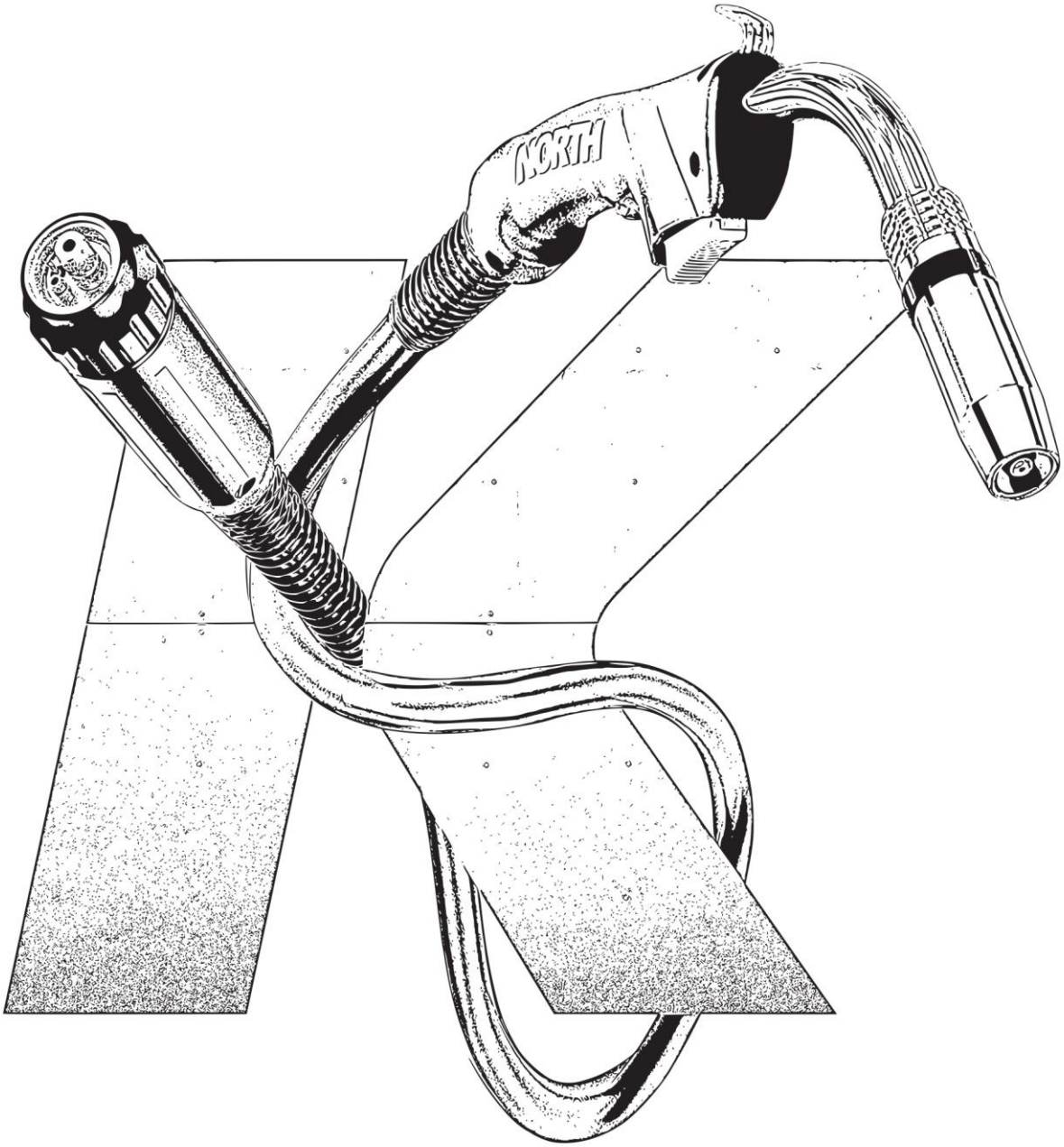
Jinan North Welding Tools Co Ltd The North of 308 National Highway, Daqiao Town, Tianqiao Zone, Jinan 250121, Shandong, China

NORTH®

OPERATING MANUAL / INSTRUCTIONS



KLASIK SERIES MIG/MAG TORCH

PART NUMBER: OM-100A EN

ISSUE: 01-0820

Read and understand this entire Manual and your employer's safety practices before installing, operating, or servicing this Product. While the information contained in this Manual represents the Manufacturer's best judgment, the Manufacturer assumes no liability for its use

User Manual No: OM-100A EN for: KLASIK BZL, PNA, OTC, BRD, TWE, VALVE (DIY) Style MIG/MAG Manual Welding Torches

KLASIK	MIG/MAG Manual Welding Torch Model Number
BZL	N15-3, N15-4, N15-5; N15FE-3, N15FE-4, N15FE-5; N24-3, N24-4, N24-5; N25-3, N25-4, N25-5; N26-3, N26-4, N26-5; N36-3, N36-4, N36-5; N40-3, N40-4, N40-5; NW24-3, NW24-4, NW24-5; NW501E-3, NW501E-4, NW501E-5
PNA	NS-200K-3, NS-200K-4, NS-200K-5; NS-350K-3, NS-350K-4, NS-350K-5; NS-500K-3, NS-500K-4, NS-500K-5; NS-600K-3, NS-600K-4, NS-600K-5
OTC	ND-200D-3, ND-200D-4, ND-200D-5; ND-350D-3, ND-350D-4, ND-350D-5; ND-500D-3, ND-500D-4, ND-500D-5
BRD	NQ 200-10, NQ 200-12, NQ 200-15; NQ 200B-10, NQ 200B-12, NQ 200B-15; NQ 300-10, NQ 300-12, NQ 300-15; NQ 300B-10, NQ 300B-12, NQ 300B-15; NQ 400-10, NQ 400-12, NQ 400-15; NQ 400B-10, NQ 400B-12, NQ 400B-15 NB 200-10, NB 200-12, NB 200-15; NB 300-10, NB 300-12, NB 300-15; NB 400-10, NB 400-12, NB 400-15
TWE	NT1-3E, NT1-4E, NT1-5E; NT1-3T, NT1-4T, NT1-5T; NT1-3L, NT1-4L, NT1-5L; NT1-3M, NT1-4M, NT1-5M; NT2-3E, NT2-4E, NT2-5E; NT2-3T, NT2-4T, NT2-5T; NT2-3L, NT2-4L, NT2-5L; NT2-3M, NT2-4M, NT2-5M; NT4-3E, NT4-4E, NT4-5E; NT4-3T, NT4-4T, NT4-5T; NT4-3L, NT4-4L, NT4-5L; NT4-3M, NT4-4M, NT4-5M; NT5-3E, NT5-4E, NT5-5E; NT5-3T, NT5-4T, NT5-5T; NT5-3L, NT5-4L, NT5-5L; NT5-3M, NT5-4M, NT5-5M; NT2B-3E, NT2B-4E, NT2B-5E; NT2B-3T, NT2B-4T, NT2B-5T; NT2B-3L, NT2B-4L, NT2B-5L; NT2B-3M, NT2B-4M, NT2B-5M; NT4B-3E, NT4B-4E, NT4B-5E; NT4B-3T, NT4B-4T, NT4B-5T; NT4B-3L, NT4B-4L, NT4B-5L; NT4B-3M, NT4B-4M, NT4B-5M
VALVE (DIY)	NVA-90E-2.5, NVA-90E-3, NVA-90T-2.5, NVA-90T-3 NV-100E-2.5, NV-100E-3, NV-100T-2.5, NV-100T-3

Published by: Jinan North Welding Tools Co Ltd
The North of 308 National Highway, Daqiao Town,
Tianqiao Zone, Jinan 250121, Shandong, China.
Website: www.northweld.com

Publication Date: August 2020

Record the following information for Warranty purposes

Place of Purchase:

_____

_____

_____

Purchase Date:

_____

Declaration of Conformity

Jinan North Welding Tools Co. Ltd. declares that the product(s) identified in this declaration conform to the essential requirements and provisions of the stated Council Directives and Standards.

Product Description: **Arc Welding Equipment MIG/MAG Manual Welding Torch**

Product Models: **KLASIK SERIES of BZL, PNA, OTC, BRD, TWE, VALVE (DIY) MIG/MAG Manual Welding Torches**

Manufacturer: **Jinan North Welding Tools Co. Ltd.**

Address: **The North of 308 National Highway, Daqiao Town, Tianqiao Zone, Jinan 250121, Shandong, China.**

Product Identification:

KLASIK	MIG/MAG Manual Welding Torch Model Number
BZL	N15-3, N15-4, N15-5; N15FE-3, N15FE-4, N15FE-5; N24-3, N24-4, N24-5; N25-3, N25-4, N25-5; N26-3, N26-4, N26-5; N36-3, N36-4, N36-5; N40-3, N40-4, N40-5; NW24-3, NW24-4, NW24-5; NW501E-3, NW501E-4, NW501E-5
PNA	NS-200K-3, NS-200K-4, NS-200K-5; NS-350K-3, NS-350K-4, NS-350K-5; NS-500K-3, NS-500K-4, NS-500K-5; NS-600K-3, NS-600K-4, NS-600K-5
OTC	ND-200D-3, ND-200D-4, ND-200D-5; ND-350D-3, ND-350D-4, ND-350D-5; ND-500D-3, ND-500D-4, ND-500D-5
BRD	NQ 200-10, NQ 200-12, NQ 200-15; NQ 200B-10, NQ 200B-12, NQ 200B-15; NQ 300-10, NQ 300-12, NQ 300-15; NQ 300B-10, NQ 300B-12, NQ 300B-15; NQ 400-10, NQ 400-12, NQ 400-15; NQ 400B-10, NQ 400B-12, NQ 400B-15 NB 200-10, NB 200-12, NB 200-15; NB 300-10, NB 300-12, NB 300-15; NB 400-10, NB 400-12, NB 400-15
TWE	NT1-3E, NT1-4E, NT1-5E; NT1-3T, NT1-4T, NT1-5T; NT1-3L, NT1-4L, NT1-5L; NT1-3M, NT1-4M, NT1-5M; NT2-3E, NT2-4E, NT2-5E; NT2-3T, NT2-4T, NT2-5T; NT2-3L, NT2-4L, NT2-5L; NT2-3M, NT2-4M, NT2-5M; NT4-3E, NT4-4E, NT4-5E; NT4-3T, NT4-4T, NT4-5T; NT4-3L, NT4-4L, NT4-5L; NT4-3M, NT4-4M, NT4-5M; NT5-3E, NT5-4E, NT5-5E; NT5-3T, NT5-4T, NT5-5T; NT5-3L, NT5-4L, NT5-5L; NT5-3M, NT5-4M, NT5-5M; NT2B-3E, NT2B-4E, NT2B-5E; NT2B-3T, NT2B-4T, NT2B-5T; NT2B-3L, NT2B-4L, NT2B-5L; NT2B-3M, NT2B-4M, NT2B-5M; NT4B-3E, NT4B-4E, NT4B-5E; NT4B-3T, NT4B-4T, NT4B-5T; NT4B-3L, NT4B-4L, NT4B-5L; NT4B-3M, NT4B-4M, NT4B-5M
VALVE (DIY)	NVA-90E-2.5, NVA-90E-3, NVA-90T-2.5, NVA-90T-3 NV-100E-2.5, NV-100E-3, NV-100T-2.5, NV-100T-3

Council Directives:
- 2006/95/EC Low Voltage Directive
- 2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment

Standards:
- GB/T 15579.7-2013 Standardization Administration of China - Arc Welding Equipment - Part 7: Torches
- IEC 60974-7:2013 Arc welding equipment – Part 7: Torches

Signature of Manufacturer's responsible representative:

Zhang Jinlu

Signature

August 27, 2020

Date

Zhang Jinlu

Name

Manager-Engineering

Title

CE

Table of Contents

SECTION 1 – SAFETY INSTRUCTIONS: Read Before Using this Product

DANGER! – Protect yourself and others around you from possible serious injury or death.

1) Read, follow and understand this User Manual before installing, operating or servicing this Product. 2) Pacemaker wearers keep away until consulting your doctor. 3) Have all installation, operation, maintenance and repair work performed only by Suitably Trained and Qualified Tradesperson. 4) Keep children away. 5) Do not lose these instructions.

6) When shipped, ownership is passes to the purchaser upon receipt from the transportation company. Accordingly, claims for component damaged in shipment must be made by the purchaser against the transportation company at the time the shipment is received.

" NOTE:" Provides information regarding operating recommendations for this Product.

Product and processes can cause serious injury or death, or damage to other equipment or property, if the operator does not strictly observe all safety instructions and take precautionary actions.
Anyone not extensively trained in welding and cutting practices should not attempt to weld or cut metal.
Safe practices are outlined in American National Standard Z49.1 entitled: SAFETY IN WELDING AND CUTTING. This publication and other guides to what you should learn before using this product are listed at the end of these safety instructions.

1.01 Arc Welding Hazard Symbols

ELECTRIC SHOCK can kill

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit are electrically live whenever the output is on. DO NOT WORK ALONE! The input power circuit and Power Source internal circuits are also electrically live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded welding equipment is a hazard.

- Do not touch live electrical parts.
- Beware of electric shock from wiring.
- Keep all panels and covers securely in place.
- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Additional safety precautions are required when any of the following electrically hazardous conditions are present:
  - In damp locations or while wearing wet clothing;
  - On metal structures such as floors, gratings or scaffolds;
  - When in cramped positions such as sitting, kneeling or lying;
  - When there is a high risk of unavoidable or accidental contact with the workpiece or ground.

  For these conditions, use the following equipment:
  1) A semiautomatic DC constant voltage (wire) welder, or
  2) A DC manual (stick) welder. In most situations a DC welder is recommended.
- Disconnect input power or stop engine before installing or servicing this Product. Lockout/Tagout input power according to OSHA 29 CFR 1910.147.
- Properly install and ground this Power Source according to its User Manual and national, state, and local codes.
- Use only well-maintained equipment. Repair or replace damaged parts at once.
- Do not wrap cables around your body.
- Always verify the Input Power Cord ground – check and be sure that Input Power Cord ground wire is properly connected to ground terminal in disconnect box or that Input Power Cord plug is connected to a properly grounded receptacle outlet.
- When making input connections, attach proper grounding conductor first. DOUBLE - CHECK ALL CONNECTIONS.
- Keep all electrical Power Cords dry, free of oil and grease, and protected from hot metal, sparks and sharp metal edges.
- Frequently inspect Input Power Cord and ground conductor for damage or bare wiring. Replace immediately if damage, bare wiring can kill.
- Turn off all equipment when not in use. Disconnect power to equipment if it will be left unattended or out of service.
- Use fully insulated Torch. Never dip Torch in water to cool it or lay it down on the ground or the work surface. Do not touch Torches connected to two Power Sources at the same time or touch other people with the Torch or electrode.
- Do not use worn, damaged, undersized, repaired or poorly spliced cables.
- Ground the work piece to a good electrical (earth) ground.
- Do not touch electrode while in contact with the work (ground) circuit.
- In confined spaces or damp locations, do not use a welder with AC output unless it is equipped with a voltage reducer. Use equipment with DC output.
- Wear a safety harness to prevent falling if working above floor level.
- Do not touch electrode holders connected to two Power Sources at the same time as double open-circuit voltage will be present.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal. Disconnect cable for process not in use.
- Use ground-fault circuit interrupter (GFCI) protection when operating auxiliary equipment in damp or wet locations.

FLYING METAL or DIRT can injure eyes

Welding, chipping, wire brushing, and grinding cause sparks and flying metal.

- Welding slag can be thrown off welds as they cool down.

- Wear approved safety glasses with side shields even under your welding helmet.

HOT PARTS can burn

Nozzles, contact tips, gas diffuser welded parts, cut metal, or ground clamp can cause burn bare skin when hot.

- Don't touch hot parts with bare skin.

- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.

ARC RAYS can injure eyes and burn skin

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin.

- Wear approved safety glasses. Side shields recommended.
- Wear a welding helmet fitted with a proper shade of filter (see ANSI Z49.1 listed in Safety Standards) to protect your face and eyes when welding or watching.
- Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
- Wear protective clothing made from durable, flame-resistant material (wool and leather) and foot protection.

NOISE can damage hearing

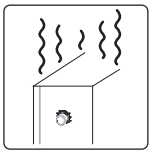
Noise from some processes can damage hearing.

- Use approved ear plugs or ear muffs for high noise levels environments.

FLYING SPARKS can injure

Flying sparks and hot metal can cause injury. Chipping and grinding cause flying metal.

- Wear proper body protection to protect skin.
- Wear approved face shield or safety goggles. Side shields are recommended.
- Sparks can cause fire, remove all flammable materials within 35 ft (10.7 m) of the working zone.



EQUIPMENT OVERHEATING

Power Source casing, terminals, cables, ground clamp, electrode stub or torch parts can cause inquiry when overheated.

- Allow cooling period before touching MIG Torch.
- Allow cooling period; follow rated duty cycle of MIG Torch.
- Reduce amperage and/or arc on time before starting to weld again.
- Do not block or filter air vent to Power Source.

BUILDUP OF GAS can injure or kill

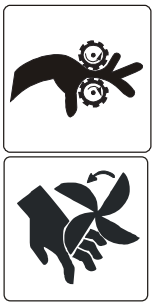
Shielding GAS used for wire welding can cause asphyxiation or death in confined places.

- Shut off compressed shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air supplied respirator.

FUMES and GASES can be hazardous

FUMES and GASES can be hazardous to your health. Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use local exhaust at the arc to remove welding fumes and gases.
- If ventilation is poor, use an approved air-supplied respirator.
- Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instruction for consumables, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have an observer trained in rescue and emergency procedures to monitor the person in a confined space. Shielding gases used for welding can displace air causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapours to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.



MOVING PARTS can cause injury

Moving parts, such as fans, drive gears, rotating wire spools, rotors, and belts can cut fingers and hands and catch loose clothing.

- Keep all doors, panels, covers, and guards closed and securely in place.
- Switch OFF Power Source before installing or connecting it.
- Keep hands, hair, loose clothing, and tools away from moving parts.
- Have only suitably Trained and Qualified Tradesperson remove guards or covers for maintenance and troubleshooting as necessary.
- To prevent accidental starting during servicing, disconnect Power Source from power receptacle or disconnect negative battery cable from battery.
- Reinstall panels or guards and close doors when servicing is finished and before starting engine.

ELECTRIC and MAGNETIC FIELDS (EMF) can affect Implanted Medical Devices

Consult your doctor and the Implanted Medical Device manufacturer before going near arc welding, spot welding, gouging or plasma arc cutting.

- Wearers of Pacemakers and other Implanted Medical Devices should keep away.

SHIELDING GAS CYLINDERS can explode

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process; be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, and arcs.
- Install and secure cylinder(s) in an upright position by chaining cylinder(s) to a stationary support or equipment cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding or other electrical circuits.
- Never allow a welding electrode to touch any cylinder.
- Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.

WELDING WIRE can cause injury

Welding wire can cause injuries to hands, ears, eyes, etc.

- Do not depress Torch Trigger or commence welding process until it is safe to do so.
- Do not point the end of the MIG Torch near any part of your body, other people, or any metal when threading the welding wire thru the MIG Torch.

Eye protection filter shade selector numbers for welding (goggles or helmet)			
Welding operation	**Arc Amperage (Amps)**	**Minimum Filter Shade Number**	**Suggested ^ Filter Shade Number**
Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW)	Less than 60	7	7
	60 – 160	10	11
	160 – 250	10	12
	250 – 550	10	14

^ As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. This Lens Shade Selector Guide was adapted from ANSI Z49.1, 2012.

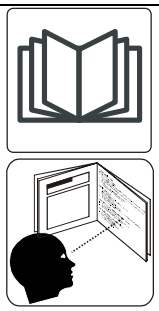
WELDING can cause fire or explosion

Sparks and spatter fly off from the welding arc. The flying sparks and hot molten metal, weld spatter, hot work piece and hot equipment can cause fires and burns.

Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, fire, or explosion. Check that the area is safe before doing any welding.

- Protect yourself and others from flying sparks and hot metal.
- Do not weld where flying sparks can strike flammable material.
- Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not weld on containers that have held combustibles or on closed containers such as tanks, drums, or pipes unless they are properly prepared according to AWS F4.1 and AWS A6.0.
- Do not weld where the atmosphere contains flammable dust, gas, or liquid vapours (gasoline for example).
- Connect work cable to the work as close to the welding area as practical to prevent welding amperage from travelling long, possibly unknown paths and causing electric shock and fire hazards.
- Use only correct fuses or circuit breakers. Do not oversize or bypass them.
- Cut off welding wire at contact tip when not in use.
- Wear body protection made from durable, flame–resistant material (leather, heavy cotton, wool). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuff less trousers, high shoes, and a cap.
- Remove any combustibles, such as butane lighter or matches, from your person before doing any welding.
- After completion of work, inspect area to ensure it is free of sparks, glowing embers, and flames.
- Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a fire watcher and extinguisher nearby.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.

1.02 Additional Installation, Operation and Maintenance Hazard Symbols



READ USER MANUAL

Read and follow all Power Source labels and User Manual carefully before installing, operating, or servicing the Power Source.

- Read the safety information at the beginning of the manual and in each section.
- Perform installation, maintenance, and service according to the User Manual, industry standards, and national, state, and local codes.

IMPROPER INSTALLATION can cause fire

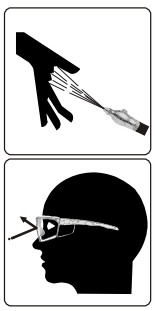
Improper equipment installation can cause fire.

- Do not install or place Power Source on, over, or near combustible surfaces.
- Do not install Power Source near flammables.
- Do not overload building wiring; be sure Input Power Supply system is properly sized, rated, and protected for weld system.

ARC WELDING can cause interference

Arc welding produces electromagnetic energy that can interfere with sensitive electronic equipment.

- Electronic equipment that can be affected are computers, telecommunication equipment, and computer-driven equipment such as robots.
- Be sure all equipment in the welding area is electromagnetically compatible.
- To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor.
- Locate welding operation 100 meters from any sensitive electronic equipment.
- Be sure this Power Source is installed and grounded according to this manual.
- If interference still occurs, the user must take extra measures such as moving the Power Source, using shielded cables, using line filters, or shielding the work area.



COMPRESSED AIR can injure or kill. Whipping air hoses can injure.

A concentrated stream of air at high pressure and high speed that can cause serious injury you or people around you.

- Do not direct air stream toward self or others.
- Wear protective equipment such as safety glasses, hearing protection, leather gloves, heavy shirt / trousers, steel toe boots, and a cap when working on compressed air system.
- Release air pressure from air system / air tools before servicing, adding or changing attachments.
- Turn off and lockout / Tagout air compressor, release air pressure from system and be sure air pressure cannot be accidentally reapplied before working on compressed air system.
- Relieve air pressure before disconnecting or connecting air lines.
- Check compressed air system components and all connections and hoses for damage, leaks and wear before operating unit.
- Use soapy water to search for leaks; never use bare hands. Do not use equipment if leaks are found.

FALLING EQUIPMENT can injure

Use designated lifting device on power source to lift the power source only, NOT cart/running gear, gas cylinders, or any other accessories

- Use lifting equipment of adequate capacity to lift and support power source.
- If using lift forks to move power source, be sure forks are long enough to extend beyond opposite side of power source.
- Keep cables and Power Cords away from moving vehicles when working from an aerial location.
- Follow the guidelines in the *Applications Manual for the Revised NIOSH Lifting Equation* [DHHS (NOISH) Publication No. 94–110] when manually lifting heavy parts or Power Source.

1.03 Read Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, is available as a free download from the American Welding Society at (Website: www.aws.org).

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1, from Global Engineering Documents (Website: www.global.ihs.com).

Safe Practices for Welding and Cutting Containers that have Held Combustibles, American Welding Society Standard AWS A6.0, from Global Engineering Documents (Website: www.global.ihs.com).

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Quincy, MA 02269 (Website: www.nfpa.org).

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 14501 George Carter Way, Suite 103, Chantilly, VA 20151 (website: www.cganet. com).

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5NS (Website: www.csagroup.org).

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (Website: www.ansi.org). Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B, from National Fire Protection Association, Quincy, MA 02269 (Website: www.nfpa.org).

OSHA, Occupational Safety and Health Standards for General Industry,

Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, from U.S. Government Printing Office, Superintendent of Documents, (Website: www.osha.gov).

Applications Manual for the Revised NIOSH Lifting Equation, The National Institute for Occupational Safety and Health (NIOSH), 1600 Clifton Rd, Atlanta, GA 30329-4027 (Website: www.cdc.gov/NIOSH).

1.04 California Proposition 65 Warnings

This product contains chemicals, including lead, or otherwise produces chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Wash hands after handling. (California Health & Safety Code 25249.5 et seq.)

Welding and cutting equipment produce fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. Wear an approved air-supplied respirator for welding and cutting. (California Health & Safety Code Section 25249.5 et seq.)

1.05 ELECTRIC and MAGNETIC FIELDS (EMF) Recommendations

Consult your doctor and the Implanted Medical Device manufacturer before going near arc welding, spot welding, gouging, or plasma arc cutting.
EMF is produced around welding cables / accessories during the welding operation and can interfere with some medical implants such as pacemakers. All Welding Operators should use the following procedures in order to minimize exposure to EMF when welding.

- Keep electrode / ground cables together by twisting or taping them together.
- Keep electrode / ground cables away from your body.
- Do not place your body in between the electrode and ground cables.
- Do not coil or drape cable around the body.
- Keep Power source and accessories as far away from your body as possible.
- Do not weld whilst carrying the Power source or accessories.
- Connect the ground clamp to the workpiece as close as possible to the weld zone.

SECTION 2 – WARRANTY

The MIG/MAG Manual Welding Torch is safe and reliable in operation when handled, installed and maintained by suitably Trained and Qualified Tradesperson.

JINAN NORTH WELDING TOOLS products are meticulously checked during and at completion of manufacture. JINAN NORTH WELDING TOOLS guarantees that each product is free from material defects and workmanship at the time of dispatch and functions according to its intended use.

JINAN NORTH WELDING TOOLS provides warranty on material defects and workmanship according to national or state legal requirements.

Contact Tips, Nozzles, and Liners (consumables) are exempt from this warranty.

The warranty does not cover any damages or functional defects resulting from:

- Overloading, abusing, or diverting from intended use of the product.
- Collisions or accidents.
- Non-compliance with instructions stated in this document.
- Improper installation or assembly.
- Insufficient maintenance.
- Modifying the product from its original state.
- Chemical influences.
- Normal wear and tear.

JINAN NORTH WELDING TOOLS assumes no liability other than for replacement or repair of faulty parts.

JINAN NORTH WELDING TOOLS makes no other warranty of any kind, expressed or implied, including, but not limited to the warranties of merchantability, or fitness for any purpose. JINAN NORTH WELDING TOOLS shall not be liable under any circumstances to Buyer, or to any person who shall purchase from Buyer, for damages of any kind, including, but not limited to any direct, indirect incidental or consequential damages or loss of production or loss of profits resulting from any cause whatsoever, including, but not limited to any delay, act, error or omission of JINAN NORTH WELDING TOOLS.

Genuine JINAN NORTH WELDING TOOLS parts must be used for safety and performance reasons or the warranty becomes invalid. Warranty shall not apply if accident, abuse, or misuse damages of a product, or if a product is modified in any way except by authorized JINAN NORTH WELDING TOOLS personnel.

2.01 Conditions of Intended Use

- This product is intended for industrial and commercial use and must only be utilized by suitably trained personnel. JINAN NORTH WELDING TOOLS is not liable for any damage or accidents resulting from improper usage.
- The instructions for installation, operation and maintenance described in this document must be followed.
- The MIG/MAG Manual Welding Torch must only be installed, operated, and serviced by suitably Trained and Qualified Tradesperson. The installation, operation, and maintenance regulations detailed in this manual are to be followed.
- The MIG/MAG Manual Welding Torch must solely be used for the intended purpose by the user within the Torches technical specifications and with an automated welding system. The type of Torch must be selected to suit the welding task.
- The MIG/MAG Manual Welding Torch was designed for use as a complete system. The incorporation of components from other manufacturers into the system is not permissible.
- The product must be kept dry and protected from humidity when transported, stored or used.
- The system is designed for environmental temperature range from 5 °C to 40 °C (41 °F to 104 °F). In case these limits are exceeded, specific action is needed.

SECTION 3 – INTRODUCTION

3.01 KLASIK Torch Description

This air or water cooled MIG/MAG Manual Welding Torches are designed for hand Metal Inert Gas welding (MIG) and Metal Active Gas welding (MAG) welding using MIG/MAG welding Power Source.

The Torches consist of a variety design elements:

1. CNC machined tips and gas diffusers are 100% compatible with OEM MIG Torches.
2. Ergonomic, solid handle design.
3. Positive grip Trigger Button with long life contacts.
4. Heavy Duty insulated metal jacketed swan neck with high conductivity inner copper tube.
5. Cable supported by steel spring to reduce hand fatigue.

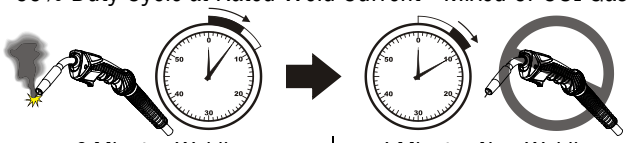
These elements create a very reliable and long-lasting Torch system with minimal maintenance.

The JINAN NORTH WELDING TOOLS ordering numbers, available accessories, spare parts, and wear parts are found within this User Manual.

3.02 KLASIK Torch Duty Cycle

The rated duty cycle of the MIG/MAG Manual Welding Torches, is a statement of the time it may be operated at its rated welding amperage without exceeding the temperature limits of the component parts.

60% Duty Cycle at Rated Weld Current - Mixed or CO_2 Gas



6 Minutes Welding in any 10 Minute Period	4 Minutes Non-Welding in any 10 Minute Period

3.03 KLASIK Torch Contents

All KLASIK Torches come complete with:

- MIG/MAG Manual Welding Torch
- Contact Tip
- Nozzle
- User Manual No: OM-100A EN

***NOTE 1**: JINAN NORTH WELDING TOOLS reserves the right to change, improve or revise the specifications or design of this product without prior notice. Such updates or changes do not entitle the buyer of this Product previously sold or shipped to the corresponding changes, updates, improvements or replacement. The values specified in the table above are nominal parameters. An individual Torch may differ from the above specifications due to in part, but not exclusively, to any one or more of the following; variations or changes in manufactured components, installation location/conditions.*

3.04 KLASIK BZL Torch Specifications *(Refer to NOTE 1)*

Part Number	N15-3 N15-4 N15-5 N15FE-3 N15FE-4 N15FE-5	N24-3 N24-4 N24-5	N25-3 N25-4 N25-5	N26-3 N26-4 N26-5	N36-3 N36-4 N36-5	N40-3 N40-4 N40-5	NW24-3 NW24-4 NW24-5	NW501E-3 NW501E-4 NW501E-5
Torch Length (m)	3 = 3 m; 4 = 4 m; 5 = 5 m							
Torch Power Connector	E = Euro Fitting							
Swan Neck Angle (°)	45	50	45	50	50	45	45	45
Wire Size Range (mm)	0.6–1.0	0.8–1.2	0.8–1.2	0.8–1.2	0.8–1.6	1.0–2.4	0.8–1.2	1.0–1.6
Standardization Administration of China - Arc Welding Equipment - Part 7: Torches IEC Standard for Safety - Arc Welding Equipment - Part 7: Torches	GB/T 15579.7-2013 IEC 60974-7:2013							
Cooling Method	Air Cooled						Water Cooled	
Operating Temperature Range	-10 °C to +40 °C (+14 °F to +104 °F)							
Storage/Transportation Temperature Range	-25 °C to +55 °C (-13 °F to +131 °F)							
Relative Air Humidity During Operating	0% to 90% (at +20 °C ambient air temperature)							
Welding Power Rating for MIG/MAG Manual Welding Torch [+40 °C Air Temperature]								
Rated Amps / Duty Cycle using: CO_2 Shielding Gas Mixed Shielding Gas	 180A/60% 150A/60%	 250A/60% 220A/60%	 230A/60% 200A/60%	 290A/60% 260A/60%	 340A/60% 300A/60%	 350A/60% 320A/60%	 300A/100% 270A/100%	 500A/100% 450A/100%
MIG/MAG Torch Maximum Voltage	113 VDC (Peak Welding Voltage)							

3.05 KLASIK PNA Torch Specifications *(Refer to NOTE 1)*

Part Number	NS-200K-3 NS-200K-4 NS-200K-5	NS-350K-3 NS-350K-4 NS-350K-5	NS-500K-3 NS-500K-4 NS-500K-5	NS-600K-3 NS-600K-4 NS-600K-5
Torch Length	3 = 3 m; 4 = 4 m; 5 = 5 m			
Torch Power Connector	K = Panasonic Style Fitting			
Swan Neck Angle (°)	45	55	55	55
Wire Size Range (mm)	0.8–1.2	1.0–1.4	1.2–1.6	1.2–2.0
Standardization Administration of China - Arc Welding Equipment - Part 7: Torches	GB/T 15579.7-2013			
IEC Standard for Safety - Arc Welding Equipment - Part 7: Torches	IEC 60974-7:2013			
Cooling Method	Air Cooled			
Operating Temperature Range	-10 °C to +40 °C (+14 °F to +104 °F)			
Storage/Transportation Temperature Range	-25 °C to +55 °C (-13 °F to +131 °F)			
Relative Air Humidity During Operating	0% to 90% (at +20 °C ambient air temperature)			
Welding Power Rating for MIG/MAG Manual Welding Torch [+40 °C Air Temperature]				
Rated Amps / Duty Cycle using:				
CO_2 Shielding Gas	200A/60%	350A/60%	500A/60%	600A/35%
Mixed Shielding Gas	180A/60%	300A/60%	420A/60%	500A/35%
MIG/MAG Torch Maximum Voltage	113 VDC (Peak Welding Voltage)			

3.06 KLASIK OTC Torch Specifications *(Refer to NOTE 1)*

Part Number	ND-200D-3 ND-200D-4 ND-200D-5	ND-350D-3 ND-350D-4 ND-350D-5	ND-500D-3 ND-500D-4 ND-500D-5
Torch Length	3 = 3 m; 4 = 4 m; 5 = 5 m		
Torch Power Connector	OTC Style Euro Fitting		
Swan Neck Angle (°)	45	55	55
Wire Size Range (mm)	0.8–1.2	1.0–1.4	1.2–1.6
Standardization Administration of China – Arc Welding Equipment – Part 7: Torches	GB/T 15579.7-2013		
IEC Standard for Safety – Arc Welding Equipment – Part 7: Torches	IEC 60974-7:2013		
Cooling Method	Air Cooled		
Operating Temperature Range	-10 °C to +40 °C (+14 °F to +104 °F)		
Storage/Transportation Temperature Range	-25 °C to +55 °C (-13 °F to +131 °F)		
Relative Air Humidity During Operating	0% to 90% (at +20 °C ambient air temperature)		
Welding Power Rating for MIG/MAG Manual Welding Torch [+40 °C Air Temperature]			
Rated Amps / Duty Cycle using:			
CO_2 Shielding Gas	200A/60%	350A/60%	500A/60%
Mixed Shielding Gas	180A/60%	300A/60%	420A/60%
MIG/MAG Torch Maximum Voltage	113 VDC (Peak Welding Voltage)		

3.07 KLASIK BRD Torch Specifications *(Refer to NOTE 1)*

Part Number	NQ 200-10, NQ 200-12, NQ 200-15, NQ 200B-10, NQ 200B-12, NQ 200B-15, NB 200-10, NB 200-12, NB 200-15	NQ 300-10, NQ 300-12, NQ 300-15, NQ 300B-10, NQ 300B-12, NQ 300B-15, NB 300-10, NB 300-12, NB 300-15	NQ 400-10, NQ 400-12, NQ 400-15, NQ 400B-10, NQ 400B-12, NQ 400B-15, NB 400-10, NB 400-12, NB 400-15
Torch Length	10 = 10 ft; 12= 12 ft; 15 = 15 ft		
Torch Power Connector	Euro Style Fitting		
Swan Neck Angle (°)	60/45	45	45
Wire Size Range (mm)	0.8–1.2	0.8–1.2	0.8–1.6
Standardization Administration of China - Arc Welding Equipment - Part 7: Torches	GB/T 15579.7-2013		
IEC Standard for Safety - Arc Welding Equipment - Part 7: Torches	IEC 60974-7:2013		
Cooling Method	Air Cooled		
Operating Temperature Range	-10 °C to +40 °C (+14 °F to +104 °F)		
Storage/Transportation Temperature Range	-25 °C to +55°C (-13 °F to +131 °F)		
Relative Air Humidity During Operating	0% to 90% (at +20 °C ambient air temperature)		
Welding Power Rating for MIG/MAG Manual Welding Torch [+40 °C Air Temperature]			
Rated Amps / Duty Cycle using:			
CO_2 Shielding Gas	200A/60%	300A/60%	400A/60%
Mixed Shielding Gas	150A/60%	200A/60%	320A/60%
MIG/MAG Torch Maximum Voltage	113 VDC (Peak Welding Voltage)		

3.08 KLASIK TWE Torch Specifications *(Refer to NOTE 1)*

Part Number	NT1-3E, NT1-4E, NT1-5E, NT1-3T, NT1-4T, NT1-5T, NT1-3L, NT1-4L, NT1-5L, NT1-3M, NT1-4M, NT1-5M	NT2-3E, NT2-4E, NT2-5E, NT2-3T, NT2-4T, NT2-5T, NT2-3L, NT2-4L, NT2-5L, NT2-3M, NT2-4M, NT2-5M, NT2B-3E, NT2B-4E, NT2B-5E, NT2B-3T, NT2B-4T, NT2B-5T, NT2B-3L, NT2B-4L, NT2B-5L, NT2B-3M, NT2B-4M, NT2B-5M	NT4-3E, NT4-4E, NT4-5E, NT4-3T, NT4-4T, NT4-5T, NT4-3L, NT4-4L, NT4-5L, NT4-3M, NT4-4M, NT4-5M, NT4B-3E, NT4B-4E, NT4B-5E, NT4B-3T, NT4B-4T, NT4B-5T, NT4B-3L, NT4B-4L, NT4B-5L, NT4B-3M, NT4B-4M, NT4B-5M	NT5-3E, NT5-4E, NT5-5E, NT5-3T, NT5-4T, NT5-5T, NT5-3L, NT5-4L, NT5-5L, NT5-3M, NT5-4M, NT5-5M
Torch Length	3 = 3 m; 4 = 4 m; 5 = 5 m			
Torch Power Connector	E = Euro Style Fitting; T = Tweco Style Fitting; L = Lincoln Style Fitting; M = Miller Style Fitting			
Swan Neck Angle (°)	45	60	60	60
Wire Size Range (mm)	0.6–1.2	0.6–1.2	0.8–2.0	0.9–2.4
Standardization Administration of China - Arc Welding Equipment - Part 7: Torches IEC Standard for Safety - Arc Welding Equipment - Part 7: Torches	GB/T 15579.7-2013 IEC 60974-7:2013			
Cooling Method	Air Cooled			
Operating Temperature Range	-10 °C to +40 °C (+14 °F to +104 °F)			
Storage/Transportation Temperature Range	-25 °C to +55 °C (-13 °F to +131 °F)			
Relative Air Humidity During Operating	0% to 90% (at +20 °C ambient air temperature)			
Welding Power Rating for MIG/MAG Manual Welding Torch [+40 °C Air Temperature]				
Rated Amps / Duty Cycle using: CO_2 Shielding Gas Mixed Shielding Gas	 180A/60% 125A/60%	 200A/60% 150A/60%	 400A/60% 350A/60%	 500A/60% 400A/60%
MIG/MAG Torch Maximum Voltage	113 VDC (Peak Welding Voltage)			

3.09 KLASIK VALVE (DIY) Torch Specifications *(Refer to NOTE 1)*

Part Number	NVA-90E-2.5, NVA-90E-3, NVA-90T-2.5, NVA-90T-3	NV-100E-2.5, NV-100E-3, NV-100T-2.5, NV-100T-3
Torch Length	2.5 = 2.5 m; 3 = 3 m	
Torch Power Connector	Not Applicable; Torch Cable end must be hard wired into MIG/MAG Welding Equipment. Refer to Operating Manual of MIG/MAG Welding Equipment for installation instructions.	
Swan Neck Style	E = Euro Style Swan Neck; T = Tweco Style Swan Neck	
Swan Neck Angle (°)	35	35
Wire Size Range (mm)	0.6–1.0	0.6–1.0
Standardization Administration of China – Arc Welding Equipment – Part 7: Torches IEC Standard for Safety – Arc Welding Equipment – Part 7: Torches	GB/T 15579.7-2013 IEC 60974-7:2013	
Gas Control	Welding Gas Controlled by Torch Trigger Lever (Mechanical Valve Built into Handle)	
Cooling Method	Air Cooled	
Operating Temperature Range	-10 °C to +40 °C (+14 °F to +104 °F)	
Storage/Transportation Temperature Range	-25 °C to +55 °C (-13 °F to +131 °F)	
Relative Air Humidity During Operating	0% to 90% (at +20 °C ambient air temperature)	
Welding Power Rating for MIG/MAG Manual Welding Torch [+40 °C Air Temperature]		
Rated Amps / Duty Cycle using: Mixed Shielding Gas	 90A/35%	 100A/35%
MIG/MAG Torch Maximum Voltage	113 VDC (Peak Welding Voltage)	

SECTION 4 – INSTALLATION

4.01 Environmental Limits

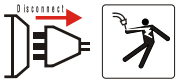
These air or water cooled MIG/MAG Manual Welding Torches are designed for use in environments where:

- Operating temperature range is -10 °C to +40 °C (+14 °F to +104 °F)
- Relative air humidity during operating is 0% to 90% @ + 20 °C ambient air temperature

4.02 Torch Operation Guidelines

Be sure to locate the MIG/MAG equipment according to the following guidelines:

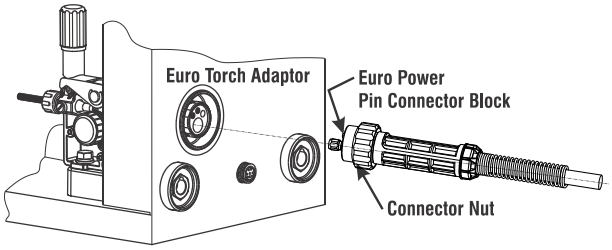
- In areas, free from moisture and dust.
- In areas, free from oil, steam and corrosive gases.
- In areas, not subjected to abnormal vibration or shock.
- In areas, not exposed to direct sunlight or rain.

							
Torch installation must be done by a suitably Trained and Qualified Tradesperson.	Disconnect power to MIG/MAG equipment. Electric shock can kill.	Flying metal or dirt can injure eyes.	FUMES and Shielding GAS can be hazardous to your health.	Moving parts can cause injury.	Sparks, weld spatter or hot work piece can cause fires and burns.	Improper installation can cause fire.	Read User Manual.

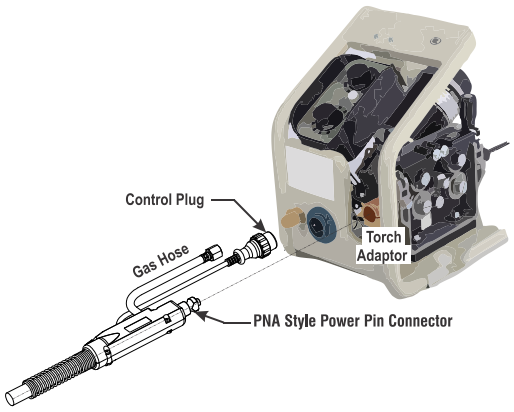
Genuine JINAN NORTH WELDING TOOLS parts must be used for safety and performance reasons or the warranty becomes invalid. Inspect all parts for transportation damage. ***Do not use damaged parts.***

4.03 Connecting Torch Power Pin to MIG Equipment Adaptor

BZL Euro, OTC, BRD Euro, TWE Euro Power Pin Connector Block to Euro Adaptor



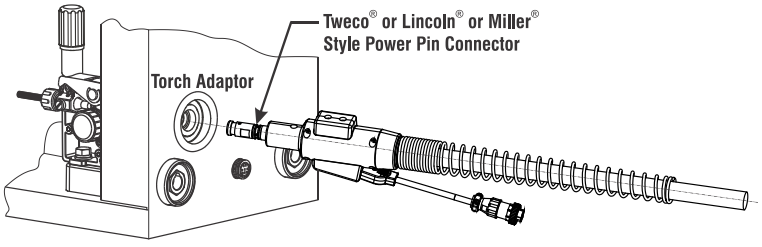
a) Disconnect power to the MIG/MAG equipment.
b) Align **Euro Power Pin Connector Block** with **Euro Torch Adaptor** then insert it.
c) Secure tighten the **Connector Nut** into the **Euro Adaptor**.
d) Refer to the MIG/MAG equipment user manual for feeding the welding wire into the MIG/MAG Manual Welding Torch.



PNA Power Pin Connector Block to PNA Adaptor

a) Disconnect power to the MIG/MAG equipment.
b) Insert the **Power Pin** into the **Torch Adaptor** to shoulder then secure using mechanical means as described in MIG/MAG equipment user manual.
c) Connect then secure the control plug and gas hose into MIG/MAG equipment.
d) Refer to the MIG/MAG equipment user manual for feeding the welding wire into the MIG/MAG Manual Welding Torch.

TWE Tweco® Power Pin Connector to Tweco® Style Adaptor or TWE Lincoln® Power Pin Connector to Lincoln® Style Adaptor or TWE Miller® Power Pin Connector to Miller® Style Adaptor

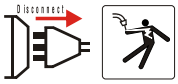


a) Disconnect power to the MIG/MAG equipment.
b) Insert the **Power Pin** into the **Torch Adaptor** to shoulder then secure using mechanical means as described in MIG/MAG equipment user manual.
c) Connect then secure the control plug into MIG/MAG equipment.
d) Refer to the MIG/MAG equipment user manual for feeding the welding wire into the MIG/MAG Manual Welding Torch.

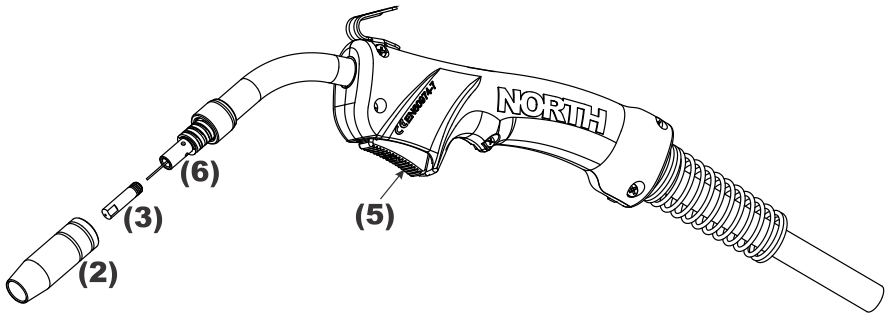
4.04 Connecting VALVE (DIY) Torch to MIG Equipment

a) Disconnect power to the MIG/MAG equipment.
b) The old Torch must be removed by a suitably Trained and Qualified Tradesperson
c) The new VALVE (DIY) Torch installation must be fitted by a suitably Trained and Qualified Tradesperson.
d) Refer to the MIG/MAG equipment User Manual for feeding the welding wire into the new VALVE (DIY) Welding Torch.

SECTION 5 – OPERATION

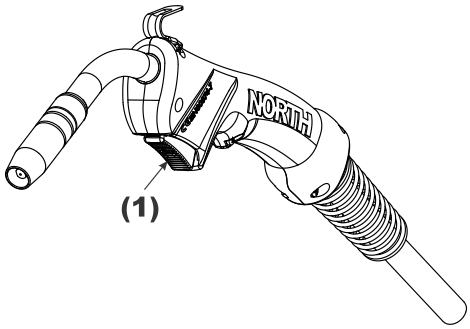
							
Torch installation must be done by a suitably Trained and Qualified Tradesperson.	Disconnect power to MIG/MAG equipment. Electric shock can kill.	Flying metal or dirt can injure eyes.	FUMES and Shielding GAS can be hazardous to your health.	Moving parts can cause injury.	Sparks, weld spatter or hot work piece can cause fires and burns.	Improper installation can cause fire.	Read User Manual.

5.01 Feeding Welding Wire Thru MIG/MAG Manual Torch



a) Connect MIG/MAG Manual Welding Torch as per Section 4.03.
b) Remove **Nozzle (2)**.
c) Remove **Contact Tip (3)**.
d) Connect power to the MIG/MAG equipment.
e) With the Torch laying straight and a low setting for Wire Feed Speed, depress **Torch Trigger Switch (5)** to energizes welding power to drive welding wire thru the MIG/MAG torch.
f) Release **Torch Trigger Switch (5)** when welding wire emerges from the **Gas Diffuser (6)**.
g) Fit **Contact Tip (3)** and secure.
h) Fit **Nozzle (2)**.

5.02 Depress Torch Trigger Switch



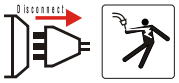
Torch Trigger (1) – When depressed the welding power is energized, welding wire (if fitted) is driven into MIG/MAG torch and shielding gas flows (if gas is connected MIG/MAG equipment and turned on) out of the gas nozzle.

DO NOT put MIG Torch near your ears or eyes when the Torch Trigger (1) is depressed as welding wire will rapidly excite the Contact Tip then the Nozzle and will cause serious to your ears, eyes or skin.

Touching welding wire when electrically alive may cause fatal shocks or severe burns.

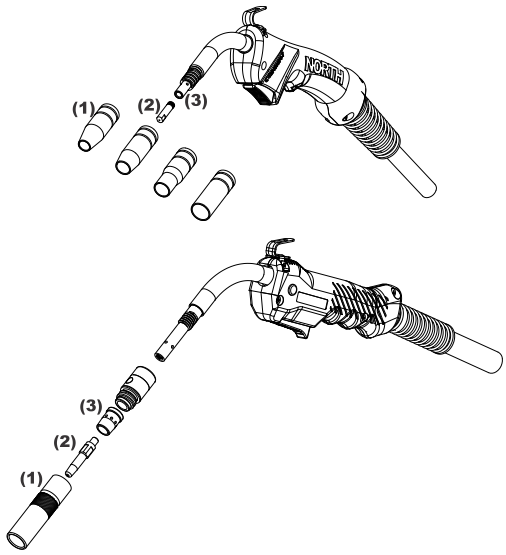
Always wear Safety glass when operating or near MIG/MAG equipment.

SECTION 6 – REPLACING WORN CONSUMABLE PARTS

							
Torch installation must be done by a suitably Trained and Qualified Tradesperson.	Disconnect power to MIG/MAG equipment. Electric shock can kill.	Flying metal or dirt can injure eyes.	FUMES and Shielding GAS can be hazardous to your health.	Moving parts can cause injury.	Welding wire can cause injury	Improper installation can cause fire.	Read User Manual.

Genuine JINAN NORTH WELDING TOOLS parts must be used for safety and performance reasons or the warranty becomes invalid. Inspect all parts for transportation damage. ***Do not use damaged or worn parts.*** *Before starting the MIG/MAG equipment, check the whole installation according to the manufacturer's instructions, this Manual and applicable national / state / local safety regulations.*

6.01 Changing Torch Consumable Parts



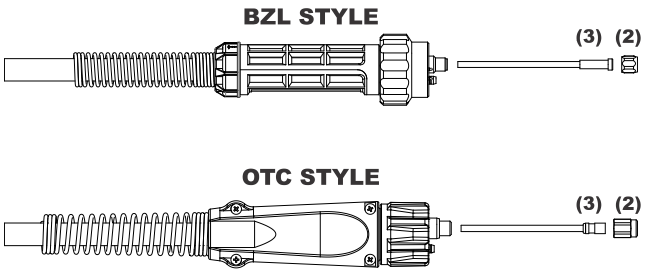
a) Disconnect power to MIG/MAG equipment.

b) **Replacing Nozzle (1)** – Remove threaded nozzle by turning in a counter clockwise direction OR slide–on nozzle can be removed using a twisting pull action.

c) **Replacing Contact Tip (2)**
Welding Wire – Cut welding wire (electrode) close to the Contact Tip (2) and remove burrs before removing contact tip.
Remove Old Contact Tip (2) – Use an appropriate wrench or pliers in a counter clockwise direction.
Install NEW Contact Tip (2) – Slide new contact tip with the same wire size over welding wire then secure using an appropriate wrench or pliers in a clockwise direction. DO NOT over tighten.

d) **Replacing Gas Diffuser (3)** – Remove using an appropriate wrench counter clockwise direction. To install firmly secure Gas Diffuser using an appropriate wrench in a clockwise direction.

6.02 Changing BZL, OTC Torch Liner



a) Disconnect power to MIG/MAG equipment.

b) Remove nozzle, contact tip and gas diffuser then lay Torch cable straight.

c) **Liner Nut (2)** – Remove use an appropriate wrench in a counter clockwise direction.

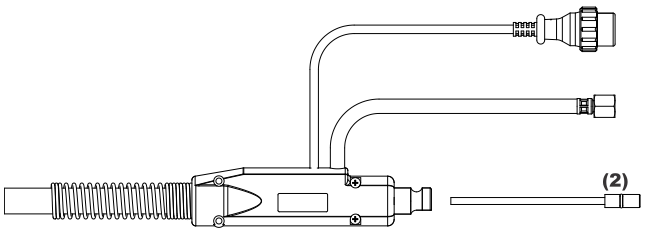
d) **Liner (3)** – Remove by pulling the liner end out of the Euro Power Pin Connector Block.

e) With the Torch laying straight, insert new liner into Euro Power Pin Connector Block and feed 50mm at a time into the Torch using a twisting motion to stop the liner from kinking.

f) **Secure Liner (3)** – Screw **Liner Nut (2)** into Pin Connector Block to secure the Liner.

g) **New Liner Trim Length** – Trim liner close to swan neck end. Remove all burrs from end of liner then replace gas diffuser, contact tip and nozzle.

6.03 Changing PNA Torch Liner



a) Disconnect power to MIG/MAG equipment.

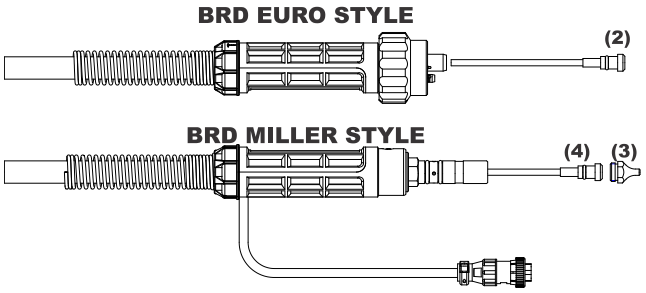
b) Remove nozzle, contact tip and gas diffuser then lay Torch cable straight.

c) **Liner (2)** – Remove by pulling the liner end out of the PNA Power Pin Connector Block.

d) With the Torch laying straight, insert new liner into PNA Power Pin Connector Block and feed 50mm at a time into the Torch using a twisting motion to stop the liner from kinking.

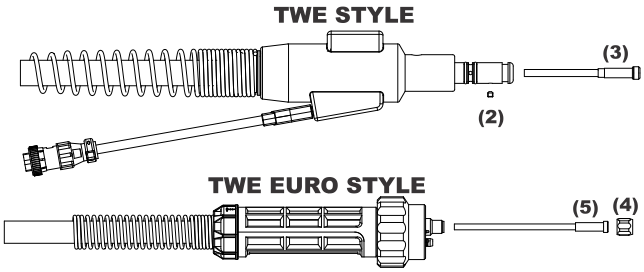
e) **New Liner Trim Length** – Trim liner close to swan neck end. Remove all burrs from end of liner then replace gas diffuser, contact tip and nozzle.

6.04 Changing BRD Torch Liner



a) Disconnect power to MIG/MAG equipment.
b) Remove nozzle, contact tip and gas diffuser then lay Torch cable straight.
c)
d) **Removing BRD Euro Style Liner (2)** – Unscrew Liner from Pin Connector Block then remove Liner by pulling the liner end out of the BRD Euro Power Pin Connector Block.
e) **Removing BRD Miller Style Liner Nut (3)** – Unscrew Liner Nut (3) from the Miller Style Pin Connector Block then remove Liner by pulling the liner end out of the BRD Miller Style Power Pin Connector Block.
f) With the Torch laying straight, insert new liner into Power Pin Connector Block and feed 50mm at a time into the Torch using a twisting motion to stop the liner from kinking.
g) **Install BRD Euro Style Liner** – Screw Liner into Pin Connector Block to secure the Liner.
h) **Install BRD Miller Style Liner Nut (3)** – Screw Nipple for Miller Connection into Pin Connector Block to secure the Liner.
i) **New Liner Trim Length** – Trim liner stick-out past swan neck, refer to table. Remove all burrs from end of liner then replace gas diffuser, contact tip and nozzle.

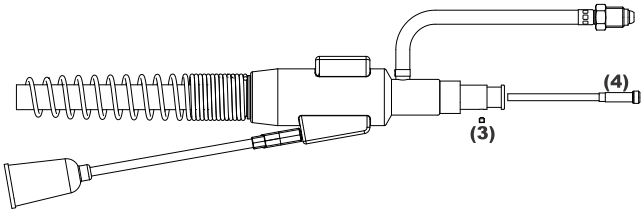
6.05 Changing TWE Style & TWE Euro Style Torch Liner



TWE Model Number	Diffuser Part No.	New Liner Trim Length
NT1	52	29 mm
NT2	52	33.5 mm
	52FN	27 mm
NT4	54A	11.9 mm
NT5	55	11.8 mm

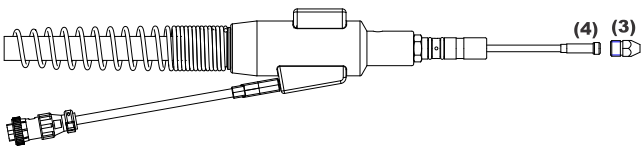
a) Disconnect power to MIG/MAG equipment.
b) Remove nozzle, contact tip and gas diffuser then lay Torch cable straight.
c) **TWE Style: Socket Head Screw (2)** – Remove using an appropriate Allen Key (Hex Key) in a counter clockwise direction.
Remove Liner (3) TWE Style Power Pin – Remove by pulling the liner end out of the TWE Power Pin Connector Block.
d) **Euro Style: Liner Nut (4)** – Remove use an appropriate wrench in a counter clockwise direction.
Remove Liner (5) TWE Euro Style Power Pin – Remove by pulling the liner end out of the Euro Power Pin Connector Block.
e) With the Torch laying straight, insert new **Liner (3) or (5)** into TWE Power Pin Connector Block and feed 50mm at a time into the Torch using a twisting motion to stop the liner from kinking.
f) **Secure Liner (3) TWE Style Liner** – Fit, **Socket Head Screw (2)**, using an appropriate Allen Key (Hex Key), in a clockwise direction to secure Liner.
g) **Secure Liner (5) TWE Euro Style**– Fit, **Liner Nut (4),** into Pin Connector Block to secure the Liner.
h) **New Liner Trim Length** – Trim liner stick-out past swan neck, refer to table. Remove all burrs from end of liner then replace gas diffuser, contact tip and nozzle.

6.06 Changing TWE Lincoln Style Torch Liner



a) Disconnect power to MIG/MAG equipment.
b) Remove nozzle, contact tip and gas diffuser then lay Torch cable straight.
c) **Liner stick out**– Measure Liner length past the end of the Swan neck.
d) **Socket Head Screw (3)** – Remove using an appropriate Allen Key (Hex Key) in a counter clockwise direction.
e) **Remove Liner (4)** – Remove by pulling the liner end out of the Power Pin Connector Block.
f) With the Torch laying straight, insert new **Liner (4)** into Power Pin Connector Block and feed 50mm at a time into the Torch using a twisting motion to stop the liner from kinking. Then fit, **Socket Head Screw (3)**, using an appropriate Allen Key (Hex Key), in a clockwise direction to secure Liner.
g) **New Liner Trim Length** – Trim liner stick-out past swan neck, as measured. Remove all burrs from end of liner then replace gas diffuser, contact tip and nozzle.

6.07 Changing TWE Miller Style Torch Liner



a) Disconnect power to MIG/MAG equipment.
b) Remove nozzle, contact tip and gas diffuser then lay Torch cable straight.
c) **Liner stick out**– Measure Liner length past the end of the Swan neck.
d) **Remove Liner Nut (3)** – Remove use an appropriate wrench in a counter clockwise direction.
e) **Remove Liner (4)** – Remove by pulling the liner end out of the Power Pin Connector Block.
f) With the Torch laying straight, insert new **Liner (4)** into Power Pin Connector Block and feed 50mm at a time into the Torch using a twisting motion to stop the liner from kinking. Then fit, **Liner Nut (3),** into Pin Connector Block to secure the Liner.
g) **New Liner Trim Length** – Trim liner stick-out past swan neck, as measured. Remove all burrs from end of liner then replace gas diffuser, contact tip and nozzle.

6.08 Changing VALVE (DIY) Torch Liner

a) The old VALVE (DIY) Torch **Liner** must be removed by a suitably Trained and Qualified Tradesperson
b) The new VALVE (DIY) Torch **Liner** must be fitted by a suitably Trained and Qualified Tradesperson.
c) Refer to the MIG/MAG equipment User Manual for feeding the welding wire into the new VALVE (DIY) Welding Torch.

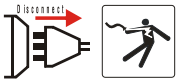
SECTION 7 – TROUBLESHOOTING

NOTE: *Weld quality is dependent on the correct consumables, proper Torch position/angles, and Product maintenance.*

Description	Possible Cause	Corrective Action
1. Welding wire does not feed	A The welding wire is jammed before the contact tip due to the welding wire not being straight. B The Torch and Torch Cable Assembly are not equipped correctly for the wire diameter and/or wire material. C The Liner is not correctly inserted into the Torch Cable Assembly. D The contact tip is blocked with wire debris OR the Liner is worn / filled with dirt and debris. E Wrong size liner. F Worn or broken Torch Trigger Switch G Wrong size/type feed rolls for welding wire or worn feed rolls in MIG/MAG equipment.	A Remove welding wire from Torch, cut off end, and remove burr then straighten end. Feed welding wire into the Torch. B Check Liner (Torch Cable Assembly and Torch Neck) then contact tip size. C Make sure that the Liner is touching the contact tip. D Replace the contact tip and/or Liner, blow out Torch Neck, Liner conduit with clean, dried compressed air. E Change liner to correct size/type for welding wire F Test, if not working then replace. G Change feed rolls to correct size/type for welding wire or change worn feed rolls.
2. Torch is getting extremely hot	A Contact tip or tip holder are not tightened properly. B Cooling system is not cooling effectively. C Cooling system is not correctly connected. D Torch Cable connections loose or defective.	A Make tighter using a suitable tool. B Check then correct coolant flow, fluid level, or cleanliness. C Check connections (coolant inlet and return). D Make Torch Cable / Swan Neck connections tighter.
3. Welding wire feeding problems	A Contact tip is worn. B Liner is worn / dirty. C Consumables used are not suitable for the welding wire diameter or material. D MIG/MAG equipment not set-up properly. E Welding wire is contaminated.	A Replace contact tip. B Check the Liner; blow it out with clean, dry compressed air. If needed replace it. C Use recommended consumables for the welding wire diameter/material used. D Check the feed rolls, feed roll pressure and the spool brake are adjusted as stated by the MIG/MAG equipment's manual. E Use a cleaning felt to clean welding wire in the MIG/MAG equipment.
4. Wire feed stops during welding	A Wire blockage in contact tip. B Wire burns back into contact tip C Groove worn in contact tip by welding wire.	A Check for contamination/clogging, clean or replace contact tip. B Adjust distance between contact tip and arc. C Replace contact tip.
5. Porosity in the weld metal	A Turbulent shielding gas flowing to weld zone caused by spatter build up inside nozzle or on gas diffuser. B Too low or extremely high shielding gas flow in the Torch. C Shielding gas supply contaminated or incorrect shielding gas used. D Moisture or contamination on the welding wire or on the work piece	A Clean the Torch consumables and use nozzle / gas diffuser anti-spatter spray. B Check flow using a gas flow meter then adjust gas flow rate from 10 LPM (indoors, no drafts) up to 20 LPM (welding in drafts or outdoors). C Check for gas leakages using soapy water or check for correct shielding gas to the Welding System. D Check the wire and the work piece, use less or different anti-spatter spray.
6. Welding arc: - always varies length - is unstable - is erratic	A Contact tip is worn. B Wrong welding parameters. C Poor electrical connections in the welding circuit.	A Change contact tip. B Check the MIG/MAG equipment setup parameters then change parameters. C Check / tighten all electrical connections of the MIG/MAG equipment, Torch and ground cable to work piece.

Description	Possible Cause	Corrective Action
7. Welding wire burns back to contact tip	A Incorrect arc voltage/ wire feed speed weld parameters for the welding wire wire/material/Torch position. B Erratic / unstable welding arc. C Incorrect contact tip stick-out length for required weld. D Incorrect welding wire stick-out length for required weld. E Ground cable to work piece fault.	A Adjust arc voltage and/or wire feed speed parameters. B Refer to Description No. 6 on page 17. C Adjust nozzle / tip relationship. D Adjust wire stick-out. E Replace ground cables and/or connections.
8. Short contact tip life	A Contact tip size. B Welding wire eroding contact tip due to feed rolls scoring wire. C Exceeding Torch duty cycle.	A Replace with correct contact tip size. B Change feed rolls. C Replace with higher rated Torch.
9. Extreme spatter	A Incorrect arc voltage/ wire feed speed weld parameters for the welding wire / material / Torch position. B Inadequate shielding gas coverage. C Contaminated wire or work piece.	A Adjust arc voltage and/or wire feed speed parameters. B Verify shielding gas coverage or gas mixture. C Use a cleaning felt to clean welding wire in the MIG/MAG equipment and work piece.

SECTION 8 – ROUTINE SERVICE and MAINTENANCE

								
Service / Maintenance must be performed by a suitably Trained and Qualified Tradesperson	Disconnect Input Power Supply from Welding System before performing maintenance on the system. Electric shock can kill	Hot parts can burn. Let the Torch cool down prior to doing maintenance work	Turn off air compressor, and release air pressure from system. Compressed air can injure or kill.	Welding wire can cause injury	Moving parts can cause injury	Flying metal or dirt can injure eyes	Improper installation can cause fire	Read User Manual

Damaged Swan Necks, Torches, or Cable Assemblies must not be used!

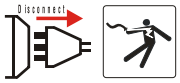
Known defects must be repaired by suitably Trained and Qualified Tradesperson prior using Torch.

Schedule for Routine Maintenance / Inspection with Actions

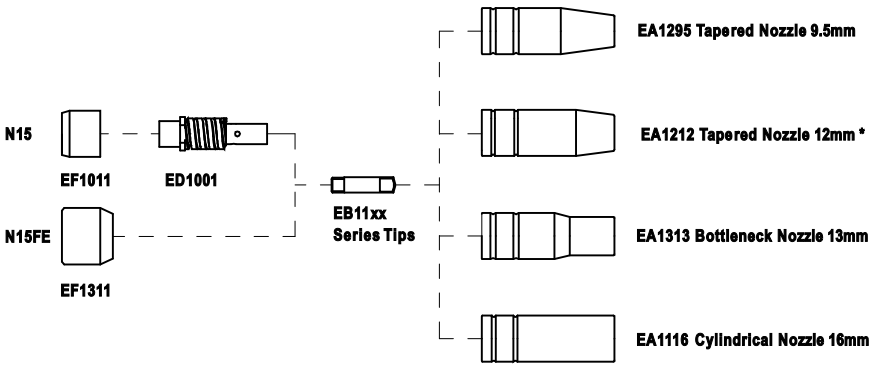
Before Every Use	• Check torch, contact tip, nozzle, liner, cables, and overall equipment for damage. Replace any damaged components.
Every 8 Hours of Use	• Change Contact Tip.
Once per Day	• Visual inspect for damages on the Swan Neck, and Torch Cable Assembly.
Every 16 Hours of Use	• Use dry, clean compressed air to blow out the Liner but first remove contact tip.
Every 40 Hours of Use	• Remove the Liner and check for wear. Replace Liner if worn. • Remove the Liner and check for dirt deposits. Use dry, clean compressed air to blow out the Liner but first remove contact tip. Replace Liner if dirt cannot be removed from Liner.
Once per Month (1 x 8 Hour Shift per Day) OR **Twice per Month (2 x 8 Hour Shifts per Day) OR** **Three Times per Month (3 x 8 Hour Shifts per Day)**	• Make sure that all screws are tightened. • Inspect all connections and hoses for damages.

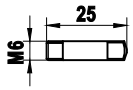
SECTION 9 – WEAR PARTS

9.01 BZL N15 / N15FE / N24 / NW-24 Wear Parts

								
Service / Maintenance must be performed by a suitably Trained and Qualified Tradesperson	Disconnect Input Power Supply from Welding System before performing maintenance on the system. Electric shock can kill	Hot parts can burn. Let the Torch cool down prior to doing maintenance work	Turn off air compressor, and release air pressure from system. Compressed air can injure or kill.	Welding wire can cause injury	Moving parts can cause injury	Flying metal or dirt can injure eyes	Improper installation can cause fire	Read User Manual

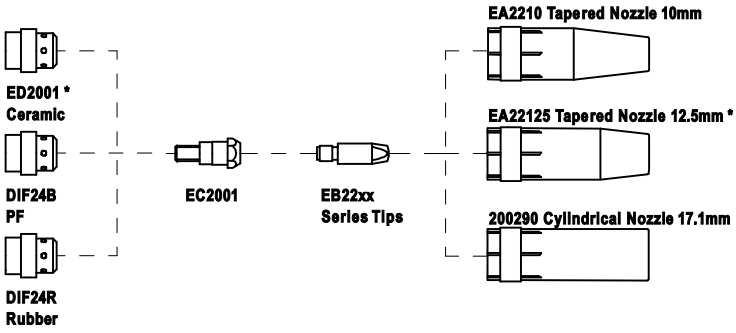
N15/N15FE Consumable Series

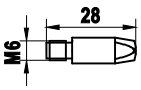




'EB11xx'Series Tips		
EB1106	0.6mm (0.023")	ECu
EB1108	0.8mm (0.030")	ECu
EB1109	0.9mm (0.035")	ECu
EB1110	1.0mm (0.040")	ECu
EB1106L	0.6mm (0.023")	CuCrZr
EB1108L	0.8mm (0.030")	CuCrZr
EB1109L	0.9mm (0.035")	CuCrZr
EB1110L	1.0mm (0.040")	CuCrZr
EB1108AL	0.8mm (0.030")	ECu/AL
EB1109AL	0.9mm (0.035")	ECu/AL
EB1110AL	1.0mm (0.040")	ECu/AL

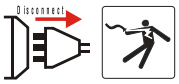
N24/NW-24 Consumable Series



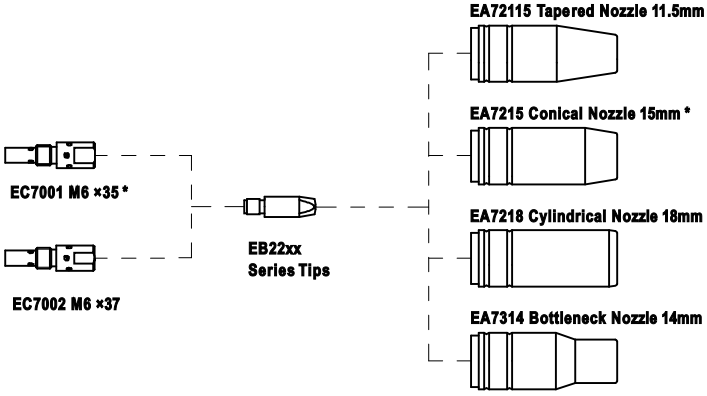


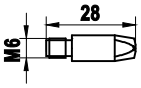
'EB22xx'Series Tips		
EB2208	0.8mm (0.030")	ECu
EB2209	0.9mm (0.035")	ECu
EB2210	1.0mm (0.040")	ECu
EB2212	1.2mm (0.045")	ECu
EB2214	1.4mm (0.055")	ECu
EB2208L	0.8mm (0.030")	CuCrZr
EB2209L	0.9mm (0.035")	CuCrZr
EB2210L	1.0mm (0.040")	CuCrZr
EB2212L	1.2mm (0.045")	CuCrZr
EB2214L	1.4mm (0.055")	CuCrZr
EB2208AL	0.8mm (0.030")	ECu/AL
EB2209AL	0.9mm (0.035")	ECu/AL
EB2210AL	1.0mm (0.040")	ECu/AL
EB2212AL	1.2mm (0.045")	ECu/AL

9.02 BZL N25 / N26 Wear Parts

									
Service / Maintenance must be performed by a suitably Trained and Qualified Tradesperson	Disconnect Input Power Supply from Welding System before performing maintenance on the system. Electric shock can kill	Hot parts can burn. Let the Torch cool down prior to doing maintenance work	Turn off air compressor, and release air pressure from system. Compressed air can injure or kill.	Welding wire can cause injury	Moving parts can cause injury	Flying metal or dirt can injure eyes	Improper installation can cause fire	Read User Manual

N25 Consumable Series

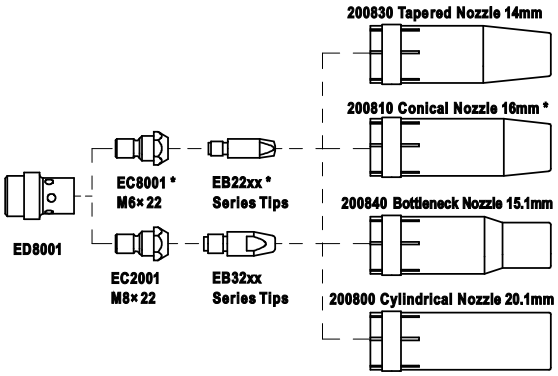


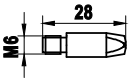


'EB22xx'Series Tips

EB2208	0.8mm (0.030")	ECu
EB2209	0.9mm (0.035")	ECu
EB2210	1.0mm (0.040")	ECu
EB2212	1.2mm (0.045")	ECu
EB2214	1.4mm (0.055")	ECu
EB2208L	0.8mm (0.030")	CuCrZr
EB2209L	0.9mm (0.035")	CuCrZr
EB2210L	1.0mm (0.040")	CuCrZr
EB2212L	1.2mm (0.045")	CuCrZr
EB2214L	1.4mm (0.055")	CuCrZr
EB2208AL	0.8mm (0.030")	ECu/AL
EB2209AL	0.9mm (0.035")	ECu/AL
EB2210AL	1.0mm (0.040")	ECu/AL
EB2212AL	1.2mm (0.045")	ECu/AL

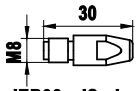
N26 Consumable Series





'EB22xx'Series Tips

EB2208	0.8mm (0.030")	ECu
EB2209	0.9mm (0.035")	ECu
EB2210	1.0mm (0.040")	ECu
EB2212	1.2mm (0.045")	ECu
EB2214	1.4mm (0.055")	ECu
EB2208L	0.8mm (0.030")	CuCrZr
EB2209L	0.9mm (0.035")	CuCrZr
EB2210L	1.0mm (0.040")	CuCrZr
EB2212L	1.2mm (0.045")	CuCrZr
EB2214L	1.4mm (0.055")	CuCrZr
EB2208AL	0.8mm (0.030")	ECu/AL
EB2209AL	0.9mm (0.035")	ECu/AL
EB2210AL	1.0mm (0.040")	ECu/AL
EB2212AL	1.2mm (0.045")	ECu/AL

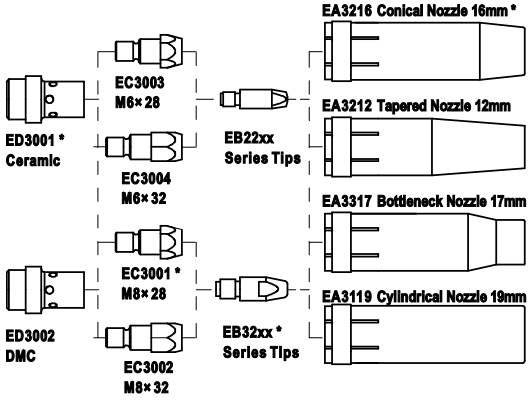


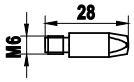
'EB32xx'Series Tips

EB3208	0.8mm (0.030")	ECu
EB3209	0.9mm (0.035")	ECu
EB3210	1.0mm (0.040")	ECu
EB3212	1.2mm (0.045")	ECu
EB3214	1.4mm (0.055")	ECu
EB3216	1.6mm (1/16")	ECu
EB3220	2.0mm (5/64")	ECu
EB3224	2.4mm (3/32")	ECu
EB3208L	0.8mm (0.030")	CuCrZr
EB3209L	0.9mm (0.035")	CuCrZr
EB3210L	1.0mm (0.040")	CuCrZr
EB3212L	1.2mm (0.045")	CuCrZr
EB3214L	1.4mm (0.055")	CuCrZr
EB3216L	1.6mm (1/16")	CuCrZr
EB3220L	2.0mm (5/64")	CuCrZr
EB3224L	2.4mm (3/32")	CuCrZr
EB3209AL	0.9mm (0.035")	ECu/AL
EB3210AL	1.0mm (0.040")	ECu/AL
EB3212AL	1.2mm (0.045")	ECu/AL
EB3214AL	1.4mm (0.055")	ECu/AL
EB3216AL	1.6mm (1/16")	ECu/AL

9.03 BZL N36 / N40 / NW-501 Wear Parts

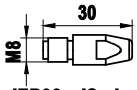
N36 Consumable Series





'EB22xx'Series Tips

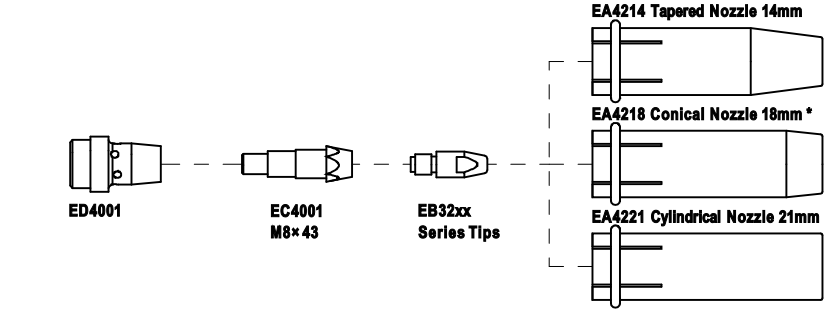
EB2208	0.8mm (0.030")	ECu
EB2209	0.9mm (0.035")	ECu
EB2210	1.0mm (0.040")	ECu
EB2212	1.2mm (0.045")	ECu
EB2214	1.4mm (0.055")	ECu
EB2208L	0.8mm (0.030")	CuCrZr
EB2209L	0.9mm (0.035")	CuCrZr
EB2210L	1.0mm (0.040")	CuCrZr
EB2212L	1.2mm (0.045")	CuCrZr
EB2214L	1.4mm (0.055")	CuCrZr
EB2208AL	0.8mm (0.030")	ECu/AL
EB2209AL	0.9mm (0.035")	ECu/AL
EB2210AL	1.0mm (0.040")	ECu/AL
EB2212AL	1.2mm (0.045")	ECu/AL

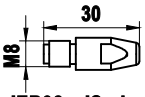


'EB32xx'Series Tips

EB3208	0.8mm (0.030")	ECu
EB3209	0.9mm (0.035")	ECu
EB3210	1.0mm (0.040")	ECu
EB3212	1.2mm (0.045")	ECu
EB3214	1.4mm (0.055")	ECu
EB3216	1.6mm (1/16")	ECu
EB3220	2.0mm (5/64")	ECu
EB3224	2.4mm (3/32")	ECu
EB3208L	0.8mm (0.030")	CuCrZr
EB3209L	0.9mm (0.035")	CuCrZr
EB3210L	1.0mm (0.040")	CuCrZr
EB3212L	1.2mm (0.045")	CuCrZr
EB3214L	1.4mm (0.055")	CuCrZr
EB3216L	1.6mm (1/16")	CuCrZr
EB3220L	2.0mm (5/64")	CuCrZr
EB3224L	2.4mm (3/32")	CuCrZr
EB3209AL	0.9mm (0.035")	ECu/AL
EB3210AL	1.0mm (0.040")	ECu/AL
EB3212AL	1.2mm (0.045")	ECu/AL
EB3214AL	1.4mm (0.055")	ECu/AL
EB3216AL	1.6mm (1/16")	ECu/AL

N40 Consumable Series

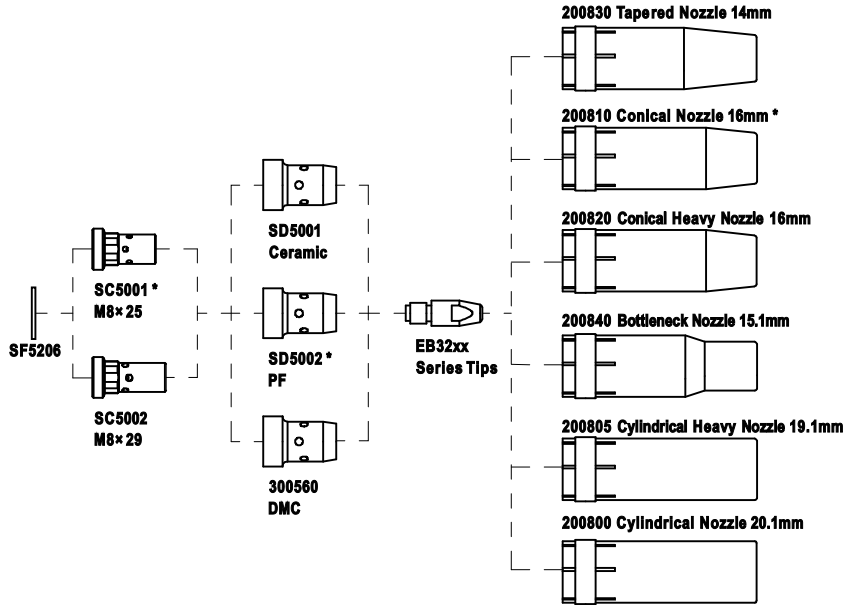




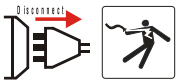
'EB32xx'Series Tips

EB3208	0.8mm (0.030")	ECu
EB3209	0.9mm (0.035")	ECu
EB3210	1.0mm (0.040")	ECu
EB3212	1.2mm (0.045")	ECu
EB3214	1.4mm (0.055")	ECu
EB3216	1.6mm (1/16")	ECu
EB3220	2.0mm (5/64")	ECu
EB3224	2.4mm (3/32")	ECu
EB3208L	0.8mm (0.030")	CuCrZr
EB3209L	0.9mm (0.035")	CuCrZr
EB3210L	1.0mm (0.040")	CuCrZr
EB3212L	1.2mm (0.045")	CuCrZr
EB3214L	1.4mm (0.055")	CuCrZr
EB3216L	1.6mm (1/16")	CuCrZr
EB3220L	2.0mm (5/64")	CuCrZr
EB3224L	2.4mm (3/32")	CuCrZr
EB3209AL	0.9mm (0.035")	ECu/AL
EB3210AL	1.0mm (0.040")	ECu/AL
EB3212AL	1.2mm (0.045")	ECu/AL
EB3214AL	1.4mm (0.055")	ECu/AL
EB3216AL	1.6mm (1/16")	ECu/AL

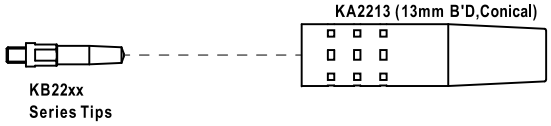
NW-501 Consumable Series



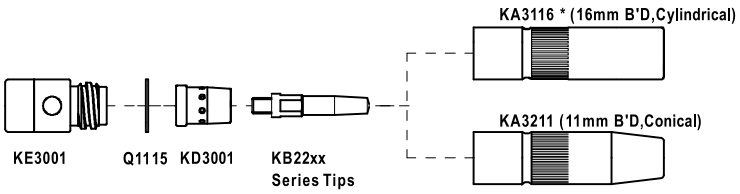
9.04 PNA & OTC QTB-200A / QTB-350A / QTB-500A / QTB-600A Wear Parts

								
Service / Maintenance must be performed by a suitably Trained and Qualified Tradesperson	Disconnect Input Power Supply from Welding System before performing maintenance on the system. Electric shock can kill	Hot parts can burn. Let the Torch cool down prior to doing maintenance work	Turn off air compressor, and release air pressure from system. Compressed air can injure or kill.	Welding wire can cause injury	Moving parts can cause injury	Flying metal or dirt can injure eyes	Improper installation can cause fire	Read User Manual

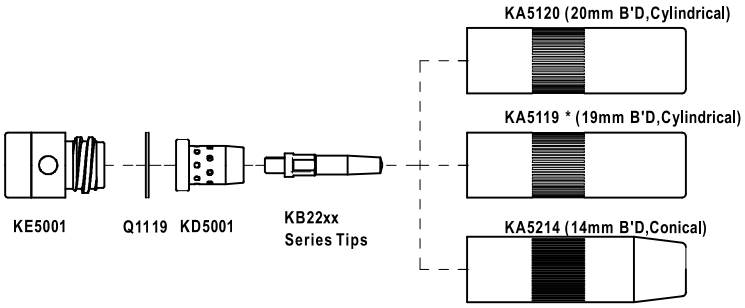
QTB-200A Consumable Series



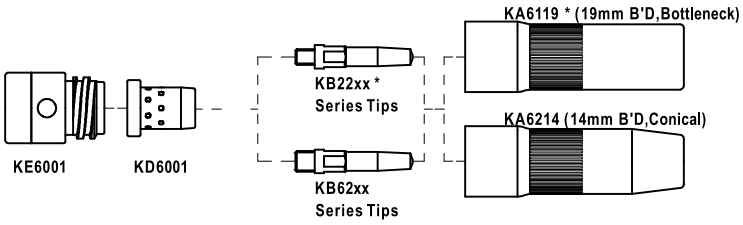
QTB-350A Consumable Series

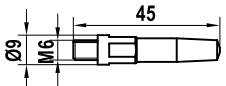


QTB-500A Consumable Series



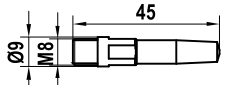
QTB-600A Consumable Series





'KB22xx'Series Tips

KB2208	0.8mm (0.030")	ECu
KB2210	1.0mm (0.040")	ECu
KB2212	1.2mm (0.045")	ECu
KB2214	1.4mm (0.055")	ECu
KB2216	1.6mm (1/16")	ECu
KB2208L	0.8mm (0.030")	CuCrZr
KB2210L	1.0mm (0.040")	CuCrZr
KB2212L	1.2mm (0.045")	CuCrZr
KB2214L	1.4mm (0.055")	CuCrZr
KB2216L	1.6mm (1/16")	CuCrZr
KB2210AL	1.0mm (0.040")	ECu/AL
KB2212AL	1.2mm (0.045")	ECu/AL



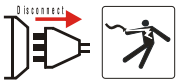
'KB62xx'Series Tips

KB6212	1.2mm (0.045")	ECu
KB6214	1.4mm (0.055")	ECu
KB6216	1.6mm (1/16")	ECu
KB6212L	1.2mm (0.045")	CuCrZr
KB6214L	1.4mm (0.055")	CuCrZr
KB6216L	1.6mm (1/16")	CuCrZr

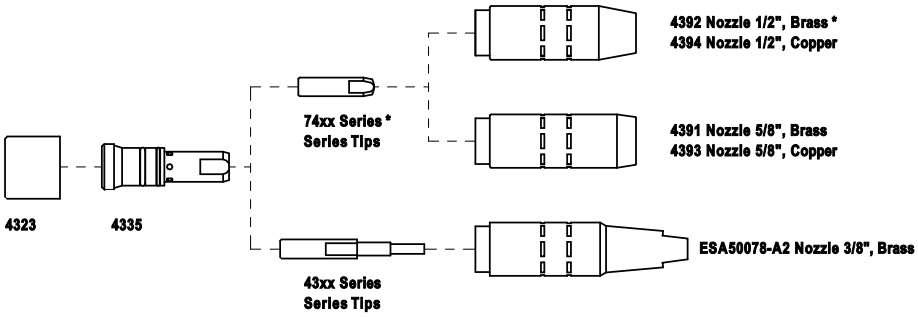
Neck Options

Part Number	Separate Swanneck	Swanneck
QTB-200A	N/A	KF2245 45 ° KF2180 180 °
QTB-350A	KF3355 KF3311 Front Gun Tube — KF3312 Gunneck 55 °	KF3255 55 ° KF31180 180 °
QTB-500A	KF5011 Front Gun Tube — KF5255 Gunneck 55 ° KF51180 Gunneck 180 °	N/A
QTB-600A	KF6031 Front Gun Tube M6 — KF5255 Gunneck 55 ° KF6032 Front Gun Tube M8 — KF51180 Gunneck 180 °	N/A

9.05 BND NB200 / NB300 / NB400 Wear Parts

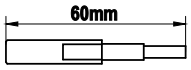
								
Service / Maintenance must be performed by a suitably Trained and Qualified Tradesperson	Disconnect Input Power Supply from Welding System before performing maintenance on the system. Electric shock can kill	Hot parts can burn. Let the Torch cool down prior to doing maintenance work	Turn off air compressor, and release air pressure from system. Compressed air can injure or kill.	Welding wire can cause injury	Moving parts can cause injury	Flying metal or dirt can injure eyes	Improper installation can cause fire	Read User Manual

NB200 / NB300 Consumable Series



74 Series Tips

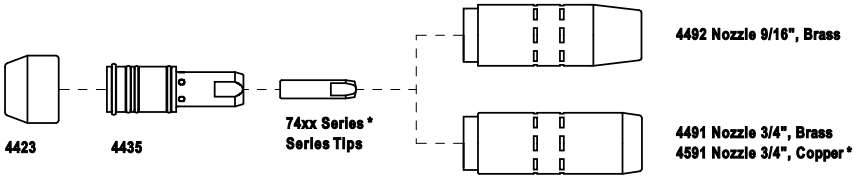
7497	0.023" (0.6mm)	ECu
7488	0.030" (0.8mm)	ECu
7489	0.035" (0.9mm)	ECu
7496	0.039" (1.0mm)	ECu
7490	0.045" (1.2mm)	ECu
7498	0.052" (1.4mm)	ECu
7491	1/16" (1.6mm)	ECu
7492	5/64" (2.0mm)	ECu
7493	3/32" (2.4mm)	ECu

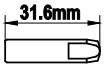


43xx Series Tips

4381A	0.035" (0.9mm)	ECu
4382A	0.045" (1.2mm)	ECu

NB400 Consumable Series

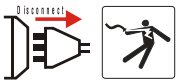




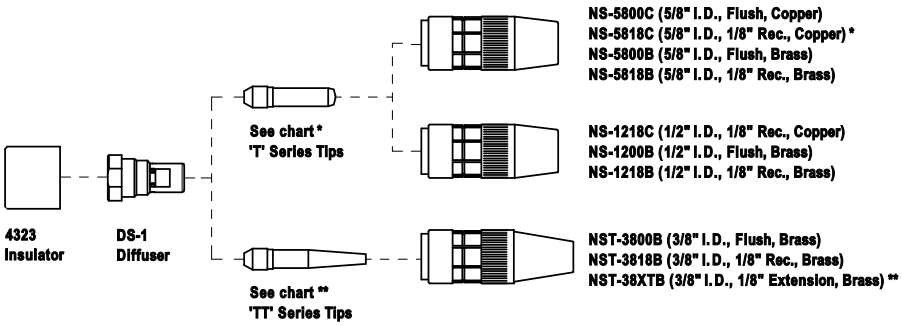
74 Series Tips

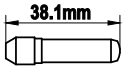
7497	0.023" (0.6mm)	ECu
7488	0.030" (0.8mm)	ECu
7489	0.035" (0.9mm)	ECu
7496	0.039" (1.0mm)	ECu
7490	0.045" (1.2mm)	ECu
7498	0.052" (1.4mm)	ECu
7491	1/16" (1.6mm)	ECu
7492	5/64" (2.0mm)	ECu
7493	3/32" (2.4mm)	ECu

9.06 BND NQ200 / NQ300 / NQ400 Wear Parts

								
Service / Maintenance must be performed by a suitably Trained and Qualified Tradesperson	Disconnect Input Power Supply from Welding System before performing maintenance on the system. Electric shock can kill	Hot parts can burn. Let the Torch cool down prior to doing maintenance work	Turn off air compressor, and release air pressure from system. Compressed air can injure or kill.	Welding wire can cause injury	Moving parts can cause injury	Flying metal or dirt can injure eyes	Improper installation can cause fire	Read User Manual

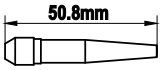
NQ200 / NQ300 Consumable Series





T Series Tips

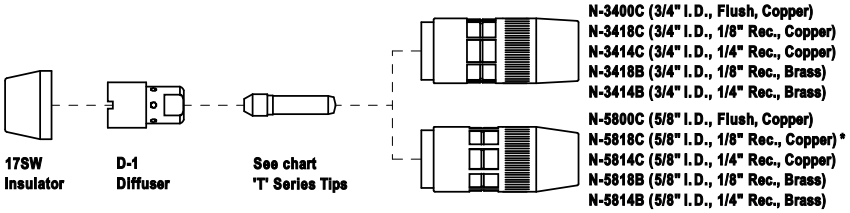
T-23	0.023" (0.6mm)	ECu
T-030	0.030" (0.8mm)	ECu
T-035	0.035" (0.9mm)	ECu
T-039	0.039" (1.0mm)	ECu
T-045	0.045" (1.2mm)	ECu
T-052	0.052" (1.3mm)	ECu
T-062	1/16" (1.6mm)	ECu
T-072	0.072" (1.8mm)	ECu
T-078	5/64" (2.0mm)	ECu
T-094	3/32" (2.4mm)	ECu

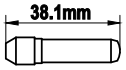


TT Series Tips

TT-23	0.023" (0.6mm)	ECu
TT-030	0.030" (0.8mm)	ECu
TT-035	0.035" (0.9mm)	ECu
TT-039	0.039" (1.0mm)	ECu
TT-045	0.045" (1.2mm)	ECu
TT-052	0.052" (1.3mm)	ECu
TT-062	1/16" (1.6mm)	ECu

NQ400 Consumable Series

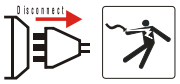




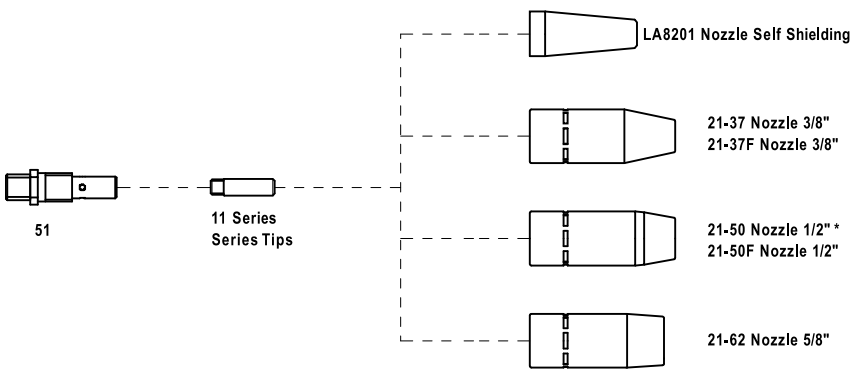
T Series Tips

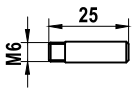
T-23	0.023" (0.6mm)	ECu
T-030	0.030" (0.8mm)	ECu
T-035	0.035" (0.9mm)	ECu
T-039	0.039" (1.0mm)	ECu
T-045	0.045" (1.2mm)	ECu
T-052	0.052" (1.3mm)	ECu
T-062	1/16" (1.6mm)	ECu
T-072	0.072" (1.8mm)	ECu
T-078	5/64" (2.0mm)	ECu
T-094	3/32" (2.4mm)	ECu

9.07 TWE NT1 / NT2 Wear Parts

								
Service / Maintenance must be performed by a suitably Trained and Qualified Tradesperson	Disconnect Input Power Supply from Welding System before performing maintenance on the system. Electric shock can kill	Hot parts can burn. Let the Torch cool down prior to doing maintenance work	Turn off air compressor, and release air pressure from system. Compressed air can injure or kill.	Welding wire can cause injury	Moving parts can cause injury	Flying metal or dirt can injure eyes	Improper installation can cause fire	Read User Manual

NT1 Consumable Series

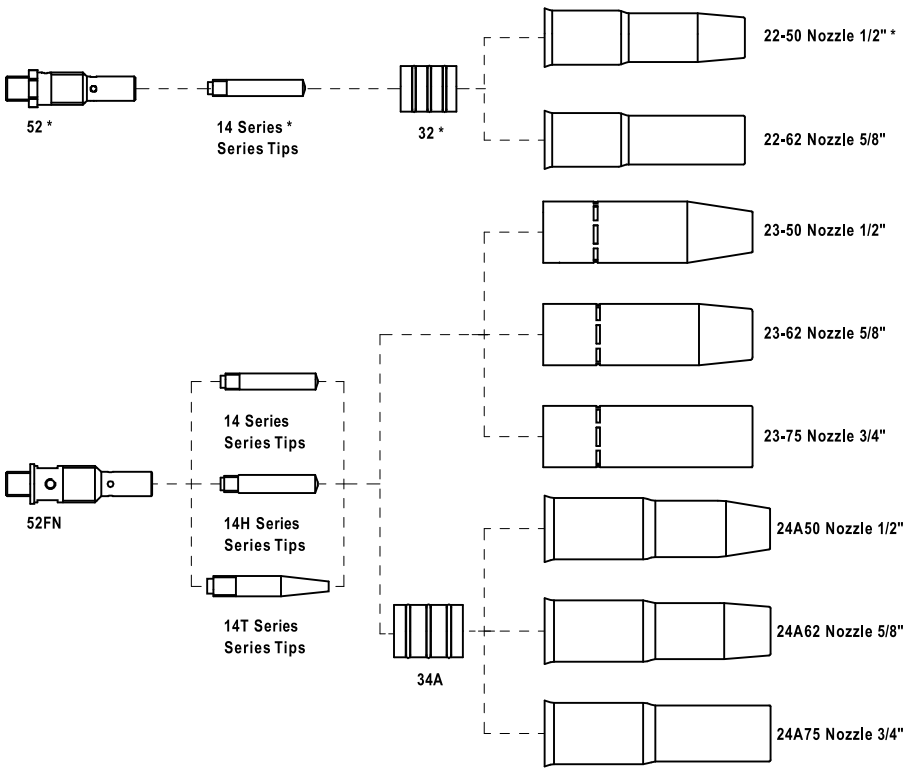


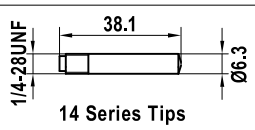


11 Series Tips

11-23	0.023" (0.6mm)	ECu
11-30	0.030" (0.8mm)	ECu
11-35	0.035" (0.9mm)	ECu
11-40	0.040" (1.0mm)	ECu
11-45	0.045" (1.2mm)	ECu

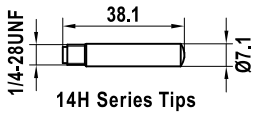
NT2 Consumable Series





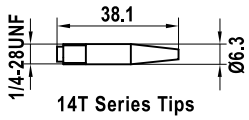
14 Series Tips

14-23	0.023" (0.6mm)	ECu
14-30	0.030" (0.8mm)	ECu
14-35	0.035" (0.9mm)	ECu
14-40	0.040" (1.0mm)	ECu
14-45	0.045" (1.2mm)	ECu
14-52	0.052" (1.3mm)	ECu
14-116	1/16" (1.6mm)	ECu



14H Series Tips

14H-30	0.030" (0.8mm)	ECu/HD
14H-35	0.035" (0.9mm)	ECu/HD
14H-40	0.040" (1.0mm)	ECu/HD
14H-45	0.045" (1.2mm)	ECu/HD
14H-52	0.052" (1.3mm)	ECu/HD
14H-116	1/16" (1.6mm)	ECu/HD
14H-564	5/64" (2.0mm)	ECu/HD

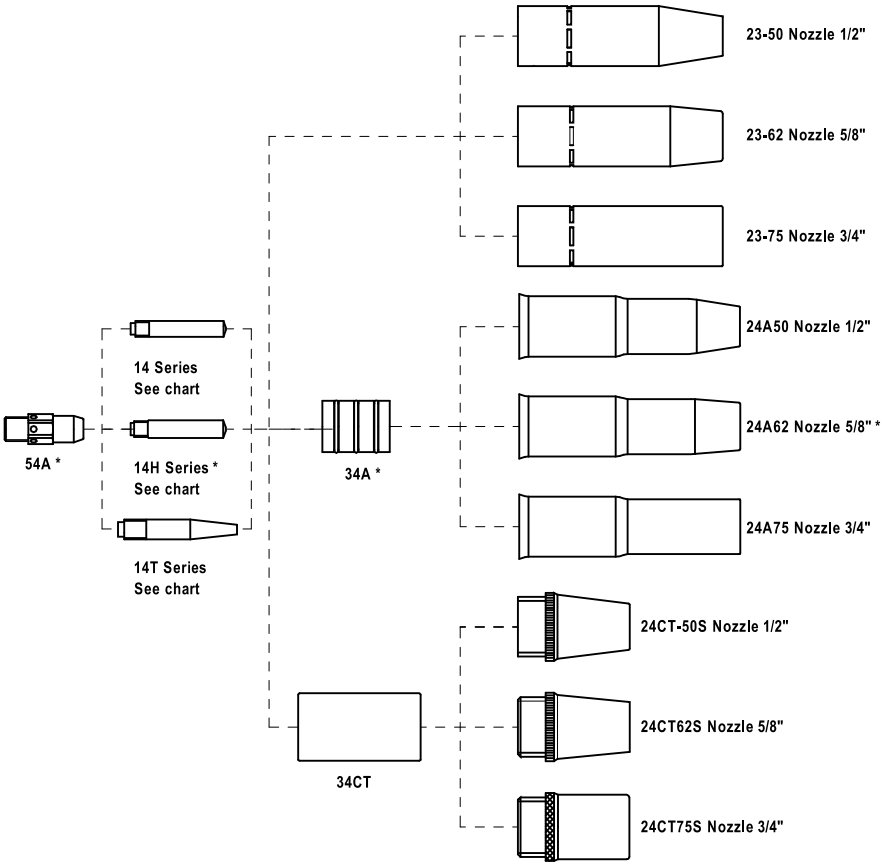


14T Series Tips

14T-30	0.030" (0.8mm)	ECu
14T-35	0.035" (0.9mm)	ECu
14T-40	0.040" (1.0mm)	ECu
14T-45	0.045" (1.2mm)	ECu
14T-52	0.052" (1.3mm)	ECu
14T-116	1/16" (1.6mm)	ECu
14T-564	5/64" (2.0mm)	ECu

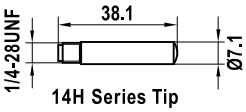
9.08 TWE NT4 / NT5 Wear Parts

NT4 Consumable Series



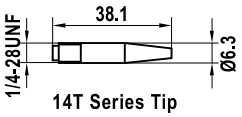
14 Series Tip

14-23	0.023" (0.6mm)	ECu
14-30	0.030" (0.8mm)	ECu
14-35	0.035" (0.9mm)	ECu
14-40	0.040" (1.0mm)	ECu
14-45	0.045" (1.2mm)	ECu
14-52	0.052" (1.3mm)	ECu
14-116	1/16" (1.6mm)	ECu



14H Series Tip

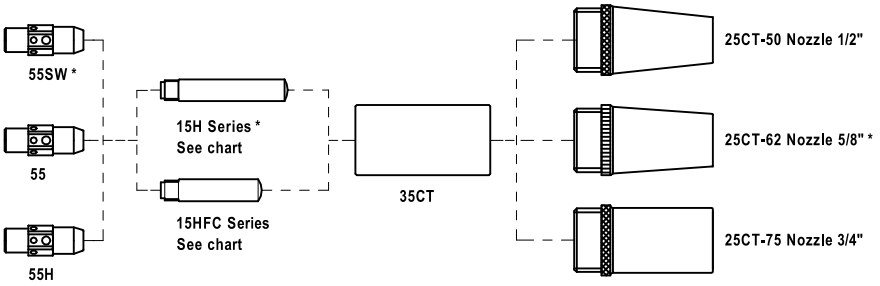
14H-30	0.030" (0.8mm)	ECu/HD
14H-35	0.035" (0.9mm)	ECu/HD
14H-40	0.040" (1.0mm)	ECu/HD
14H-45	0.045" (1.2mm)	ECu/HD
14H-52	0.052" (1.3mm)	ECu/HD
14H-116	1/16" (1.6mm)	ECu/HD
14H-564	5/64" (2.0mm)	ECu/HD

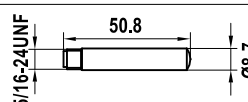


14T Series Tip

14T-30	0.030" (0.8mm)	ECu
14T-35	0.035" (0.9mm)	ECu
14T-40	0.040" (1.0mm)	ECu
14T-45	0.045" (1.2mm)	ECu
14T-52	0.052" (1.3mm)	ECu
14T-116	1/16" (1.6mm)	ECu
14T-564	5/64" (2.0mm)	ECu

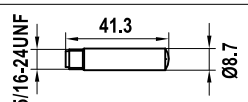
NT5 Consumable Series





15H Series Tip

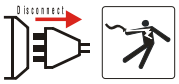
15H-35	0.035" (0.9mm)	ECu/HD
15H-45	0.045" (1.2mm)	ECu/HD
15H-52	0.052" (1.3mm)	ECu/HD
15H-116	1/16" (1.6mm)	ECu/HD
15H-564	5/64" (2.0mm)	ECu/HD
15H-332	3/32" (2.4mm)	ECu/HD



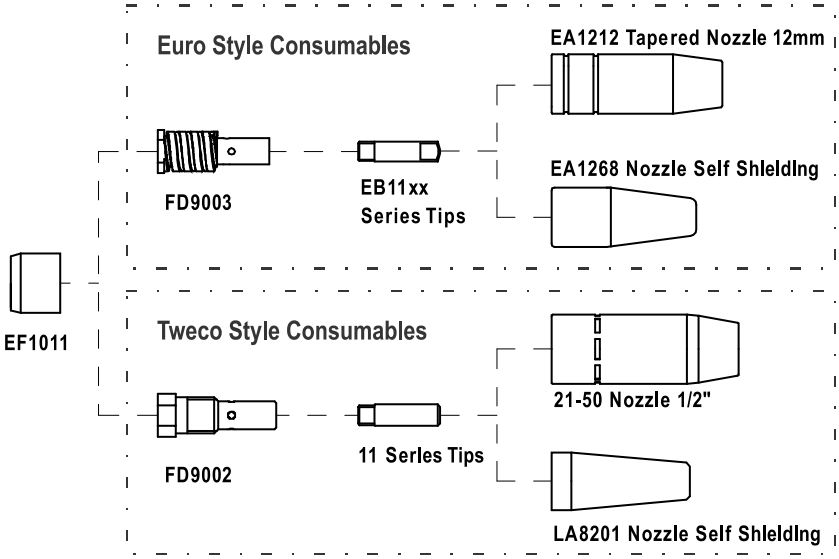
15HFC Series Tip

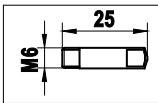
15HFC-35	0.035" (0.9mm)	ECu/Cored
15HFC-45	0.045" (1.2mm)	ECu/Cored
15HFC-52	0.052" (1.3mm)	ECu/Cored
15HFC-116	1/16" (1.6mm)	ECu/Cored
15HFC-564	5/64" (2.0mm)	ECu/Cored
15HFC-332	3/32" (2.4mm)	ECu/Cored

9.09 VALVE (DIY) Wear Parts

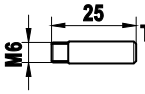
								
Service / Maintenance must be performed by a suitably Trained and Qualified Tradesperson	Disconnect Input Power Supply from Welding System before performing maintenance on the system. Electric shock can kill	Hot parts can burn. Let the Torch cool down prior to doing maintenance work	Turn off air compressor, and release air pressure from system. Compressed air can injure or kill.	Welding wire can cause injury	Moving parts can cause injury	Flying metal or dirt can injure eyes	Improper installation can cause fire	Read User Manual

NVA-90 / NV-100 Consumable Series





Euro Style Consumables 'EB11xx' Series Tips		
EB1106	0.6mm (0.023")	ECu
EB2208	0.8mm (0.030")	ECu
EB2209	0.9mm (0.035")	ECu
EB2210	1.0mm (0.040")	ECu



Tweco Style Consumables 11 Series Tips		
11-23	0.023" (0.6mm)	ECu
11-30	0.030" (0.8mm)	ECu
11-35	0.035" (0.9mm)	ECu
11-40	0.040" (1.0mm)	ECu

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