

SAFETY NOTICE

To understand the functioning of the tools, it is necessary to read the manual first!

- > Read these instructions before assembling, during installation and throughout use and in the proper sequence
- > Always refer to the OEM manufacturer's instructions and service manuals for the latest data and to maintain the correct sequence
- > These work instructions and the recommended tools are meant to serve as aides only and are by no means a guarantee for certain results.
- > This tool kit is a special collection and it has been tested and used successfully on several occasions. It is of the utmost importance to maintain the correct procedure as per the instructions
- > The use of the tools should only be carried out by qualified personnel!



ATTENTION
Special caution



CORRECT



LIGHT BULB
Hint or recommendation



WRONG



SAFETY GOGGLES
Wearing safety goggles
necessary

CONTENT

PREPARATION AND ASSEMBLY OF THE TOOL	5
BLEEDING THE HYDRAULIC SYSTEM	9
PULLING OPERATION	11
CLEANING THE INJECTOR SHAFT BORE AND THE SEAL SEAT	12
RECOMMENDED ACCESSORIES	13

INJECTOR REMOVAL KIT 20 T PSA 2.0 L / 2.2 L (DW10F / DW12R)



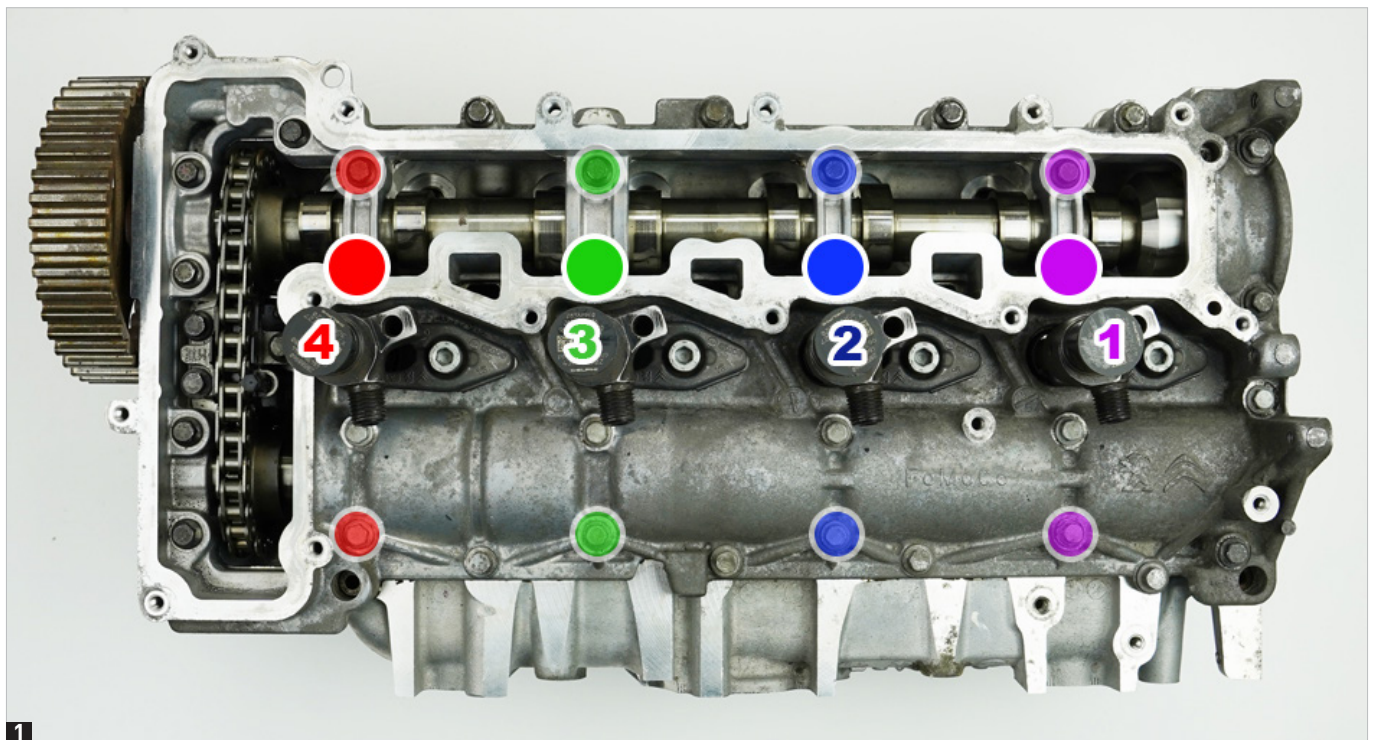
NO	PART.-NR.	Description	60385625	60385620	60385615
1	60385621	Thread adapter for claw with thread M20x1.5	1	1	1
2	60385632	Injector claw	1	1	-
3	60385633	Mounting plate	1	1	-
4	60385634	Fastening nut	1	1	-
5	60385636	Support foot outside (rigid)	2	2	-
6	60385637	Support plate	1	1	-
7	60385323	Basic unit for support foot inside	1	1	-
8	60385638	Support foot inside (adjustable)	1	1	-
9	6038316	Collar nut M10	2	2	-
10	60385342	Tapered socket	1	1	-
11	60385639	Spherical washer	1	1	-
12	6038311	Hydraulic hollow piston cylinder 20 t, stroke 8 mm	1	-	1
13	151.2108	Angle pin wrench 8 mm Allen long, with ball end	1	1	-
14	91472015	Collar nut M20x1,5	1	1	1
15	60385321	Extraction Spindle M20x1.5x160 mm	1	1	1
16	60385318	Extraction Adapter M20x1.5, SOFIM	1	1	1

PREPARATION AND ASSEMBLY OF THE TOOL

To prepare, remove all parts that are hindering work, such as the wiring harness, fuel and vacuum lines, plastic cover, foam insulation pad, leakage oil as well as high-pressure lines and the respective injector retaining fork.

Then unscrew the black plastic cover with oil filler opening and engine ventilation from the camshaft box.

Fig. 1 shows which camshaft box screw connections must be removed for the injector to be pulled. The respective outer camshaft bearing glands (marked with colored dot) must be completely removed. The inner exhaust camshaft bearing gland (marked with colored ring) must only be exposed, but not removed.



Attach injector claw **60385632**, with threaded adapter **60385621** already fully screwed in, in an arcuate motion (with the milled out window facing the injector diesel port) to the injector to be extracted.



Slightly lift the injector claw **60385632**, with the threaded adapter **60385621** already fully screwed in, and position the mounting plate **60385633** in the milled-out window of the injector claw **60385632** below the injector diesel connection.



Now screw the fastening nut **60385634** onto the diesel connection thread of the injector. Make absolutely sure that the injector claw **60385632** is always held positioned completely upwards (in the direction of pull) on the injector during the tightening process of the fastening nut **60385634** (Fig. 5).



ATTENTION

Pull the injector claw upwards.



Screw the two support feet outside/rigid **60385636** instead of the camshaft box bolts fully into the cylinder head at the respective positions indicated (see Fig. 1) and tighten lightly.



Fully screw the extractor spindle **60385321** (M20x1,5x160) into the threaded adapter **60385621** of the injector claw **60385632** and tighten lightly.



Turn the inner support foot **60385638** completely back inwards (counterclockwise) using the angle pin wrench **151.2108** in the basic unit **60385323** already preassembled on the support plate **60385637**.



Place the support plate **60385637** with the preassembled basic unit **60385323** and the turned-back support foot inside **60385638** on the two support feet outside/rigid **60385636** and fix them in place using the flanged nut M10 and screw them on lightly. Make sure that the entire support plate is positioned correctly. The inner support foot **60385638** must be centered on the inner exhaust camshaft bearing screw connection.



Using angle pin wrench **151.2108**, now turn the turned-back support foot inside **60385638** slightly (max. hand-tight) onto the screw head of the inner exhaust camshaft bearing screw connection.





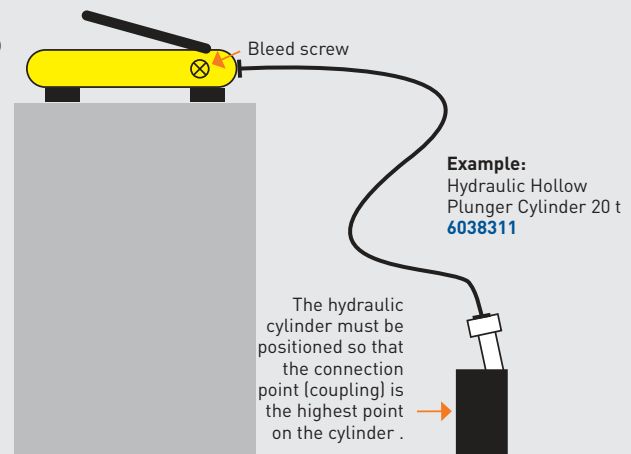
BLEEDING THE HYDRAULIC SYSTEM



Bleeding the hydraulic system

To do this, first connect the hydraulic hollow piston cylinder **6038311** to a hydraulic pump. The hollow piston cylinder must always be lower than the hose and the hydraulic pump so that the air can rise via the hose to the hydraulic pump. Build up pressure until the max. stroke height of the hollow piston cylinder is reached. Then release the pressure via the pressure relief valve. This forces the trapped air upwards into the pump tank. Repeat this process 4-5 times. If necessary, top up the oil in the system.

Example: hydraulic pump with hose **80255500**



Place the **60385342** tapered cup, **60385639** spherical washer and **6038311** hydraulic hollow piston cylinder in the correct sequence and position on the **60385637** support plate. For the **60385342** tapered ladle, make sure that the direction of the arrow points to the **60385637** support plate.



ATTENTION

Pay attention to the right side of **60385342**!



Then screw the knurled pull adapter **60385318** onto the extracting spindle **60385321** and tighten lightly. At the same time, align and center the tapered cup **60385342**, spherical washer **60385639** and hydraulic hollow piston cylinder **6038311** using the groove in the spherical washer.



ATTENTION

Position and align all parts correctly!



PULLING PROCESS



At the beginning of the extraction process, build up only low pressure for 2-3 times → Release the pressure → This allows the support device to align with the rest of the components and there by settle somewhat.



Pressure build up → after approx. 8 mm, the maximum stroke of the hydraulic cylinder has been reached → Release pressure → Retrofit knurled adapters → repressurize.



Attention: When reaching the 8 mm lift height, do not continue pumping, but release pressure → Reposition the adapter and repressurize.



ATTENTION

The injector can only be extended hydraulically until the threaded adapter **60385621** (screwed into the injector claw **60385632**) is in contact with the stepped underside of the spherical washer **60385639**.



In rare cases, the injector may break off in the area of the screw connection on the shaft during the extraction process. If this is the case, the remaining part of the injector that is still stuck can be removed from the cylinder head without any problems using tool set **60385650** / **60385641** / **60382400** (not included in set **660385625** / **20**).

Depending on the tool sets already available, there are different set combinations for this. However, all these additional tool sets must always be used in conjunction with **60385625** / **20**.

EXTRACTION KIT FOR BROKEN INJECTORS PSA 2.0 L / 2.2, 20 T

60385650



SUPPLEMENTARY SET FOR EXISTING 6038525 / 530 / 535 / 540 INJECTOR DISASSEMBLY TOOL FORD

60385641



UNIVERSAL EXTRACTION KIT FOR BROKEN INJECTORS, E.G. PSA 2.0L / 2.2L DW10/DW12

60382400



CLEANING THE INJECTOR SHAFT BORE AND THE SEAL SEAT



TIP

Before installing the new nozzle, it is recommended to clean the injector tray with the cleaning kit **9038100**.



32



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This set contains all the important tools for removing the sealing ring: To clean the injector shaft hole in the circumference, as well as to clean the hole on the front side.

In addition, this kit also includes various tools for a controlled regrinding of the sealing seat with depth limitation.

ACCESSORIES RECOMMENDED

HYDRAULIC SET 3 PIECES

80255500



AIR HYDRAULIC PUMP 700 BAR WITH HYDRAULIC PRESSURE GAUGE

80255575



INJECTOR SHAFT CLEANING SET WITH 5 MODULES

9038100



INTERIOR BRUSH 19 MM (12 / 3 PCS.)

9039081/ 90390815



SEALING RING EXTRACTOR

6039070



SEALING RING PULLER SET UNI

60390775



UNIVERSAL INJECTOR SEALING RING SET

60390705



INJECTOR SEALING RING ASSORTMENT SPECIFIC 551 PCS.

60390605



UNIVERSAL INJECTOR COPPER WASHER ASSORTMENT 450 PCS

60390505



VIDEOSCOPE MOD. EXCL. WITH 1.5 M LONG FLEXIBLE CONDUCTOR SHAFT DRM.4.9

9078050



WIFI BORESCOPE, WIFI 4,5 MM, 180°

90780025



MORE INJECTOR REMOVAL KITS

INJEKTOR DEMONTAGESATZ FORD 2.0 TDCI



60385525

60385530

NOTES



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