

TORCH WIZARD[®]

AUTOMATIC ROBOTIC NOZZLE CLEANING STATION

Models EL-NCS-A-18-SC & EL-NCS-AC-18-SC

Operation Manual

**Installation, Maintenance &
Warranty Information**



WIRE WIZARD[®]
WELDING PRODUCTS

Ship Date

Serial #

ELCo Enterprises • 5750 Marathon Drive • Jackson, MI 49201 • (517) 782-8040 • Fax: (517) 782-8039

www.wire-wizard.com

TABLE OF CONTENTS

1.0 INTRODUCTION	3
1.1 Warranty	3
1.2 Model Information	3
1.3 Safety	4
2.0 INSTALLATION	4
2.1 Mounting the Torch Wizard	5
2.2 Pneumatic Connection	5
2.3 Electrical Connection	5
2.4 Adjusting V-Block	6
2.5 Reamer Adjustment	7
2.6 Anti-Spatter Dispensing	8
3.0 MAINTENANCE OF REAMER & WIRE CUTTER	9
4.0 ELECTRICAL SCHEMATIC & SEQUENCE OF OPERATIONS	10
5.0 PNEUMATIC SCHEMATIC	11
6.0 EXPLODED VIEWS w/BOM	12-14
6.1 Parts List	15
7.0 OPTIONAL EQUIPMENT, REAMER BLADES & ACCESSORIES	16

1.0 INTRODUCTION

This guide is designed to assist the user whose primary responsibility is to maintain and operate the Torch Wizard Nozzle Cleaning Station. This manual provides specific information on installation, safety, basic operation, and maintenance. **Please read, understand and follow all safety procedures.**

The Torch Wizard EL-NCS-A-18-SC and EL-NCS-AC-18-SC models offer fast & efficient cleaning cycle times and high production rates. The anti-spatter solution is applied via venturi style sprayer on the front of the reamer.

The complete sequence of the Torch Wizard Nozzle Cleaning Station must be started and controlled by a robot controller, programmable logic controller (PLC), or some other superior control system. See sequence of operations on page 9 for details.

In order to obtain the optimum cleaning performance, the interior of the nozzle should be sprayed with **Blue Magic[®]** or **Blue Chill[®]** Anti-Spatter after cleaning.

1.1 WARRANTY

TWO YEAR EXTENDED WARRANTY TERMS AND CONDITIONS: ELCo Enterprises, Inc. (hereinafter "ELCo") shall warrant the Torch Wizard Nozzle Cleaning Station (hereinafter "Torch Wizard") to be free of defects in material and/or workmanship for Two (2) Years from the date of shipment to the Buyer. This two year warranty requires the exclusive use of **Blue Magic[®]** or **Blue Chill[®]** anti-spatter (or other anti-spatter supplied by ELCo Enterprises), along with an **ELCo supplied Filter/Regulator/Lubricator (FRL) with auto-drain**. The warranty shall cover 100% of all parts and labor with the exception of misuse, abuse, neglect and typical consumables as determined by ELCo. **Failure to follow proper installation and maintenance procedures specified in this operation manual will void this warranty.** ELCo will, at its option, repair, replace or issue a credit for the value of the defective Torch Wizard. The use of anti-spatter agents other than **Blue Magic[®]** or **Blue Chill[®]** and non-ELCo parts and/or consumables with the Torch Wizard may damage or limit the performance of the Torch Wizard and will void this extended warranty on all components.

ONE YEAR LIMITED WARRANTY TERMS AND CONDITIONS: For units using anti-spatter agents other than Blue Magic[®] or Blue Chill[®], ELCo Enterprises, Inc. shall warrant the Torch Wizard Nozzle Cleaning Station to be free of defects in material and/or workmanship for One (1) Year from the date of shipment to the Buyer. The warranty shall cover 100% of all parts and labor with the exception of misuse, abuse, neglect and typical consumables as determined by ELCo. This limited warranty excludes all sprayer components, which are warranted to be

free from defects and/or workmanship for 90 days from the date of shipment to the buyer. **Failure to follow proper installation and maintenance procedures specified in this operation manual will void this warranty. This includes the use of a Filter/Regulator/Lubricator (FRL) without auto-drain functionality.** ELCo will, at its option, repair, replace or issue a credit for the value of the defective Torch Wizard.

Buyer accepts all responsibility for compliance with any/all Local, State and Federal Laws or Regulations including Regulations of Foreign Governments.

No equipment shall be returned to ELCo without a Return Authorization Number from ELCo. Upon evaluation and determination of warranty, replacements or repairs will be sent to the Buyer. If a replacement is needed immediately, a purchase order is required to cover the cost of the product until the warranty is determined.

ELCo's warranty is limited to replacing any goods that are proved to be defective and ELCo in no event shall have any liability for paying incidental or consequential damages including and without limitation, damages resulting in personal or bodily injury or death, or damages to, or loss of use of any property. Notwithstanding any of these terms and conditions, the warranties set forth shall apply in connection with any sales of goods, services or design by ELCo and are in lieu of all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.

1.2 MODEL INFORMATION

Model EL-NCS-A-18-SC

- Base Unit
- Integrated Anti-spatter Sprayer
- No Wire Cutter (may be added later if desired)

Model EL-NCS-AC-18-SC

- Base Unit
- Integrated Anti-spatter Sprayer
- Wire Cutter

1.3 SAFETY

The Torch Wizard Nozzle Cleaning Station is designed to be safe to operate, provided the user reads, understands and adheres to the safety precautions listed below. Failure to adhere to these precautions may result in personal injury and/or damage to the equipment.

1. Do not remove or deface any labels that are attached to the unit.
2. Ensure that all equipment in the area is disabled and locked out prior to entering the work zone where the Torch Wizard is located.
3. Ensure that all electrical and air power is disconnected prior to performing any maintenance on the Torch Wizard.
4. Keep hands and face away from clamp, reamer and spray operating space during both automatic and manual operation.
5. Ensure that all electrical and pneumatic connections comply with the codes relevant to the country and/or state where the Torch Wizard is installed.
6. Do not exceed the specified operating air pressure.
7. Ensure that there is no equipment (e.g. robot) in the Torch Wizard prior to shutting down the system.
8. Additional safety information can be found at the following websites:
<http://www.osha-slc.gov/SLTC/robotics/index.html>
<http://www.ansi.org>
<http://www.nfpa.org>

2.0 INSTALLATION

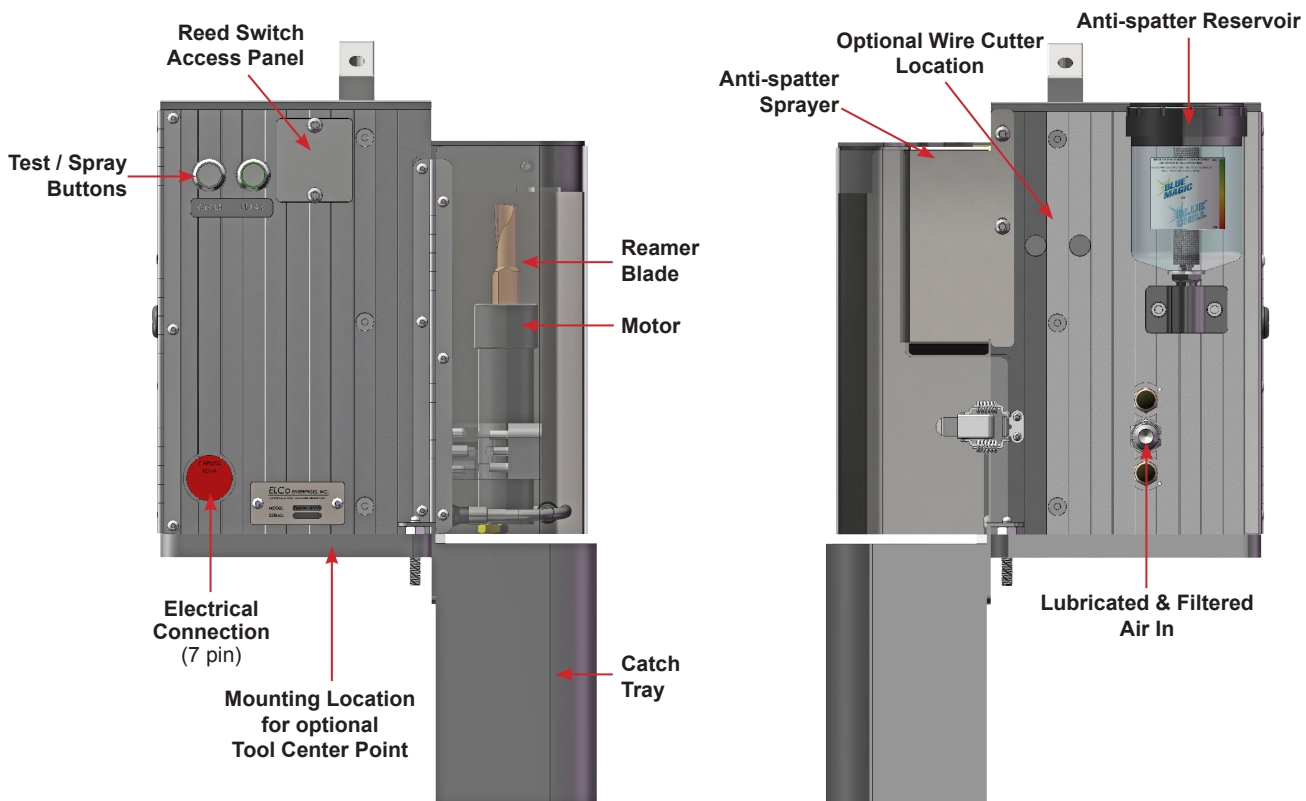


Figure 1: Torch Wizard Components with Anti-spatter Spray System (EL-NCS-A-18-SC shown)

2.1 MOUNTING THE TORCH WIZARD

Select a location within the robotic workcell that provides the robot with the shortest approach points. It is important to consider the robot work envelope and any fixed obstructions or potential interference.

- Mount the Torch Wizard to a stable platform that is parallel to the floor for best results (an optional stand is available). Use the (4) 11/32 mounting holes provided on base of the Torch Wizard to secure the unit to the platform.
- It is recommended that (4) M8 – 1.25 SHCS (Socket Head Cap Screws) are used to mount the Torch Wizard to the platform (the optional stand provides M8 – 1.25 tapped holes for mounting).

BOLT PATTERN (same for all models)

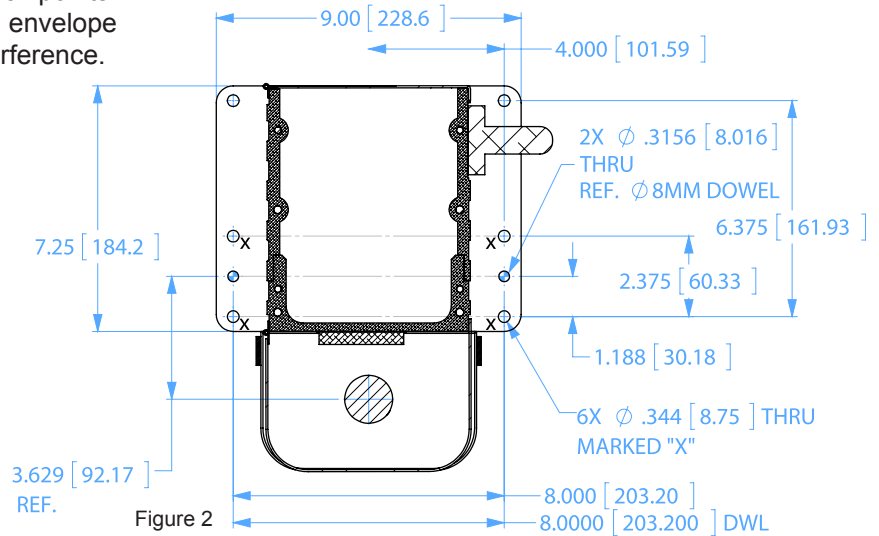


Figure 2

2.2 PNEUMATIC CONNECTION

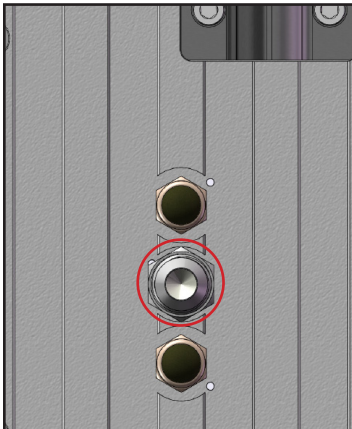


Figure 3

We recommend “Push-to Lock” style fittings on the Torch Wizard for supplying air to the unit. Use an air line with a 5/16” outside diameter to supply air to the Torch Wizard. There is just one location that supplies air to the unit. (Refer to figure 3 at left).

Air Supply Requirements:

Air **must** be filtered & regulated with a Filter/Regulator/Lubricator & **LUBRICATED**.

- Use an AIR SUPPLY LINE with an inside diameter of 1/2”, connect to the 1/4” N.P.T. female inlet located on the side of the Reamer.
- 80 psi recommended at 16 cfm (5.0-7.0 BAR at 450 lpm) at the Reamer during operation.
- **LUBRICATOR ADJUSTMENT:** Set the lubricator to deliver one drop of pneumatic oil for every two minutes of operation. DO NOT OVER-LUBRICATE.

Use of unfiltered, dirty air may result in damage to the unit and will void the warranty.

2.3 ELECTRICAL CONNECTION

The complete sequence of the Torch Wizard Nozzle Cleaning Station must be started and controlled by a robot controller, programmable logic controller (PLC), or other superior control system.

Electrical Draw: 0.5 Amps

See **Electrical Schematic on page 10** for detailed wiring information.

2.4 ADJUSTING THE V-BLOCK

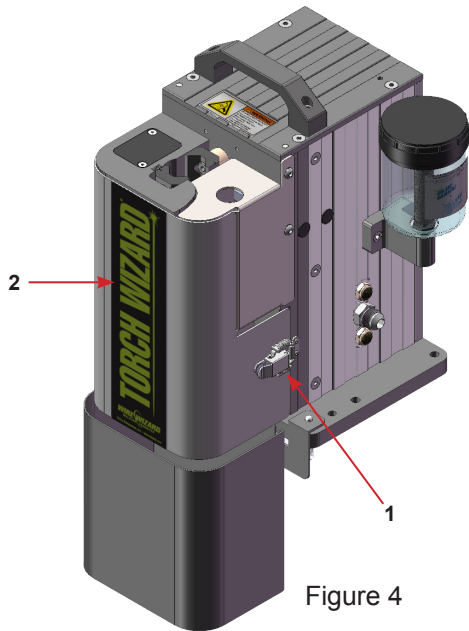


Figure 4

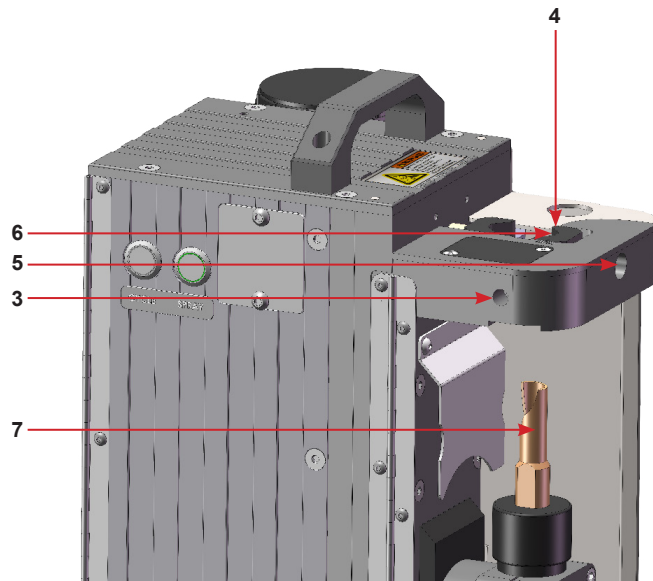
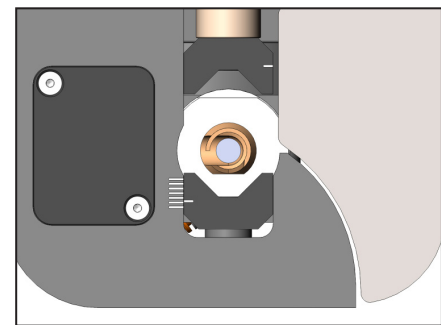


Figure 5

The Torch Wizard Nozzle Cleaning Station incorporates an adjustable v-block feature. This feature eliminates the need to replace the v-block when changing to different diameter gas nozzles. To adjust the v-block, follow the procedure below and refer to figures 4 & 5. **Ensure that there is no air pressure or electrical power to the unit before performing this procedure.**

1. Open the Stainless Steel Guard (2) by unlocking the latch.
2. Install the reamer blade (7). Use the slim profile wrench provided to hold the motor in place when securing the reamer blade.
3. Loosen Set Screw (3).
4. Loosen the Low Head Socket Head Cap Screw in the clamp (4).
5. Adjust the V-Block (6) using the Adjuster Screw (5) so that when the air motor is at its upper point, the reamer is centered in the gas nozzle. To check this, hold a gas nozzle in V-Block and raise the air motor slide by hand.
6. Tighten Low Head Socket Head Cap Screw (4).
7. Tighten Set Screw (3).
8. Replace the Stainless Steel Guard and Catch Tray (2) and tighten screws, or leave open if performing the initial setup and proceed to page 7.



The graphic above represents the approximate location of the v-block when set up for a gas nozzle with a 1 inch outside diameter.

2.5 REAMER ADJUSTMENT

In order to ensure adequate cleaning of the gas nozzle, it is essential that the correct reamer insertion depth is obtained.

The reamer insertion depth will vary based upon the nozzle, tip and diffuser on the torch. In general, the reamer can be inserted up until it is approximately 1/16" to 1/8" away from making contact with the diffuser (see example in Fig. 6-B). Removing the nozzle from the torch to ensure the proper depth and clearance from the diffuser is recommended. **It is imperative that the reamer not make contact with the gas diffuser as this will cause damage to both the reamer and the gas diffuser. The Torch Wizard is not designed to clean the contact tip or gas diffuser.**

To adjust the reamer depth, use the following procedure and refer to Figure 6: **(Ensure that there is no air pressure or electrical power to the unit before performing this procedure)**

1. Remove the Stainless Steel Guard. (refer to figure 4 and the procedure for adjusting the V-Block on pg 6).
2. With one hand, hold a gas nozzle in the V-Block at the position that will be used when programming the robot. With the other hand, raise the reamer and check the insertion depth of the reamer bit (1).
3. If the insertion depth is incorrect, loosen the Socket Head Cap Screws (2). Move the Air Motor (3) up or down to obtain the correct insertion depth. If the motor will not move, screw in the Jack Screws (4) to loosen the motor clamp.
4. Back out the Jack Screws (4) if necessary, and tighten the Socket Head Cap Screws (2). Repeat steps 1-3 until the correct insertion depth is obtained.

Note: The air motor on this reaming station has a max torque of 7.3 ft/lbs @ 90 psi at the motor.

POSITIONING ROBOT

The robot **must** be positioned such that the O.D. of the nozzle rests evenly against the V-Block. Failure to program the robot so that the nozzle rests against the v-block could result damage to the robot due to reactionary forces transmitted to the robot axes when the nozzle is clamped with the air cylinder.

See page 10 for the electrical schematic for your Torch Wizard model.

WARNING: Ensure that the adjustable v-block and the air motor have been correctly set prior to positioning the robot and running the Torch Wizard in the automatic mode. Refer to sections 2.4 Adjusting V-Block and 2.5 Adjusting Air Motor. **Failure to adjust these two items properly will result in damage to Torch Wizard and possibly the Robot.**

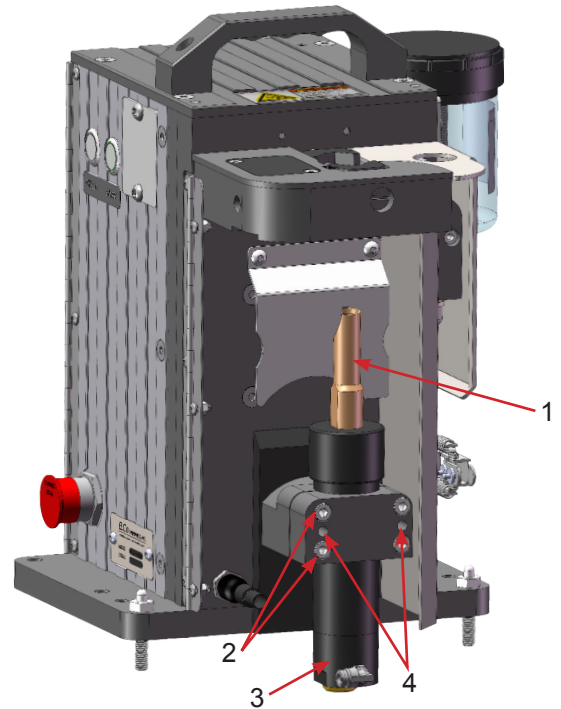


Figure 6

1/16"-1/8" (1.6-3.2mm)
between top of blade &
contact point on diffuser

Figure 6-B

Example of typical reamer insertion depth. End of blade should be approx. 1/16"-1/8" from the contact point on the diffuser. This location will vary based on the torch design.



2.6 ANTI-SPATTER DISPENSING

Anti-spatter Dispensing with the Reservoir

The Anti-spatter Reservoir dispensing option is shipped loose. On models ordered with the reservoir, simply attach the bowl to the connection point on the side of the unit. For all others, use the following procedure and refer to figure 7-A on how to attach the reservoir bottle to the Torch Wizard:

1. Open the back cover by loosening the three screws. Remove the Bulk-head Connector.
2. Attach Reservoir to Reaming Station using the two supplied bolts.
3. Insert the anti-spatter tube (the one that was connected to the bulkhead) into the fitting on the Reservoir assembly.
4. Reattach back cover and ensure all screws and fittings are tight.

Once the Reservoir has been secured, remove the Fill Cap and fill the Reservoir with **Blue Magic[®]** or **Blue Chill[®]** anti-spatter solution. **The use of other anti-spatters will void the warranty on sprayer components. This is due to the corrosiveness of many anti-spatters, which is not found in either Blue Magic[®] or Blue Chill[®].**

The anti-spatter liquid volume and air volume have been factory set and should be evaluated before making any adjustments to the system. You may also adjust the length of the spray time when programming the unit.

Priming the Anti-spatter Sprayer

After filling the reservoir the first time it is important that you prime the anti-spatter sprayer. Follow these steps to do so:

1. Connect the electrical cable to your power supply and turn off the air.
2. Open up the front cover.
3. Press and hold the Spray button on the side of the reamer until anti-spatter is coming out the spray block. You may need to run the cycle more than once to prime the sprayers.

Sprayer Adjustment & Maintenance

If the flow of anti-spatter is too low or too high, you may adjust the flow rate using the valve located in the back of the unit. To adjust, open the back cover and locate the valve shown at right. Turn the valve dial clockwise to decrease pressure in the anti-spatter line and counter-clockwise to increase the pressure. Press and hold the **Spray** button on the side of the unit to observe the anti-spatter flow adjustment.

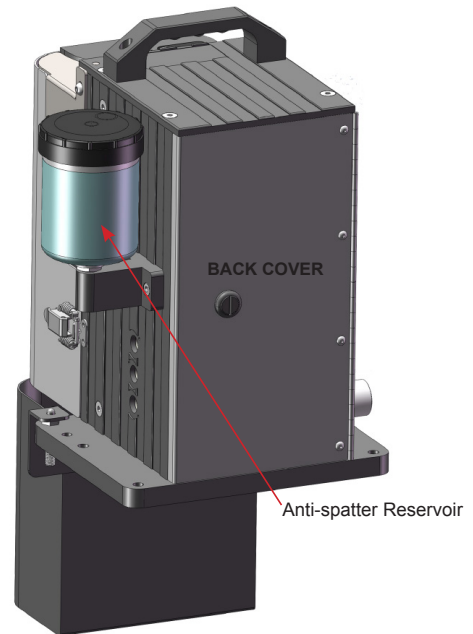


Figure 7-A Anti-spatter Reservoir Attachment

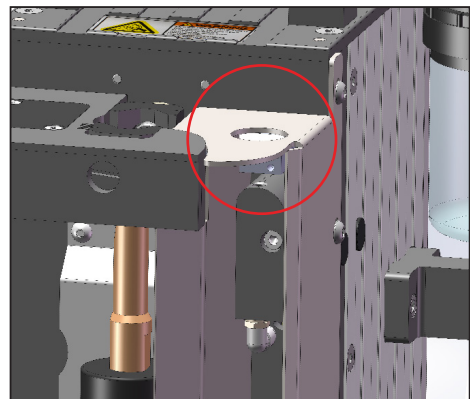


Figure 7-B Anti-spatter Spray Block



Anti-spatter Adjustment

3.0 MAINTENANCE OF CLEANING STATION & WIRE CUTTER

The Torch Wizard is for the most part, a low maintenance peripheral. However, maintenance of this unit should still be added to your preventive maintenance schedule. The following should be checked at regular intervals:

- Clean anti-spatter lines monthly (see pg. 8)
- Visually inspect unit for damage, especially mechanically stressed components
- Clean the filter
- Check that the air lines are free of leaks
- Clean anti-spatter hole in reamer blade
- Ensure the lubricator has lubricant and fill if necessary
- Check blade for chips or cracks, replace if necessary
- Check for loose parts
- Ensure the proper depth of blade in the nozzle
- Ensure the blade is not making contact with the diffuser
- Ensure all covers are in place before operating

Wire Cutter Maintenance (if applicable)

The wire cutter blade and back plate should be checked occasionally for wear. Replace blade (pt. #NCS-WCS-08) if worn. If the back plate is worn, it may be removed and flipped around to the other end. To disassemble and install a new blade, remove the two screws on the top of the cutter with a 4mm wrench. Remove the slide piece that rests on top of the blade and then remove the screw holding the blade with a 2.5mm wrench. Install the new blade with the angled side facing up as shown in Figure 9. Reassemble unit.

The wire back plate may be flipped by removing the screw on the bottom of the cutter with a 5mm wrench. Replacement blades and other wire cutter components are available from ELCo Enterprises.

The wire cutter should also be greased approximately once every 10,000 cycles with multi-purpose grease.

Wire Cutter Replacement Parts:

Cutting Blade	Pt. #NCS-WCS-19
Wire Back Plate	Pt. #NCS-WCS-16
Clamping Block	Pt. #NCS-WCS-07
Replacement Spring	Pt. #C0240-045-1000-S

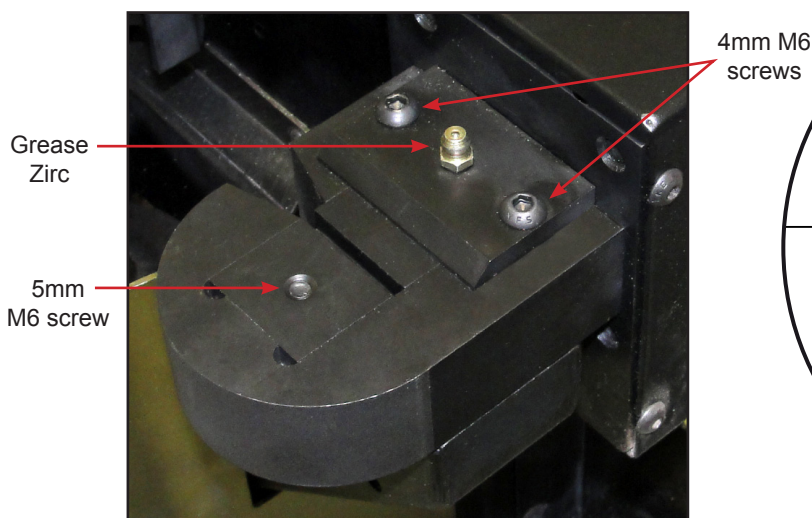


Figure 8 Wire Cutter, Exterior View

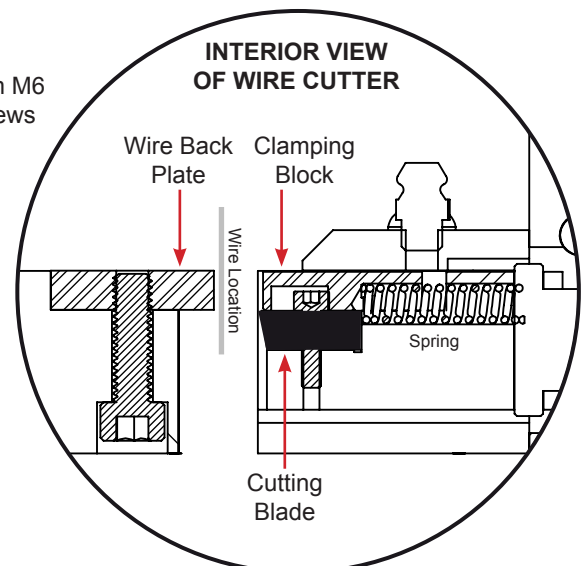
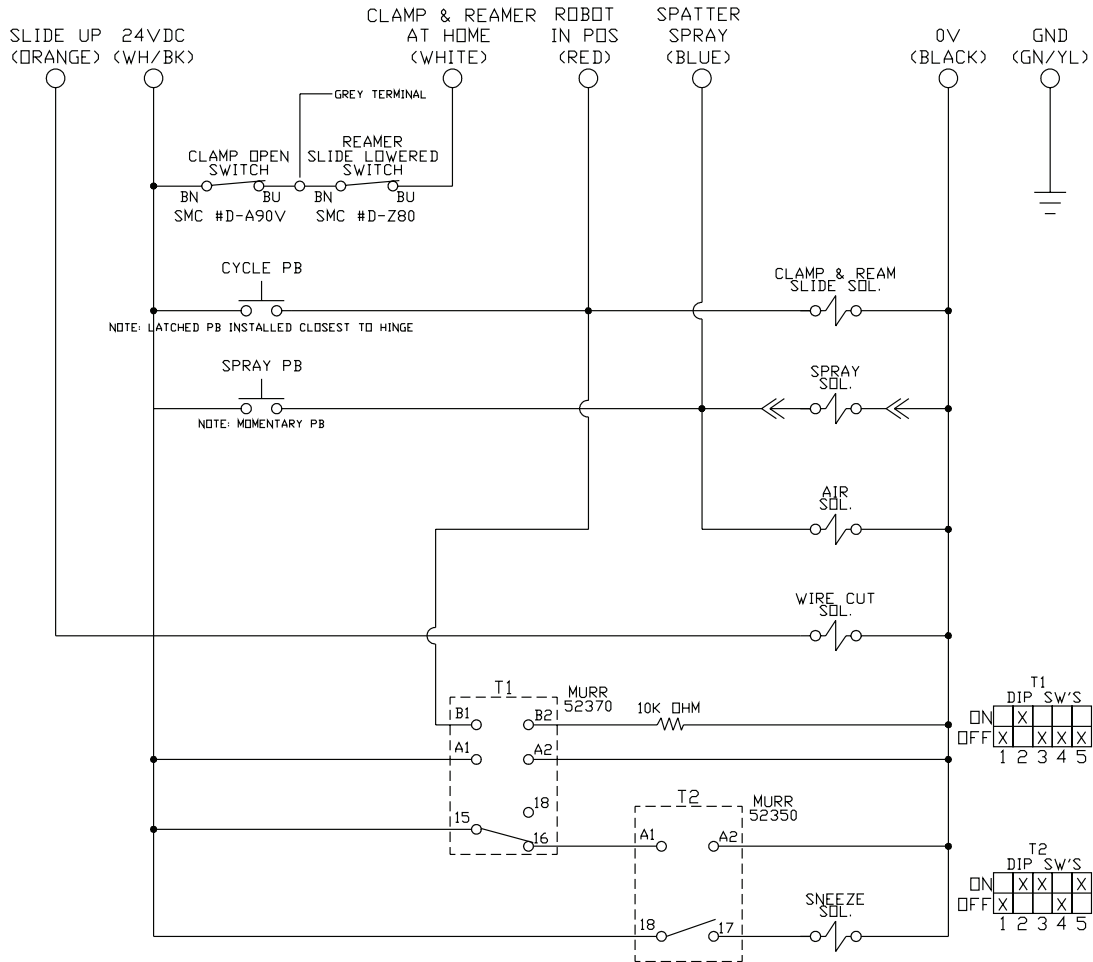


Figure 9 Wire Cutter, Interior View

4.0 ELECTRICAL SCHEMATIC (7-PIN)



SEQUENCE OF OPERATIONS

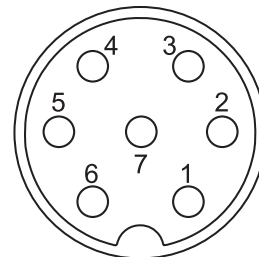
MODEL EL-NCS-A-18-SC

1. Verify signal at pin #3 is On (Home)
2. Energize pin #4 - Clamp On / Motor On / Slide Up
3. Verify signal at pin #3 is Off - Clamped
4. Short dwell for torch cleaning
5. Anti-spatter spray - pin #6 ceases (air continues to flow to purge potential debris from spray jet)
6. De-energize pin #4 - Unclamp / Motor Off / Slide Down
7. Verify signal at pin #3 is On (Home)
8. Cycle Complete

MODEL EL-NCS-AC-18-SC

(includes wire cutter)

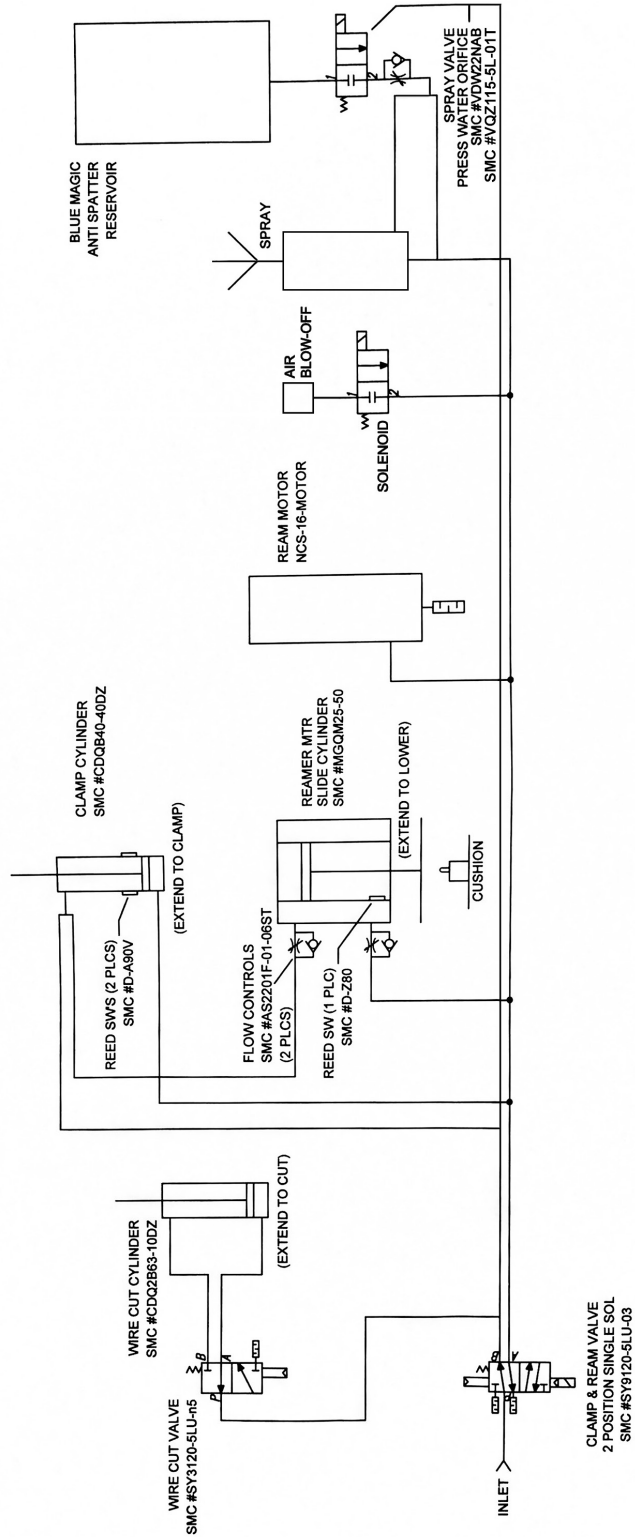
1. Verify signal at pin #3 is On (Home)
2. Energize pin #4 - Clamp On / Motor On / Slide Up.
3. Verify signal at pin #3 is Off - Clamped
4. Short dwell for torch cleaning
5. Anti-spatter spray- Pin #6 ceases (air continues to flow to purge potential debris from spray jet)
6. De-energize pin #4 - Motor Off / Unclamp / Slide Down
7. Verify signal at pin #3 is On (Home)
8. Wire Cutter at pin #5 begins (preset at approx. 3 seconds)
9. Wire Cutter advance & retract
10. Cycle Complete



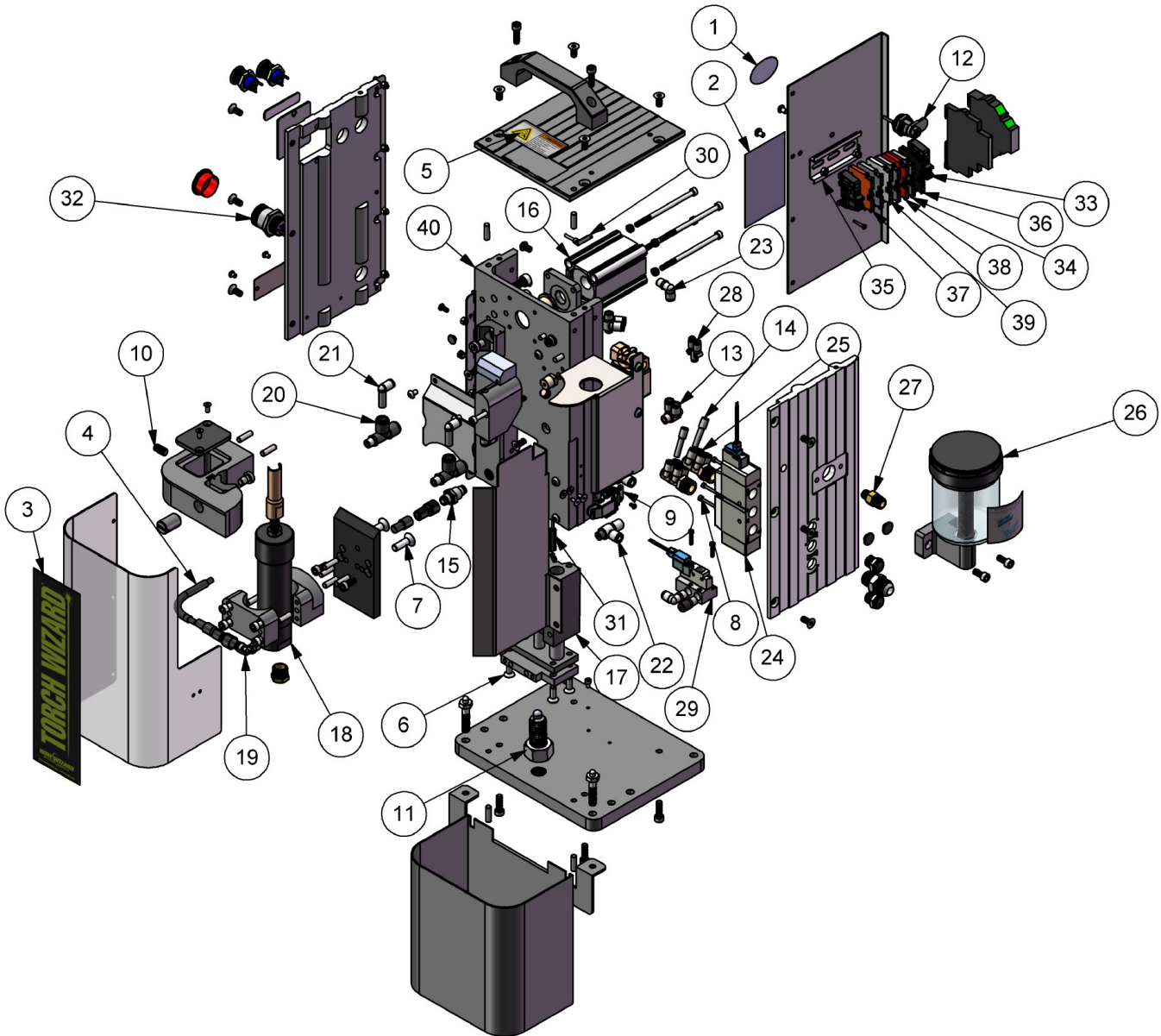
1. (WHT/BLK) - +24 VDC
2. (BLACK) - 0 VDC
3. (WHITE) - CLAMP AND REAM (HOME)
4. (RED) - ROBOT INPUT AND POS
5. (ORANGE) - WIRE CUT
6. (BLUE) - ANTI-SPATTER SPRAY
7. (GRN/YEL) - GROUND

Note: Wire Cutter not included on EL-NCS-A-18-SC model, however it may be added to the unit later if desired.

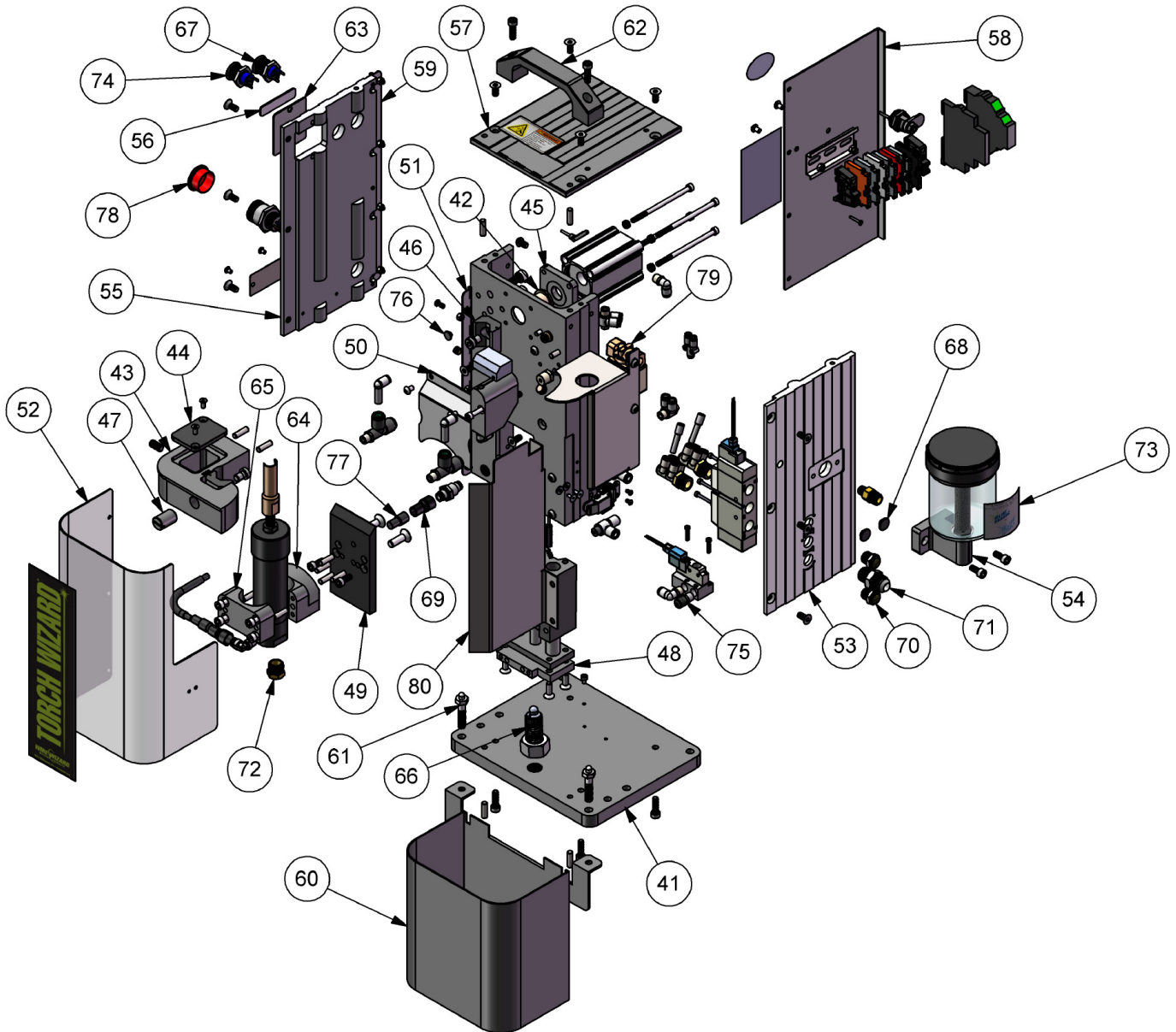
5.0 PNEUMATIC SCHEMATIC



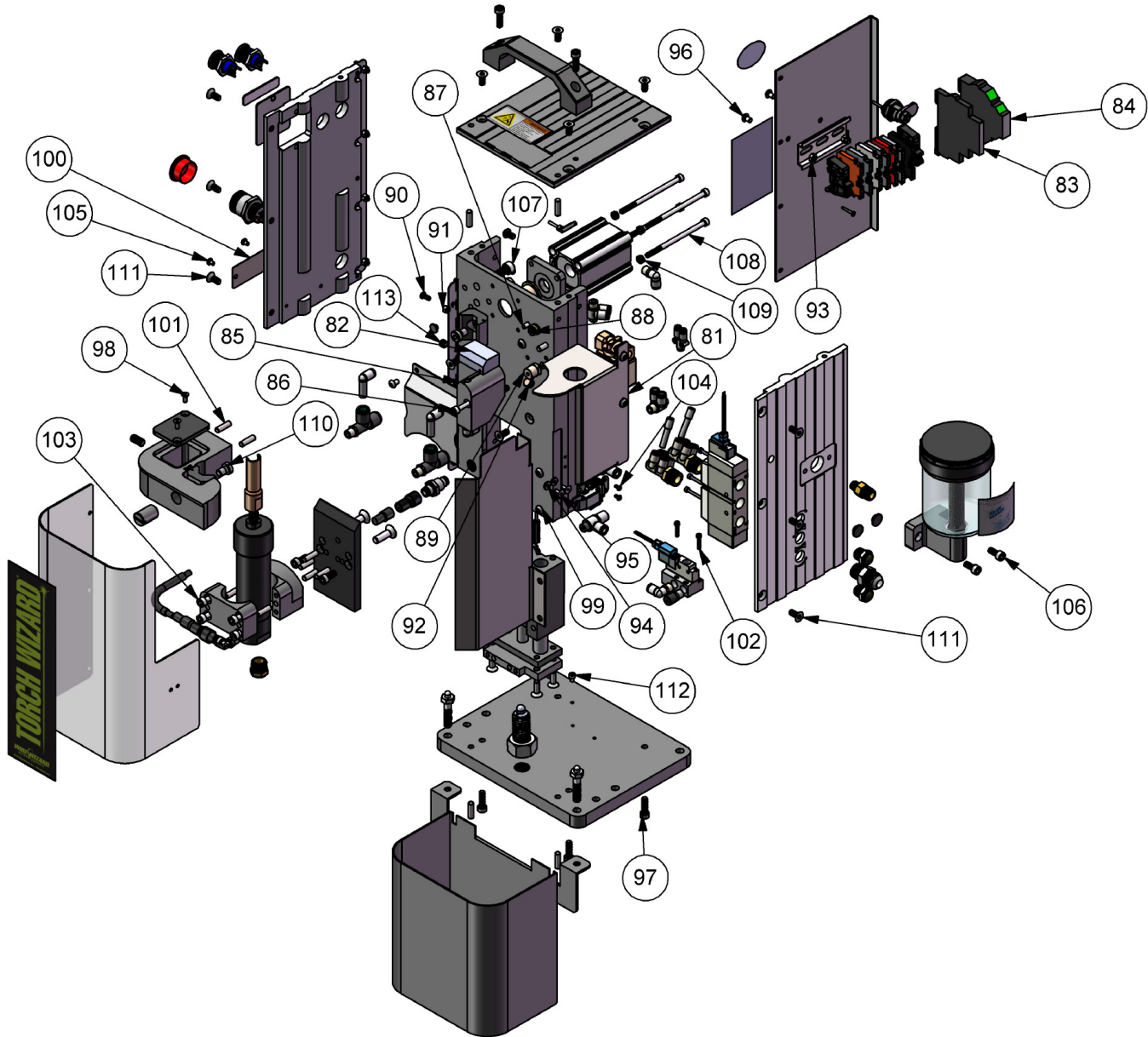
6.0 EXPLODED VIEW (1)



6.0 EXPLODED VIEW (2)



6.0 EXPLODED VIEW (3)



Operation Manual



6.1 PARTS LIST

PLEASE REFERENCE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS

ITEM NO.	PART NUMBER	QTY	ITEM NO.	PART NUMBER	QTY
1	USA STICKER	1	58	NCS-90	1
2	NCS-NOZZLE-DEPTH-WARN	1	59	NCS-46	1
3	NCS-TORCH WIZARD-LABEL	1	60	NCS-37	1
4	TRB0604B-100	1	61	NCS-81	2
5	H5161-L27WHP	1	62	5193A2	1
6	41391	4	63	NCS-102	1
7	41406	2	64	NCS-97	1
8	39511	3	65	NCS-98	1
9	1734A120	1	66	326046	1
10	39856	1	67	ULV4F2BSS335	1
11	36216	1	68	9688K124	2
12	NCS-82	1	69	IN-289-2006	2
13	KQ2Z06-01AS	2	70	W0970530053U	2
14	KQ2P-06	2	71	8/4/2404	1
15	KQB2E06-00	1	72	MOTOR-MUFFLER	1
16	CDQ2B40-40DZ	1	73	NCS-BM-BC-DECAL	1
17	MGQM25-50	1	74	NCS-GPBL	1
18	NCS-16-MOTOR	1	75	AN10-01	1
19	KQB2L06-01S	1	76	9688K221	1
20	KRY08-01S	2	77	74965K65	2
21	KQ2L06-08A	2	78	EC-16	1
22	AS2201F-01-06ST	2	79	VX212CAB	1
23	KQ2L06-01AS	3	80	NCS-106	1
24	SY9120-5LU-03	1	81	NCS-87-1	1
25	KQ2ZD06-03AS	2	82	NCS-107	1
26	M476-RP	1	83	52300	1
27	123-4-2	1	84	6652370	1
28	KQ2U04-00A	1	85	NCS-50-3	1
29	VQZ115-5L1-01T	1	86	35908	1
30	D-A90V	1	87	35897	1
31	D-Z80	1	88	KQ2S06-U01A	1
32	MIN-7MR2-ZZ-18	1	89	KQ2H06-02A	1
33	CA702	2	90	M4-.7 X 10 BHCS ZINC	13
34	CX2.5	3	91	40147	7
35	2511120-75CE	1	92	109AL-02	1
36	CX2.5-BL	1	93	40151	2
37	CX2.5-O	1	94	41451	2
38	CX2.5-R	1	95	41212	2
39	CX2.5-W	1	96	41307	4
40	NCS-83-AVBC-18B	1	97	35918	6
41	NCS-93	1	98	41363	2
42	5448T21	1	99	41317	7
43	NCS-32	1	100	EL-NCS-A-18-SC-SERIAL TAG	1
44	NCS-41	1	101	40059	13
45	NCS-45	1	102	35867	2
46	NCS-24	2	103	35921	4
47	NCS-39	1	104	41293	2
48	NCS-31	1	105	41299	2
49	NCS-34	1	106	35915	4
50	NCS-42	1	107	35934	2
51	NCS-47	1	108	41705	4
52	NCS-86	1	109	24766	8
53	NCS-85	1	110	90597	2
54	NCS-43	1	111	41389	14
55	NCS-27	1	112	39522	1
56	NCS-TAG-1	1	113	50785K267	1
57	NCS-29	1			

Wire Cutter Replacement Parts:

Cutting Blade	Pt. #NCS-WCS-19	Clamping Block	Pt. #NCS-WCS-07
Wire Back Plate	Pt. #NCS-WCS-16	Replacement Spring	Pt. #C0240-045-1000-S

NOTE: Wire cutter not included on EL-NCS-A-18-SC model

Rev. 4/22/19

7.0 OPTIONAL COMPONENTS & ACCESSORIES

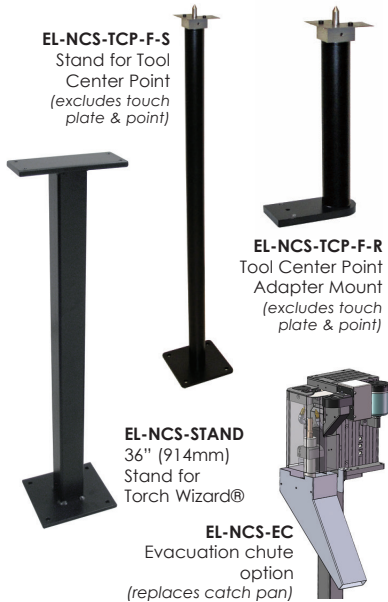
REAMING BLADES & ACCESSORIES



TITANIUM NITRIDE
TiN Coated for Maximum Durability

SINGLE FLUTE REAMER BLADE DOUBLE FLUTE REAMER BLADE

EL-NCS-TB
Testing and Diagnostic Box for fine tuning and easy setup.



EL-NCS-TCP-F-S
Stand for Tool Center Point (excludes touch plate & point)

EL-NCS-TCP-F-R
Tool Center Point Adapter Mount (excludes touch plate & point)

EL-NCS-STAND
36" (914mm) Stand for Torch Wizard®

EL-NCS-EC
Evacuation chute option (replaces catch pan)

Reduce downtime & cost by using a multi-station bulk anti-spatter dispensing system



DMK
Drum Manifold Kit

5GMK
5 Gallon Manifold Kit

TORCH WIZARD® CLEANING STATION PARTS & ACCESSORIES

ITEM	PART NO.
Reaming Station w/integrated anti-spatter spray (7-pin unit)	EL-NCS-A-18-SC
Reaming Station w/integrated anti-spatter spray & wire cutter (7-pin unit)	EL-NCS-AC-18-SC
Reaming Station w/integrated anti-spatter spray (5-pin unit)	EL-NCS-A-16-D
Reaming Station w/integrated anti-spatter spray & wire cutter (5-pin unit)	EL-NCS-AC-16-D
36" (914mm) Stand (custom heights available) for EL-NCS models	EL-NCS-STAND
Filter/Regulator/Lubricator	EL-NCS-FRL-14
Testing and Diagnostic Box for EL-NCS A/AC-16 Models	EL-NCS-TB
Stand for Tool Center Point - 44.9" H (1141mm) from base to point	EL-NCS-TCP-F-S
Tool Center Point Mount (attaches to reaming station stand)	EL-NCS-TCP-F-R
Integrated Wire Cutter (included on AC & ACD models)	EL-NCS-WCS-12
Stand Alone Wire Cutter	EL-NCS-WCS-SA-12
Evacuation Chute for High Volume Applications (replaces catch pan)	EL-NCS-EC
Compressed Air Sprayer (inc. hose, fitting & blow gun) for clearing out debris	EL-NCS-CH
7 Pin, 20 ft Power/Control Cable (for EL-NCS-A-18-SC and AC-16 models)	EL-NCS-CC7-20-3

TORCH WIZARD® REAMER BLADES

ITEM	DIA	FLUTES	THREAD	HEIGHT	PART NO.
Reamer Blade	13mm	2	Female	2.558"	EL-NCS-13MM
Reamer Blade	13mm	1	Female	2.687"	EL-NCS-TL-13MMF
Reamer Blade	13mm	1	Female	2.433"	EL-NCS-TS-13MMF
Reamer Blade	15mm	2	Female	2.558"	EL-NCS-15MM
Reamer Blade ⚡	1/2"	2	Female	2.558"	EL-NCS-500
Reamer Blade ⚡	1/2"	1	Female	2.687"	EL-NCS-TL-50F
Reamer Blade ⚡	1/2"	1	Female	2.433"	EL-NCS-TS-50F
Reamer Blade ⚡	5/8"	2	Female	2.558"	EL-NCS-625
Reamer Blade ⚡	5/8"	1	Female	2.687"	EL-NCS-TL-62F
Reamer Blade ⚡	5/8"	1	Female	2.433"	EL-NCS-TS-62F
Reamer Blade ⚡	3/4"	2	Female	2.558"	EL-NCS-750

⚡ Compatible with PowerBall® Welding Consumables

Blue Magic® Anti-spatter

ITEM	PART NO.
32 OZ Spray Bottle	EAS1000-C32
1 GAL Bottle	EAS1000-C1
5 GAL Container	EAS1000-C5
55 GAL Drum	EAS1000-C
5 GAL Concentrate	EAS1000-C-CON

Blue Chill® Anti-spatter

ITEM	PART NO.
32 OZ Spray Bottle	EAS1000-BC32
1 GAL Bottle	EAS1000-BC1
5 GAL Container	EAS1000-BC5
55 GAL Drum	EAS1000-BC

20 ft (7.6 m) power/control cable included. The reamer bit required is based on the I.D. of the gas nozzle being used.

ELCo Enterprises, Inc.

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