

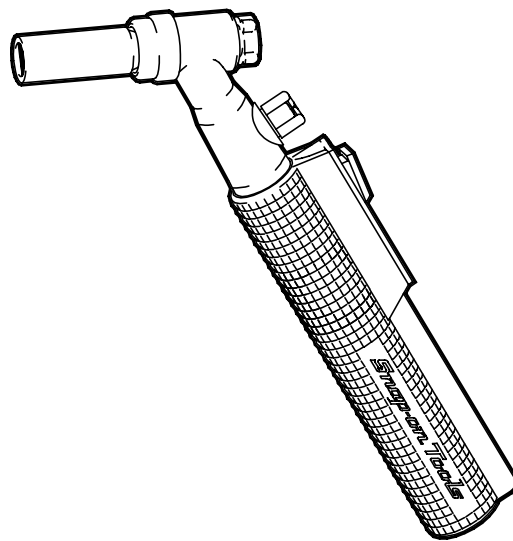
**Snap-on**

*Muscle Mig System*



# FLEX-TIG

## OWNERS MANUAL



**THE FLEX-TIG  
ENABLES THE OPERATOR TO PERFORM HIGH  
QUALITY TUNGSTEN-INERT GAS (T.I.G.) WELDING  
ON STEEL, STAINLESS STEEL, CHROME-MOLY, COP-  
PER AND CAST IRON.**

THIS T.I.G. WELDING PACKAGE WILL NOT WELD ALUMINUM.

FOR TECH. SERVICE, CALL TOLL-FREE 1-800-232-9353

INSTALLATION  
OPERATION  
REPLACEMENT PARTS

## **MANUFACTURER'S LIMITED WARRANTY**

This equipment is warranted against defects in materials and workmanship for a period of **90 DAYS** from the date of purchase.

Should it become defective for such reason, the Manufacturer will repair it without charge, if it is returned to the Manufacturer's factory, freight prepaid. This warranty does not cover: (1) failure due to normal wear and tear; (2) consumable parts, such as, but not limited to, collets, collet bodies, gas cups and heat shields; (3) damage by accident, force majeure, improper use, neglect, unauthorized repair or alteration; (4) anyone other than the original purchaser.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY INJURY TO PERSONS, INCLUDING DEATH; OR LOSS OR DAMAGE TO ANY PROPERTY, DIRECT OR CONSEQUENTIAL, INCLUDING, BUT NOT LIMITED TO, LOSS OF USE, ARISING OUT OF THE USE, OR THE INABILITY TO USE, THE PRODUCT. THE USER ASSUMES ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION WITH THE USE OF THE PRODUCT, AND BEFORE DOING SO, SHALL DETERMINE ITS SUITABILITY FOR HIS INTENDED USE, AND SHALL ASCERTAIN THE PROPER METHOD OF USING IT.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

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## INTRODUCTION

The TIG Welding process is used to produce the highest quality, porosity-free welds. The **FLEX-TIG** adds this capability to your MUSCLE MIG Welder. The **FLEX-TIG** enables the operator to perform high quality Tungsten-Inert Gas (T.I.G.) welding on steel, stainless steel, chrome-moly, copper and cast iron.

With Direct Current-Straight polarity (DCSP), the **FLEX-TIG** will perform on the (4) TIG settings, as well as all (8) MIG settings (see welder output chart and warning on page 4). The (4) TIG settings are "Special" TIG voltages for use on materials ranging from 18 gauge thru 3/32". The higher MIG voltages are for use on material from 3/32" thru 1/4".

The **FLEX-TIG** consists of a 200 amp gas cooled torch with built-in gas control valve, remote On/Off switch, 12 1/2 or 25 foot cable assembly and the required consumable parts.

**NOTE: THIS T.I.G. WELDING PACKAGE**

**WILL NOT WELD ALUMINUM.**

## CONTENTS

- 1- TIG Torch with built-in valve
- 1- Locking Electric Switch with cord  
(installed on torch)
- 1- Power Cable with Connector  
(installed on torch)
- 1- Gas Hose with fitting  
(installed on torch)
- 3- 3C116 Collet - for 1/16" tungsten
- 3- 3C332 Collet - for 3/32" tungsten
- 2- 3CB116 Collet Body - for 1/16" tungsten
- 2- 3CB332 Collet Body - for 3/32" tungsten
- 2- 3C6 Gas Cup - 3/8" orifice
- 6- 3C7 Gas Cup - 7/16" orifice
- 2- 3C8 Gas Cup - 1/2" orifice
- 1- 300L Long Backcap
- 3- 1/16" X 3" Tungsten Electrode
- 3- 3/32" X 3" Tungsten Electrode

## SPECIFICATIONS

**PART NUMBER:** FLEX-TIG 12  
FLEX-TIG 25

**TORCH RATING:** 200 Amps, DCSP

**DUTY CYCLE:** 100%  
(reduce duty cycle when operating over 200 amps.)

**COOLING METHOD:** Gas (100% Argon)

**SHIELDING GAS CONTROL METHOD:**  
Gas Valve on Torch

**WELD CURRENT ON-OFF CONTROL:**  
Locking Switch on Torch

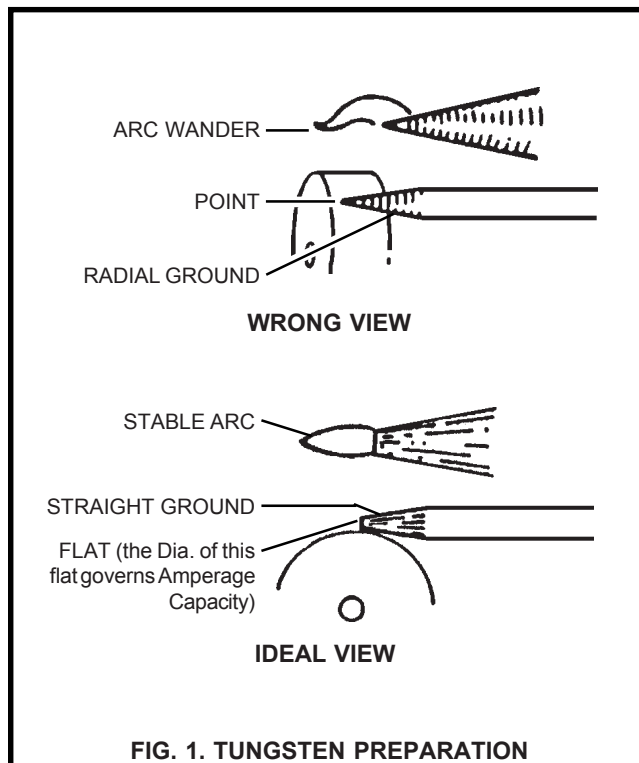
## INSTALLATION

### TUNGSTEN PREPARATION

#### NOTE

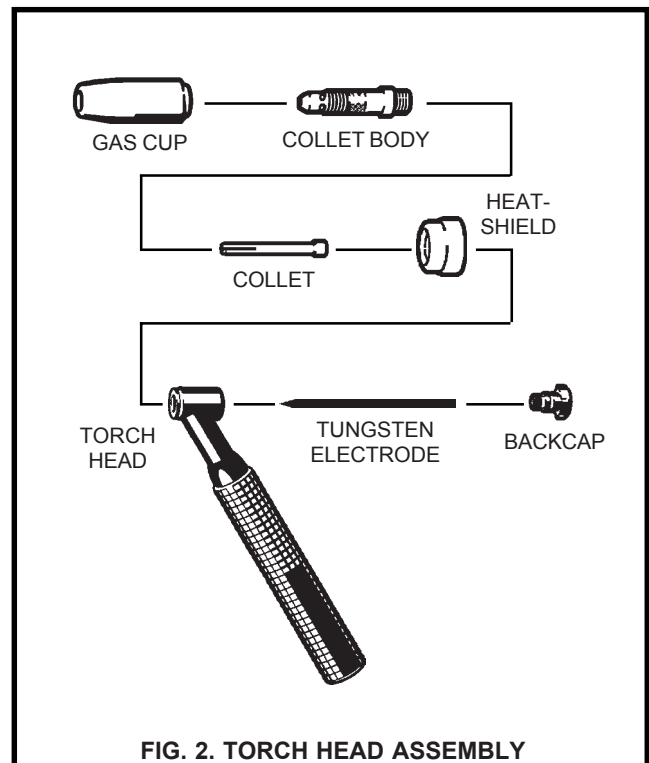
Before using the **FLEX-TIG** the tungsten electrode must be prepped.

1. Referring to Figure 1, grind the electrode following the **IDEAL VIEW**.



### TORCH HEAD ASSEMBLY

1. Select the size tungsten electrode to be used.
2. Make sure teflon heatshield is in place.
3. Locate the matching size Collet and Collet body.
4. Drop the Collet, slit-end down, into the Collet body.
5. Screw assembly into torch head, Heatshield side, and tighten firmly.
6. Install a Gas cup, screw into place seating cup against teflon heatshield.
7. Insert tungsten electrode, prepped end first, thru torch head, Collet and center hole of Collet body.
8. Allow tungsten electrode to extend pass the cup 1/8".
9. Screw Backcap into torch head, tighten firmly.

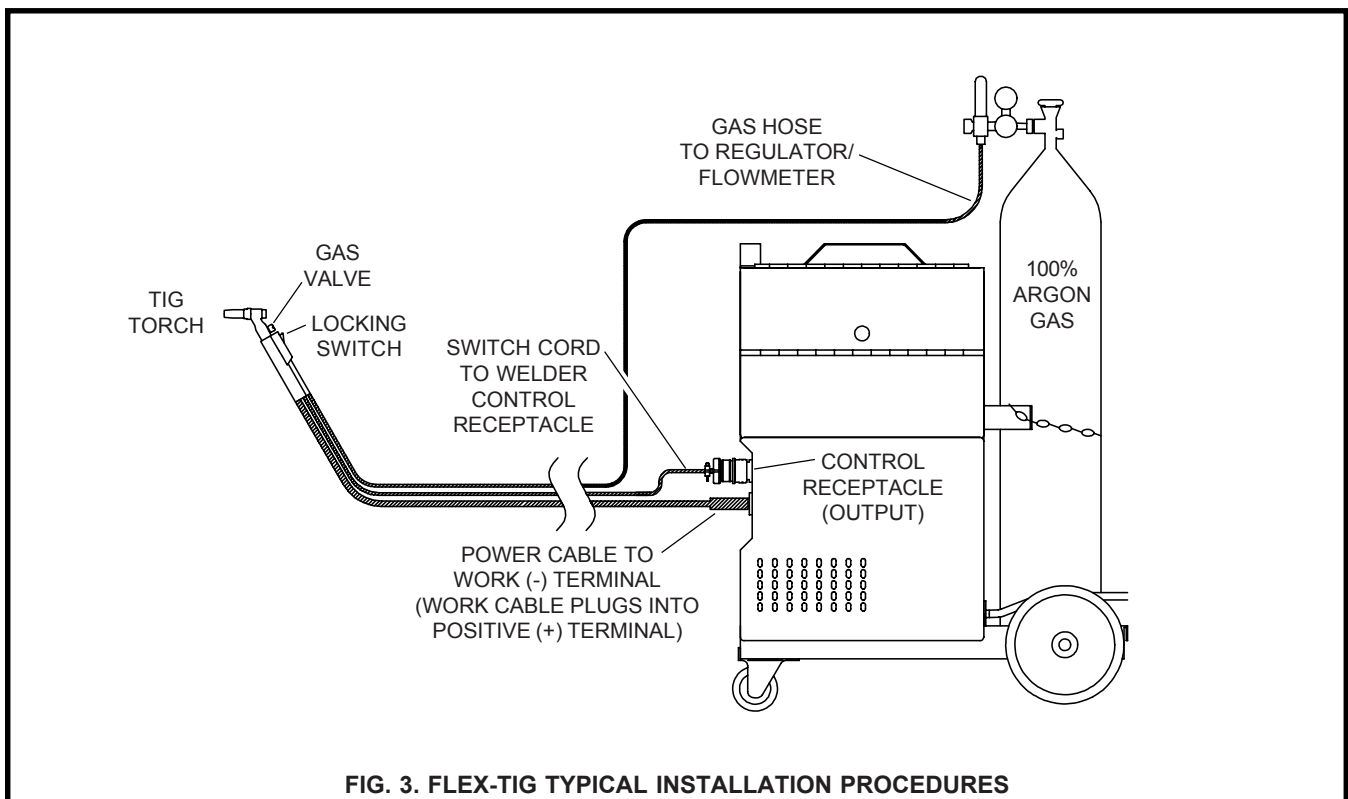


## INSTALLATION (Cont.)

### FLEX-TIG INSTALLATION

1. Disconnect the Feeder control cable assembly from the front of the power source.
2. Plug the TIG torch power cable into "WORK" (-) terminal.
3. Plug the Work cable into "TORCH" (+) terminal. With the TIG torch and Work cable connected in this manner, straight polarity(DCSP) current is available as required for TIG welding.
4. Plug the TIG torch switch cord into the Control receptacle (OUTPUT).
5. Attach the gas regulator/flow-meter to a cylinder of 100% pure Argon gas.
6. Attach the TIG torch gas hose directly to the gas regulator/flowmeter.
7. Turn on the gas cylinder and open the TIG torch gas valve to purge the system of impurities in the gas line. Purge for one minute to ensure porosity free welds.

**YOU ARE NOW READY TO TIG WELD!**



## OPERATION

1. Open the TIG torch gas valve.
2. Set the flowmeter @ a 20 CFH flow rate.
3. Turn "On" the MIG welding machine.
4. Set the welder MIG/TIG Voltage control switch to the desire setting. See "Welder Output Chart" and Warning that follows.

### WELDER OUTPUT CHART - FOR TIG WELDING

HEAT SETTING	OUTPUT(Approx.)
TIG 1	50 AMPS
2	90 AMPS
3	105 AMPS
4	150 AMPS
MIG 1	160 AMPS
2	175 AMPS
3	190 AMPS

### WARNING

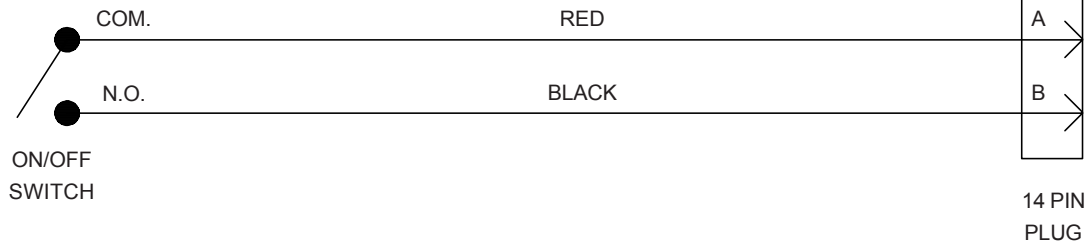
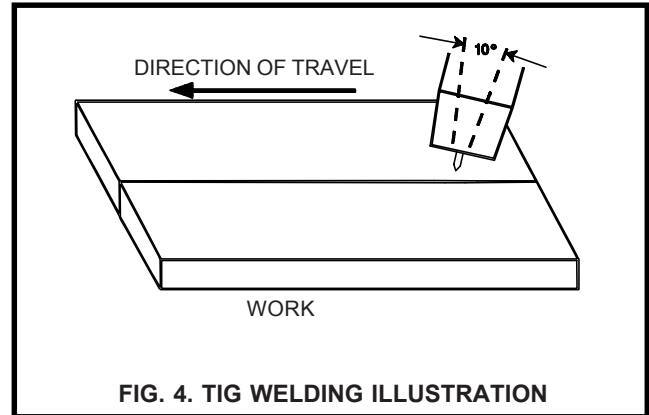
THE FLEX-TIG IS RATED UP TO 200 AMPS, @ A 100 % DUTY CYCLE. OPERATION ABOVE MIG VOLTAGE SETTING #3 COULD RESULT IN PERMANENT DAMAGE TO THE TORCH HEAD AND CABLES.

5. Depress the TIG torch switch and lock "On", scratch or touch tungsten to the work and draw back to establish an arc.

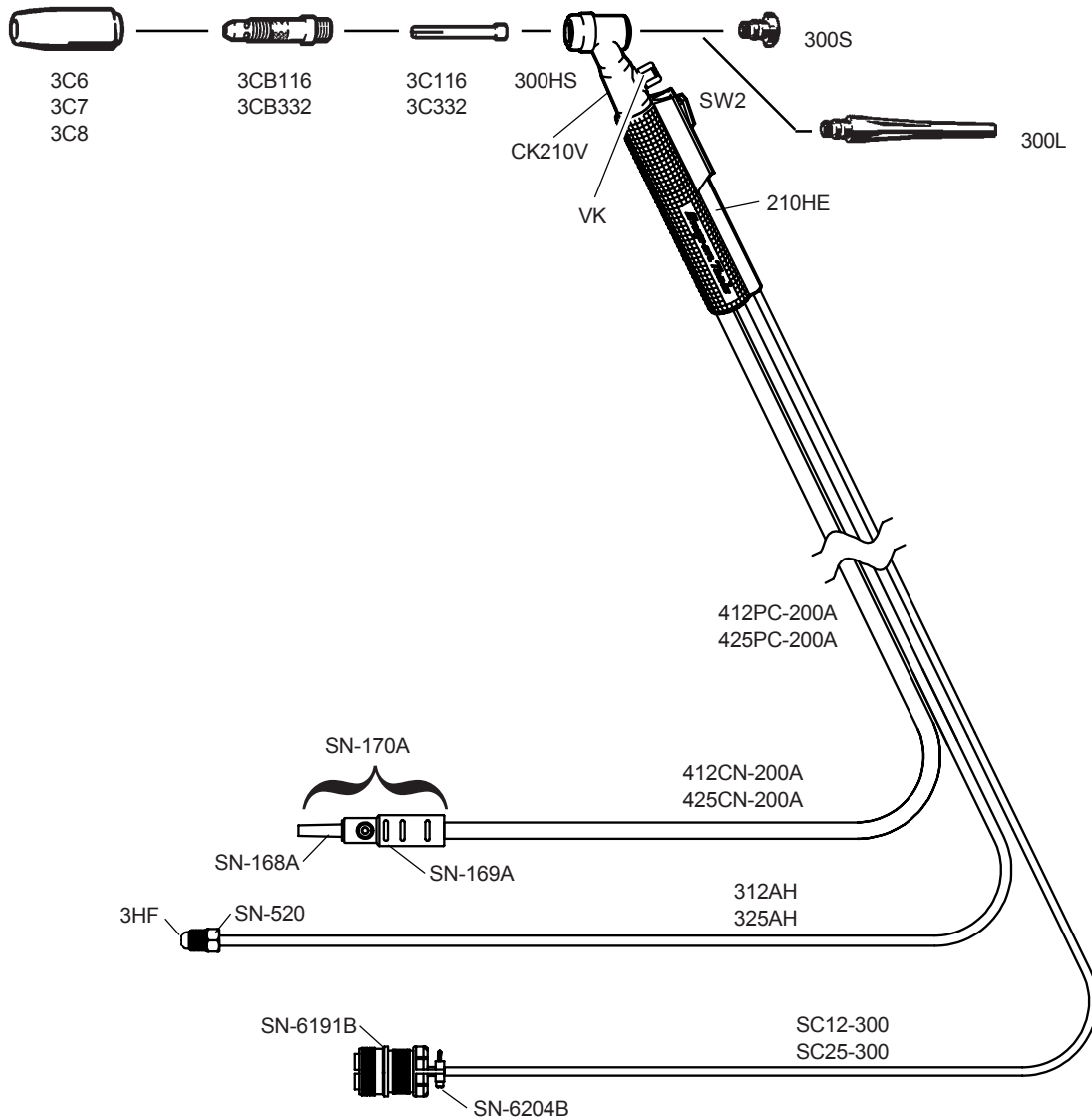
### CAUTION

Continual sticking of the tungsten electrode to the work surface can cause severe damage to the MIG welding machine.

6. Once arc is established, hold and maintain a steady arc until base material becomes fluid. Then continue welding while maintaining a consistent arc length and travel speed.



## REPLACEMENT PARTS - TIG TORCH ASSEMBLY



PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
210HE	HANDLE (only)	425CN-200A	POWER CABLE (only) - with fittings, 25'
300HS	HEATSHIELD	412PC-200A	POWER CABLE AND HOSE ASSEMBLY, 12 1/2'
300L	LONG BACKCAP (with "o" ring)	425PC-200A	POWER CABLE AND HOSE ASSEMBLY, 25'
300S	SHORT BACKCAP (with "o" ring)	CK210V	TORCH BODY (only)
312AH	GAS HOSE (only) - with fittings, 12 1/2'		- with valve assembly & heatshield
325AH	GAS HOSE (only) - with fittings, 25'	SC12-300	CONTROL WIRE (only) - with fittings, 12 1/2'
3C116	COLLET, 1/16"	SC25-300	CONTROL WIRE (only) - with fittings, 25'
3C332	COLLET, 3/32"	SN-168A	CABLE TERMINAL (only)
3C6	CUP, 3/8" ORIFICE	SN-169A	TERMINAL INSULATOR (only)
3C7	CUP, 7/16" ORIFICE	SN-170A	CABLE TERMINAL ASSEMBLY (only)
3C8	CUP, 1/2" ORIFICE	SN-520	HOSE NUT
3CB116	COLLET BODY, 1/16"	SN-6191B	PLUG, 14 PIN (MALE PINS)
3CB332	COLLET BODY, 3/32"	SN-6204B	CLAMP, AMPHENOL
3HF	FITTING, GAS HOSE	SW2	LOCKING ELECTRIC SWITCH (only)
412CN-200A	POWER CABLE (only) - with fittings, 12 1/2'	VK	VALVE (with "o" rings)

**NOTES:**