ARCAIR®

AN ESAB® BRAND



INDUSTRIAL CUTTING AND GOUGING EQUIPMENT

esab.com

MANUAL GOUGING
TORCH & CABLE ASSEMBLIES

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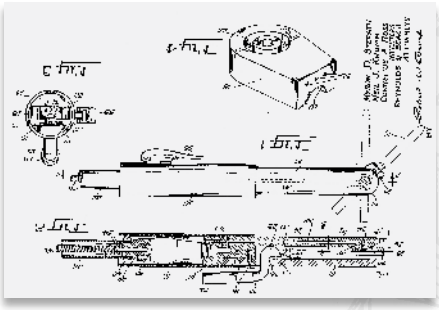
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This information is accurate to the best of our knowledge at the time of printing and is subject to change at any time at ESAB’s sole discretion.

















1949
- Myron Stepath invents CAC-A cutting and gouging process.
- Stepath founds Arcair Co.
- Introduces G-3 cutting and gouging torch.

1956
Introduces H-5 cutting and gouging torch.

1961
Arcair relocates manufacturing to Lancaster, Ohio.

1968
Introduces K-3 cutting and gouging torch.

1972
Introduces Underwater Cutting and Welding Torch.

1974
Myron Stepath retires.

ARCAIR IS SYNONYMOUS WITH **CARBON ARC GOUGING**













1980s SLICE® torch introduced, allowing for portable and quick cutting solutions for fire and rescue operations.

1983 Introduces K4000® cutting and gouging torch.

1989 Arcair relocated to Wichita, Kansas; combines manufacturing with Tweco.

2004 Arcair relocates to Denton, Texas combines manufacturing with Victor.

2011 Introduces Arcair-Matic® N7500 Automated Gouging System.

2014 Arcair becomes An ESAB brand

GOUGING TORCHES
FEATURES & BENEFITS

IMPROVED TORCH AIR FLOW
- More efficient use of air supply. Improved metal removal.

FOUR HOLE HEAD ASSEMBLY
- Optimizes air flow to the arc. Efficiently cleans slag from groove edge.

AIR ASSIST POSITIVE AIR SHUT-OFF
- Minimizes air supply unit cycling on and off. Allows torch usage when air supply is marginal.

IMPROVED CABLE ELECTRICAL CONDUCTION
- Improves cable service life. Decreases heat build up in cable and torch.

SUPERIOR OUTER CABLE COVER
- Durable cover for improved cable life in a harsh environment. Resists breakdown due to exposure to heat produced by gouging.

INSULATED CONNECTION BOOT & HOOK-UP KIT
- Makes for easy torch hook-up. Virtually eliminates the possibility of arcing when contacting electrically hot parts.



Angle-Arc®
Gouging Torches



Straight Handle
Gouging Torches



Tri-Arc®
Gouging Torches

THE NEW CARBON-ARC TORCH CABLE "BOOT" DESIGN

FEATURES & BENEFITS

- **Patented two-piece boot design**
  Molded from a hard nylon reinforced fiber polymer made to withstand the substantial abuse in shop and field applications
- **Helps prevent accidental arcing**
  No chance of the “boot” pulling away from the power connection as seen with prior “boot” design
- **Ease of replacement in the field**
  Threaded screws holds the two halves together and can be loosened with a standard straight blade screwdriver
- **Available in two (2) different molded “boot” housing configurations**
  Conventional Boot (Part No. 94105032)
  – Accepts one 120 mm² welding cable from the power supply and one 19 mm diameter air hose assembly providing current and compressed air
  Quick-Connect Hook-Up Kit (Part No. 94463046)
  – Twist lock-style power connection and air hose extending from the rear of the torch cable. This option allows the operator to connect or disconnect the incoming power lead and air line quickly and easily



Patent No. D708,240 S

THE “BEST” JUST GOT BETTER

Help prevent accidental arcing in your workplace



Conventional
Replacement Part No. 94105032



Quick-Connect Hook-Up Kit
Replacement Part No. 94463046

NOTE: Replacement Boots will fit onto all Arcair® manual hand torch cable assemblies having an amperage range of 1000 Amps or less.

GOUGING TECHNIQUES FOR SPECIFIC MATERIALS

CARBON STEEL & LOW ALLOY STEEL, SUCH AS ASTM A514 & A517
Use DC electrodes with DCEP (electrode positive). AC electrodes with an AC transformer can be used, but for this application, AC is only half as efficient as DC.

STAINLESS STEEL
Use DC electrodes with DCEP (electrode positive). AC electrodes with an AC transformer can be used, but for this application, AC is only half as efficient as DC.

CAST IRON INCLUDING MALLEABLE AND DUCTILE IRON (NODULAR)
Use 12.7 mm or larger diameter CCDC electrodes at the highest rated amperage. Use an angle of 70° off the orkpiece and the depth of gouge should not exceed 12.7 mm per pass.

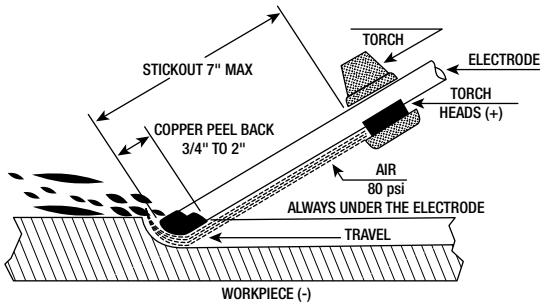
COPPER ALLOYS (COPPER CONTENT 60% AND UNDER)
Use CCDC electrodes with DCEN (electrode negative) at the electrode's highest amperage rating.

ALUMINIUM BRONZE AND ALUMINIUM NICKEL BRONZE (NAVAL PROPELLER ALLOY)
Use CCDC electrodes with DCEN (electrode negative) at the electrode's highest amperage rating.

NICKEL ALLOYS (NICKEL CONTENT OVER 80% OF MASS)
Use CCAC electrodes with AC current.

NICKEL ALLOYS (NICKEL CONTENT UNDER 80% OF MASS)
Use CCDC electrodes with DCEP (electrode positive) at the electrode's highest amperage rating.

PRINCIPLES OF AIR CARBON ARC



MAGNESIUM ALLOYS
Use CCDC electrodes with DCEP (electrode positive) and prior to welding, wire brush the groove.

ALUMINIUM
Use CCDC electrodes with DCEP (electrode positive). You must brush with a stainless wire brush before welding. Electrode stick-out (length of electrode between torch and workpiece) should not exceed 76.2 mm.

TITANIUM, ZIRCONIUM, HAFNIUM, AND THEIR ALLOYS
Do not cut or gouge to prepare for welding or remelting unless you mechanically remove the surface layer from the cut/gouge surface.

NOTE – If you preheat for welding, preheat for gouging

CURRENT REQUIREMENTS

Electrode diameter	3.2 mm	4.0 mm	4.8 mm	6.4 mm	7.9 mm	9.5 mm	13 mm	16 mm	19 mm	25 mm	9.5 mm Flat	16 mm Flat
Minimum Amps DC	60	90	200	300	350	450	800	1000	1250	1600	250	300
Maximum Amps DC	90	150	250	400	450	600	1000	1250	1600	2200	450	500
Minimum Amps AC	--	--	200	300	--	350	--	--	--	--	--	--
Maximum Amps AC	--	--	250	400	--	450	--	--	--	--	--	--

GOUGING TORCH SELECTION GUIDE

Copperclad Electrodes	Amperage Range (A) 90 - 450	450 - 1000	1000 -1400	1400 - 2000	2000 - 2400	Recommended	Alternate
Round 3.2 mm - 9.5 mm Flats 9.5 mm & 15.9 mm						K3000™	
Round 4.0 mm - 12.7 mm Flats 9.5 mm & 15.9 mm						K4000®	K3000™
Round 7.9 mm - 15.9 mm						K-5	K4000®, Tri-Arc®
Round 7.9 mm - 25.4 mm						Tri-Arc®	

WHICH TORCH IS RIGHT FOR YOU?

Torch Model	Amperage (Maximum)	Swivel Cable	Swivel Cable Lengths (m)	Cooling method	Handle Design	Body/Upper Arm Construction	Application	Special Features
K3000™	600	360°	2.1 & 3 m	Air-Cooled	Small & Ergonomic	Brass	Medium Duty	All brass torch parts with a copper head assembly having 4-hole design
K4000®	1000	360°	2.1 & 3 m	Air-Cooled	Small & Ergonomic	Brass	Heavy Duty	All brass torch parts with a copper head assembly having 4-hole design
K-5	1250	340°	2.1 & 3 m	Air-Cooled	Straight	Brass	Heavy Duty	All brass torch parts with a copper head assembly having 4-hole design
Tri-Arc®	2200	340°	2.1 & 3 m	Air- & Water-Cooled	Straight	Copper	Heavy Duty	Versatility with three (3) different head assemblies to choose from to meet any metal removal application

ANGLE-ARC® MANUAL GOUGING TORCHES

FEATURES & BENEFITS

NATURAL 15° TORCH ANGLE
- Greater operator comfort

DURABLE FRONT INSULATORS
- High impact and heat resistant protecting the torch metal parts

360° SWIVEL CABLE
- Less cable twist
- Less strain on operator

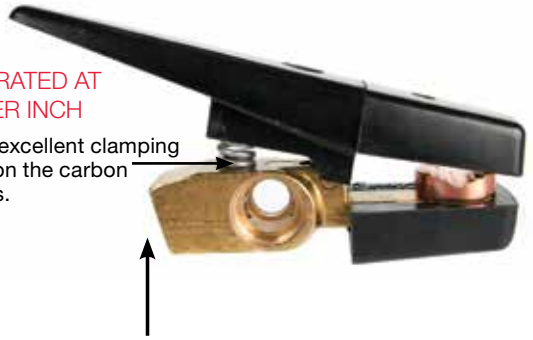
NEW TWO-PIECE BOOT DESIGN
- Prevents the chance of accidental arcing
- Made to withstand substantial abuse from typical applications

POSITIVE GRIP HANDLE
- Greater operator feel and ease in positioning the torch

REDUCED WEIGHT
- Optimum cable and torch weight to minimize fatigue

HIGH QUALITY CABLE HOSE
- Best quality cable hose offers high heat and abrasion resistance
- Non conductive

K3000™



SPRING RATED AT 66 KG PER INCH

providing excellent clamping pressure on the carbon electrodes.

FORGED 1-PIECE BRASS ALLOY BODY

machined to close tolerances on the valve seat and head seat.

K4000®



SPRING RATED AT 102 KG PER INCH

providing excellent clamping pressure on the carbon electrodes.

SQUARE THREADS

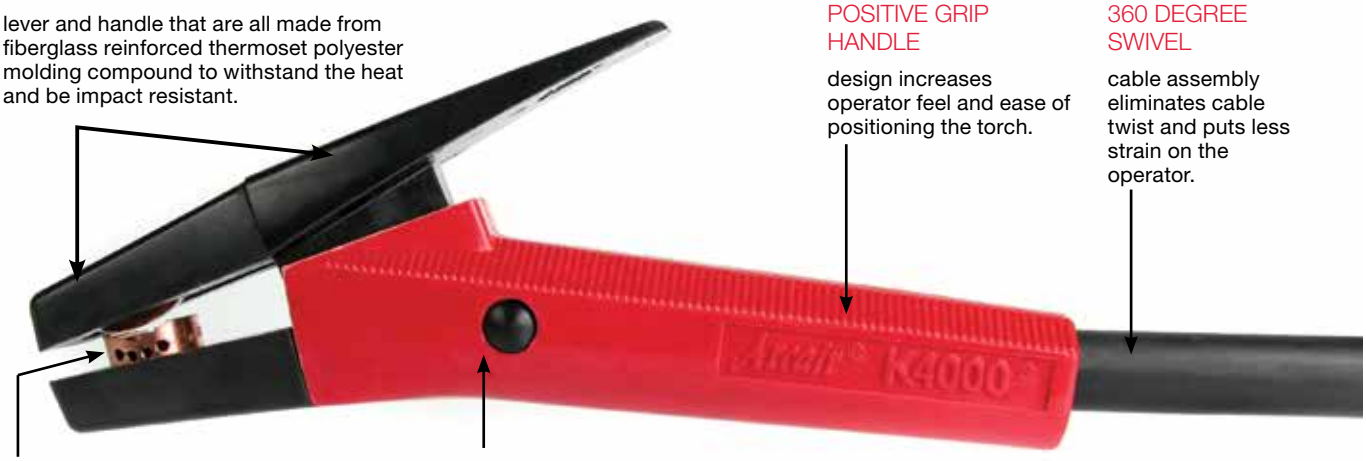
are used to attach the cable assembly to the body reducing the chance of this connection seizing together when operated at high amperage range/duty cycle.

FORGED 1-PIECE BRASS ALLOY BODY

machined to close tolerances on the valve seat and head seat.

HEAVY-DUTY INSULATORS

lever and handle that are all made from fiberglass reinforced thermoset polyester molding compound to withstand the heat and be impact resistant.



POSITIVE GRIP HANDLE

design increases operator feel and ease of positioning the torch.

360 DEGREE SWIVEL

cable assembly eliminates cable twist and puts less strain on the operator.

HEAD ASSEMBLY

machined from copper alloy having four (4) air holes optimizing the air flow to the arc.

BALANCED TO PIVOT

at the center of the handle for ease of use for all gouging positions, and thereby reduces operator fatigue.

K3000™

Medium Duty - General repair and maintenance jobs in areas as mining, construction, and all types of metal fabrication



AMPERAGE RANGE

- 90 – 600 A

ELECTRODE SIZE

- Pointed - round 3.2 mm - 9.5 mm
- Jointed - round 7.9 mm - 9.5 mm
- Flat - 9.5 mm - 15.9 mm
- Half Round - 15.9 mm

AIR REQUIREMENTS

- psi – 80
- kg/cm² – 5.6
- cfm – 22
- l/min – 624

Part No.	Description
01065001	Torch Only
61065006	Torch w/2.1 m 360° Swivel Cable
61065002	Torch w/2.1 m 360° Swivel Cable & Insulated Hook-Up Kit
61065007	Torch w/3 m 360° Swivel Cable
61065003	Torch w/3 m 360° Swivel Cable & Insulated Hook-Up Kit

K4000®

Heavy Duty - Heavy metal removal applications such as weld preparations in pressure vessel shops and shipyards



AMPERAGE RANGE

- 90 – 1000 A

ELECTRODE SIZE

- Pointed - round 4.0 mm - 12.7 mm
- Jointed - round 7.9 mm - 12.7 mm
- Flat - 9,5 mm - 15.9 mm
- Half Round - 15.9 mm

AIR REQUIREMENTS

- psi – 80
- kg/cm² – 5.6
- cfm – 25
- l/min – 708

Part No.	Description
01082002	Torch Only
61082008	Torch w/2.1 m 360° Swivel Cable
61082006	Torch w/2.1 m 360° Swivel Cable & Insulated Hook-Up Kit
61082009	Torch w/3 m 360° Swivel Cable
61082007	Torch w/3 m 360° Swivel Cable & Insulated Hook-Up Kit

SWIVEL CABLE ASSEMBLY OPTIONS

K3000 360° Swivel Cable



K4000 360° Swivel Cable







Part No.		Description
K3000	K4000	
70088107	70084207	2.1 m 360° Swivel Cable Assembly
70088110	70084210	3 m 360° Swivel Cable Assembly

TRI-ARC® FOUNDRY GOUGING TORCHES

FEATURES & BENEFITS

THREE TORCHES IN ONE
- Designed for foundry applications, defect removal, general purpose applications, and padwashing by just changing head assemblies

HIGH IMPACT, HEAT RESISTANT INSULATORS
- Provides protection for the torch metal parts

FORGED BODY
- Provides cooler operation, improved air flow and greater current ratings

POWERFUL INSULATED COIL SPRING & HIGH STRENGTH UPPER ARM
- Ensures positive electrode contact at all angles

BETTER BALANCE
- Streamline design and high strength fluted handles reduce operator fatigue

EASY CABLE INSTALLATION
- No need to disassemble the torch, just slide the sleeve from the rear of the handle

TRI-ARC TORCH HEADS

DEFECT REMOVAL HEADS
- For removal of defects and fine removal application
- Accepts electrode diameters 9.5 mm to 19.05 mm



GENERAL PURPOSE CLEANING HEADS
- For removal of defects, fin removal, padwashing, and piercing applications
- Accepts electrode diameters 12.7 mm to 25.4 mm



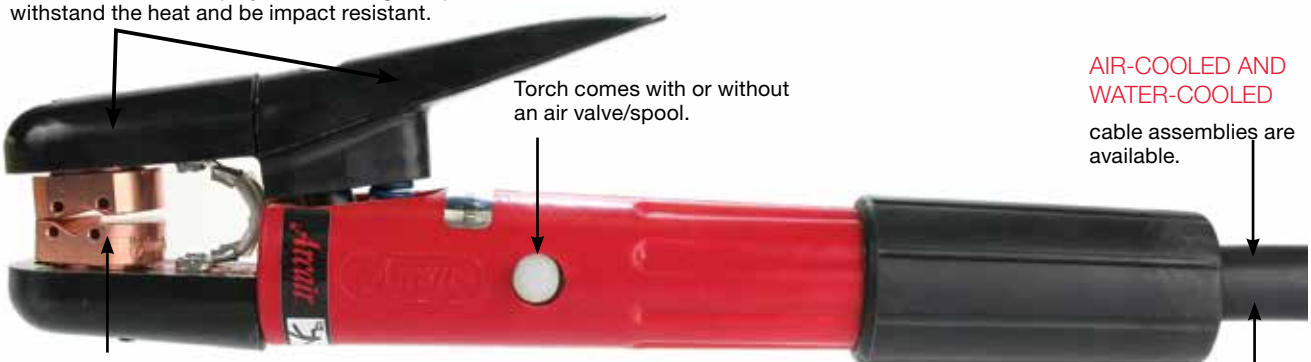
PADWASHING HEADS
- For padwashing applications only
- Heads are fixed on a 35° work angle
- Accepts electrode diameters 12.7 mm to 19.05 mm



HEAVY-DUTY INSULATORS,
lever and handle that are all made from fiberglass reinforced thermoset polyester molding compound to withstand the heat and be impact resistant.

Torch comes with or without an air valve/spool.

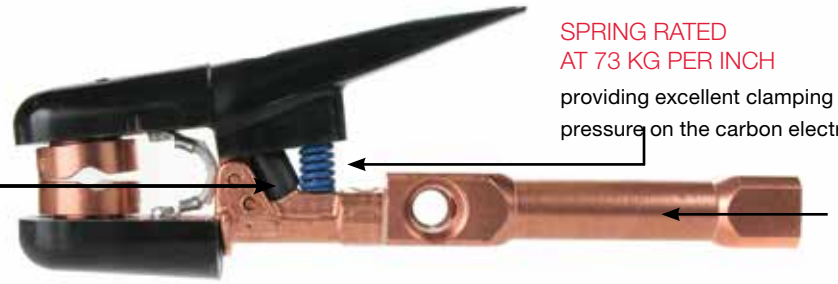
AIR-COOLED AND WATER-COOLED
cable assemblies are available.



SWITCHABLE HEAD ASSEMBLIES
machined from copper alloy designed for foundry applications - DEFECT REMOVAL - GENERAL PURPOSE - PADWASHING.

RUGGED AND DURABLE CABLE
assemblies offered for applications requiring 1600 to 2200 amps.

COMPRESSED AIR
flows through the body and upper arm increasing the metal removal capabilities on this torch.



SPRING RATED AT 73 KG PER INCH
providing excellent clamping pressure on the carbon electrodes.

FORGED 2-PIECE BRAZED COPPER ALLOY BODY
machined to close tolerances on the valve seat and head seat.

TRI-ARC®

Foundry - General foundry work, pad washing, defect, nails, sprue and interior work



AMPERAGE RANGE

- 450 – 2200 A

ELECTRODE SIZE

- Round 9.5 mm - 25.4 mm

AIR REQUIREMENTS

- psi – 80
- kg/cm² – 5.6
- cfm – 33
- l/min – 934

Part No.	Description	Electrode Size
NO HEADS IN TORCH		
02991411	Torch Only	--
62991417	Torch & 2.1 m Cable	--
NO HEADS IN TORCH - NO VALVE		
02991426	Torch Only	--
DEFECT REMOVAL HEADS		
94378298	Replacement Heads	9.5 - 19.05 mm
PADWASHING HEADS		
94378286	Replacement Heads	12.7 mm
94378289	Replacement Heads	15.9 mm
94378283	Replacement Heads	19.05 mm
GENERAL PURPOSE CLEANING HEADS		
94378267	Replacement Heads	12.7 mm
94378270	Replacement Heads	15.9 mm
94378273	Replacement Heads	19.05 mm
94378343	Replacement Heads	25.4 mm

Note: The cable assembly that comes standard on the assemblies is Part No. 74143607, 2.1 m long and rated for 1600 amperes maximum.

SWIVEL CABLE ASSEMBLY OPTIONS



Part No. 2.1 m	Part No. 3 m	Description
74143607	74143610	Std. Duty - 340° Swivel Cable Assembly
74161907	--	E-H-D 340° Swivel Cable Assembly
74085207	74085210	Water-Cooled Cable Assembly - Non-Swivel

K-5 Swivel Cable



Part No.	Description
70128507	2.1 m 340° Swivel Cable Assembly
70128510	3 m 340° Swivel Cable Assembly

STRAIGHT HANDLE MANUAL GOUGING TORCHES

FEATURES & BENEFITS

RELIABLE TORCH DESIGN
- Market leader for over 60+ years
- Greater operator comfort

ACCEPTS A WIDE RANGE OF CCDC GOUGING ELECTRODES
- 7.9 mm to 15.9 mm round

DURABLE FRONT INSULATORS
- High impact and heat resistant protecting the torch metal parts

SWIVEL CABLE
- Less cable twist
- Less strain on the operator

HIGH QUALITY CABLE HOSE
- Best quality cable hose offers high heat and abrasion resistance
- Non-conductive

RUGGED CONSTRUCTION OVERALL
- Can withstand harsh environments

K-5

Extra Heavy Duty - Heavy metal removal applications such as weld preparations in pressure vessel shops, shipyards and defect removal in foundries



AMPERAGE RANGE
- 450 - 1250 A

ELECTRODE SIZE
- Pointed - round 7.9 mm - 12.7 mm
- Jointed - round 7.9 mm - 15.9 mm
- Half Round - 15.9 mm

AIR REQUIREMENTS
- psi – 80
- kg/cm² – 5.6
- cfm – 30
- l/min – 850

Part No.	Description
01104003	Torch Only
61104007	Torch w/2.1m 360° Swivel Cable
61104008	Torch w/3m 360° Swivel Cable

CUTSKILL MANUAL GOUGING TORCHES

FEATURES & BENEFITS

NATURAL 15° TORCH ANGLE
- Greater operator comfort

DURABLE FRONT INSULATORS
- High impact and heat resistant protecting the torch metal parts

360° SWIVEL CABLE
- Less cable twist
- Less strain on operator

POSITIVE GRIP HANDLE
- Greater operator feel and ease in positioning the torch

REDUCED WEIGHT
- Optimum cable and torch weight to minimize fatigue

HIGH QUALITY CABLE HOSE
- Best quality cable hose offers high heat and abrasion resistance
- Non conductive

CSK4000

Heavy Duty - Heavy metal removal applications such as weld preparations in pressure vessel shops and shipyards



ELECTRODE SIZE
- Pointed - round 4.0 mm - 12.7 mm
- Jointed - round 7.9 mm - 12.7 mm
- Flat - 9.5 mm - 15.9 mm
- Half Round -15.9 mm

AIR REQUIREMENTS
- Maximum Amperage – 1000 amps
- Compressed Air – 80 psi (5.6 kg/cm²)
- Compressed Air Flow Rate – 0.79 m³/min
- Torch and Cable Weight: 2.4 kg

Part No.	Description
01088000	Torch Only
61088007	Torch & 2.1 m Cable Assembly
61088010	Torch & 3 m Cable Assembly
70088007	2.1 m Cable Assembly
70088010	3 m Cable Assembly

INCHES OF GROOVE PER ELECTRODE (POINTED)

POINTED COPPERCLAD DC ELECTRODES

Groove Depth	4.0 mm x 30.5 cm	4.8 mm x 30.5 cm	6.5 mm x 30.5 cm	8.0 mm x 30.5 cm	9.5 mm x 30.5 cm	12.7 mm x 35.6 cm
3.2 mm	165 cm	178 cm	206 cm	NR	NR	NR
4.0 mm	45 cm	165 cm	178 cm	206 cm	NR	NR
4.8 mm	NR	145 cm	168 cm	183 cm	208 cm	NR
6.4 mm	NR	117 cm	147 cm	168 cm	183 cm	285 cm
8.0 mm	NR	51 cm – 2P	117 cm	147 cm	150 cm	254 cm
9.5 mm	NR	30 cm – 2P	61 cm – 2P	119 cm	150 cm	224 cm
12.7 mm	NR	NR	36 cm – 2P	66 cm – 2P	119 cm	185 cm
15.9 mm	NR	NR	NR	41 cm – 2P	66 cm – 2P	145 cm
19.05 mm	NR	NR	NR	NR	41 cm – 2P	109 cm
22.0 mm	NR	NR	NR	NR	NR	89 cm – 2P
25.4 mm	NR	NR	NR	NR	NR	71 cm – 2P

Note: All figures derived from gouging mild steel under laboratory conditions. Field results may vary due to type of metal, power source, compressed air supply, operators experience and other parameters.
NR = Not Recommended
2P = Two (2) Passes

JOINTED COPPERCLAD ELECTRODES

Groove Depth	7.9 mm x 35.6 cm	9.5 mm x 43.2 cm	12.7 mm x 43.2 cm
4.0 mm	406 cm	NR	NR
4.8 mm	361 cm	523 cm	NR
6.4 mm	318 cm	437 cm	660 cm
7.9 mm	284 cm	310 cm	478 cm
9.5 mm	213 cm	345 cm	399 cm
12.7 mm	183 cm – 2P	262 cm	356 cm
15.9 mm	122 cm – 2P	191 cm – 2P	259 cm
19.05 mm	NR	145 cm – 2P	229 cm
22.0 mm	NR	NR	203 cm
25.4 mm	NR	NR	183 cm

Note: All figures derived from gouging mild steel under laboratory conditions. Field results may vary due to type of metal, power source, compressed air supply, operators experience and other parameters.
NR = Not Recommended
2P = Two (2) Passes

ARCAIR® AIR CARBON-ARC ELECTRODES

FEATURES & BENEFITS

DESIGNED SPECIFICALLY FOR THE AIR CARBON-ARC PROCESS

- Contain a precise formulated blend of carbon and graphite
- The most efficient metal removal performance in today's market
- Superior metal removal rates, cool operation, and uniform diameters

IDEAL FOR A BROAD RANGE OF APPLICATIONS

- Creating u-grooves for weld joint
- Removing old welds
- Gouging out cracks
- Cleaning and repairing castings
- Removing hard surface material
- Rough machining

POINTED COPPERCLAD DC ELECTRODES

Part No.	Description	Application
22023003*	3.2 mm x 30.5 cm CCDC Pointed	A standard, all purpose gouging electrode. Its controlled copper coating improves electrical conductivity (for more efficient, cooler operation) and helps maintain electrode diameter at the point of the arc.
22983003	4.0 mm x 30.5 cm CCDC Pointed	
22033003	4.8 mm x 30.5 cm CCDC Pointed	
22043003	6.4 mm x 30.5 cm CCDC Pointed	
22053003	7.9 mm x 30.5 cm CCDC Pointed	
22063003	9.5 mm x 30.5 cm CCDC Pointed	
22082003	12.7 mm x 35.6 cm CCDC Pointed	

Note: Standard 50 pieces per carton unless noted
** 100 pieces per carton*

POINTED PLAIN DC ELECTRODES

Part No.	Description	Application
21983003	4.0 mm x 30.5 cm CCDC Pointed	General purpose electrodes without the copper plating to avoid any chance of copper contamination in the base material. Same high quality blend of carbon and graphite used in other electrodes.
21033003	4.8 mm x 30.5 cm CCDC Pointed	
21043003	6.4 mm x 30.5 cm CCDC Pointed	
21053003	7.9 mm x 30.5 cm CCDC Pointed	
21063003	9.5 mm x 30.5 cm CCDC Pointed	

Note: Electrodes will glow incandescent due to not having the copper plating and a penciling affect will take place along the outside diameter of the electrode. Standard 50 pieces per carton unless noted

POINTED COPPERCLAD AC ELECTRODES

Part No.	Description	Application
20033003	4.8 mm x 30.5 cm AC Pointed	Designed for use with A.C. power supplies. Rare earth material is added to the electrodes to stabilize the arc and enhance the operating characteristics.
20043003	6.4 mm x 30.5 cm AC Pointed	
20063003	9.5 mm x 30. 5 cm AC Pointed	

FLAT COPPERCLAD DC ELECTRODES

Part No.	Description	Application
35099003	9.5 mm x 4.8 mm x 30.5 cm CCDC Flat	Specially designed for close tolerance metal removal and scarfing applications. Excellent for general gouging applications, removing weld crowns, repairing or making dies, removing temporary welded dogs, and scarfing billets.
35033003	15.9 mm x 4.8 mm x 30.5 cm CCDC Flat	

Note: Standard 50 pieces per carton unless noted

HALF ROUND COPPERCLAD DC ELECTRODES

Part No.	Description	Application
25103003	5.9 x 7.9 mm x 30.5 cm CCDC Half-Round	Versatility of having both a round and flat electrode for the various gouging applications. Excellent for removing weld crowns, repairing or making dies, removing temporary welded dogs, and scarfing billets.

Note: Standard 50 pieces per carton unless noted

JOINTED JETRODS® COPPERCLAD DC ELECTRODES

Part No.	Description	Application
24052003	7.9 mm x 35.6 cm CCDC Jointed	Provides continuous electrode feed and increased savings, especially in production operations. Suited for both hand held foundry applications and or automated gouging systems.
24062003	9.5 mm x 35.6 cm CCDC Jointed	
24064003	9.5 mm x 43.2 cm CCDC Jointed	
24082003	12.7 mm x 35.6 cm CCDC Jointed	
24084003	12.7 mm x 43.2 cm CCDC Jointed	
24104003	15.9 mm x 43.2 cm CCDC Jointed	
24124003	19.05 mm x 43.2 cm CCDC Jointed	

Note: Standard 100 pieces per carton unless noted

CUTSKILL ELECTRODES

POINTED COPPERCLAD DC ELECTRODES

Part No.	Description	Application
22033003C	4.8 mm x 30.5 cm CCDC Pointed	A standard, all purpose gouging electrode. Its controlled copper coating improves electrical conductivity (for more efficient, cooler operation) and helps maintain electrode diameter at the point of the arc.
22043003C	6.4 mm x 30.5 cm CCDC Pointed	
22053003C	7.9 mm x 30.5 cm CCDC Pointed	
22063003C	9.5 mm x 30.5 cm CCDC Pointed	

Note: Standard 50 pieces per carton unless noted
** 100 pieces per carton*

HOLLOW POINTED COPPERCLAD DC ELECTRODES

Part No.	Description	Application
22033003HC	4.8 mm x 30.5 cm CCDC Pointed	General purpose electrodes having the same high quality blend of carbon and graphite used in other electrodes, but with a hole down the center of the electrode..
22043003HC	6.4 mm x 30.5 cm CCDC Pointed	
22053003HC	7.9 mm x 30.5 cm CCDC Pointed	
22063003HC	9.5 mm x 30.5 cm CCDC Pointed	
22082003HC	12.7 mm x 35.6 cm CCDC Pointed	

Note: Standard 50 pieces per carton

JOINTED COPPERCLAD DC ELECTRODES

Part No.	Description	Application
24064003C	9.5 mm x 43.2 cm CCDC Jointed	Provides continuous electrode feed for greatly increased savings, especially in production operations.
24084003C	12.7 mm x 43.2 cm CCDC Jointed	
24104003C	15.9 mm x 43.2 cm CCDC Jointed	
24124003C	19.05 mm x 43.2 cm CCDC Jointed	
24164003C*	25.4 mm x 43.2 cm CCDC Jointed	

Note: Standard 100 pieces per carton unless noted
** - 25 pieces per carton*

WELDING CARBON PRODUCTS

Carbon Plates and Carbon Rods



FEATURES & BENEFITS

WIDE RANGE OF APPLICATIONS TO CONTROL THE FLOW OF WELD METAL

- Repair broken corners
- Repair broken gears
- Dams or molds for weld deposit

ELIMINATES THE NEED FOR MANY JIGS AND FIXTURES

- Substantial time and labor savings

CARBON PLATE

Part No.	Description
48043012	6.4 mm x 30.5 cm x 30.5 cm
48063012	9.5 mm x 30.5 cm x 30.5 cm
48083012	12.7 mm x 30.5 cm x 30.5 cm
48123012	19.05 mm x 30.5 cm x 30.5 cm
48163012	25.4 mm x 30.5 cm x 30.5 cm

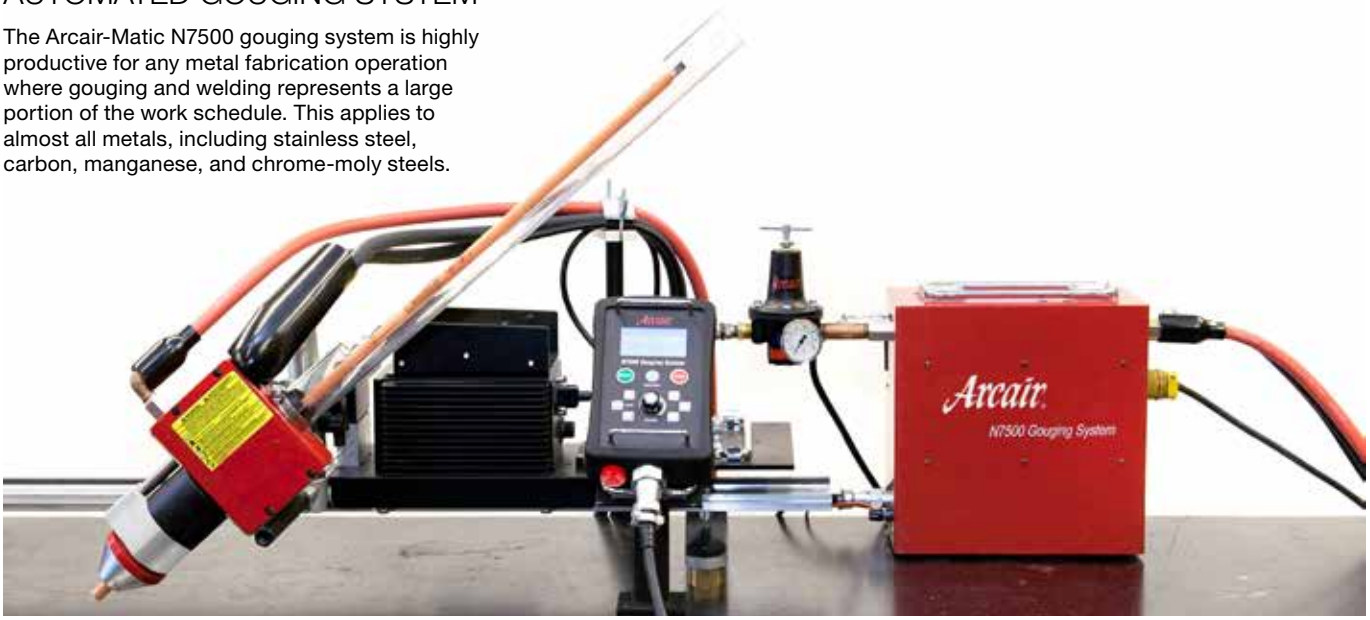
CARBON ROD

Part No.	Description
47123000	19.05 mm x 20.5 cm
47143000	22.23 mm x 30.5 cm
47164000	25.4 mm x 30.5 cm
47183000	28.6 mm x 30.5 cm
47203000	31.8 mm x 30.5 cm
47243000	38.1 mm x 30.5 cm
47323000	50.8 mm x 30.5 cm

ARCAIR-MATIC® N7500

AUTOMATED GOUGING SYSTEM

The Arcair-Matic N7500 gouging system is highly productive for any metal fabrication operation where gouging and welding represents a large portion of the work schedule. This applies to almost all metals, including stainless steel, carbon, manganese, and chrome-moly steels.



DIGITAL LCD REMOTE PENDANT

- Ease of use – start/stop function, travel delay, electrode diameter
- Rough machining feature to stall the feed of the electrode to compensate for pitted area or out-of-round steel rolls, thereby maintaining the concentricity of the shaft/roll
- US Patent No. US 9101998 B2
- "Travel delay" function assures excellent groove geometry at the very beginning of the groove, thereby eliminating the need for a starting pad
- Shock-absorbent bumper
- Remote Pendant incorporates an emergency stop switch (E-Stop) when pressed in, will take precedence over any other "stop" signal and will drop out the engaged contactor in the power supply stopping the flow of current to the carbon electrode.





TORCH HEAD

- Redesigned Torch Head with an extended front end – gives the operator better view of the weld seam that's being back-gouged
- Can be oriented 360 degrees in any direction giving flexibility to fit the application

DIGITAL CIRCUITRY CONTROL BOX

- Redesigned digital circuitry control box
- A synergic mode ensures conformity to pre-determined, pre-selected groove depth and width specifications
- Can be used with CC/CV power supplies and the system utilizes the contactor in the welding power supply unit thereby eliminating the need for an external contactor used on prior models



COMPLETE N7500 GOUGING SYSTEM

Part No.	Description
65991015	Includes Remote Pendant, Control Box, Torch Head, Air Regulator and Electrode Tube Holder

SYSTEM CABLE ASSEMBLY OPTIONS*

Part No.	Description
230V AC POWER SUPPLY CABLE	
96130305	3 m
PENDANT CABLE ASSEMBLY	
96170069	0.36 m
96170070	5 m
96170071	8 m
96170072	15 m
MOTOR CABLE ASSEMBLY	
96130335	0.9 m
96130336	5 m
96130337	8 m
96130338	15 m
POWER SUPPLY COMMUNICATION CABLE ASSEMBLY	
96130339	5 m
96130340	8 m
96130341	15 m
DC POWER CABLES	
96130254	1.2 m
96130256	5 m
96130300	8 m
NOTE: Minimum 2 Power Cables Required	
AIR HOSE ASSEMBLY	
94396051	1.2 m
94396049	5 m
94396048	8 m
**Must be ordered separately*	

ALL POSITION TRAVEL SYSTEMS

Arcair®, the industry leader in air carbon-arc products joined together with leading travel system manufactures to bring to the market the best all around metal removal system providing superior performance, flexibility, versatility, and safety for your metal removal applications.

BUG-O® and GULLCO® tractors are ideal for out of position metal removal applications since both incorporates an aluminum track that guides the tractor down the weld seam with ability to keep the Arcair-Matic N7500 torch head on track by mechanical rack device.

BUG-O TRAVEL SYSTEM PACKAGES

ALL TRAVEL SYSTEMS INCLUDE A COMPLETE N7500 AUTOMATED GOUGING SYSTEM

- Remote Pendant
- Control Box
- Torch Head
- Arcair Electrode Tube Holder
- Arcair Air Regulator



		BUG-O TRAVEL SYSTEM SPECIFICATIONS						
Description	Part No.*	Carriage	Master Drive Unit	Arc Gouging Control Module	Arcair Mounting Group	Cable Mounting Assembly	Rail	On/Off Magnet
Rigid - 220 VAC	71023141	MPD-1065 (30.5 mm Releaseable Carriage)	MPD-1002 (220 VAC)	AGS-1002	AGS-4172	BUG-2975	ARR-1080 (Heavy-Duty Aluminum Rail)	ARM-2010 (5 Magnets)
Flex - 220 VAC	71023143	FMD-1105 (HI-Flex Carriage w/ Handle & Clamp)	MPD-1002 (220 VAC)	AGS-1002	AGS-4172	--	FMD-2170 (HI-Flex Rail)	FMD-2010 (8 Magnets)

* System Part No. includes the BUG-O items as noted along with the Arcair-Matic N7500 System

GULLCO TRAVEL SYSTEM PACKAGES

ALL TRAVEL SYSTEMS INCLUDE A COMPLETE N7500 AUTOMATED GOUGING SYSTEM

- Remote Pendant
- Control Box
- Torch Head
- Arcair Electrode Tube Holder
- Arcair Air Regulator



		GULLCO TRAVEL SYSTEM SPECIFICATIONS					
Description	Part No.*	Carriage	Rack Box	Rack Bar	Welding Gun Attachment	Track	Track Magnet Devices
Rigid - 220 VAC	71023145	GK-200-RHC-N (GULLCO "KAT" Variable Speed Travel Carriage - 220 VAC)	GK-171-650 (GULLCO Heavy Duty Rack Box)	GK-171-047-2 (GULLCO 45.7 cm Long Heavy Duty Square Rack Bar)	GK-165-047-2 (GULLCO 4-Motion Semi-Automatic Welding Gun Attachment)	GK-165-052-1 (GULLCO 234,8 cm Aluminum Alloy Standard Track)	GK-165-215 (6 GULLCO Track Magnet Devices)

* System Part No. includes the GULLCO items as noted along with the Arcair-Matic N7500 System

BUG-O is a registered trademark of the Weld Tooling Corporation. Gullco is a registered trademark of Gullco Enterprises Limited. The aforementioned registered trademarks are in no way affiliated with Arcair. Arcair is a registered trademark of Victor Technologies International, Inc.

SLICE® EXOTHERMIC CUTTING SYSTEM

FEATURES & BENEFITS

VERSATILE - UNLIKE ANY OTHER CUTTING TECHNOLOGY

- Cuts right through hard-to-cut materials
  - mild, stainless steel and alloy steels
  - cast iron
  - aluminium, magnesium and other non ferrous metals
  - slag and refractory materials
  - pierces through concrete or brick

FAST CUTTING SPEEDS

- No-preheat required
- Cut sooner and finish every job faster

COMFORTABLE AND EASY TO USE

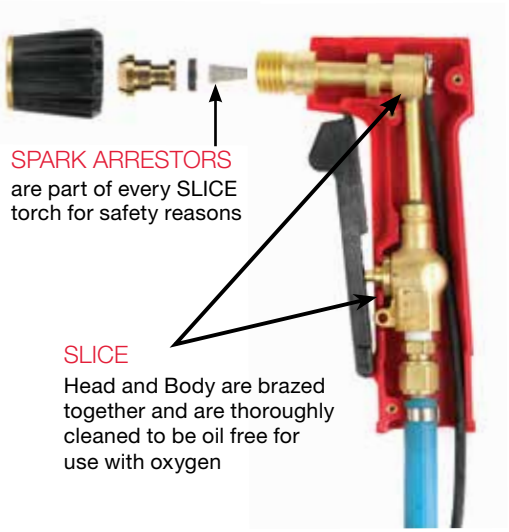
- Pistol grip style handle
- Lightweight shield to protect the operator from heat and sparks
- Lever operated oxygen control

CARRY ALL CONVENIENCE

- Several portable SLICE packs to choose from
  - Utility Pack
  - Battery Pack
  - Complete Pack



SLICE EXOTHERMIC CUTTING TORCH



SPARK ARRESTORS
are part of every SLICE torch for safety reasons

SLICE
Head and Body are brazed together and are thoroughly cleaned to be oil free for use with oxygen

USE 6.4 & 9.5 MM DIAMETER
cutting rods by simply changing the collet nut and collet chuck

LIGHTWEIGHT SHIELD
to help protect the operator from heat and sparks

EASY TO SQUEEZE LEVER
on the handle for easy oxygen control

INDUSTRIAL GRADE OXYGEN HOSE
3 m length is standard



PISTOL GRIP
designed handle is comfortable and easy to use

TIPS FOR USING SLICE® EXOTHERMIC CUTTING EQUIPMENT

TIPS FOR CUTTING

Cutting procedures will vary from job to job. Study the cutting rates chart for specific cutting speeds.

Normal cutting is done by using a drag technique. Once the rod is in contact with the piece to be cut, drag the rod in the direction of the cut. If the operator can't see the kerf, the speed of cut is too fast. If the rod is being used too rapidly the progress of the cut is too slow and the rod is being used without cutting. REMEMBER, the cutting rods consume as long as the oxygen is flowing. Maintain the proper travel speed at all times. NOTE: Use a sawing motion when material to be cut is thicker than 1-1/2 to 2 inches to ensure a complete melt through.

Use a smooth motion to complete the cut. Be careful not to hit nearby material with the rod when cutting in "close quarters." After completing the cut, release the oxygen control lever in the handle. THE CUTTING ROD WILL CONTINUE TO BURN AS LONG AS OXYGEN IS SUPPLIED. Hold the torch safely away from you until the rod cools.

TIPS FOR PIERCING SURFACES

The SLICE Torch can be used to pierce solids. Special procedures must be used when piercing. When piercing, use a collet extension (and shield). This extension adds life to the torch and hand shield, and greatly improves operator safety and comfort. Always hold the torch at arm's length and wear plenty of protective clothing, eye and ear protection. Cutting rods can get stuck inside the pierced hole. If possible, remove the cutting rod from the hole before releasing the oxygen lever.

With any thermal cutting equipment blowback is most likely to occur when the user is piercing holes. Cutting rods may burn unevenly. Slowly swirl the cutting rod as it enters a pierced hole. Cutting rods may burn out on the sides. Correct the problem by removing the cutting rod from the pierce point, shut the oxygen off, and replace the cutting rod.

To pierce follow these steps:

- Strike cutting rod on striker.
- Hold torch at arm's length.
- Keep the cutting rod at a 90° angle (perpendicular) to the pierce point.
- Slowly push cutting rod in at pierce point until you're at proper depth or until you've achieved burn through.

The pierce procedure is also used to cut concrete. By piercing a series of holes where a user wants to cut concrete, the concrete becomes easier to fracture. This helps reduce the time it would take to actually cut the concrete.

OXYGEN USAGE

This cutting process uses standard industrial grade oxygen to support the exothermic reaction and to remove the molten metal. All SLICE equipment uses standard oxygen fittings. The most commonly recommended operating pressure is 80 psi. Applications such as cutting material sections 76.2 mm and thicker might require higher operating pressures. Pressures as low as 40 psi have been used to perform operations such as washing off rivet heads and scarfing out small cracks for repair.

The oxygen consumption rate for the SLICE cutting rods at 80 psi is 7 to 7.5 cfm for the 6.4 mm diameter cutting rods and 11 to 12 cfm for the 9.5 mm diameter cutting rods. This rate will vary if a different operating pressure is used.

ROD BURNTIME

Listed are the approximate burntimes for the various SLICE rod diameters and lengths:

6.4 X 55.9 cm	40 - 45 seconds
6.4 X 111.8 cm	80 - 90 seconds
9.5 X 45.7 cm	30 - 35 seconds
9.5 X 91.4 mm	60 - 70 seconds

APPLICATION DATA

The best techniques for the SLICE equipment will change from job to job. The enclosed charts present the results of extensive testing of the SLICE Torch. Four things contribute to good cutting

1) Electrical current.

2) Type of material being cut.

3) Environmental conditions.

4) Experience of the operator(s).

These data result from studies of the first two (2) items in this list. Since data were collected in a LABORATORY, actual results obtained will vary because of changes in the environment. Too, these tests were conducted by highly experienced users. The way in which you use the SLICE Torch will also cause your results to vary.

In any application, some adjustments in operating conditions are necessary. The charts are presented only as a guideline. Results will vary. You can approximate these results by using the data presented as a starting point, then adjusting for your job.

Here is a sample of some cutting rates that can be obtained using the SLICE Equipment. Cutting rates in this chart were obtained using 80 PSI oxygen pressure, battery ignition (no power cutting) and 6.4 x 55.9 cm cutting rods. These cutting rates will vary when using different rods, when cutting with power or using a different oxygen pressure. This chart does not represent all materials SLICE will cut nor all thicknesses used in fabrication. When cutting composite materials or metals not listed, locate the listed type that most closely matches the metal to be cut. This information is only meant as a reference to the efficiency and versatility that a user can realize using the SLICE Equipment.

CUTTING RATES

Material Being Cut	Thickness cm	Electrode cm	Cut Spped cm/mn
Carbon Steel	0.318	5.7	183
	0.635	3.8	132
	0.953	3.5	106
	1.27	3.2	89
	1.91	1.9	56
Stainless Steel	0.318	5.1	165
	0.635	2.9	91
Aluminium	0.635	4.4	147
	0.953	3.2	97
	1.91	1.9	58

This data is the result of averaging lab tests. The actual results will vary.

SLICE UTILITY PACK

Includes a rugged tool box carrying case. Power connections (12 volt battery only), tong style battery clamps makes power connection quick and easy. Industrial oxygen hose connected to the torch; industry standard “blue” hose supplies the torch with oxygen, and standard fittings used to connect to oxygen regulators



SYSTEM INCLUDES:

- Tool Box (94134049)
- SLICE Torch Assembly (03003001CE)
- SLICE Striker Assembly (72012002)
- Collet Extension Assembly – 15.24 cm (94168023)
- Extension Shield (94777111)
- Clamp (Red) (96168035)
- Clamp (Black) (96168036)

Part. No.	Description
63991026CE	SLICE Utility Pack

SLICE TORCH FOR USE WHEN CUTTING WITH WELDING CURRENT

(<200 amps)

Part. No.	Description
03003000CE	SLICE Torch Assembly *

SLICE BATTERY PACK

Includes a rugged tool box carrying case. Power connections twist-lock style connection; easy to connect to battery box assembly for both torch and striker and color coded connectors. Industrial oxygen hose connected to the torch; industry standard “blue” hose supplies the torch with oxygen, standard fittings used to connect to oxygen regulators, and color coded connections



SYSTEM INCLUDES:

- Tool Box (94134047)
- SLICE Torch Assembly (03003006CE)
- SLICE Striker Assembly (72012002)
- Battery Box Assembly (96076021)
- Cutting Rod 6.4 x 55.9 cm (qty 25) (43049002)
- Collet Extension Assembly – 15.24 cm (94168023)
- Extension Shield (94777111)
- Charging Cable – 230 VAC/50 Hz (96130296)

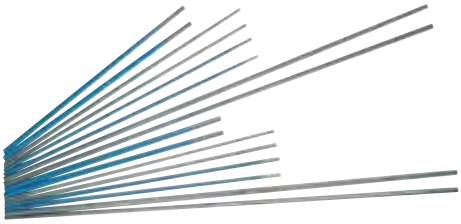
Part. No.	Description
63991007CE	SLICE Battery Pack 230 VAC @50 Hz

SLICE EXOTHERMIC CUTTING RODS

SPECIALLY DESIGNED CUTTING ROD

- One piece patented construction maintains the balance necessary to sustain the exothermic reaction
- Cutting rod sustains the burn without constant electrical power once ignited

Uncoated Part No	Flux Coated Part No.	Description
43049002	42049002	6.4 mm x 55.9 cm 25 each /carton
43049003	42049003	6.4 mm x 55.9 cm 100 each /carton
43049005	--	6.4 mm x 111.8 cm 25 each /carton
43049007	42049005	9.5 mm x 45.7 cm 50 each /carton
43049009	--	9.5 mm x 91.4 cm 25 each /carton



SLICE COMPLETE PACK

Rugged aluminum carrying case; packed with the basic items needed to do a cutting job. Self-contained cutting system lends itself well to the emergency type cutting situations where seconds count. Storage compartment with hinged door for parts storage during transportation. Power connections twist-lock style connection; easy to connect to battery box assembly for both torch and striker and color coded connectors. Industrial oxygen hose connected to the torch; industry standard “blue” hose supplies the torch with oxygen. Standard fittings used to connect to oxygen regulators.



SYSTEM INCLUDES:

- Aluminum Case Assembly (94134034)
- SLICE Torch Assembly (03003006)
- SLICE Striker Assembly (72012002)
- Battery Box Assembly (96076021)
- Cutting Rod 6.4 mm x 55.9 cm (qty 25) (43049002)
- Collet Extension Assembly – 15.24 (94168023)
- Extension Shield (94777111)
- Spacer
- 25.4 cm Rubber Tie Down
- Charging Cable – 230 VAC/50 Hz (96130296)
- Outfit Wrench – Hose Nut and Regulator Nut
- Outfit Wrench – Oxygen Hose Nut and Male Adapter

Part. No.	Description
63991005CE	SLICE Complete Pack 230 VAC @50 Hz





SEA TORCH® "COMBINATION TORCH"

Underwater Cutting & Welding Torch

FEATURES & BENEFITS



ONE PIECE BODY CONSTRUCTION

- Fully insulated electrically for safety in normal operation
- Prohibits oxygen leakage in the torch body
- Bright orange for high visibility to the diver

COMBINATION TORCH

- Torch can be used for oxygen-arc cutting
- Underwater welding

TAPERED COLLET BODY

- Brings the bare surface of an electrode into contact for the entire length of the collet
- Solid grip and increased contact area decreases the risk of arcing between the collet and electrode

EQUIPPED WITH A SPARK ARRESTOR

- Spark arrestor located behind the collet for safe operation
- Ball check valve in the torch handle gives additional protection

SPECIFICATIONS:

- Equipped with 3 m Power Cable
- Length: 22.2 cm
- Weight: 2.04 kg with cable

Part. No.	Description
14050124	Sea Torch 7.9 mm Cutting Collet
14050126	Sea Torch 9.5 mm Cutting Collet



UNDERWATER CUTTING ELECTRODES

FEATURES & BENEFITS

OXYGEN-ARC AND EXOTHERMIC CUTTING ELECTRODES

- Oxygen-arc cutting electrodes requires current to be present during the cutting process
- Exothermic cutting electrodes only require current to ignite the electrode and once ignited the rod will continue to burn as long as there is oxygen flowing

WATER-PROOF COATING

- All cutting electrodes are coated with a water-proof coating



SEA-CUT® CUTTING ELECTRODES

"Oxygen-Arc Process" (50 per carton)

Part. No.	Diameter	Length
42059007	7.9 mm - 2.9 mm	45.7 cm



TUFF-COTE® CUTTING ELECTRODES FLUX COATED

"Oxygen-Arc Process" (50 per carton)

Part. No.	Diameter	Length
42059008	7.9 mm - 2.9 mm	45.7 cm



SEA-JET® CUTTING ELECTRODES

"Exothermic Process" (50 per carton)

Part. No.	Diameter	Length
42066006	9.5 mm	45.7 cm





SEA-DRAGON™ CUTTING ELECTRODES

"Exothermic Process" (50 per carton)

Part. No.	Diameter	Length
42075005	9.5 mm	45.7 cm

SEA-STINGER® II TORCH

Underwater Welding Torch

FEATURES & BENEFITS



LIGHTWEIGHT AND DURABLE

- Proven design that gives the diver-welder an easy to use electrode holder
- Repairable replaceable cable and internal parts extend its service life

ACCEPTS SEVERAL DIFFERENT DIAMETERS OF WELDING ELECTRODES

- 3.2 mm, 4.0 mm and 4.8 mm welding electrodes

SPECIFICATIONS:

- Equipped with 3 m Power Cable
- Length: 15.24 cm
- Weight: 1.66 kg with cable

Part. No.	Description
14050128	Sea-Stinger II Torch

ARCWATER® II TORCH

Underwater Gouging Torch

FEATURES & BENEFITS



DESIGNED FOR UNDERWATER GOUGING OPERATIONS

- Similar to gouging above water with the exception of using a high velocity of pressurized water in place of compressed air
- Uses sea water at 90 psi (6.32 kg/cm2 or 620 kPa) over the pressure at the depth of use
- Minimum water flow rate of 3.5 gallons (13.25 liters) per minute required

OXYGEN FREE

- Eliminates the risk of hydrogen gas pocket explosions

EASY TO USE

- Handle can be used left or right handed divers
- Used out-of position

CONVERTS INTO A WELDING TORCH EASILY

- Simply change out the collet to accept welding electrodes

SPECIFICATIONS:

- Equipped with 3 m Power Cable
- Length: 22.2 cm
- Weight: 2.5 kg

Part. No.	Description
14050127	Arcwater II Torch

UNDERWATER WELDING ELECTRODES

FEATURES & BENEFITS

EXCELLENT BEAD CONTOUR

- All position, flux coated SMAW electrode

FILLET WELDS ARE FLAT WITH GOOD BASE METAL WETTING

- Helps keep undercut to a minimum

EASY SLAG REMOVAL

- Keeps chipping and grinding to a minimum
- Lower risk of slag inclusions

PRODUCES WELDS WHICH PASS BEND AND X-RAY REQUIREMENTS

- As defined by the AWS D3.6 specification for underwater welding



SEA-WELD® WELDING ELECTRODES

Part. No.	Electrode Size	Per Carton
42024002	3.2 mm x 35.6 cm	150
42984004	4.0 mm x 35.6 cm	100
42034007	4.8 mm x 45.7 cm	75

UNDERWATER GOUGING ELECTRODES



ARCWATER® GOUGING ELECTRODES

(50 per carton)

Part. No.	Diameter	Amperage	Length
42059006	7.9 mm	350 - 450	22.9 cm

ISO 9001
REGISTERED FIRM

The Quality System of ESAB at our Denton, Roanoke, West Lebanon and Hermosillo locations is registered to meet the requirements of ISO 9001

Las- & Gastechniek bvba
Aarschotsebaan 312 • 2590 Berlaar

T 03 482 43 65 • F 03 482 35 72
sales@lgtechniek.be

www.lgtechniek.be

LAS- EN GASTECHNIEK®
THE ART OF WELDING