TORCH MANUAL

for CK9, CK20, CK25

2 Series Standard

CK WORLDWIDE

THE STANDARD IN TIG WELDING

FORM TM-2 APRIL 2019

Toll Free: (800) 426.0877

www.CKWORLDWIDE.com

Congratulations on your purchase of a CK Worldwide TIG Torch!

CK Worldwide's premium quality TIG torches perform with a reliability and efficiency you can always depend on. CK equipment and technical support is available online at www.CKWORLDWIDE.com or by calling (800) 426-0877 between 7:00AM and 3:30PM, Monday through Friday.

THE STANDARD IN TIG WELDING

Phone: 1.800.426.0877
Fax: 1.800.327.5083

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www.CKWORLDWIDE.com

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Product demonstrations, welding tips and more.

TWITTER: @CKWWInc

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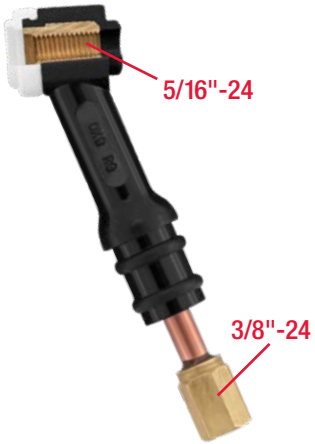
IN THIS MANUAL

Need technical information? Call or email to request a copy of our Technical Guide (Form 116)

IN THIS MANUAL you will find technical and ordering information for CK9, CK20, and CK25 TIG torches, hoses, and accessories.

TORCH SPECIFICATIONS

CK9



CK20/CK25*

*CK25 (Pencil) uses same thread pattern as the CK20

INSTALLATION: Before using this torch, tighten regulator, hose and power cable fittings with proper wrenches. Using small pliers, securely tighten all knurled hose fittings (Slide the torch handle back for access to the torch connections). Purge the regulator and TIG torch with inert gas at 20 cubic feet per hour. Following these steps will ensure contamination free welds. Repeat this procedure whenever torch or regulator fittings have been detached.

MAX-FLO™ Improved Cooling Capacity

WARRANTY: CK Worldwide, Inc. warrants products manufactured by CK Worldwide, Inc. to be free of defects in materials and workmanship. CK Worldwide, Inc. limits this warranty to replacement of the product or parts thereof and excludes liability for injury, property damage or economic loss attributable to product use or misuse. In any event, CK Worldwide, Inc. will only be responsible for its products when used with accessory items manufactured by CK Worldwide, Inc.

CALIFORNIA PROPOSITION 65

WARNING: This product contains or produces a chemical known to the state of California to cause cancer and birth defects or other reproductive harm) (California Health and Safety Code Section 25249.5 et seq.)

WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer (California Health and Safety Code Section 25249.5 et seq.)

INFORMATION SOURCES

California Health and Safety Code, Section 25249.4 through 25249.13. The California Office of Environmental Health Hazard Assessment, 301 Capitol Mall, Sacramento, CA 95814; Telephone 916-445-6900.
California Proposition 65 Website: *www.oehha.ca.gov/prop65.html.*
American National Standards Institute (ANSI). Product Safety Signs And Labels (ANSI Z535.4), available from ANSI, 25 West 43rd Street, New York, NY 10036; Telephone 212-642-4900;
Website *www.ansi.org.*

SAFETY INFORMATION

Welding and cutting equipment can be dangerous to both the operator and people in or near the surrounding working area, if the equipment is not correctly operated. Equipment must only be used under the strict and comprehensive observance of all relevant safety regulations. Read and understand this instruction manual carefully before the installation and operation of this equipment.

ELECTRIC SHOCK: It can kill

ELECTRIC SHOCK: It can kill. **Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and internal machine circuits are also live when power is on. Incorrectly installed or improperly grounded equipment is dangerous.**

- Connect the primary input cable according to American standards and regulations. ANSI Z49.1.
- Avoid all contact with live electrical parts of the welding circuit, electrodes and wires with bare hands. The operator must wear dry welding gloves while he/she performs the welding task.
- The operator should keep the work piece insulated from himself/herself.
- Keep cords dry, free of oil and grease, and protected from hot metal and sparks.
- Frequently inspect input power cable for wear and tear, replace the cable immediately if damaged, bare wiring is dangerous and can kill.
- Do not use damaged, under-sized, or badly joined cables.
- Do not drape cables over your body.

FUMES AND GASES ARE DANGEROUS

FUMES AND GASES ARE DANGEROUS: **Smoke and gas generated while welding or cutting can be harmful to people's health. Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.**

- Do not breathe the smoke and gas generated while welding or cutting, keep your head out of the fumes.
- Keep the working area well ventilated, use fume extraction or ventilation to remove welding fumes and gases.
- In confined or heavy fume environments always wear an approved air-supplied respirator. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be certain the air in your work environment is safe to breathe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Materials such as galvanized, lead, or cadmium plated steel, contain elements that can give off toxic fumes when welded. Do not weld these materials unless the area is very well ventilated, and or wearing an air supplied respirator.

ARC RAYS: Harmful to people's eyes and skin

ARC RAYS: Harmful to people's eyes and skin. **Arc rays from the welding process produce intense visible and invisible ultraviolet and infrared rays that can burn eyes and skin.**

- Always wear a welding helmet with correct shade of filter lens and suitable protective clothing including welding gloves while the welding operation is performed.
- Measures should be taken to protect people in or near the surrounding working area. Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.

HOT PARTS: **Items being welded generate and hold high heat and can cause severe burns. Do not touch hot parts with bare hands. Allow a cooling period before working on the welding gun. Use insulated welding gloves and clothing to handle hot parts and prevent burns.**

FIRE HAZARD: Welding on closed containers, such as tanks, drums, or pipes, can cause them to explode. Flying sparks from the welding arc, hot work piece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding.

- Welding sparks may cause fire, therefore remove any flammable materials away from the working area, at least 40 feet (12m) from the welding arc. Cover flammable materials and containers with approved covers if unable to be moved from the welding area.
- Do not weld on closed containers such as tanks, drums, or pipes, unless they are properly prepared according to the required Safety Standards to insure that flammable or toxic vapors and substances are totally removed, these can cause an explosion even though the vessel has been "cleaned". Vent hollow castings or containers before heating, cutting or welding. They may explode.
- Do not weld where the atmosphere may contain flammable dust, gas, or liquid vapors such as gasoline.
- Have a fire extinguisher nearby and know how to use it. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.

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

- Protect gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Insure cylinders are held secure and upright to prevent tipping or falling over.
- Never allow the welding electrode or earth clamp to touch the gas cylinder, do not drape welding cables over the cylinder.
- Never weld on a pressurized gas cylinder, it will explode and kill you.
- Open the cylinder valve slowly and turn your face away from the cylinder outlet valve and gas regulator.

GAS BUILD UP: The build up of gas can cause a toxic environment by depleting the air's oxygen content and potentially resulting in injury or death.

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

ELECTRONIC MAGNETIC FIELDS: MAGNETIC FIELDS can affect implanted medical devices.

- Wearers of pacemakers and other implanted medical devices should keep away.
- Implanted medical device wearers should consult their doctor and the device manufacturer before going near any electric welding, cutting or heating operation.

NOISE CAN DAMAGE HEARING: Noise from some processes or equipment can damage hearing. Wear approved ear protection if noise level is high.

FIRE HAZARD

GAS CYLINDERS
Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode

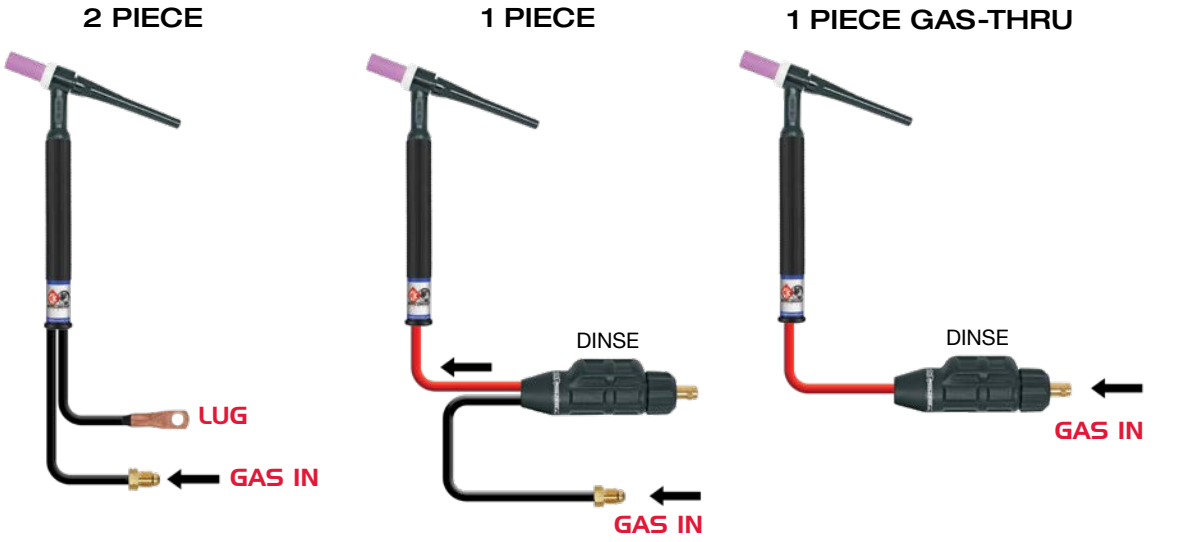
GAS BUILD UP

ELECTRONIC MAGNETIC FIELDS can affect implanted medical devices

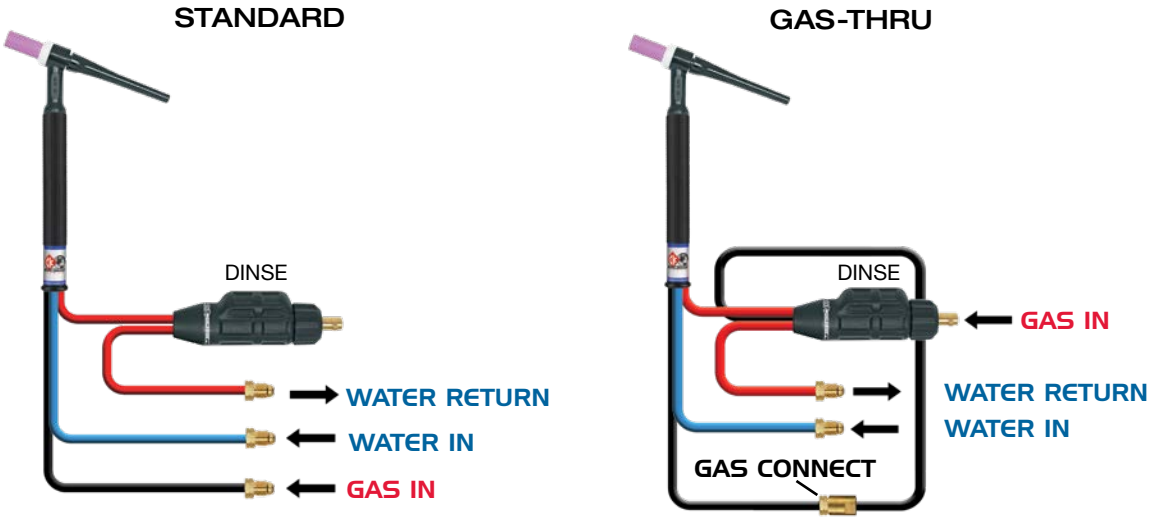
NOISE CAN DAMAGE HEARING

CONNECTION DIAGRAMS

GAS-COOLED

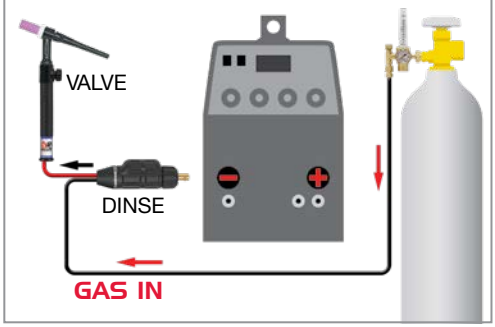


WATER-COOLED

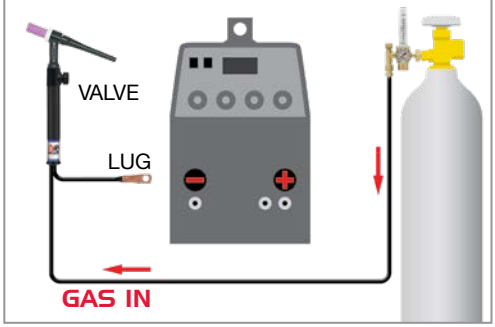


MACHINE CONNECTION DIAGRAMS

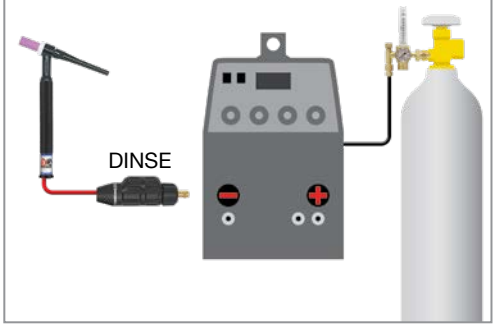
1 PIECE GAS-COOLED



2 PIECE GAS-COOLED

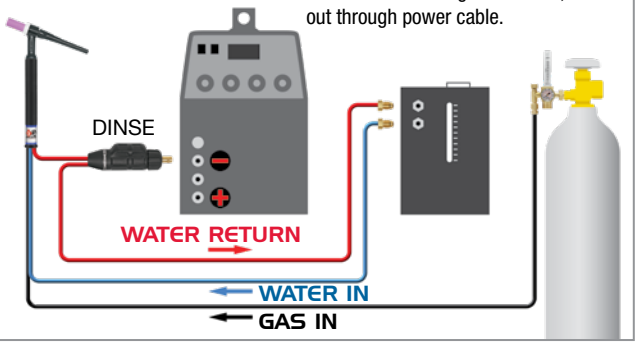


1 PIECE GAS-THRU

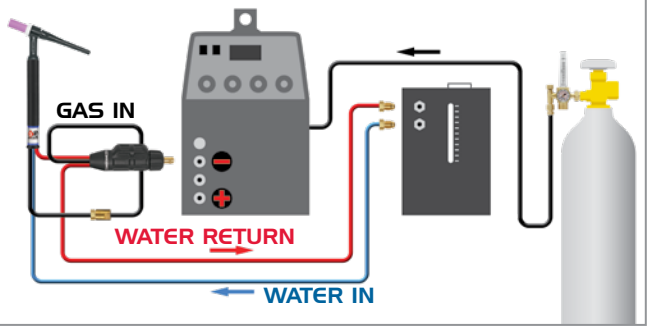


WATER-COOLED

NOTE: 1 quart (1 liter) per minute flow rate. Water in through water line, water out through power cable.



WATER-COOLED GAS-THRU



QUICK DISCONNECTS

Adapters for gas-cooled and water-cooled torch setups that have quick-disconnect female adapters on either the machine or water-cooler.

QDWAP
WATER COOLED
9mm male quick disconnect for water.

QDGAP
GAS COOLED
9mm male quick disconnect for argon.

AMP 125

CK9

GAS COOLED
125 amp ACHF or DCSP @ 100%
2 Series Head Accessories

CK9 & CK9V | RIGID

HEAD STYLE	CABLE	CABLE LENGTH	STANDARD #	SUPER-FLEX #	SPECIFICATIONS
RIGID	1 Piece	12.5 ft. (3.8m)	CK9-12-R RG	CK9-12-RSF RG	7-1/2" (19.0cm)
		25 ft. (7.6m)	CK9-25-R RG	CK9-25-RSF RG	
	2 Piece	12.5 ft. (3.8m)	CK9-12-2 RG	CK9-12-2SF RG	2.75 oz (78gm)
		25 ft. (7.6m)	CK9-25-2 RG	CK9-25-2SF RG	
RIGID + VALVE	1 Piece	12.5 ft. (3.8m)	CK9V-12-R RG	CK9V-12-RSF RG	
		25 ft. (7.6m)	CK9V-25-R RG	CK9V-25-RSF RG	
	2 Piece	12.5 ft. (3.8m)	CK9V-12-2 RG	CK9V-12-2SF RG	
		25 ft. (7.6m)	CK9V-25-2 RG	CK9V-25-2SF RG	

CK9 & CK9V | FLEX

HEAD STYLE	CABLE	CABLE LENGTH	STANDARD #	SUPER-FLEX #	SPECIFICATIONS
FLEX	1 Piece	12.5 ft. (3.8m)	CK9-12-R FX	CK9-12-RSF FX	8" (20.3cm)
		25 ft. (7.6m)	CK9-25-R FX	CK9-25-RSF FX	
	2 Piece	12.5 ft. (3.8m)	CK9-12-2 FX	CK9-12-2SF FX	3.5 oz (99gm)
		25 ft. (7.6m)	CK9-25-2 FX	CK9-25-2SF FX	
FLEX + VALVE	1 Piece	12.5 ft. (3.8m)	CK9V-12-R FX	CK9V-12-RSF FX	
		25 ft. (7.6m)	CK9V-25-R FX	CK9V-25-RSF FX	
	2 Piece	12.5 ft. (3.8m)	CK9V-12-2 FX	CK9V-12-2SF FX	
		25 ft. (7.6m)	CK9V-25-2 FX	CK9V-25-2SF FX	

CK9P & CK9PV | PENCIL

HEAD STYLE	CABLE	CABLE LENGTH	STANDARD #	SUPER-FLEX #	SPECIFICATIONS
RIGID	1 Piece	12.5 ft. (3.8m)	CK9P-12-R	CK9P-12-RSF	7-3/4" (19.7cm)
		25 ft. (7.6m)	CK9P-25-R	CK9P-25-RSF	
	2 Piece	12.5 ft. (3.8m)	CK9P-12-2	CK9P-12-2SF	3 oz (85gm)
		25 ft. (7.6m)	CK9P-25-2	CK9P-25-2SF	
RIGID + VALVE	1 Piece	12.5 ft. (3.8m)	CK9PV-12-R	CK9PV-12-RSF	
		25 ft. (7.6m)	CK9PV-25-R	CK9PV-25-RSF	
	2 Piece	12.5 ft. (3.8m)	CK9PV-12-2	CK9PV-12-2SF	
		25 ft. (7.6m)	CK9PV-25-2	CK9PV-25-2SF	


CK9 RG

REPLACEMENT TORCH BODIES

PART #	STYLE
CK9 RG	RIGID
CK9 FX	FLEX
CK9V RG	VALVED RIGID
CK9V FX	VALVED FLEX
CK9P	PENCIL
CK9PV	VALVED PENCIL


CK9 FX


CK9V RG


CK9V FX


CK9P

POWER CABLES/HOSES

1 PIECE STANDARD POWER CABLE

1 PIECE SUPER-FLEX POWER CABLE

2 PIECE STANDARD POWER CABLE

2 PIECE SUPER-FLEX POWER CABLE

	STANDARD	SUPER-FLEX
LENGTH	1 PIECE CABLE	1 PIECE CABLE
12-1/2 ft. (3.8m)	**1512PCHF** (57Y01R)	**1512PCSF** (57Y01RSF)
25 ft. (7.6m)	**1525PCHF** (57Y03R)	**1525PCSF** (57Y03RSF)

LENGTH	2 PIECE CABLES	2 PIECE CABLES
12-1/2 ft. (3.8m)	**1512PCN** (57Y01-2)	**1512PCNSF** (57Y01-2SF)
25 ft. (7.6m)	**1525PCN** (57Y03-2)	**1525PCNSF** (57Y03-2SF)

LENGTH	WELD LEAD
12-1/2 ft. (3.8m)	**1512CN**
25 ft. (7.6m)	**1525CN**

LENGTH	ARGON HOSE	ARGON HOSE
12-1/2 ft. (3.8m)	**212AH** (45V09)	**212AHSF** (45V09SF)
25 ft. (7.6m)	**225AH** (45V10)	**225AHSF** (45V10SF)

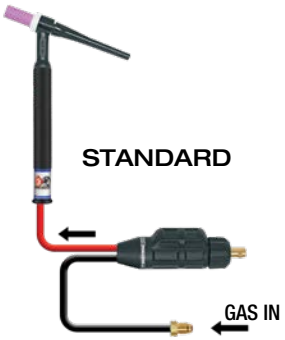
POWER CABLE ADAPTER

15PCA | 105Z57

HANDLE Part # HS

DINSE CONNECTORS

DINSE 25 (3/8" 9.5mm) | *DINSE 35* (1/2" 12.8mm) | *DINSE 25M* (3/8" 9.5mm) | *DINSE 35M* (1/2" 12.8mm)



STANDARD

DINSE SIZE	ORDER #
3/8" (9mm)	SL2-25
1/2" (12.8mm)	SL2-35

GAS-THRU

DINSE SIZE	ORDER #
3/8" (9mm)	SL2-25M
1/2" (12.8mm)	SL2-35M

TWECO / CAM-LOCK

DINSE STYLE	ORDER #
TWECO	SL-2
CAM-LOCK	SL2-CL

AMP 250

CK20

WATER COOLED
250 amp ACHF or DCSP @ 100%
2 Series Head Accessories

CK20 & CK20V | RIGID

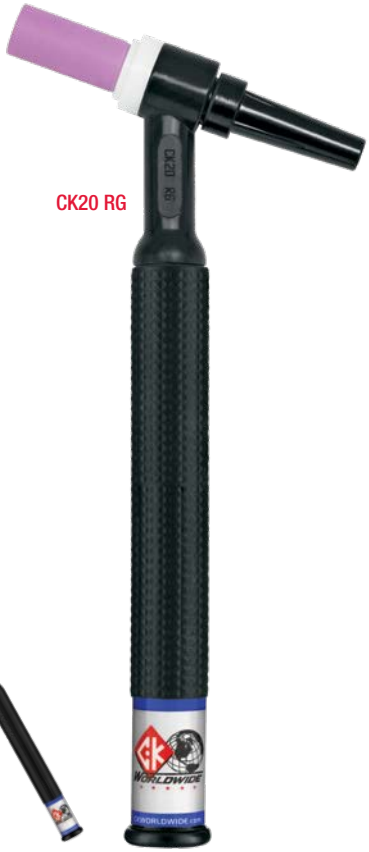
HEAD STYLE	CABLE	CABLE LENGTH	STANDARD #	SUPER-FLEX #	SPECIFICATIONS
RIGID	3 Piece	12.5 ft. (3.8m)	CK20-12	CK20-12SF	7-1/2" (19.0cm)
		25 ft. (7.6m)	CK20-25	CK20-25SF	3 oz (85gm)
RIGID + VALVE	3 Piece	12.5 ft. (3.8m)	CK20V-12	CK20V-12SF	
		25 ft. (7.6m)	CK20V-25	CK20V-25SF	

CK20 & CK20V | FLEX

HEAD STYLE	CABLE	CABLE LENGTH	STANDARD #	SUPER-FLEX #	SPECIFICATIONS
FLEX	3 Piece	12.5 ft. (3.8m)	CK20-12 FX	CK20-12SF FX	7-1/2" (19.0cm)
		25 ft. (7.6m)	CK20-25 FX	CK20-25SF FX	3 oz (85gm)
FLEX + VALVE	3 Piece	12.5 ft. (3.8m)	CK20V-12 FX	CK20V-12SF FX	
		25 ft. (7.6m)	CK20V-25 FX	CK20V-25SF FX	

CK20P | PENCIL | SAME AS CKM200

HEAD STYLE	CABLE	CABLE LENGTH	STANDARD #	SUPER-FLEX #	SPECIFICATIONS
RIGID	3 Piece	12.5 ft. (3.8m)	CK20P-12	CK20P-12SF	7-1/2" (19.0cm)
		25 ft. (7.6m)	CK20P-25	CK20P-25SF	3 oz (85gm)



REPLACEMENT TORCH BODIES

PART #	STYLE
CK20 RG	RIGID
CK20 FX	FLEX
CK20V RG	VALVED RIGID
CK20V FX	VALVED FLEX
CK20P	PENCIL
CK20PV	VALVED PENCIL

CK25

WATER COOLED
250 amp ACHF or DCSP @ 100%
2 Series Head Accessories

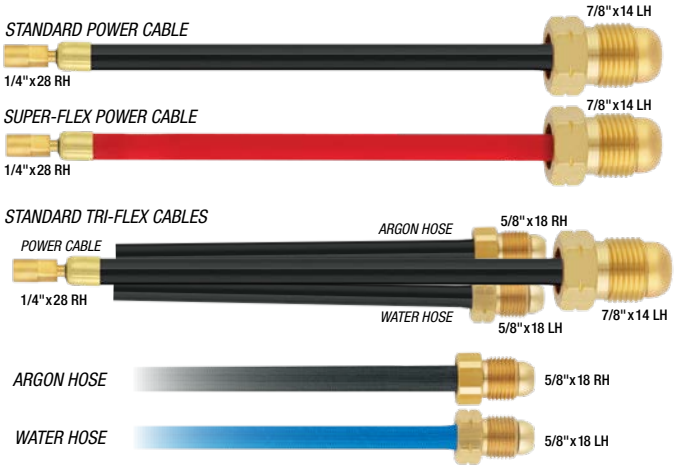
CK25 | PENCIL FLEX

HEAD STYLE	CABLE	CABLE LENGTH	STANDARD #	SUPER-FLEX #	SPECIFICATIONS
FLEX	3 Piece	12.5 ft. (3.8m)	CK25-12	CK25-12SF	11-1/2" (29.2cm)
		25 ft. (7.6m)	CK25-25	CK25-25SF	3 oz (85gm)

Custom lengths available up to 10" (25.4cm), and uses the same thread pattern as the CK20

CK20/CK25

POWER CABLES/HOSES



LENGTH	STANDARD POWER CABLE	SUPER-FLEX POWER CABLE
12-1/2 ft. (3.8m)	**212PC** (45V03)	**212PCSF** (45V03SF)
25 ft. (7.6m)	**225PC** (45V04)	**225PCSF** (45V04SF)

LENGTH	TRI-FLEX CABLES	3-PIECE ASSEMBLY
12-1/2 ft. (3.8m)	**212TF**	**212SF**
25 ft. (7.6m)	**225TF**	**225SF**

LENGTH	WATER HOSE	WATER HOSE
12-1/2 ft. (3.8m)	**212WH** (45V07)	**212WHSF** (45V07SF)
25 ft. (7.6m)	**225WH** (45V08)	**225WHSF** (45V08SF)

LENGTH	ARGON HOSE	ARGON HOSE
12-1/2 ft. (3.8m)	**212AH** (45V09)	**212AHSF** (45V09SF)
25 ft. (7.6m)	**225AH** (45V10)	**225AHSF** (45V10SF)

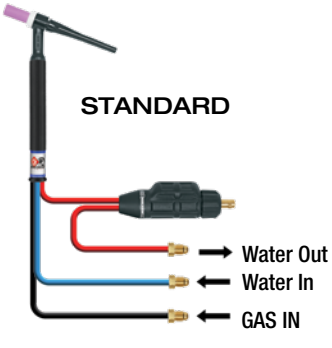
POWER CABLE ADAPTER

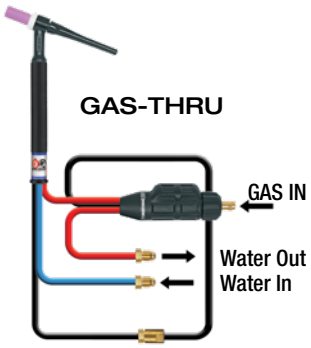
2PCA | 45V11

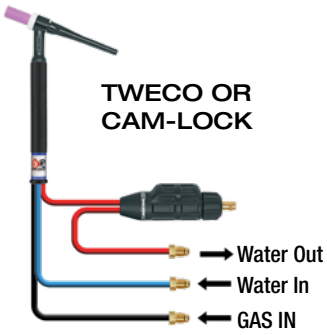
HANDLE Part # HS

DINSE CONNECTORS

DINSE 25 (3/8" 9.5mm) | *DINSE 35* (1/2" 12.8mm) | *DINSE 25M* (3/8" 9.5mm) | *DINSE 35M* (1/2" 12.8mm)







STANDARD

DINSE SIZE	ORDER #
3/8" (9mm)	SLWHAT-25
1/2" (12.8mm)	SLWHAT-35

GAS-THRU

DINSE SIZE	ORDER #
3/8" (9mm)	SLWHAT-25M
1/2" (12.8mm)	SLWHAT-35M

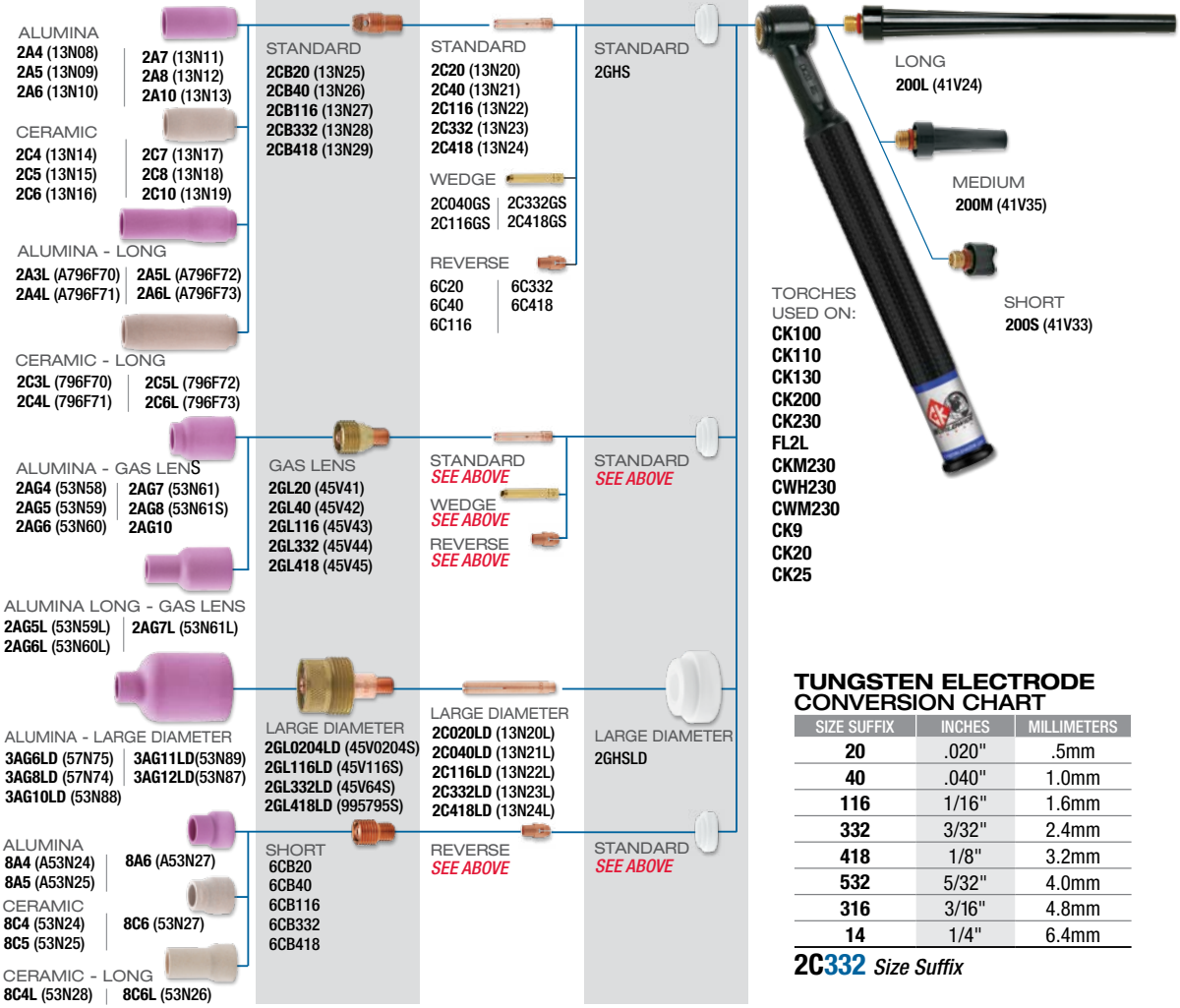
TWECO / CAM-LOCK

DINSE STYLE	ORDER #
TWECO	SLWHAT-T
CAM-LOCK	SLWHAT-CL

2 SERIES PARTS (13N) TORCH MODELS 9, 20

THREAD PATTERN: **5/16" x 24**

CUP	COLLET BODY	COLLET	HEATSHIELD	TORCH	BACKCAP



ALUMINA
2A4 (13N08)
2A5 (13N09)
2A6 (13N10)
2A7 (13N11)
2A8 (13N12)
2A10 (13N13)

CERAMIC
2C4 (13N14)
2C5 (13N15)
2C6 (13N16)
2C7 (13N17)
2C8 (13N18)
2C10 (13N19)

ALUMINA - LONG
2A3L (A796F70)
2A4L (A796F71)
2A5L (A796F72)
2A6L (A796F73)

CERAMIC - LONG
2C3L (796F70)
2C4L (796F71)
2C5L (796F72)
2C6L (796F73)

ALUMINA - GAS LENS
2AG4 (53N58)
2AG5 (53N59)
2AG6 (53N60)
2AG7 (53N61)
2AG8 (53N61S)
2AG10

ALUMINA LONG - GAS LENS
2AG5L (53N59L)
2AG6L (53N60L)
2AG7L (53N61L)

ALUMINA - LARGE DIAMETER
3AG6LD (57N75)
3AG8LD (57N74)
3AG10LD (53N88)
3AG11LD(53N89)
3AG12LD(53N87)

ALUMINA
8A4 (A53N24)
8A5 (A53N25)
8A6 (A53N27)

CERAMIC
8C4 (53N24)
8C5 (53N25)
8C6 (53N27)

CERAMIC - LONG
8C4L (53N28)
8C6L (53N26)

STANDARD
2CB20 (13N25)
2CB40 (13N26)
2CB116 (13N27)
2CB332 (13N28)
2CB418 (13N29)

GAS LENS
2GL20 (45V41)
2GL40 (45V42)
2GL116 (45V43)
2GL332 (45V44)
2GL418 (45V45)

LARGE DIAMETER
2GL0204LD (45V0204S)
2GL116LD (45V116S)
2GL332LD (45V64S)
2GL418LD (995795S)

SHORT
6CB20
6CB40
6CB116
6CB332
6CB418

STANDARD
2C20 (13N20)
2C40 (13N21)
2C116 (13N22)
2C332 (13N23)
2C418 (13N24)

WEDGE
2C040GS | **2C332GS**
2C116GS | **2C418GS**

REVERSE
6C20 | **6C332**
6C40 | **6C418**
6C116

STANDARD *SEE ABOVE*
WEDGE *SEE ABOVE*
REVERSE *SEE ABOVE*

LARGE DIAMETER
2C020LD (13N20L)
2C040LD (13N21L)
2C116LD (13N22L)
2C332LD (13N23L)
2C418LD (13N24L)

REVERSE *SEE ABOVE*

STANDARD
2GHS

STANDARD *SEE ABOVE*

STANDARD *SEE ABOVE*

LARGE DIAMETER
2GHSLD

STANDARD *SEE ABOVE*

LONG
200L (41V24)

MEDIUM
200M (41V35)

SHORT
200S (41V33)

TORCHES USED ON:
CK100
CK110
CK130
CK200
CK230
FL2L
CKM230
CWH230
CWM230
CK9
CK20
CK25

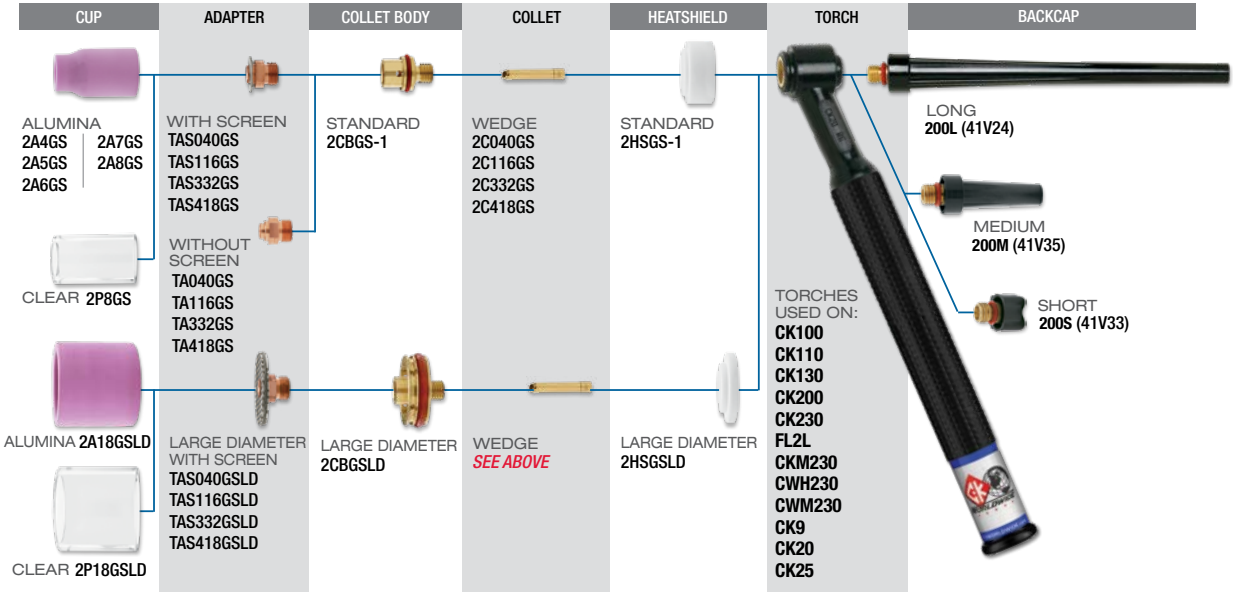
TUNGSTEN ELECTRODE CONVERSION CHART

SIZE SUFFIX	INCHES	MILLIMETERS
20	.020"	.5mm
40	.040"	1.0mm
116	1/16"	1.6mm
332	3/32"	2.4mm
418	1/8"	3.2mm
532	5/32"	4.0mm
316	3/16"	4.8mm
14	1/4"	6.4mm

2C332 *Size Suffix*

2 SERIES GAS SAVER PARTS TORCH MODELS 9, 20

THREAD PATTERN: **5/16" x 24**



ACCESSORY KITS

Pre-packaged kits containing common consumables for our 2 Series torches.

2 SERIES | ORDER #AK-4

ITEM *(Quantity 1 Each)*	PART #
Long Backcap	**200L** (41V24)
1/16" (1.6mm) Collet	**2C116** (13N22)
3/32" (2.4mm) Collet	**2C332** (13N23)
1/8" (3.2mm) Collet	**2C418** (13N24)
1/16" (1.6mm) Collet Body	**2CB116** (13N27)
3/32" (2.4mm) Collet Body	**2CB332** (13N28)
1/8" (3.2mm) Collet Body	**2CB418** (13N29)
#5 (5/16" 8.0mm) Alumina Cup	**2A5** (13N09)
#6 (3/8" 9.6mm) Alumina Cup	**2A6** (13N10)
#8 (1/2" 12.8mm) Alumina Cup	**2A8** (13N12)
1/16" (1.6mm) x 7" 2% Ceriated Tungsten	**T1167GC2**
3/32" (2.4mm) x 7" 2% Ceriated Tungsten	**T3327GC2**
1/8" (3.2mm) x 7" 2% Ceriated Tungsten	**T187GC2**

2 SERIES | ORDER #AK-1 (NOT SHOWN)

.040" (1.0mm) 1/16" (1.6mm) accessory kit. See website for details.

2 SERIES GAS SAVER | ORDER #AK-4GS

ITEM *(Quantity 1 Each)*	PART #
Long Backcap	**200L** (41V24)
1/16" (1.6mm) Collet	**2C116GS**
3/32" (2.4mm) Collet	**2C332GS**
1/8" (3.2mm) Collet	**2C418GS**
1/16" (1.6mm) Tungsten Adapter	**TAS116GS**
3/32" (2.4mm) Tungsten Adapter	**TAS332GS**
1/8" (3.2mm) Tungsten Adapter	**TAS418GS**
Collet Body	**2CBGS-1**
Heatshield	**2HSGS-1**
#4 (1/4" 6.4mm) Alumina Cup	**2A4GS**
#6 (3/8" 9.6mm) Alumina Cup	**2A6GS**
#8 (1/2" 12.8mm) Pryex Cup	**2P8GS**
1/16" (1.6mm) x 7" 2% Ceriated Tungsten	**T1167GC2**
3/32" (2.4mm) x 7" 2% Ceriated Tungsten	**T3327GC2**
1/8" (3.2mm) x 7" 2% Ceriated Tungsten	**T187GC2**

STANDARD GAS SAVER™ KITS

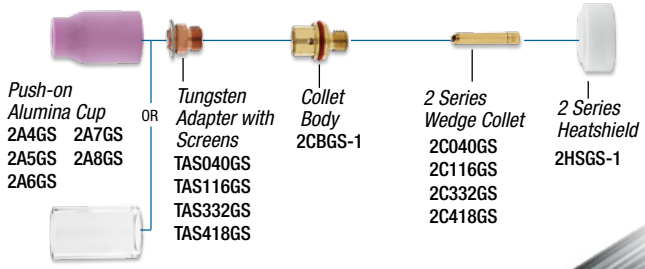
Use these conversion kits and save up to 40% of shield gas consumption plus save money on replacement parts.

- Provides better gas coverage versus standard collet bodies
- Tungsten stick-out can be up to 6 times the electrode diameter
- Clear Pyrex or Alumina push on nozzles available
- Improves visibility
- Less expensive replacement parts than standard gas lenses
- Fits most standard silicone rubber insulated torch bodies
- Replaceable screen adapter

2 SERIES | STANDARD | GAS SAVER KITS

TORCHES	TUNGSTEN	CUP TYPE	ORDER #
CK9, CK20 (2 SERIES)	1/16" (1.6mm)	ALUMINA	D2GS116
	3/32" (2.4mm)	ALUMINA	D2GS332
	1/8" (3.2mm)	ALUMINA	D2GS418
	1/16" (1.6mm)	PYREX	D2GS116-P
	3/32" (2.4mm)	PYREX	D2GS332-P
	1/8" (3.2mm)	PYREX	D2GS418-P

COMPLETE FRONT-END KIT INCLUDES ITEMS BELOW (ONE EACH):



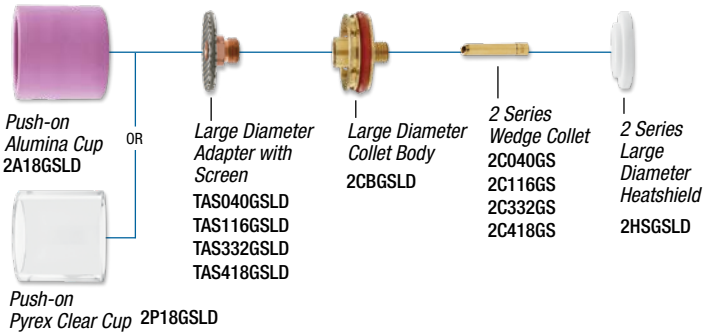
LARGE DIAMETER GAS SAVER™ KITS

With a cup orifice of 1-1/8" (28.5mm) the Large Diameter Gas Saver™ kit provides a large inert atmosphere for the welding of reactive metals such as titanium, molybdenum, nickel-based and aluminum-based alloys as well as non-reactive metals like stainless steel.

2 SERIES | LRG. DIAMETER | GAS SAVER KITS

TORCHES	TUNGSTEN	CUP TYPE	ORDER #
CK9, CK20 (2 SERIES)	1/16" (1.6mm)	ALUMINA	D2GS116LD-A
	3/32" (2.4mm)	ALUMINA	D2GS332LD-A
	1/8" (3.2mm)	ALUMINA	D2GS418LD-A
	1/16" (1.6mm)	PYREX	D2GS116LD
	3/32" (2.4mm)	PYREX	D2GS332LD
	1/8" (3.2mm)	PYREX	D2GS418LD

COMPLETE FRONT-END KIT INCLUDES ITEMS BELOW (ONE EACH):



REMOTE AMPERAGE CONTROLS

- Available in either Steady-Grip™, rotary, linear slide, or spring loaded wheel configurations
- Fits most makes and models of TIG power supplies
- Controls contactor on / off, gas solenoids and full range current output
- Available with a Velcro strap or built into the torch handle
- Contact CK for order numbers

Flex-Loc™ torch not included.

STEADY-GRIP™
Velcro Straps

ROTARY
Velcro Straps

LINEAR SLIDE
Built-In – Handle
(For CK torches)

SPRING LOADED WHEEL
Velcro Straps

LEATHER VELCRO HOSE COVERS

ABRASION, HEAT, OIL, FLAME AND UV RESISTANT

TORCHES	LENGTH*	WIDTH	INSIDE DIAMETER	ORDER#
CK9, CK17, CK20	10 ft. (3.0m)	3-3/4" (95mm)	1" (25mm)	**212HCLV**
	22 ft. (7.0m)	3-3/4" (95mm)	1" (25mm)	**225HCLV**
CK18, CK26	10 ft. (3.0m)	4-1/2" (114mm)	1-1/4" (31mm)	**312HCLV**
	22 ft. (7.0m)	4-1/2" (114mm)	1-1/4" (31mm)	**325HCLV**

TUNGSTEN ELECTRODE GRINDER

- Enclosed electrode grinder
- Minimizes grinding dust exposure to both the user and the environment
- Standard head for diameters:
  .040" (1.0mm)
  1/16" (1.6mm)
  3/32" (2.4mm)
  1/8" (3.2mm)
- Angles adjustable from 20°– 60°
- Consistent tip geometry
- Eliminate grinding wheel contamination

SPECIFICATIONS

Voltage ..... **120V AC**
Single Phase..... **60 Hz**
Power ..... **710 W**
Amp..... **6.45 A**
No Load Speed ..... **34,000 RPM**
Weight
..... **4.1 lbs. (1,860 grams)**
Ship Weight
..... **10.1 lbs. (4,581 grams)**
Warranty..... **2 years**

230V available, contact us for more information

TURBO-SHARP® X

TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
Excessive Electrode Consumption	Inadequate gas flow	*Increase gas flow*
	Improper size electrode for current required	*Use larger electrode*
	Operating of reverse polarity	*Use larger electrode or change polarity*
	Electrode contamination	*Remove contaminated portion, then prepare again*
	Excessive heating inside torch	*Replace collect, try wedge collet or reverse collet*
	Electrode oxidizing during cooling	*Increase gas post flow time to 1 sec. per 10 amps*
	Shield gas incorrect	*Change to proper gas (no oxygen or Co2)*
Erratic Arc	Incorrect voltage (arc too long)	*Maintain short arc length*
	Current too low for electrode size	*Use smaller electrode or increase current*
	Electrode contaminated	*Remove contaminated portion, then prepare again*
	Joint too narrow	*Open joint groove*
	Contaminated shield gas, dark stains on the electrode or weld bead indicate contamination	*Most common cause is moisture or aspirated air in gas stream. Use welding grade gas only. Find the source of the contamination and eliminate it promptly.*
	Base metal is oxidized, dirty or oily	*Use appropriate chemical cleaners, wire brush or abrasives prior to welding.*
Inclusion of Tungsten or Oxides in Weld	Poor scratch starting technique	*Many codes do not allow scratch starts. Use copper strike plate. Use high-frequency arc starter.*
	Excessive current for tungsten size used	*Reduce current or use larger electrode*
	Accidental contact of electrode with puddle	*Maintain proper arc length*
	Accidental contact of electrode to filler rod	*Maintain a distance between electrode and filler metal*
	Using excessive electrode extension	*Reduce electrode extension to recommended limits*
	Inadequate shielding or excessive drafts	*Increase gas flow, shield arc from wind, or use gas lens*
	Wrong gas	*Do not use Ar-02 or Ar-Co2 GMA (MIG) gases for TIG welding*
	Heavy surface oxides not being removed	*Use ACHF, adjust balance control for maximum cleaning, or wire brush and clean the weld joint prior to welding.*
Porosity in Weld Deposit	Entrapped impurities, hydrogen, air, nitrogen, water vapor	*Do not weld on wet material. Remove condensation from line*
	Defective gas hose or loose connection	*Check hoses and connections for leaks*
	Filler material is damp (particularly aluminum)	*Dry filler metal in oven prior to welding*
	Filler material is oily or dusty	*Replace filler metal*
	Alloy impurities in the base metal such as sulphur, phosphorus, lead and zinc	*Change to a different alloy composition which is weldable. These impurities can cause a tendency to crack when hot.*
	Excessive travel speed with rapid freezing of weld trapping gases before they escape	*Lower the travel speed*
	Contaminated gas shield	*Replace the shielding gas*
Cracking in Welds	Hot cracking in heavy section or with metals which are hot shorts	*Preheat, increase weld bead cross-section size, change weld bead contour.*
	Crater cracks due to improperly breaking the arc or terminating the weld at the joint edge	*Reverse direction and weld back into previous weld at edge. Use remote or foot control to manually down slope current.*
	Post weld cold cracking, due to excessive joint restraint, rapid cooling, or hydrogen embrittlement	*Preheat prior to welding, use pure to non-contaminated gas. Increase the bead size. Prevent craters or notches. Change the weld joint design.*
	Centerline cracks in single pass welds	*Increase bead size. Decrease root opening, use preheat, prevent craters.*
	Underbead cracking from brittle microstructure	*Eliminate sources of hydrogen, joint restraint, and use preheat.*
Inadequate Shielding	Gas flow blockage or leak in hoses or torch	*Locate and eliminate blockage or leak.*
	Excessive travel speed exposes molten weld to atmospheric contamination	*Use slower travel speed or carefully increase the flow rate to a safe level below creating excessive turbulence. Use trailing shield cup.*
	Wind or drafts	*Set up screens around the weld area*
	Excessive electrode stickout	*Reduce electrode stickout. Use a larger size cup.*
	Excessive turbulence in gas stream	*Change to gas saver parts or gas lens parts.*
Arc Blow	Induced magnetic field from DC weld current	*Change to ACHF current. Rearrange the split ground connection.*
	Arc is unstable due to magnetic influences	*Reduce weld current and use arc length as short as possible.*
Short Parts Life	Short water cooled leads life	*Verify coolant flow direction, return flow must be on the power cable lead.*
	Cup shattering or breaking in use	*Change cup size or type, change tungsten position, refer to CK Worldwide technical specifications available at www.CKWorldwide.com*
	Short collet life	*Ordinary style is split and twists or jams, change to wedge style.*
	Short torch head life	*Do not operate beyond rated capacity, use water cooled model, do not bend rigid torches.*
	Gas hoses ballooning, bursting or blowing off while hot	*Incorrect flowmeter, TIG flowmeters operate at 35 psi with low flows. MIG flowmeters operate with high flows at 65 psi or more.*

CK WORLDWIDE

Phone: 1.800.426.0877 Fax: 1.800.327.5038
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CONNECT WITH US ON:

www.CKWORLDWIDE.com