

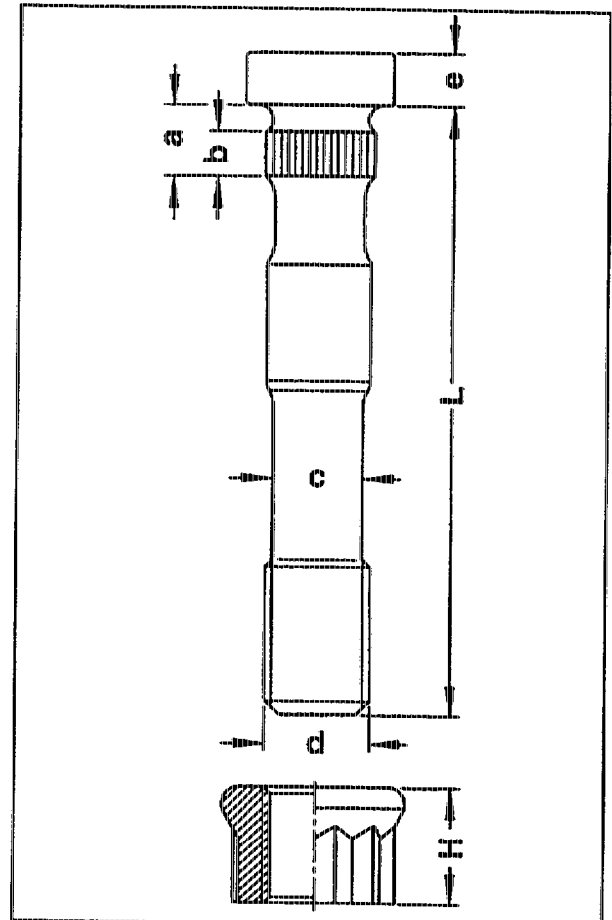
03-3100 Checking, replacing and tightening conrod bolts

Operation no. of operation texts and work units or standard texts
and flat rates 03-434-1 bzw. 03-435-1

Stretch shank bolt (1st version) ¹⁾

Part no.	116 038 05 71
Thread \varnothing	M 10 x 1
Stretch shank \varnothing [(c) when new]	8.4-0.1
Min. stretch shank \varnothing (c)	8.0
a	4.2
Size b	4.5
e	4.2
Length (L) (when new)	49.2-49.5
Conrod nut height (H)	9

¹⁾ Engine 119.96



P03.10-0221-17

Tightening torques in Nm and tightening angle (nut)

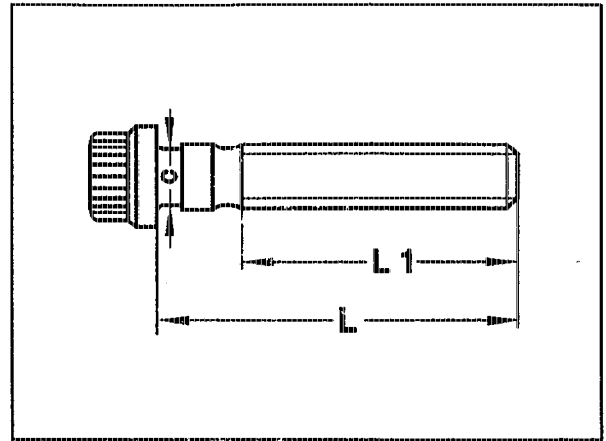
Engine 119.960

Conrod nut ²⁾	Initial torque	First tightening	55
		Repeat tightening	45
	Tightening angle		90°

²⁾ Nut and thread and contact surface of bolt moistened with engine oil before installing.

Straight stretch shank bolt (2nd version) ³⁾

Part no.	102 038 02 71	
Thread Ø	M 9 x 1	
Shank Ø [(c) when new]	8.7-0.2	
Min. shank Ø (c)	8.2	
Length (L)	when new	52-0.3
	max.	52.9



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³⁾ Engine 119.97

Tightening torque in Nm and tightening angle (straight stretch shank bolt)

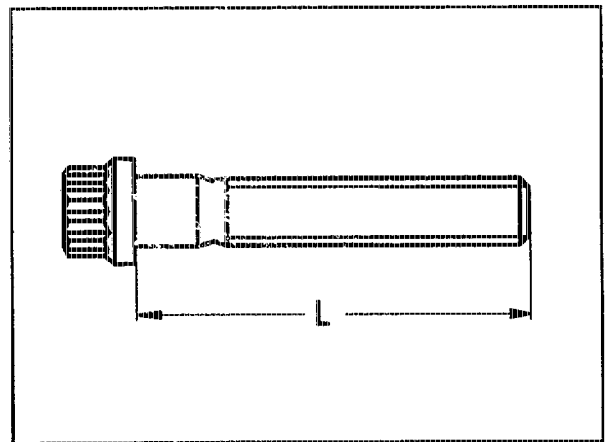
Engine 119.97

Conrod bolt ⁴⁾	Initial torque	First tightening	45
		Repeat tightening	40
Tightening angle		90°	

⁴⁾ Thread and contact surface of bolt moistened with engine oil before installing.

Straight stretch shank bolt (3rd version) ⁵⁾

Part no.	111 038 00 71	
Thread Ø	M 9 x 1	
Length (L)	when new	52-0.3
	max.	52.9



P03-5270-13

Tightening torque in Nm and tightening angle (straight stretch shank bolt)

Engine 119.97/98

Conrod bolt ⁶⁾	Initial torque	First tightening	40
		Repeat tightening	30
Tightening angle		90°	

⁶⁾ Thread and contact surface of bolt moistened with engine oil before installing.

Conrod bolts	re-use up to minimum stretch shank \varnothing or up to max. stretch shank length.
Thread and bolt head contact surface	oil before installing.
Conrod bolts	tighten initially with torque wrench 001 589 66 21 00.
Conrod bolts	tighten with tightening angle wrench; pay attention to tightening angle.

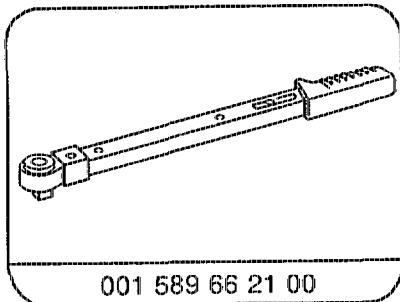


The conrod bolts have different weights. Only conrod bolts of the same weight may be installed in an engine.

Note

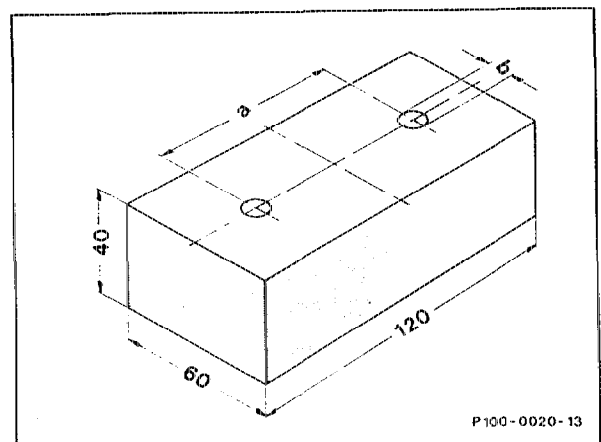
If no tightening angle wrench is available, the conrod bolt or conrod nut can be tightened further in a single step by the specified angle using a socket wrench and tommy bar. Do not use a flexi-bar torque wrench for tightening to degree settings in order to avoid any angle errors.

Special tool



Replacing (1st version)

- 2 Knock out conrod bolts.
- 3 Press new conrod bolts into the conrod with a pressure of about 45,000 N or knock in with a hammer and drift. Place conrod on a ground steel plate (shop-made tool) when performing this step.



P100-0020-13

Tightening

4 Coat conrod nuts and thread and contact surface of conrod bolts with engine oil.

5 Tighten conrod nuts and conrod bolts, respectively.

Initial tightening torque

Engine 119.96	45 Nm (55 Nm for new conrod bolt)
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Tightening angle 90–100°



Engine 119.96: if conrod bolts knocked in with hammer, tighten the first time to initial torque of 55 Nm and then to a tightening angle of 90–100°.

It is essential to observe this instruction otherwise the nuts or conrod bolts may slacken.

