SisuDiesel

WORKSHOP MANUAL

SISUDIESEL

320
420
620
634

8366 40634

PARTEK

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ENGINE SPECIFICATIONS

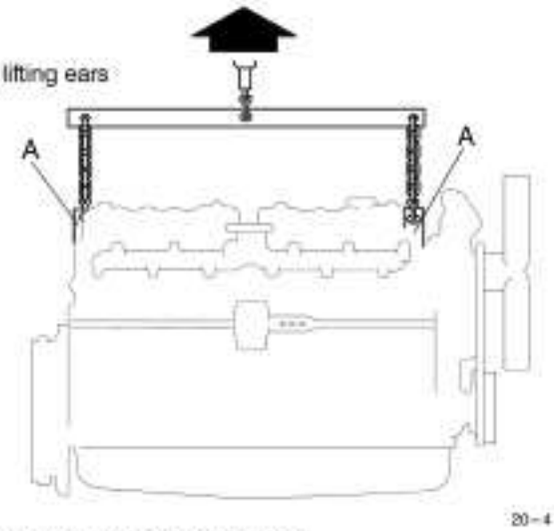
Engine type	320D	320DS	420D	420DS	420DW	420DWI	620D	620DS	634DS
Number of cylinders	3	3	4	4	4	4	6	6	6
Displacement (dm^3)	3,3	3,3	4,4	4,4	4,4	4,4	6,6	6,6	7,4
Cylinder bore (mm)	108	108	108	108	108	108	108	108	108
Stroke (mm)	120	120	120	120	120	120	120	120	134
Compression ratio	16,5/18,5:1								
Combustion	direct injection								
Firing order	1–2–3			1–2–4–3			1–5–3–6–2–4		
Compression pressure bar[1]	24								
Weight kg[2]	275	280	335	340	340	345	500	510	515
Direction of rotation from the engine front	clockwise								

[1]) Minimum value at operating temperature and starting revs. Max permitted difference between cylinders 3,0 bar.
[2]) Without flywheel and electrical equipment.

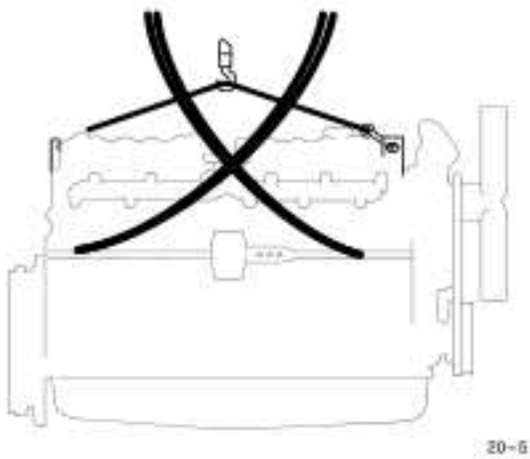
LIFTING THE ENGINE

Safe lifting of the engine is done with a lifting device where the lifting force effects the lifting ears vertically.

A = Engine lifting ears

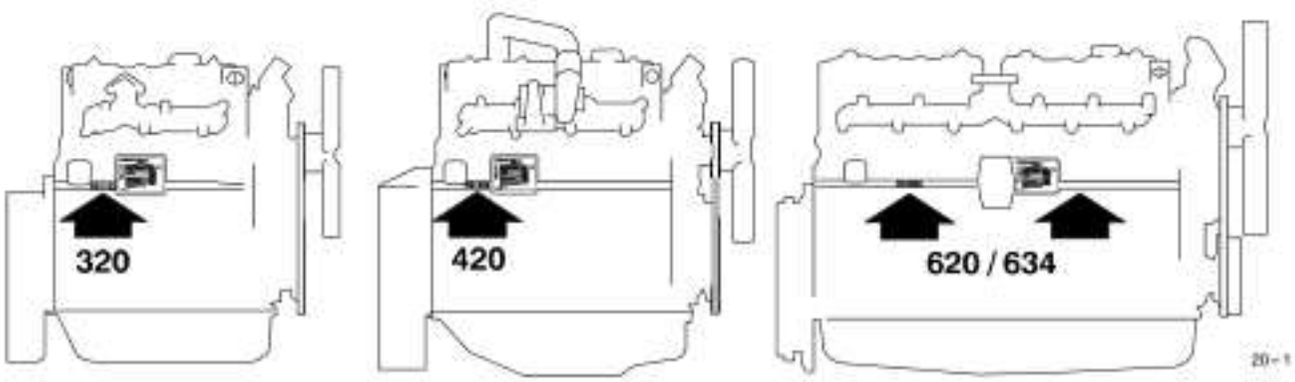


20–4


20–6

Engine weight: see Engine Specifications

LOCATION OF THE ENGINE SERIAL NO.



20–1

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Trouble shooting

If the timing deviates remarkably from given, check the following:

1. Vibrating delivery pipe, hold the pipe with hand.

2. Distance of magnetic probe from flywheel not correct, re–set the magnetic probe.

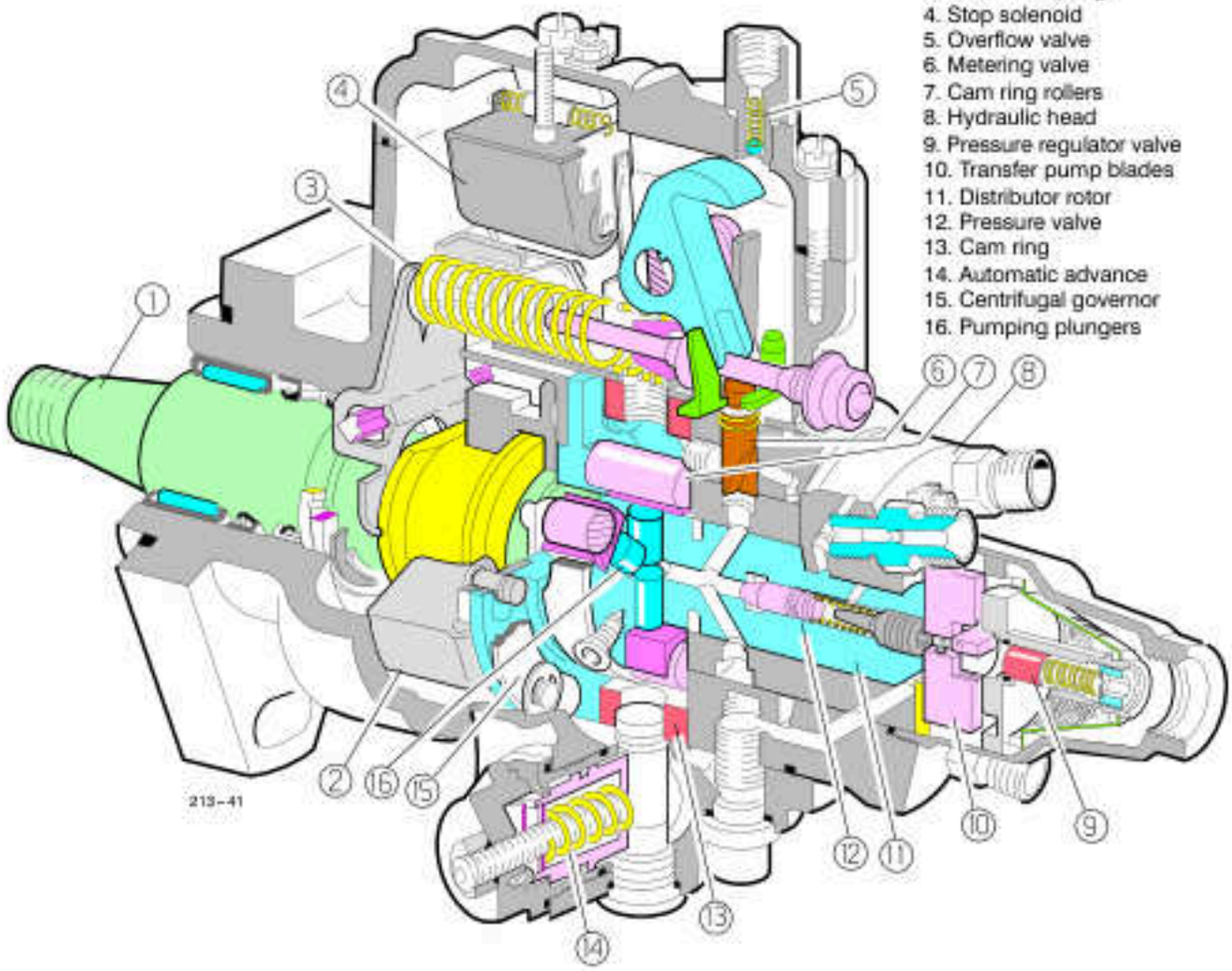
3. "Offset" or "Trig Level" value wrong, re–set.

4. Disturbing scratches on the flywheel.

5. Alignment of flywheel–crankshaft wrong, remove the flywheel and reassemble correct.

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Stanadyne distributor pump



Construction

The main rotating components are the drive shaft, transfer pump blades, distributor rotor and governor.

The drive shaft engages the distributor rotor in the hydraulic head. The drive end of the DB2 rotor incorporates two pumping plungers and DB4 four.

The plungers are actuated toward each other simultaneously by an internal cam ring through rollers and shoes which are carried in slots at the drive end of the rotor. The numbers of cam lobes normally equals the number of cylinders (not 3–cyl. engines).

The transfer pump at the rear of the rotor is of the positive displacement vane type and is enclosed in the end cap. The end cap also houses the fuel inlet strainer and transfer pump pressure regulator. The face of the regulator assembly is compressed against the liner and distributor rotor and forms an end seal for the transfer pump.

The injection pump is designed so that end thrust is against the face of the transfer pump pressure regulator.

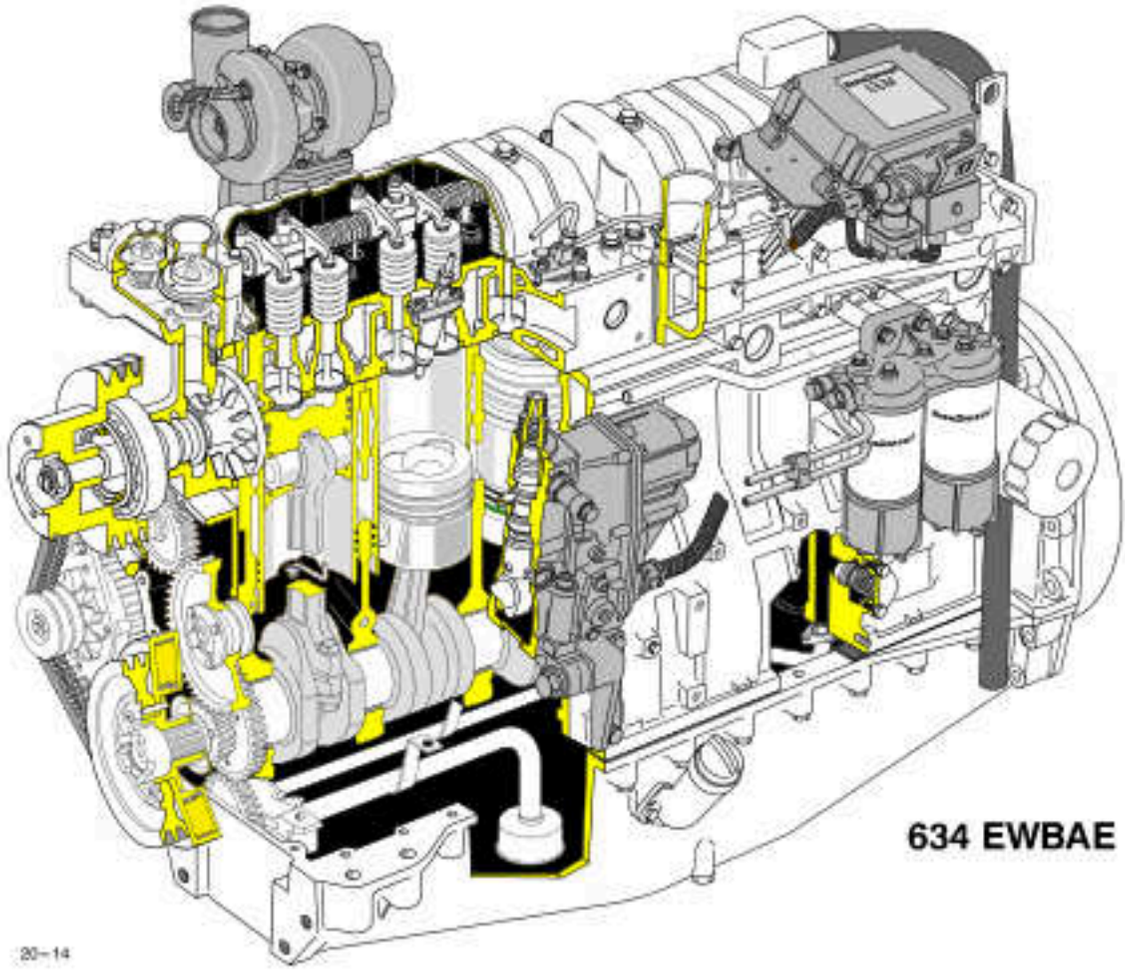
The distributor rotor incorporates two charging ports and a single axial port (pressure chamber), in which is placed the pressure valve. After the delivery valve, there is one discharge port to serve all head outlets to the fuel injection pipes.

The hydraulic head contains the bore in which the rotor revolves, the metering valve bore, the charging ports and the connections to the fuel injection pipes.

The pump contains a mechanical governor. The centrifugal force of the weights is transferred to the metering valve via a linkage. The metering valve can be closed electrically with aid of the solenoid in the pump housing.

The automatic advance is a hydraulic mechanism which turns the cam ring and advances or retards the beginning of the fuel delivery from the pump.

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Electronic Engine Management system (EEM)

The Sisudiesel EEM system is a microprocessor based diesel engine control system to replace the traditional mechanical speed governor on the engine. This system significantly improves the properties of the engine and adds several functions and operational features that could not be realised with mechanical governors. The EEM system is applicable to all kinds of vehicles, on– or off–road.

The system consists of the following components:

– Fuel injection pump with electrical actuator system
– Electronic control unit
– Sensors for engine parameters and speed demand value
– Wiring harness

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