MODEL T34328
TIG TORCH FOR
MODEL T34311
INSTRUCTIONS

For questions or help with this product contact Tech Support at (570) 546-9663 or techsupport@grizzly.com

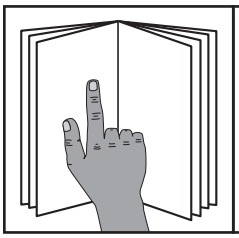
Introduction

The Model T34328 is an air-cooled WP17 TIG torch designed for use with the Grizzly Model T34311 3-in-1 Welder. This lightweight, lift-start torch comes complete with two back caps, two collets, a ceramic shield, and more than six feet of cable to make moving around a workpiece easy and straightforward.

Figure 1. Model T34328 TIG Torch.

Specifications

Cable Length	79 in.
Maximum Amperage Range	120 - 200A
Electrode Diameter Range	1/16" or 5/64"
Cooling Method	Air
Start Method	Lift
Weight	1.9 lbs.



⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

Inventory

	Description	Qty
A.	TIG Torch w/Cable	1
B.	Long Back Cap	1
C.	Short Back Cap	1
D.	Collet Body 3.2mm (1/8")	1
E.	Collet 1.6mm (1/16")	1
F.	Collet 2.0mm (5/64")	1
G.	Ceramic Shield #6	1

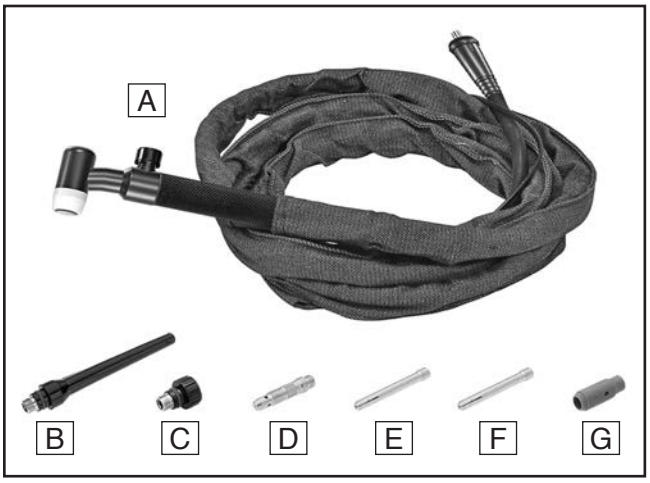


Figure 2. Inventory.

(FOR MODELS MFD. SINCE 10/24) #MN23492 PRINTED IN CHINA V1.02.25

******Keep for Future Reference******

For Your Own Safety, Read Instruction Manual Before Operating This Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures. Always use common sense and good judgment.

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **Alerts the user to useful information about proper operation of the machine to avoid machine damage.**

Safety Instructions for Machinery

⚠WARNING

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using machine.

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make your workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are NOT approved safety glasses.

⚠WARNING

WEARING PROPER APPAREL. Do not wear loose clothing, gloves, neckties, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

HAZARDOUS DUST. Dust created by machinery operations may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material. Always wear a NIOSH-approved respirator to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB. Only use this tool for its intended purpose—do not force it or an attachment to do a job for which it was not designed. Never make unapproved modifications—modifying tool or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly BEFORE operating machine.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine ***OFF*** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

DAMAGED PARTS. Regularly inspect machine for damaged, loose, or mis-adjusted parts—or any condition that could affect safe operation. Immediately repair/replace BEFORE operating machine. For your own safety, DO NOT operate machine with damaged parts!

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

EXPERIENCING DIFFICULTIES. If at any time you experience difficulties performing the intended operation, stop using the machine! Contact our Technical Support at (570) 546-9663.

Additional Safety for Welders

⚠WARNING

Serious injury, burns, electric shock, or death can occur from misuse of the welder. Welding fumes can cause suffocation or poisoning if operating in an enclosed space. Arc rays can cause eye injury. Sparks and spatter can cause nearby flammable materials to ignite. To reduce the risks of welding, anyone operating this machine MUST completely heed the hazards and warnings below.

WELDING FUMES. Breathing welding fumes can cause suffocation or poisoning without warning. Keep your head out of welding fumes. Use adequate ventilation at arc to safely remove fumes from your breathing zone and general area. Use ANSI-approved respirators recommended for type of welding operation. Protect others from these fumes.

ELECTRIC SHOCK. Connect welder to power source with approved earth ground. Make sure all electrical connections are tight, clean, and dry. Connect workpiece to approved earth ground. Work lead is NOT a ground connection and is to be used only to complete working welding circuit. Welding in wet and humid conditions drastically increases risk of electrical shock.

PREVENT FIRES. Keep welding work zones clear of flammable liquids, such as gasoline and solvents; combustible solids, such as paper and wood; and flammable gases, such as acetylene and hydrogen. Provide approved fire barriers and fire extinguishing equipment for welding zone of at least 35' radius. Stay alert for sparks and spatter thrown into cracks and crevices that can start smoldering fire.

HANDLING GAS CYLINDERS. Regardless of content, pressurized gas cylinders can explode. Always secure protector cap in place over outlet valve assembly when moving cylinder. Broken valve could release pressurized contents and cause cylinder to be hurled about at dangerously high speeds, causing serious property damage, personal injury, or death. Always use safe methods when moving gas cylinders. Secure gas cylinder to wall or approved cylinder cart with chain before using or storing.

PROTECTING GAS CYLINDERS. Excessive heat can cause pressurized gas to expand and explode cylinder. Never weld on gas cylinder. Damaging cylinder can cause cylinder to crack and explode. Exploding pressurized gas cylinders can cause serious property damage, personal injury, or death.

WORK AREA. Keep working area clear of any material not involved in welding operation. Keep all equipment, workpieces, and work surfaces clean, dry, and free of entanglements. Keep lead cables organized and away from your body.

WORKPIECE. Take proper precautions and think about workpiece you are welding on. Welding certain treated metals, such as galvanized steel, can create severely toxic fumes. DO NOT weld, burn, or heat sealed or pressurized containers. Observe specific guidelines when welding workpiece to ensure safe practice has not been overlooked.

ARC BURNS, SPARKS, SPATTER, AND HOT MATERIALS. Welding without complete and approved body protection can cause severe damage to eyes and body. Wear non-flammable protective clothing, welding gloves, cap, long-sleeve shirt, cuffless pants, and leather boots. DO NOT wear jewelry or frayed clothing. Use welding helmet with correct shade of filter for operation. Protect bystanders and property in working zone from exposure to arc radiation, sparks, and spatter. Welding operations create extreme amounts of heat. Make sure to allow for cooling before handling welded materials.

WELDING IN CONFINED SPACES. Always open all covers, sustain forced ventilation, remove toxic and hazardous materials, and provide a power disconnect to the welder inside the work space. Always work with someone who can give you help from outside the space. Welding can displace oxygen. Always check for safe breathing atmosphere and provide air-supplied respirators if necessary. Keep in mind that all normal welding hazards are intensified in a confined space.

ELECTROMAGNETIC FIELDS (EMF). Welding operations create EMF around welding equipment and workpieces. Operators with pacemakers must consult their physician before using this equipment, or being within 50' of welding operations.

Additional Sources for Welding Codes and Standards

American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33166-6672, (305) 443-9353, Website: *www.aws.org*.

—Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1

—Safe Practices for the Preparation of Containers and Piping for Welding, Cutting, and Allied Processes, AWS F4.1

National Fire Protection Association, P. O. Box 9101, 1 Batterymarch Park, Quincy, MA 02169-7471, (617) 770-3000, Website: *www.nfpa.org* and *www.sparky.org*.

—National Electrical Code, NFPA Standard 70

—Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B

Compressed Gas Association, 8484 Westpark Dr., Ste. 220, McLean, VA 22102, (703) 788-2700, Website: *www.cganet.com*.

—Standard for Safe Handling of Compressed Gases in Containers, CGA Pamphlet P-1

Canadian Standards Association, Standards Sales, 178 Rexdale Blvd., Ontario, Canada M9W 1R3, (416) 747-4000, Website: *www.csa-international.org*.

—Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2-06

American National Standards Institute (ANSI), 1180 Avenue of the Americas, 10th Fl., New York, NY 10036, (212) 642-4900, Website: *www.ansi.org*.

—Standard for Occupational and Educational Personal Eye and Face Protection Devices, ANSI Z87.1-2020

Occupational Safety and Health Administration (OSHA)

— Code of Federal Regulations, Title 29 Labor, Parts 1910.1 to 1910.1450, available from the U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954, (800) 321-6742, Website: *www.osha.gov*

American Conference of Government Industrial Hygienists (ACGIH), 3640 Park 42 Dr., Cincinnati, OH 45241, (513) 742-2020, Website: *www.acgih.org*.

—Threshold Limit Values and Biological Exposure Indices (Booklet)

National Institute for Occupational Safety and Health (NIOSH), 1090 Tusculum Ave., Cincinnati, OH, 45226, (800) 356-4674, Website: *www.cdc.gov/niosh*

— Safety and Health in Arc Welding and Gas Welding and Cutting, NIOSH Publication No. 78-138

Controls & Components

Become familiar with the names and locations of the controls and features shown below to better understand the steps in these instructions.

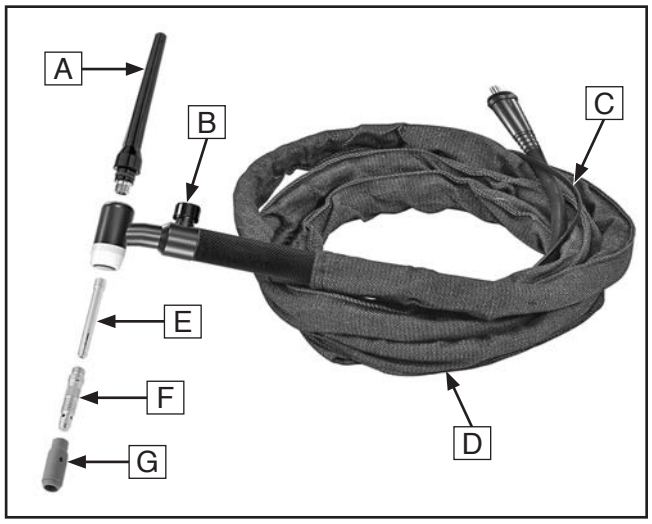


Figure 3. Torch components.

A. Back Cap: Secures electrode inside torch.

B. Gas Flow Valve: Controls flow of shielding gas for welding.

C. Gas Hose: Delivers shielding gas to torch.

D. Torch Cable: Delivers welding current and shielding gas to arc.

E. Collet: Holds tungsten electrode during operations.

F. Collet Body: Secures collet and shield in torch.

G. Ceramic Shield: Directs flow of shielding gas from torch to arc.

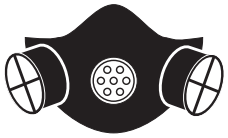
Needed for Setup

The following items are needed, but not included, for the setup of this tool.

Description	Qty
• Gas Hose Fitting	1
• Argon Gas Cylinder w/Regulator	1
• Safety Glasses	1
• Adjustable Wrench	1
• Tungsten Electrode (1/16" or 5/64")	1
• Benchtop Grinder	1

⚠WARNING

To reduce risk of eye injury from flying particles or lung damage from breathing dust, always wear safety goggles and a respirator when sharpening electrodes.



Sharpening Tungsten Electrode

New tungsten electrodes must be sharpened to a blunt tip before being used for the first time. To avoid contaminating the electrode, dedicate a fine-grit diamond wheel exclusively for electrode grinding.

To sharpen tungsten electrode:

1. Turn grinder ***ON*** and allow it to reach full speed.

2. Press electrode against grinding wheel at a slight angle (see **Figure 4**) and rotate electrode all the way around until a blunt point is formed.

   Note: *For best current flow, only grind electrode along its length, never side to side.*

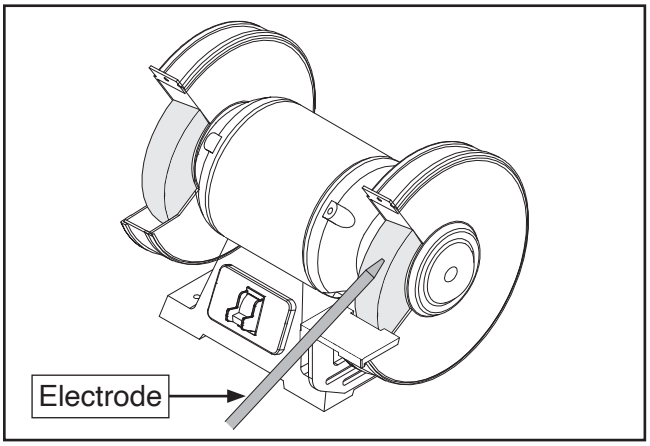


Figure 4. Sharpening tungsten electrode.

3. Continue grinding electrode until length of tip is approximately 2½ times diameter of electrode.

4. Turn grinder ***OFF***.

⚠WARNING

Wear safety glasses during entire assembly process!

Assembling Torch

The tool must be fully assembled before it can be operated. Before beginning the assembly process, refer to **Needed for Setup** and gather all listed items.

To assemble torch:

1. Determine correct size and type of tungsten electrode according to type and thickness of material to be welded (see **Figure 5**).

Tungsten Electrode Size			
Dia. (mm)	**Material Thickness**	**Amps**	**Type**
1.6	Up to 0.8mm	<50A	Varies
2.0	0.8 - 3.2mm	50 - 150A	Varies

Figure 5. Tungsten electrode table.

2. Select collet that is same size as diameter of electrode.

3. Thread collet body into front of torch (see **Figure 6**).

4. Thread ceramic shield onto collet body (see **Figure 6**).

5. Insert collet into collet body through back of torch (see **Figure 6**).

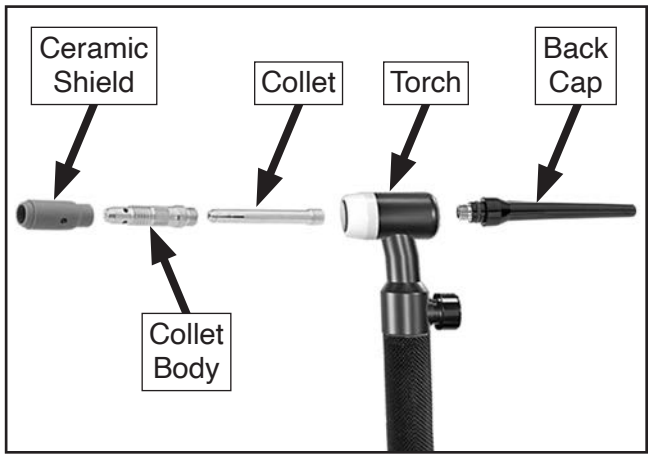


Figure 6. Torch assembly sequence.

6. Insert tungsten electrode into collet from front of torch.

7. With tungsten electrode emerging ⅛"–¼" beyond tip of ceramic shield, thread long back cap onto back of torch.

   Note: *If using short back cap, break or cut tungsten electrode to fit before installing.*

Connecting Torch to Gas Cylinder

The Model T34328 requires that a gas hose fitting be installed on the gas hose that matches the regulator fitting on your argon gas cylinder.

To connect torch to gas cylinder:

1. Install gas hose fitting on TIG torch gas hose.

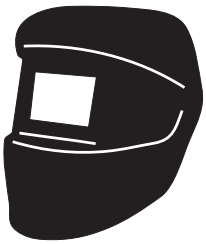
2. Close gas flow valve on TIG torch by turning valve knob all the way counterclockwise.

3. Close gas flow valve on argon gas cylinder by turning valve knob all the way clockwise.

4. Connect hose fitting on TIG torch gas hose onto regulator on argon gas cylinder and secure.

NOTICE

If you are not experienced with this type of tool, WE STRONGLY RECOMMEND that you seek additional training outside of these instructions. Read books/magazines or get formal training before beginning any projects. Regardless of the content in this document, Grizzly Industrial will not be held liable for accidents caused by lack of training.



⚠WARNING

Always wear an ANSI-approved welding helmet, safety goggles, and hearing protection when using this tool.

Operating Torch

For details on performing TIG operations with the Model T34311 3-in-1 Welder, see **Page 12** in the owner's manual.

To operate torch:

1. Plug TIG torch cable into negative socket (–) on front panel of T34311 (see **Figure 7**) and tighten it.

2. Plug work lead cable into positive socket (+) on front panel of T34311 (see **Figure 7**) and tighten it.

3. Attach work lead clamp (see **Figure 7**) to workpiece to be welded.

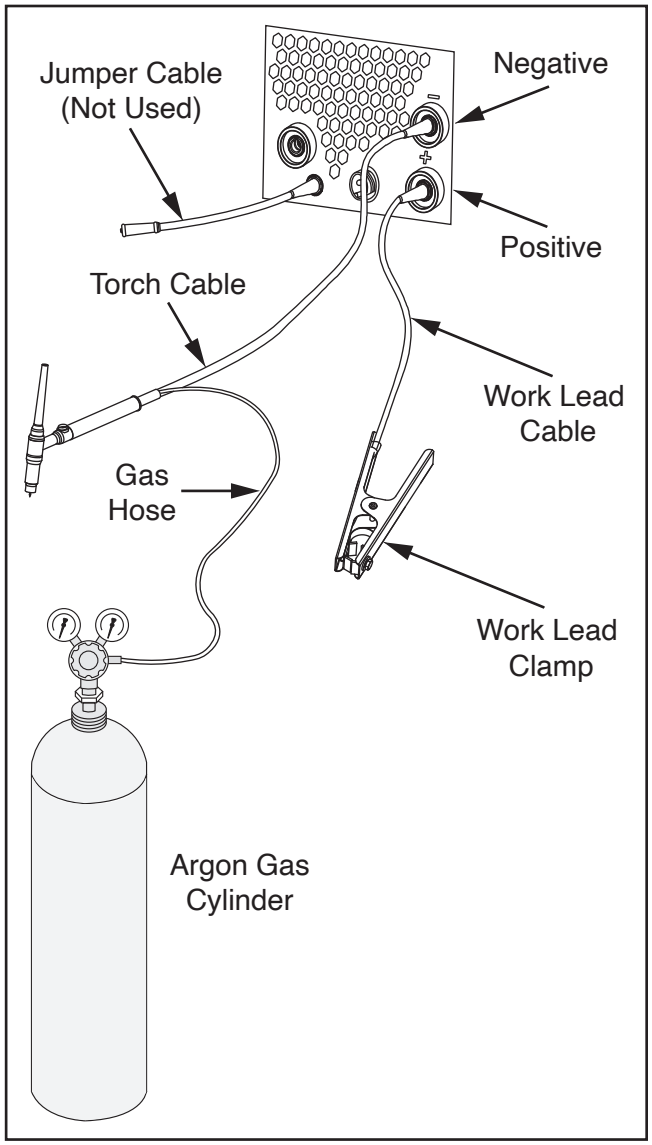


Figure 7. TIG torch connected to T34311 Welder.

4. Move ON/OFF switch on back of T34311 to ON position.

5. Select Lift-TIG function on front panel of T34311 and adjust welding current.

6. Open gas flow valve on argon gas cylinder by turning valve knob counterclockwise. Precise gas flow will depend on workpiece material, size of ceramic shield, and atmospheric conditions. An average setting of 15–20 cubic feet per hour (CFH) is common.

7. Open gas flow valve on TIG torch by turning valve knob clockwise.

8. Initiate arc by touching tungsten electrode to workpiece then quickly lifting it off again.

9. Begin welding operation, keeping gap between tip of electrode and workpiece 1–1½ times diameter of electrode.

10. When operation is complete, lift torch away from workpiece to extinguish arc.

11. Close gas flow valve on TIG torch by turning valve knob all the way counterclockwise.

12. Close gas flow valve on argon gas cylinder by turning valve knob all the way clockwise.

13. Move ON/OFF switch on back of T34311 to OFF position.