

# BACKPACK ASSEMBLY

## INITIAL PORTABLE CUTTING SYSTEM (PCS) BACKPACK ASSEMBLY

The PCS requires supplemental assembly in addition to the System Assembly outlined in the Petrogen Reference Manual.

1. Remove the (2 quart) Liquid Fuel Tank and (23 cubic foot) Oxygen Bottle from the PCS backpack.
2. Fill the Oxygen Bottle by following the steps on the Filler Pigtail card or by contacting your local oxygen provider.
3. Locate and assemble the Oxygen Regulator to the Oxygen Bottle Valve (see section 4 of the Petrogen Reference Manual).
4. Locate and assemble the Pump Shaft Assembly to the Liquid Fuel Tank (see section 34.5 in the Petrogen reference manual).
5. Fill the Liquid Fuel Tank with 1.5 quarts of liquid fuel, and pressurize to 20 psi (see sections 7 and 8 in the Petrogen Reference Manual).
6. Place the fully assembled, filled and pressurized Liquid Fuel Tank into the left PCS backpack housing.
7. Place the fully assembled Oxygen Bottle into the right PCS backpack housing.

NOTE: All PCS packages come with pre-assembled quick disconnects that allow operators the option to connect the system's hoses before assembling the PCS backpack or after assembly. Should operators wish not to use the provided quick disconnects, the hoses should be attached to the Liquid Fuel Tank and Oxygen Regulator before the Liquid Fuel Tank and Oxygen Bottle are placed into the PCS backpack.

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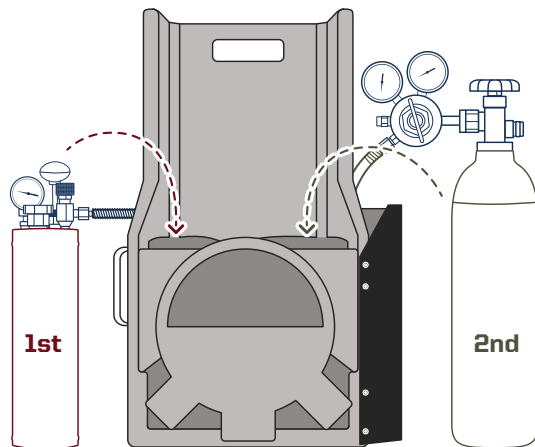
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When reassembling the PCS Backpack, first take the following steps to replace the Liquid Fuel Tank and Oxygen Bottle.

1. Ensure the fittings are snug between the Oxygen Regulator and the Oxygen Bottle's valve.
2. Ensure the Oxygen Hose is snug to both the Oxygen Regulator and to the Oxygen Flashback Arrestor and also that the Oxygen Flashback Arrestor is snug to the Torch's Oxygen Hose Connector.
3. Ensure the Liquid Fuel Hose is snug to the Liquid Fuel Tank's Shut-Off Valve hose connector and to the Liquid Fuel Hose Connector on the Torch.
4. Place the fully assembled Liquid Fuel Tank into the left PCS backpack housing.
5. Place the fully assembled Oxygen Bottle into the right PCS backpack housing.

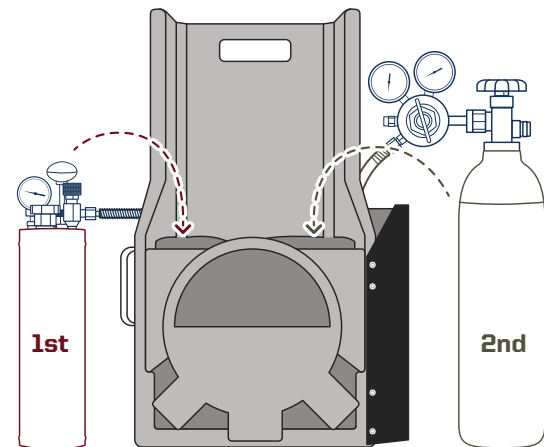


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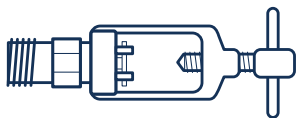
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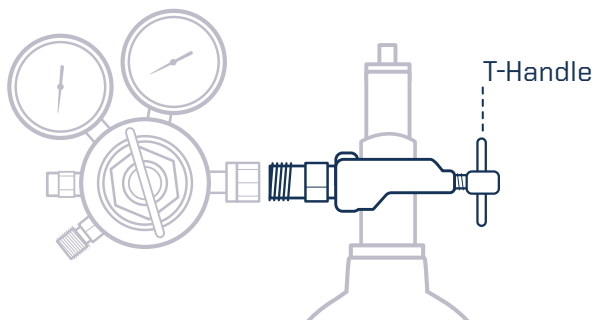
# ADAPTER

Petrogen's Portable Cutting System (PCS) includes a 23 cubic foot aluminum oxygen bottle that may be substituted with a Jumbo D medical oxygen bottle. When using a medical oxygen bottle, the Medical Yoke Adapter enables operators to connect a CGA Oxygen Regulator to the CGA 870 valve on medical oxygen bottle.



## MEDICAL YOKE ADAPTER APPLICATION

1. Place the Medical Yoke Adapter over the medical CGA 870 post valve.
2. Tighten the adapter to the post by turning the adapter's T-Handle clockwise.
3. Once the adapter is secured to the medical oxygen bottle's valve post, you may then assemble the Oxygen Regulator (see page 13 of the manual).

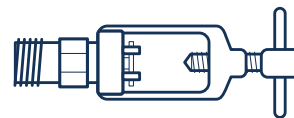


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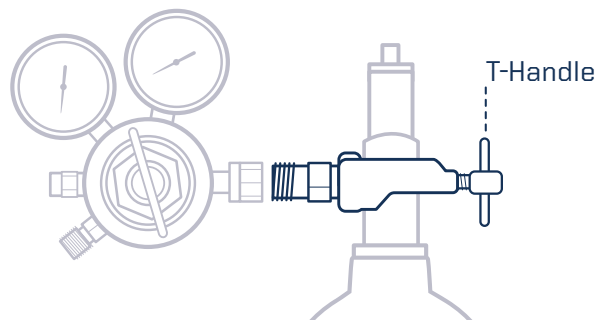
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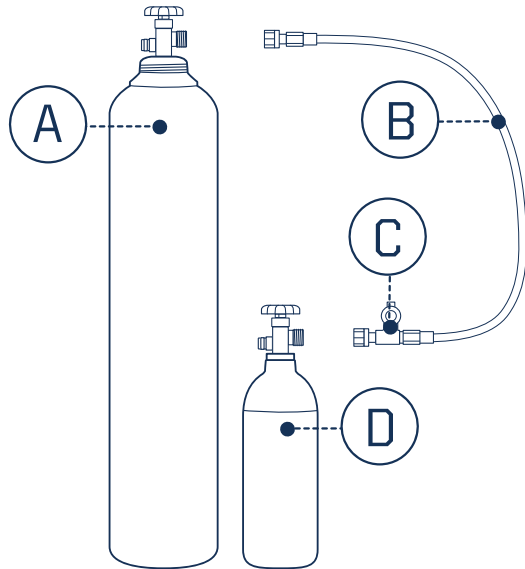
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# FILLER PIGTAIL

## TRANS FILLING OXYGEN

The Portable Cutting System (PCS) includes an empty 23 cubic foot aluminum oxygen bottle that may be filled from a larger oxygen bottle using the provided Filler Pigtail.



**A. Distributing Oxygen Bottle** - The Distributing Oxygen Bottle must have more pressure than the Receiving Oxygen Bottle.

**B. Filler Pigtail** - The Filler Pigtail transports oxygen from the Distributing Oxygen Bottle to the Receiving Oxygen Bottle.

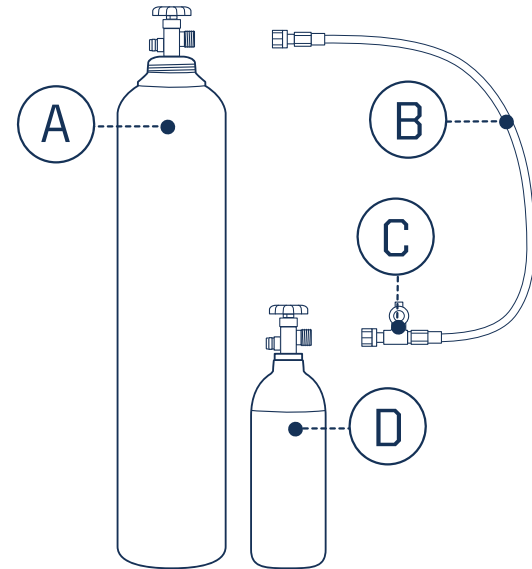
**C. Release Valve** - The Filler Pigtail's Release Valve releases pressure within the Filler Pigtail.

**D. Receiving Bottle** - The Receiving Oxygen Bottle must have less pressure than the Distributing Oxygen Bottle in order to fill with pressure.

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**D. Receiving Bottle** - The Receiving Oxygen Bottle must have less pressure than the Distributing Oxygen Bottle in order to fill with pressure.

## FILLING PROCEDURE

1. Inspect each end of the Filler Pigtails threads and the socket of the Distributing Oxygen Bottle and Receiving Oxygen Bottle to be sure they are clean and undamaged before connecting the Filler Pigtail.
2. Attach one end of the Filler Pigtail to the Distributing Oxygen Bottle and tighten clockwise using an adjustable wrench to snug the fitting.
3. Attach the other end of the Filler Pigtail to the Receiving Oxygen Bottle and tighten clockwise using an adjustable wrench to snug the fitting.
4. Open the Receiving Oxygen Bottle's valve fully.
5. Slowly open the Distributing Oxygen Bottle's valve fully.
6. When the Distributing Oxygen Bottle and Receiving Oxygen Bottle are at the same pressure, flow will stop.
7. Listen for the oxygen transfer to conclude, and then close both the Receiving and Distributing Oxygen Bottles completely.
8. Open the Filler Pigtail's Release Valve to relieve the remaining pressure within the line.
9. Remove the Filler Pigtail from both the Receiving and Distributing Oxygen Bottles.
10. The Receiving Oxygen Bottle is now ready for Oxygen Regulator assembly (see page 13 of the Petrogen Reference Manual).

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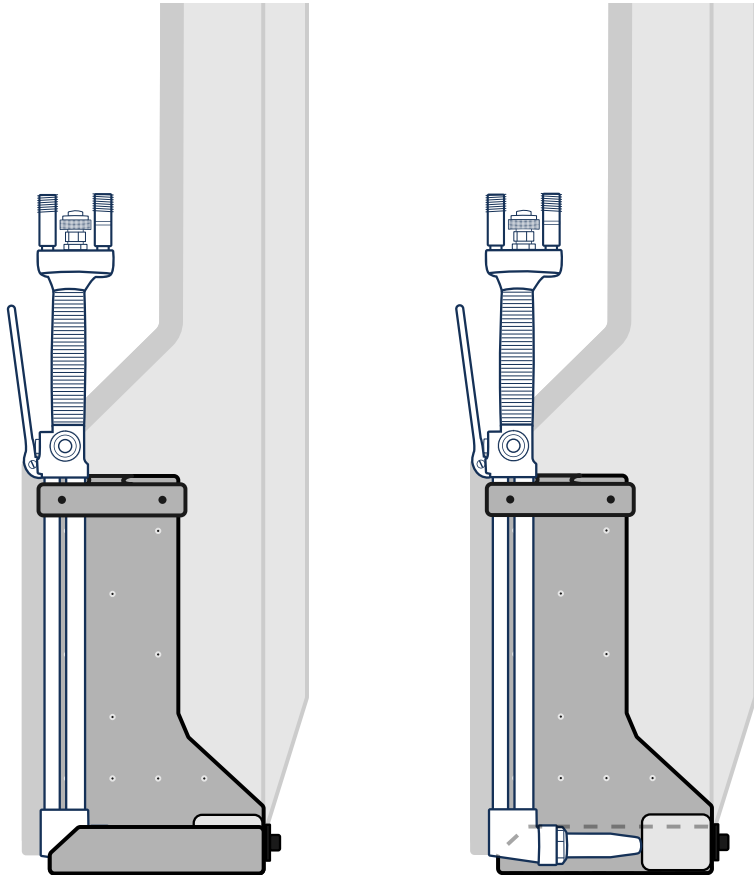
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## BRACKET SPACER

### CONVERTING THE PCS BRACKET FOR USE WITH THE MULTI-FUEL ADAPTER

When using a standard torch configuration, the PCS bracket is assembled with an aluminum spacer which aids in stabilizing the Torch during transport.

If the system is to be configured with a Multi-Fuel Adapter, the aluminum spacer will need to be removed in order to properly attach the Torch to the bracket.

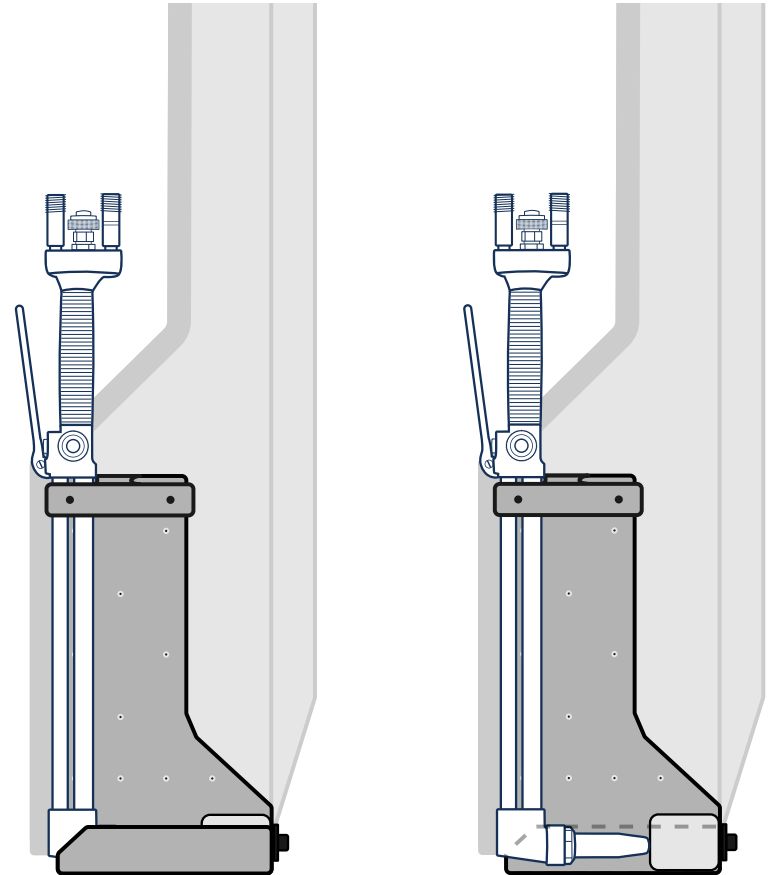


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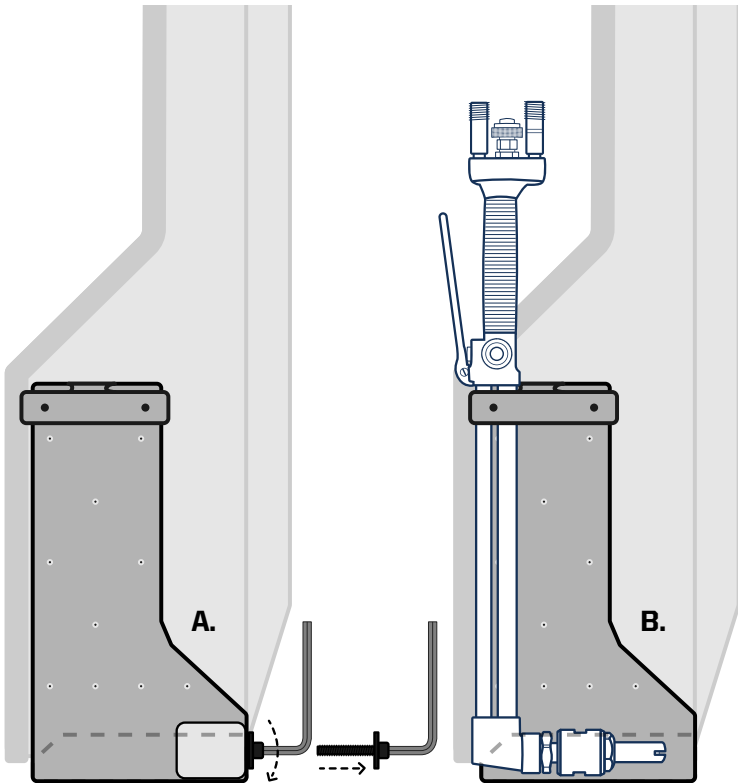
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## SPACER REMOVAL

1. Use the included “Hex” Allen Wrench found in the Standard Tool Kit to loosen and remove the exposed bolt, located on the lower back side of the bracket (A).
2. Remove the spacer from the bracket and thread the bolt back into the spacer to store with the systems Parts and Tool Kit.
3. With the spacer removed, the Torch with the Multi-Fuel Adapter may then be placed into the bracket (B).

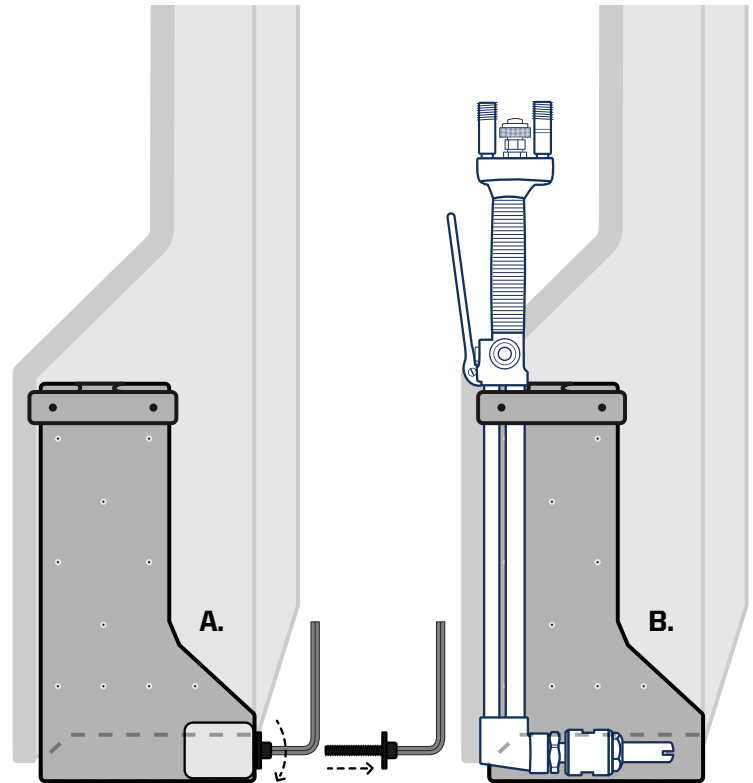


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