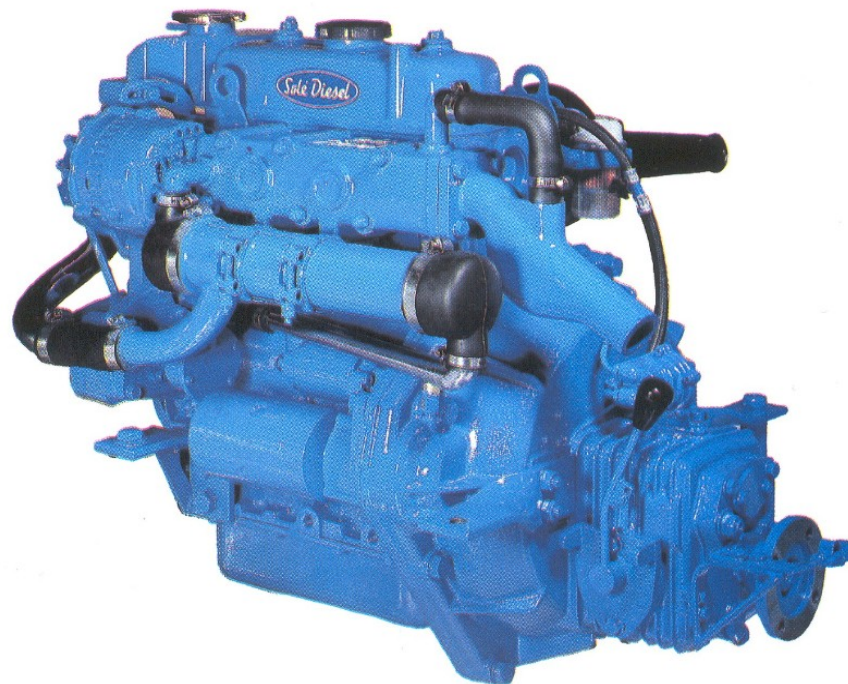




Engine MINI-23  
VERSION 2017-12  
SPARE PARTS MANUAL



## PARTS LIST CATALOGUE

### NORMS TO PLACE AN ORDER:

For fast and more efficient service, please specify the following information on spare parts orders that must be preferably done by FAX or e-mail as specified below:

- 1- Engine model: As shown in identification plate
- 2- Engine serial number: As shown in identification plate and stamped on crankcase
- 3- Item description + part number + quantity required

---

### Spare parts requests must be addressed to:

[recambios@solediesel.com](mailto:recambios@solediesel.com)

Telf.: +34 93 775 44 05

Fax: +34 93 775 30 13

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The components shown in the catalog have:

- Figure: Number by which they are represented in scheme
  - Description: Trade name of the component
  - Quantity: Total number of parts used in the assembly of the part represented (may differ from the total minimum quantities)
- Hoses, indicates the total length in meters

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*The diagrams shown in this catalog of spare parts, have only the purpose to identify the piece in question, its representation is not meaningful and may differ from the actual piece.*

*In case of doubt, contact Solé Diesel, or your authorized dealer.*

*The parts i / or references in this catalog are subject to change without notice.*

---

[SOLE, S.A.](#)

C-243b, Km, 2 - P.O. BOX 15  
08760 Martorell (Barcelona) Spain

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## Engine body, MINI-23

Cylinder Head  
Oil Pan & Gear Case  
Timing Parts  
Crankcase  
Crankshaft, Piston & Connectiong Rod  
Oil Sysem  
Engine Brackets & Exhaust

## Inlet System, MINI-23

Inlet

## Cooling System, MINI-23

Water Pump  
Cooling System 1  
Cooling System 2

## Fuel System, MINI-23

Fuel Pipe  
Fuel Injection Pump  
Nozzle  
Governor Parts  
Fuel Filter

## Electrical System, MINI-23

Electrical System 1  
Electrical System 2  
Electrical Wiring & Panel

## Maintenance Kit, MINI-23

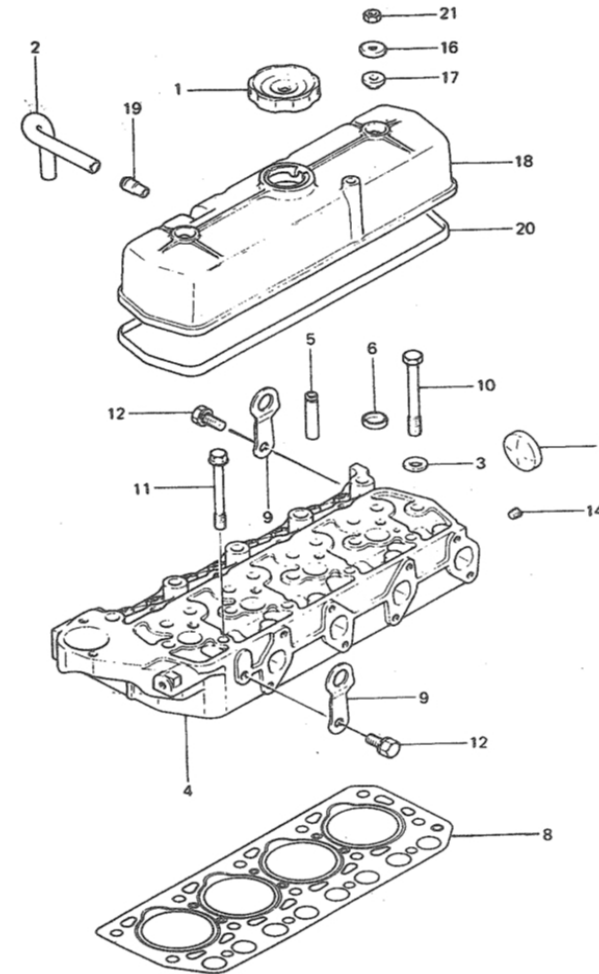
Gasket Kit

## GearBox MINI-23

GearBox RONIM IV R.2,00  
GearBox RONIM IV R.3,00  
GearBox RONIM V R.2,25



D_MI23_1_1		Cylinder Head			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	13221003	1	Cap Oil FILLER		
2	13221006	1	Hose BREATHER		
3	13121005	8	Washer FINISHED P		
4-7	13621001	1	Head Assy CYLINDE		
5	13221002	6	Guide Valve		
6	13220012	3	Cap Sealing		
7	13220013	1	Cap		
8	13621004	1	Gasket Cylinder H		
9	13221011	2	HANGER Engine		
10	13221005	8	Bolt,cylinder head		
11	13221012	3	Bolt Cylinder Heat		
12	52202307	2	Bolt DIN 933 M10-1,25-20 8.8		
14	17820011	1	Plug, Tapered [NP]	12/07/2017	
14	13120011	1	Plug, Tapered [NP]		12/07/2017
16	13221015	2	Washer		
17	13221016	2	Seal		
18	13621009	1	Cover Assy Rocker		
19	13221017	1	Pipe		
20	13621010	1	Gasket Rocker COV		
21	52120008	2	Nut DIN 934 M8 8.8		

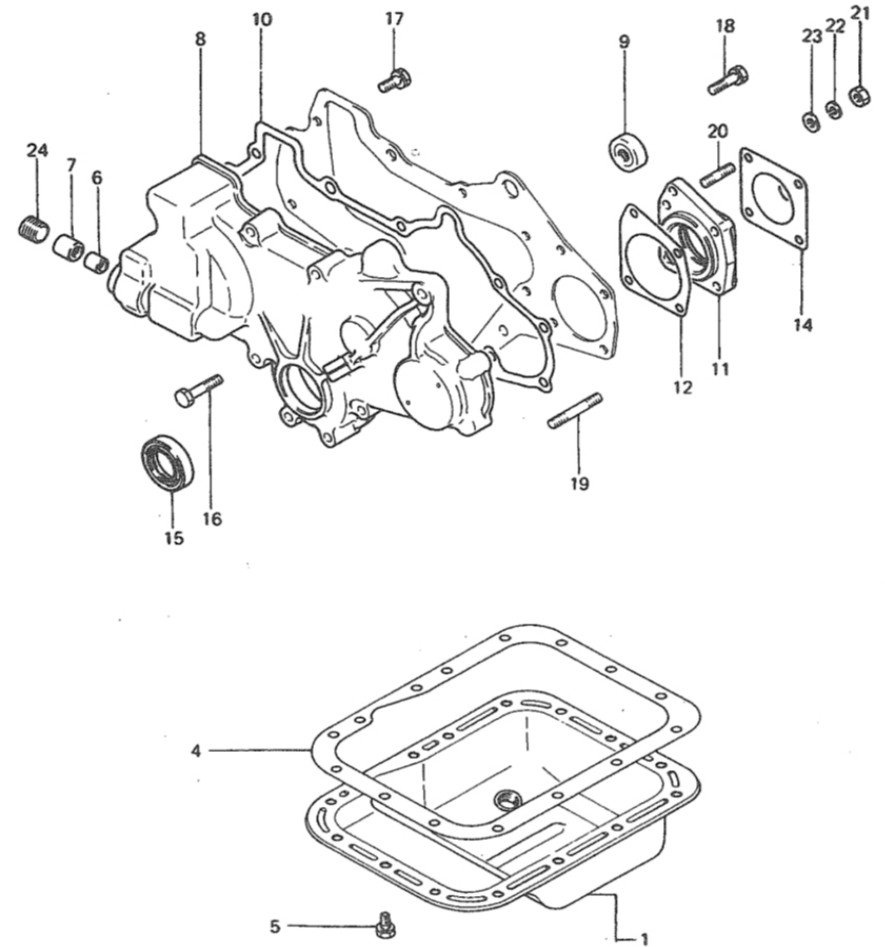


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D_MI23_1_2		Oil Pan & Gear Case				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
1	13620030	1	PAN Assy Oil			
4	13620033	1	Gasket Oil PAN			
5	52102256	15	Bolt DIN 933 M8-15 8.8			
6	13220034	1	Roller Bearings			
7	13220036	1	Roller Bearings			
8A	13220035	1	Case Gear [NP]			
8B	13420035	1	Case Gear			
9	13420051	1	Plug THRUST			
10	13220040	1	Gasket Gear Case			
11	13220037	1	Housing Pump Gear			
12	13220038	1	Gasket Housing			
14	13120047	1	Gasket Water Pump			
15	13220039	8	Seal Oil			
16	52101262	2	Bolt DIN 931 M8-45 8.8			
17	52102256	1	Bolt DIN 933 M8-15 8.8			
18	52101259	3	Bolt DIN 931 M8-30 8.8			
19	13220042	3	Stud L 54			
20	13220043	1	Stud L 34			
21	52120008	4	Nut DIN 934 M8 8.8			
22	53033008	4	Washer GROWER DIN 127-8			
23	51030008	4	Washer DIN 125-8			
24	13120037	1	Plug TAPER 1/2			

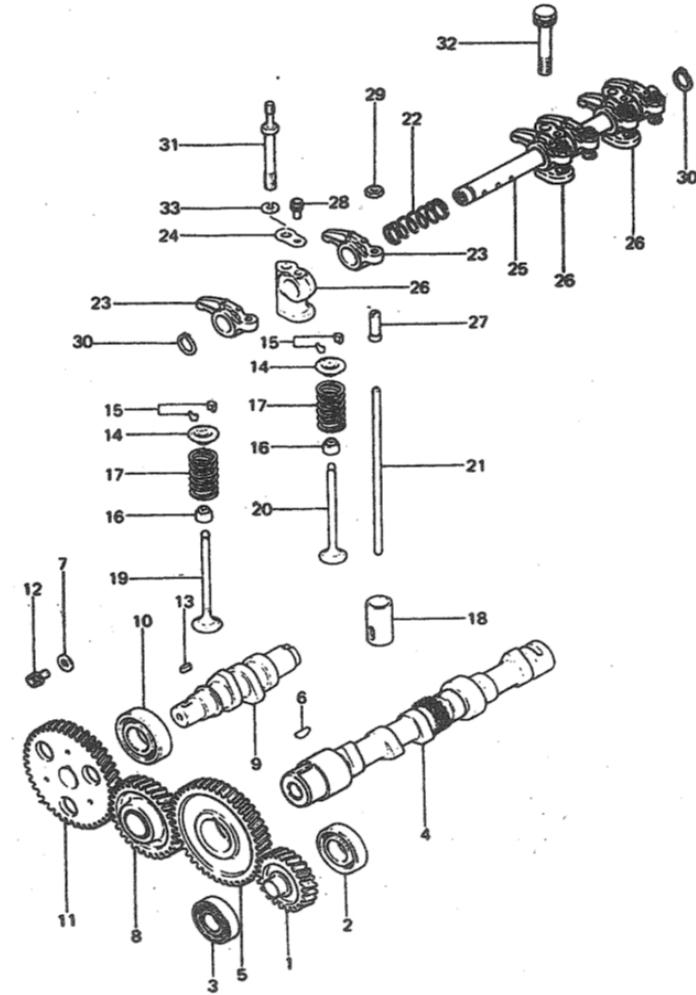


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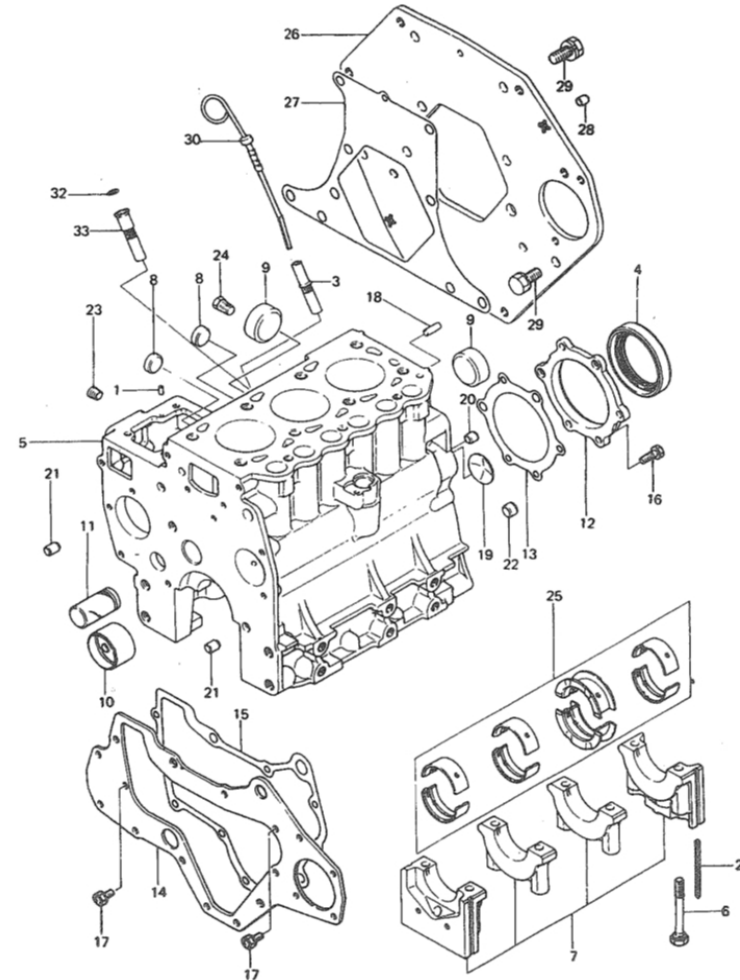
D_MI23_1_4						
Timing Parts						
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
1A	13222066	1	Gear PRESSUR Oil			
1B	13422066	1	Gear Pressure Water Pump			
2	13222067	1	Ball Bearing 6205			
3	13222068	1	Ball Bearing 6204			
4	13622035	1	CamShaft			
5	13222037	1	Gear CamShaft			
6	13222020	1	KEY			
7	51030008	1	Washer DIN 125-8			
8	13222038	1	Gear Assy IDLER			
9	13622040	1	Shaft Fuel IN			
10	13222062	1	Ball Bearing 6228			
11	13222043	1	Gear Fuel I/P Cam			
13	13222060	1	Key, Sunk [NP]			
14	13222058	6	Retainer			
15	13222059	12	Lock Valve			
16	13222054	6	Seal Valve Stem			
17	13222057	6	Spring Valve			
18	13222061	6	Tappet			
19A	13222055	3	Intake Valve (27,2)			
19B	13222155	3	Intake Valve (32,2)			
20A	13222056	3	Exhaust Valve (25,2)			
20B	13222156	3	Exhaust Valve (27,2)			
21	13222041	6	ROD PUSH			
22	13122047	2	Spring			
23	13222042	6	ARM Rocker			
24	13222063	2	Washer Seat			
25	13622046	1	Shaft Assy			
26	13222049	3	STAY Rocker			
27	13122044	6	Screw Adjusting			
28	52102156	2	Bolt DIN 933 M6-16 8.8			
29	13122045	6	Nut			
30	53040019	2	CIRClip DIN 471 E-19 [NP]			
31	13222053	2	Bolt			
32	13222065	1	Bolt&Washer			
33	53033010	2	Washer GROWER DIN 127-10			



[NP] Not provided



D_MI23_1_6		Cranckcase			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	13120036	2	Pin Dowel [NP]		02/08/2017
1	17620036.4	2	Pin Dowel	02/08/2017	
2	13220002	4	Seal Side		
3	13220008	1	Seal Oil		
4	13420001	1	Block Assy,cylinder [NP]		
5-10	13620001	1	Block SUB Assy CY [NP]		
6	13220009	8	Bolt Bearing Cap		
7	13620010	1	Cap Assy,bearing [NP]		
8	13220012	2	Cap Sealing		
9	13220013	2	Cap		
10	13220011	1	Bushing		
11	13220014	1	Shaft IDLER		
12	13220015	1	Case Oil Seal		
13	13220016	1	Gasket Oil Seal		
14	13220017	1	Plate, Front [NP]		
15	13220018	1	Gasket Front PLAT		
16	52102257	6	Bolt DIN 933 M8-20 8.8		
17	(*)	3	Not available [NP]		
18	13220020	1	Pin [NP]		02/08/2017
18	17620020.4	1	Pin	02/08/2017	
19	13120007	1	Plug Expansion		
20	13120009	2	Bushing		
21	13220021	2	Bushing KNOCK		
22	13220022	2	BUSHING,KNOCK		
23	13220023	3	Plug TAPER		
25A	13620003	1	Metal Set STD.		
25B	13620004	1	METAL Set 0.25		
25C	13620005	1	METAL Set 0.50		
25D	13620006	1	METAL Set 0.75		
26	13220024	1	Plate REAR [NP]		
27	13220025	1	Gasket REAR Plate		
28	13220026	2	Pin KNOCK (10X12)		
29	52202359	8	Bolt DIN 933 M12-1,25-30 8.8		
30	13220029	1	Gauge Oil LEVEL		

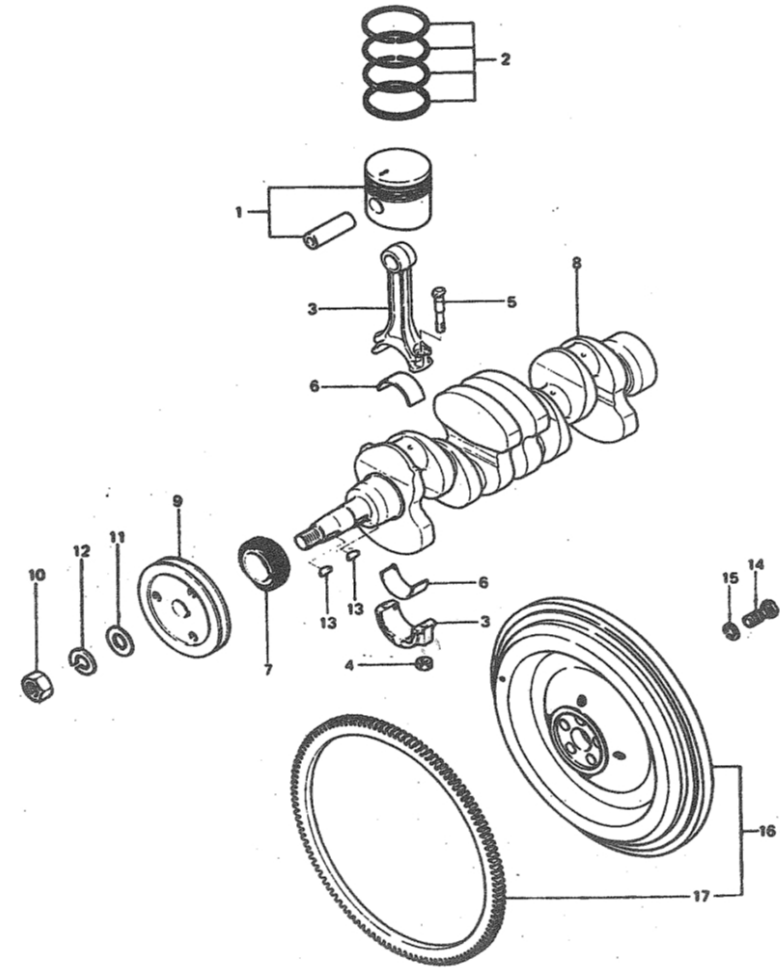


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D_MI23_1_8		Crankshaft, Piston & Connecting Rod			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1A	13422001	3	Piston & Pin Set		
1B	13422002	3	Piston & Pin Set		
1C	13422003	3	Piston & Pin Set		
1D	13422004	3	Piston & Pin Set		
2A	13422006	3	Ring Set Piston S		
2B	13422007	3	Ring Set Piston O		
2C	13422008	3	Ring Set Piston O		
2D	13422009	3	Ring Set Piston O		
3-5	13222012	3	ROD Assy		
4	13222011	6	Nut,connecting rod		
5	13222013	6	Bolt,connecting rod		
6A	13222014	3	METAL Set STD		
6B	13222015	3	METAL Set 0.25		
6C	13222016	3	METAL Set 0.50		
6D	13222017	3	METAL Set 0.75		
7	13222021	1	Gear CrankShaft		
8	13622018	1	CrankShaft		
9	13622024	1	Pulley CrankShaft		
10	13222026	1	Nut		
11	51030018	1	Washer DIN 125-18		
12	53033018	1	Washer GROWER DIN 127-18		
13	13222020	2	KEY		
14	13122031	5	Bolt		
15	13122030	5	Washer		
16	13222027	1	Flywheel SUB Assy [NP]		
17	13222029	1	Gear		

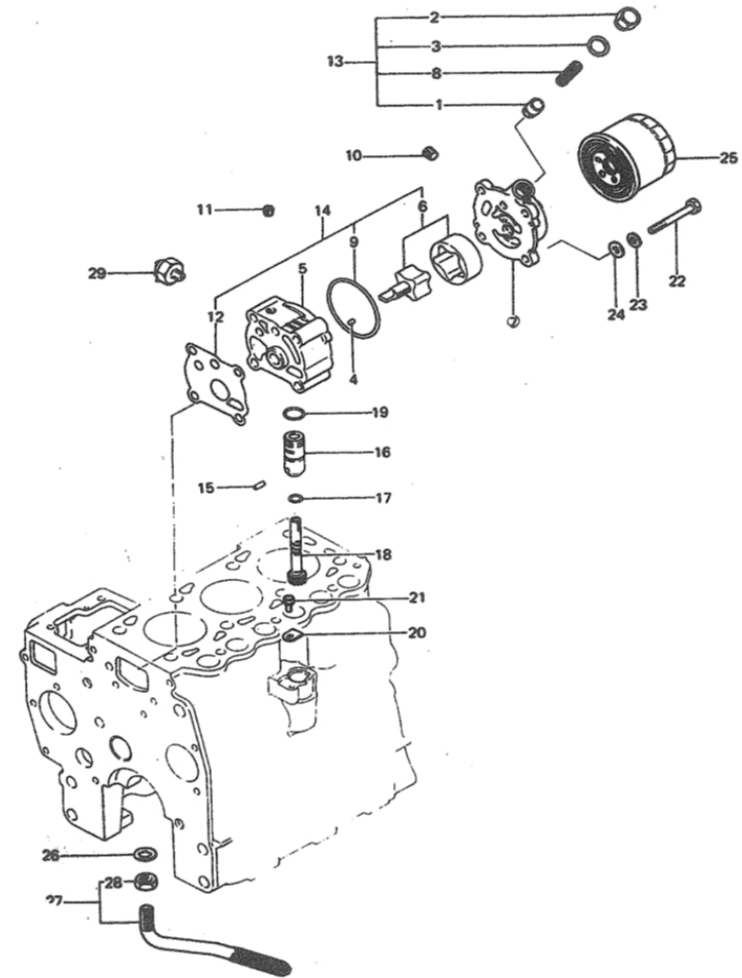


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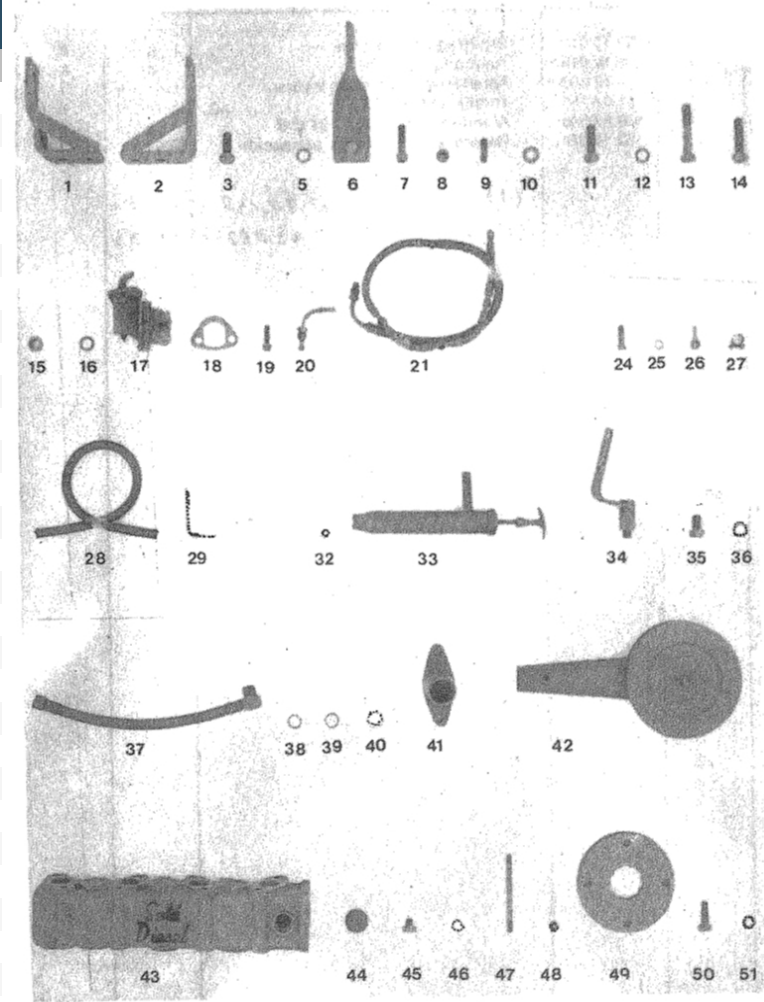
D_MI23_1_10		Oil System				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
1	13224043	1	Plunger			
1-11	13224040	1	Pump Assy Oil			
2	13224045	1	Plug			
3	13120032	2	Washer 18-23-1,5 [NP]			
5	13224046	1	Body Oil Pump			
6	13224042	1	Rotor Assy Oil PU			
7	13224061	1	Cover Oil Pump			
8	13224044	1	Spring RELIEF			
9	13224049	1	O-Ring			
10	13220023	1	Plug TAPER			
11	17820011	1	Plug, Tapered [NP]	12/07/2017		
11	13120011	1	Plug, Tapered [NP]		12/07/2017	
12	13224041	1	Gasket Oil Pump B			
13	13224070	1	SERVICE Kit RELIE			
14	13224075	1	SERVICE Kit Rotor			
15-19	13224054	1	DriveN UNIT SPEED			
16	13224056	1	SLEEVE SPEEDO			
17	25210010	1	O-Ring D. 10,77X2,62			
18	13224054	1	DriveN UNIT SPEED			
19	13224059	1	O-Ring D. 19X2,4			
20	13224063	1	Plate			
21	52102156	4	Bolt DIN 933 M6-16 8.8			
22	13224062	4	Bolt			
23	53033008	4	Washer GROWER DIN 127-8			
24	51030008	4	Washer DIN 125-8			
25	13124051	1	Filter Oil Element			
26	13224001	1	Washer			
27-28	13624052	1	Tank [NP]			
28	51221014	1	Nut DIN 936 M14X1,5 5.6 ZINC			
29	13124060	1	Switch			



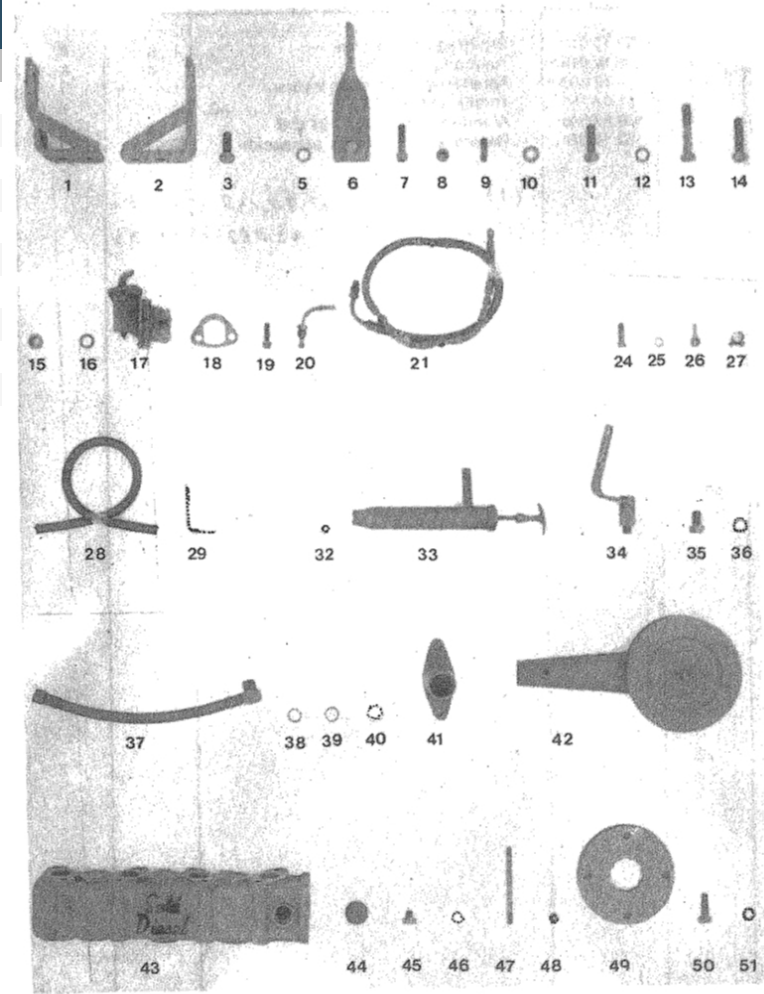
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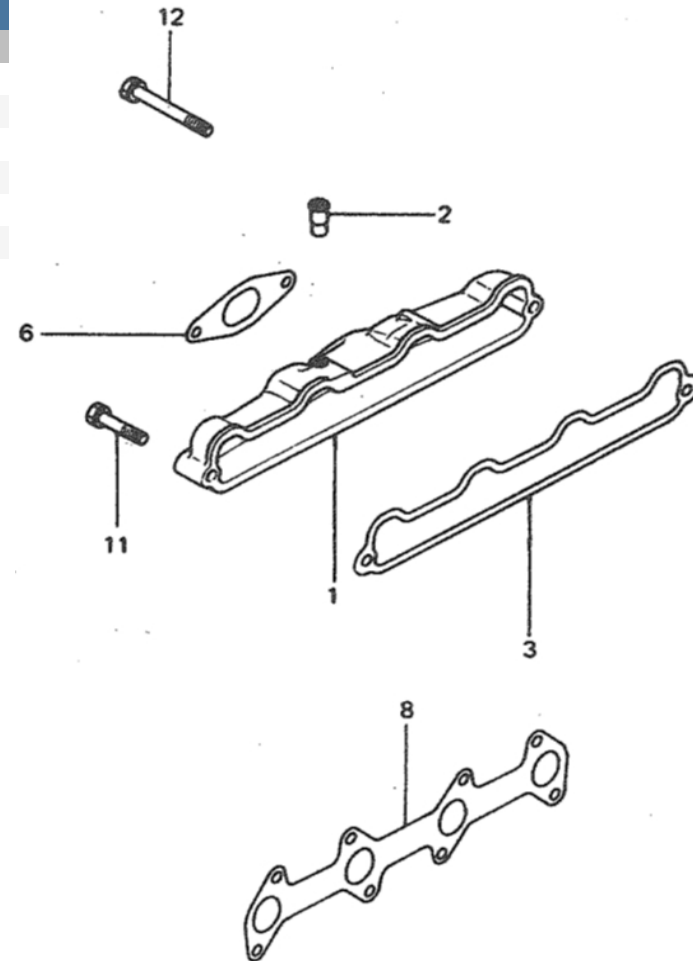
D_MI23_1_12		Engine Brackets & Exhaust			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	13210001	1	RIGHT Front Bracket		
2	13210002	1	LEFT Front Bracket		
3	52202359	4	Bolt DIN 933 M12-1,25-30 8.8		
5	53033012	4	Washer GROWER DIN 127-12		
6	13210010	2	REAR Bracket		
7	52103311	4	Bolt DIN 912 M10-40 8.8		
8	51123010	6	Nut DIN 985 M10 5.6		
9	13110011	2	Stud		
10	13110017	6	Washer DIN 125		
11	52202361	5	Bolt DIN 933 M12-1,25-40 8.8		
12	53038012	6	Washer DIN 6798-A 12		
13	52101363	2	Bolt DIN 931 M12-50 8.8		
14	52202363	1	Bolt DIN 933 M12-1,25-50 8.8		
15	52120012	2	Nut DIN 934 M12 8.8		
16	53033012	2	Washer GROWER DIN 127-12		
17	13114001	1	Pump Fuel Supply		
18	13114002	2	Gasket		
19	52103258	2	Bolt DIN 912 M8-25 8.8		
20	13114003	1	Pipe Inlet		
21	13614005	1	Pipe Assy,fuel		
24	13114008	1	Screw LONG Connector		
25	56000006	9	Washer 8-12-1		
26	13114011	1	Connector SPHERICAL OverFLOW		
27	51080012	4	Clamp 12-13		
28	13614007	1	Hose Assy,fuel		
29	13614012	1	Bracket,fuel filter		
32	52120006	1	Nut DIN 934 M6 8.8		
33	14714001	1	Pump,oil Suction		
35	52202357	2	Bolt DIN 933 M12-1,25-20 8.8		
36	53033012	2	Washer GROWER DIN 127-12		
37	13214021	1	ExtraCTION Hose		
38	56000068	2	Washer 13,5-20-1,5		
39	57000367	2	Washer 13,2-20-1,5		
40	56000077	2	Washer 18-23-1,5		
41	13211010	1	Inlet Pipe		



D_MI23_1_12		Engine Brackets & Exhaust			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
42	17010030	1	Air Filter Assy		
44	12111004	6	Cap,cylinder		
45	13111038	1	Bolt DIN 933 M10-15 8.8		
46	56000057	8	Washer 8-13-1,5		
47	13211015	8	MANIFOld MOUNTING Stud		
48	13211016	8	Nut DIN 1587 M8		
49	13112002	1	Plate Reverse Gear Coupling		
50	52102156	8	Bolt DIN 933 M6-16 8.8		
51	53033006	8	Washer GROWER DIN 127-6		
52	13214024	1	NIPPLE,oil pump bracket		

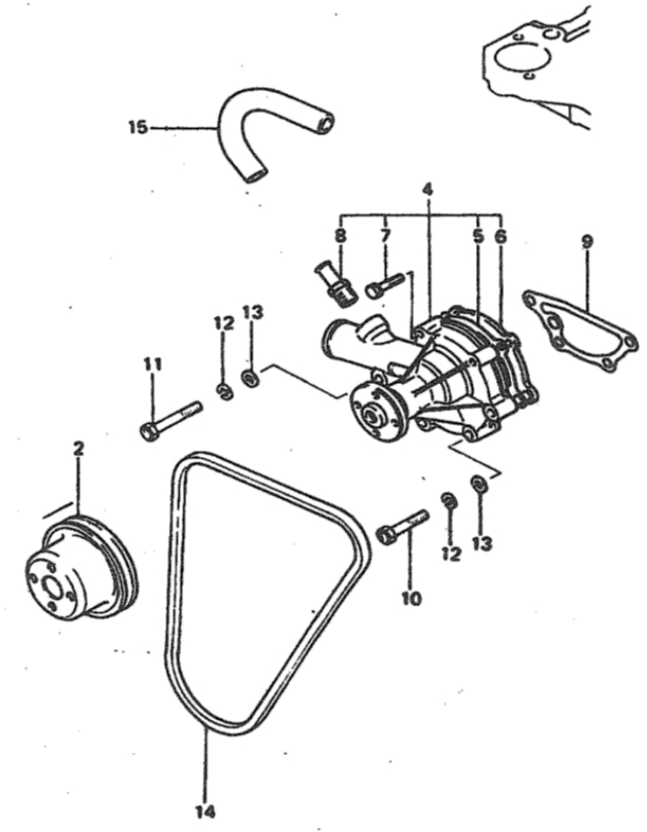


D_MI23_2_1		Inlet				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
1-2	13621030	1	Cover Assy Intake			
2	13221017	1	Pipe			
3	13621032	1	Gasket Intake MAN			
6	13221034	1	Gasket Inlet Pipe			
8	13621035	1	Gasket Exhaust Manifold			
11	13221036	1	Bolt			
12	52101265	2	Bolt DIN 931 M8-60 8.8			





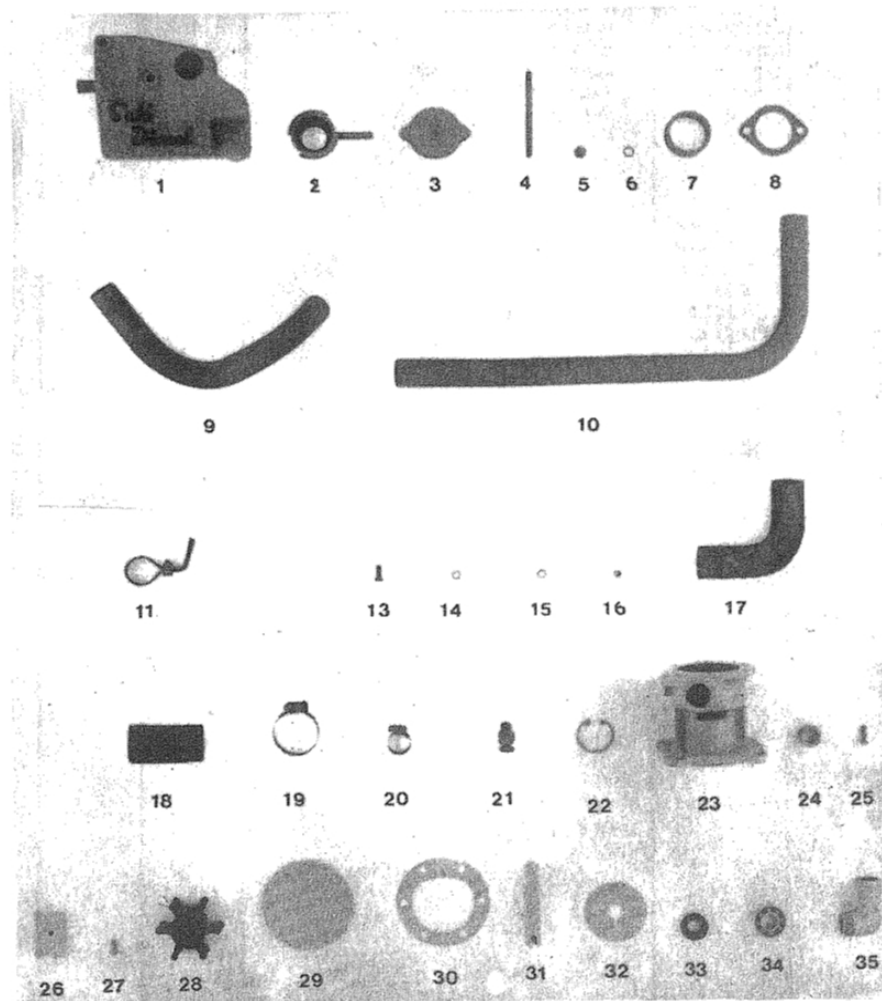
D_MI23_3_1 Water Pump						
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
2	13221021	1	Pulley Water Pump			
3	54102156	4	Bolt DIN 933 M6-16 INOX			
4	13221020	1	Pump Assy, Water [NP]			
5	13221041	1	Gasket Water Pump			
7	13421043	2	Bolt			
8	13221026	1	NIPPLE Hose			
9	13221022	1	Gasket Water Pump			
10	52101262	3	Bolt DIN 931 M8-45 8.8			
11	(*)	1	Not available [NP]			
12	53033008	4	Washer GROWER DIN 127-8			
13	51030008	4	Washer DIN 125-8			
14	13221028	1	Belt Type AVX 10 950			
15	13221025	1	Hose Assy Water			
19	13221027	1	Thermostat (71°)			



[NP] Not provided



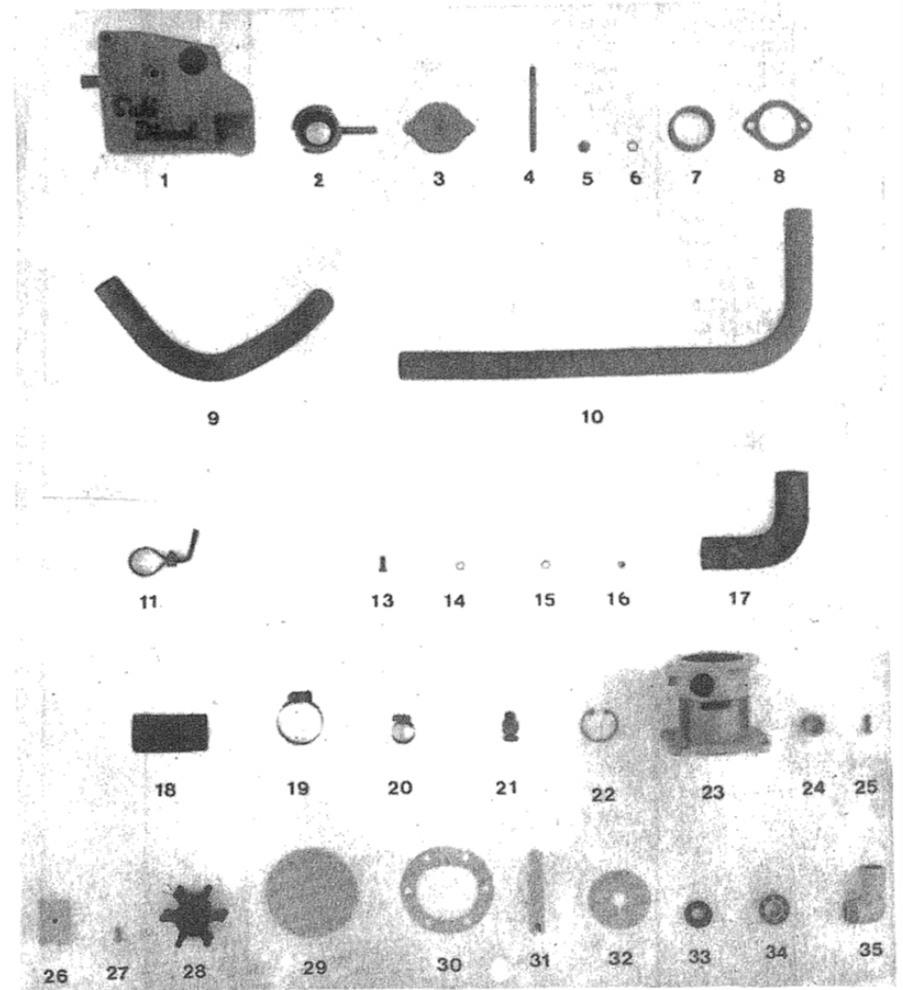
D_MI23_3_2		Cooling System 1			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1-2	13211150	1	Expansion Tank and Cap Momunth		
2	15111002	1	Cap Mouth		
3	14711003	1	Cap [NP]		18/01/2017
3	14711003.1	1	Cap	19/01/2017	
4	13211015	2	MANIFOld MOUNTING Stud		
5	13211016	2	Nut DIN 1587 M8		
6	56000057	4	Washer 8-13-1,5		
7	13211056	1	Thermostat Holder		
8	13211054	1	Engine Water OutLER Gasket		
9	13211051	1	Pipe From Tank TO Cooler		
10	13611052	1	Pipe From Cooler TO Engine		
11	13611053	1	Bracket,Tube		
13	52102156	1	Bolt DIN 933 M6-16 8.8		
14	53033006	1	Washer GROWER DIN 127-6		
15	51030006	1	Washer DIN 125-6		
16	52120006	1	Nut DIN 934 M6 8.8		
17	13211057	1	Rubber		
18A	13611036	1	Pipe 30-40-85		
18B	13611037	1	Pipe 30-40-80		
18C	13611038	1	Pipe 30-40-75		
19A	54082025	7	Clamp DIN 3017 25-40/12 W4		
19B	54082032	1	Clamp DIN 3017 32-50/12 W4		
20	54081012	2	Clamp DIN 3017 12-22/9 W4		
21	13111039	1	Plug,taper		
22	53041028	1	CIRClip DIN 472 I-28		
22-34	33211000	1	1/2" Water Pump, Seawater		
23	33211001	1	Body Water Pump		
24	33211015	1	Bushing Spacer		
25A	55307105	1	Bolt DIN 86 W3/16-13		
25B	57000301	1	Washer 5-7,5-1		
26	31211005	1	Cam		
27A	55307104	6	Bolt DIN 86 W3/16-10		
27B	55102104	6	Bolt DIN 933 M5-10 INOX.		
28	31211008	1	1/2" Impeller		
29	31211002	1	Cover Pump		



[NP] Not provided

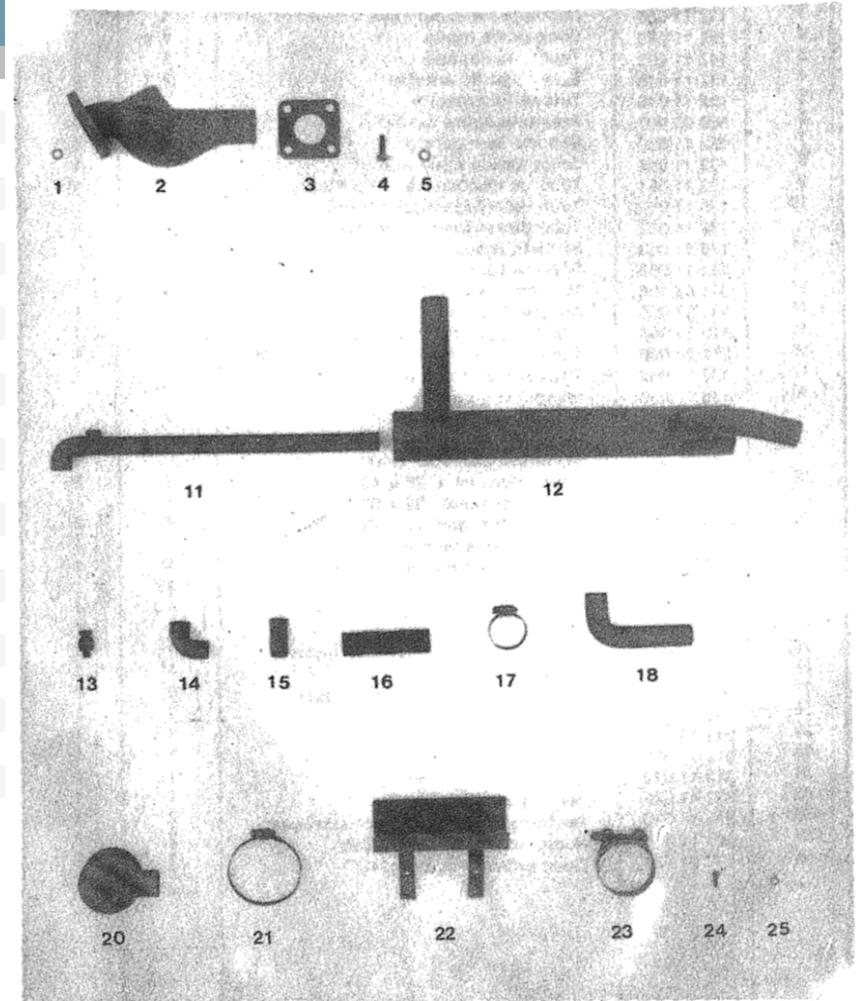


D_MI23_3_2		Cooling System 1			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
30	31211003	1	Gasket Cover		
31	31211010	1	Shaft Pump		
32	33211026	1	Disk		
33	32111020	2	Seal Shaft 12-22-7		
34A	12110030	2	Ball Bearing 6001-C3		
34B	25210010	1	O-Ring D. 10,77X2,62		
35	13211027	2	Water Inlet Bend		





D_MI23_3_3		Cooling System 2				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
1	(*)	0	Not available [NP] [VAR]			
2	13111023	1	Elbow, Wet Exhaust			
3	15113043	1	Exhaust Elbow Gasket			
4	52102258	4	Bolt DIN 933 M8-25 8.8			
5	53033008	4	Washer GROWER DIN 127-8			
9A	13211026	1	CARRYING Coupling			
9B	13411026	1	Coupling,water pump			
11A	13611028	1	Pipe,pump to heat exchanger			
11B	13611030	1	Pipe,heat exchanger to pump			
12	13611029	1	Water Cooler			
13	13111038	1	Bolt DIN 933 M10-15 8.8			
14	13211035	2	Exhaust Manifold Outlet Bend			
15	13211031	1	Raccord 1/2"			
16	13211033	1	Pipe 20-28-80			
17	54081020	4	Clamp DIN 3017 20-32/9 W4			
18	13211034	1	Rubber Elbow			
20	13211040	2	Water Cooler Cover			
21	54081020	2	Clamp DIN 3017 20-32/9 W4			
22	13611041	1	Bracket,cooler			
23	51083060	2	Clamp "P" 59-63			
24	52102156	4	Bolt DIN 933 M6-16 8.8			
25	53033006	4	Washer GROWER DIN 127-6			



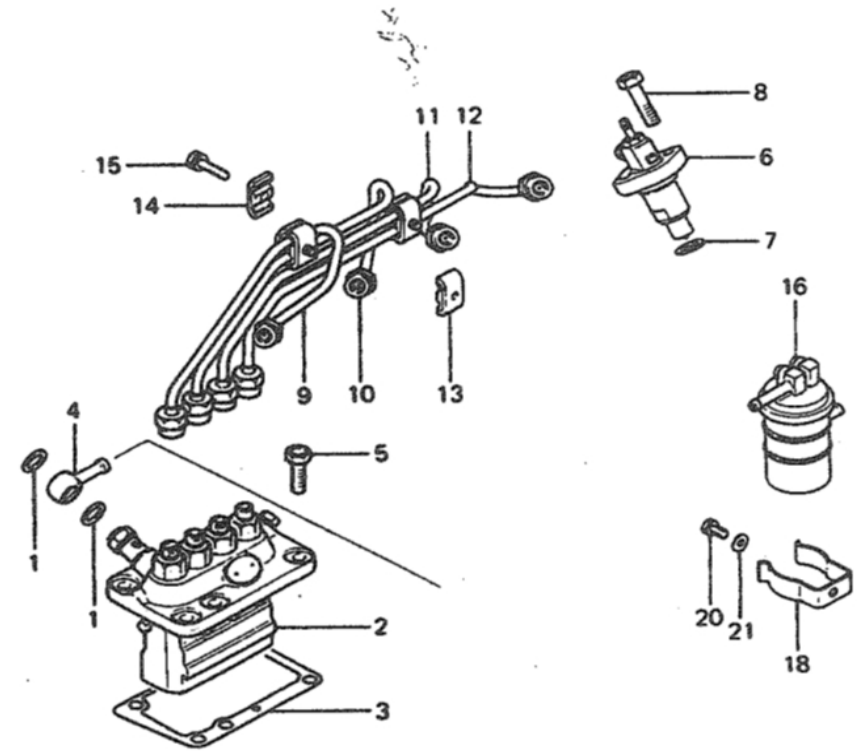
[NP] Not provided

[VAR] Variable according to repair





D_MI23_4_1		Fuel Pipe			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	13124001	2	Washer		
2	13625001	1	Pump Assy Fuel IN		
3A	13624003	0	Shim Adjusting T=0,2mm [VAR]		
3B	17224004.4	0	Shim Adjusting T=0,3mm [VAR]		
3C	13624005	0	Shim Adjusting T=0,4mm [VAR]		
3D	17224006	0	Shim Adjusting T=0,5mm [VAR]		
3E	17224007	0	Shim Adjusting T=0,6mm [VAR]		
3F	17224008	0	Shim Adjusting T=0,7mm [VAR]		
3G	13624009	0	Shim Adjusting T=0,8mm [VAR]		
3H	17224010	0	Shim Adjusting T=0,9mm [VAR]		
3I	17224011	0	Shim Adjusting T=1,0mm [VAR]		
4	(*)	1	Not available [NP]		
6	13126001	3	Nozzle		
7	13124013	3	Gasket Nozzle HOL		
8	52101259	6	Bolt DIN 931 M8-30 8.8		
9	13224015	1	Pipe Assy Fuel IN		
10	13224016	1	Pipe Assy Fuel IN		
11	13224019	1	Pipe Assy Fuel IN		
12	13224022	1	Pipe Assy Fuel IN		
13	13124017	2	Clamp (B)		
14	13124018	2	Clamp (A)		
15	13124019	2	Bolt		
16	13124020	1	Filter Assy Fuel		
18	13124021	1	Clamp Filter		
20	13123005	1	Bolt DIN 933 M6-12 8.8 [NP]		
21	51030006	1	Washer DIN 125-6		

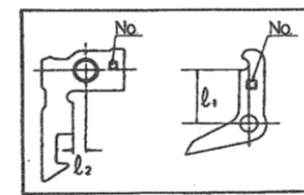
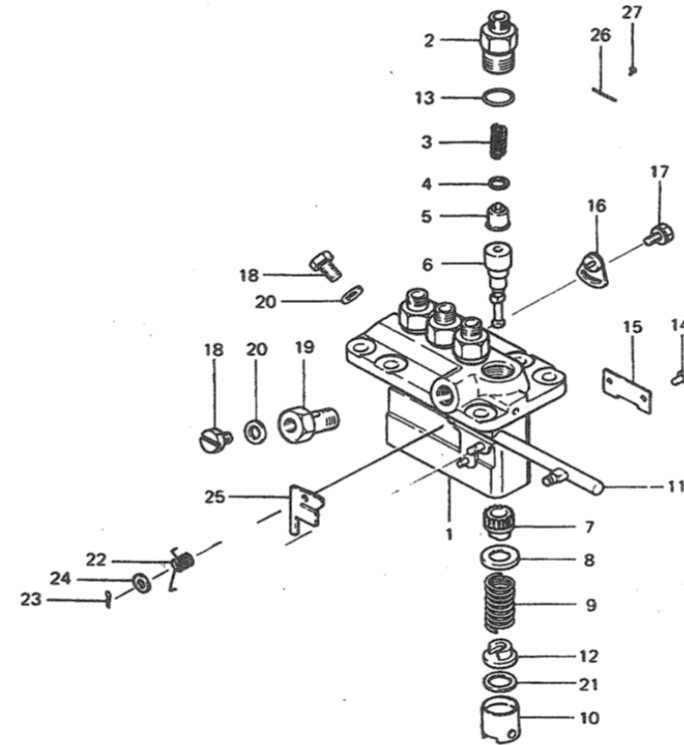


[NP] Not provided

[VAR] Variable according to repair



D_MI23_4_2		Fuel Injection Pump			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	13625005	1	Housing SUB Assy [NP]		
1-27	13625001	1	Pump Assy Fuel IN		
2	13125004	3	Holder DELIVERY V		
3	13225002	3	Spring DELIVERY Valve		
4	13125007	3	Gasket DELIVERY V		
5	13125008	3	Valve SUB Assy DE		
6	13625009	3	Element Assy Pump		
7	13125010	3	SLEEVE		
8	13125011	3	Seat Spring Upper		
9	13125012	3	Spring Plunger		
10	13125021	3	Tappet SUB Assy		
11	13625006	1	RACK Control		
12	13125013	3	Seat Spring LOWER		
13	13125033	3	O-Ring D. 15X2,5		
14	13125022	3	Pin Tappet Guide		
15	13625023	1	Plate		
16	13125030	2	Plate Assy Pressure		
17	13125028	2	Bolt Washer ASSEM		
18	13125026	1	Screw Air BRETATH		
19	13125027	1	Screw HOLLOW		
20	13125025	1	Washer		
21A	13125014	0	Shim Adjusting T=0,60 [VAR]		
21B	13125015	0	Shim Adjusting T=0,2 [VAR]		
21C	13125016	0	Shim Adjusting T=0,3 [VAR]		
21D	13125017	0	Shim Adjusting T=0,4 [VAR]		
21E	13125018	0	Shim Adjusting T=0,5 [VAR]		
21F	13125019	0	Shim Adjusting T=0,25 [VAR]		
21G	13125020	0	Shim Adjusting T=0,35 [VAR]		
22	13225031	1	Spring SMOKE Set		
23	13125032	1	Pin SPLIT		
24	51030005	1	Washer DIN 125-5		
25Ñ	13225049	0	Stopper [VAR]		
25A	13625042	0	Stopper [VAR]		
25B	13625043	0	Stopper [VAR]		
25C	13625044	0	Stopper [VAR]		



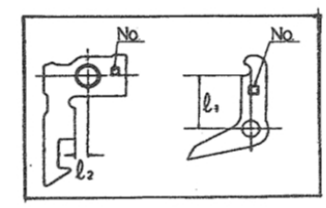
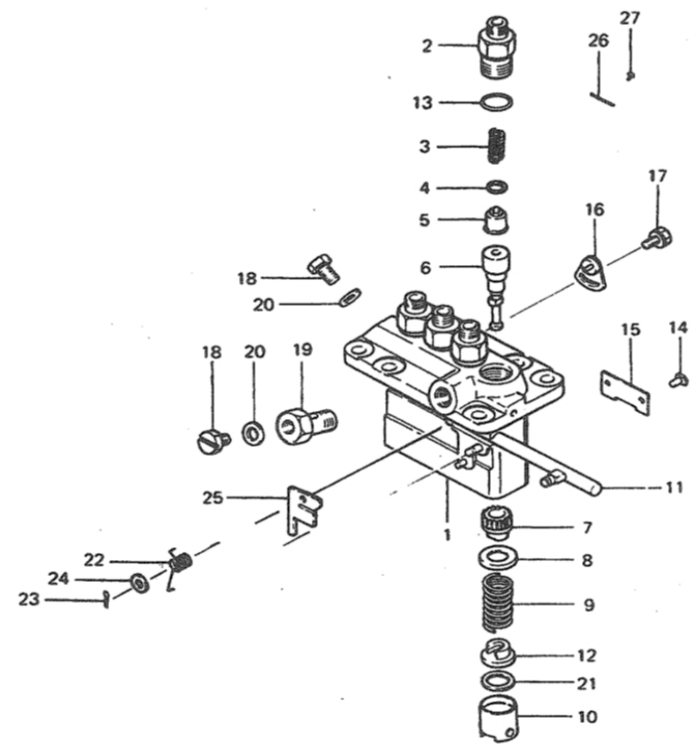
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[VAR] Variable according to repair

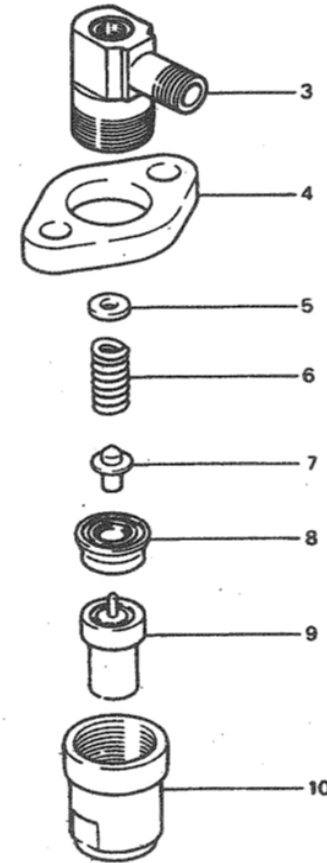




D_MI23_4_2		Fuel Injection Pump				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
25D	13625045	0	Stopper [VAR]			
25E	13625046	0	Stopper [VAR]			
25F	13625047	0	Stopper [VAR]			
25G	13625048	0	Stopper [VAR]			
25H	13625049	0	Stopper [VAR]			
25I	13625050	0	Stopper [VAR]			
25J	13625052	0	Stopper [VAR]			
25K	13625053	0	Stopper [VAR]			
25L	13225046	0	Stopper [VAR]			
25M	13225047	0	Stopper [VAR]			
25N	13225048	0	Stopper [VAR]			
25O	13225050	0	Stopper [VAR]			
25P	13225052	0	Stopper [VAR]			
25Q	13225042	0	Stopper [VAR]			
25R	13225043	0	Stopper [VAR]			
25S	13225044	0	Stopper [VAR]			
25T	13425053	0	Stopper [VAR]			
26	13625058	1	Plate NAME			
27	13125003	2	RIVET			



D_MI23_4_3		Nozzle				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
3	13126002	3	Body			
3-10	13126001	3	Nozzle			
4	13126008	1	Flange			
5A	13126017	0	Washer [VAR]			
5B	13126010	0	Washer [VAR]			
5C	13126011	0	Washer [VAR]			
5D	13126012	0	Washer [VAR]			
5E	13126013	0	Washer [VAR]			
5F	13126014	0	Washer [VAR]			
5G	13126015	0	Washer [VAR]			
5H	13126016	0	Washer [VAR]			
6	13126004	3	Spring			
7	13126003	3	Pin			
8	13126007	3	PIECE DISTANCE			
9	13126018	3	Nozzle Assy			
10	13126006	3	Nut RETAINING			

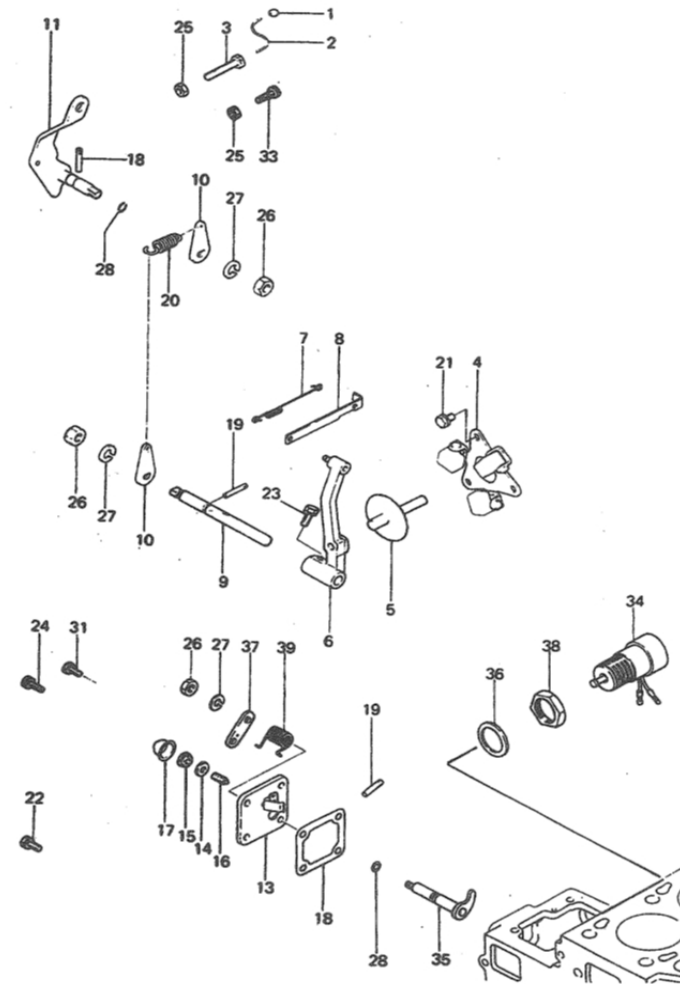


[VAR] Variable according to repair





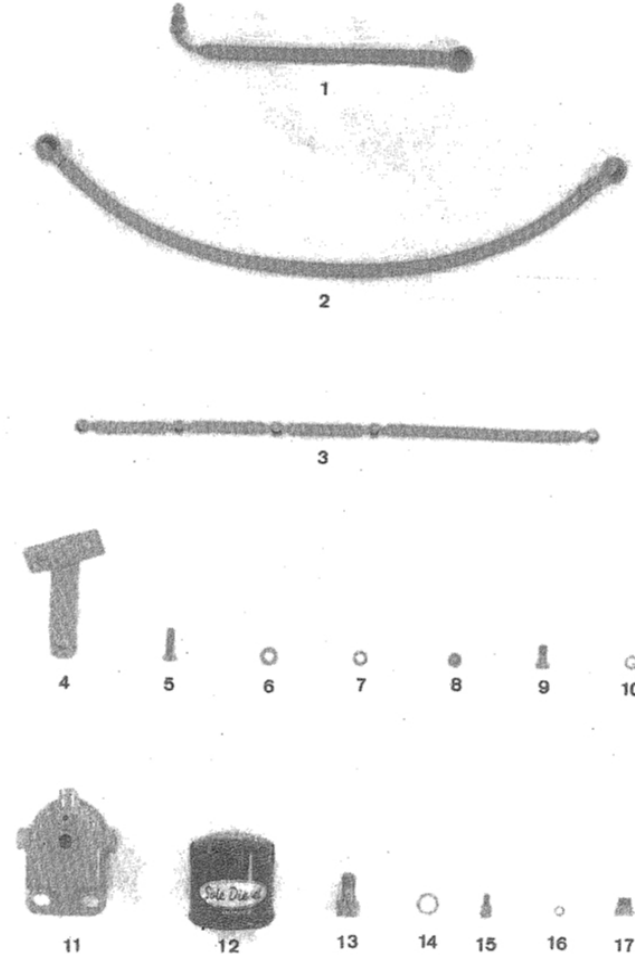
D_MI23_4_4		Governor Parts			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	13123019	1	Metal Sealing		
2	17623020.4	1	Metal,Fuel	02/08/2017	
2	13123020	1	Metal,Fuel [NP]		02/08/2017
3	13123017	1	Bolt High Speed		
4	13223001	1	WEIGHT Assy,GOverNOR		
5	13223002	1	Shaft Assy		
6	13223003	1	Lever Assy GOverN		
7	13223004	1	Spring TIE ROD		
8	13423005	1	ROD TIE		
9	13223006	1	Shaft Governor		
10	13223007	2	Lever Governor		
11A	13423008	1	Lever Assy SPEED		
11B	13223008	1	Lever Assy Speed		
13-16	13423019	1	Cover Assy TIE RO		
15	13423021	1	Nut SPECIAL (6)		
16	13423022	1	Screw Adjusting		
17	13423023	1	Cap SeallNG		
18	13223014	1	Gasket Cover		
19	13123009	2	Pin GROOVED		
20A	13423015	1	Spring Governor (A)		
20B	17023015	1	Spring Governor (B)		
21	13223016	3	Bolt		
22	52102156	1	Bolt DIN 933 M6-16 8.8		
23	52102156	1	Bolt DIN 933 M6-16 8.8		
24	13124019	3	Bolt		
25	52120006	2	Nut DIN 934 M6 8.8		
26	52120008	3	Nut DIN 934 M8 8.8		
28	13123021	1	O-Ring D. 7X1.8		
33	13423025	1	Bolt LOW IDLE Set		
34	13424025	1	Solenoid		
35	13425026	1	Lever Assy Stop		
36	13425028	1	Gasket		
37	13425027	1	Lever Stop		
38	13425029	1	Nut (old)		
39	13425030	1	Spring Return		



[NP] Not provided



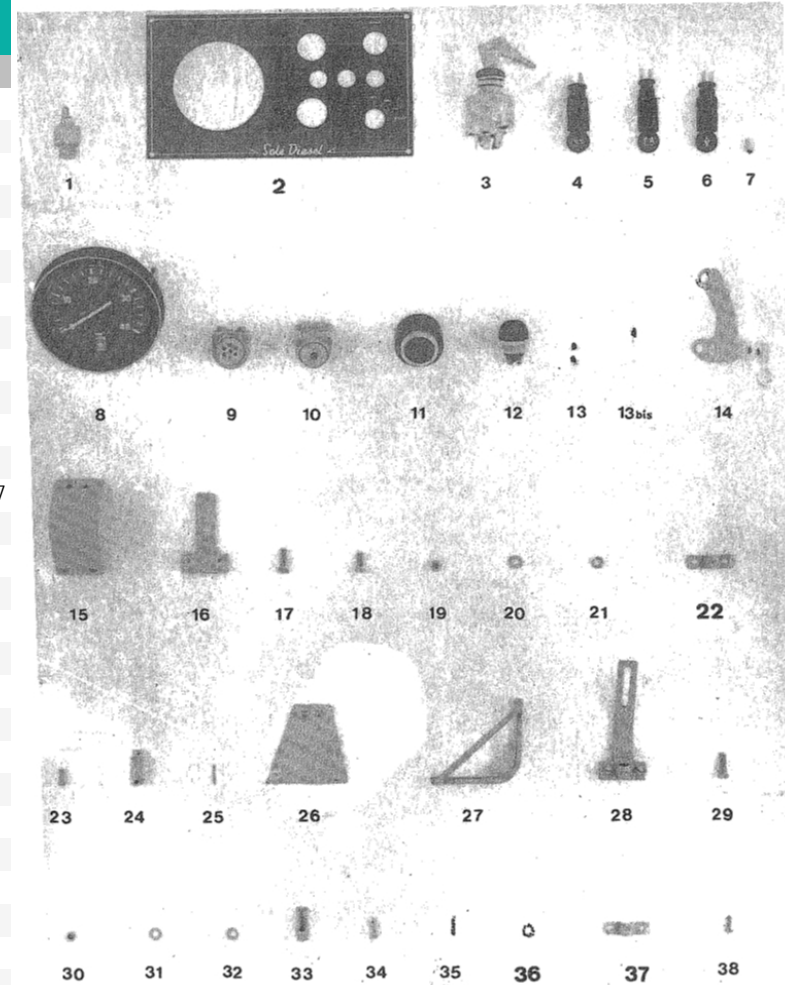
D_MI23_4_5		Fuel Filter				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
1	13414016	1	Pipe, Pump TO Filter [NP]			
2	13614017	1	Pipe, Filter TO INJEC. Pump			
3	13414018	1	Assy,Fuel Return			
4	13614002	1	Bracket,oil pump			
5	52102258	2	Bolt DIN 933 M8-25 8.8			
6	51030008	2	Washer DIN 125-8			
7	53033008	2	Washer GROWER DIN 127-8			
8	52120008	2	Nut DIN 934 M8 8.8			
9A	13114007	1	Screw SHORT Connector			
9B	13114008	1	Screw LONG Connector			
10	57000357	2	Washer 8,2-12-1,5			
11	13114020	1	Cover,filter			
12	13114022	1	Gas-Oil Filter Element			
13	13114021	1	Coupling,cover filter			
14	57000353	4	Washer 6,2-11-1,5			
15	13114023	1	Screw, air breather			
16	57000353	1	Washer 6,2-11-1,5			
17	12814051	1	Screw,eye			



[NP] Not provided



D_MI23_5_1		Electrical System 1			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	60900070	1	Thermo-Switch 97°C		
2	60931001	1	Panel		
2-13	60936000	1	Panel MINI-23		
3A	60900031	1	Key-Locking Switch		
3B	60900035	1	Cover,key		
4	60900050	1	LAMP, oil press.		
5	60900051	1	LAMP, charge		
6	60900052	1	LAMP, water temp.		
7	60900045	3	Bulb 12V 3W Connector B		
8	60934710	1	Tachometer MINI-33/34/44		
9	60936095	1	LAMP Glow (3CYL-3		
11	60900060	1	Alarm, SWITCH		
12	60900040	1	Pushbutton Stop [NP]		13/07/2017
12	60900049	1	Pushbutton Stop [NP]	13/07/2017	
13A	60900115	2	Fuse 3 A.		
13B	60900110	2	DIODE 3 A.		
14	13619001	1	Bracket,engine control		
16	12119021	1	SUPPORT Clamp		
17	52102157	2	Bolt DIN 933 M6-20 8.8		
18	52102156	2	Bolt DIN 933 M6-16 8.8		
19	52120006	4	Nut DIN 934 M6 8.8		
20	51030006	4	Washer DIN 125-6		
21	53033006	4	Washer GROWER DIN 127-6		
22	14719013	1	Clamp,cable		
23	55307105	2	Bolt DIN 86 W3/16-13		
24	13419003	1	GAS,control yoke		
25	51051107	1	Pin DIN-94 1,6-16		
26	13119015	1	Bracket Morse REVERSE Gear		
27	12119020	1	Bracket,Gear box control		
28	12119021	1	SUPPORT Clamp		
29	52102157	4	Bolt DIN 933 M6-20 8.8		
30	52120006	4	Nut DIN 934 M6 8.8		
31	51030006	4	Washer DIN 125-6		
32	53033006	4	Washer GROWER DIN 127-6		
33	13119128	1	SPLIT,piece special		

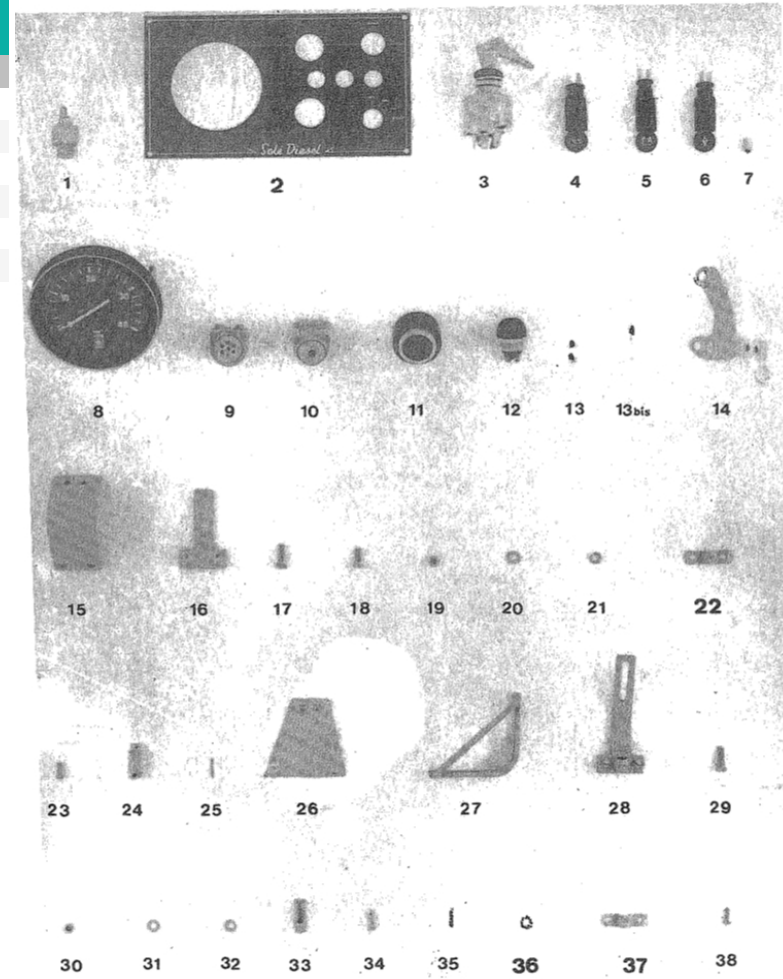


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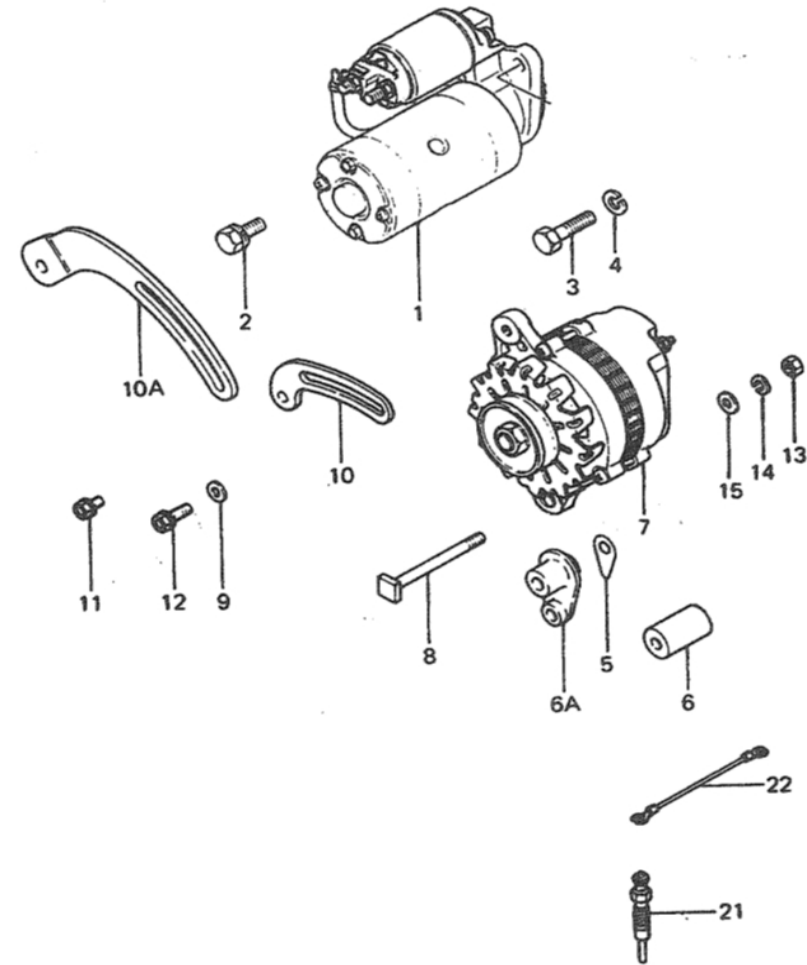




D_MI23_5_1		Electrical System 1				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
34	14719027	1	Pin			
35	51051107	1	Pin DIN-94 1,6-16			
36	51030005	2	Washer DIN 125-5			
37	14719013	1	Clamp,cable			
38A	55307104	2	Bolt DIN 86 W3/16-10			
38B	60934117	1	Fuse 60A.			



D_MI23_5_2		Electrical System 2				
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
1	13227001	1	STARTER Assy 12 V			
2	52202308	2	Bolt DIN 933 M10-1,25-25 8.8			
3	52202311	1	Bolt DIN 933 M10-1,25-40 8.8			
4	53033010	1	Washer GROWER DIN 127-10			
5	13127005	0	Shim Adjusting [VAR]			
6-A	13427006	1	Spacer			
7	13627010	1	Alternator 12V/35A			
8	13227008	1	Bolt			
10	13224007	1	Shim Adjusting T=0,6mm			
10-A	13427007	1	BRACE Generator			
11	(*)	1	Not available [NP]			
12	13127012	1	Bolt DIN 933 M8-25 8.8			
13	52120008	1	Nut DIN 934 M8 8.8			
14	53033008	1	Washer GROWER DIN 127-8			
15	51030008	1	Washer DIN 125-8			
21	13127017	3	Plug Glow Type V-110			
22	13127018	2	Wire Glow Plug LE			

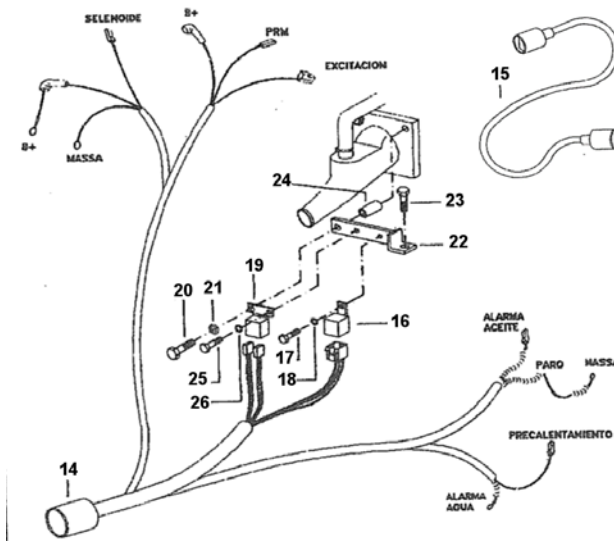
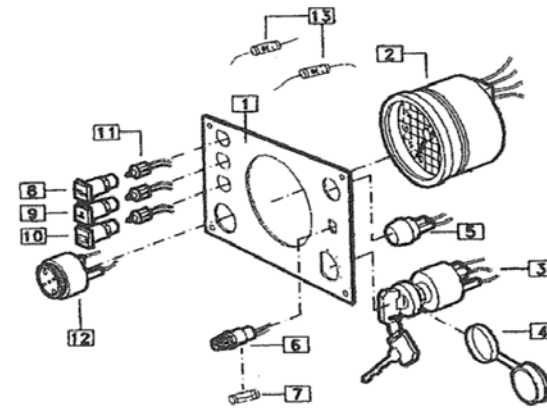


[NP] Not provided

[VAR] Variable according to repair



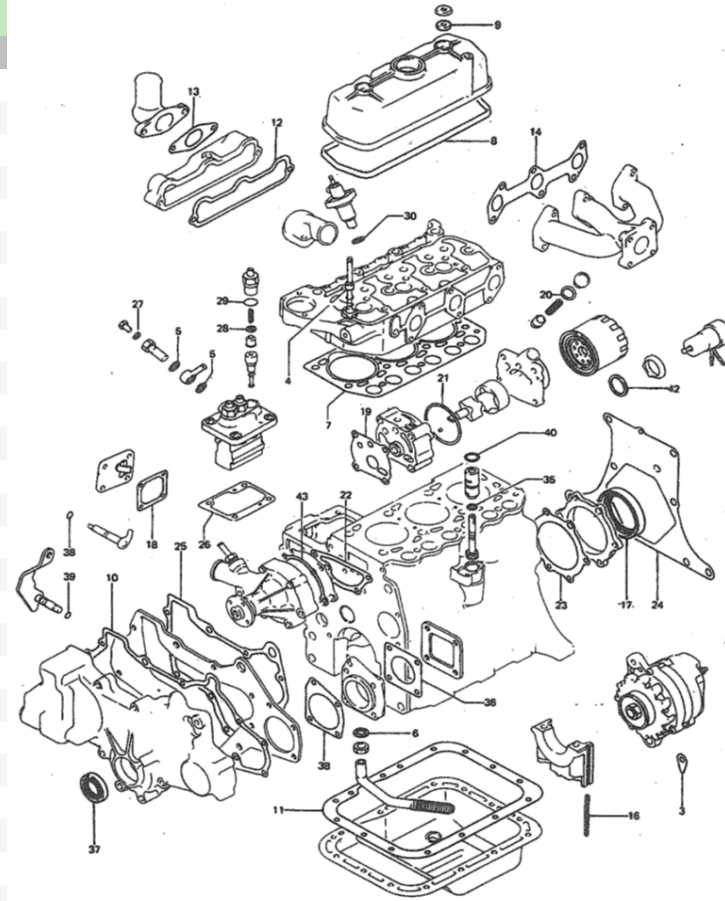
D_MI23_5_5 Electrical Wiring & Panel					
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	60938001	1	Panel		
1-13	60934000R	1	Panel MINI-33/34/44		
2	60934710	1	Tachometer MINI-33/34/44		
3	60900031	1	Key-Locking Switch		
4	60900035	1	Cover,key		
5	60900040	1	Pushbutton Stop [NP]		13/07/2017
5	60900049	1	Pushbutton Stop [NP]	13/07/2017	
6	60900121	1	FuseHolder, panel		
7	60900118	1	Fuse 10 A.		
8	60900050A	1	LAMP, oil press.		
9	60900052A	1	LAMP, water temp.		
10	60900051A	1	LAMP, charge		
11	60900045A	3	Bulb 12V 3W Connector JKL		
12	60900060	1	Alarm, SWITCH		
13	60900110	2	DIODE 3 A.		
14	60934200R	1	MINI-34 Electrical Wiring		
15	60938210	1	Wiring Ext. 3 M.		
16	18517005	1	Relay Nagares 12V 40A		
17	54102104	1	Bolt DIN 933 M5-10 INOX.		
18	51030005	1	Washer DIN 125-5		
19	13827005	1	Glow Relay		
20	52101262	1	Bolt DIN 931 M8-45 8.8		
21	51030008	1	Washer DIN 125-8		
22	13417001	1	Support,relay		
23	52102259	1	Bolt DIN 933 M8-30 8.8		
24	13417002	1	Spacer		
25	52102156	1	Bolt DIN 933 M6-16 8.8		
26	51030006	1	Washer DIN 125-6		



[NP] Not provided



D_MI23_6_1		Gasket Kit			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
3	13127005	0	Shim Adjusting [VAR]		
3-43	13620101	1	Kit Gasket		
4	13222054	6	Seal Valve Stem		
5	13124001	2	Washer		
6	13224001	1	Washer		
7	13621004	1	Gasket Cylinder H		
8	13621010	1	Gasket Rocker COV		
9	13221016	2	Seal		
10	13220040	1	Gasket Gear Case		
11	13620033	1	Gasket Oil PAN		
12	13621032	1	Gasket Intake MAN		
13	13221034	1	Gasket Inlet Pipe		
14	13621035	1	Gasket Exhaust Manifold		
16	13220002	4	Seal Side		
17	13220008	1	Seal Oil		
18	13223014	1	Gasket Cover		
19	13224041	1	Gasket Oil Pump B		
21	13224049	1	O-Ring		
22	13221022	1	Gasket Water Pump		
23	13220016	1	Gasket Oil Seal		
24	13220025	1	Gasket REAR Plate		
25	13220018	1	Gasket Front PLAT		
26A	13624003	1	Shim Adjusting T=0,2mm		
26B	13624004	1	Shim Adjusting T=0,3mm [NP]		
26C	13624005	1	Shim Adjusting T=0,4mm		
26D	13624009	1	Shim Adjusting T=0,8mm		
27	13125025	1	Washer		
28	13125007	3	Gasket DELIVERY V		
29	13125033	3	O-Ring D. 15X2,5		
30	13124013	3	Gasket Nozzle HOL		
35	25210010	1	O-Ring D. 10,77X2,62		
36	13120047	1	Gasket Water Pump		
37	13220039	1	Seal Oil		
38	13220038	1	Gasket Housing		
39	13123021	2	O-Ring D. 7X1.8		

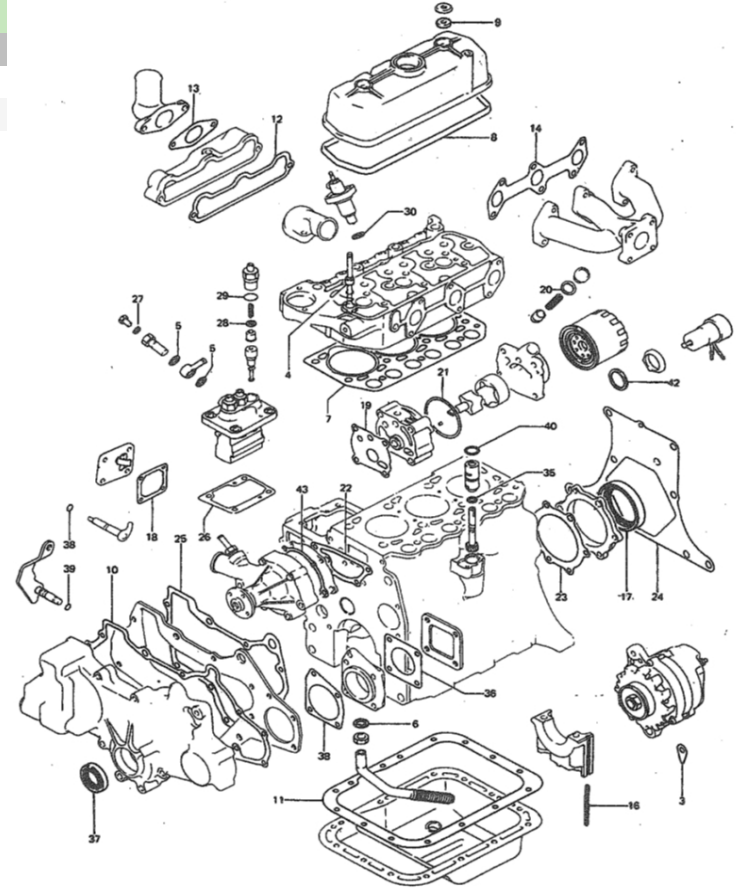


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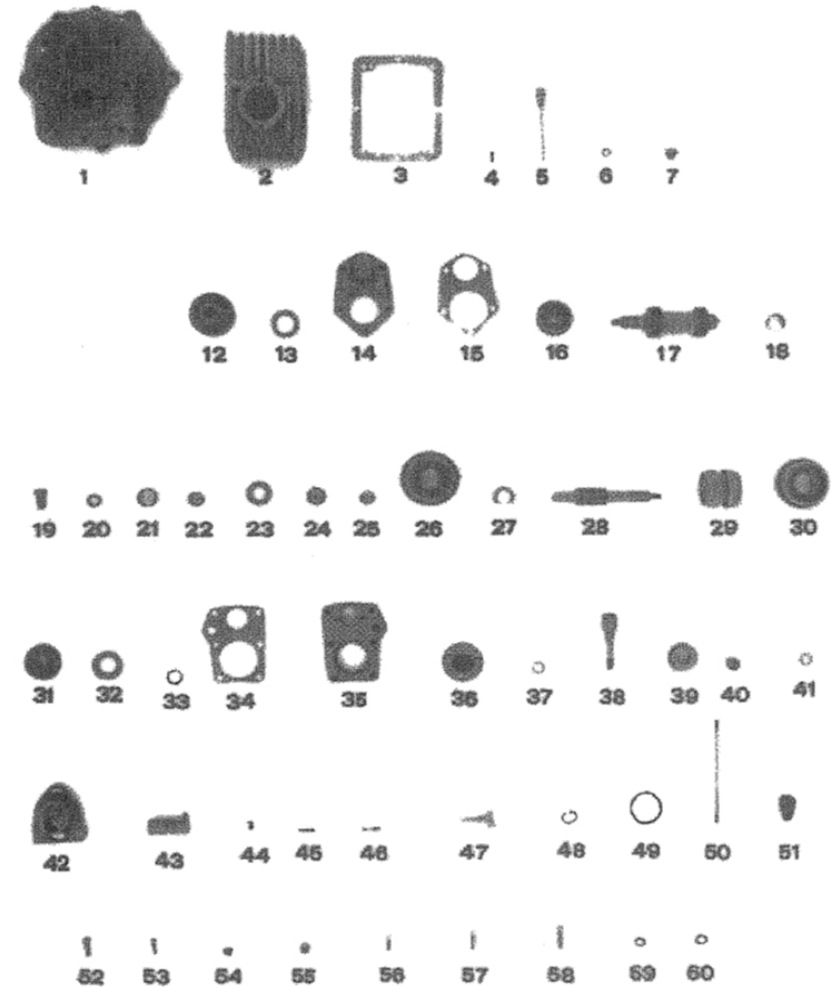
[VAR] Variable according to repair



D_MI23_6_1 Gasket Kit						
FIG.	REF.	QTY	DESCR.	FROM	UPTO	
40	13224059	1	O-Ring D. 19X2,4			
42	13425028	1	Gasket			
43	13221041	1	Gasket Water Pump			



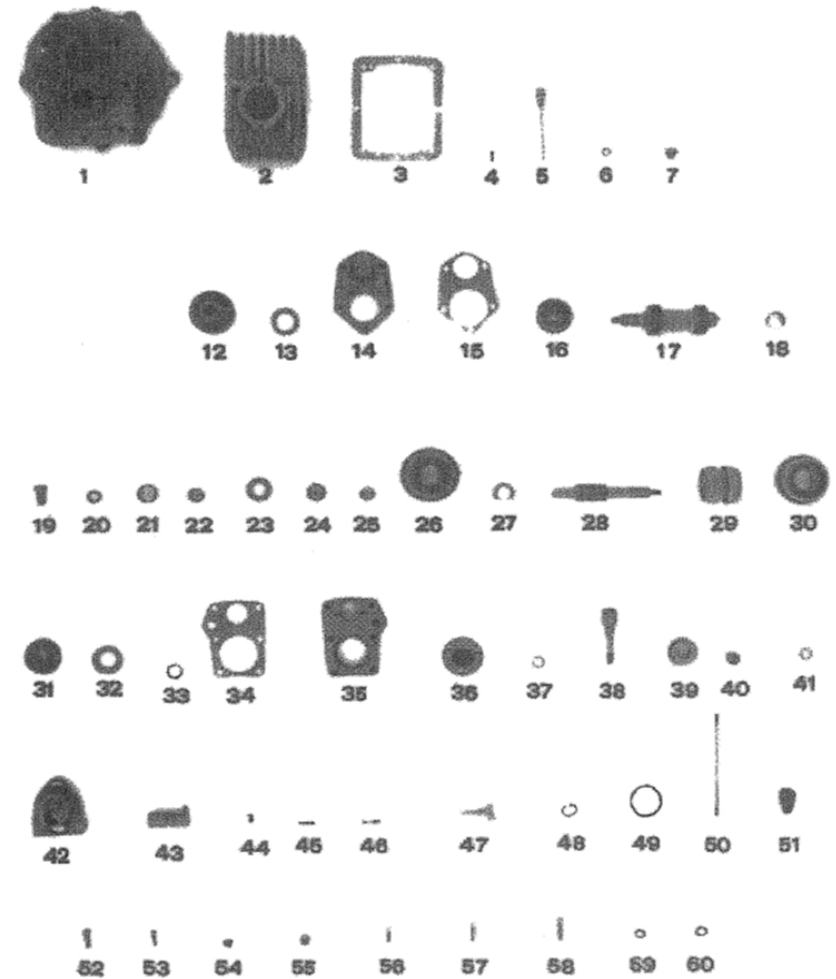
D_22413000		GearBox RONIM IV R.2,00			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	22410001	1	Housing,front [NP]		
1-64	22413000	1	GearBox RONIM-5 R. 2,25:1 MINI-33/34 [NP]		
2	22410002	1	Housing,rear [NP]		
3	22310003	1	Gasket		
5	22310008	1	Plug,oil level		
6	25210010	1	O-Ring D. 10,77X2,62		
7	51102254	1	Bolt DIN 933 M8-10 8.8		
12	22410005	1	Flange,input		
13	22210103	1	Seal,oil BA 30-47-7		
14	22310102	1	Cover,front [NP]		
15	22310105	1	Gasket		
16	22210204	1	Bearing,needle		
17	22413101	1	Shaft,input 2:1		
18	22210106	1	Bearing,needle		
19	25210222	1	Bolt,blockage		
20	22210204	2	Bearing,needle		
21	22210204	2	Bearing,needle		
22	22210205	2	Ring		
23A	22310218	1	Spacer,bearing		
23B	22410218	1	Spacer,rear bearing		
24	22410204	1	Bearing,needle		
25	22410205	1	Ring,bearing		
26	22413203	1	Gear,front 2:1		
27	22310217	1	Spacer,Gear		
28	22410201	1	Shaft,output [NP]		
29	22310232	1	Cone,clutch [NP]		
30	22410210	1	Gear,rear		
31	22410224	1	Ball Bearing 6305-NR		
32	22410223	1	Seal,oil 35-47-7		
33	22210225	1	O-Ring D. 20X23X1,5		
34	22410209	1	Gasket		
35	22410208	1	Cover,rear [NP]		
36	22410225	1	Flange,output		
37A	51030012	2	Washer DIN 125-12		
37B	51030016	1	Washer DIN 125-16		



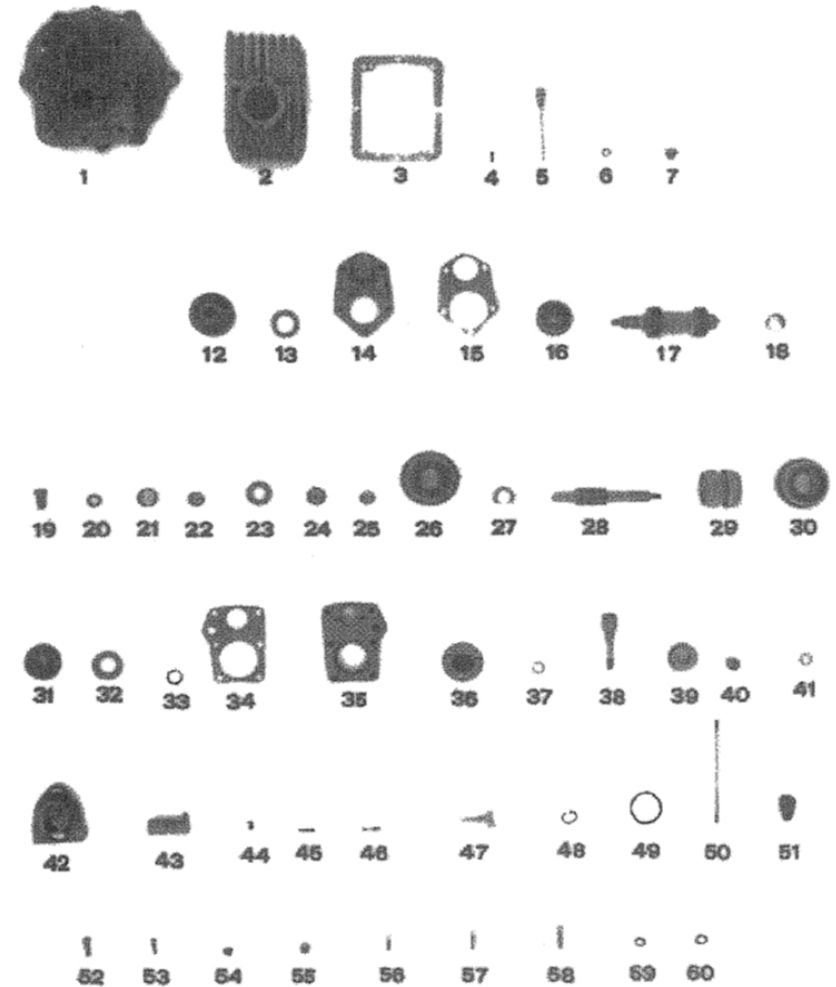
[NP] Not provided



D_22413000		GearBox RONIM IV R.2,00			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
38	22310301	1	Intermediate Shaft		
39	22210302	1	Gear,INTERMEDIATE		
40	22210306	1	Bearing,needle		
41	22310304	1	Washer,friction [NP]		
42	22310401	1	Control Assy		
43	22310402	1	EXCENTRICA,control		
44	25210418	1	Eccentric Command		
45	53052310	1	Pin DIN 1481 4-20		
46	25210411	1	Spring		
47	22510423	1	ARM, control		
48	25210408	1	O-Ring D. 18,3X25,5X3,6		
49	22310417	1	O-Ring D. 49X2,5		
50	25210424	1	Lever,control		
51	22110416	1	Handle		
52	52102258	1	Bolt DIN 933 M8-25 8.8		
53	52103157	2	Bolt DIN 912 M6-20 8.8		
54	52120006	2	Nut DIN 934 M6 8.8		
55A	51123016	2	Nut DIN 985 M16 5.6		
55B	51123012	1	Nut DIN 985 M12 5.6		
56	52101258	11	Bolt DIN 931 M8-25 8.8		
57	52101259	2	Bolt DIN 931 M8-30 8.8		
58	52101260	5	Bolt DIN 931 M8-35 8.8		
59	51030008	20	Washer DIN 125-8		
60	56000116	1	Washer 12,5-20-2		
61	22410226	1	Cover [NP]		
62	32111023	1	Gasket		
63	52102156	2	Bolt DIN 933 M6-16 8.8		
64	57000353	2	Washer 6,2-11-1,5		



D_22415000		GearBox RONIM IV R.3,00			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	22415001	1	MOUSING,front		
1-64	22415000	1	GearBox RONIM 5 R.3,05:1/MINI-33 [NP]		
3	22310003	1	Gasket		
4	22210007	2	Pin		
5	22310008	1	Plug,oil level		
6	25210010	1	O-Ring D. 10,77X2,62		
7	51102254	1	Bolt DIN 933 M8-10 8.8		
12	22415005	1	Flange,input [NP]		
13	22410223	1	Seal,oil 35-47-7		
14	22415102	1	Cover,front		
15	22415105	1	Gasket		
16	22410224	1	Ball Bearing 6305-NR		
17	22415101	1	Shaft,input [NP]		
18	22210106	1	Bearing,needle		
19	25210222	1	Bolt,blockage		
20	22210204	1	Bearing,needle		
21	22210204	2	Bearing,needle		
22	22210205	2	Ring		
23A	22410218	1	Spacer,rear bearing		
23B	22415218	1	Spacer,bearing		
24	22410204	1	Bearing,needle		
25A	22410205	1	Ring,bearing		
26	22415203	1	Gear [NP]		
27	22410217	1	Spacer,Gear		
28	22410201	1	Shaft,output [NP]		
29	22310232	1	Cone,clutch [NP]		
30	22415210	1	Gear,rear 3:1 [NP]		
31	22415224	1	Ball Bearing 6306-NR		
32	22415223	1	Seal,oil 40-55-8		
33	22210225	1	O-Ring D. 20X23X1,5		
34	22415209	1	Gasket		
35	22415208	1	Cover,rear [NP]		
36	22415225	1	Flange,output		
37A	51030016	2	Washer DIN 125-16		
37B	51030016	2	Washer DIN 125-16		

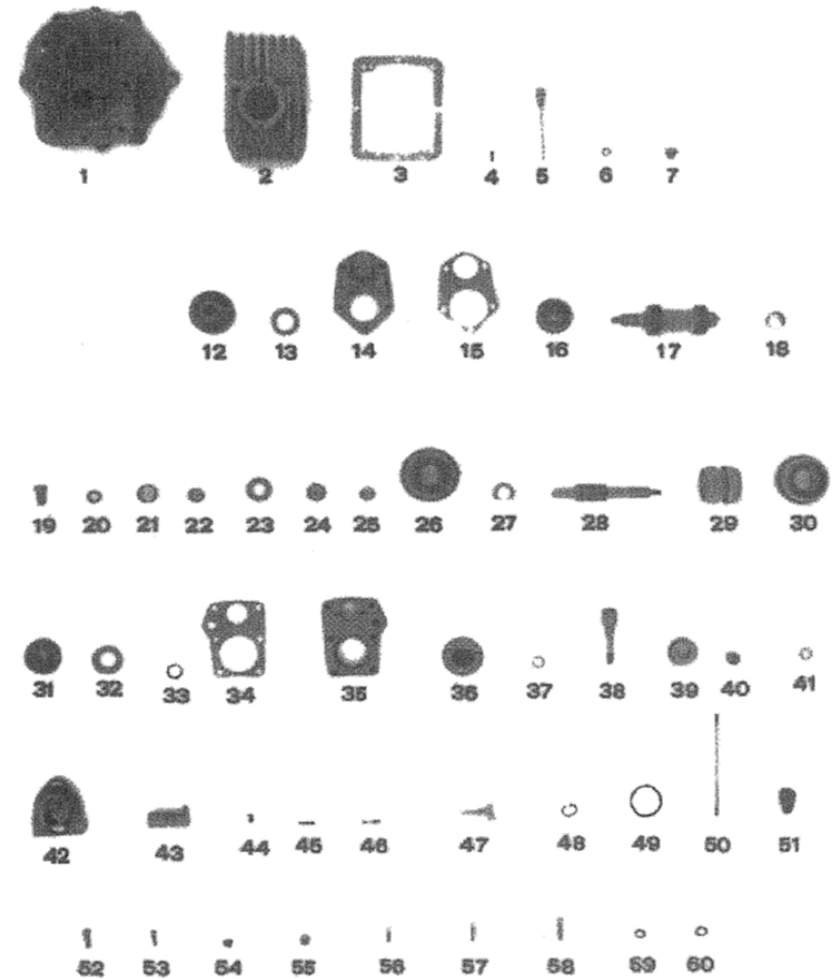


[NP] Not provided

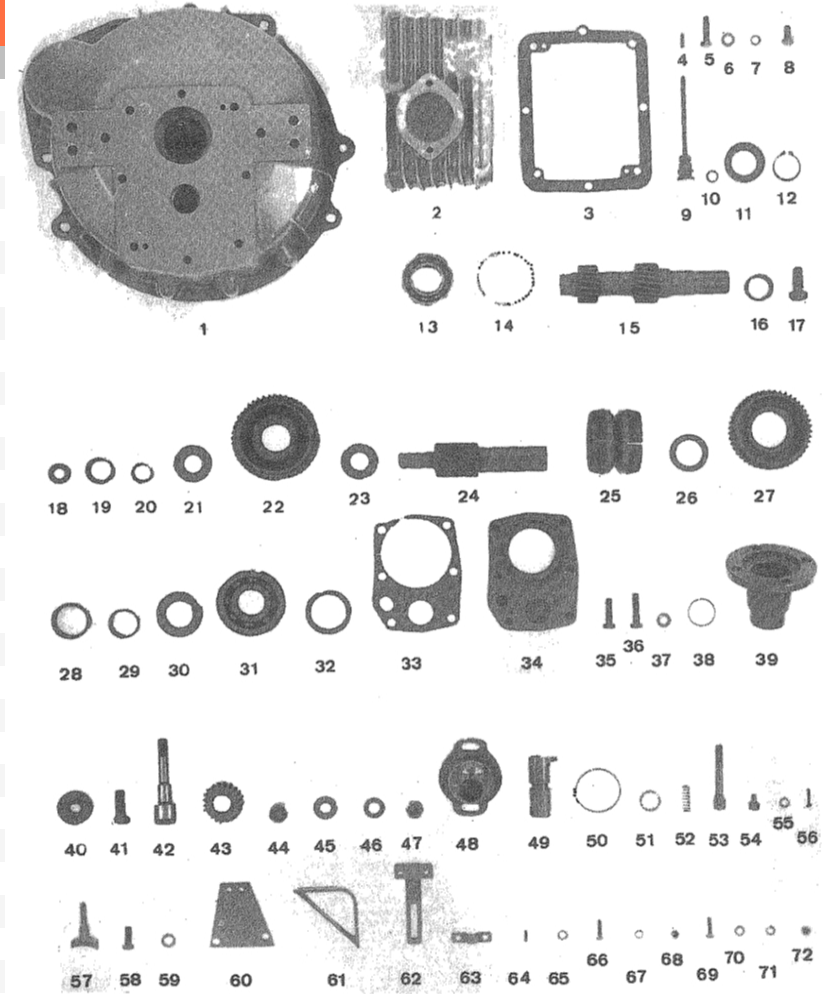




D_22415000		GearBox RONIM IV R.3,00			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
38	22310301	1	Intermediate Shaft		
39	22310302	1	Gear,INTERMEDIATE [NP]		
40	22210306	1	Bearing,needle		
41	22310304	1	Washer,friction [NP]		
42	22310401	1	Control Assy		
43	22310402	1	EXCENTRICA,control		
44	25210418	1	Eccentric Command		
45	53052310	1	Pin DIN 1481 4-20		
46	25210411	1	Spring		
47	22510423	1	ARM, control		
48	25210408	1	O-Ring D. 18,3X25,5X3,6		
49	22310417	1	O-Ring D. 49X2,5		
50	25210424	1	Lever,control		
51	22110416	1	Handle		
52	52102258	2	Bolt DIN 933 M8-25 8.8		
53	52103157	2	Bolt DIN 912 M6-20 8.8		
54	52120006	2	Nut DIN 934 M6 8.8		
55B	51123012	1	Nut DIN 985 M12 5.6		
56	52101258	11	Bolt DIN 931 M8-25 8.8		
57	52101259	2	Bolt DIN 931 M8-30 8.8		
58	52101260	5	Bolt DIN 931 M8-35 8.8		
59	51030008	20	Washer DIN 125-8		
60	56000116	1	Washer 12,5-20-2		
61	22410226	1	Cover [NP]		
62	32111023	1	Gasket		
63	52102156	2	Bolt DIN 933 M6-16 8.8		
64	57000353	2	Washer 6,2-11-1,5		



D_22513100		GearBox RONIM V R.2,25			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
1	22510020	1	Housing, front		
1-72	22513100	1	GearBox RONIM-5 R. 2,25:1 MINI-33/34		
2	22513002	1	Housing, rear red.2:1		
3	22510003	1	Gasket		
4	22210007	2	Pin		
5	52102259	8	Bolt DIN 933 M8-30 8.8		
6	51030008	8	Washer DIN 125-8		
7	57000357	1	Washer 8,2-12-1,5		
8	52102256	1	Bolt DIN 933 M8-15 8.8		
9	22310008	1	Plug,oil level		
10	25210010	1	O-Ring D. 10,77X2,62		
11	22210103	1	Seal,oil BA 30-47-7		
12	53040030	1	CIRClip DIN 471 E-30		
13	25110104	1	Ball Bearing 6206		
14	53041062	1	CIRClip DIN 472 I-62		
15	22513101	1	Shaft,input red. 2:1		
16	22210106	1	Bearing,needle		
17	25210222	1	Bolt,blockage		
18	22210219	1	Washer		
19	22210204	2	Bearing,needle		
20	22210205	2	Ring		
21	22510228	1	Spacer		
22	22513203	1	Gear,front red. 2,28:1 [NP]		
23	22510216	1	Spacer, Gear		
24	22510201	1	Shaft, output		
25	22510202	1	CONE, clutch (With THREAD)		
26	22510217	1	Spacer, Gear		
27	22513210	1	Gear,rear red. 2:1 [NP]		
28	22510204	1	Bearing, needle		
29	22510205	1	Ring, bearing		
30	22510218	1	Bearing D. 32,25X52X5		
31	22415224	1	Ball Bearing 6306-NR		
32	25210214	1	Seal,oil 40-52-7		
33	22510209	1	Gasket, rear		
34	22513208	1	Cover, rear red. 2:1		



[NP] Not provided



D_22513100		GearBox RONIM V R.2,25			
FIG.	REF.	QTY	DESCR.	FROM	UPTO
35	52102259	4	Bolt DIN 933 M8-30 8.8		
36	52101260	2	Bolt DIN 931 M8-35 8.8		
37	51030008	6	Washer DIN 125-8		
38	25210231	1	O-Ring D. 29,5X1,5		
39	22510225	1	Flange, output		
40	25210219	1	Washer,blockage		
41	53102359	1	Bolt DIN 933 M12-30 12.9		
42	22510301	1	INTERMEDIATE Shaft [NP]		
43	22510302	1	Gear,intermediate		
44	22510306	1	Bearing, needle		
45	22510305	1	Washer, friction		
46	51030012	1	Washer DIN 125-12		
47	51123012	1	Nut DIN 985 M12 5.6		
48	22310401	1	Control Assy		
48-56	22513400	1	Control Assy		
49	22310402	1	EXCENTRICA,control		
50	22310417	1	O-Ring D. 49X2,5		
51	25210408	1	O-Ring D. 18,3X25,5X3,6		
52	25210411	1	Spring		
53	25210424	1	Lever,control		
54	14719115	1	Coupling,cable		
56	54051155	1	Pin DIN-94 1,6-16		
57	22510423	1	ARM, control		
58	52102257	2	Bolt DIN 933 M8-20 8.8		
59	51030008	2	Washer DIN 125-8		
60	22510915	1	Bracket Morse REVERSE Gear		
61	12119020	1	Bracket,Gear box control		
61-68	12119000	1	Assy Bracket,morse control		
62	12119021	1	SUPPORT Clamp		
63	14719013	1	Clamp,cable		
64	55307104	2	Bolt DIN 86 W3/16-10		
66	52102157	2	Bolt DIN 933 M6-20 8.8		
67	53033006	2	Washer GROWER DIN 127-6		
68	52120006	2	Nut DIN 934 M6 8.8		
69	52102157	2	Bolt DIN 933 M6-20 8.8		
70	51030006	7	Washer DIN 125-6		
72	52120006	2	Nut DIN 934 M6 8.8		

