

808890 | Revision 1 | English

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HPRXD
Short Torch with Integrated Lead

Instruction Manual

808890
Revision 1

English

December 2014

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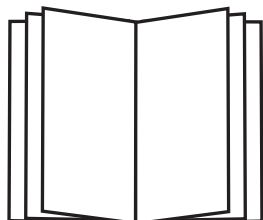
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WARNING!



READ THE SAFETY INFORMATION

Before operating or maintaining any Hypertherm equipment, read the *Safety and Compliance Manual* (80669C) for important safety information.

You can find the *Safety and Compliance Manual* in the “Downloads library” at www.hypertherm.com.

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Attention

Genuine Hypertherm parts are the factory-recommended replacement parts for your Hypertherm system. Any damage or injury caused by the use of other than genuine Hypertherm parts may not be covered by the Hypertherm warranty, and will constitute misuse of the Hypertherm Product.

You are solely responsible for the safe use of the Product. Hypertherm does not and cannot make any guarantee or warranty regarding the safe use of the product in your environment.

General

Hypertherm, Inc. warrants that its Products shall be free from defects in materials and workmanship for the specific periods of time set forth herein and as follows: if Hypertherm is notified of a defect (i) with respect to the plasma power supply within a period of two (2) years from the date of its delivery to you, with the exception of Powermax brand power supplies, which shall be within a period of three (3) years from the date of delivery to you, and (ii) with respect to the torch and leads within a period of one (1) year from its date of delivery to you, with the exception of the HPRXD short torch with integrated lead, which shall be within a period of six (6) months from the date of delivery to you, and with respect to torch lifter assemblies within a period of one (1) year from its date of delivery to you, and with respect to Automation products one (1) year from its date of delivery to you, with the exception of the EDGE Pro CNC, EDGE Pro Ti CNC, MicroEDGE Pro CNC, and ArcGlide THC, which shall be within a period of two (2) years from the date of delivery to you, and (iii) with respect to HyIntensity fiber laser components within a period of two (2) years from the date of its delivery to you, with the exception of laser heads and beam delivery cables, which shall be within a period of one (1) year from its date of delivery to you.

This warranty shall not apply to any Powermax brand power supplies that have been used with phase converters. In addition, Hypertherm does not warranty systems that have been damaged as a result of poor

power quality, whether from phase converters or incoming line power. This warranty shall not apply to any product which has been incorrectly installed, modified, or otherwise damaged.

Hypertherm provides repair, replacement or adjustment of the Product as the sole and exclusive remedy, if and only if the warranty set forth herein properly is invoked and applies. Hypertherm, at its sole option, shall repair, replace, or adjust, free of charge, any defective Products covered by this warranty which shall be returned with Hypertherm's prior authorization (which shall not be unreasonably withheld), properly packed, to Hypertherm's place of business in Hanover, New Hampshire, or to an authorized Hypertherm repair facility, all costs, insurance and freight prepaid by the customer. Hypertherm shall not be liable for any repairs, replacement, or adjustments of Products covered by this warranty, except those made pursuant to this paragraph and with Hypertherm's prior written consent.

The warranty set forth above is exclusive and is in lieu of all other warranties, express, implied, statutory, or otherwise with respect to the Products or as to the results which may be obtained therefrom, and all implied warranties or conditions of quality or of merchantability or fitness for a particular purpose or against infringement. The foregoing shall constitute the sole and exclusive remedy for any breach by Hypertherm of its warranty.

Distributors/OEMs may offer different or additional warranties, but Distributors/OEMs are not authorized to give any additional warranty protection to you or make any representation to you purporting to be binding upon Hypertherm.

Patent indemnity

Except only in cases of products not manufactured by Hypertherm or manufactured by a person other than Hypertherm not in strict conformity with Hypertherm's specifications and in cases of designs, processes, formulae, or combinations not developed or purported to be developed by Hypertherm, Hypertherm will have the right to defend or settle, at its own expense, any suit or proceeding brought against you alleging that the use of the Hypertherm product, alone and not in combination with any other product not supplied by Hypertherm, infringes any patent of any third party. You shall notify Hypertherm promptly upon learning of any action or threatened action in connection with any such alleged infringement (and in any event no longer than fourteen (14) days after learning of any action or threat of action), and Hypertherm's obligation to defend shall be conditioned upon Hypertherm's sole control of, and the indemnified party's cooperation and assistance in, the defense of the claim.

Limitation of liability

In no event shall Hypertherm be liable to any person or entity for any incidental, consequential direct, indirect, punitive or exemplary damages (including but not limited to lost profits) regardless of whether such liability is based on breach of contract, tort, strict liability, breach of warranty, failure of essential purpose, or otherwise, and even if advised of the possibility of such damages.

National and local codes

National and local codes governing plumbing and electrical installation shall take precedence over any instructions contained in this manual. In no event shall Hypertherm be liable for injury to persons or property damage by reason of any code violation or poor work practices.

Liability cap

In no event shall Hypertherm's liability, if any, whether such liability is based on breach of contract, tort, strict liability, breach of warranties, failure of essential purpose or otherwise, for any claim, action, suit or proceeding (whether in court, arbitration, regulatory proceeding or otherwise) arising out of or relating to the use of the Products exceed in the aggregate the amount paid for the Products that gave rise to such claim.

Insurance

At all times you will have and maintain insurance in such quantities and types, and with coverage sufficient and appropriate to defend and to hold Hypertherm harmless in the event of any cause of action arising from the use of the products.

Transfer of rights

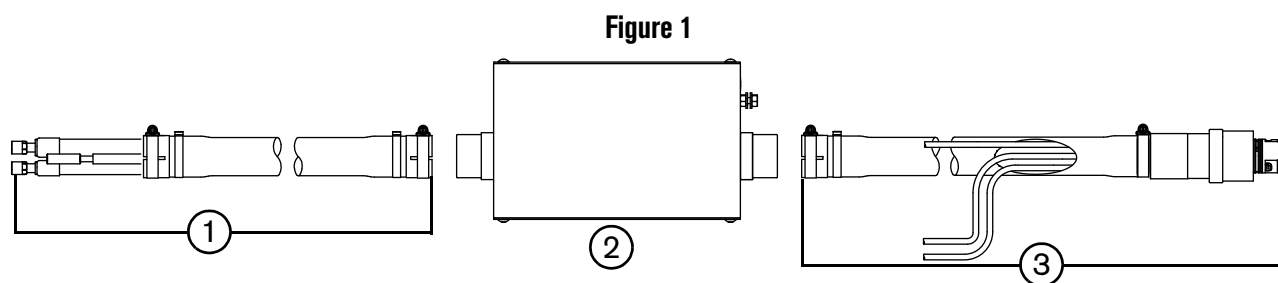
You may transfer any remaining rights you may have hereunder only in connection with the sale of all or substantially all of your assets or capital stock to a successor in interest who agrees to be bound by all of the terms and conditions of this Warranty. Within thirty (30) days before any such transfer occurs, you agree to notify in writing Hypertherm, which reserves the right of approval. Should you fail timely to notify Hypertherm and seek its approval as set forth herein, the Warranty set forth herein shall be null and void and you will have no further recourse against Hypertherm under the Warranty or otherwise.

Section 1

Specifications

Introduction

The HPRXD short torch with integrated lead is designed for use with HPRXD systems. This torch uses the HPRXD consumables. This torch has an integrated lead that connects to HPRXD junction box. A junction box lead connects the junction box to the ignition console.



Description

- 1 HPRXD junction box to ignition console lead, 5.5 m (18 feet)
- 2 HPRXD junction box
- 3 HPRXD short torch with integrated lead, 2.5 m (8 feet) (Consumables are not included with the torch.)

Component weights

HPRXD junction box lead	4.6 kg (10.2 pounds)
HPRXD junction box	3.6 kg (7.9 pounds)
HPRXD short torch with integrated lead	2.7 kg (6 pounds)

Instruction manual references

This document refers to your system's instruction manual. If you do not have your instruction manual, you can find it in the Hypertherm downloads library:

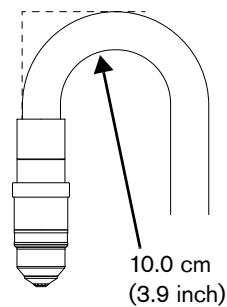
1. Go to www.hypertherm.com.
2. Click **Downloads library**.
3. Enter your instruction manual's part number in the **Part number** field.
 - ❑ *HPR130XD Auto Gas Instruction Manual: 806330*
 - ❑ *HPR130XD Manual Gas Instruction Manual: 806320*
 - ❑ *HPR260XD Auto Gas Instruction Manual: 806350*
 - ❑ *HPR260XD Manual Gas Instruction Manual: 806340*
 - ❑ *HPR400XD Auto Gas Instruction Manual: 806160*
 - ❑ *HPR400XD Manual Gas Instruction Manual: 806170*
 - ❑ *HPR800XD Auto Gas Instruction Manual: 806500*
 - ❑ *HPR800XD Manual Gas Instruction Manual: 806490*

HPRXD short torch with integrated lead

The HPRXD short torch with integrated lead:

- Functions the same as the standard HPRXD torch with 2 exceptions.
 - The torch does not have the ohmic-sensing feature.
 - The torch does not have a quick-disconnect feature.
- Connects to the junction box.
- Includes a 2.5 m (8 foot) flexible lead that is part of the torch.
 - The lead has a recommended minimum bend radius of 10.0 cm (3.9 inches). See *Figure 2*.

Figure 2 – Bend radius



- The lead is not designed for cyclic bends greater than 90° during cutting. See *Figure 3*.

Figure 3 – Bend angle during cutting

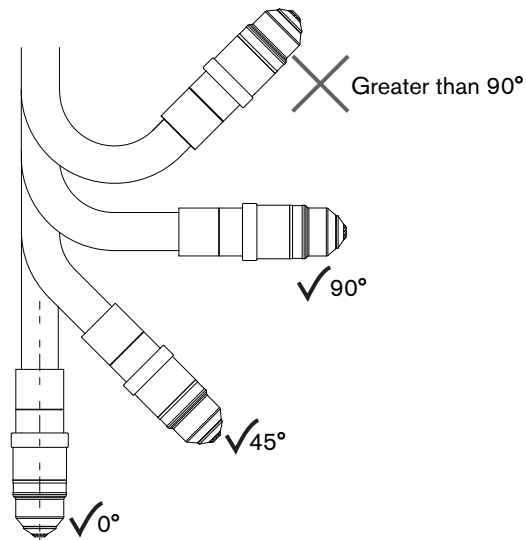
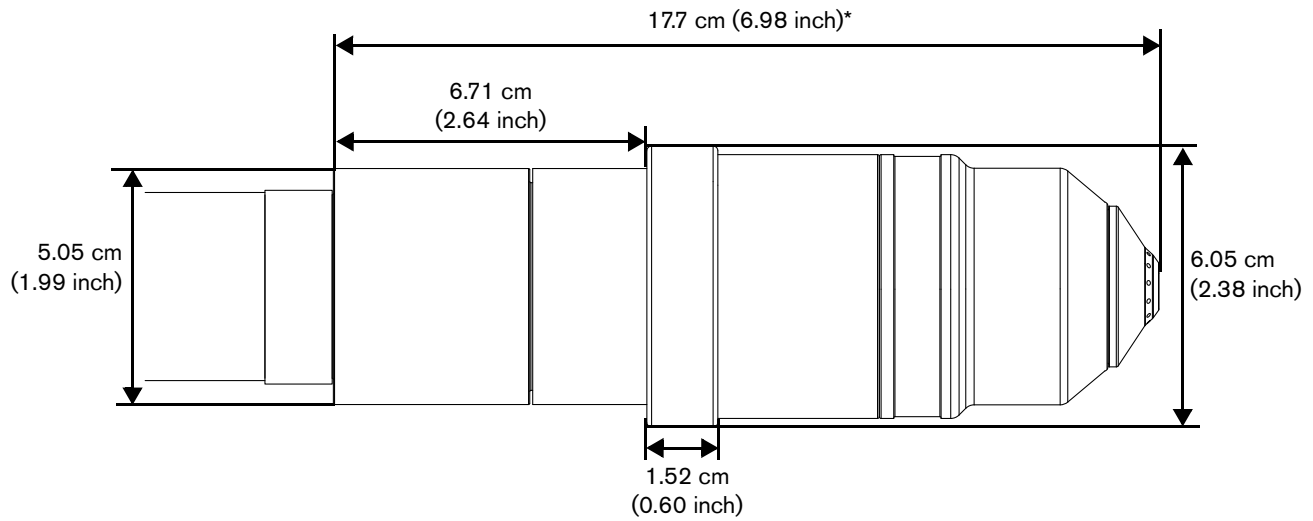


Figure 4 – Torch dimensions



* This dimension varies depending on the type of consumables installed. The preceding figure shows the HPR 260 A consumables installed.

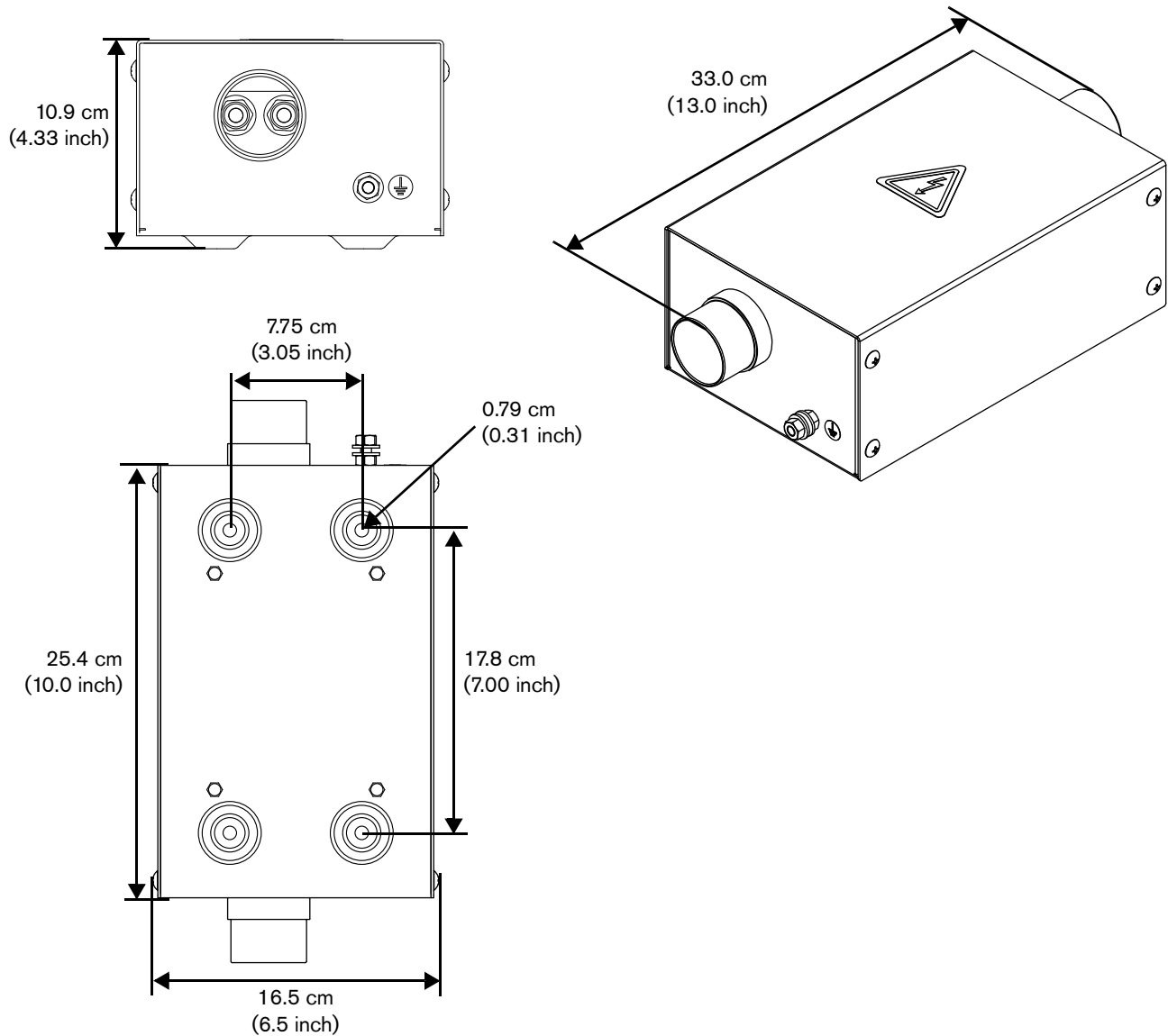


The dimensions in *Figure 4* apply to most bevel consumable configurations.

HPRXD junction box

- The junction box is the connection point between the short torch with integrated lead and the ignition console for coolant, power, and high frequency.

Figure 5 – Junction box dimensions



HPRXD junction box lead

The junction box lead:

- Connects the junction box to the ignition console.
- Supplies power and high frequency to the torch.
- Takes coolant to and from the torch.

Section 2

Installation

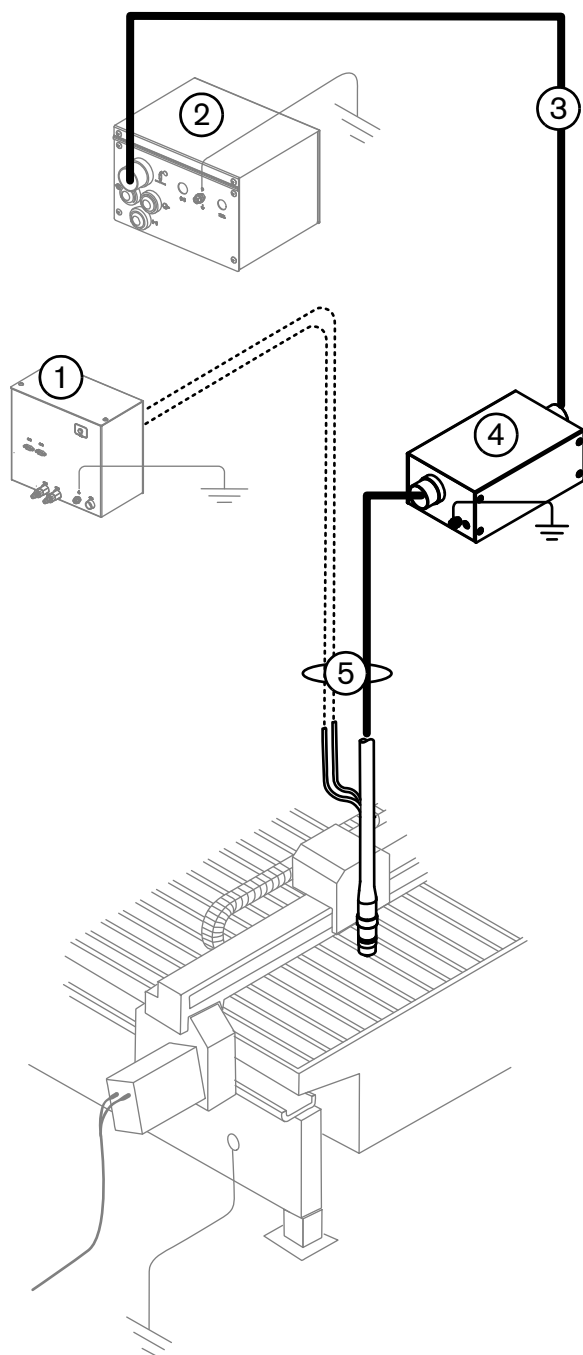
To use the HPRXD short torch with integrated lead, you must:

- Install the junction box.
- Connect the leads.
- Mount the torch.
- Choose and install the consumables.

2 – Installation

Figure 6 shows where the short torch with integrated lead is installed in a typical HPRXD installation.

Figure 6



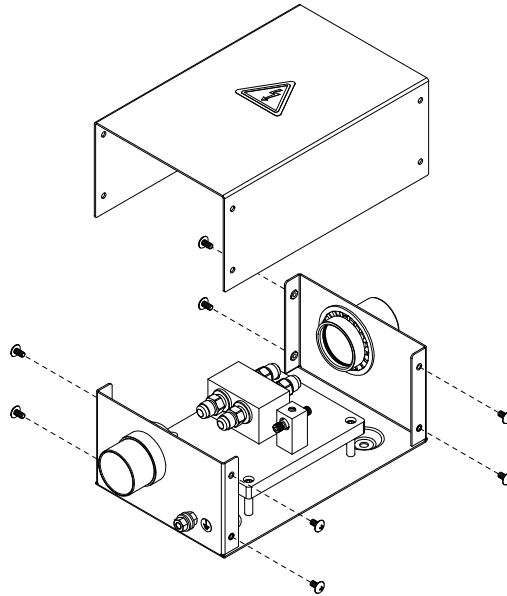
- 1** Metering console (auto gas) (shown) or off-valve assembly (manual gas) (not shown)
- 2** Ignition console
- 3** Junction box lead*
- 4** Junction box*
- 5** Short torch with integrated lead*

* New assemblies

Install the junction box

1. Remove the cover from the junction box.

Figure 7



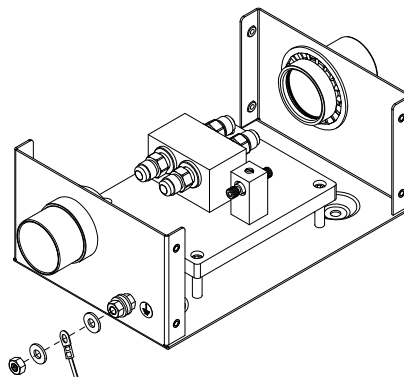
2. Mount the junction box 2.5 m (8 feet) or closer to the cutting location. (See *Figure 5 – Junction box dimensions* on page 15 for mounting dimensions.)




Allow space to install and remove the cover of the box for servicing.


3. Ground the junction box to the bus bar on the cutting table or equivalent. See *Recommended grounding and shielding* in the *Installation* section in your system's instruction manual for more information.

Figure 8



Connect the leads

	CAUTION!
Always use 2 wrenches to properly loosen and tighten the fittings mentioned in these procedures.	

 Do not overtighten the connections.

Junction box to the ignition console

1. Connect one end of the junction box lead to the junction box.


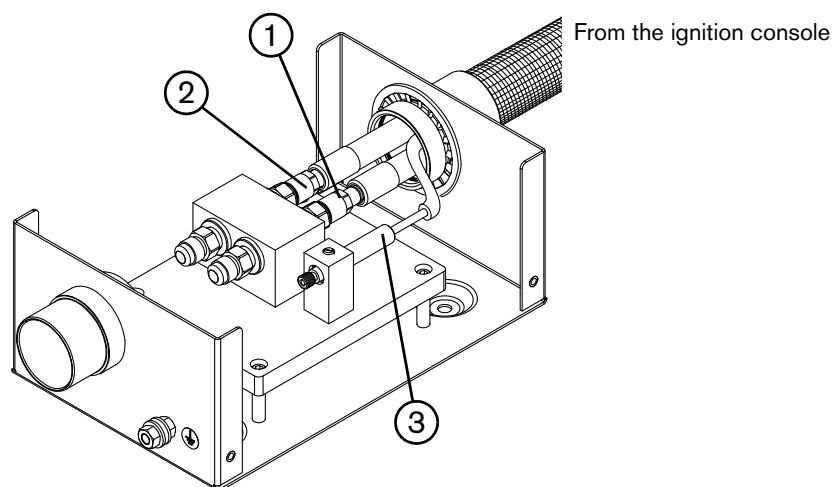
 The lead can go in either end of the junction box.

Figure 9

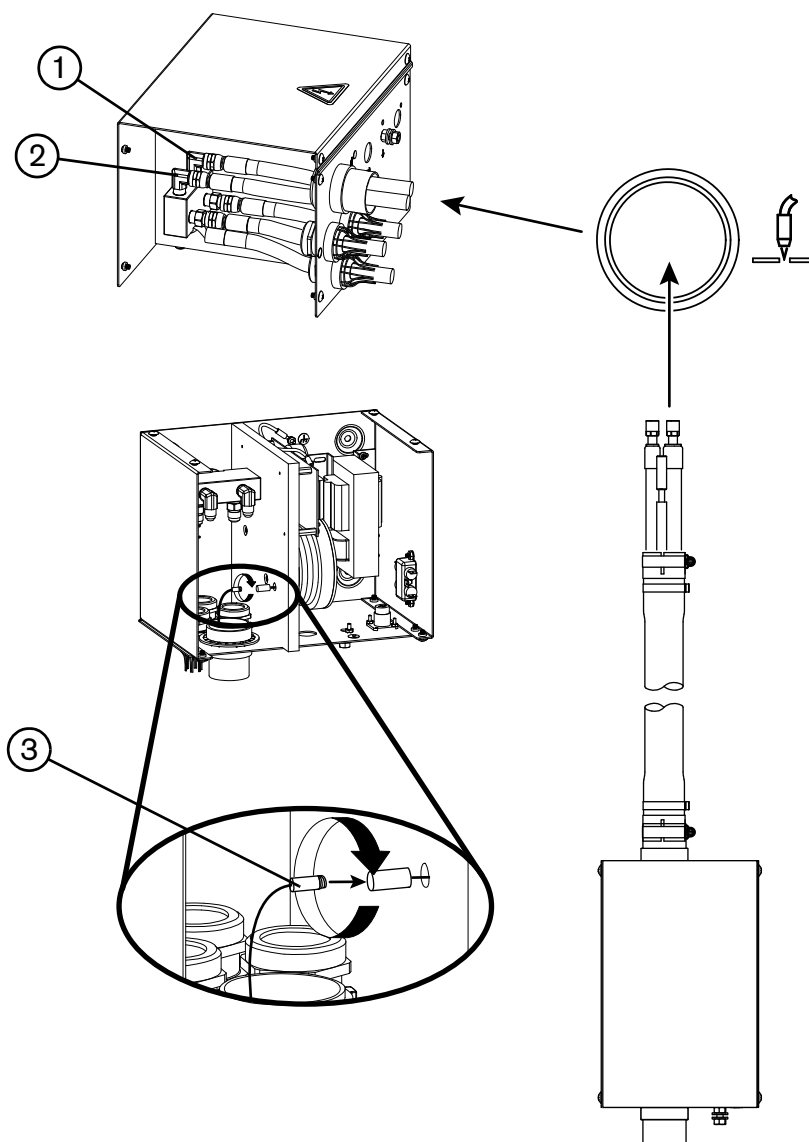


- 1 Coolant supply hose (green)
- 2 Coolant return hose (red)

- 3 Pilot arc lead (yellow)

2. Connect the other end of the junction box lead to the ignition console.

Figure 10



1 Coolant supply hose (green)

2 Coolant return hose (red)

3 Pilot arc lead (yellow)

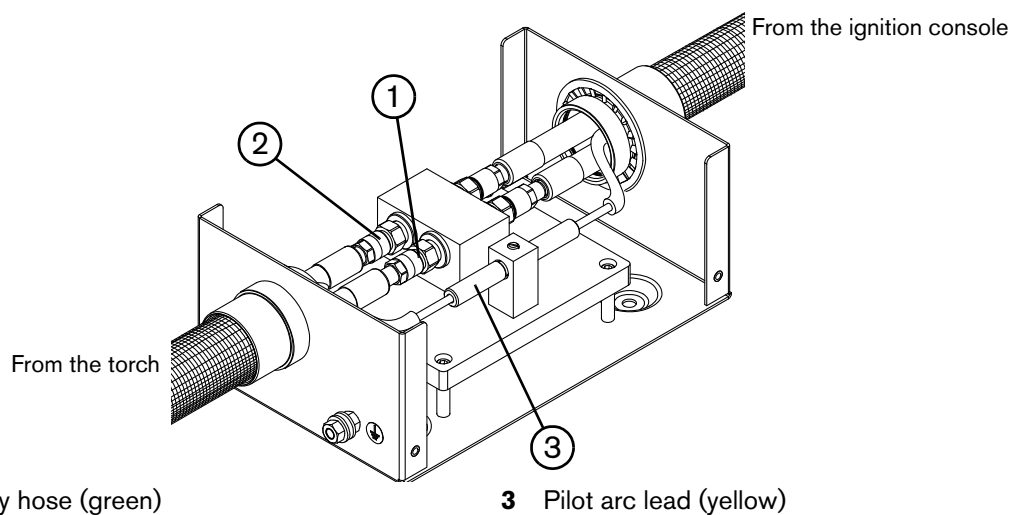
Short torch with integrated lead to the junction box

1. Connect the short torch with integrated lead to the junction box.



The torch lead can go in either end of the junction box.

Figure 11

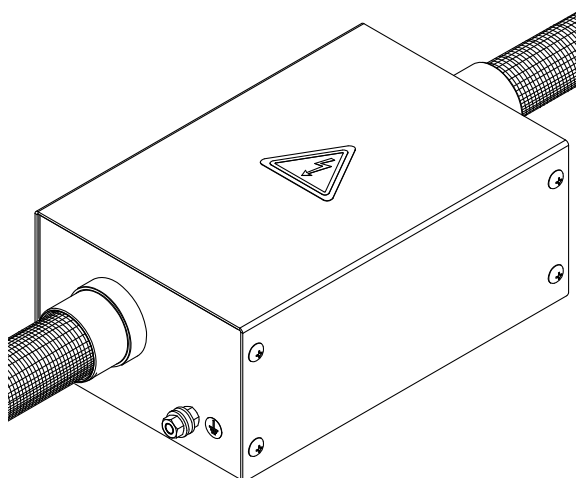


- 1 Coolant supply hose (green)
- 2 Coolant return hose (red)

- 3 Pilot arc lead (yellow)

2. Install the junction box cover.

Figure 12



3. Connect the torch hoses to the off-valve assembly for manual gas systems or metering console for auto gas systems.
See Figure 13.


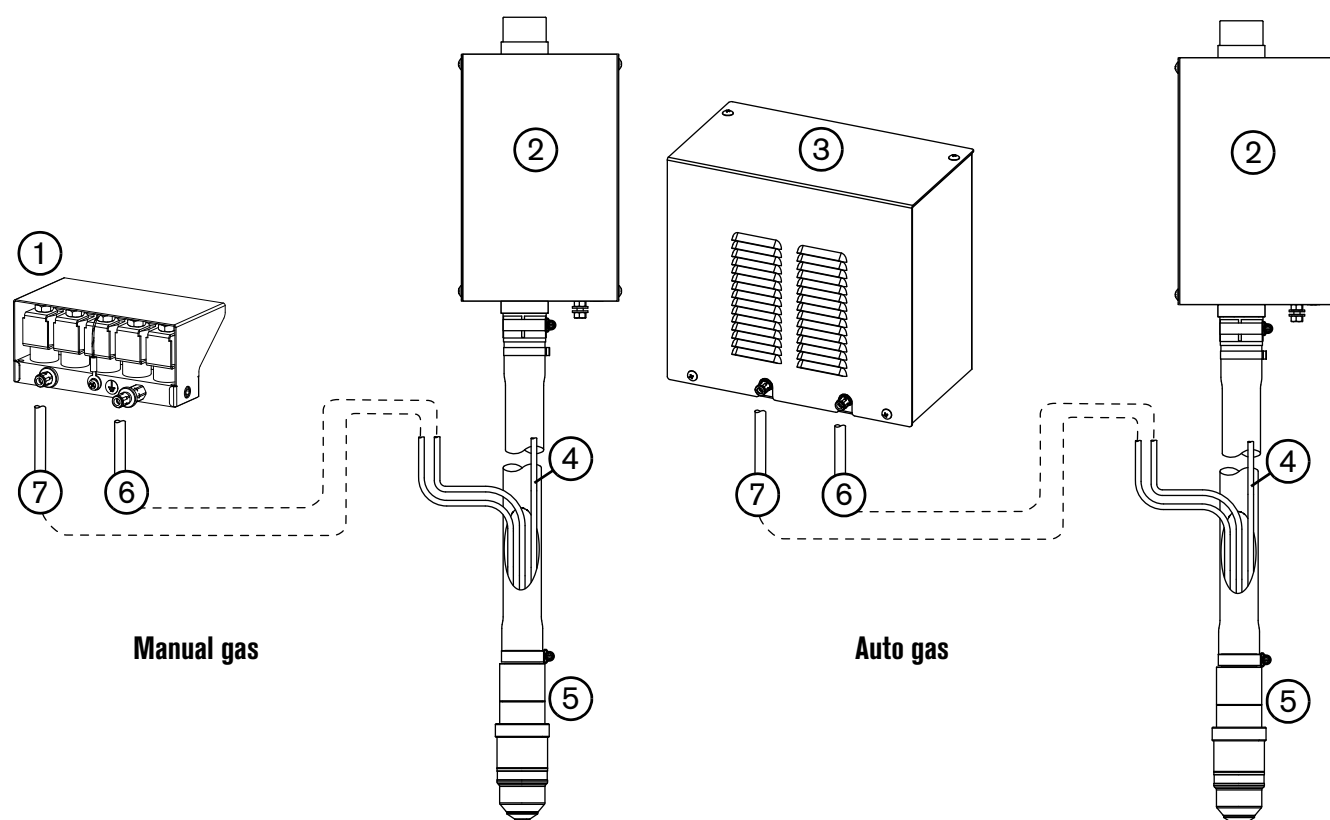
	<h3>CAUTION!</h3>
<p>The length of the hoses from the torch to the metering console or off-valve assembly are critical to cut quality and consumable life. Do not alter the length of the hoses.</p> <p>Locate the exposed end of the plasma-gas vent hose away from sparks caused by piercing to avoid ignition and possible damage to the torch leads.</p>	

Figure 13



- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Off-valve assembly 2 Junction box 3 Metering console 4 Plasma-gas vent hose (white) | <ul style="list-style-type: none"> 5 Short torch with integrated lead 6 Plasma gas hose (black) 7 Shield gas hose (blue) |
|--|---|

Mount the torch

Use only the mounting area to mount the torch. See *Figure 15* for the location of this area. The insulator separates the mounting bracket and the torch body to prevent arcing. Do not use a mounting bracket that has conductive material past the insulator. See *Figure 14* for an example of correct and incorrect mounting.

Figure 14

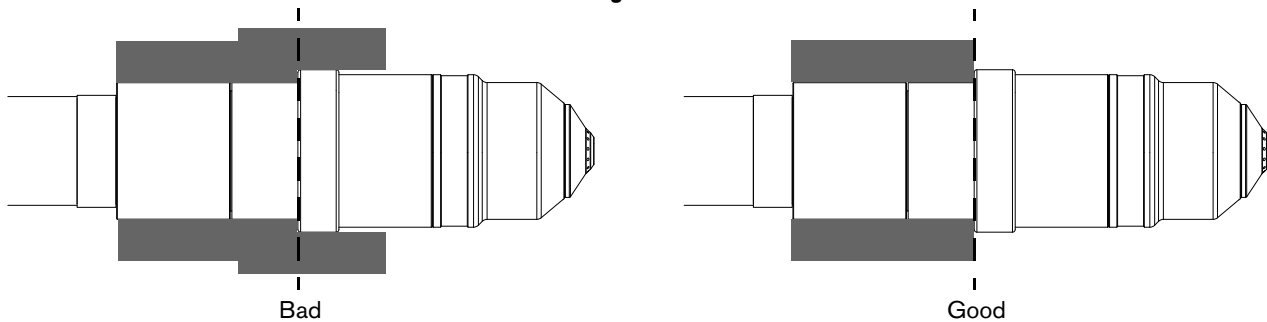
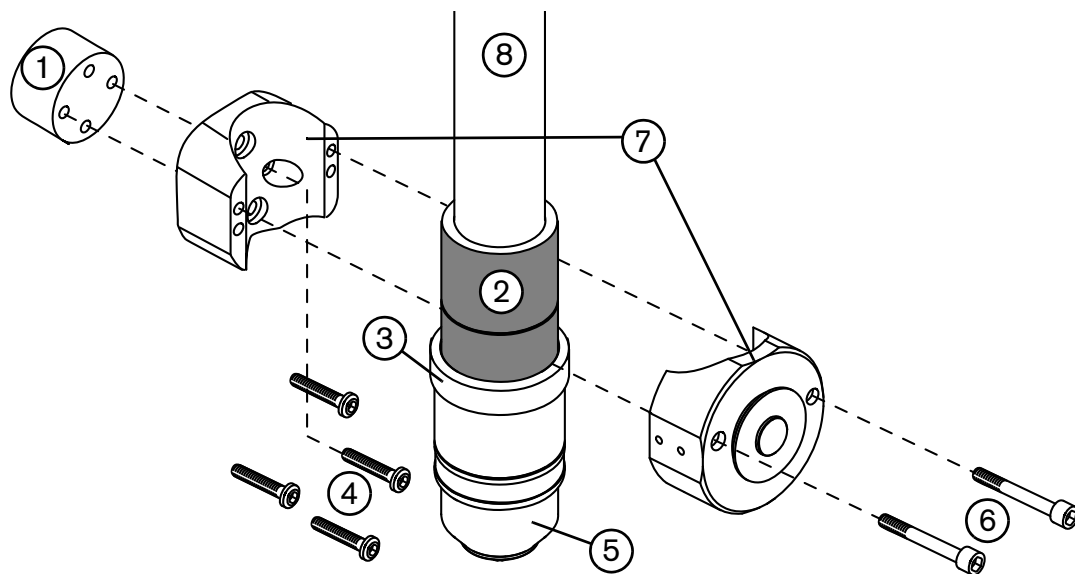


Figure 15



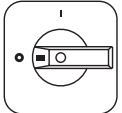


- | | |
|--|----------------------|
| 1 Spacer | 5 Consumables* |
| 2 Mounting area (gray) | 6 Bracket screws (2) |
| 3 Insulator (Do not use this area for mounting.) | 7 Mounting bracket |
| 4 Spacer screws (4) | 8 Torch lead |

* Consumables are not included with the torch assembly. You must purchase consumables separately.

Depending on your application, Hypertherm offers a torch mounting bracket that fits this torch. See *Mounting bracket* on page 29. Use your torch mounting bracket, and follow the manufacturer's instructions on how to mount the torch in the mounting bracket.

Install the consumables

		WARNING! INSTANT-ON TORCHES PLASMA ARC CAN CAUSE INJURY AND BURNS
	Make sure the power is OFF before changing the consumables.	

To operate the short torch with integrated lead, a complete set of consumable parts must be installed. For more information on consumables see your system's manual.



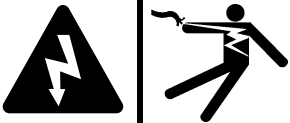
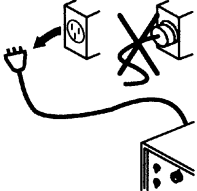
This torch does not have a quick disconnect. You must install the consumables at the location of the torch.

Use the cut charts

The cut charts for each set of mechanized consumables can be found in the *Torch Setup* section of the Instruction Manual that shipped with the system. You also can download the manuals from Hypertherm's website (www.hypertherm.com) using the "Downloads library" link. A consumable diagram with part numbers precedes each set of charts. For each consumable type, there are Metric and English charts for mild steel, stainless steel, and aluminum.

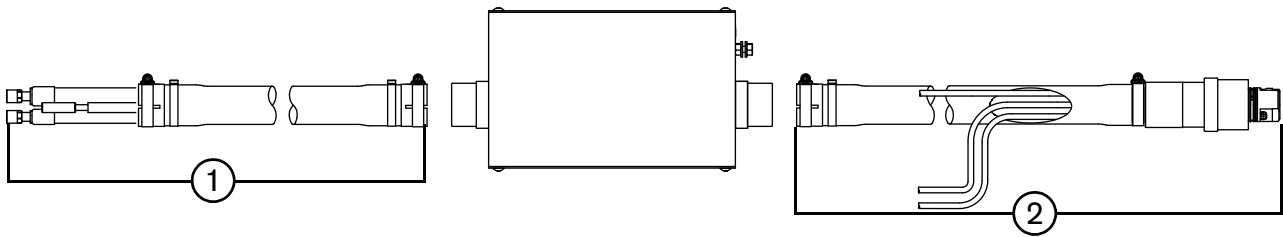
Section 3

Parts

	<p>WARNING!</p> <p>ELECTRIC SHOCK CAN KILL</p>
	<p>Disconnect electrical power before performing any maintenance.</p> <p>All work requiring removal of the power supply cover must be performed by a qualified technician.</p> <p>See the safety information provided with your product for more safety precautions.</p>

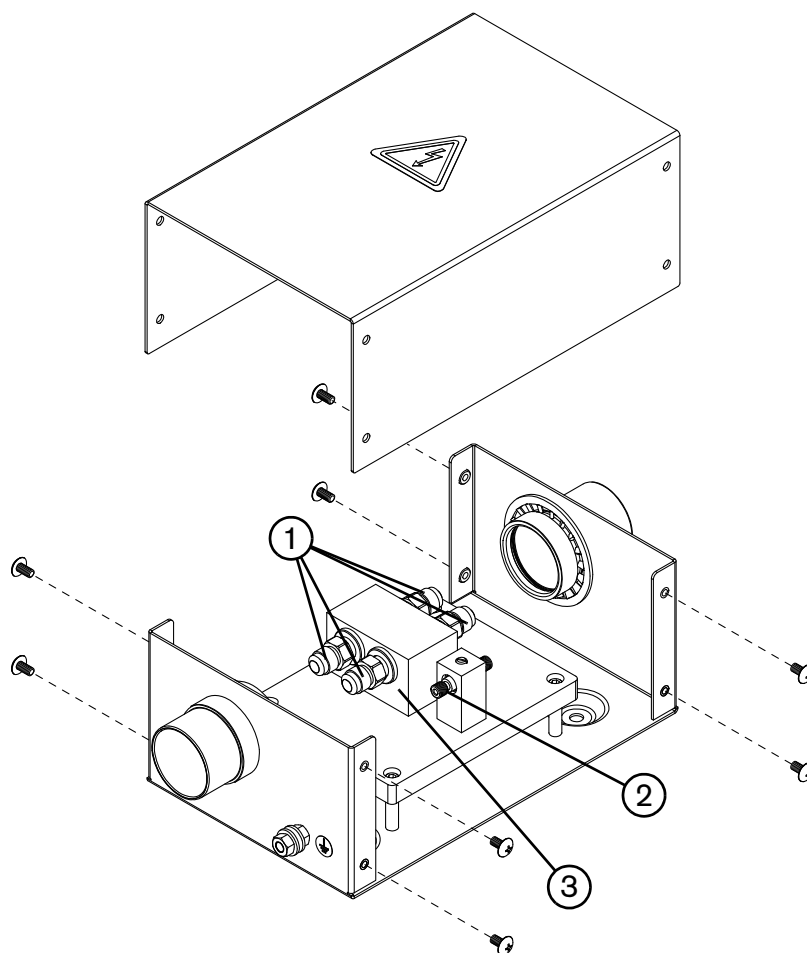
Torch and leads

There are no replaceable items inside the torch or leads.



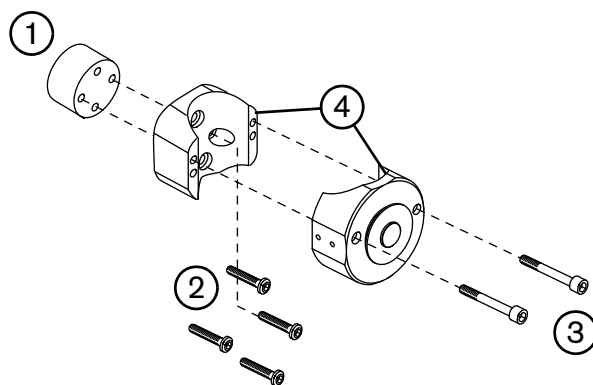
	Part Number	Description
1	428339	HPRXD junction box to ignition console lead, 5.5 m (18 feet)
2	420383	HPRXD short torch with integrated lead, 2.5 m (8 feet) (Consumables are not included with the torch.)

Junction box



	Part Number	Description
	078619	HPRXD junction box
1	015007	Coolant fitting (4)
2	104763	Pilot arc fitting
3	104762	Coolant block

Mounting bracket



	Part Number	Description
1	004775	Spacer
2	075127	Socket cap screw, 1/4-20 X 1-1/2 inch hex (4)
3	075583	Socket cap screw, 1/4-20 X 1-3/4 inch hex (2)
4	120597	Mounting bracket, 5.08 cm (2 inch) diameter

