

TORCH CONSUMABLES CHANGEOUT INSTRUCTIONS

All threaded parts are manufactured with a positive stop so that a consistent tip-to-nozzle relationship is maintained as the consumables are changed. All parts should be installed tightly to allow for the efficient transfer of welding current from the conductor tube to the contact tip and ultimately the weld wire. Parts which are not installed correctly will cause excessive heat build-up due to inefficient weld current transfer between the 2 parts.

- (1) The **GAS NOZZLE** should be **hand tightened** onto the Nozzle Seat. The Gas Nozzle directs shielding gas to the weld area while conducting heat away from the consumables back through goose neck where it dissipates.

The Gas Nozzle should be changed for the following reasons:

- Spatter build up restricts gas flow through the nozzle chamber to the weld area.
- Substantial material wear occurs from cleaning or the general weld process allowing spatter to more easily adhere to its' surfaces.

- (2) The **INSULATING WASHER** and **NOZZLE INSULATOR** protects the nozzle seat threads from spatter while forming a spatter "cup" around the electrically hot consumables. (*Gas Diffuser / Tip Holder, Contact Tip*) In the event of spatter build up, the spatter "cup" insulates the electrically "hot" components from arcing to the electrically isolated components. (*Gas Nozzle*) If this occurs the gooseneck may have to be replaced.

The Insulators should be changed for the following reasons:

- Insulators turned black and brittle. Severe pitting and breakdown of material allows spatter to better adhere to surfaces.

- (3) The **CONTACT TIP** should be **wrench tightened** into the Gas Diffuser / Tip Holder to ensure good weld current transfer to the weld wire. The contact tip is produced out of drawn copper tubing. The hole in the center is sized specifically for the welding wire being used. Its primary function is to guide the wire to the weld joint and transfer the welding current to the weld wire. As the wire moves through the Contact Tip, abrasive wear will occur causing the hole to become larger and oval in shape. As the hole widens, the welding current does not transfer as efficiently. In addition, the wire can also "wander" from the intended joint being welded.

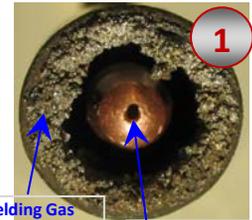
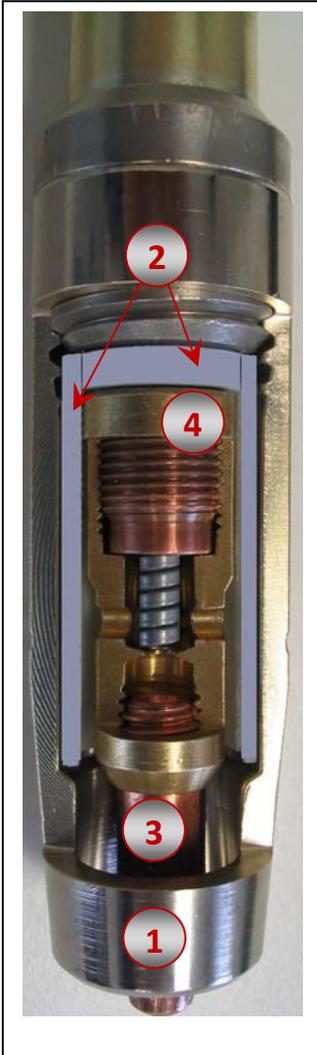
The Contact Tip should be changed for the following reasons:

- Contact Tip I.D. worn out as to not direct wire accurately.
- Contact Tip I.D. worn out as to not transfer weld current efficiently.
- Contact Tip unable to deliver wire due to weld wire burnback or other interference.

- (4) The **GAS DIFFUSER / TIP HOLDER** should be **wrench tightened** onto the conductor tube to ensure good electrical conductivity from the conductor tube to the Contact Tip. It also has (6) 1/8" holes that direct shielding gas into the Gas Nozzle which in turn directs it to the weld area.

The Gas Diffuser / Tip Holder should be changed for the following reasons:

- The gas holes have been fully or partially blocked by excessive spatter build up restricting gas flow.
- The Threads on either end have been stripped or cross-threaded not allowing the conductor tube or Contact Tip to be installed correctly.



Shielding Gas restricted by spatter build-up on nozzle

Wear of contact tip ID



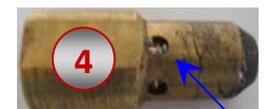
Spatter build up in nozzle insulator. Beginning of insulating material breakdown



Insulating washer beginning to breakdown.



Contact tip not installed tight. Will cause overheating and poor electrical conductivity. Note bluish purple thread discoloration.



Spatter buildup in the gas diffuser/tip holder holes.

