

# D-Torch\* user guide

## Spectro Blue EOP

30-808-3600

### BEFORE YOU START

Congratulations on the purchase of your D-Torch.

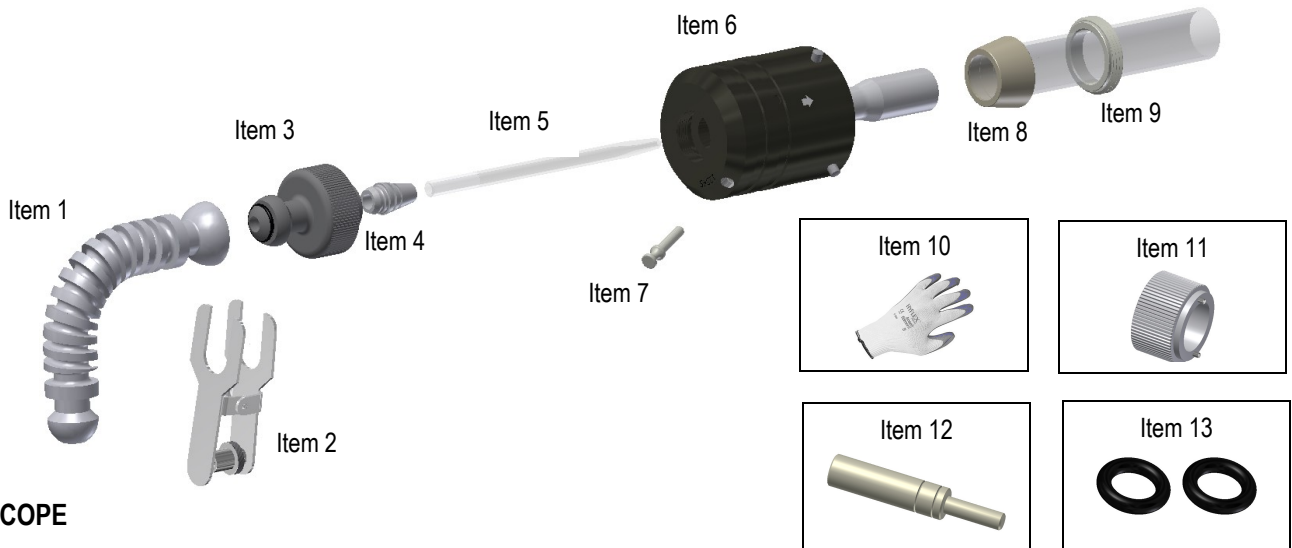
As supplied, the D-Torch is fully assembled -- Table 1, lists all the D-Torch components that can be ordered separately.

Item No.	Part Number	Description	Qty
1	21-809-4045	Adaptor S19/B19-90	1
2	JC-19	Metal Ball-joint Clip	1
3	31-808-3651	D-Torch Spectro Blue injector adaptor	1
4	31-808-2962	D-Torch injector ferrule 6.0mm	1
5	Refer note	Quartz tapered injector 1.8mm	Refer note
6	31-808-3605	D-Torch Spectro Blue Body	1
7	31-808-3628	Plug	1
8	31-808-3601	D-Torch Spectro Blue EOP quartz outer tube	1
9	31-808-3595	Retainer	1
10	SAFEGLOVE-MED	Safety gloves	1
11	70-803-1252	Tool for outer tube retainer	1
12	70-803-0920	Injector ferrule tool	1
13	VT-6/2	O-ring 6mm x 2mm	2

#### Notes;

Table 1

- Item 5. D-torch injector not supplied with standard D-torch assembly (Shown for reference only). There are a range of different injectors suitable for this D-Torch – These can be purchased from your D-Torch supplier.
- Item 7. Do not remove plug from D-Torch body - This plug is only removed when using a ceramic outer tube.
- Item 13. Two new o-rings are supplied for the D-Torch / ICP interface.  
We recommend you install both these o-rings should the existing ICP o-rings show signs of wear or other defect.



### 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. Re-attach 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

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### 1. PRECAUTIONS FOR PERSONAL SAFETY AND D-TORCH PRESERVATION

- Always wear safety gloves (item 10) 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 Using the tool (item 11) supplied, unscrew the outer tube retainer (at the tube base) by approximately 1/2 turn.
- 2.3 Grip outer tube (lower end, near D-Torch body) and gently wriggle it from side to side.  
You will hear a “click” as the outer tube releases.
- 2.4 Then fully unscrew the retainer and carefully withdraw the outer tube from the torch body.



Step 2.2



Step 2.3



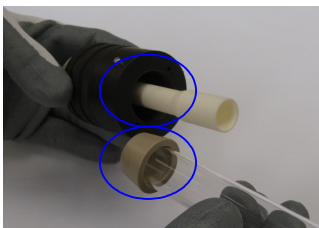
Step 2.4

**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. RE-ATTACH D-TORCH OUTER TUBE

To replace the outer tube, complete the following steps.

- 3.1 Check that both locating surfaces (outer tube and torch body) are clean and free from damage.
- 3.2 Carefully slide the outer tube over the inner tube – the outer tube will self locate into the torch body.
- 3.3 Fix the outer tube in place with the retainer from earlier - Using the same tool (item 11), apply moderate tightening force - Do Not over tighten.



Step 3.1




Step 3.2



Step 3.3

- 3.4 You can now return the D-Torch to your ICP as normal (not shown).

**Note!** Align the arrow symbol  (on the D-Torch body) with the appropriate indicator on your ICP instrument.  
The front face of the torch body and ICP interface o-rings are in good order - **Replace** o-rings if necessary

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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.



Step 4.1



Step 4.1 continued



Step 4.1 complete

4.2 Slide the injector out from the injector adaptor

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



Step 4.2



Step 4.2 complete

#### To re-install Injector to the D-Torch

Repeat steps 4.1 and 4.2 in reverse order.

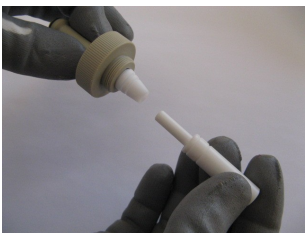
**Critical note!** Push the injector all the way into the adaptor (injector must be seated in the correct position).

### 5. REPLACE INJECTOR FERRULE

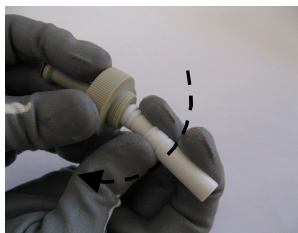
To replace the injector ferrule, complete the following steps: -

5.1 Insert the injector ferrule tool (item 12) into injector ferrule then pivot tool sideways to unseat the ferrule from the injector adaptor - Discard ferrule.

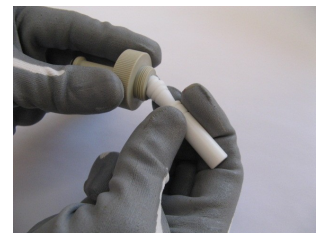
**You may** need to apply a moderately high amount of force to un-seat the injector ferrule from the adaptor.



Step 5.1

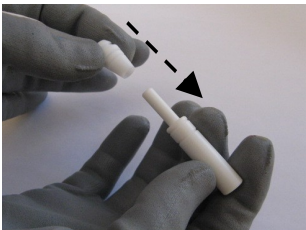


Step 5.1 continued



Step 5.1 complete

5.2 Place a new injector ferrule (item 4) 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.



Step 5.2



Step 5.2 continued



Step 5.2 complete

**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.