

Technical Data
Measures, Adjusting Values and List of all Diaphragms and Control Springs, as well as Dimensions of the Control Springs which are Installed in the Different Governor Types of the Injection Pumps, OM 636 and OM 621

Job No.
07-0

Injection Nozzles

Model	Standard version Bosch designation (DB part No.)	** Special version Bosch designation (DB part No.)	* Spray or opening pressure	
			with new nozzles	with used nozzles
OM 636	DNO SD 211 (000 017 13 12)	DNO SD 21 10 (000 017 16 12)	110-120 kg/cm ²	min. 100 kg/cm ²
OM 621	DNO SD 151 (000 017 25 12)	DNO SD 15 10 (000 017 28 12)		

* The difference of the spray pressure of the nozzles of an engine must, however, not exceed 5 kg/cm² (also see Job No. 07-18).

For engines of the OM 636 which are installed in fork lifts, the spray pressure of the injection nozzles can be adjusted to 150 kg/cm². This reduces the exhaust smoke, which is annoying in closed rooms (also see page 07-18/5).

** The injection nozzles of the special version differ from the standard nozzles by an aperture larger by a few my; therefore they tend less to coking and should be installed in engines which are subject to complaints on knocking in the partial load range; they will improve the partial load noise and the knock during start. For the OM 621 (also refer to injection lines and fuel main filter, felt plate element Job No. 09-3).

Injection lines

Dimensions of the pressure pipes		
Model	OM 636	OM 621 *
Length, not upset	750 mm	324 mm
Length, ready for installation	738-739 mm	312-313 mm
Outer dia.	6 mm	6 mm
Inner dia.	2 mm	2 mm

* **With OM 621 engines subject to complaints on partial load knock, especially the 1.5 mm inner dia. injection lines are suitable for improving the partial load noise and starting knock.**

The injection lines of 1.5 mm inner dia. can be supplied under the following part No.

Injection line for cylinder	Part No.
1	621 070 08 33
2	621 070 09 33
3	621 070 10 33
4	621 070 11 33

Injection Pump

Feed begin of injection pump (see Job No. 00-6)			Position of crankshaft with respect to feed begin of injection pump
Model	Check with overflow pipe on 1st pump element	Check with stroke advance device on 1st pump element	
OM 636	The fuel should just stop to drip from the overflow pipe, then the pump plunger just covers the feed bore in the pump cylinder, i.e., the plunger of the 1st cylinder is at feed begin.	1.7 + 0.1 mm as from BDC	26° or 32° BTDC (see Job No. 00-0)
OM 621			26° BTDC

List of all Diaphragms and Control Springs which are Installed in the Different Types of Governors

	Type of Governor	Diaphragm with Control Spring*		Design of Governor
		Bosch No.	DB-No.	
OM 636	EP/M 60 A 30	EPME 17 S 1 Z	—	Without additional spring (Stupser)
	EP/MZ 60 A 31 d	EPME 17 S 91 Z	000 075 00 07	Without additional spring (Stupser)
	EP/MZ 60 A 39 d	EPME 17 S 94 Z	000 075 01 07	With additional spring, adjustable from within only
	EP/MZ 60 A 48 d	EPME 17 S 94 Z	000 075 01 07	With additional spring, adjustable from outside
	EP/MZ 60 A 51 d	EPME 17 S 94 Z	000 075 01 07	With additional spring, adjustable from within only
	EP/MZ 60 A 52 d	EPME 17 S 94 Z	000 075 01 07	With additional spring, adjustable from outside
	EP/MZ 60 A 55 d	EPME 17 S 91 Z	000 075 00 07	Without additional spring
	EP/MZ 60 A 57 d	EPME 17 S 94 Z	000 075 01 07	With additional spring, adjustable from outside
	EP/MZ 60 A 58 d	EPME 17 S 94 Z	000 075 01 07	With additional spring, adjustable from outside
	EP/M 60 A 71 d	EPME 17 S 98 Z	000 075 08 07	Without additional spring
	EP/MZ 60 A 72 d	EPME 17 S 96 Z	000 075 02 07	With additional spring, adjustable from outside
	EP/MZ 60 A 87 d	EPME 17 P 101 Z	—	With additional spring, adjustable from outside
	EP/MZ 60 A 89 d	EPME 17 P 105 Z	—	With additional spring
	EP/MZ 60 A 91 d	EPME 17 P 102 Z	000 075 03 07	With additional spring, adjustable from outside
	EP/MZ 60 A 93 d	EPME 17 P 103 Z	000 075 04 07	With additional spring, adjustable from outside
	EP/MZ 60 A 94 d	EPME 17 P 104 Z	000 075 05 07	With additional spring, adjustable from outside
EP/MZ 60 A 99 d	EPME 17 P 104 Z	000 075 05 07	With additional spring, adjustable from outside	
EP/M 60 A 102 d	EPME 17 S 91 Z	000 075 00 07	Without additional spring (Stupser)	

* The control spring is supplied with the diaphragm, because adapting spring and control spring are properly matched.

Dimensions of control springs which are installed in the different governor types

Installed in engine	Bosch designation		Dimensions of governor spring			
	of governor	of governor spring	Length, unloaded mm	Number of windings	Outer dia. mm	Wire thickness mm
OM 636	EP/M 60 A 30	WSF 11 S 9 X	60	7.5	36.2	1.7
	EP/M 60 A 31 d					
	EP/MZ 60 A 39 d					
	EP/MZ 60 A 48 d					
	EP/MZ 60 A 51 d					
	EP/MZ 60 A 52 d					
	EP/MZ 60 A 55 d					
	EP/MZ 60 A 57 d					
	EP/MZ 60 A 58 d					
	EP/M 60 A 71 d	WFS 11 S 16 X	95	11.5	35.5	1.5
	EP/MZ 60 A 72 d	WSF 11 S 52 X	57	6.4	36.2	1.7
	EP/MZ 60 A 87 d	WSF 11 P 94 X	71	7.75	36.2	1.6
	EP/MZ 60 A 89 d	WSF 11 P 90 X	89	8.4	35.5	1.5
	EP/MZ 60 A 91 d	WSF 11 P 99 X	68	7.75	36.2	1.6
	EP/MZ 60 A 93 d	WSF 11 S 52 X	57	6.4	36.2	1.7
	EP/MZ 60 A 94 d	WSF 11 S 37 X	65.5	7.5	36.0	1.7
	EP/MZ 60 A 99 d	WSF 11 S 37 X	65.5	7.5	36.0	1.7
	EP/MZ 60 A 102 d	WSF 11 S 9 X	60	7.5	36.2	1.7
	x EP/M 60 A 121 d	WSF 11 S 16 X	95	11.5	35.5	1.5
	x EP/M 60 A 125 d	WSF 11 S 16 X	95	11.5	35.5	1.5
x EP/M 60 A 126 d	WSF 11 S 9 X	60	7.5	36.2	1.7	
x EP/M 60 A 131 D	WSF 11 S 52 X	57	6.4	36.2	1.7	
x EP/M 60 A 132 D	WSF 11 S 37 X	65.5	7.5	36.0	1.7	
x EP/M 60 A 138 D	WSF 11 S 37 X	65.5	7.5	36.0	1.7	
x EP/M 60 A 143 D	WSF 11 S 37 X	65.5	7.5	36.0	1.7	

Dimensions of control springs which are installed in the different governor types

Installed in engine	Bosch Designation		Dimensions of governor spring			
	of governor	of governor spring	Length unloaded mm	No. of windings	Outer dia. mm	Wire thickness mm
x OM 621	EP/MN 60 M 3 d EP/MN 60 M 4 d	WSF 11 P 168 X	87	8.7	36.0	1.6
	EP/MN 60 M 7 d EP/MN 60 M 8 d	WSF 11 S 26 X	126	9.5	35.5	1.4
	EP/MN 60 M 9 d	WSF 11 S 16 X	95	11.5	35.5	1.5
	EP/MN 60 M 11 d	WSF 11 37 X	65.5	7.5	36.0	1.7
	EP/MN 60 M 12 d EP/MN 60 M 13 d	WSF 11 S 16 X	95	11.5	35.5	1.5
	EP/MN 60 M 14 d	WSF 11 P 222 X	87±3	10.5	35.5	1.5
	EP/MN 60 M 15 d EP/MN 60 M 16 d	WSF 11 P 260 X	102±3	11.5	35.5	1.5

Injection timing device

Model		OM 636	OM 621
Bushings	Outer dia.	23.980–23.959	
	Inner dia.	15.000–15.027	
	Length, total	28.7–28.8	33.60–33.65
	Collar thickness	–	4.65–4.70
Hub of drive or intermediate gear	Length of hub	28.4–28.5	28.7–28.8
	Bore dia.	24.000–24.021	
Radial clearance between bushing and hub of drive or intermediate gear		0.20–0.062	
Axial clearance between drive wheel or intermediate gear and butting plate		0.1–0.3	–
Axial clearance between drive or sprocket and collar bushing		–	0.10–0.25
Axial clearance between collar bushing and butting ring or front bearing bushing of intermediate gear shaft		–	0.05–0.12

Pressure springs for the flyweights of the injection timing device

Model	Outer dia.	Wire thickness	Length un-tensioned	Length pre-tensioned, loaded		Length, block loaded		Spring acting windings
OM 636 OM 621	11.35-11.45	2.25	43.8	43.3 mm	1.4-1.7 kg	37.0 mm	19.3-19.95 kg	12

x Fuel Feed Pump

Designation of feed pump		Bosch designation
		FP/K 22 FP/K 22
Feed pressure	Measuring point	between feed pump outlet and fuel main filter
	Feed pressure at idling speed. atü	0.8-1.1
Feed capacity	Measuring point	between feed pump outlet and fuel main filter
	Feed volume in litres/min	2.3
	at engine speed of rpm	3000
Suction head at counter pressure of 1 kg/cm ² m		0.9
Pressure head at counter pressure of 1 kg/cm ² m		0.4
Test liquid		Diesel fuel