

VM 350

SPARE PARTS LIST

Z 0124-1 E

List of Assemblies

System	Description of Assembly	Code No. of Assembly
Basic and Motion Parts	Column, Relief Valve	0101
	Bedplate	0102
	Cylinder Block	0104
	Crankshaft, Flywheel	0105
	Connecting Rod	0106
	Piston	0107
	Timing Gears	0109
	Auxiliary Drive, Vibration Damper	0134
Valve and Turbo-charging Systems	Cylinder Head, Inlet and Exhaust Valves	0108
	Camshaft	0110
	Drive Mechanism for Inlet and Exhaust Valves	0111
	Air Intake Manifold, Intake Silencer	0122
	Exhaust Manifold, Expansion Joint	0141
	Turbocharger	0143
	Circulatory Lube Oil Pump	0114
	Individual Lubricator with Drive	0114
Lubricating System	Lube Oil Duplex Filter, Edge Filter	0115
	Lube Oil Fittings	0116
Injection System	Injection Pump	0117
	Drive for Injection Pump	0118
	Injector	0119
	Fuel Lift Pump	0120
	Fuel Duplex Filter	0120
	Injection Lines, Spill Valve	0121

System	Description of Assembly	Code No. of Assembly
Speed Control System	Governor	0127
	Injection Pump Linkage	0129
Cooling System	Cooling Water Regulator	0138
	Cooling Water Piping and Fittings	0138
	Charge Air Cooler	0158
Safety System	Supervisory and Warning System	0148
	Instrumentation	0151
Accessories and Tools	Tools for Engine	0149
	Tools for Injection Pump	0159
Pneumatic System	Starting Pilot Air Distributor	0130
	Starting and Safety Valves	0131
	Compressed-air Lines and Fittings	0132
	Direct Control Unit	0135
Remote Control Unit		0975
		0979
		0981
		0986
	Flywheel Brake	0985
		0986

Spare Parts Catalogue

The Parts Catalogue hereafter is divided into sections dealing with the various engine assembly groups; they contain the following information:

General Description and Notes on dismantling/reassembling, settings, maintenance etc. as applicable.

Drawings of Assemblies showing the function and item No. of each part listed.

Parts List identifying each assembly and component by quoting the complete Fig. No., denomination and quantity required per engine.

Identification of Spare Parts

Each component of the engine is denoted by its Fig. No. in the Parts List. The complete Fig. No. consists of the Assembly code No. (left of hyphen) and the part item No. (right of hyphen).

Example:

Fig. No. **0107**-5 Piston pin

The code No. and denomination of the related assembly are printed in bold type at the top of each page, i.e. in this example:

Piston

0107
Assembly

Within the actual lists, both the complete assembly and any sub-assemblies thereof are denoted by underlined Fig. Nos. comprising assembly code No. and assembly (or sub-assembly) version No.

For example, 0107-2 Piston (for BVM, SBVM, RBVM engines) indicates the complete piston assembly version of a turbocharged engine, the assembly consisting of the actual piston plus piston pin, circlips, compression rings and oil control rings.

When you order an assembly unit (by quoting the underlined Fig. No.), we shall supply the complete unit in the fully assembled condition. If this should prove impracticable for reasons of storage, packing or transportation, we shall forward the component parts as individual items.

Ordering Spare Parts

Whenever a spares item is taken from your stock, a replacement for it should be obtained as quickly as possible.

It will also be recommendable for you to specify only DEUTZ Spares, since only these parts are of the standard required to meet the operating conditions involved.

DEUTZ Spares are in fact manufactured and inspected under exactly the same conditions as parts for new engines.

Please send your orders to your local DEUTZ agent or to this Headquarters:

Address: Klöckner-Humboldt-Deutz AG, Köln-Deutz
Abteilung Z

Telephone: Köln 8221

Telegrams: Deutzmotor Köln

Telex: 0887 3501

In addition, please be sure to quote in your orders all of the following references:

1. Engine model (e.g. RBV12M 350)
2. Engine serial No.
3. No. of Parts Catalogue referred to
4. Complete Fig. No. of assembly or component as listed
5. Description of assembly or component
6. Full details of consignee and destination

Only with all these references on hand shall we be in a position to handle your order quickly and efficiently.

Illustrations and particulars of the Catalogue are subject to change, especially as regards bought-out products.

Details of Assemblies

Note: Although within the text of their pertaining Assembly Group, parts are denoted only by their Fig. Item No. as given in the associated illustration, orders must always quote the complete Fig. No. as given in the associated parts list, which is the item No. plus prefixed Basic Assembly Code No. set out in addition at the top of each page.

Crankcase

Design and Function

Crankcase and bedplate form the actual space accomodating the crankshaft with related parts.

Made of cast iron, the crankcase is held down onto the bedplate free of stressing by 8 anti-fatigue studs at each main bearing.

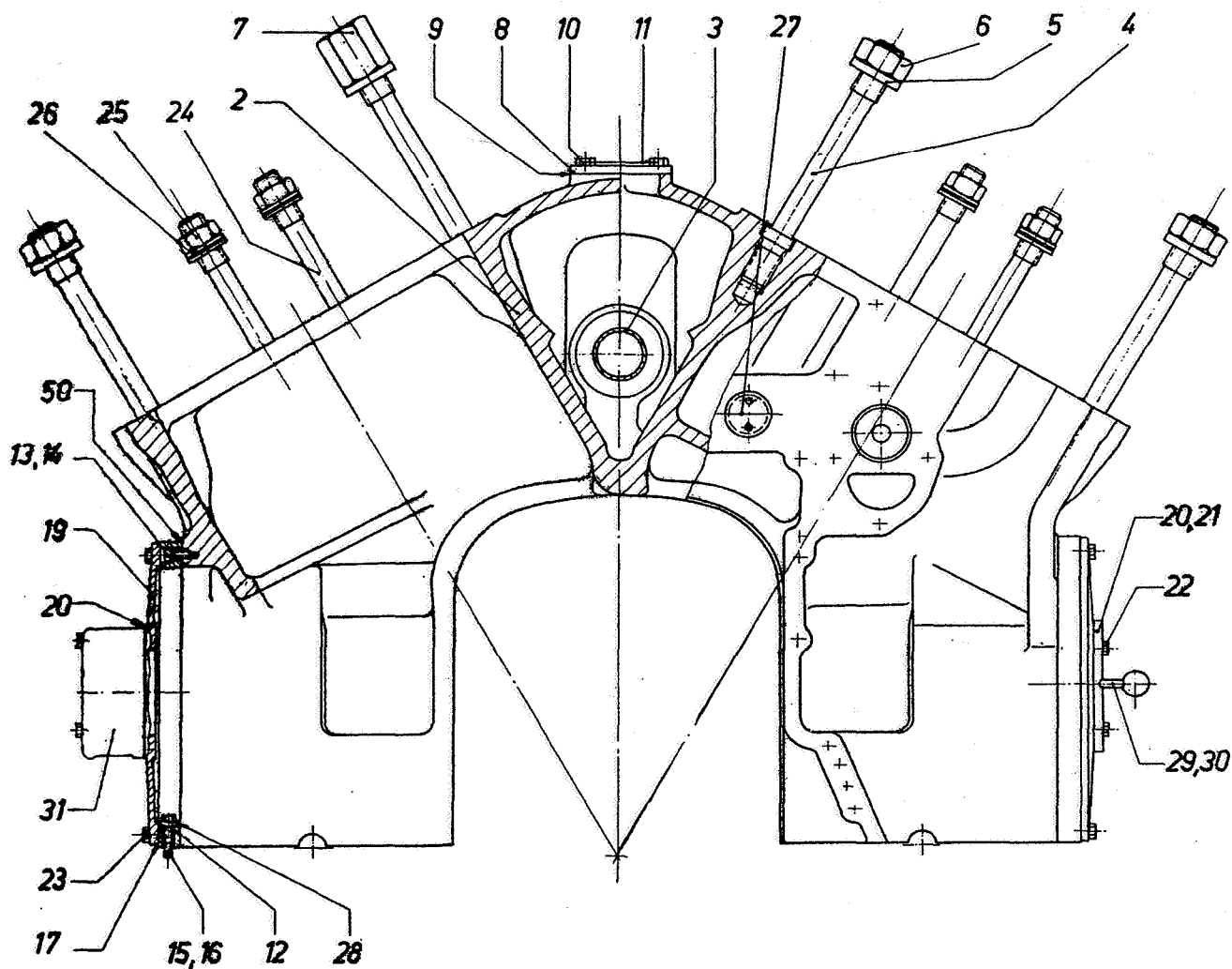
Openings on either engine side give access to the motion parts. On the covers of these openings it is possible to mount relief valves 31 as specified by the classification societies to safeguard against crankcase explosions. The crankcase has no contact with water.

Removing and Refitting

Warning: Do not open side covers 18 until the engine has sufficiently cooled down, especially if irregularities are likely to have occurred with the crankshaft and its related parts, since the hot oil vapour and the ambient air will form an explosive mixture that may ignite through the hot engine parts.

To pull down the nuts on the anti-fatigue studs 5 see the final tightening angle specified under 3.2.9.

Note: Orders must quote full part Fig. Nos. as listed.



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Crankcase

0101

Assembly

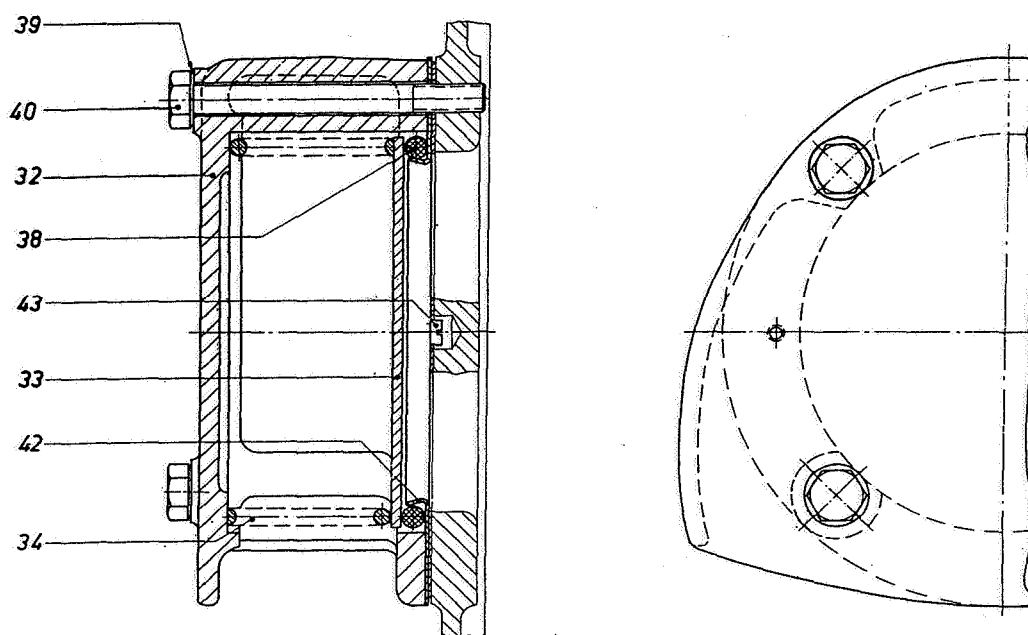
Fig. No.	Description	Quantity	Note
0101 - 1	<u>Crankcase</u> Items 2 to 28	1	
0101 - 2	Crankcase	1	
0101 - 3	Pipe 70x2 approx. 4250 lg.	1	
0101 - 4	Anti-fatigue stud	48	
0101 - 5	Washer	48	
0101 - 6	Hex. nut	40	
0101 - 7	High hex. nut	8	
0101 - 8	Blank square flange	12	
0101 - 9	Square flange gasket	12	
0101 - 10	Hex. bolt M12x25 SK DIN 933 m8G	48	
0101 - 11	Locking wire 1 dia., 6000 lg.	1	
0101 - 12	Adapter frame	12	
0101 - 13	Cheese-head screw M12x30 DIN 912-6G	108	
0101 - 14	Lock washer 12 DIN 7980	108	
0101 - 15	Hex. bolt M12x45 DIN 933 m8G	60	
0101 - 16	Locking plate 13 DIN 93 St	60	
0101 - 17	Gasket, spelt board	12	
0101 - 18	<u>Cover</u> Items 19 to 22	12	
0101 - 19	Cover	12	
0101 - 20	Round flange gasket	12	
0101 - 21	Cover	12	
0101 - 22	Hex. bolt M10x30 DIN 933 m8G	48	
0101 - 23	Hex. bolt M12x25 DIN 933 m8G	192	
0101 - 24	Anti-fatigue stud	8	
0101 - 25	Hex. nut M30x2 DIN 934 m5S	8	
0101 - 26	Washer	8	
0101 - 27	Front hole plug	1	
0101 - 28	Washer	60	
0101 - 29	Stud M10x70 DIN 427	24	
0101 - 30	Ball knob	24	
0101 - 31	<u>Relief Valve for Crankcase</u> Components see separate sheet	6	
0101 - 50	Gasket	12	

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Fig. No.	Description	Quantity	Note
0101 - 31	Relief Valve Items 32 to 34, 38 to 40, 42, 43	6	
0101 - 32	Housing	6	
0101 - 33	Washer	6	
0101 - 34	Helical spring	6	
0101 - 38	Rubber O-ring 110x8	6	
0101 - 39	Joint washer A12x16 DIN 7603 copper	24	
0101 - 40	Hex. bolt M10x110 DIN 931 m8G	24	
0101 - 42	Ring carrier	6	
0101 - 43	Cheese-head screw AM5x10 DIN 84-4S	12	

Design and Function

The one-piece bedplate of cast iron carries the bearings of the crankshaft. The second bearing at the flywheel end is a locating bearing. It controls crankshaft end float by two stop rings 20/45; it is not able to accommodate major end thrust.

All main bearings are secured against end float by stop or locating rings. The bedplate is also a reservoir for the oil returning from the various lubricating points of the engine. In the case of an elevated lube oil tank the oil is drawn from here through the oil suction pipe 26.

Where the oil tank is at a lower level, it receives the oil from the bedplate by gravity feed.

A hand pump with an especially low level suction pipe permits evacuating the oil sump when cleaning the bedplate.

Removing and Refitting

The main bearing can be replaced individually without removing the crankshaft. For this purpose loosen bearing cap 9 and screw up by means of removing tool (0149-3). Following this it is possible to lift off the top bearing shell and then to remove the bottom shell by turning the crankshaft while using tool (0149-18). Where the crankshaft mounts balance weights, be sure these do not hit the removing tool while turning the shaft.

Before turning the bottom shell in place, fit main bearing cap and tighten cap nuts by hand. Check clearances x-x (see diagram) and average them out, otherwise the bore of the top shell will not match that of the bearing cap and the shell will be damaged when screwing the flange with tube 12 in place.

Also be sure not to remove 2 adjacent main bearings at the same time, otherwise the crankshaft will be subjected to undue stresses.

When removing the bearing next to the flywheel it is necessary to support the latter.

All bearing shells are marked. Install them in such a manner that the figure stamped in can be read from the flywheel end.

Run-in shells must not be interchanged.

Note: Orders must quote full part Fig. Nos. as listed.