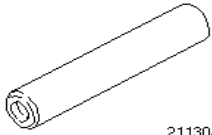


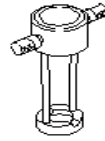
## Seals - Valve Stem - Renew (All) (21 238 0)

### Special Tools



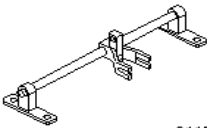
21130A

21-130 Installer, valve stem oil seals



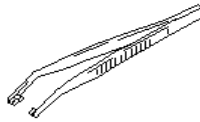
2115502A

21-155-02 AAdapter for 21-155



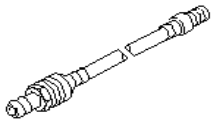
21155

21-155 Valve spring compressor



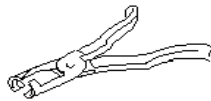
21156

21-156 Installer, valve collets



21157

21-157 Adapter, cylinder air supply



21165

21-165 Remover, valve stem oil seals

### Workshop Equipment

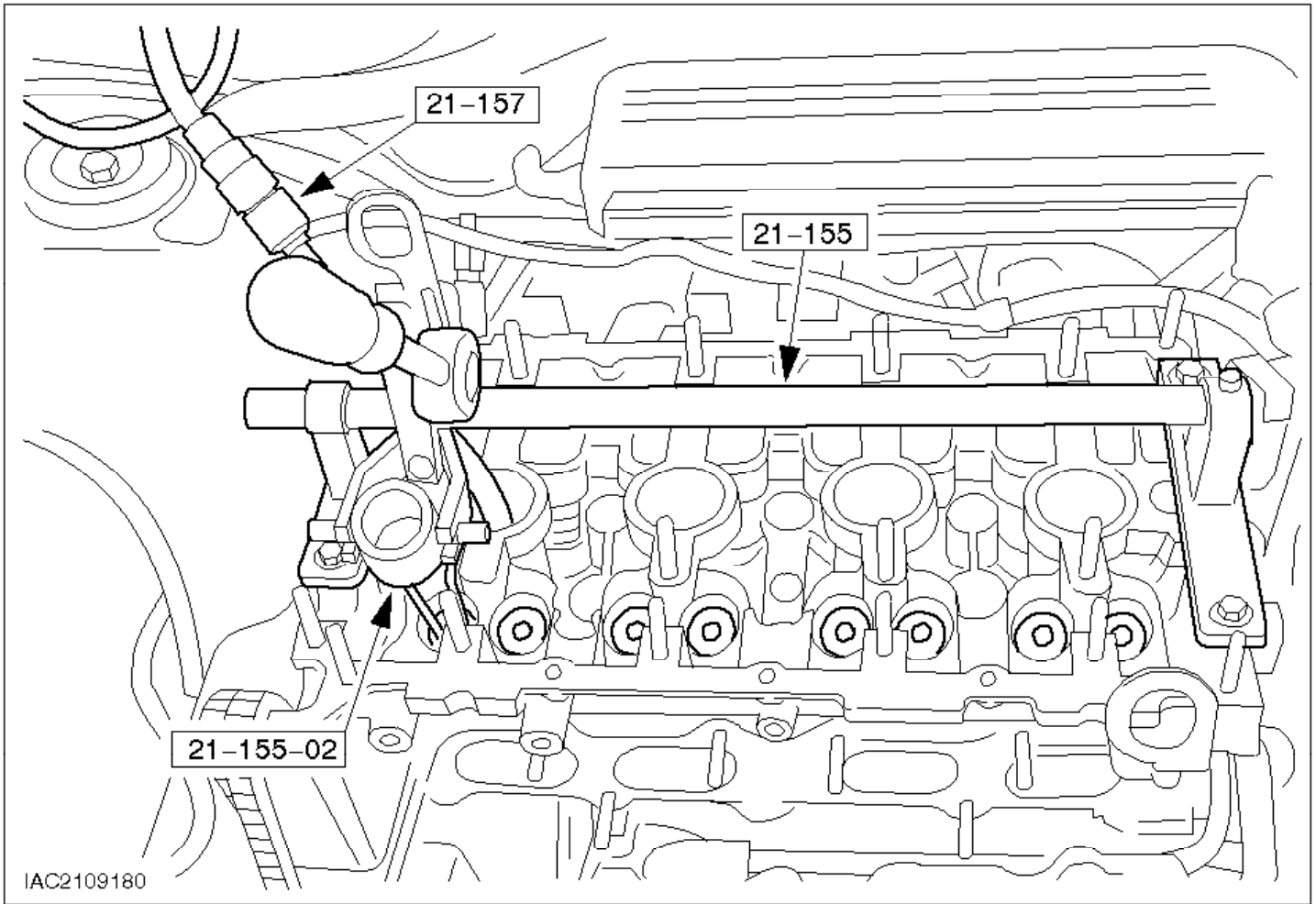
Description	
Brass drift	

### Materials

Description	Specification
Cable ties	

### Renew

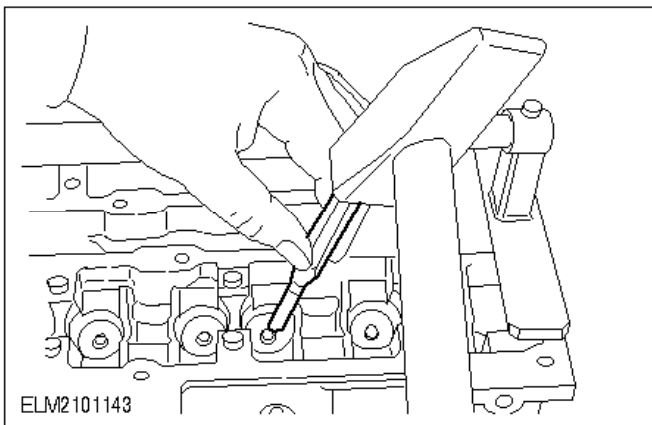
1. Remove the camshafts as described in «Operation No. 21 283 0».
2. Remove the hydraulic tappets and put them down in order.



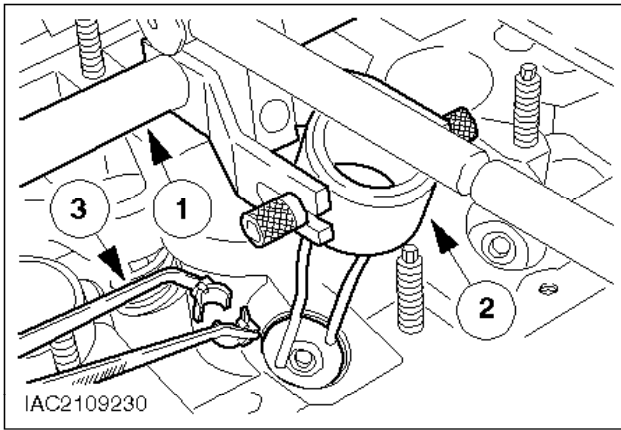
**⚠ CAUTION:**

**Set the piston of the cylinder that is to be worked on to BDC, and in doing so feed the chain through by hand.**

3. Attach valve spring compressor 21-155 and adapter 21-155-02.
4. Screw compressed air connection piece 21-157 into the spark plug bore and apply compressed air to the cylinder at 7-10 bar.



5. Release all valve spring retainers from the valve collets with a single light tap on the edge of the retainer with a brass drift.

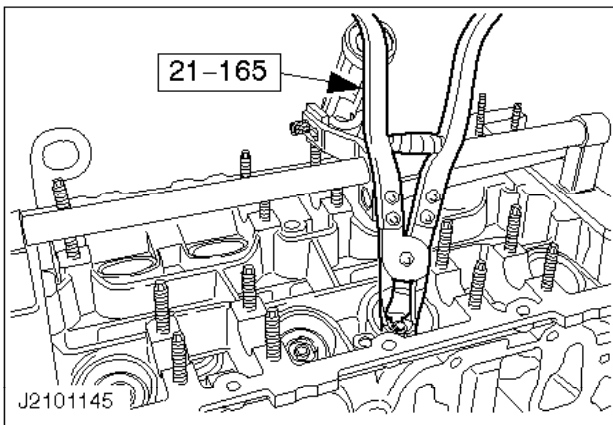


Note:

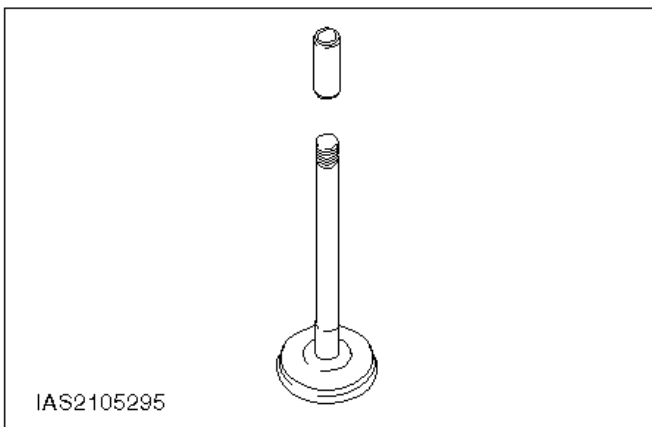
Put the parts down in order.

- 6. Remove the valve springs.

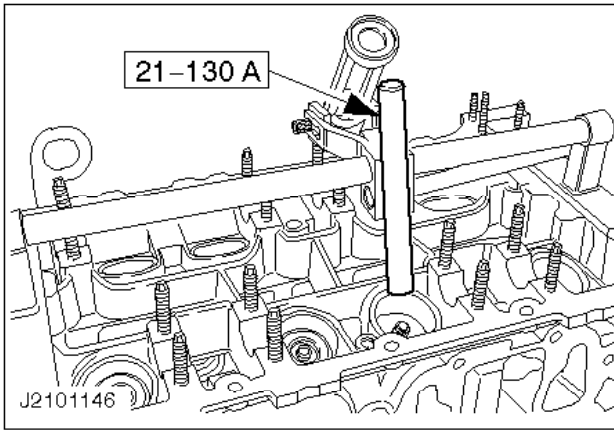
- 1 Connect the valve spring compressor 21-155.
- 2 Adapter 21-155-02 A.
- 3 Installer, valve collets 21-156
  - Compress the valve springs and remove the valve collets.
  - Remove the valve spring and the valve spring retainer.



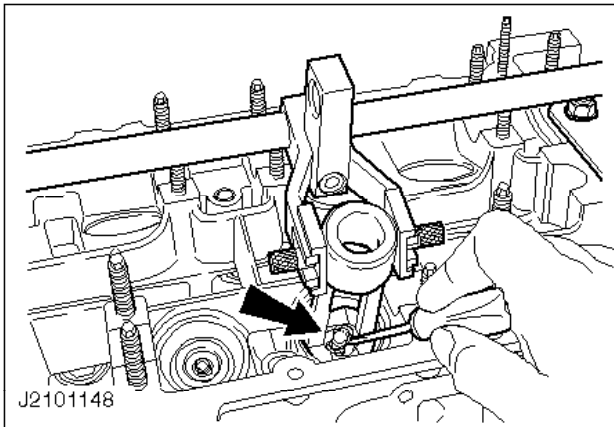
- 7. Pull off the valve stem seal.



- 8. Installation sleeve for valve stem seals.



- ☛ 9. Fit the valve stem oil seals.
- Cover the valve collet grooves with the installation sleeve.
  - Fit the valve stem seals.



- ☛ 10. Install the valve springs.

Note:

Do not press the valve down.

- Locate the valve spring and valve spring retainer in place.
  - Compress the valve spring.
  - Grease the valve collets and put them in place with a small screwdriver.
  - Relax the valve spring and check that the valve collets are sitting correctly.
11. Repeat the previous steps on all other cylinders.
  12. Insert the hydraulic tappets.
  13. Detach the valve spring compressor and the air line adapter.
  14. Install the camshafts as described in «**Operation No. 21 283 0**».
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