

# D-Torch\* for AGILENT 7700

## Part Number 30-808-3305

### BEFORE YOU START

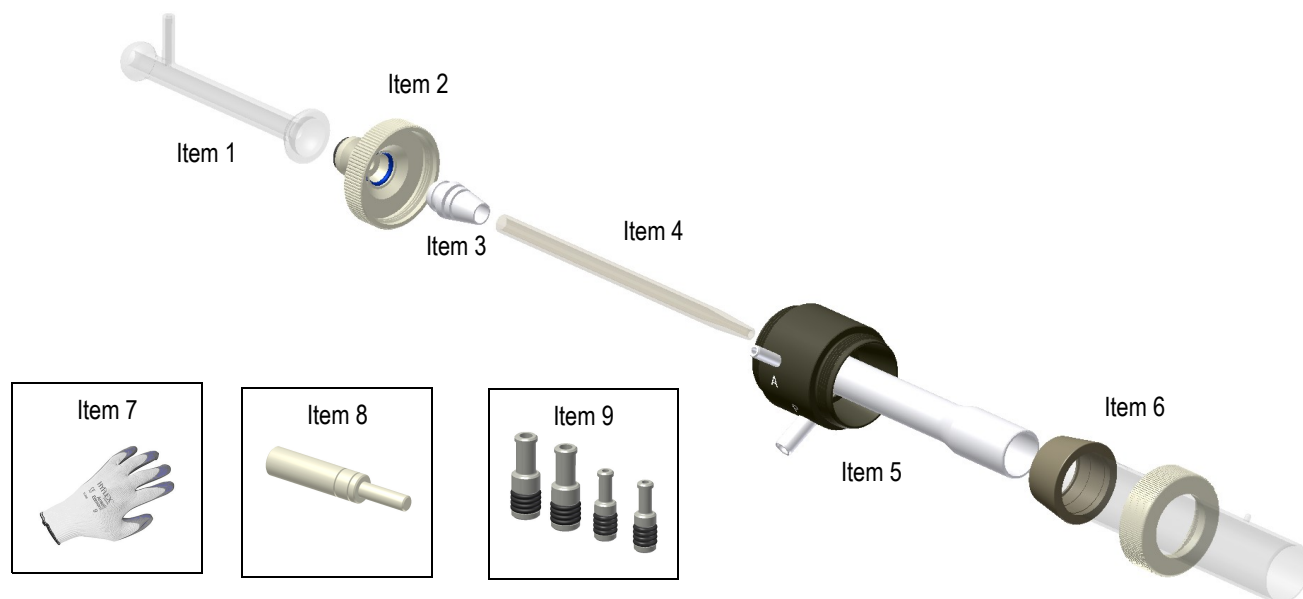
Congratulations on the purchase of your D-Torch.  
As supplied, the D-Torch is fully assembled. Table 1, lists the D-Torch parts that can be ordered separately.

| Item No. | Part Number   | Description                         | Qty        |
|----------|---------------|-------------------------------------|------------|
| 1        | 31-808-3303   | D-Torch quartz adaptor AGILENT 7700 | 1          |
| 2        | 31-808-3072   | D-Torch injector adaptor            | 1          |
| 3        | 31-808-2962   | Injector ferrule                    | 1          |
| 4        | Refer note    | Injector                            | Refer Note |
| 5        | 31-808-3196   | D-Torch AGILENT body                | 1          |
| 6        | 31-808-3022   | D-Torch AGILENT quartz outer tube   | 1          |
| 7        | SAFEGLOVE-MED | Safety gloves                       | 1          |
| 8        | 70-803-0920   | Injector ferrule tool               | 1          |
| 9        | GAZ-0604      | GazFit connectors 4mm and 6mm       | Refer Note |

Table 1

### Note!

- Item 4. D-torch injector not supplied with standard D-torch assembly (Shown for reference only). There is a range of different injectors suitable for Agilent D-Torch – These can be purchased from your D-Torch supplier.
- Item 9. GazFit connectors used to attach your ICP tubes to the D-torch side arms. (two used, leaving two spare).



### Scope

Pages 2 & 3 of this document will explain;

1. Precautions for personal safety and D-Torch preservation.
2. Remove D-torch outer tube.
3. Reattach D-Torch outer tube.
4. Access D-Torch injector.
5. Replace injector ferrule.

\* The D-Torch is covered by US Patent 8,232,500 B2

# D-Torch\* for AGILENT 7700

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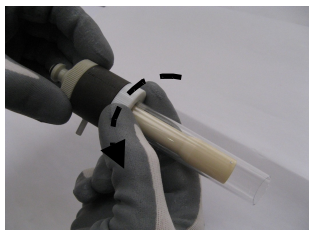
### 1. Precautions for personal safety and D-Torch preservation

- Always wear safety gloves (item 7) and safety glasses when handling ICP torches.
- The D-Torch is made from high grade engineered materials – *handle with extreme care.*
- Do not allow the Torch to be placed on hard surfaces or allow it to come into contact with hard objects.
- It is recommended you review and understand this procedure before handling the D-Torch assembly.

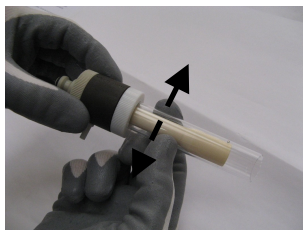
### 2. Remove D-Torch outer tube

The D-Torch outer tube is accurately located in place with the retainer. The outer tube can be removed at any time by completing the following steps.

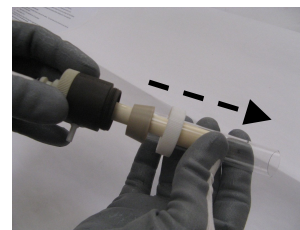
- 2.1 If fitted, remove D-Torch assembly from ICP (not shown).
- 2.2 Unscrew retainer ½ turn.
- 2.3 Grip outer tube (lower end, near D-Torch body) then wriggle tube from side to side – refer figure 2.3  
You will hear a “click” as the outer tube releases.
- 2.4 Fully unscrew the retainer then carefully withdraw the outer tube from the torch body.



2.2



2.3



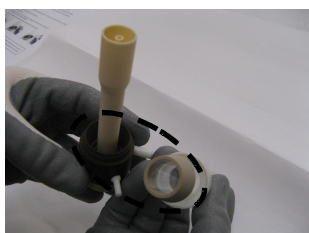
2.4

**Note!** Outer tube is permanently fitted with a tapered ferrule - **Do not** attempt to remove ferrule from outer tube.  
Inner tube is permanently fixed to D-Torch body - **Do not** attempt to remove inner tube from D-Torch body.

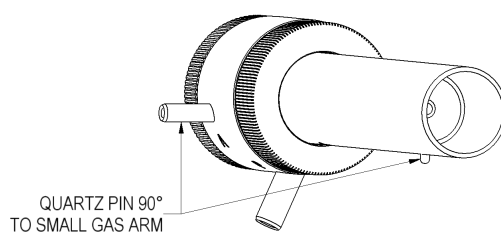
### 3. Attach D-Torch outer tube

To attach the outer tube, complete the following steps.

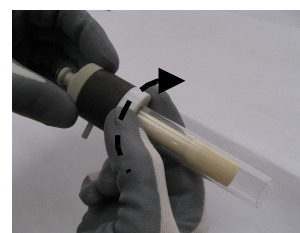
- 3.1 Check that both locating surfaces of the D-torch body and outer tube are clean and free from damage.
- 3.2 Slide the outer tube with its retainer over the D-Torch body's inner tube - Tube will self-seat in the D-Torch body.  
Rotate the outer tube to position its quartz pin 90° to the small gas arm.  
**Note!** Position of the quartz pin is only important, if you intend to use a torch shield (this is optional)
- 3.3 Tighten the retainer to fix the outer tube in place.  
**Do not** over tighten retainer (Hand tightening is adequate).



3.1



3.2



3.3

- 3.4 If required, return D-Torch to ICP and connect as normal (not shown).

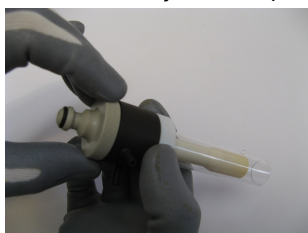
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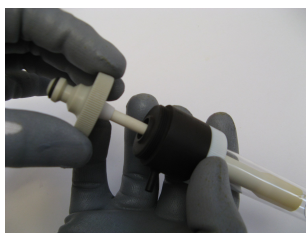
### 4. Access D-Torch Injector

#### To remove the injector

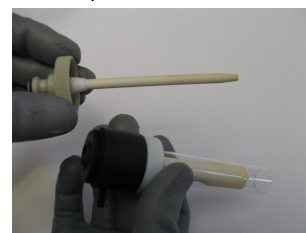
4.1 Unscrew the injector adaptor from the rear of the D-Torch and carefully remove the adaptor from D-Torch body.



4.1a



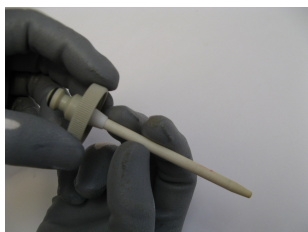
4.1b



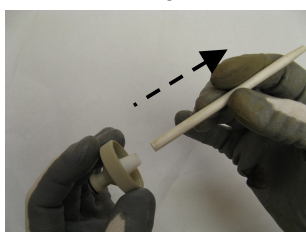
4.1c

4.2 Slide the injector out from the injector adaptor

**Check** condition of the ferrule – Replace ferrule if damaged or deteriorated (refer section 5).



4.2a



4.2b

#### To reinstall Injector to the D-Torch

Repeat steps 4.1 and 4.2 in reverse order.

**Note!** Push injector all the way into the injector ferrule. (End of injector must butt-up against inside of adaptor).

### 5. Replace injector ferrule

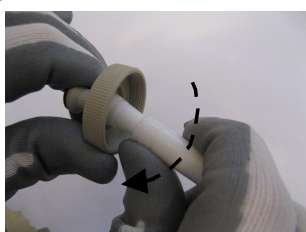
To replace the injector ferrule, complete the following steps: -

5.1 Insert the injector ferrule tool (item 8) into injector ferrule then pivot tool sideways to unseat the ferrule from the injector adaptor - Discard ferrule.

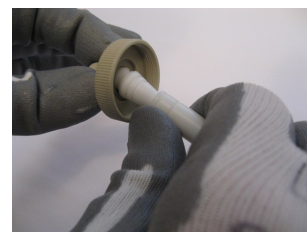
**You may** need to apply a moderately high amount of force to un-seat the injector ferrule from the adaptor.



5.1a

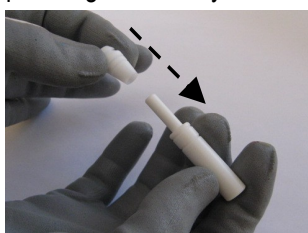


5.1b

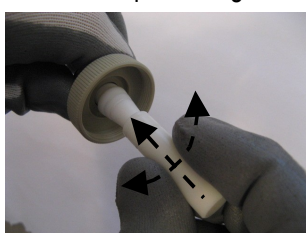


5.1c

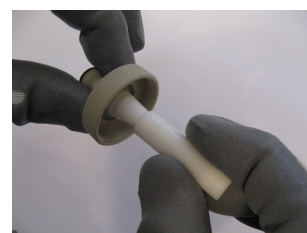
5.2 Place a new injector ferrule (item 3) onto the stem of injector ferrule tool. Position the ferrule into the adaptor and push together until you feel the ferrule 'seat' with adaptor o-ring.



5.2a



5.2b



5.2c

**Hint!** It will help if you pivot the injector ferrule tool (like step 5.1b) whilst pushing-in the injector ferrule.

**Finished!** If you have any questions regarding the D-Torch assembly or this procedure, please contact your supplier.