

OSHA Training Toolbox Talk: Cutting, Welding, & Compressed Gas Safety - Torch Assembly

[Reference: 1910.253 / 1926.350]

Using a torch fueled by oxygen and a gas such as acetylene, propylene, or propane gas to cut, gouge, or braze metals is very common in the workplace. And the work is typically done safely. However, if the torch and its accessories are not properly assembled, there is a real possibility for a fire or explosion that can cause severe burns or even death. This toolbox talk focuses on the proper selection and assembly of an oxy-fuel gas torch. However, you should only assemble a torch if you have been authorized to do so by your employer after receiving hands-on training and practice.

- Select the right sized torch for the job. Some torches have a larger body that facilitates a greater flow of gasses and, subsequently, produce more heat. These larger torches are therefore better suited when working with thicker pieces of steel. However, larger torches are heavier, and use more gasses than a smaller torch. Conversely, a smaller torch produces less heat, but is more suitable, and also more efficient, when working with thinner pieces of steel.
- Ensure the main sections of the cutting torch, which include the torch handle, or body, and the cutting or heating attachment, are compatible (this would not apply to single body assemblies). Torch parts made by different manufacturers, or even parts of different models of torch made by the same manufacturer, could have different sizes, shapes, or styles of seats, threads, or coupling nuts that may not be fully compatible, leading to gas leaks at critical joints.
- Before assembling a torch, inspect the torch seating area as well as the thread assembly for damage, and make sure that the cone and O-rings are in place and free from damage. Also check the seating end of the torch tip and the tip nut for damage that could cause a leak at the seating area. Damaged torches or attachments should never be used.
- Inspect to make sure all valve knobs and, where applicable, the oxygen cutting lever, are securely attached and functioning. This is critical for proper flame adjustments and delivery of oxygen for cutting, but more importantly to make sure the valves can be quickly and securely closed when necessary. Remove the torch from service if damaged.
- Make certain you have the right brand, size and type of tip for the torch you are using and the job you will be performing. There are different types and sizes of torch tips used for cutting, gouging, and heating.
- The seating surface of the cutting tip should be inspected for scratches and dents. Also, ensure the opening at the end of the tip is not clogged, and use a tip cleaner to clean it out if necessary.
- Once assembled, make sure all nuts and connections on the torch assembly are tightened. A leak check should be performed after the torch is connected to the hoses, regulators, and gas cylinders.

Does anyone have any other safety tips for assembling an oxy-fuel gas torch that you'd like to share? Thank you for participating in today's toolbox talk. Please make sure you sign the training certification form to get credit for attending today's training session.

Oxy/Fuel Gas Torches & Attachments

Torch Attachment (for cutting)

One Piece Torch (cutting / gouging)

Torch Handle

Torch Attachment (for brazing)

Torch Attachment (for heating)

Torch Tips
(various purposes)

Photos: Miller Electric Manufacturing LLC