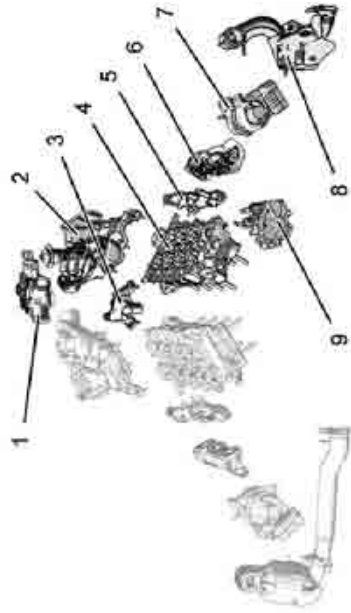


ENGINE TIGHTENING TORQUES

Engine: DT17BTED4

		Cylinder head
1	Butterfly housing	
2	Inlet valve cover screws (*) Inlet valve cover studs (*)	0,9 ± 0,2
3	Coolant outlet housing	
4	Cylinder heads Pre-tightening Tightening Angular tightening	2 ± 0,2 4 ± 0,5 8 ± 0,5 180 ± 5°
5	EGR (exhaust gas recycling) electrovalve	0,9 ± 0,2
6	Exhaust manifold nuts Exhaust manifold studs	2,3 ± 0,3 1,3 ± 0,2
7	Turbocharger nuts Turbocharger studs	2,3 ± 0,3 1,3 ± 0,2
8	Pre-catalysers	2 ± 0,1
9	Vacuum pump	2,3 ± 0,3

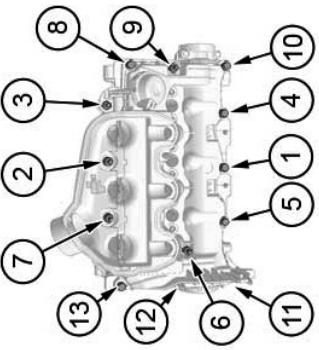
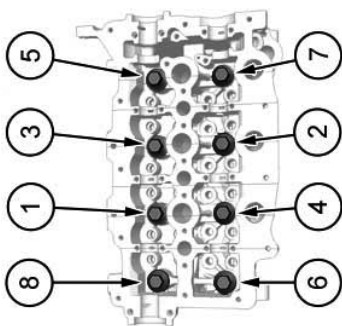


B1DP1LZD

(*) Respect the sequence of tightening.

ENGINE TIGHTENING TORQUES

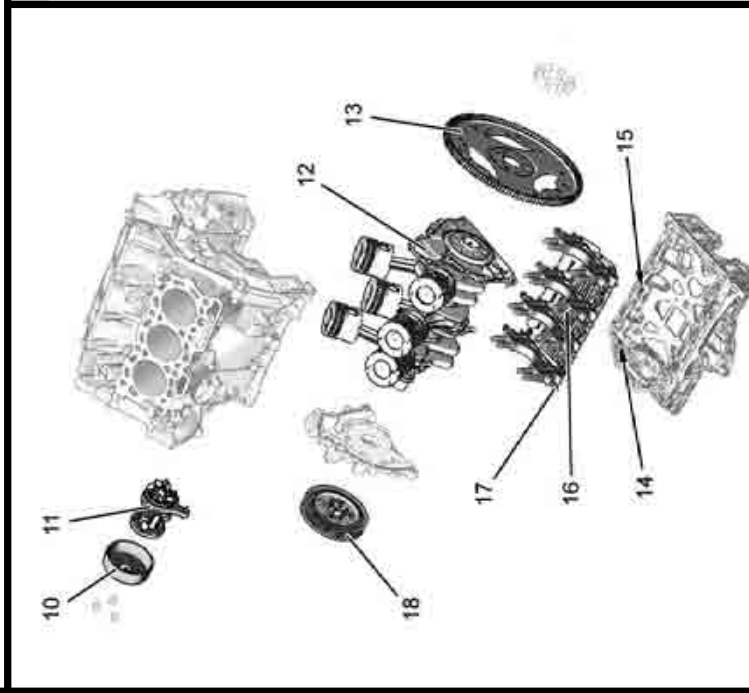
Engine: DT17BTED4

 <p data-bbox="774 1915 813 2049">B1DP1M1C</p>	<p data-bbox="486 952 518 1411">Order of tightening of screws (2)</p> <p data-bbox="582 772 614 1411">(2) Camshaft bearing cover screws <i>(from 1 to 13)</i></p> <p data-bbox="646 795 678 1411">(2) Camshaft bearing cover studs <i>(from 1 to 13)</i></p>
 <p data-bbox="1220 1915 1260 2049">B1DP1M2C</p>	<p data-bbox="845 795 877 1411">Order of tightening of bolts (4) (from 1 to 8)</p> <p data-bbox="949 1108 981 1411">(4) Cylinder head bolts</p>

ENGINE TIGHTENING TORQUES

Engine: DT17BTED4

		Cylinder block	
11	Coolant pump		0,9 ± 0,2
12	Con rod screws		2 ± 0,1 45 ± 5° 45 ± 5°
	Pre-tightening		
	Angular pre-tightening		
13	Starter gearwheel carrier		5 ± 0,5 45 ± 5° 45 ± 5°
	Pre-tightening		
	Angular pre-tightening		
14	Lower engine block screw (*)		0,9 ± 0,2 2,3 ± 0,3
	Pre-tightening		
	Angular pre-tightening		
15	Lower engine block screw (*)		6 ± 0,6 14,5 ± 1,4 90 ± 20°
	Pre-tightening		
	Angular pre-tightening		
16	Bearing cap fixing screws (*)		1,5 ± 0,1 3,3 ± 0,9 47 ± 20°
	Pre-tightening		
	Angular pre-tightening		
17	Crankshaft bearing cap cover		2,5 ± 0,2
	Pre-tightening		
	Angular pre-tightening		
18	Accessories drive pulley		

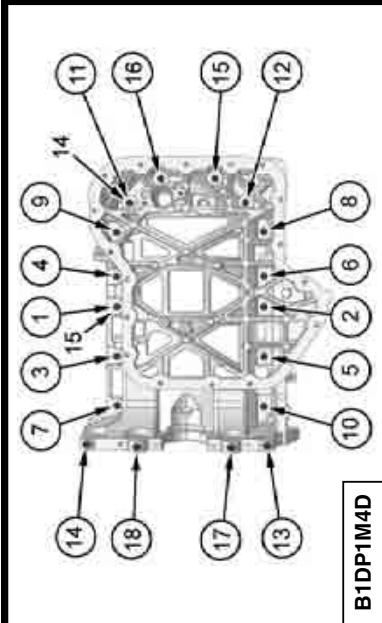


(*) Respect the sequence of tightening.

B1DP1M3P

ENGINE TIGHTENING TORQUES

Engine: DT17BTED4



B1DP1M4D

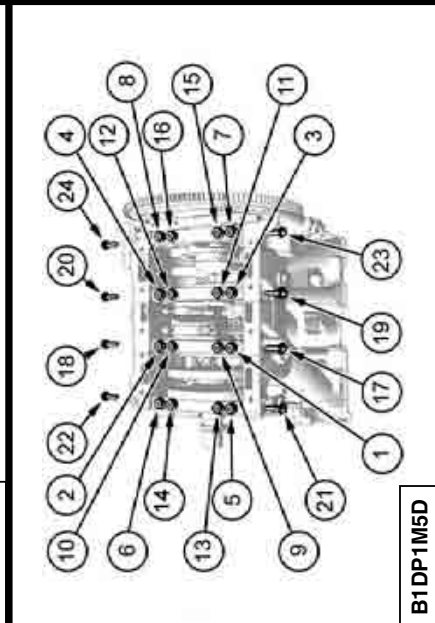
Order of tightening for screws (14) and (15)

- (14) Lower engine block screw (screw **M6**)
- (15) Lower engine block screw (screw **M8**)

Method of tightening:

- Tighten the 10 screws (15) (from 1 to 10) to
- Tighten the 8 screws (14) (from 1 to 8) to

- : 2,3 ± 0,3
- : 0,9 ± 0,1



B1DP1M5D

Order of tightening for screws (16) and (17)

- (16) Bearing cap fixing screw (screw **M9**)
- (17) Crankshaft bearing cap cover screw (screw **M6**)

Method of tightening:

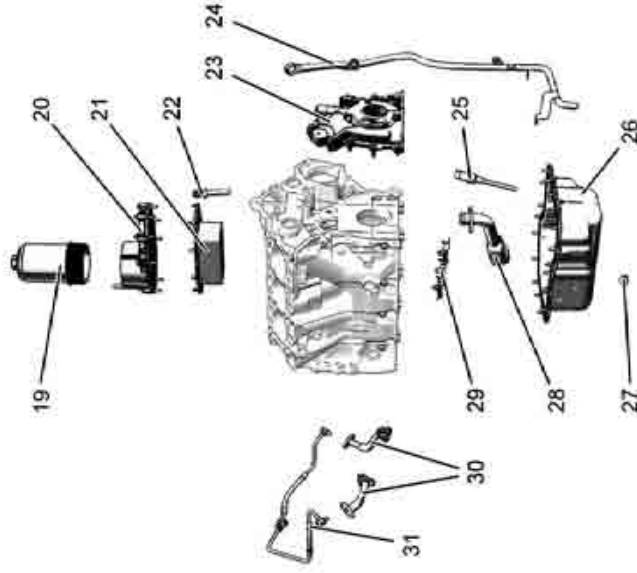
- Pre-tighten the 16 screws (16) (from 1 to 16) to
- Pre-tighten the 8 screws (17) (from 17 to 24) to
- Pre-tighten the 16 screws (16) (from 1 to 16) to
- Tighten the screws (16) (from 1 to 16)
- Tighten the 8 screws (17) (from 17 to 24) to
- Tighten the screws (17) (from 17 to 24)

- : 6 ± 0,6
- : 1,5 ± 0,1
- : 14,5 ± 2
- : 90° ± 20°
- : 3,3 ± 0,3
- : 47° ± 20°

ENGINE TIGHTENING TORQUES

Engine: DT17BTED4

		Lubrication
19	Oil filter cover	2,3 ± 0,3
20	Oil filter support	0,9 ± 0,2
21	Oil/coolant heat exchanger	1,3 ± 0,2
22	Oil pressure switch	0,9 ± 0,2
23	Oil pump assembly	2,3 ± 0,3
24	Oil gauge	2,7 ± 0,5
25	Oil level sensor	0,9 ± 0,2
26	Drain plug	2,3 ± 0,3
27	Oil suction strainer	0,9 ± 0,1
28	Piston skirt spray jets	1 ± 0,1
29	Turbocharger lubrication pipe	0,9 ± 0,2
30	Turbocharger lubrication pipe	1,3 ± 0,3
31	Turbocharger lubrication pipe	1,3 ± 0,3



B1DP1M6P

ENGINE TIGHTENING TORQUES

Engine: DT17BTED4

		Valve timing
32	Camshaft pulley hub screw Tightening Angular tightening	8 ± 0,8 90° ± 5°
33	Camshaft pulley screw	2,3 ± 0,3
34	Camshaft bearing caps (*) Tightening Pre-tightening	0,5 ± 0,1 0,9 ± 0,1
35	Tensioner roller for the fuel high pressure pump drive belt	2,5 ± 0,2
36	Fuel high pressure pump drive pulley Tightening Angular tightening	8 ± 0,8 90° ± 5°
37	Camshaft timing chain tensioner	0,9 ± 0,1
38	Timing belt guide roller	4,5 ± 0,3
39	Timing pinion on crankshaft Tightening Angular tightening	10 ± 1 90° ± 5°
40	Timing belt tensioner roller	2,6 ± 0,2

(*) Respect the sequence of tightening.



B1EP1JCD

ENGINE TIGHTENING TORQUES

Engine: DT17BTED4

IMPERATIVE: The camshaft bearing caps are marked at "a" with a letter on the front cylinder head and with a number on the rear cylinder head.

Refit the camshaft bearing caps according to the plan below:

Refit: The camshaft bearing caps (34) 9, 8, 7, 6, 4, 3, 2, D, C, B, A, J, G and F ; the screws (41)

Tightening of the screws (41):

Pre-tighten the screws (41) of the camshaft bearing caps (34) by hand in the following sequence 9, 8, 7, 6, 4, 3, 2, D, C, B, A, J, G and F.

Pre-tighten the screws (41) of the camshaft bearing caps (34) to $0,5 \pm 0,1$ m.daN in the following sequence 9, 8, 7, 6, 4, 3, 2, D, C, B, A, J, G and F.

Tighten the screws (41) of the camshaft bearing caps (34) to $1 \pm 0,1$ m.daN in the following

sequence 9, 8, 7, 6, 4, 3, 2, D, C, B, A, J, G and F.

Apply sealing product **LOCTITE 518** on the camshaft bearing caps (15) K, 5, E and J (see procedure: *remove/refit camshaft*).

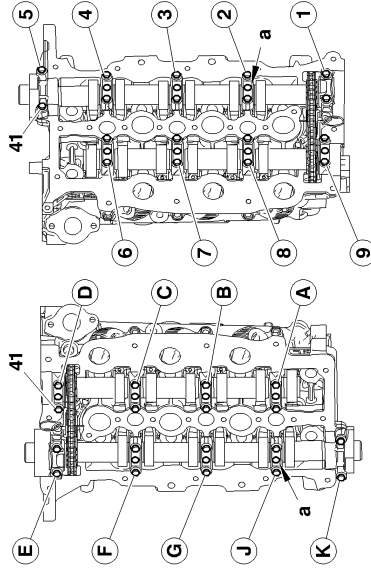
Refit: the camshaft bearing caps K, 5, E and J.

Tightening of the screws (41):

- Pre-tighten the screws (41) of the camshaft bearing caps (34) by hand in the following sequence K, 5, E and J.

- Pre-tighten the screws (41) of the camshaft bearing caps (34) to $0,5 \pm 0,1$ m.daN in the following sequence K, 5, E and J.

- Tighten the screws (41) of the camshaft bearing caps (34) to $1 \pm 0,1$ m.daN in the following sequence K, 5, E and J.

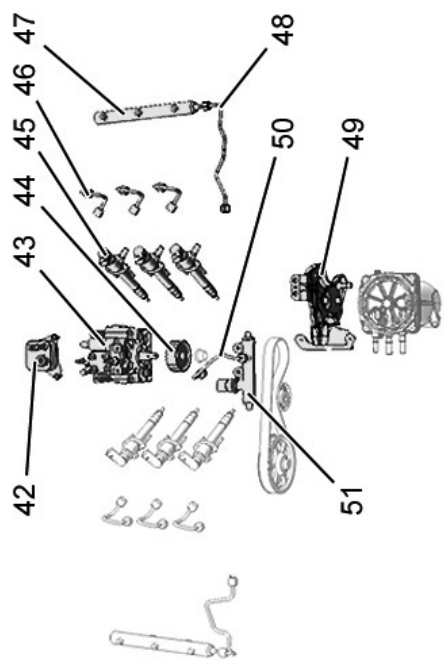


B1DP1MQD

ENGINE TIGHTENING TORQUES

Engine: DT17BTED4

		Injection circuit	
42	Diesel fuel/coolant exchanger		2,2 ± 0,3
43	Diesel injection pump on support		2,3 ± 0,3
44	Diesel injection pump pinion		5 ± 0,2
45	Diesel injector fixing flange screw		0,9 ± 0,1
46	Union on diesel injector Pre-tightening Tightening		1,5 ± 0,3 2,3 ± 0,3
47	Fuel high pressure common injection rail on engine block Pre-tightening Tightening		1,5 ± 0,3 3 ± 0,3
48	Unions on fuel high pressure common injection rail Pre-tightening Tightening		1,5 ± 0,3 3 ± 0,3
49	Fuel filter support		2,3 ± 0,3
50	Union on diesel fuel high pressure pump Pre-tightening Tightening		1,5 ± 0,3 3 ± 0,3
51	Fuel high pressure common injection intermediate rail Pre-tightening Tightening		1,5 ± 0,3 3 ± 0,3

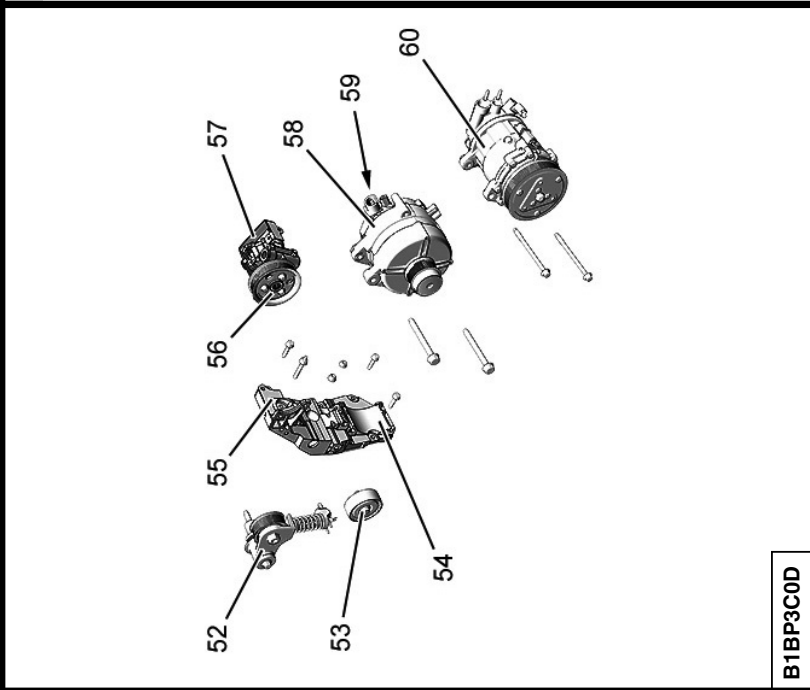


B1HP246D

ENGINE TIGHTENING TORQUES

Engine: DT17BTED4

Accessories		
52	Screw M8 for automatic tensioner roller (<i>accessories drive belt</i>) Screw M10 for dynamic tensioner roller (<i>accessories drive belt</i>)	2,2 ± 0,3 4,7 ± 0,7
53	Guide roller	4,7 ± 0,7
54	Accessories support	2,3 ± 0,3
55	Multifunction support	2,3 ± 0,3
56	Power steering pump pulley	2,3 ± 0,3
57	Power steering pump	2,3 ± 0,3
58	Alternator screw	5 ± 0,3
59	Alternator power circuit	1,4 ± 0,2
60	Aircon compressor screw	2,3 ± 0,3



B1BP3COD