PT-26 Plasma Arc Cutting Torch

Instruction Manual (GB)

0558003747

BE SURE THIS INFORMATION REACHES THE OPERATOR.
YOU CAN GET EXTRA COPIES THROUGH YOUR SUPPLIER.

CAUTION

These INSTRUCTIONS are for experienced operators. If you are not fully familiar with the principles of operation and safe practices for arc welding and cutting equipment, we urge you to read our booklet, "Precautions and Safe Practices for Arc Welding, Cutting, and Gouging," Form 52-529. Do NOT permit untrained persons to install, operate, or maintain this equipment. Do NOT attempt to install or operate this equipment until you have read and fully understand these instructions. If you do not fully understand these instructions, contact your supplier for further information. Be sure to read the Safety Precautions before installing or operating this equipment.

USER RESPONSIBILITY

This equipment will perform in conformity with the description thereof contained in this manual and accompanying labels and/or inserts when installed, operated, maintained and repaired in accordance with the instructions provided. This equipment must be checked periodically. Malfunctioning or poorly maintained equipment should not be used. Parts that are broken, missing, worn, distorted or contaminated should be replaced immediately. Should such repair or replacement become necessary, the manufacturer recommends that a telephone or written request for service advice be made to the Authorized Distributor from whom it was purchased.

This equipment or any of its parts should not be altered without the prior written approval of the manufacturer. The user of this equipment shall have the sole responsibility for any malfunction which results from improper use, faulty maintenance, damage, improper repair or alteration by anyone other than the manufacturer or a service facility designated by the manufacturer.

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PT-26 Torch

This versatile, easy-to-use 300 amp torch provides superior performance for a full range of manual and mechanized cutting applications.

- *Excellent cutting capability - cuts up to 3.50" (88.9mm) and severs 4" (101.6mm) using air, nitrogen or argon-hydrogen at 300 amps*
- *Produces clean, high quality cuts*
- *Patent pending safety circuit for enhanced operator safety*
- *Operates with shop or cylinder air, nitrogen or argon-hydrogen at 300 amps*
- *Compact, lightweight design for ease of handling*
- *Long life electrodes lower operating costs*
- *Pilot arc starting - even starts on paint*
- *Gouging nozzle available*
- *Intermittent cutting capacity for grate or expanded metal applications*
- *Gouging guard and stand-off guide available for operator convenience*
- *One-year warranty*

Specifications

Voltage Class "M" (EN 50078)
Current Capacity (All Service Gases and Pressures)
- 100% duty cycle ..... 200 A DCSP
- 60% duty cycle ..... 300 A DCSP
- Maximum Rated Current ..... 300 A DCSP

Approved Service Gases
- Plasma ..... Air, N_2, H-35, N_2/H_2 Mixtures
- Shield ..... Air, N_2, CO_2,Ar

Min. Gas Supply Flow Requirements
- Shield ..... 200 cfh @ 85 psig (94 l/min. @ 6.0 BAR)
- Plasma ..... 240 cfh @ 80 psig (112 l/min. @ 5.6 BAR)

Length of Service Lines ..... 25 ft.or 50 ft. (7.6 m or 15.2 m)
Weight ..... 25 ft. (7.6m) - 16 lbs. (7.3 kg)
50 ft. (15.2m) - 28 lbs. (12.7 kg)
Max. Allowable Inlet Gas Pressure ..... 100 psig (6.9 BAR)
Start Gas Pressure ..... 30 psig (2.1 BAR)
Min. Water Supply Flow Requirements ..... 0.9 gpm @ 95 psig (3.4 l/min @ 6.6 BAR)
Max. Water Inlet Pressure ..... 120 psig (8.3 BAR)
Max. Water Temperature ..... 105° F (40° C)

Consoles

ESP-150, ESP-200 and DEUCE PACK 150

Ordering Information

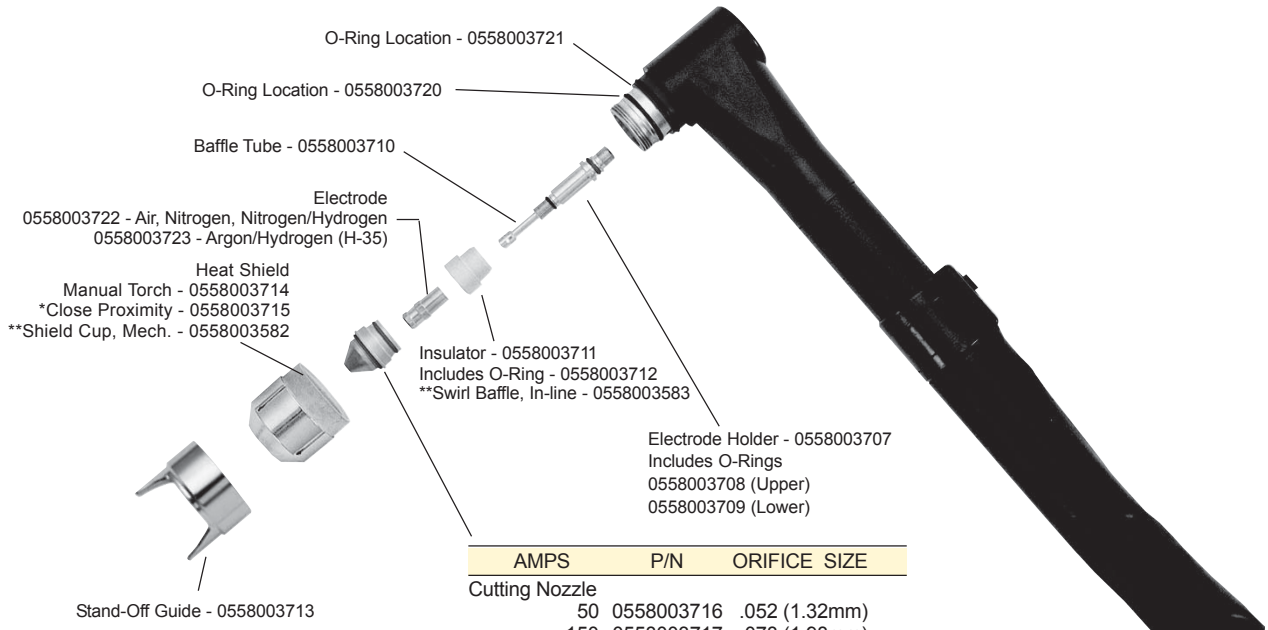
PT-26, 90°, 25-ft. (7.6m) line 0558004031
PT-26, 90°, 50-ft. (15.2m) line 0558004032
PT-26, 70°, 25-ft. (7.6m) line 0558002208
PT-26, 70°, 50-ft. (15.2m) line 0558002209
PT-26, IN-LINE, 25-ft. (7.6m) 0558002320
PT-26, IN-LINE, 50-ft.(15.2m) 0558002321

NOTE: IN-LINE torches have 2" (50.8mm) barrel diameter and comes without rack or torch holder.

Optional Accessories

Plasmit Torch Head Protector
For gouging 0558003797
25 ft. (7.6m) Leather Sheath*
Protects torch leads from abrasion and molten metal; particularly recommended for plasma gouging 0558002921
50 ft. (15.2m) Leather Sheath* 0558002922
Spare Parts Kit (Deuce Pack and ESP-200) 0558004030
Spare Parts Kit (150A ESP-150) 0558002864
Torch Holder, 2" (50.8mm) 0558002985
Torch Rigging Kit 0558003186
**Standard on manual torch.*

PT-26 Manual & In-Line Models



AMPS	P/N	ORIFICE SIZE
Cutting Nozzle		
50	0558003716	.052 (1.32mm)
150	0558003717	.078 (1.98mm)
200	0558003798	.089 (2.26mm)
300	0558003794	.104 (2.64mm)
Gouging Nozzle		
200	0558003718	.125 (3.18mm)
300	0558003795	.144 (3.66mm)

All include O-Rings 0558003724 (Upper)
0558003725 (Lower)

* *Close proximity Heat Shield. Optional for Manual Torch when cutting or gouging in close proximity of workpiece.*

** *These two items along with a baffle removal tool (0558003584) are shipped with all mechanized versions of this torch.*

Assembly of PT-26 Front End Parts

1.1 Description

The PT-26 is a dual gas, water cooled, manually operated torch with a 70° or 90° head designed for cutting and gouging with certain plasma arc packages. These packages include the ESP-150, ESP-200 and properly equipped Deuce Pack 150 Systems.

WARNING

The plasma arc cutting process employs high voltages. Contact with "live" parts of the torch and machine must be avoided. Also, the improper use of any of the gases employed can present a safety hazard. Before beginning operation of the PT-26 Torch, refer to the safety precautions and operating instructions packed with your power source package.

Using the torch on any unit not equipped with a mating safety interlock circuit will expose operator to unexpected high voltage.

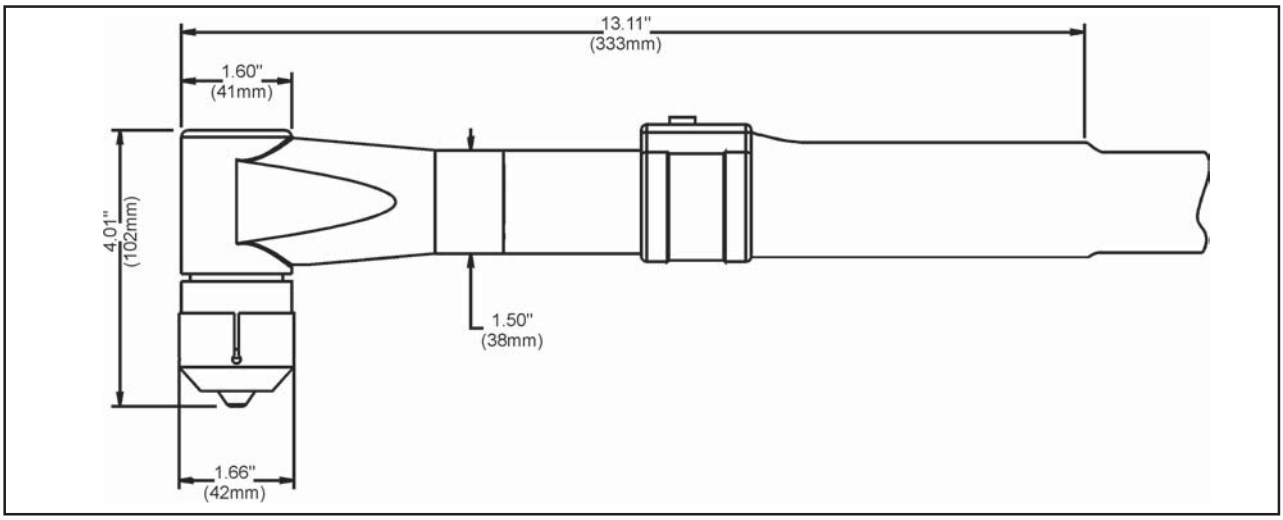


Figure 1-1 PT-26 Torch Dimensions

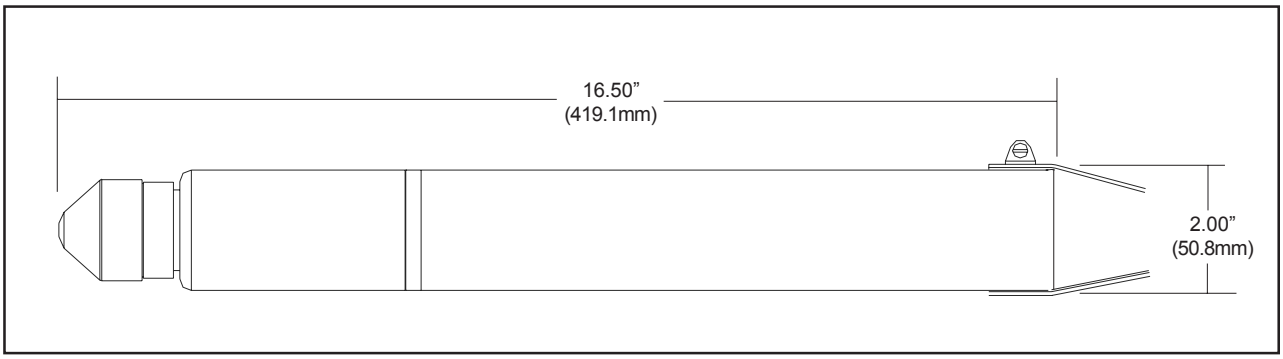


Figure 1-2 PT-26 In-line Torch Dimensions

2.1 TORCH TO POWER SOURCE CONNECTIONS

Consult your power source instruction literature to learn how to access the torch connections.

The order in which the torch connections can be made will vary with the power source used. Study your power source to determine the order which will best allow you to make the connections correctly with a wrench.

WARNING

Make sure power switch on console is in the OFF position and primary input power is deenergized.

WARNING

The PT-26 is designed to form a safe system with certain power sources which have means for detecting a loss of coolant flow returning from the torch and which will not energize the torch when such a loss of coolant is detected. The removal or loosening of the torch heat shield will cause such a coolant loss. DO NOT use the PT-26 on power sources which are not equipped with such a system.

The PT-26 torch uses a “C” sized left hand thread fitting for the negative terminal and coolant connection. Connect this fitting to the corresponding female fitting on the power source and tighten it firmly with a wrench. After tightening the fitting, slide the rubber boot (0558000793) on the power cable over the connection. The “B” sized right hand fitting is used to make the positive terminal and coolant connection. Tighten it firmly as well.

The plasma gas and shield gas connections are made with two “B” sized fittings, each with a different thread. Tighten them firmly with a wrench at the corresponding power source panel fitting.

The torch switch connection is made with the 5-pin plug on the torch switch lead. Insert the plug into the socket on the power source and twist the locking ring to secure it in place.

2.2 GAS SELECTION

The PT-26 is a dual gas torch, allowing for one gas to be used for plasma gas and another to be used for shielding the cut zone. Recommended combinations of gases are listed below.

CAUTION

Use only those gases listed as approved in this document (see Section 1.2). Do not use oxygen as shield or plasma gas as the torch may catch fire.

Air Plasma/Air Shield
Best overall combination for cut quality, cut speed and economy on mild steel, stainless steel and aluminum. This combination causes some surface nitrating at cut face and some surface oxidation of alloying elements on stainless steels. Always use clean, dry air. Moisture or oil in the air supply will reduce torch parts life.

Nitrogen Plasma/Air Shield
This combination provides improved parts life, especially for the electrode. Cut speeds will usually be slightly slower than with air plasma. It creates surface nitriding but provides cleaner cut face on stainless steels. Nitrogen or CO_2 may be substituted for cooling.

H-35 Plasma/Nitrogen Shield
This combination gives excellent parts life with minimum amount of cut surface contamination, providing excellent weldability. It is most often used for gouging on mild steel, aluminum, and stainless steel. It gives poor cut quality on mild steel, good cut quality on aluminum and stainless, particularly on thicker sizes.

40% Hydrogen - 60% Nitrogen Plasma/Air Shield
On aluminum only, gives increased speed and thickness capability. Poor performance on stainless and mild steel.

3.1 OPERATING PARAMETERS

Recommended Gas Pressures:

Start	30 psig (2.1 bar)
Plasma (Cutting)	50-70 psig (3.4-4.8 bar)
Plasma (Gouging)	40-45 psig (2.8-3.1 bar)
Shield	40-50 psig (2.8-3.4 bar)

Recommended Stand-off:
0.31" - 0.50" (7.9mm - 12.7mm)

Travel Speeds:
Travel speeds for the PT-26 are given in Figures 3-1 through 3-3.

To ensure optimum cutting performance and aid in troubleshooting any cut quality problems, please refer to the cutting parameters charts included in the Maintenance Troubleshooting subsection.

3.2 GAS CONNECTIONS

Refer to Section 1.2 for the list of approved service gases. Do not use gases which are not expressly approved for the PT-26 torch.

After the gases for the job have been selected, connect the gas supply hoses to the fittings at the back of the power source. Note that there may be two fittings for each gas. Use the fitting which matches your hose. Make sure that the fittings not used are plugged with the plug attached to the power source.

Note that the ESP-200 power source has a gas connection labeled “Start Gas”. This allows a different plasma gas type and pressure setting to be used for the plasma gas at the start of the cut. This is done to increase electrode life during some types of mechanized plasma cutting. The start gas most typically used in manual cutting is either the same gas as that used for the cutting/gouging plasma or nitrogen.

IMPORTANT! A gas supply MUST be supplied to the “Start Gas” connection at all times. If this is not done, the torch will be damaged. The start gas may be any of the approved Plasma gases listed in section 1.2.

3.3 ASSEMBLING FRONT END PARTS

WARNING

Make sure power switch on power source is in the OFF position and primary input power is deenergized. Failure to install front end parts properly can expose you to high voltage or fire.

Be sure:

- **All O-Rings are in place (torch head, nozzle, electrode holder)**
- **Electrode holder is tight**
- **Baffle tube is installed and tight**
- **Electrode is installed and tight**
- **Nozzle is installed**

Refer to figure 3.4 for the assembly of the front end parts into the torch head.

Inspect the electrode holder (0558003707) to make sure that both o-rings are in place. Thread the electrode holder into the torch head and tighten it firmly using a 0.19" (4.8mm) hex allen wrench. The holder must be tight, but avoid overtightening to the point of rounding-off the hex inside the holder.

Insert the baffle tube (0558003710) into the electrode holder and thread it into the torch head using the plastic hex allen wrench tool (0558000808). Take care not to overtighten the tube but make sure that it is secured.

Insert the insulator (0558003711) into the torch head. Make sure the o-ring is in place on the insulator so that the insulator will hold its place in the head.

Thread the electrode (0558003722 or 0558003723) onto the thread of the electrode holder and tighten it in place with the hex socket end of the plastic tool (0558000808).

Press the nozzle (see Assembly of PT-26 Front End Parts) into the front of the torch head. This will probably push the insulator further into the head. This is normal. Make sure that both o-rings are in place and that the nozzle seats against the torch head.

Thread the heat shield (0558003714) onto the torch head to retain the nozzle. The heat shield should be tightened as tight as possible by hand to prevent coolant leaks from the nozzle o-ring seal.

If the optional stand-off guide (0558003713) is to be used, install it onto the heat shield by pushing or twisting in a CLOCKWISE direction until it is fully seated on the shield.

IMPORTANT - Do not twist the stand-off guide in the counter-clockwise direction as this will loosen the heat shield.

PT-26 Steel Cutting Data

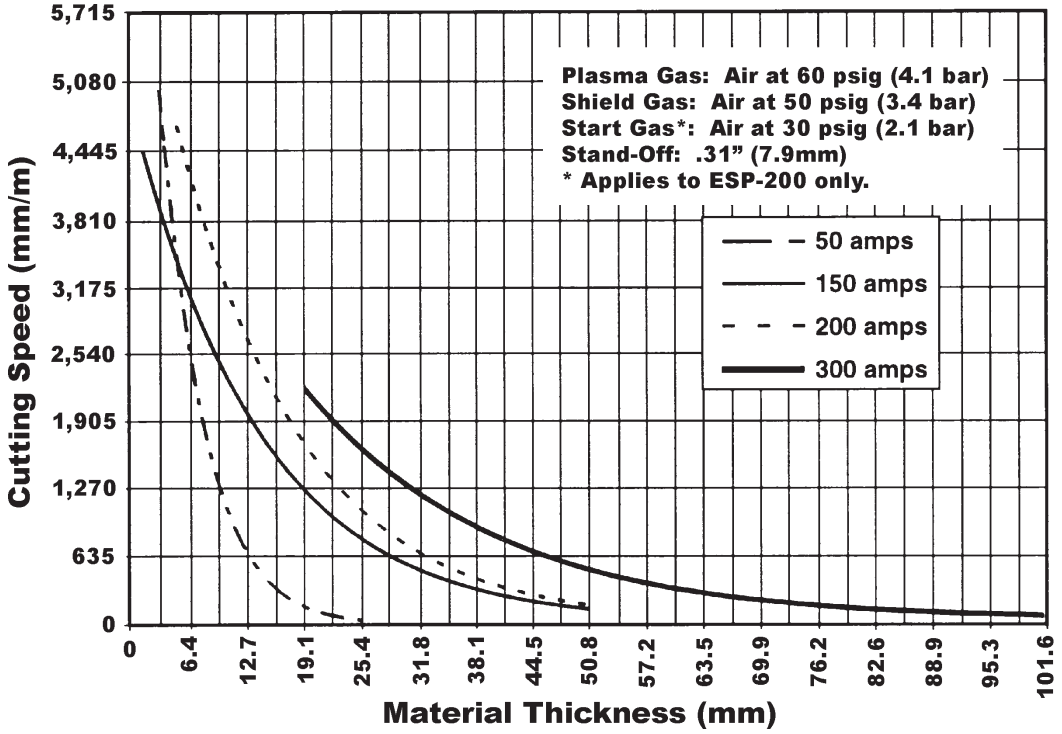


Figure 3-1

PT-26 Aluminum Cutting Data

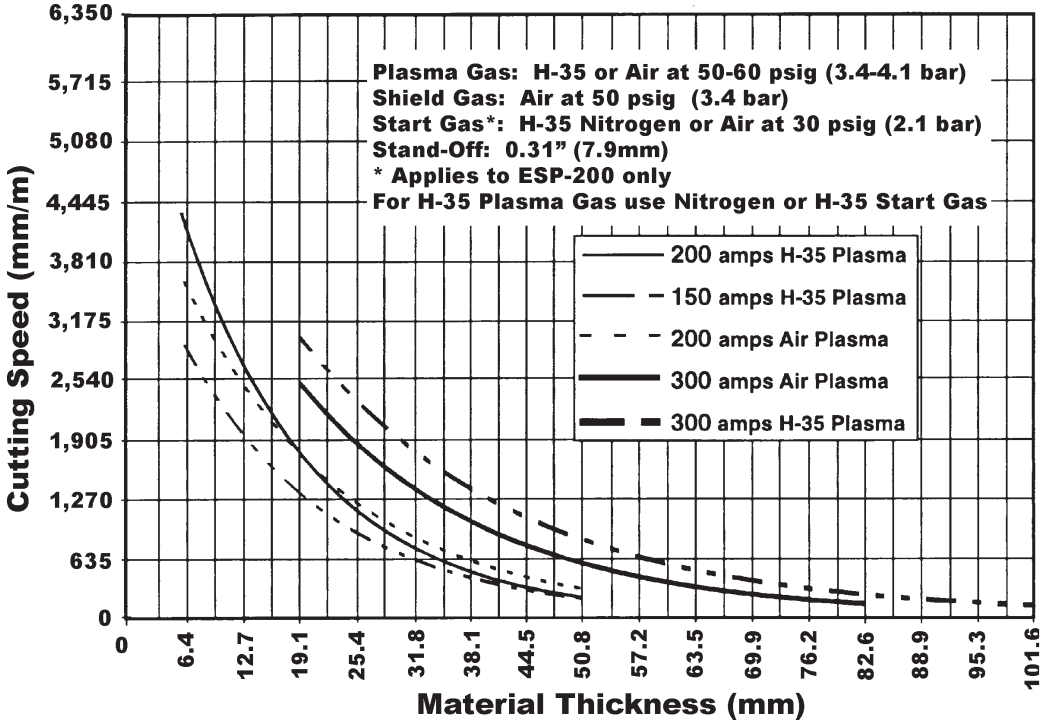


Figure 3-2

PT26 Stainless Steel Cutting Data

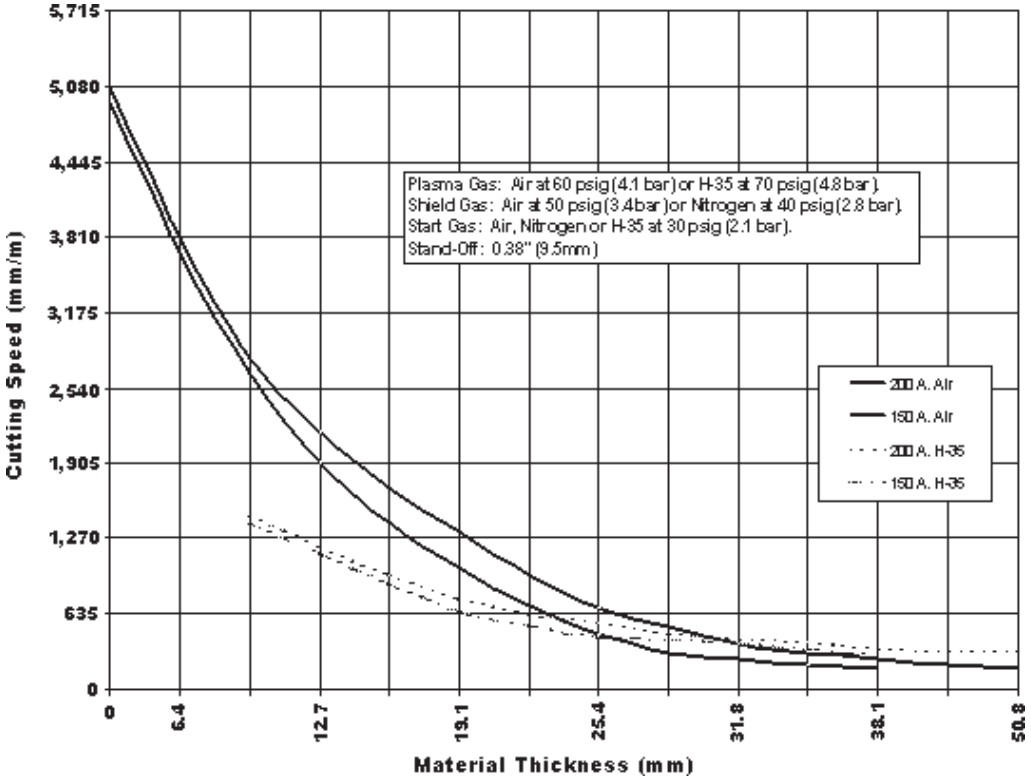


Figure 3-3

PT-26 300 Amp Stainless Steel

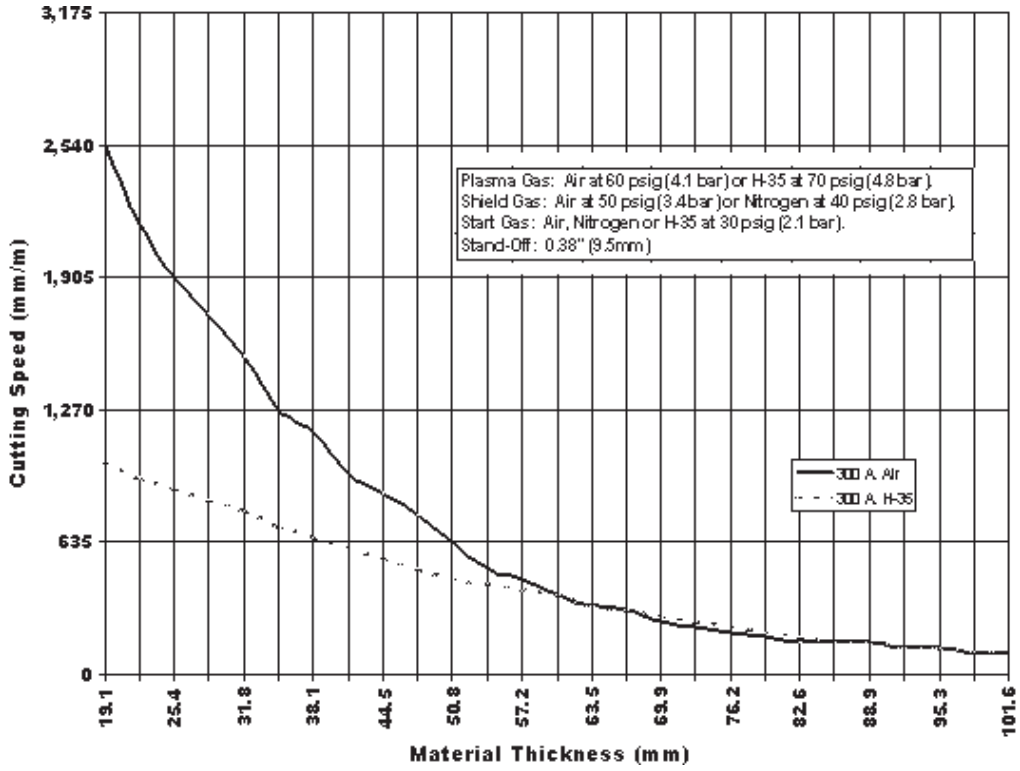


Figure 3-4

Follow all instructions in the appropriate booklet packed with your power source package. Do NOT install or attempt to operate this torch without following these instructions. The torch front end design contains components which, working together with power source circuitry, prevent the torch from being accidently energized when the heat shield is removed and the torch switch is closed.

3.4 STAND-OFF GUIDE

The stand-off guide (0558003713) provides the operator with the ability to hold a consistent stand-off by keeping the guide's feed in contact with the work.

Install the guide by sliding it onto the heatshield (heatshield should be in place on torch) with a clockwise twisting motion. Always install or adjust the guide on the shield with a clockwise twisting motion to prevent loosening of the shield.

If the fit of the stand-off guide is too tight on the shield, open the slot in the shield by twisting with a large flat blade screw driver. If the fit is too loose, close the slot by squeezing the guide in a bench wise.

3.5 LOOSE CONSUMABLES

Proper performance of the torch will rely on proper and secure installation of the front end consumable parts, particularly the electrode holder, baffle tube, electrode, and heat shield as well as the associated o-rings.

1. Make sure that the electrode holder is fully threaded into the torch head and securely tightened using a 0.19" (4.8mm) hex allen wrench. Use a metal allen wrench. The plastic wrench is not strong enough for this. Also make sure that the baffle tube is fully installed into the torch and seated against the electrode holder, use the plastic allen wrench (0558000808) for this.

2. Fully tighten the electrode onto the electrode holder using the hex socket end of the plastic wrench (0558000808).

3. Make sure that the nozzle is secured and its o-rings sealed by **fully** tightening the heat shield. "Fully" means as tightly as possible using the hands alone, do not use wrenches.

Improperly installed front end parts will cause coolant leaks which may cause poor cutting or gouging performance and may cause damage to the torch itself from internal arcing.

3.6 OPERATION

CAUTION

Wear the usual protective gloves, clothing, ear protection and helmet. Read Safety Precautions covered in the instruction manual packed with your power source.

The torch is now ready for cutting or gouging operation. Refer to the instructions for your power source for making any control adjustments.

WARNING

Never touch any parts forward of the torch handle (nozzle, heat shield, electrode, etc.) unless the power switch on the power source is in the OFF position.

1. Turn the gas test or gas mode switch to the test or set-up position.

   *NOTE: On the ESP-200, the "CUT" position is to set the cutting plasma gas. The "START/SHIELD" position is to set the starting plasma gas and the shield gas. If the starting plasma gas and the cutting plasma gas are to be the same **and** supplied by the same regulator, use the START/SHIELD position only, the CUT position is not needed.*

2. Turn the power switch to the ON position. Gas should now flow at the torch.
3. Adjust the gas pressure settings at the gas supply regulators to the values given in the operating parameters section. Turn the gas test or gas mode switch to the operating position. Gas Flow should now stop. Adjust the current control to the correct setting for the nozzle.
4. Bring the torch into the proper position for cutting or gouging. For cutting, the torch stand-off (nozzle-to-work distance) should be approximately 0.25" (6.4mm). If possible, start the cut from an edge on the workpiece. If piercing must be done, tilt the torch at an angle to deflect the molten metal away from the torch and operator until the pierce is complete, then bring the torch back to the vertical and begin the cut. For gouging, place the torch over the work at an angle of 35° to 45° from the horizontal.
5. Lower your protective helmet.
6. Push down and hold the torch switch button. The gas should start flowing. Two seconds later, the main contactor should close and the arc should transfer to the workpiece.

NOTE: Your power source may allow the preflow time to be extended longer than two seconds, usually up to four or five seconds. If, at the end of the preflow time, the pilot arc does not ignite, release the torch switch and check the gas pressure settings. If the pilot arc does ignite but does not transfer to the work, release the torch switch and check to see that the torch is in the proper distance from the work and that the work clamp is firmly connected to the work piece.

7. When cutting, maintain the torch stand-off at a distance of between 0.19" and 0.50" (4.8-12.7mm). When cutting thinner plates, the stand-off should be closer to the lower end of the range and it should be closer to the upper end of the range for thicker plates. Maintain a cutting speed which gives a cut of the desired quality and produces a stream of molten metal emitting from the bottom of the workpiece.
8. When gouging, maintain an angle and speed which causes the desired amount of metal to be removed on each pass. Maintain the torch angle so that all the molten metal is blown directly away from the torch, along the top surface of the plate or down the groove of the previous pass. Gouging at too steep an angle will cause molten metal to fly directly back at the torch.
9. If the main arc is lost during the cut (or gouge), the pilot arc will immediately reignite as long as the torch switch is depressed. At this time the torch should quickly be repositioned at the workpiece to re-establish the main arc or else the torch switch should be released.
10. The main arc will automatically extinguish at the end of the cut as the torch is moved away from the workpiece. The torch switch should be released immediately to keep the pilot arc from reigniting.
11. When cutting (or gouging) operations are completed, wait a few minutes before placing the power switch on the power source in the OFF position to allow the fan to remove heat from the unit. After this time, shut off the primary power at the main disconnect switch.

4.1 DISASSEMBLY OF FRONT END

WARNING

Make sure power switch on power source is in the OFF position and primary input power is deenergized.

If the stand-off guide is being used, remove it by twisting clockwise and pulling it from the heat shield.

Unscrew the heat shield and remove it from the torch. The nozzle should remain in the torch head. Some coolant leakage is normal as the shield is removed. Inspect the heat shield. There should be no signs of arcing anywhere inside the shield. The outer insulating jacket should not be severely worn or charred. Replace the shield if any of the above mentioned damage is found.

Pull the nozzle from the torch head and inspect it. The orifice should be round at both the entrance and the exit. Replace the nozzle if the orifice is oval shaped or damaged. The nozzle may have grey to black deposits on the inside surfaces. They may be cleaned with steel wool but care must be taken to remove all traces of the steel wool afterward.

Inspect the electrode. If it has a pit more than 0.062" (1.59mm) deep at its center, replace it.

Each time the electrode is replaced, one should inspect the electrode holder. There should be no signs of arcing and the o-rings should not be worn or damaged.

Inspect the insulator. If any signs of arcing are found, replace it.

Inspect the torch head o-rings. If they are worn or damaged, replace them. They will last longer if they are kept covered with a thin film of silicone lubricant (0558000443). Use just enough to make the o-ring appear wet or shiny but do not leave clumps of excess lubricant.

After all of the front end parts have been inspected and replaced as needed, reassemble the torch as described in the section “Assembling Front End Parts”.

4.2 GENERAL

Periodically check the heat shield, electrode holder assembly and insulator. If any of these parts are damaged or excessively worn, replace them.

Check the torch o-rings daily. If any o-ring has nicks, cuts or other damage, replace it. If it is dry, lubricate it with a thin film of lubricant, P/N 0558000443. If no drag, caused by the o-ring, is felt when installing the heat shield, replace the o-ring.

The torch cable sleeving should be inspected periodically. If any damage to the sleeving is found, inspect the torch power and pilot arc cables for damage. If gas leaks or damage of any kind are found, replace the components in question.

4.3 DIRT OR CONTAMINATION

Dirt or other contamination can cause premature failure of the PT-26 torch through internal arcing. To avoid this, users are instructed to do the following:

1. Insure that clean, dry, oil-free air is used for plasma and/or shield gas.
2. Avoid excessive use of the silicone o-ring grease on the torch o-rings. A thin film is sufficient.
3. Wipe the torch body insulator clean with a cloth before installing each fresh set of consumables. The ability of the insulator to resist arc tracking over its surface is reduced when dirt or other contamination is allowed to collect there.
4. When the torch is not in use, store it with a full set of front end parts installed. This will prevent dirt from collecting in the torch and will help protect the torch head in case it is accidentally dropped.

4.4 REMOVAL AND REPLACEMENT OF THE TORCH HEAD

Note the position of all components and tape locations before performing disassembly to ensure proper positioning of components and tape during reassembly. Refer to Figure 5.1.

1. Slide the flex support rearward, onto the cable sleeving until it is approximately 18" (457.2mm) to the rear of the handle.
2. Remove the tape near the end of the torch handle.
3. Slide the switch band and switch rearward and off the handle.
4. Slide the cable sleeving rearward.
5. Twist and pull the handle from the torch head and slide it rearward to expose the torch cable connections.
6. Using two wrenches at each connection, unthread the two torch connections. The wrench sizes required are 0.38" (9.5mm) and 0.44" (11.1mm).

7. Pull the torch head away from the cable assembly, including the piece of insulation attached. Position the new torch head and insulation back into the assembly.
8. Using two wrenches at each connection, tighten the two torch connections securely. The torque valve used a the factory for this step is 25-30 in/lbs (2.8-3.4 m-n).
9. Thread the handle back onto the torch head.
10. Slide the switch band and switch onto the handle until it is two (2) inches from the torch head. The red splice connections for the switch lead should be located just behind the handle end.
11. Pull the cable sleeving forward and tape in place behind the handle using vinyl electrical tape.
12. Slide the flex support back onto the handle until it contacts the switch band.

4.5 REMOVAL AND REPLACEMENT OF TORCH CABLES

1. Disconnect the torch cable assembly from the power source. Refer to your power source. Refer to your power source instruction booklet for detailed instructions.
2. Remove the torch head from the cable assembly as described in steps 1 through 7 of the previous section. Also remove the handle and flex support from the cable assembly.
3. Lay the cable assembly our straight. This should be done in an area about 1-1/2 times the length of the cables.
4. Using a piece of cord or sturdy twine about 1/2 the length of the torch cables, secure one end of the cord around all of the torch cables at the torch end and secure the other end of the cord to a stationary object.
5. Remove the tape from the cable sleeving at the power source end of the cables.
6. Push the switch out of the switch band and slide the handle, switch band and flex support to the far end of the cord used in step 4. Secure the power source end of the cables and pull the cable sleeving completely onto the cord.
7. Untie the cord from the cables and replace the damaged cables or cables.
8. Resecure the torch ends of the cables with the cord and pull the cable sleeving back onto the cables. Temporarily secure the sleeving to the cables near the torch head end with vinyl electrical tape.
9. Pull the flex support, switch band and handle back off the cord and onto the cable sleeving. Remove the tape.
10. Untie the cord from the cables and follow steps 7 through 12 of the previous section to secure the torch head to the cable assembly.
11. Secure the cable sleeving to the cables at the power source end with vinyl electrical tape.

4.6 REPLACEMENT OF FLEX SUPPORT, SWITCH BAND OR HANDLE.

If damage to the flex support, switch band or torch handle causes the need for replacement of any of these items, follow the procedure in the section “Removal and Replacement of the Torch head” and replace the part(s) in question during step 7 prior to reattaching the torch head. This process will be made easier by temporarily securing the sleeving to the cables with vinyl electrical tape.

4.7 REPLACEMENT OF TORCH SWITCH

1. Follow steps 1 through 3 of the section “Removal and Replacement of the Torch Head”.
2. Clip the black and white leads of the old switch as close as possible to the red splice connections. Strip 1/4" of insulation from the black and white leads.
3. Strip 0.25" (6.4mm) of insulation from the new switch leads (P/N 0558000818).
4. Attach the switch leads to the switch cable using the two new splice connections included with the replacement switch. Be sure to use a crimping tool made for crimping this type of splice connection.
5. Reverse steps 1 through 3 of the section “Removal and Replacement of the Torch Head” to finish.

4.8 MEASURING TORCH GAS FLOWS

If low gas flow is suspected of causing poor cutting performance or short consumable life, the flow can be checked by using Plasma Torch Flow Measuring Kit (P/N 0558000739). The kit includes a hand held rotameter (flowmeter) which will indicate the gas flow rate exiting the torch. The kit also includes a set of instructions which should be followed exactly to insure safe and accurate use of the rotameter. See form F14-391.

The PT-26’s air or nitrogen flow rates should be as follows:

Shield Flow:

ESP-150 & ESP-200 ..... 135 - 145cfh @ 50 psig
(63.7 - 68.4 l/m @ 3.4 bar)

Deuce Pack 150 ..... 215 - 225 cfh @ 50 psig
(101.5 - 106.2 l/m @ 3.4 bar)

Plasma Flow ..... 115 - 140 cfh @ 50 psig
(54.3 - 66.1 l/m @ 3.4 bar)

Total Flow:

ESP-150 & ESP-200 ..... 250 - 285 cfh @ 50 psig
(118.0 - 134.5 l/m @ 3.4 bar)

Deuce Pack 150 ..... 330 - 365 cfh @ 50 psig
(155.7 - 172.3 l/m @ 3.4 bar)

Measure the flow rates using a new 200 amp nozzle (0558003798), a new electrode and a new heat shield. Make sure that all parts are properly installed and that the torch o-ring (0558003721) is in good condition and not leaking. Measure the flows individually if possible, if not measure the total.

Gas flow rates less than those above indicate a restriction or a leak in the gas plumbing of the torch or power source.

4.9 TROUBLESHOOTING CUT QUALITY

To ensure optimum cutting performance and aid in troubleshooting any cut quality problems, please refer to the following cutting parameters charts.

PT-26 in-line torch cutting conditions:

Data taken with Swirl Baffle (0558003583) and Shield Cup (0558003582).

65 Amp data uses standard Heat Shield (0558003714) or Close Proximity Heat Shield (0558003715) in place of Shield Cup (0558003582) and uses a 50 Amp Nozzle (0558003716).

Table 4-1 65 Amp Cut Data

Material	Thickness inch (mm)	Standoff inch (mm)	Speed ipm (mm/m)	Start Gas and Pressure psig (bar)	Cut Gas and Pressure psig (bar)	Shield Gas and Pressure for ESP-150 and 200 psig (bar)
Carbon Steel	0.12 (3.2)	0.19 (4.8)	190 (4826)	Air 30 (2.1)	Air 60 (4.1)	Air 50 (3.4)
	0.25 (6.4)		100 (2540)			
	0.50 (12.7)	0.25 (6.4)	30 (762)			
Aluminum	0.12 (3.2)	0.19 (4.8)	50* (1270)			
	0.25 (6.4)		70 (1778)			
	0.50 (12.7)	0.25 (6.4)	20 (508)			
Stainless Steel	0.12 (3.2)	0.19 (4.8)	75 (1905)			
	0.25 (6.4)		50 (1270)			
	0.50 (12.7)	0.25 (6.4)	20 (508)			

* It is possible to go much faster, but 50 ipm (1270 mm/m) gives the best quality cut.

Table 4-2 150 Amp Cut Data

Material	Thickness inch (mm)	Standoff inch (mm)	Speed ipm (mm/m)	Start Gas and Pressure psig (bar)	Cut Gas and Pressure psig (bar)	Shield Gas and Pressure for ESP-150 and 200 psig (bar)
Carbon Steel	0.19 (4.8)	0.19 (4.8)	150 (3810)	Air / N^2 30 (2.1)	O^2 60 (4.1)	Air 60 (4.1)
	0.25 (6.4)		130 (3302)			
	0.38 (9.7)		80 (2032)			
	0.50 (12.7)		70 (1778)			
	0.62 (15.7)	0.25 (6.4)	50 (1270)			
	0.75 (19.1)		35 (889)			
	1.00 (25.4)		20 (508)			
	0.19 (4.8)	0.19 (4.8)	150 (3810)	Air 30 (2.1)	Air 60 (4.1)	
	0.25 (6.4)	0.25 (6.4)	130 (3302)			
	0.38 (9.7)		80 (2032)			
	0.50 (12.7)		70 (1778)			
	0.62 (15.7)		50 (1270)			
	0.75 (19.1)		35 (889)			
	1.00 (25.4)		20 (508)			
Aluminum	0.19 (4.8)	0.19 (4.8)	175 (4445)			
	0.25 (6.4)	0.25 (6.4)	130 (3302)			
	0.38 (9.7)		90 (2286)			
	0.50 (12.7)	0.31 (7.9)	70 (1778)			
	0.62 (15.7)		50 (1270)			
	0.75 (19.1)		35 (889)			
	1.00 (25.4)		25 (635)			
Stainless Steel	0.19 (4.8)	0.19 (4.8)	165 (4191)			
	0.25 (6.4)	0.25 (6.4)	125 (3175)			
	0.38 (9.7)		80 (2032)			
	0.50 (12.7)	0.31 (7.9)	50 (1270)			
	0.62 (15.7)	0.38 (9.7)	35 (889)			
	0.75 (19.1)		20 (508)			
	1.00 (25.4)		10 (254)			

Table 4-3 200 Amp Cut Data

Material	Thickness inch (mm)	Standoff inch (mm)	Speed ipm (mm/m)	Start Gas and Pressure psig (bar)	Cut Gas and Pressure psig (bar)	Shield Gas and Pressure for ESP-150 and 200 psig (bar)
Carbon Steel	0.25 (6.4)	0.19 (4.8)	150 (3810)	Air / N^2 30 (2.1)	O^2 55 (3.8)	Air 80 (5.5)
	0.38 (9.7)		95 (2413)			
	0.50 (12.7)		80 (2032)			
	0.62 (15.7)	0.25 (6.4)	65 (1651)			
	0.75 (19.1)		50 (1270)			Air 60 (4.1)
	1.00 (25.4)		35 (889)			
	0.25 (6.4)		135 (3429)	Air 30 (2.1)	Air 55 (3.8)	Air 80 (5.5)
	0.38 (9.7)		95 (2413)			
	0.50 (12.7)		85 (2159)			
	0.62 (15.7)		70 (1778)			
	0.75 (19.1)		55 (1397)			
	1.00 (25.4)		30 (762)			
Aluminum	0.25 (6.4)		130 (3302)			
	0.38 (9.7)		105 (2667)			
	0.50 (12.7)		85 (2159)			
	0.62 (15.7)	0.31 (7.9)	75 (1905)			
	0.75 (19.1)		60 (1524)			
	1.00 (25.4)	0.38 (9.7)	40 (1016)			
Stainless Steel	0.25 (6.4)	0.25 (6.4)	130 (3302)			
	0.38 (9.7)		115 (2921)			
	0.50 (12.7)		75 (1905)			
	0.62 (15.7)	0.38 (9.7)	65 (1651)			
	0.75 (19.1)		55 (1397)			
	1.00 (25.4)		20 (508)			

Table 4-4 300 Amp Cut Data

Material	Thickness inch (mm)	Standoff inch (mm)	Speed ipm (mm/m)	Start Gas and Pressure psig (bar)	Cut Gas and Pressure psig (bar)	Shield Gas and Flow cfh (l/m)
Carbon Steel	0.50 (12.7)	0.25 (6.4)	130 (3302)	Air / N^2 30 (2.1)	O^2 75 (5.2)	Air 210 (99.1)
	0.62 (15.7)		95 (2413)			
	0.75 (19.1)	0.31 (7.9)	80 (2032)			
	1.00 (25.4)		50 (1270)			
	1.50 (38.1)	0.38 (9.7)	20 (508)			
	2.00 (50.8)	0.50 (12.7)	10 (254)			
	0.50 (12.7)	0.31 (7.9)	120 (3048)		Air 75 (5.2)	
	0.62 (15.7)		90 (2286)			
	0.75 (19.1)		80 (2032)			
	1.00 (25.4)		55 (1397)			
	1.50 (38.1)	0.38 (9.7)	25 (635)			
	2.00 (50.8)	0.50 (12.7)	12 (305)			

5.1 REPLACEMENT PARTS

Replacement parts are keyed in Figure 3-3, (Front End Parts) and Figure 5-1. Order replacement parts by part number and part name as shown on the illustrations. DO NOT order by part number alone.

Parts may be ordered from your ESAB welding and cutting equipment distributor.

(1) Wrench ..... P/N 0558000808
Included in Spare Parts Kit
Flow Measuring Kit ..... P/N 0558000739
For checking gas flow through torch.

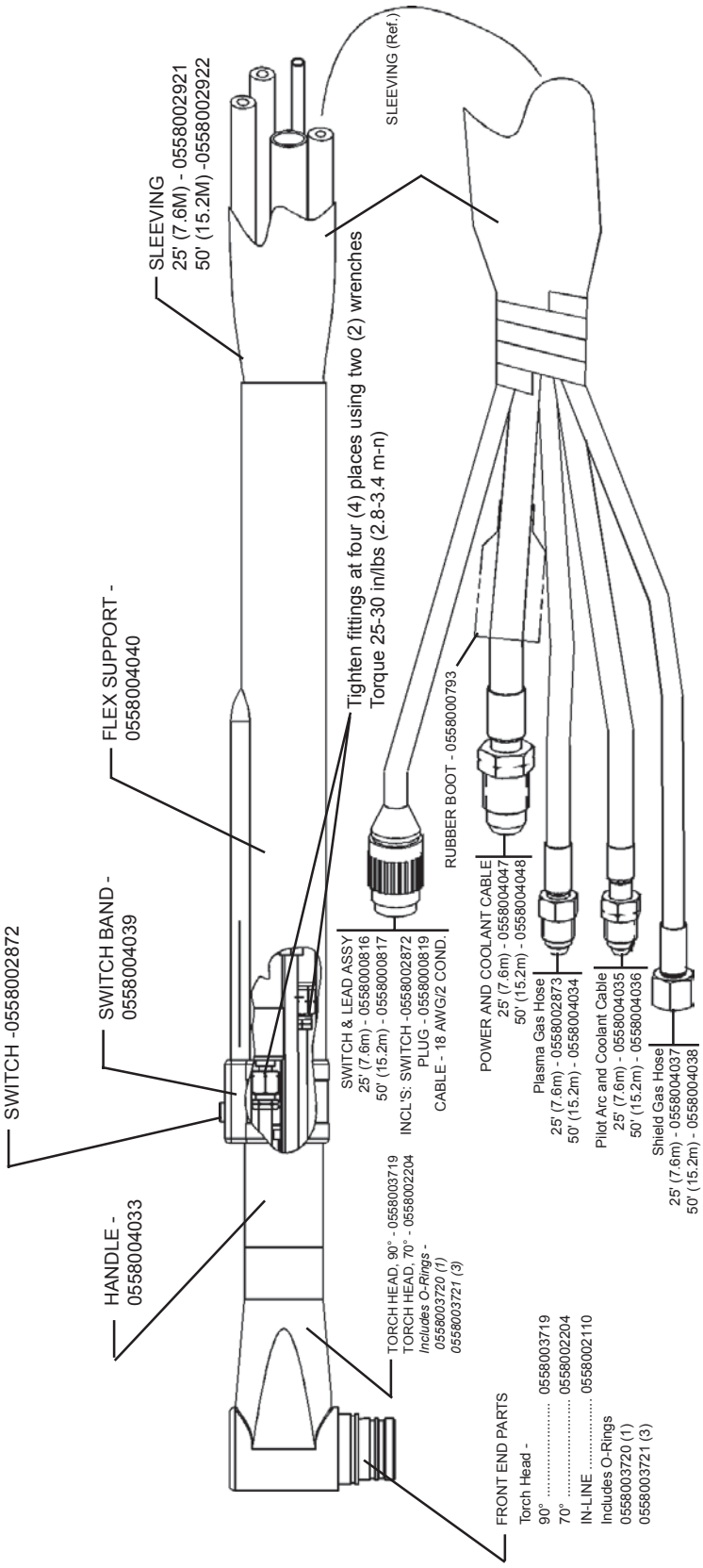


Figure 5-1. Replacement Parts - PT-26 Torch Assembly

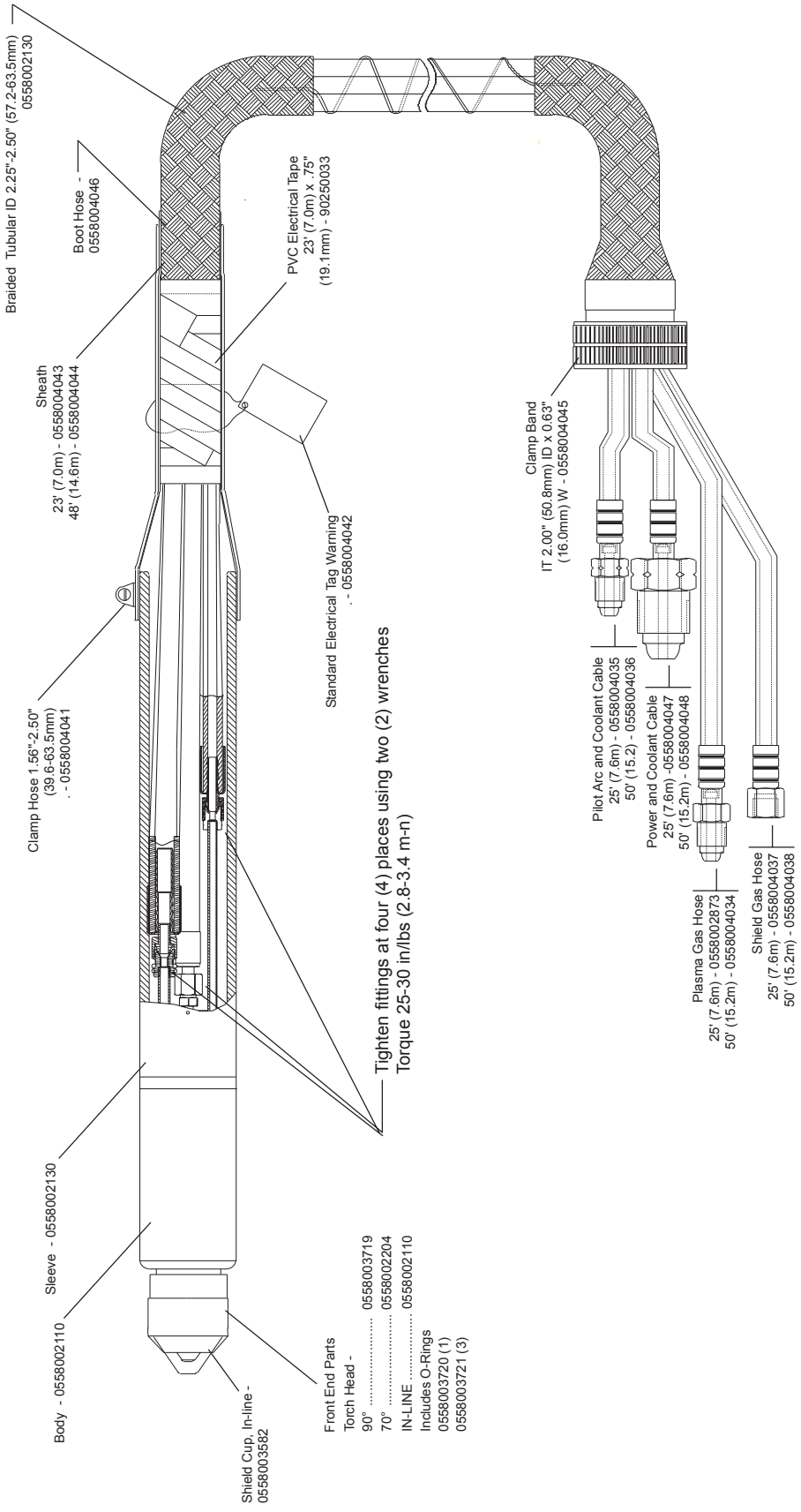


Figure 5-2. Replacement Parts - PT-26 In-Line AY Torch Assembly

NOTES

Revision History

Original release on February 21, 2003

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