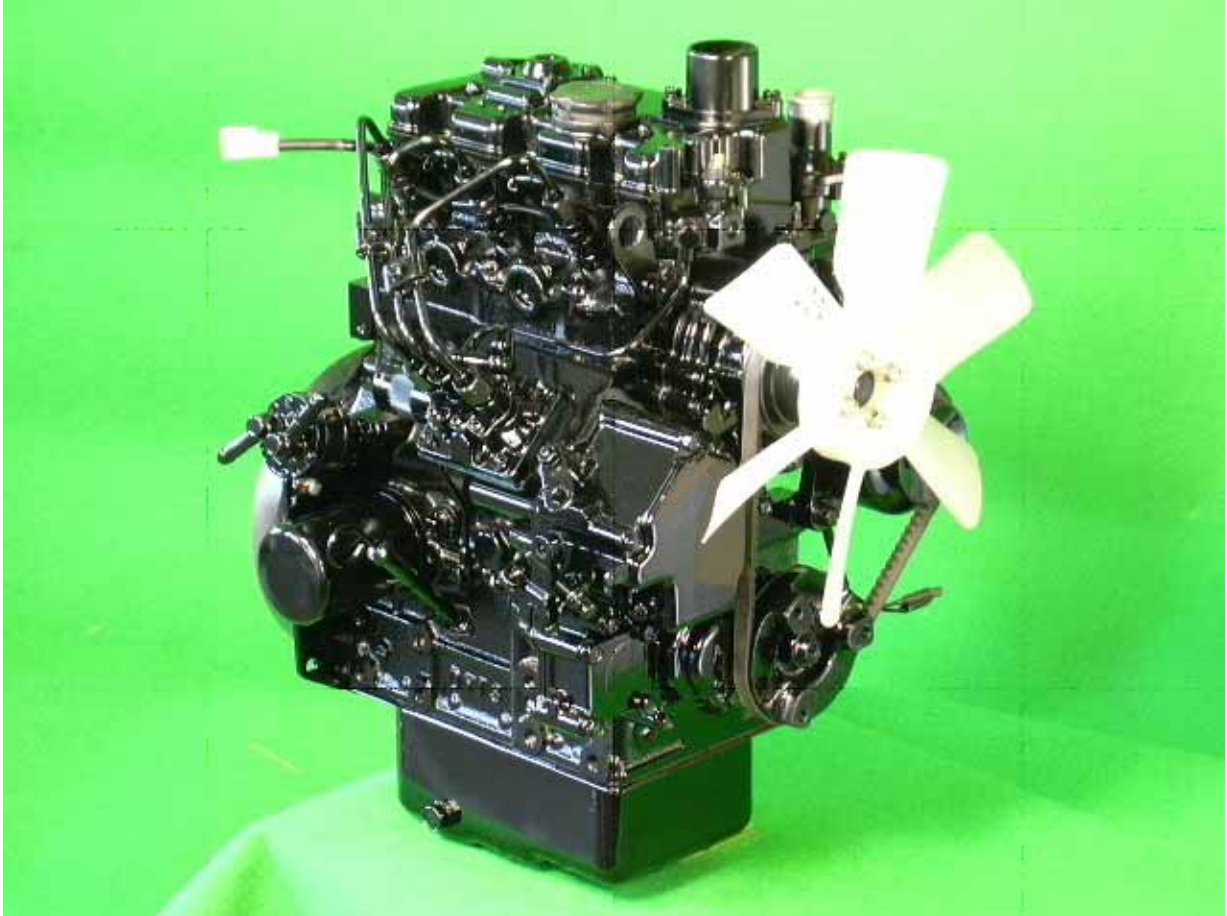


# SHIBAURA DIESEL ENGINE

MODEL: S773L

## PARTS MANUAL



SUPPORTED BY HUSTLER TURF EQUIPMENT AND EXCEL  
INDUSTRIES, INC.



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# General Information

This Manual covers the Shibaura diesel engine **S773L**

## Service Literature

PART NO.	DESCRIPTION
109821	SHIBAURA DIESEL ENGINE MANUAL
109823	SHIBAURA DIESEL ENGINE SERVICE MANUAL

*Note:* When ordering parts, you must use the part number as shown for each part, not the index number. Always give the model and serial number to your parts and service representative.

*Note:* Items sold in bulk such as seals and hoses are sold by the foot.

## Using this manual

This Parts Manual provides a complete parts listing for the unit. Illustrations used were current at the time of printing, but subsequent production changes may cause your engine to vary slightly in detail. Excel Industries, Inc. reserves the right to redesign and change the engine as deemed necessary, without notification. If a change has been made to your machine which is not reflected in this parts manual, see your Hustler® dealer for current information and parts.

## Hardware Description Codes & Abbreviations

The following codes are used throughout this parts manual. Refer to this list when ordering parts.

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
CB	CARRIAGE BOLT	MB	MACHINE BUSHING
CE	CLEVIS PIN	MS	MACHINE SCREW
CN	CLIP NUT	NT	NUT
CP	COTTER PIN	SC	SELF TAPPING CAP SCREW
CS	CAP SCREW	SH	SOCKET HEAD
CW	CUP WASHER	SB	SHOULDER BOLT
FDRW	FENDER WASHER	SS	SET SCREW
FW	FLAT WASHER	OD	OUTSIDE DIAMETER
HX	HEX HEAD	ID	INSIDE DIAMETER
LW	LOCK WASHER	WN	WELD NUT

## Standard Torques

The following chart lists the standard torque values for the threaded fasteners found in this manual. Torque all cap screws, nuts and set screws to these values unless a different torque is shown in the Notes section next to the fastener.

SIZE	FT-LBS	N•M	SIZE	FT-LBS	N•M
.250	8.2	11.1	M3	1	1.3
.312	17	23	M4	2.2	3
.375	30	40	M5	4.5	6.1
.438	48	65	M6	7.7	10.4
.500	73	99	M8	18.5	25
.562	105	143	M10	37	50
.625	145	200	M12	64	87
.750	260	350	M14	80	108.5
.875	420	565	M16	160	215
1.00	625	850	M20	320	435
			M24	555	750

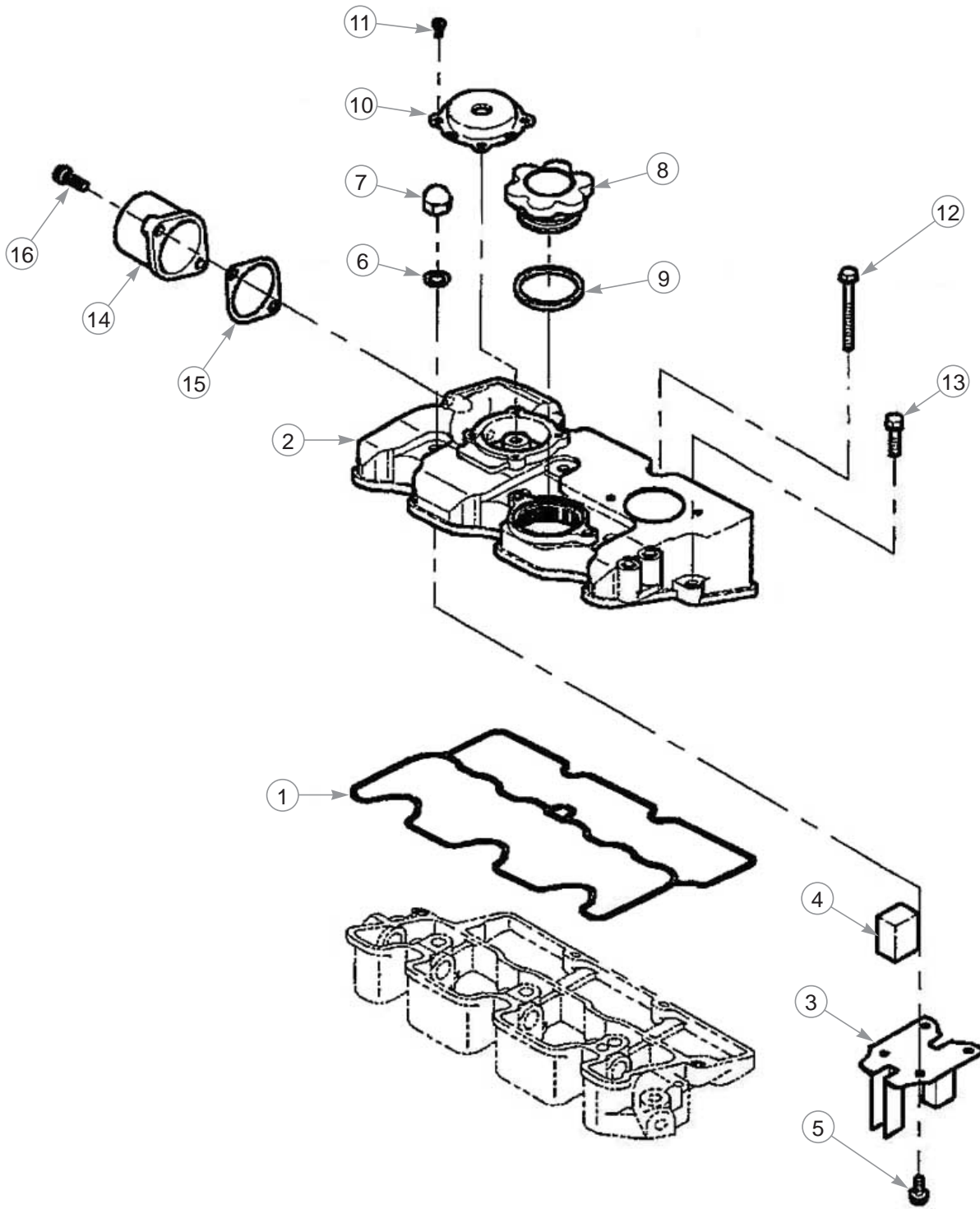


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# Valve Cover





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## Valve Cover

INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	111996420	1	VALVE COVER GASKET
2	111211120	1	VALVE COVER
3	110666220	1	BAFFLE
4	110666060	1	STEEL WOOL
5	015600406	4	SCREW
6	140996260	3	GASKET
7	024600008	3	CAP NUT
8	198436010	1	CAP
9	052100400	1	O-RING
10	110566080	1	BREATHER VALVE
11	011100408	4	BOLT
12	011310680	3	BOLT
13	011310625	2	BOLT
14	135566560	1	AIR INTAKE
15	135996750	1	GASKET
16	011310620	2	BOLT

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### NOTES:



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## **Rocker Arm Assembly**

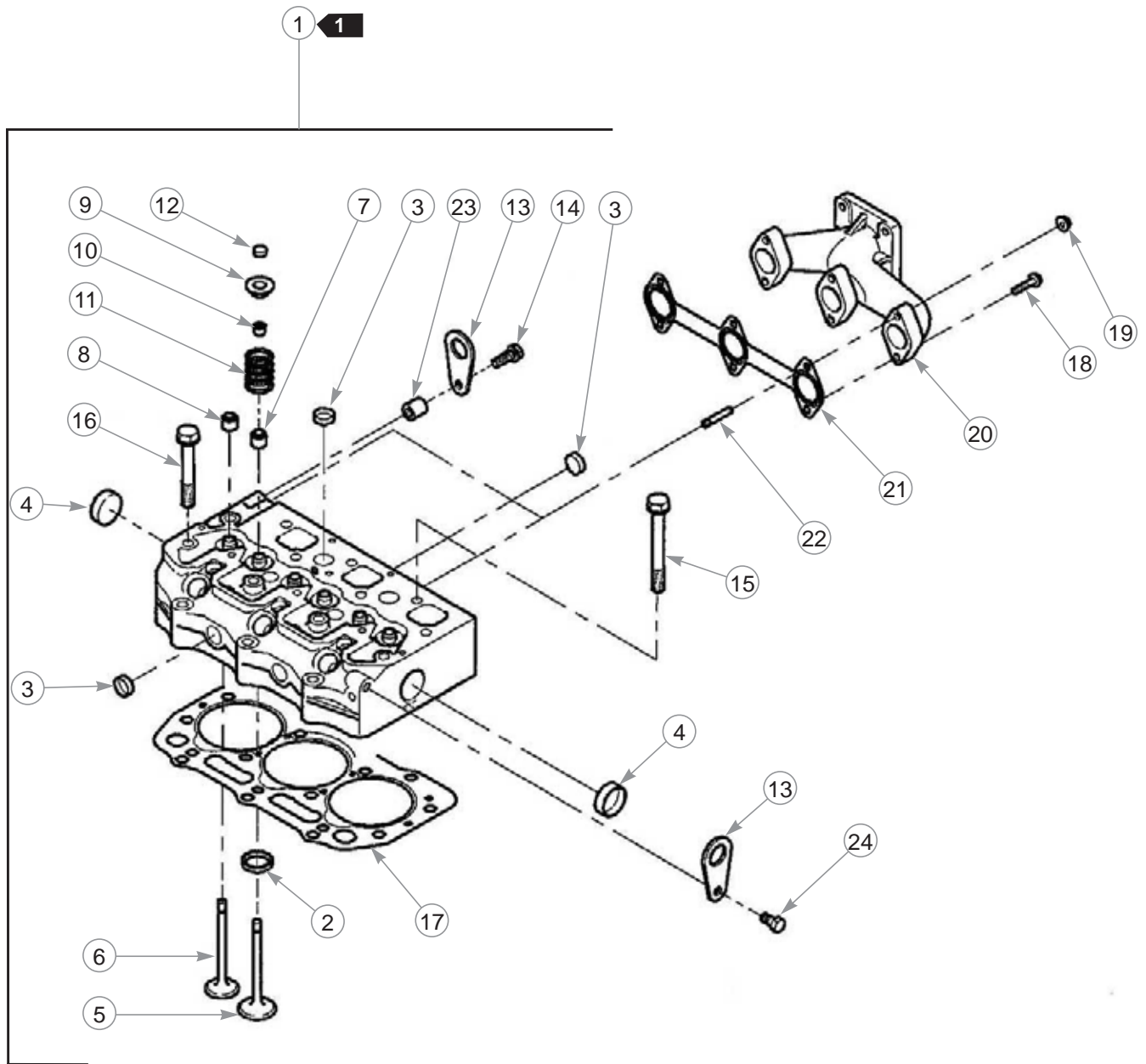
INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	120036980	1	ROCKER ARM ASSEMBLY
2	120356200	3	ROCKER ARM COMPL; INTAKE
3	120356210	3	ROCKER ARM COMPL; EXHAUST
4	199486220	6	SCREW
5	020109076	6	NUT
6	120316300	1	ROCKER ARM SHAFT
7	198216780	2	SPRING
8	199280280	4	SHIM
9	015100410	1	SCREW
10	052100120	1	O-RING
11	198436150	1	PLUG
12	140607270	1	OIL PIPE COMPL
13	140996260	4	GASKET
14	198486780	2	EYE BOLT
15	120996150	1	GASKET
16	011310625	2	BOLT
17	023100008	3	NUT
18	012109177	3	STUD BOLT
19	185246250	1	OIL PRESSURE SWITCH

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### **NOTES:**

1. Item 1 includes (items 2–11).

# Cylinder Head & Exhaust Manifold



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## **Cylinder Head & Exhaust Manifold**

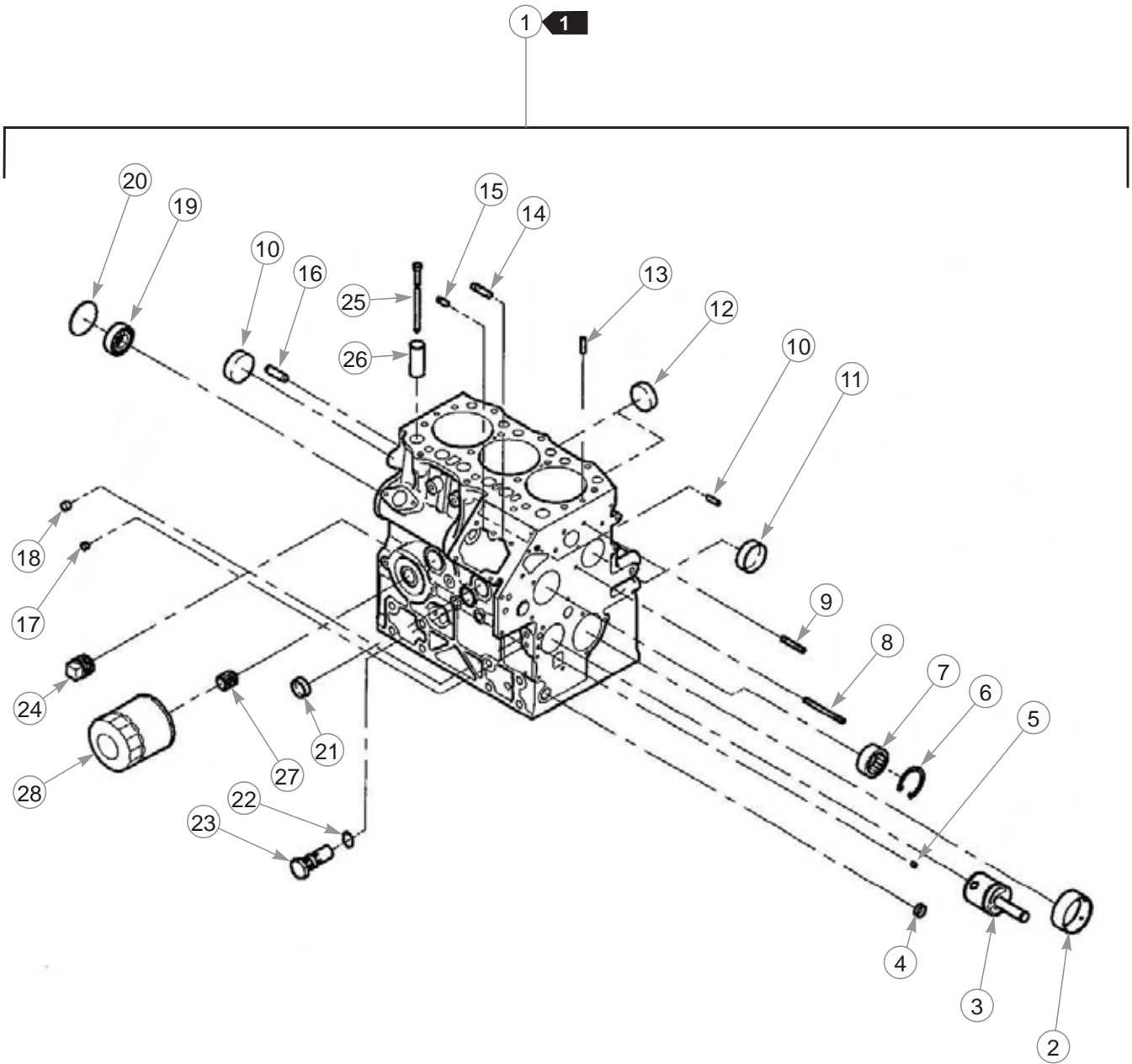
INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	111011440	1	CYLINDER HEAD ASSEMBLY
2	110136435	3	VALVE SEAT : INTAKE
3	064210018	8	SEALING CAP
4	064210030	2	SEALING CAP
5	120166360	3	INTAKE VALVE
6	120176250	3	EXHAUST VALVE
7	120406070	3	VALVE GUIDE SEAL : INTAKE
8	120406050	3	VALVE GUIDE SEAL : EXHAUST
9	120186080	6	RETAINER
10	120226070	12	COTTER
11	198216700	6	SPRING
12	120216041	6	CAP
13	195816540	2	HANGER
14	011510830	1	BOLT
15	111136440	11	HEAD BOLT
16	111136450	3	HEAD BOLT
17	111147560	1	HEAD GASKET T=1.2
	111147570	1	HEAD GASKET T=1.3
18	011310625	4	BOLT
19	023100006	2	NUT
20	135616311	1	EXHAUST MANIFOLD
21	135996541	1	GASKET
22	012110625	2	STUD BOLT
23	199236680	1	COLLAR
24	011510816	1	BOLT

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### **NOTES:**

1. Item 1 includes (items 2–11).

# Cylinder Block



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# Cylinder Block

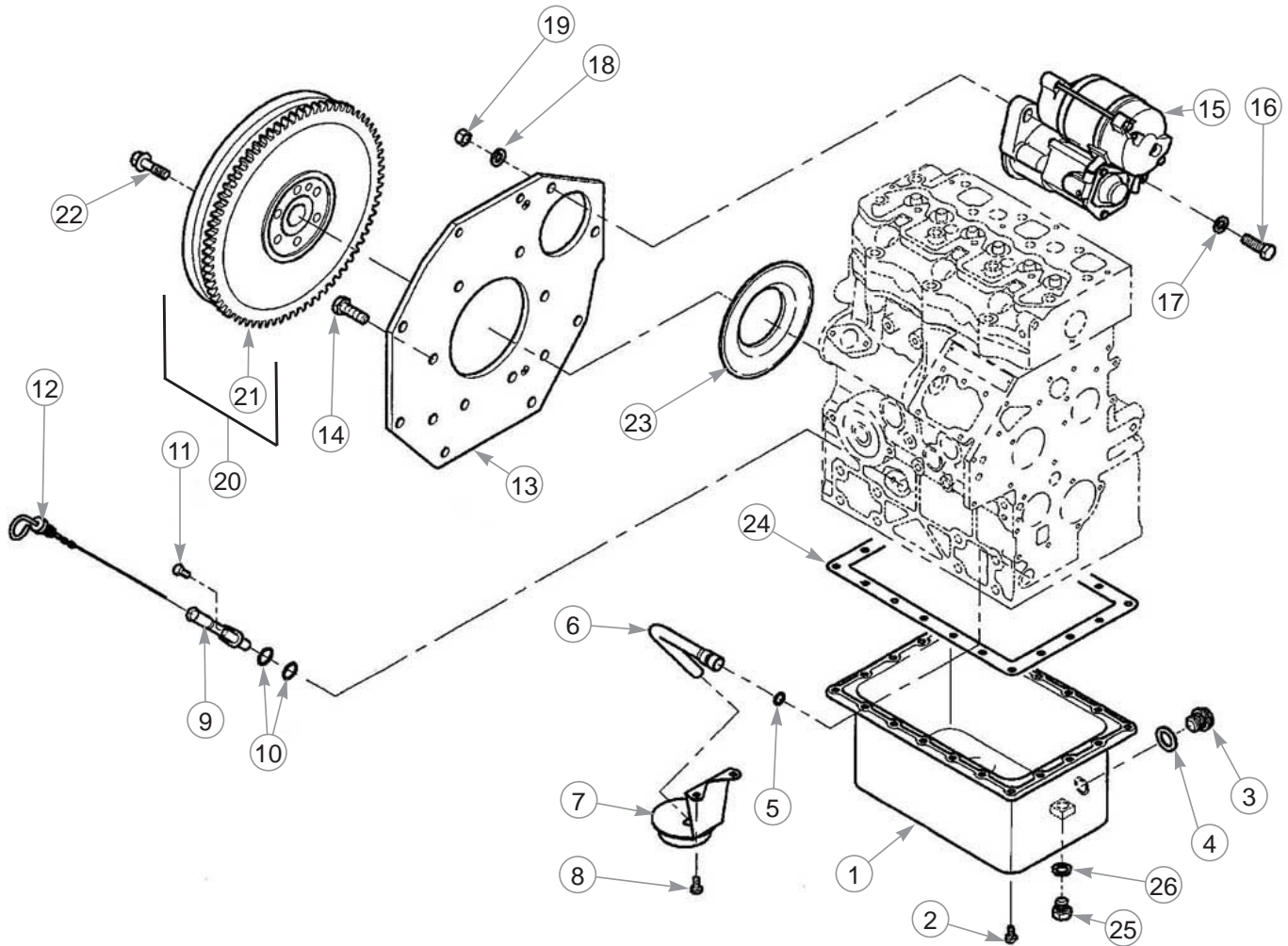
INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	110101690	1	CYLINDER BLOCK COMPL
2	198517592	1	BUSHING; S.T.D.
	198517596	1	BUSHING; U.S. 0.25
	198517599	1	BUSHING; U.S. 0.50
3	165296142	1	IDLE GEAR SHAFT COMPL
4	064210015	1	SEALING CAP
5	198466050	1	BLANK PLUG
6	036509005	1	SNAP RING
7	042303015	1	NEEDLE BEARING
8	012110660	1	STUD BOLT
9	012110635	1	STUD BOLT
10	064209055	2	SEALING CAP
11	030500616	2	DOWEL PIN
12	064210035	2	SEALING CAP
13	030309005	2	SPRING PIN
14	012110620	2	STUD BOLT
15	030500512	2	DOWEL PIN
16	030501025	2	DOWEL PIN
17	198466030	4	BLANK PLUG
18	198466010	4	BLANK PLUG
19	040106203	1	BEARING
20	064100045	1	EXPANSION PLUG
21	064210025	1	SEALING CAP
22	052109078	1	O-RING
23	140036220	1	RELIEF VALVE ASSEMBLY
24	064500060	1	PLUG
25	120456222	6	PUSH ROD COMPL
26	120116160	6	TAPPET
27	140546020	1	FILTER JOINT
28	140517020	1	OIL FILTER COMPL

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## NOTES:

1. Item 1 includes (items 2–21).

# Oil Pan, Flywheel, & Starter





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## **Oil Pan, Flywheel, & Starter**

INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	110701110	1	OIL PAN COMPL
2	010109235	20	BOLT
3	010109238	1	BOLT
4	025100016	1	SEAL WASHER
5	052109076	1	O-RING
6	140986830	1	OIL PIPE
7	140406500	1	SUCTION FILTER COMPL
8	011310612	2	BOLT
9	110756490	1	GAUGE GUIDE COMPL
10	052109113	2	O-RING
11	011310612	1	BOLT
12	198416610	1	GAUGE COMPL
13	110361160	1	BACK PLATE
14	011511020	8	BOLT
15	185086670	1	STARTER
16	010311040	2	BOLT
17	026100010	2	WASHER
18	027100010	2	SPRING WASHER
19	020500010	2	NUT
20	115357231	1	FLYWHEEL COMPL
21	115376130	1	RING GEAR
22	010109340	6	BOLT
23	050209107	1	OIL SEAL
24	110996800	1	GASKET
25	010411212	1	BOLT
26	025100012	1	SEAL WASHER

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### **NOTES:**

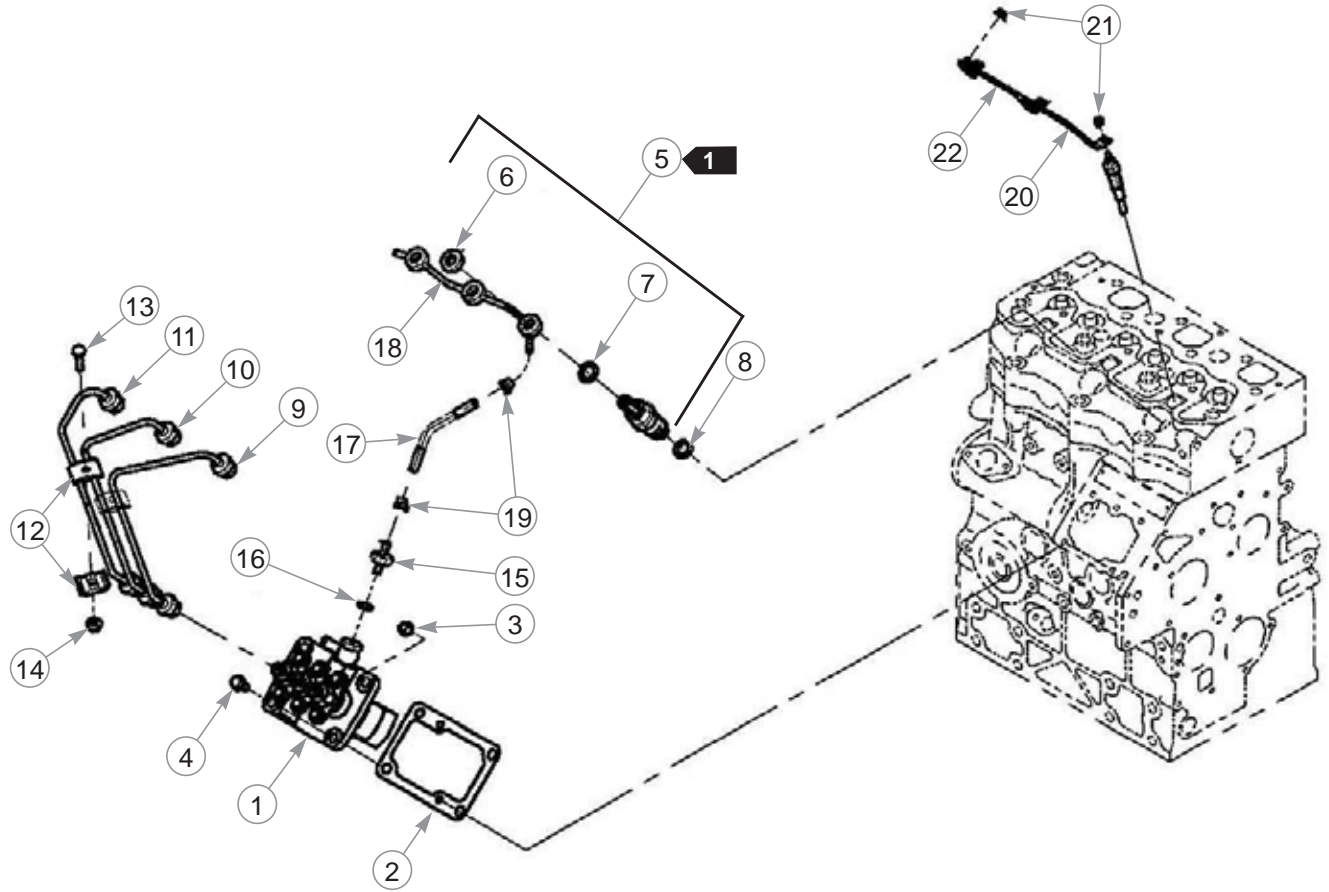
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# Injector Pump & Injectors



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## **Injector Pump & Injectors**

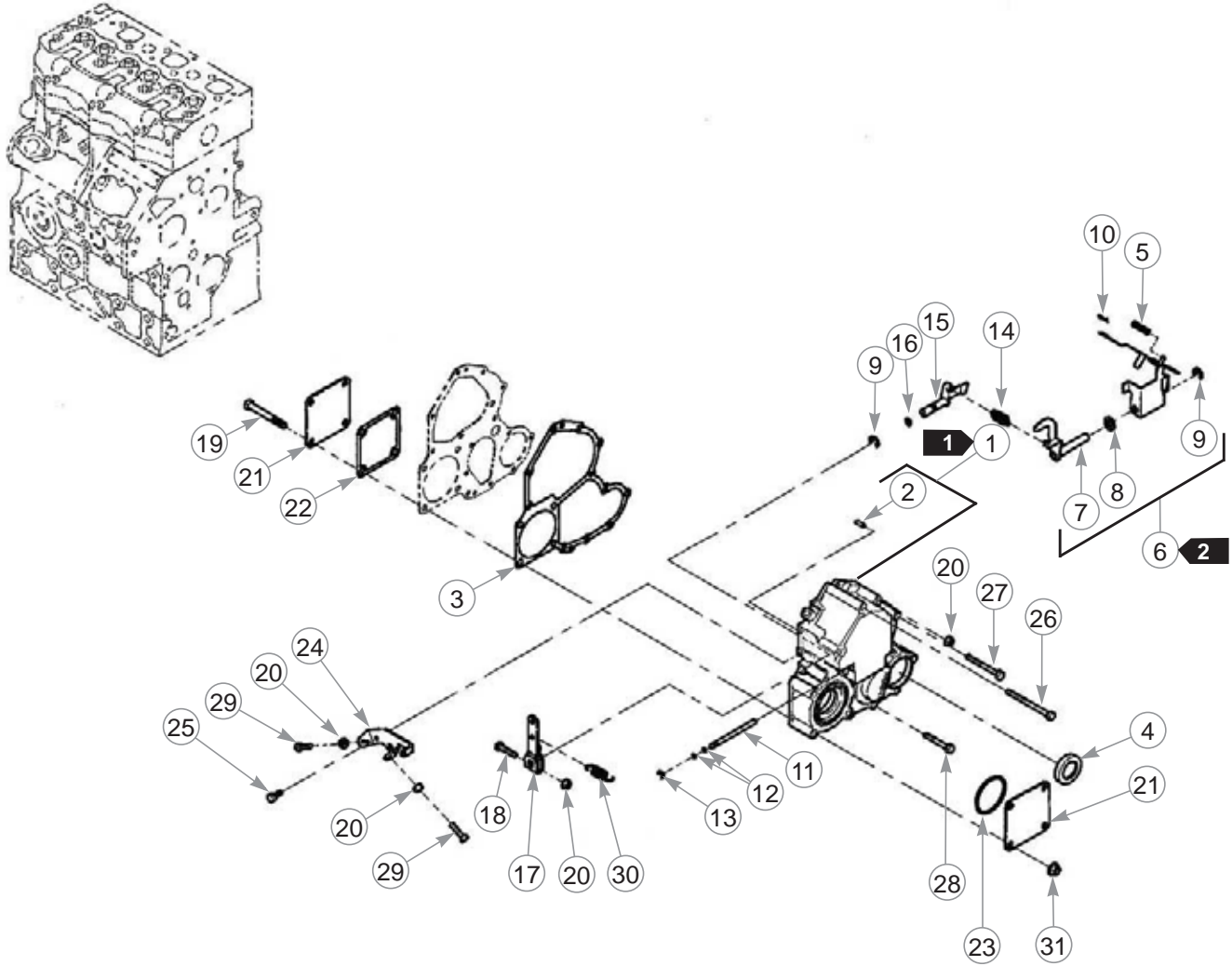
INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	131017641	1	INJECTION PUMP ASSEMBLY
2	131426300	1	ADJUSTING SHIM SET
3	023100006	2	NUT
4	011310620	2	BOLT
5	131406440	3	INJECTOR ASSEMBLY
6	131446006	3	NUT
7	131426230	3	GASKET
8	131426200	3	GASKET
9	131507740	1	INJECTION PIPE COMPL
10	131507750	1	INJECTION PIPE COMPL
11	131507760	1	INJECTION PIPE COMPL
12	199106021	4	CLAMP COMPL
13	010110625	2	BOLT
14	023100006	2	NUT
15	131246280	1	CONNECTOR
16	025100006	1	SEAL WASHER
17	068204090	1	RUBBER HOSE
18	131606920	1	RETURN PIPE COMPL
19	067200078	2	HOSE CLIP
20	185366220	3	GLOW PLUG
21	023100004	4	NUT
22	185376372	1	CONNECTOR

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### **NOTES:**

1. Item 5 includes (items 6–7).

# Timing Gear Case & Governor



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## **Timing Gear Case & Governor**

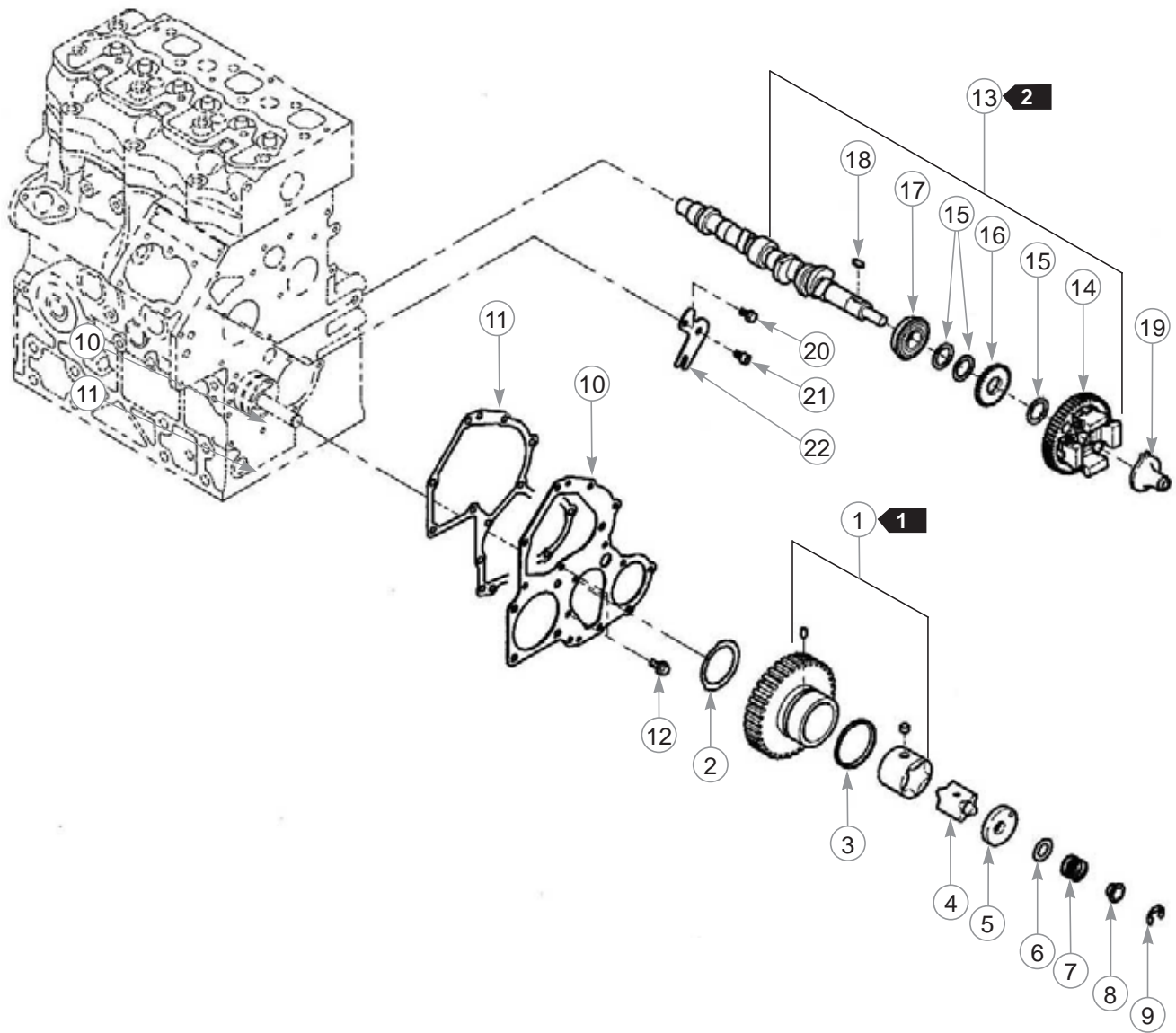
INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	165106930	1	TIMING GEAR CASE COMPL
2	030300414	1	SPRING PIN
3	165996530	1	GASKET
4	198636090	1	OIL SEAL
5	198217560	1	START SPRING
6	125046160	1	GOVERNOR LEVER ASSEMBLY
7	125416151	1	TENSIONER LEVER COMPL
8	026200010	1	WASHER
9	036800008	2	SNAP RING
10	031100004	1	SNAP PIN
11	125116131	1	SHAFT
12	052109108	2	O-RING
13	036800005	1	SNAP RING
14	198217110	1	MAIN SPRING
15	125156250	1	ARM COMPL
16	052109110	1	O-RING
17	125416300	1	GOVERNOR LEVER
18	010110630	1	BOLT
19	010310865	4	BOLT
20	023100006	4	NUT
21	165206700	2	COVER
22	165996610	1	GASKET
23	052300600	1	O-RING
24	125976120	1	STAY
25	011310614	2	BOLT
26	011310680	2	BOLT
27	011310660	3	BOLT
28	011310640	5	BOLT
29	010109264	2	BOLT
30	398210070	1	SPRING
31	023100008	4	NUT

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### **NOTES:**

1. Item 1 includes (item 2).
2. Item 6 includes (items 7–9).

# Oil Pump & Camshaft





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## **Oil Pump & Camshaft**

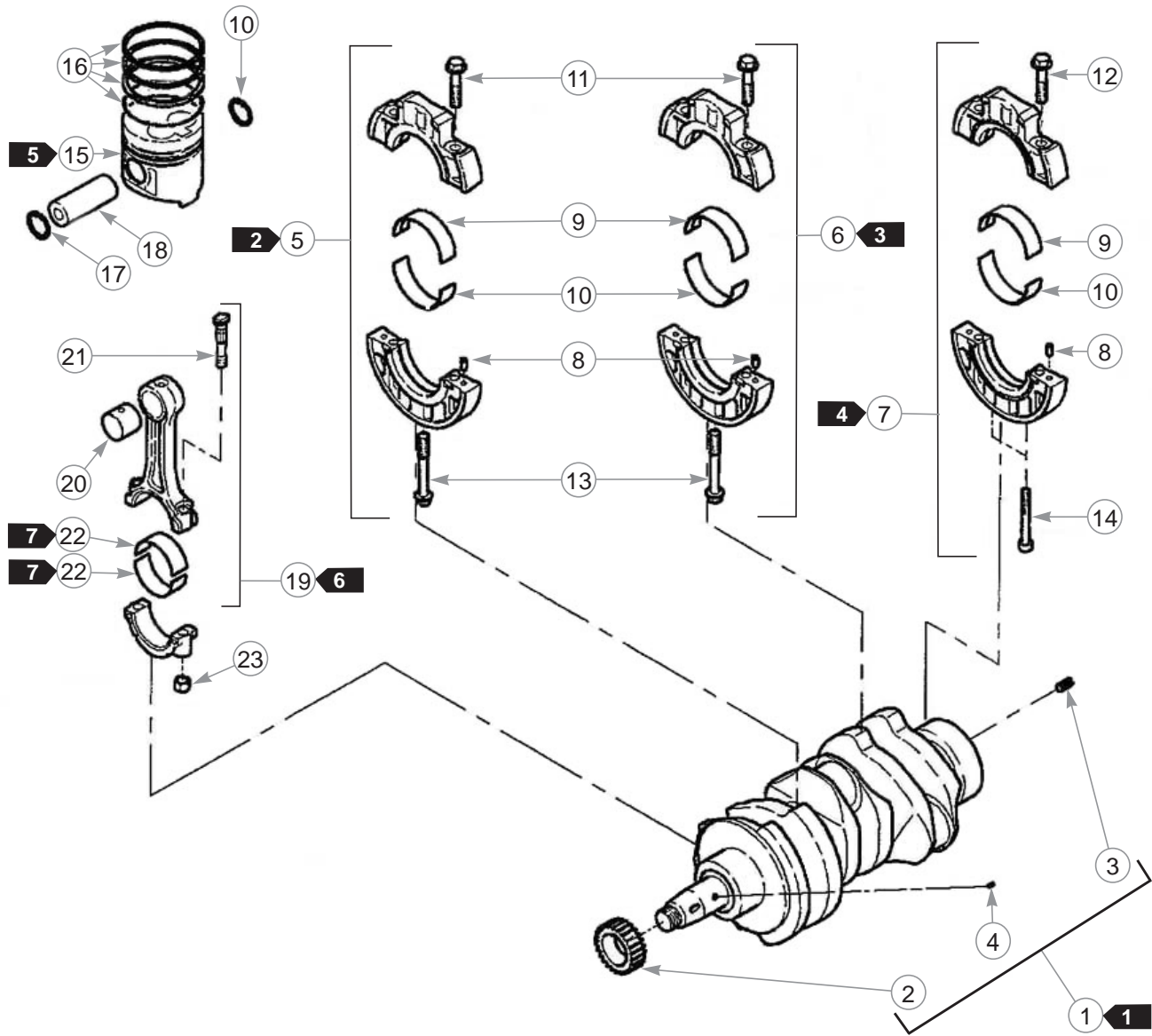
INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	165026101	1	IDLE GEAR ASSEMBLY
2	199266180	1	THRUST WASHER
3	198216821	1	SPRING
4	140166131	1	ROTOR
5	140116140	1	OIL PUMP COVER
6	199286340	1	SHIM KIT
7	198216720	1	SPRING
8	199236540	1	COLLAR
9	036800010	1	SNAP RING
10	165166520	1	FRONT PLATE
11	165996520	1	GASKET
12	011310612	3	BOLT
13	120026650	1	CAM SHAFT ASSEMBLY
14	120016001	1	CAM GEAR COMPL
15	199216230	3	SPACER
16	120736081	1	GEAR
17	040109059	1	BEARING
18	034100508	1	KEY
19	125256120	1	SLIDE COMPL
20	011310612	1	BOLT
21	010700610	1	BOLT
22	199566651	1	PLATE

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### **NOTES:**

1. Item 1 includes (item 3).
2. Item 13 includes (items 14–18).

# Crankshaft & Pistons



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## **Crankshaft & Pistons**

INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	115256830	1	CRANK SHAFT COMPL
2	115276180	1	CRANK SHAFT GEAR
3	030300816	1	SPRING PIN
4	030509020	1	DOWEL PIN
5	110156400	1	BEARING HOLDER ASSEMBLY G.1
6	110156410	1	BEARING HOLDER ASSEMBLY G.2
7	110156420	1	BEARING HOLDER ASSEMBLY G.3
8	030500612	6	DOWEL PIN
9	198517572	3	METAL; UPPER S.T.D.
	198517576	3	METAL; UPPER U.S. 0.25
	198517579	3	METAL; UPPER U.S. 0.50
10	198517582	3	METAL; LOWER S.T.D.
	198517586	3	METAL; LOWER U.S. 0.25
	198517589	3	METAL; LOWER U.S. 0.50
11	010810840	4	BOLT
12	010810845	2	BOLT
13	011510850	2	BOLT
14	010700845	2	BOLT
15	115017611	3	PISTON KIT S.T.D.
16	115107240	3	PISTON RING KIT S.T.D.
17	115326231	3	PISTON PIN
18	036500021	6	SNAP RING
19	115026340	3	CONNECTING ROD ASSEMBLY (NOT SHOWN)
20	198517125	3	BUSHING
21	115176150	6	CONNECTING ROD BOLT
22	198517602	6	METAL S.T.D.
	198517606	6	METAL S.T.D. 0.25
	198517609	6	METAL S.T.D. 0.50
23	020109075	6	NUT

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### **NOTES:**

1. Item 1 includes (items 2, 3 & 4).
2. Item 5 includes (items 8–11 & 13).
3. Item 6 includes (items 8–11 & 13).
4. Item 7 includes (items 8–10,12 & 14).
5. Item 15 includes (item 16).
6. Item 19 includes (items 20, 21, & 22).
7. Order two bearing inserts per connector rod.

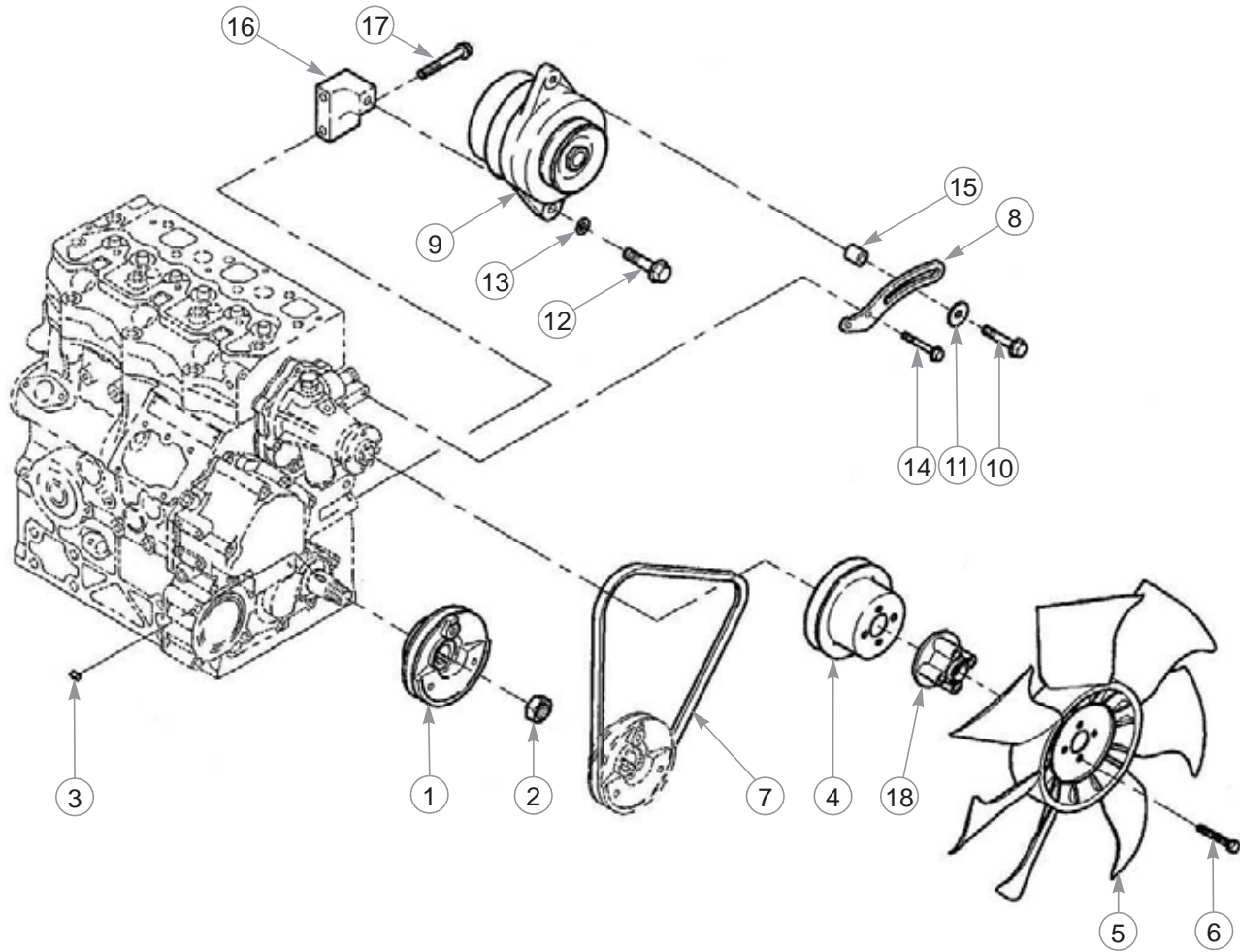


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## Section 4

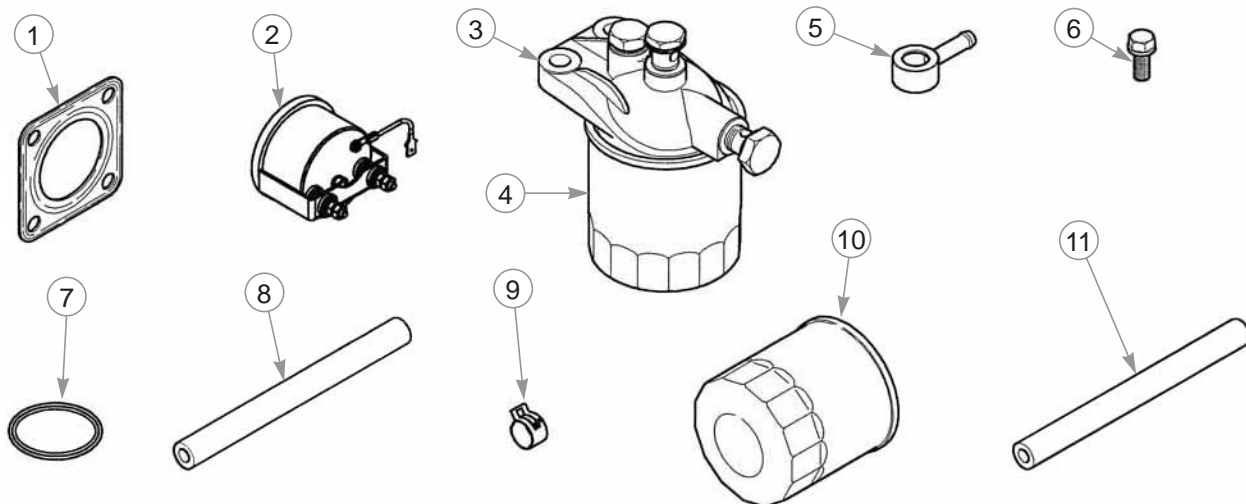
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# Fan & Alternator



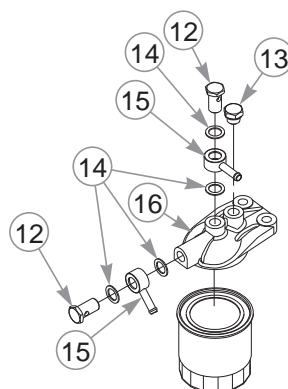
INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	115391070	1	CRANK SHAFT PULLEY
2	020800018	1	NUT
3	034100508	1	KEY
4	145336490	1	FAN PULLEY
5	145306520	1	COOLING FAN COMPL
6	011310645	4	BOLT
7	080109108	1	V-BELT
8	185726971	1	ADJUSTING PLATE
9	185046440	1	ALTERNATOR
10	011510840	1	BOLT
11	026109017	1	WASHER
12	011511040	1	BOLT
13	026100010	1	SPRING WASHER
14	011310616	2	BOLT
15	199236680	1	COLLAR
16	185977390	1	MOUNT
17	011510855	2	BOLT
18	145386540	1	FAN HOLDER

## Accessory Parts



INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	314990013	1	GASKET
2	385710011	1	THERMOMETER
3	130306190	1	FUEL FILTER ASSEMBLY
4	130366120	1	FUEL FILTER, SPIN ON
5	131246240	2	PIPE JOINT
6	110466031	1	PIPE FILLER
7	052100420	1	O-RING
8	068209084	1	RUBBER HOSE
9	067200130	4	HOSE CLIP
10	140517020	1	OIL FILTER COMPL
11	068209104	1	RUBBER HOSE

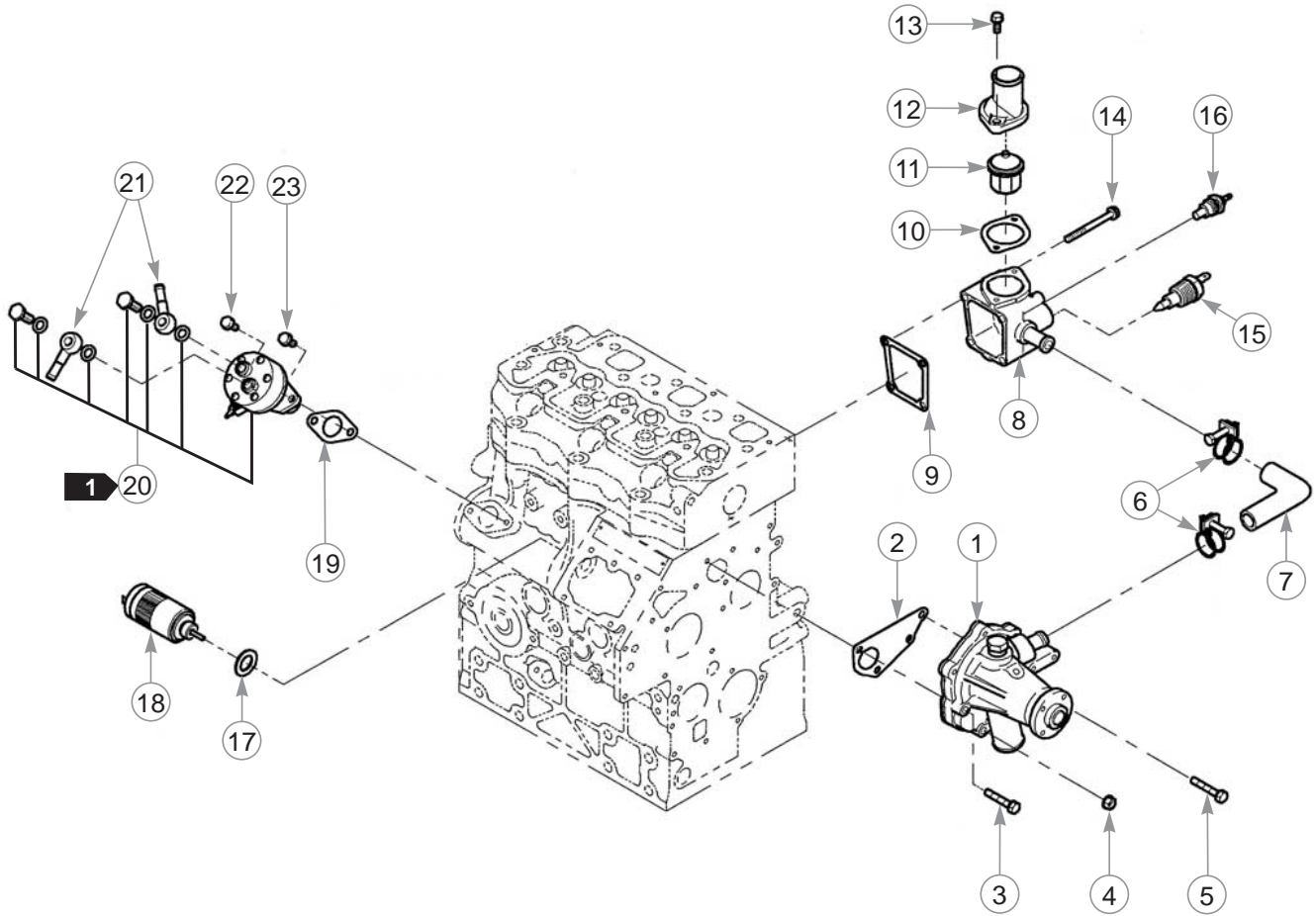
**NOTE:** The Oil Filter mounts to a remote location on the mower. Refer to the Mower Parts Manual (109744) for the mounting hardware and parts.



FUEL FILTER DETAIL

PARTS INCLUDED WITH THE FUEL FILTER			
INDEX NO.	PART NO.	QTY.	DESCRIPTION
12	130436011	2	BOLT
13	130396030	1	PLUG
14	130326051	4	GASKET
15	131246240	2	PIPE JOINT
16	130316200	1	CAP

# Water Pump & Thermostat





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## **Water Pump & Thermostat**

INDEX NO.	PART NO.	QTY.	DESCRIPTION
1	145017920	1	WATER PUMP ASSEMBLY
2	145996830	1	GASKET
3	011310635	1	BOLT
4	023100006	1	NUT
5	011310630	2	BOLT
6	067100022	2	HOSE BAND
7	145536051	1	RUBBER HOSE
8	145216880	1	THERMOSTAT CASE
9	145996840	1	GASKET
10	145996850	1	GASKET
11	145206061	1	THERMOSTAT COMPL
12	145226510	1	THERMOSTAT COVER
13	011310620	2	BOLT
14	011310660	4	BOLT
15	385720360	1	THERMO SWITCH
16	385720011	1	SENSOR
17	025100016	1	SEAL WASHER
18	185206085	1	SOLENOID
19	130996130	1	GASKET
20	130506140	1	FEED PUMP ASSEMBLY
21	198486840	2	EYE COMPL
22	011310614	1	BOLT
23	011310616	1	BOLT

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### **NOTES:**



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