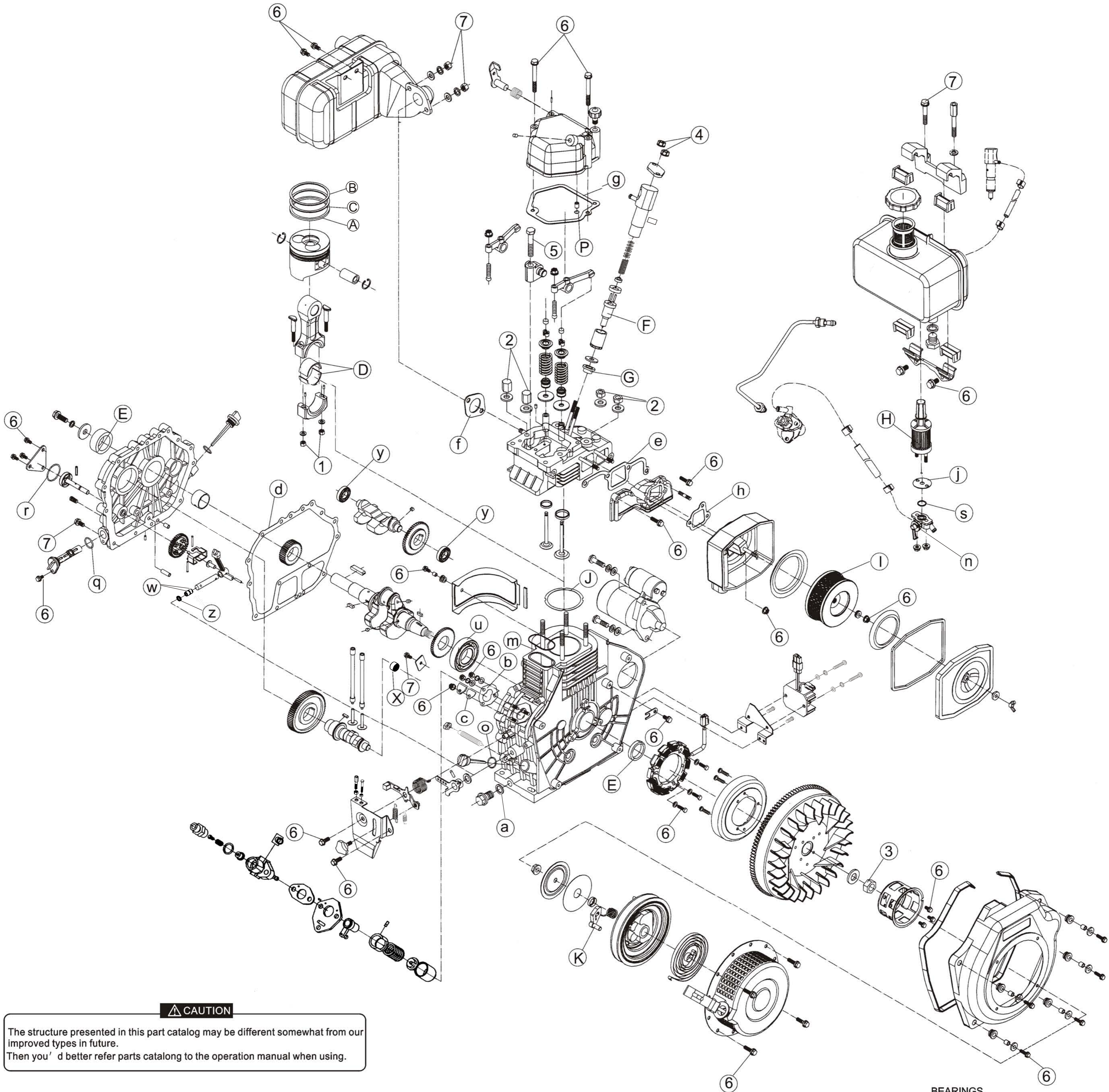


PARTS CATALOG

AIR-COOLED DIESEL ENGINE KM178

KAMA



CAUTION

The structure presented in this part catalog may be different somewhat from our improved types in future. Then you'd better refer parts catalog to the operation manual when using.

HOW TO START

CAUTION

DANGER READ MANUAL CAREFULLY BEFORE OPERATOR

WARNING DIESEL

WARNING EXTREMELY FLAMMABLE

TAGS

Ref No.	Part No.	Description	Qty.
1	KM168F-18003	Trademark Tag I	1
2	KM168F-18004	Starting Operation Tag	1
3	KM168F-18005	Caution Tag	1
4	KM178F-18007	Model Tag II	1
5	KM168F-18009	Warning Tag	1
6	KM168F-18012	Air Cleaner Tag	1
7	KM168F-18013	Air Cleaner Tag	1

EASY DESTROYED PARTS

Ref No.	Part No.	Description	Qty.	Mounted to
A	KM178F-04100	Oil Ring Unit	1	(4)Piston & Connecting Rod Assem.
B	KM178F-04001	First Air Ring	1	(4)Piston & Connecting Rod Assem.
C	KM178F-04002	Second Air Ring	1	(4)Piston & Connecting Rod Assem.
D	KM178F-04005	Connecting Rod Bushing	2	(4)Piston & Connecting Rod Assem.
E	GB/T9877.1-1988	Oil Seal Sq30 x 45 x 8	2	(1)Cylinder Block Assem.
F	KM170F-13100	Nozzle	1	(8)Fuel Injection Valve Assem.
G	KM168F-02011	Heat Insulator	1	(2)Cylinder Head Assem
H	KM178F-10300	Element Unit	1	(1)Fuel System
I	KM168F-07100	Air Cleaning Element Unit	1	(7)Air Intake System
J	KM178F-01012	Cylinder Head Gasket	1	(1)Cylinder Block Assem.
K	KM178F-14200	Starter Ratchet	1	(14)Manual Starting Assem.

RINGS

Ref No.	Part No.	Description	Qty.
m	KM178F-01007	Sheet Gasket	1
n	GB/T1235-1976	O-Ring 11 x 1.9	1
o	GB/T1235-1976	O-Ring 22.5 x 2.4	2
p	GB/T1235-1976	O-Ring 12 x 1.9	1
q	GB/T1235-1976	O-Ring 25 x 2.4	1
r	GB/T3452.1-1992	O-Ring 34 x 1.8	1
s	GB/T3452.1-1992	O-Ring 13.2 x 1.8	1

FASTENING TORQUE OF MAIN BOLTS & NUTS

Ref No.	Description	Torque
①	Connecting Rod Nut	18-21
②	Cylinder Head Nut	42-46
③	Flywheel Nut	100-120
④	Nozzle Retainer Nut	10-12
⑤	Set Bolt of Rocker Arm Seat	20-23
⑥	Standard Bolt / Nut M6	10-12
⑦	Standard Bolt / Nut M8	18-20

BEARINGS

Ref No.	Part No.	Description	Qty.
U	GB/T276-1994	Ball Bearing 6307/P5	1
w	GB/T290-1989	Needle Bearing 7941/8	2
x	GB/T290-1989	Needle Bearing HK1512	1
y	GB/T276-1994	Ball Bearing 6202/P5	2

OIL SEAL

Ref No.	Part No.	Description	Qty.
z	KM168F-11008	Lever Shaft Oil Seal	1

WASHER KIT

Ref No.	Part Number	Description	Qty.
a	KM168F-01100	Washer Unit of Drain Plug	1
b	KM168F-10014	Fuel Injection Pump Washer	2-3
c	KM168F-10016	Joint Washer	1
d	KM178F-01013	Crankcase Cover Washer	1
e	KM178F-02006	Intake Pipe Washer	1
f	KM168F-02015	Outtake Pipe Washer	1
g	KM168F-03003	Cylinder Head Cover Washer	1
h	KM168F-07001	Air Cleaner Washer	1
j	KM168F-10007	Fuel Filter Washer	1

(1) Cylinder Block Assembly (KM178F-01000)

Ref No.	Parts No.	Description	Qty.
1	KM168F-01018	Drain Plug Screw	1
1-1	KM168FGET-01018-01	Connecting bolt of drain plug	1
2	KM168F-01100	Washer Unit of Drain Plug	1
3	GB/T9877.1-1988	Oil Seal SG30×45×8(rear)	1
4	KM178F-01001	Cylinder Block	1
5	GB/T290-1989	Needle Bearing7941/8	2
6	GB/T1235-1976	O-Ring 22.5×2.4	2
7	KM178F-01002	Oil Dipstick	2
8	KM168F-11200	Fuel Controller Assem.	1
9	GB/T6173-2000	Nut M10×1.25	2
10	KM168F-01012	Forcing Stud of Fuel Injection Pump (short)	1
11	KM168F-01011	Forcing Stud of Fuel Injection Pump (long)	1
12	KM168F-10014	Fuel Injection Pump Washer	2-3
13	KM168F-10016	Joint Washer	1
14	KM168F-10015	Seal Plate	1
15	GB/T6177.1-2000	Nut M6	2
16	GB/T197.1-1985	Gasket 6	2
17	GB/T93-1987	Bolt M6×5	2
18	GB/T6170-2000	Nut M6	2
19	GB/T276-1994	Ball Bearing 6307/P5	2
20	GB/T230-1989	Needle Bearing HK1512	2
21	KM168F-10009	Thrust Plate	1
22	GB/T5789-1986	Bolt M8×12	1
23	KM178F-01003	Cushion blocking	1
24	KM178F-01211	Governor	1
25	KM178F-01201	Vibration isolation cushion block	1
26	KM178F-01202	Shear	1
27	GB/T5789-1986	Bolt M6×8	1
28	KM178F-01004	Cylinder Head Stud Bolt (short)	2
29	KM178F-01005	Cylinder Head Stud Bolt (long)	2
30	KM178F-01006	Cylinder Head Nut Gasket	4
31	KM178F-01003	Cylinder Head Nut (Thin)	2
32	KM178F-01005	Cylinder Head Nut (Thick)	2
33	KM178F-01013	Cylinder Head Shim	1
34	KM178F-01012	Cylinder Head Shim	2
35	KM178F-01007	Sheet Gasket	1
36	KM178F-01015	Crankcase Cover Washer	1
37	GB/T119.1-2000	Pin 8×12	2
38	KM178F-09003	Oil Conduit	1
39	KM168F-01021	Plunger	3
40	GB/T9877.1-1988	Oil Seal SG30×45×8(front)	1
41	KM168F-01017	Hexagonal Internal Screw Plug	1
42	KM178F-01014	Oil Seal SG30×45×8(rear)	1
43	KM178F-01016	Bolt M8×33.5	15
44	KM178F-01014	Crankcase Cover	1
	KM178F-01014	Crankcase Cover	1

(3) Cyl. Head Cover Assembly (KM178F-03000)

Ref No.	Parts No.	Description	Qty.
1	GB/T119-1986	Pin 3×16	1
2	KM168F-03001	Cylinder Head Cover	1
2-1	KM170FA-03001	Cylinder Head Cover	1
3	KM168F-03007	Breather Seat	1
4	GB/T1235-1976	O-Ring 12×1×9	1
5	KM168F-03003	Cylinder Head Cover Washer	1
5-1	KM170FA-03003	Cylinder Head Cover Washer	1
6	KM168F-01021	Plunger	1
7	KM168F-03004	Decompression Spring	1
8	KM168F-03100	Decompression Shaft Assem.	1
9	GB/T5789-1986	Bolt M6×55	2
10	KM168F-03005	Filter Screw Plug	1
	KM170FA-03000		
1	GB/T5789-1986	Bolt M6×55	3
	KM178FA-03000		
1	KM178FG-03012	Decompression Wire Sheath	2
2	KM168F-03100	Decompression Shaft Assem.	1
3	KM178FG-03011	Decompression Wire	1
4	KM178FG-03009	Outer Decompression Handle	1
5	KM178FG-03008	Decompression Handle Support	1
6	GB/T5789-1986	Bolt M6×14	3
7	KM178FG-03013	Outer Decompression Handle Sheath	1
8	GB/T6170-2000	Nut M6	1

(6) Camshaft Assembly (KM178F-06000)

Ref No.	Parts No.	Description	Qty.
1	KM178F-06100	Valve Push Rod Assem.	2
2	KM168F-06003	Valve Tappet	2
3	KM178F-06002	Camshaft Timing Gear	1
4	GB/T1096-1979	Key 4×12	1
5	KM178F-06001	Camshaft	1
5-1	KM178F-06001	Camshaft	1
	KM178FS-06000		
1	GB/T1096-1979	Key 8×30	1

(7) Air Intake Assem. (KM178F-07000)

Ref No.	Parts No.	Description	Qty.
1	KM178F-07001	Inlet Pipe	1
2	KM168F-07002	Tightening Bolt of Air Cleaner	1
3	KM168F-07001	Air Cleaning Washer	1
4	KM168F-07300	Air Cleaning Bottom Case Asm.	1
4-1	KM178FGET-07300	Air Cleaning Bottom Case Asm.	1
5	GB/T6177.1-2000	Nut M6	4
6	KM168F-07303	Shockproof Sheet Gasket II	1
7	KM168F-07100	Air Cleaner Element Assem.	1
8	KM168F-07101	Shockproof Unit	1
9	KM168F-07203	Shockproof Sheet Gasket I	1
10	KM168F-07201	Sheet Gasket	1
11	KM168F-07202	Air Cleaner Cover	1
12	KM168F-07210	Shockproof Seal Assem.	1
13	GB/T62-1988	Nut M6	1

(8) Fuel Injection Valve Assembly (KM170F-13000)

Ref No.	Parts No.	Description	Qty.
1	KM178FS-07000		
1	KM178F-S-07201	Air filter connecting disc	1
2	KM168F-07402	Tightening Bolt of Air cleaner	3
3	KM178FS-07002	Washer I	1
4	GB/T6177.1-2000	Nut M6	6
5	KM178F-S-07100	Air filter Case	1
6	KM178FS-07005	Sheet gasket	1
7	KM178F-S-07004	Air filter Protective Plate	1
8	KM178FS-07405	Element	1
9	KM178FS-07006	O-ring	1
10	KM178F-S-07400	Support weldment of element I	1
11	KM178FS-07008	Air filter sump	1
12	KM178F-S-07007	Sump lock ring	1

(12) Fuel Injection Pump Assembly (KM178F-12000)

Ref No.	Parts No.	Description	Qty.
1	KM170F-12001	Fuel Delivery Valve Forcing Holder	1
2	KM170F-12002	Dumping Block	1
3	KM170F-12003	Fuel Delivery Valve Spring	1
4	KM170F-12011	High-pressure Sheet Gasket	2
5	KM170F-12100	Fuel Delivery Assembly	1
6	KM170F-12400a	Intake Oil Pipe	1
6-1	KM178FGET-12400	Intake Oil Pipe	1
7	KM178F-12200	FIP Block Plunger Assembly	1
8	KM170F-12004	Volt-adjusting Washer	AsRequired
9	GB/T879-1986	Pin 2×6	2
10	KM170F-12005	FIP Connecting Plate	1
11	KM170F-12006	FIP Limiting Sheath	1
12	GB/T879-1986	Pin 3×8	1
13	KM170F-12007	Spring Supporting Block	1
14	KM170F-12008	Plunger Spring	1
15	KM170F-12009	Spring Holder	1
16	KM170F-12300a	Tappet	1
	KM178F-12000	Fuel Injection Pump Assem	1
	KM178FGET-12000		
1	DF1305A	Start Magnetic Valve	1
2	GB/T808-1986	Nut M10×1	1

(14) Recoil Starter Assembly (KM178F-14000)

Ref No.	Parts No.	Description	Qty.
1	GB/T6187-1986	Nut M8	1
2	KM178F-14004	Friction Reel	1
3	KM178F-14002	Friction Plate	1
4	KM178F-14003	Spring Cover	1
5	KM178F-14200	Ratchet	1
6	KM178F-14200	Ratchet	1
6-1	KM178F-14009	Return Spring	1
7	KM178F-14008	Return Spring	1
8	KM178F-14001	Starter Reel	1
9	KM178F-14006	Spiral Spring	1
10	KM178F-14100	Outer Case Assem	1
9-1	KM178F-14100	Outer Case Assem	1
10	GB/T5789-1986	Bolt M6×8	4
11	KM178F-14005	Starter Rope	1
12	KM178F-14007	Starter Handle	1

(2) Cylinder Head Assem. (KM178F-02000)

Ref No.	Parts No.	Description	Qty.
1	KM178F-02006	Intake Pipe Shim	1
2	KM178F-02101	Cylinder Cover	1
2-1	KM178FA-02101	Cylinder Cover	1
3	KM178F-02016	Intake Valve	1
4	KM178F-02017	Exhaust Valve	1
5	KM178F-02103	Inlet Valve Seat	1
6	KM178F-02104	Exhaust Valve Seat	1
7	GB/T899-1988	Stud AM8×20	2
8	KM168F-02015	Heat Insulator	1
9	GB/T900-1988	Stud AM6×55	2
10	KM178F-02102	Valve Conduit	2
11	GB/T119.1-2000	Pin 4×8	2
12	KM168F-02007	Valve Spring Gasket	2
13	KM178F-02015	Valve Conduit Oil Seal	2
14	KM178F-02001	Valve Spring	2
15	KM178F-02014	Valve Spring Seat	2
16	KM178F-02002	Valve Retaining Clip	4
17	KM178F-02013	Valve Adjusting Cushion	2
18	KM168F-02008	Valve Clearance Adjusting Screw	2
19	KM168F-02019	Valve Clearance Adjusting Locknut	2
20	KM168F-02012	Exhaust Valve Rocker Arm	1
20-1	KM170FA-02012	Exhaust Valve Rocker Arm	1
21	KM168F-02017	Set Bolt of Rocker Arm Seat	1
21-1	KM170FA-02017	Set Bolt of Rocker Arm Seat	1
22	KM168F-02200	Rocker Arm Seat Assem.	1
22-1	KM170FA-02200	Rocker Arm Seat Assem.	1
23	KM168F-02013	Intake Valve Rocker Arm	1
23-1	KM170FA-02013	Intake Valve Rocker Arm	1
24	GB/T6177.1-2000	Nut M6	2
25	KM168F-02009	Fuel Injection Valve Retainer	1
26	KM168F-02018	Heat Insulator Gasket	1
27	KM168F-02011	Heat Insulator	1
27-1	KM170FA-02011	Heat Insulator	1
28	GB/T900-1988	Stud AM8×50	2
28-1	GB/T900-1988	Stud AM8×55	2
29	GB/T5789-1986	Bolt M6×25	2
	KM178FGET-02000		
1	KM178FGET-02105	Rubber plug	1
	KM178FA-02000		
1	GB/T119.1-2000	Pin 4×8	2
2	GB/T894.1-1986	Retainer Ring 15	2

(4) Piston & Connecting Rod Assembly (KM178F-04000)

Ref No.	Parts No.	Description	Qty.
1	KM178F-04001	First Air Ring	1
2	KM178F-04002	Second Air Ring	1
3	KM178F-04003	Piston	1
4	KM178F-04003	Piston	1
4-1	KM178FS-04003	Piston	1
5	KM178F-04004	Piston Pin	1
6	GB/T893.1-1986	Retainer Ring 21	2
7	KM178F-04024	Connecting Rod Bolt	2
8	KM178F-04007	Connecting Rod Block	1
8-1	KM178FA-04007	Connecting Rod Block	1
11-1	KM178F-04005	Connecting Rod Shaft Bushing	2
10	GB/T119.2-2000	Pin 3×10	2
11	KM178F-04006	Connecting Rod Cover	1
11-1	KM178F-04005	Connecting Rod Cover	1
12	KM168F-04009	Connecting Rod Nut Gasket	2
13	KM168F-04011	Connecting Rod Nut	2

(5) Crank Shaft & Flywheel Assembly (KM178F-05000)

Ref No.	Parts No.	Description	Qty.
1	GB/T276-1994	Ball Bearing 6202/P5	2
2	KM178F-05009	Balance shaft	1
3	KM168F-05006	Key	2
4	KM178F-05014	Timing Gear of Balance Shaft	1
5	KM178F-05013	Output End Set Bolt	1
6	GB/T93-1987	Gasket 10	1
7	KM178F-S-05008	Output End Gasket	1
8	KM178F-05007	Crankshaft Timing Gear	1
9	GB/T1096-1979	Key 6×30	1
10	KM178F-05006	Crankshaft	1
	KM178FA-05006	Crankshaft	1
	KM178FW-05006	Crankshaft	1
	KM178FP-05006	Crankshaft	1
11	KM178F-05006	Crankshaft	1
12	GB/T308-1989	Steel Ball 1/4"	1
13	GB/T1096-1979	Key 5×12	2
14	KM178F-05012	Drive Gear of Balance Shaft	1
15	KM178F-05102	Flywheel Tooth	1
16	KM178F-05101	Flywheel	1
17	KM178F-05101	Flywheel	1
18	KM168F-05003	Flywheel Nut Gasket	1
19	KM168F-05002	Flywheel Nut	1
	KM178F-05001	Starting Ratchet Reel	1
	GB/T5789-1986	Bolt M6×12	3

(9) Muffler Assem. (KM178F-08000)

Ref No.	Parts No.	Description	Qty.
1	KM178F-08000	Muffler Assem.	1
1-1	KM178FG-08000	Muffler Assem.	1
2	GB/T6170-2000	Bolt M8	2
3	GB/T93-1987	Gasket 8	2
4	GB/T97.1-1985	Gasket 8	2
5	GB/T5789-1986	Bolt M6×14	2

(10) Lubricating system (KM178F-09000)

Ref No.	Parts No.	Description	Qty.
1	GB/T5789-1986	Bolt M6×12	3
2	KM168F-09001	Lube Oil Pump Cover	1
3	GB/T3452.1-1992	O-Ring 34×1.8	1
4	GB/T119.1-2000	Pin 3×16	1
5	KM168F-09100	Engine Oil Pump Unit	1
6	KM178F-09002	Drive Gear of Lube Oil Pump	1
7	KM168F-11001	Flying Weight	2
8	KM168F-11002	Flying Weight Pin	2
9	GB/T1235-1976	O-Ring 5×2.4	1
10	KM178F-09200	Lube Oil Filter Assem.	1
11	GB/T5789-1986	Bolt M6×4	1

(11) Fuel System Assembly (KM178F-10000)

Ref No.	Parts No.	Description	Qty.
1	GB/T5789-1986	Bolt M8×45	1
2	KM168F-10003	Set Bolt of Fuel Tank Upper Support	1
3	GB/T97.1-1985	Gasket 6	2
4	KM178F-10001	Fuel Tank Upper Support</	