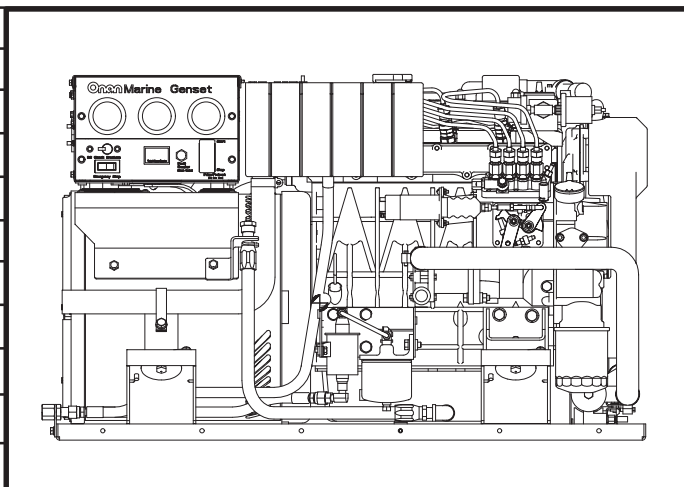




Marine *GenSet Parts Manual*

MDKAD
MDKAE



MODEL IDENTIFICATION

To avoid errors or delay in filling your parts order, always give the MODEL, SPEC NO. and SERIAL NO. from the Onan nameplate.

For handy reference, insert your nameplate information in the spaces below.

MODEL AND SPEC NO.

SERIAL NO.

DIGITAL CONTROL SOFTWARE VERSION
AND DATE (IF APPLICABLE)

SAFETY PRECAUTIONS

The following symbols are used in Onan manuals to alert users to the potentially dangerous conditions relating to maintenance of equipment and replacement of parts. Please read and observe.



This symbol warns of immediate hazards which will result in severe personal injury or death.



This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



This symbol refers to a hazard or unsafe practice which can result in severe personal injury or product or property damage.

PRODUCT SAFETY PRECAUTIONS



Service and repair of Onan equipment must be performed by trained, experienced personnel only. Improper service or repair may result in property damage, severe personal injury or death. Do not use this catalog as a guide to servicing your equipment. Read and follow the IMPORTANT SAFETY INSTRUCTIONS in the Service Manual appropriate for the equipment you are working on.



Contact with USED ENGINE OILS has been identified by a United States federal agency and some USA state agencies as causing CANCER or REPRODUCTIVE TOXICITY. When checking or changing engine oils take all necessary precautions not to ingest, breathe the fumes or contact the used oil.



Contact with ASBESTOS has been identified by a United States federal agency and some USA state agencies as causing CANCER or REPRODUCTIVE TOXICITY. When handling engine gaskets take all necessary precautions not to ingest, breathe or contact the dust from the gaskets! Use adequate ventilation and wear protective gloves, masks and clothing!



Contact with BENZINE and LEAD, found in gasoline, fuel additives and solvents has been identified by a United States federal agency and some USA state agencies as causing CANCER or REPRODUCTIVE TOXICITY. When checking, draining or adding gasoline and fuel additives or using solvents take all necessary precautions not to ingest, breathe the fumes or contact the liquids. Use adequate ventilation and wear protective gloves, masks and protective clothing!

Introduction

This catalog applies to the standard marine generator sets listed below. Parts are arranged in groups of related items and each illustrated part is identified by a reference number corresponding to the same reference number in the parts list. Parts illustrations are typical. Unless otherwise mentioned in the description or page heading, parts are interchangeable between models. Throughout this catalog left and right sides are determined by facing the engine end (front) of the set.

<u>MODEL</u>	<u>HERTZ</u>
--------------	--------------

MDKAD/*	50/60
MDKAE/*	50/60

* – The diagonal line (/) in the model and specification number separates generator set characteristics from the specification number and letter. The specification number denotes customer requested options or deviations from the standard model. The specification letter advances (A to B, B to C, etc.) with major manufacturing changes.

WIRING DIAGRAM

612-6667	DC 24V
612-6665	DC 12V
612-6666	AC 1 Phase
612-6673	AC 3Phase

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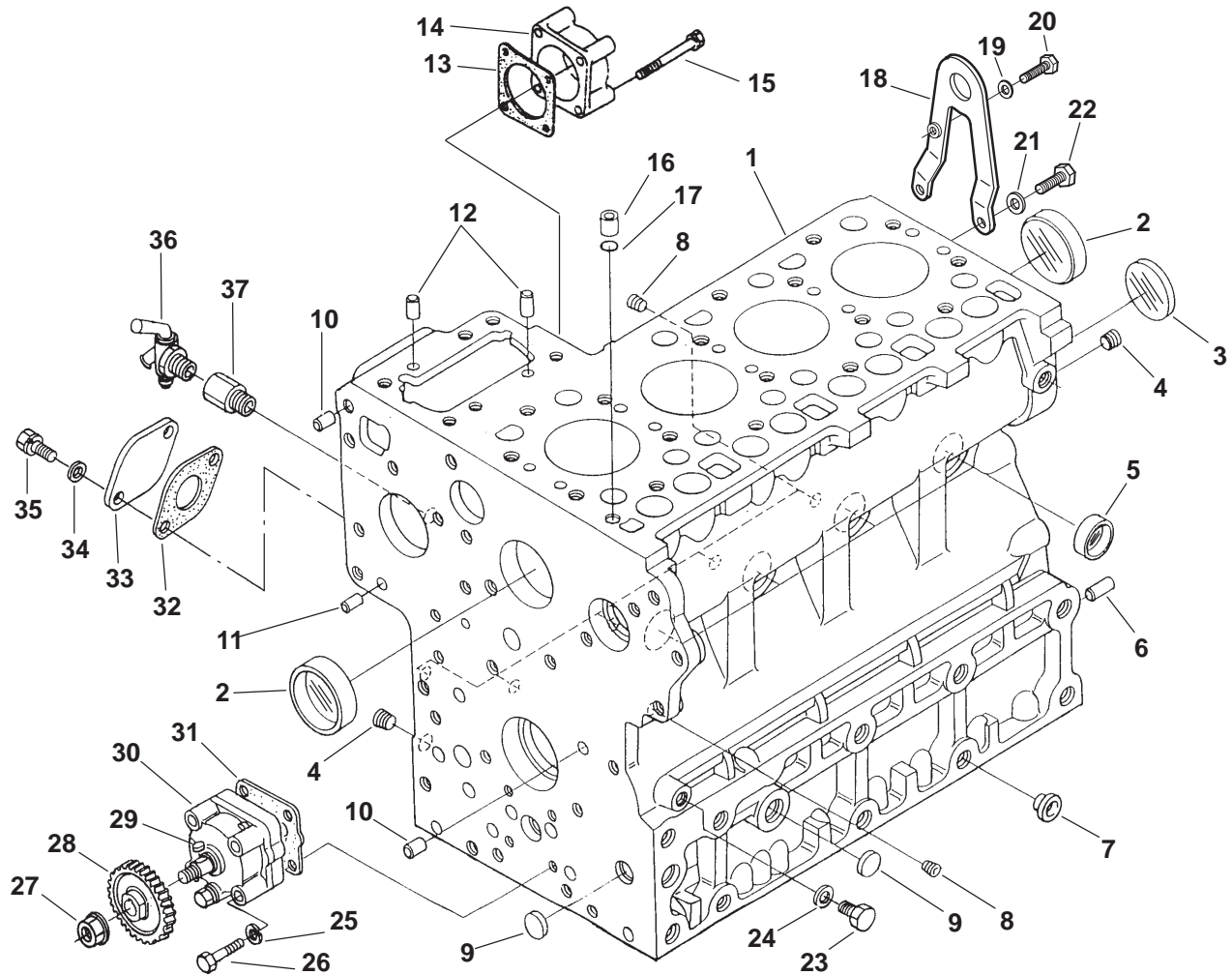
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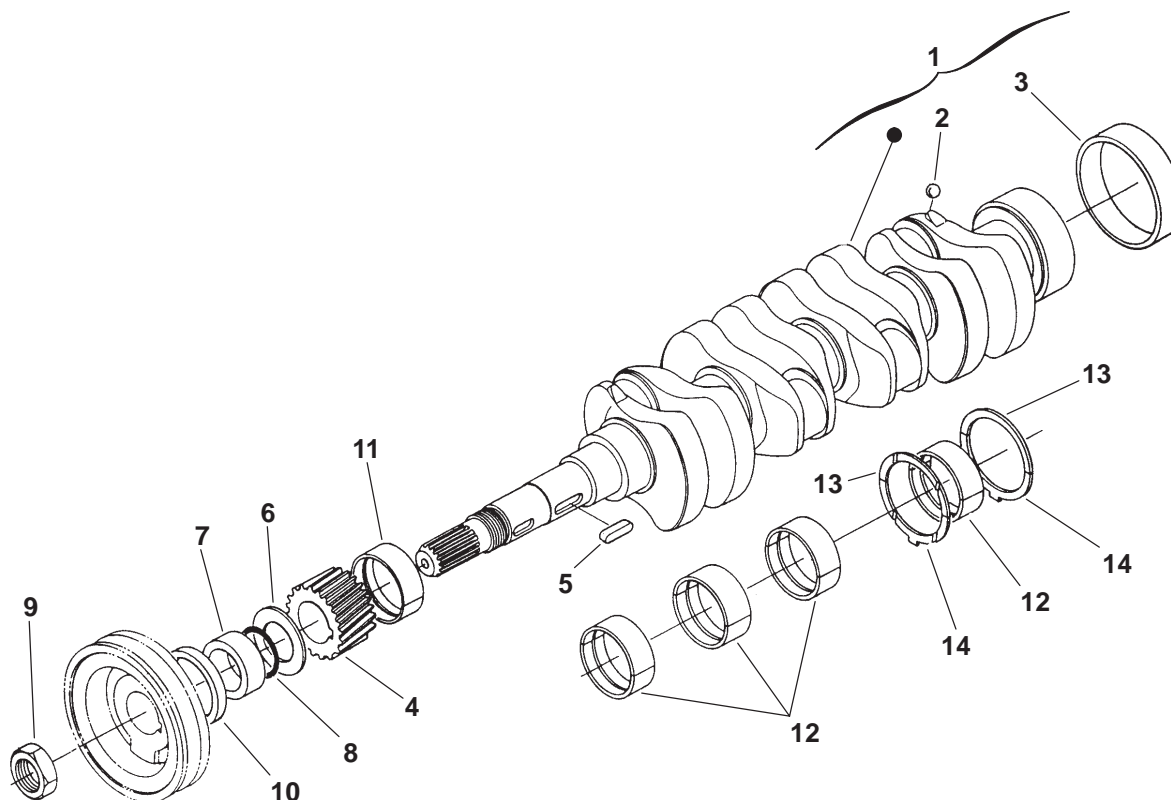
Cylinder Block



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Engine, Replacement MDKAD	20	718-1036	1	Screw, Hex Head Cap (M8 x 20 x 1.25")
	100-3243-01	1	12V	21	526-0399-64	2	Washer, Flat (M12)
	100-3243-02	1	24V	22	800-3033	2	Screw, Hex Head Cap (M12 x 1.25 x 25mm)
			MDKAE	23	185-5845	1	Plug
	100-3153-01	1	12V	24	185-2338	1	Gasket
	100-3153-02	1	24V	25	185-6759	4	Washer, Spring
2	185-5841	2	Cap, Sealing	26	185-5850	4	Bolt
3	185-5839	1	Plug	27	185-5852	1	Nut, Flange
4	185-2234	2	Plug	28	185-5851	1	Gear, Oil Pump Drive
5	185-5840	6	Cap, Sealing	29	185-2352	1	Key
6	185-5844	1	Pin, Straight	30	185-5848	1	Pump, Oil
7	185-5837	2	Plug	31	185-5849	1	Gasket, Oil Pump
8	185-2233	6	Plug	32	185-2125	1	Gasket, Hole Cover
9	185-6121	3	Plug	33	185-6784	1	Cover, Hole
10	185-5843	2	Pin, Straight	34	850-2006	2	Washer, Flat
11	185-5842	2	Pin, Straight	35	800-2034	2	Bolt
12	185-2350	2	Pin, Straight	36	185-5846	1	Cock, Drain
13	185-6982	1	*Gasket, Cover	37	185-5847	1	Joint, Drain Cock
14	185-6772	1	*Cover, Fuel Camshaft				
15	185-5676	4	*Bolt				
16	185-2094	1	Pin, Pipe				
17	185-2095	1	O'Ring				
18	403-3916-02	1	Bracket, Lifting				
19	526-2100	1	Washer (M8)				

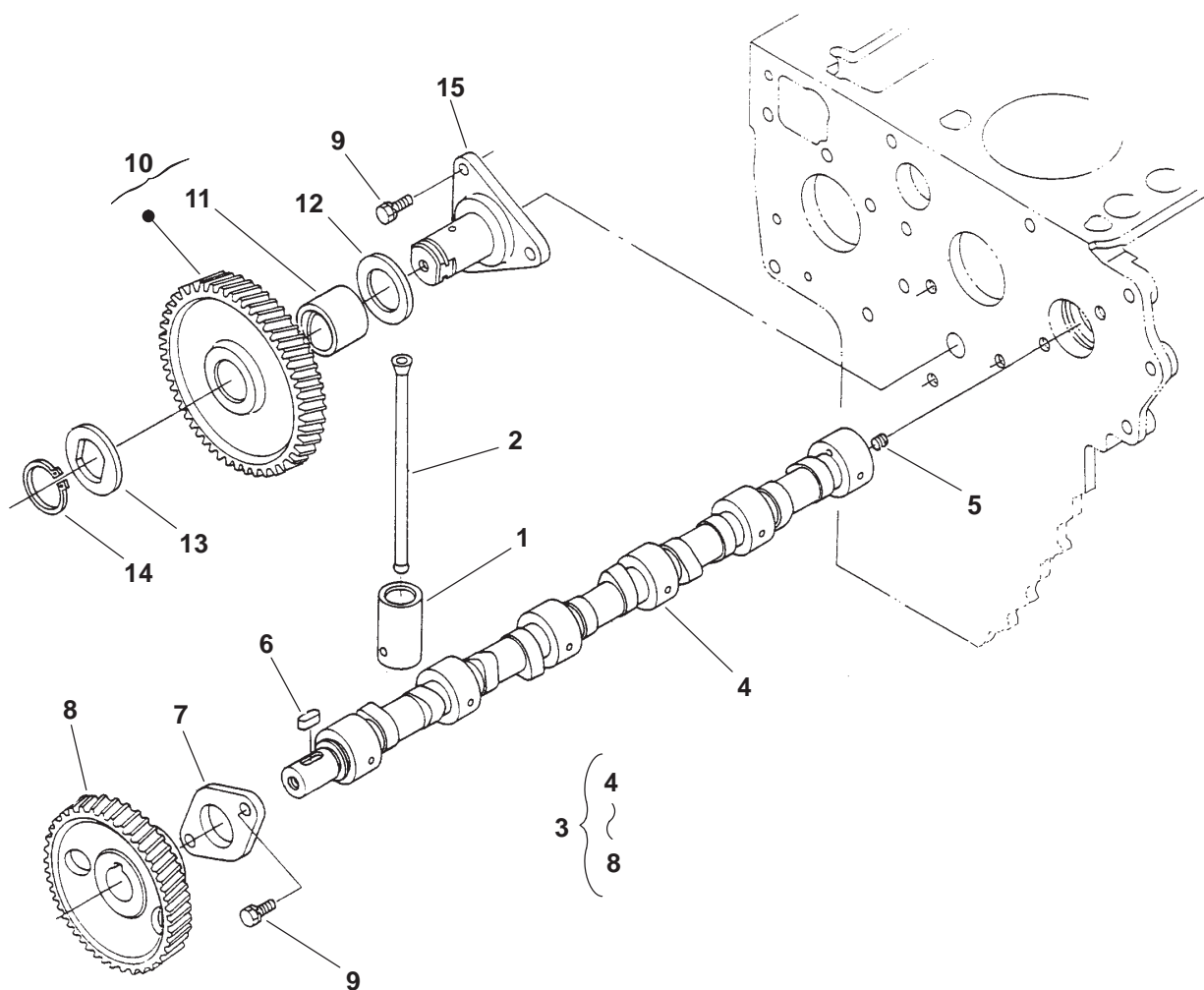
* - Parts Included in Keel Cooling Kit Found on Keel Cooling Dry Exhaust Page).

Crankshaft



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6129	1	Crankshaft (Includes Balls and Sleeve)	12	185-6086	4	Bearing, Main Standard
2	185-5924	4	Ball		185-5936	4	0.2 mm Undersize
3	185-5925	1	Sleeve		185-5937	4	0.4 mm Undersize
4	185-5926	1	Gear	13	185-5938	2	Bearing, Thrust Standard
5	185-5905	1	Key		185-5939	2	0.2 mm Oversize
6	185-5927	1	Slinger, Oil		185-5940	2	0.4 mm Oversize
7	185-5928	1	Collar	14	185-5941	2	Bearing, Thrust Standard
8	185-5929	1	O'Ring		185-5942	2	0.2 mm Oversize
9	185-5930	1	Nut		185-5943	2	0.4 mm Oversize
10	185-5931	1	Seal, Oil				
11			Bearing				
	185-6085	1	Standard				
	185-5933	1	0.2 mm Undersize				
	185-5934	1	0.4 mm Undersize				

Camshaft

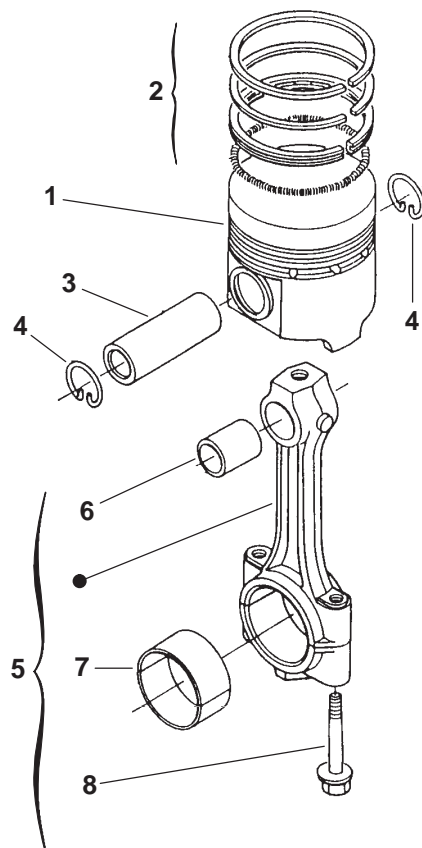


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5900	8	Tappet
2	185-5901	8	Rod, Push
3	185-5902	1	Camshaft Assy (Includes Parts Marked *)
4	185-5903	1	*Camshaft
5	185-5558	1	*Screw, Set
6	185-5905	1	*Key
7	185-5906	1	*Stopper, Camshaft
8	185-5904	1	*Gear, Camshaft
9	185-2400	5	Bolt

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
10	185-5907	1	Gear Assy, Idle (Includes Bushing)
11	185-5908		Bushing, Idle Gear
12	185-5909	1	Collar
13	185-5910	1	Collar
14	185-5911	1	Ring, External Retaining
15	185-5912	1	Shaft, Idle Gear

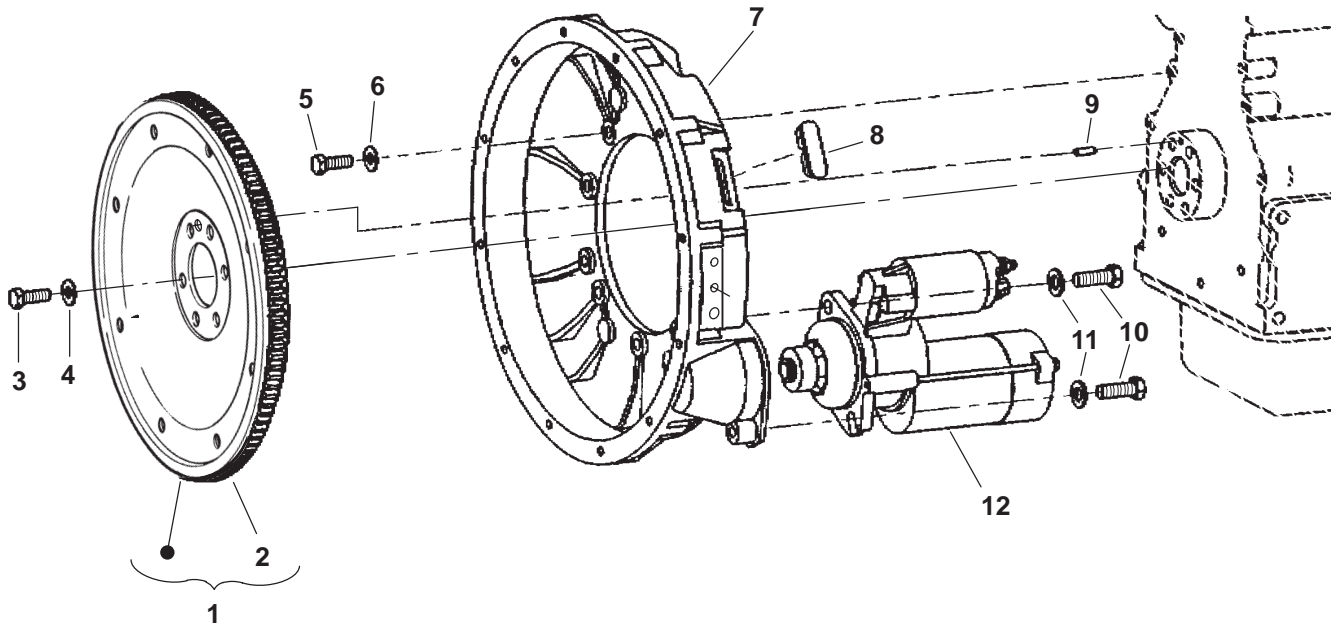
* – Parts Included in Camshaft Assy

Piston



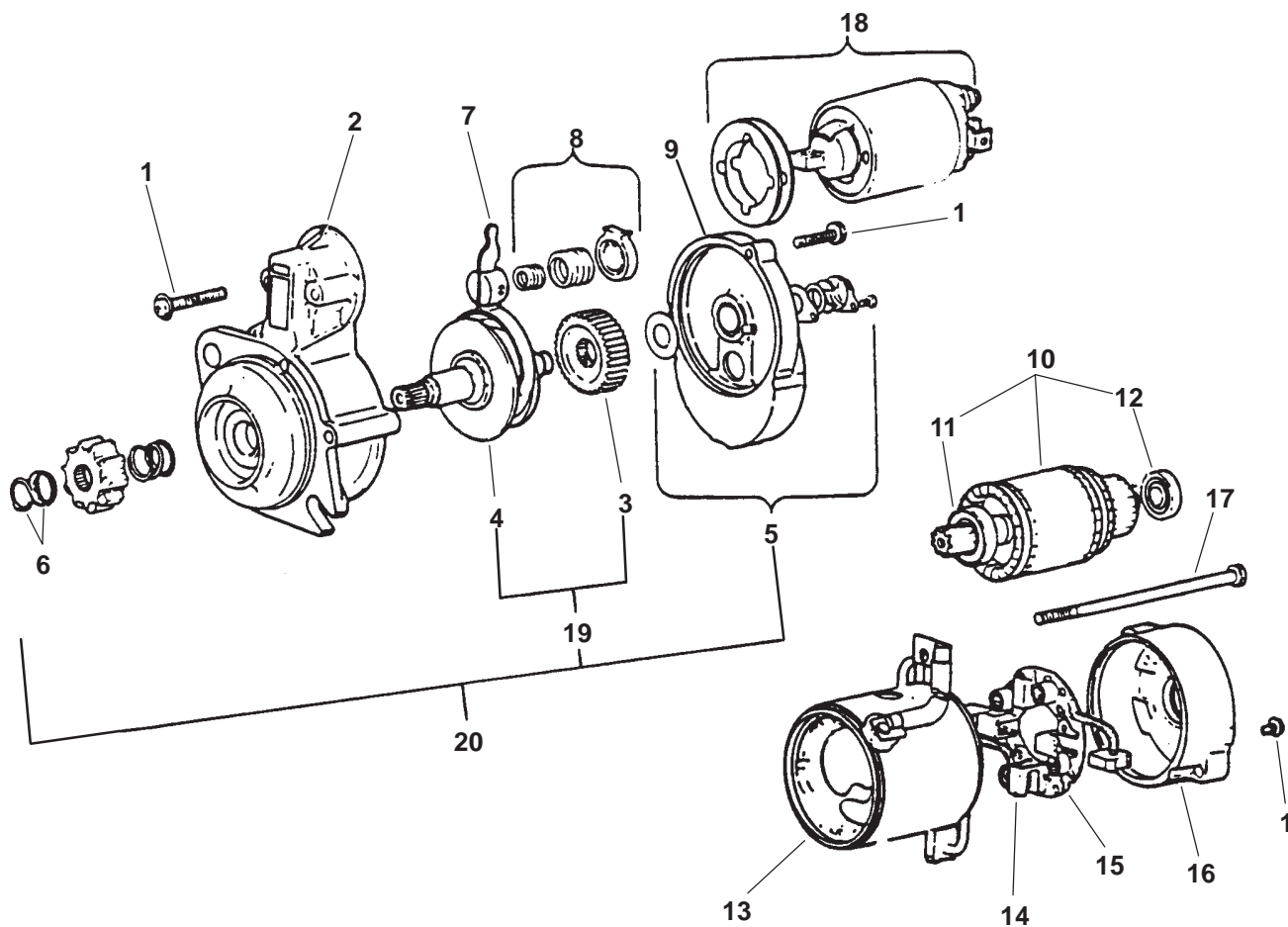
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Piston	3	185-5915	4	Pin, Piston
			MDKAD	4	185-5916	8	Ring, Retaining
	185-6767	4	Standard	5	185-5917	4	Rod Assy, Connecting (Includes Bushing, Bearing and Bolts)
	185-6768	4	0.5 mm Oversize				
			MDKAE	6	185-6209	4	Bushing
	185-5913	4	Standard	7			Bearing
	185-6074	4	0.5 mm Oversize		185-6076	4	Standard
2			Set, Ring		185-5921	4	0.2 mm Undersize
			MDKAD		185-5922	4	0.4 mm Undersize
	185-6769	4	Standard	8	185-6771	8	Bolt
	185-6770	4	0.5 mm Oversize				
			MDKAE				
	185-5914	4	Standard				
	185-6075	4	0.5 mm Oversize				

Flywheel



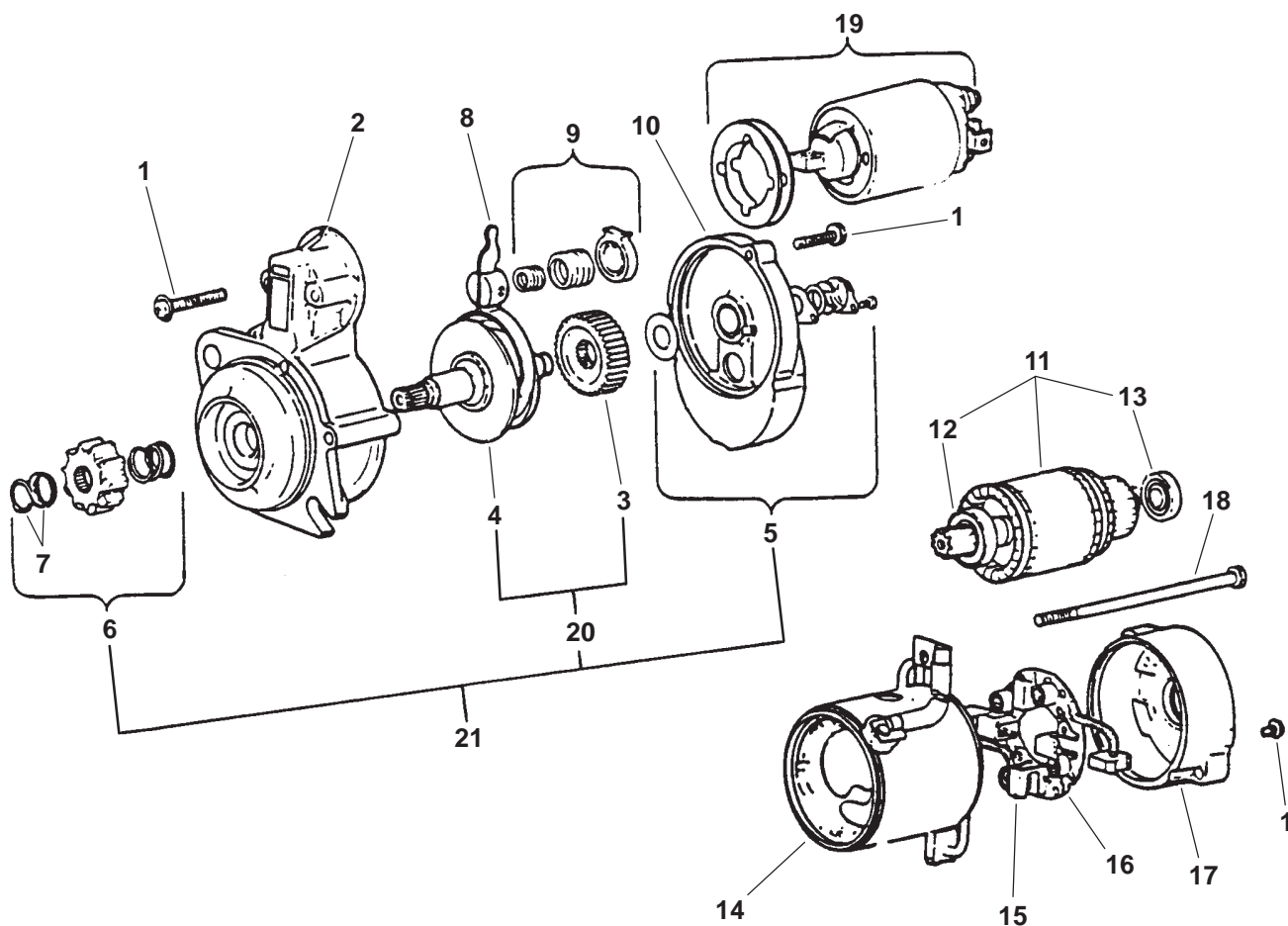
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Flywheel Assy (Includes Ring Gear)	7			Adapter, Engine
	104-1830	1	Spec A		101-0810	1	Spec A
	104-1929	1	Begin Spec B		101-0821	1	Begin Spec B
2	104-1666	1	Gear, Ring	8	101-0811	1	Plug, Hole
3	800-3032	6	Screw, Hex Head Cap (M12 x 1.25 x 30mm)	9	775-0061	1	Pin, Parallel Hard
4	526-0145	6	Washer, Flat (M12)	10	800-2113	2	Screw, Cap – Hex Head (M12 x 1.75 x 35mm)
5			Screw, Hex Head Cap (M10 x 1.25 x 30mm)	11	526-0399-64	2	Washer, Flat (M12)
	800-3005	7	Spec A	12			Starter (See Separate Page for Components)
	800-3005	11	Begin Spec B		191-1959	1	12V
6			Washer, Flat (M10)		191-1550	1	24V
	526-0029	7	Spec A				
	526-0029	11	Begin Spec B				

Starter Components (12V)



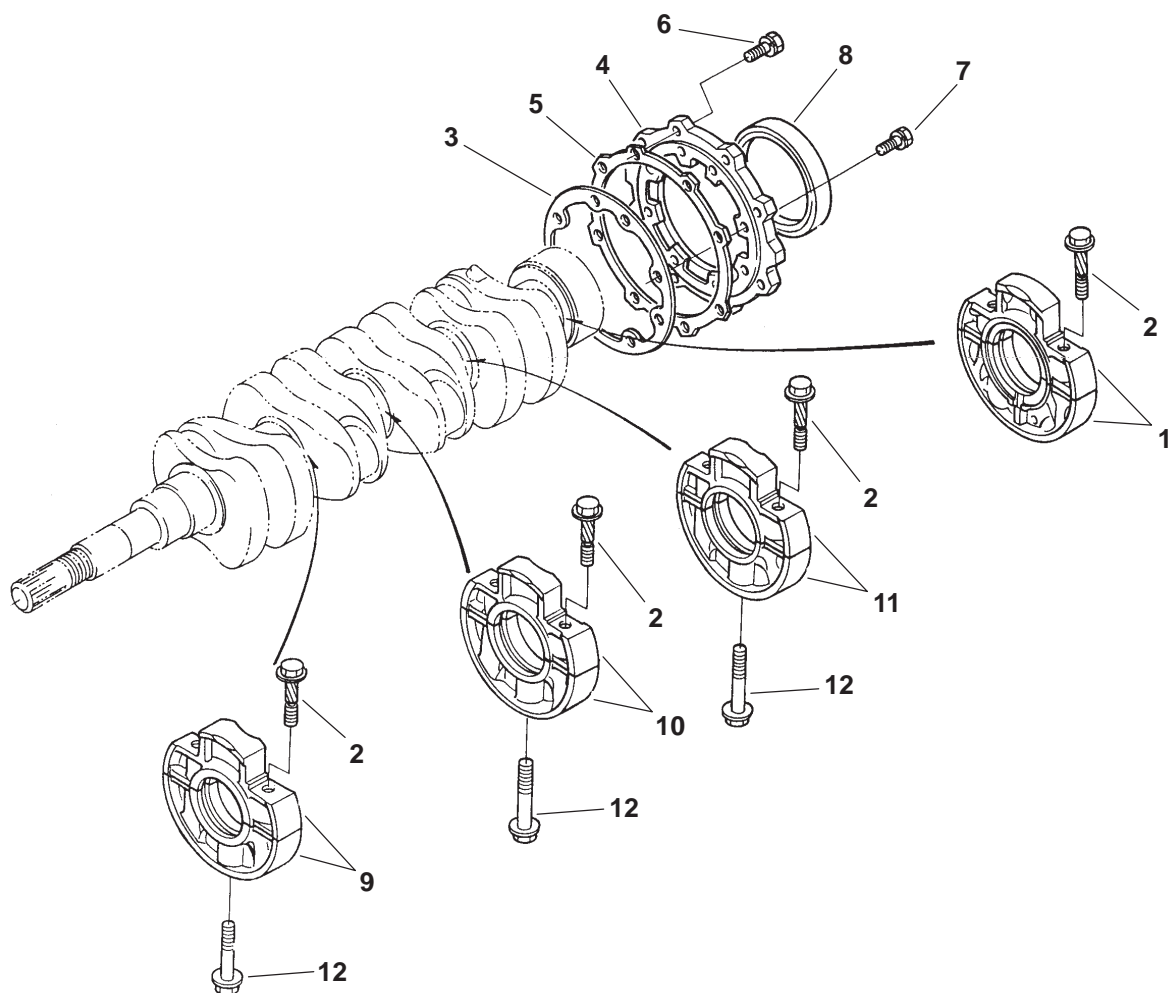
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	191-1959	1	Starter	11	191-1437	1	Bearing, Center
1	191-1450	4	Set, Screw	12	191-1436	1	Bearing, Rear
2	191-1449	1	Bracket Assy, Front	13	191-1992	1	Yoke Assy
3	191-1446	1	Gear	14	191-1993	1	Holder Assy, Brush
4	191-1445	1	Drive Assy	15	191-1433	1	Spring, Brush
5	191-1444	1	Cover Assy	16	191-1432	1	Bracket, Rear
6	191-1442	1	Stopper, Set	17	191-1431	1	Bolt, Set
7	191-1441	1	Lever Assy	18	191-1994	1	Switch, Solenoid
8	191-1991	1	Spring, Set	19	191-1447	1	Gear, Set
9	191-1439	1	Bracket Assy, Center	20	191-1448	1	Drive Assy
10	191-1438	1	Armature (Includes Bearings)				

Starter Components (24V)



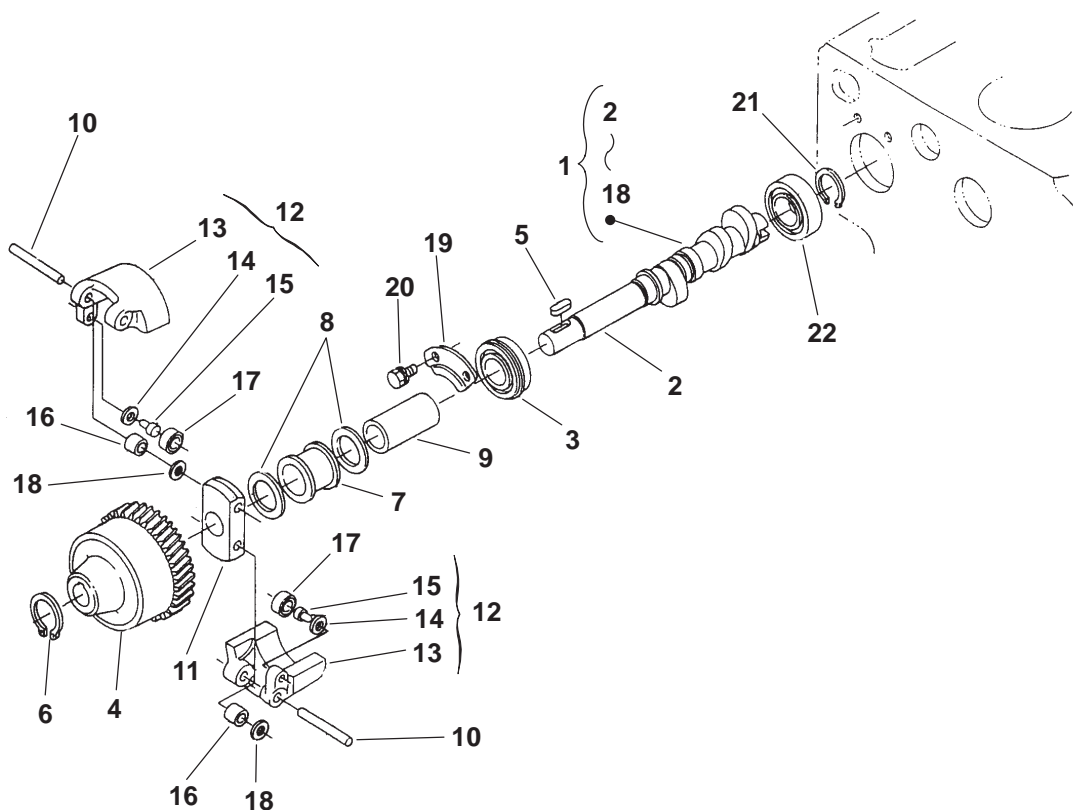
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	191-1550	1	Starter	11	191-1606	1	Armature (Includes Bearings)
1	191-1450	4	Set, Screw	12	191-1437	1	Bearing, Center Sleeve
2	191-1449	1	Bracket Assy, Front (Includes Bearing)	13	191-1436	1	Bearing, Rear Sleeve
3	191-1446	1	Gear	14	191-1607	1	Yoke Assy (Includes Pole Shoes, Field Coil, Positive Brushes)
4	191-1445	1	Drive	15	191-1608	1	Holder, Brush (Includes Negative Brushes)
5	191-1444	1	Cover Assy, Rear (Includes Cover Plate, Washers, Screws, and Snap Ring)	16	191-1433	4	Spring, Brush
6	191-1960	1	Pinion Set (Includes Pinion, Spring & Stopper Set)	17	191-1432	1	Bracket, Rear
7	191-1442	1	Stopper, Set (Includes Ring)	18	191-1431	1	Bolt, Set
8	191-1441	1	Lever Assy	19	191-1609	1	Switch, Solenoid (Includes Shims)
9	191-1440	1	Spring Set	20	191-1447	1	Gear, Set
10	191-1439	1	Bracket, Center	21	191-1448	1	Drive Assy

Main Bearing Housing



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5889	1	Housing, Main Bearing	7	185-2404	8	Bolt
2	185-5890	8	Bolt, Bearing Housing	8	185-5895	1	Seal, Oil
3	185-6766	1	Gasket, Bearing Housing	9	185-5896	1	Housing, Main Bearing
4	185-5892	1	Cover, Bearing Housing	10	185-5897	1	Housing, Main Bearing
5	185-5893	1	Gasket, Bearing Housing Cover	11	185-5898	1	Housing, Main Bearing
6	185-2403	8	Bolt	12	185-5899	3	Bolt, Bearing Housing

Fuel Camshaft

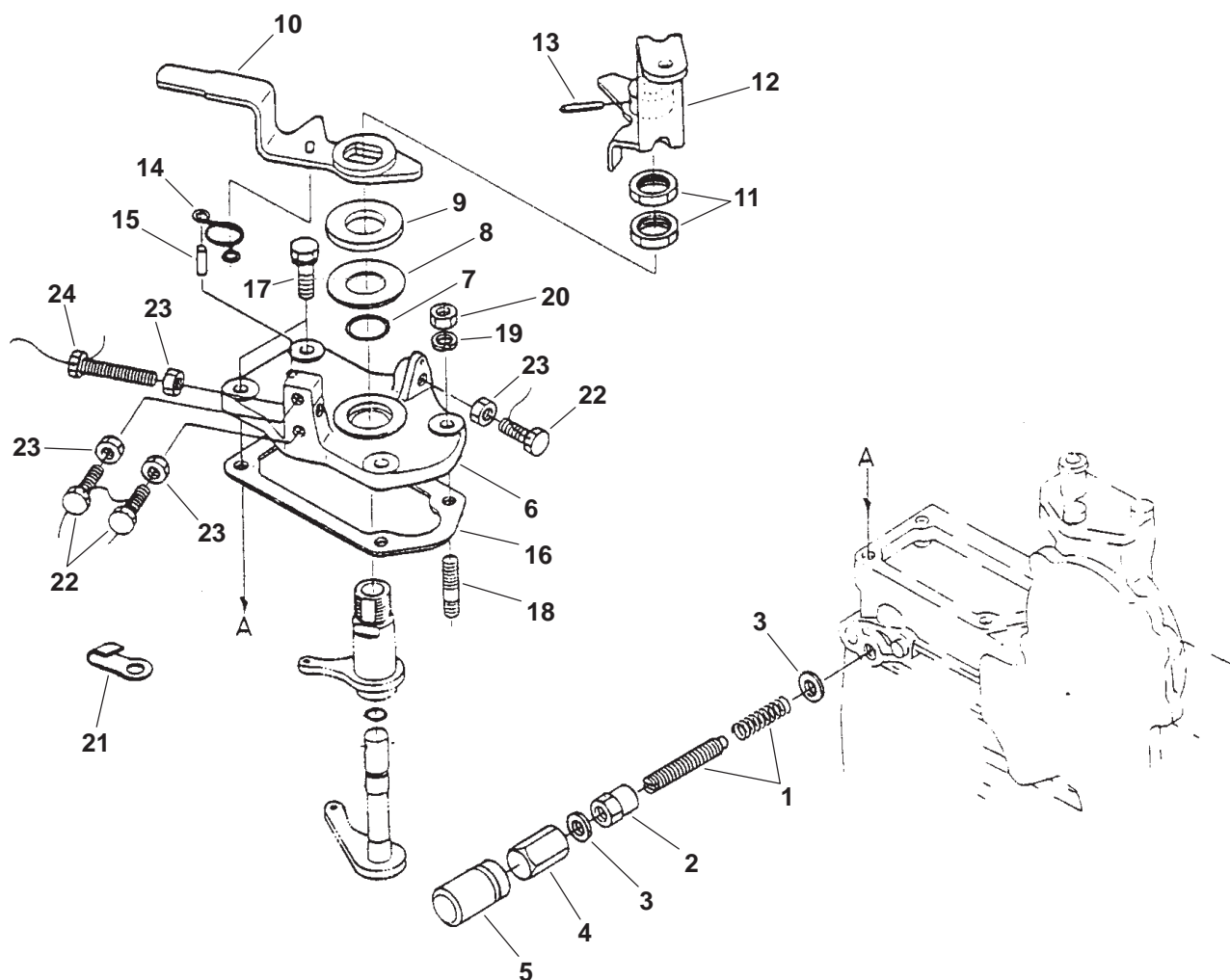


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5945	1	Camshaft Assy, Fuel (Includes Parts Marked *)
2	185-5946	1	*Camshaft, Fuel
3	185-5947	1	*Bearing, Ball
4	185-5948	1	*Gear, Injection Pump
5	185-5949	1	*Key
6	185-5950	1	*Ring, External Retaining
7	185-5951	1	*Sleeve, Governor
8	185-5952	2	*Washer, Thrust
9	185-5953	1	*Collar
10	185-5954	2	*Shaft, Governor Weight
11	185-5955	1	*Holder, Governor Weight
12	185-5956	2	*Weight Assy, Governor (Includes Pin, Weight and Washer)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
13	185-7039	2	*Weight, Governor
14	185-5960	2	*Washer
15	185-5957	2	*Pin, Governor Weight
16	185-5958	4	*Bushing
17	185-5959	2	*Bearing, Governor Weight
18	185-5966	4	*Washer, Flat
19	185-5962	1	Stopper, Fuel Camshaft
20	185-6956	2	Bolt
21	185-5963	1	Ring, External Retaining
22	185-5961	1	Bearing, Ball

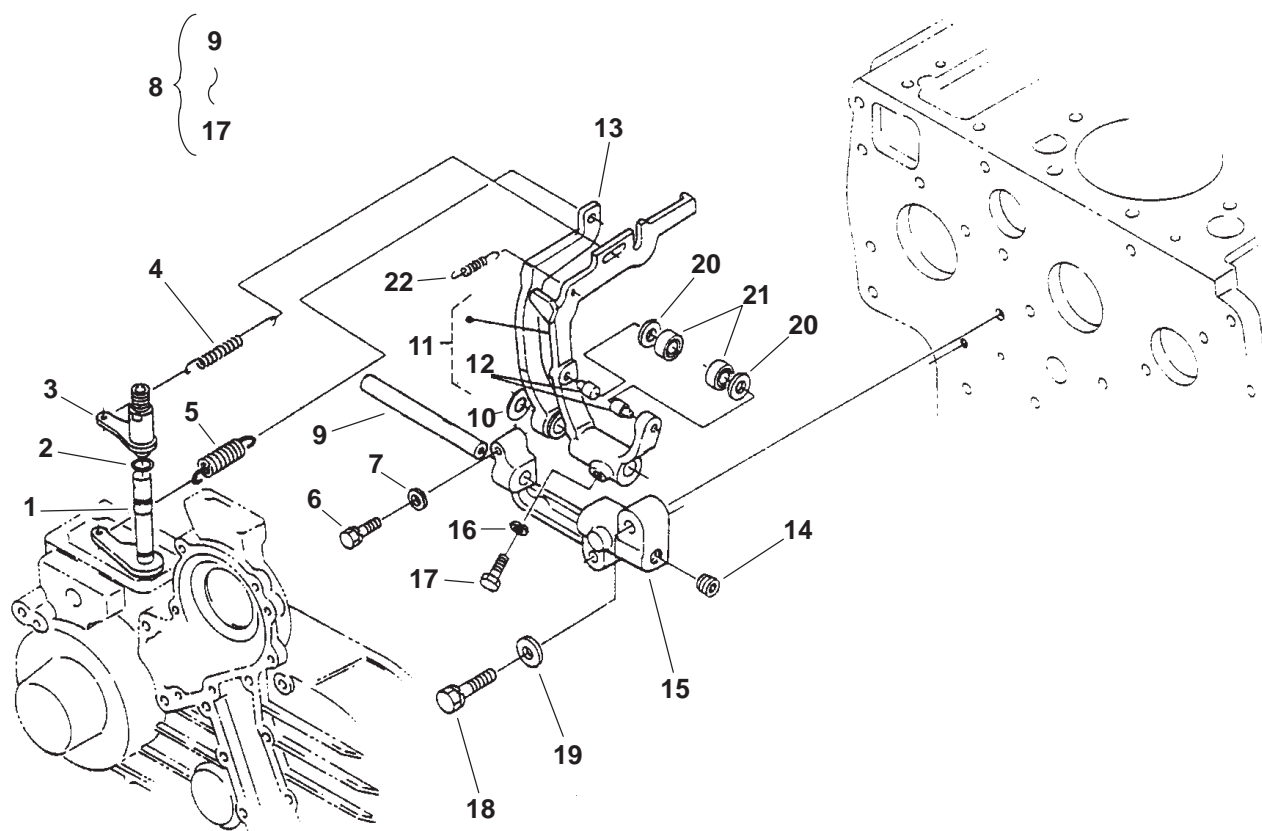
* – Parts Included in Fuel Camshaft Assy

Speed Control



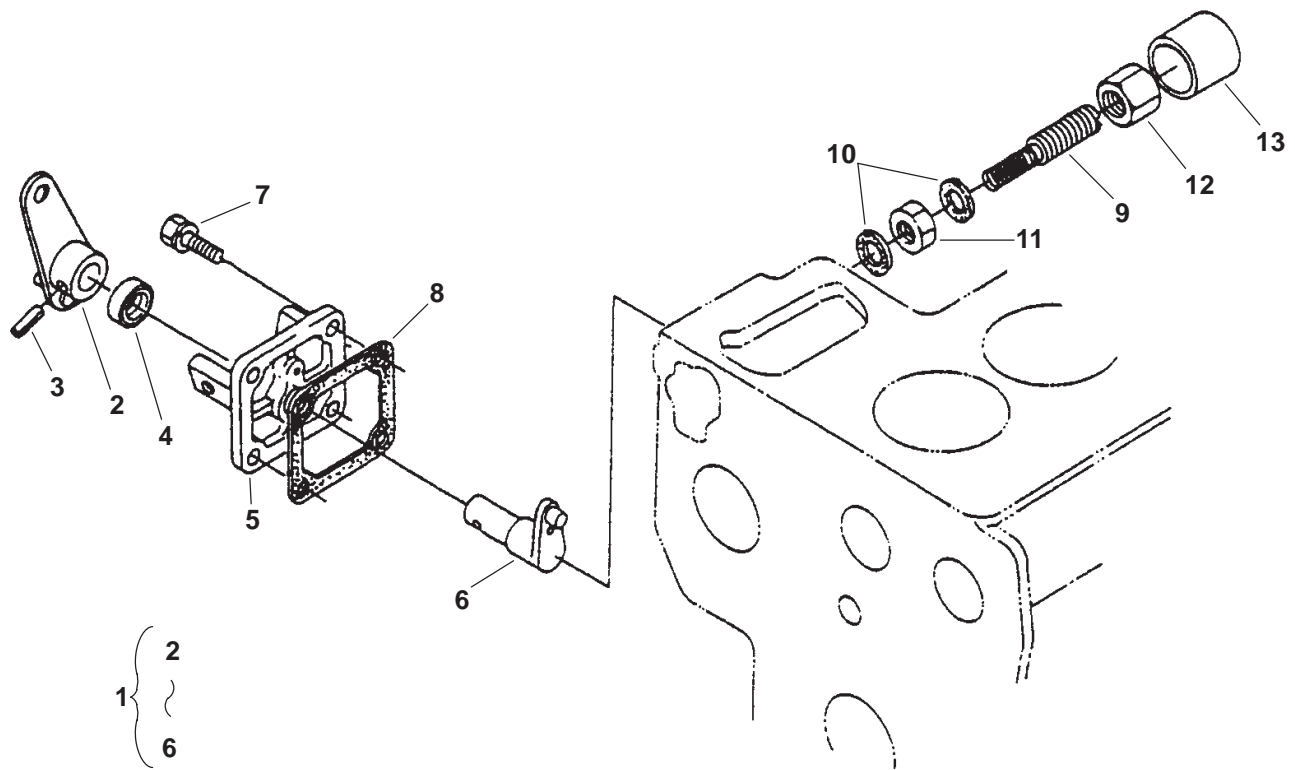
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6168	1	Bolt, Maximum Fuel Adjusting	13	185-5696	1	Pin, Spring
2	185-6169	1	Nut	14	185-6178	1	Spring
3	185-2284	2	Gasket	15	185-6179	1	Pin, Straight
4	185-5529	1	Nut, Cap	16	185-6180	1	Gasket
5	185-2283	1	Cap	17	185-2390	2	Bolt
6	185-6171	1	Plate, Speed Control	18	185-2105	2	Stud
7	185-5691	1	O'Ring	19	185-6759	2	Washer, Spring
8	185-3397	1	Shim (0.50 mm)	20	185-4255	2	Nut
9	185-6174	1	Collar	21	185-5140	1	Clamp, Cord
10	185-6175	1	Lever, Lower Speed Control	22	800-2036	3	Bolt (M6 x 30)
11	185-5693	2	Nut	23	750-1004	4	Nut (M6)
12	185-6177	1	Lever, Upper Speed Control	24	800-2038	1	Bolt (M6 x 40)

Governor



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6172	1	Shaft, Lever	12	185-5957	2	*Pin, Governor Weight
2	185-2347	1	O'Ring	13	185-6779	1	*Lever, Fork
3	185-6173	1	Lever, Governor	14	185-6164	1	*Screw, Set
4			Spring, Governor	15	185-6780	1	*Holder, Fork Lever
	185-6753	1	Prior to Kubota S/N 60896	16	185-2379	1	*Washer, Spring
	185-6167	1	Begin Kubota S/N 60897	17	185-6161	1	*Bolt
5	185-7112	1	Spring, Governor	18	185-6781	2	Bolt
6	185-2392	1	Bolt	19	740-1006	2	Washer, Flat
7	740-1004	1	Washer, Flat	20	185-5960	2	Washer
8	185-6801	1	Lever Assy, Fork (Includes Parts Marked *)	21	185-5959	2	Bearing
				22	185-6165	1	Spring, Start
9	185-6160	1	*Shaft, Fork Lever	* - Parts Included in Fork Lever Assy.			
10	185-6163	1	*Washer, Flat				
11	185-6158	1	*Lever Assy, Fork (Includes Pin)				

Engine Stop Lever

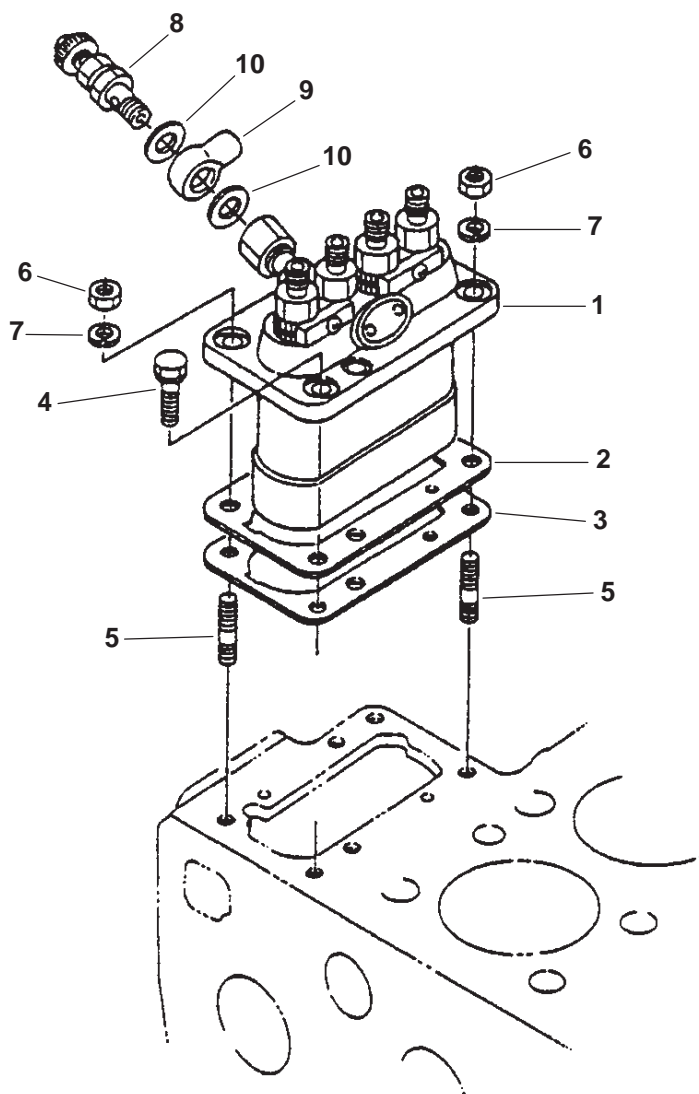


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6726	1	Lever Assy, Engine Stop (Includes Parts Marked #)
2	185-6775	1	#Lever, Engine Stop
3	185-2351	1	#Pin, Spring
4	185-2461	1	#Seal, Oil
5	185-6134	1	#Cover, Injection Pump
6	185-6135	1	#Shaft, Lever
7	185-2389	4	Bolt
8	185-5974	1	Gasket, Injection Pump Cover

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
9	185-6774	1	Bolt, Adjusting
10	185-2338	2	Gasket
11	185-5969	1	Nut
12	185-5970	1	Nut, Cap
13	185-5971	1	Cap

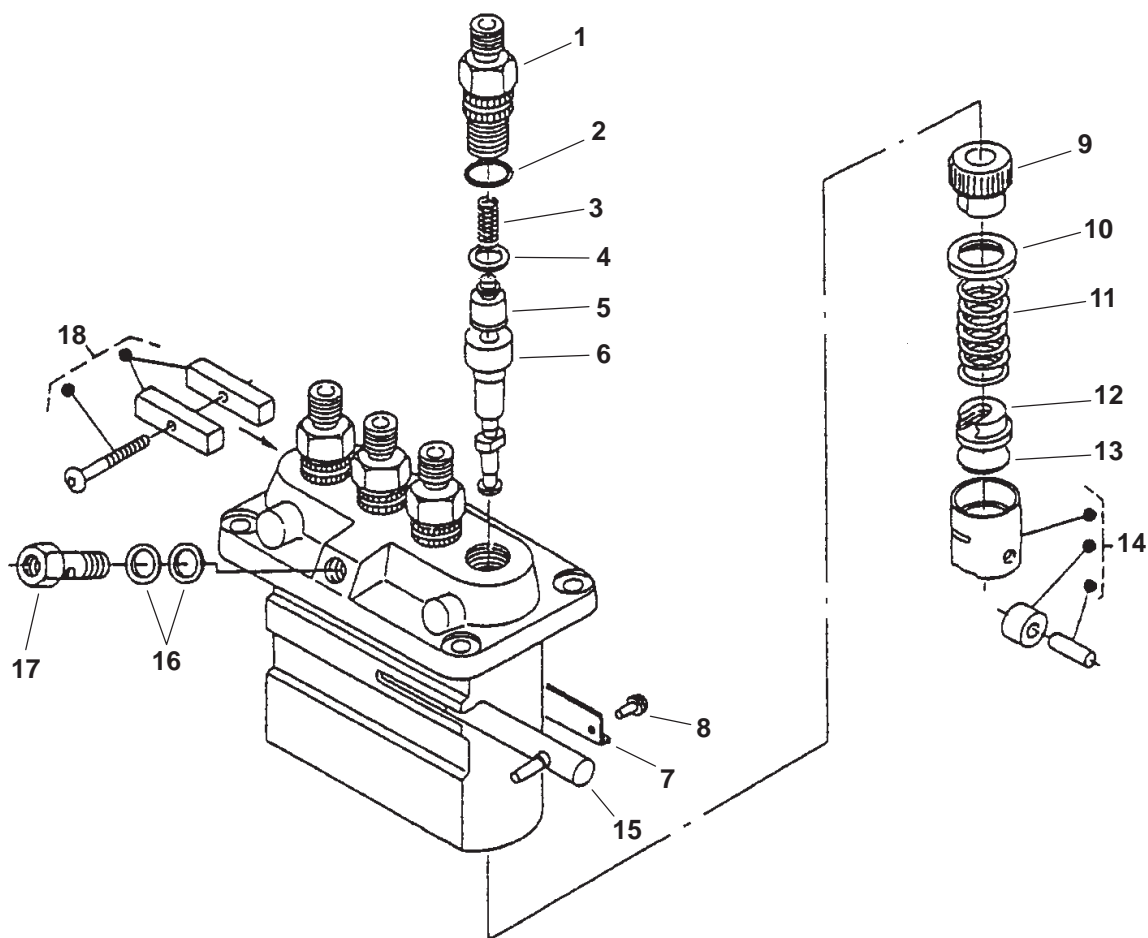
– Parts Included in Engine Stop Lever Assy

Injection Pump



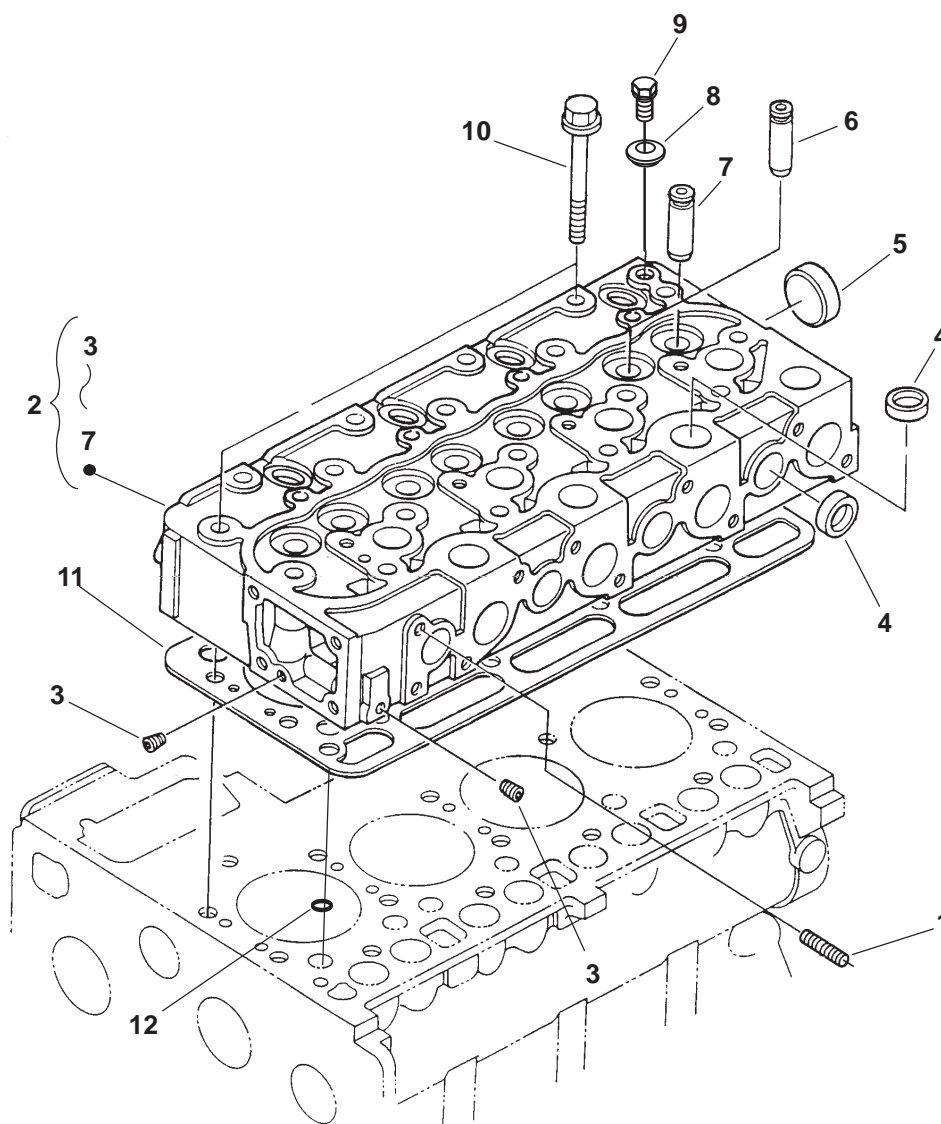
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-7111	1	Pump Assy, Injection (See Separate Page for Components)	4	185-2402	4	Bolt
2			Shim	5	185-2106	2	Stud
	185-5976	2	Standard	6	185-2367	2	Nut
	185-6756	2	.20mm	7	185-6957	2	Washer, Spring
	185-6757	2	.25mm	8	185-6777	1	Cock, Jet Start
3			Shim	9	185-6418	1	Joint, Eye
	185-5977	1	.45mm	10	120-1221	2	Gasket
	185-6758	1	.30mm				

Injection Pump Components



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	185-7111		Pump Assy, Injection	8	185-6145	4	Pin, Tappet Guide
1	185-6142	4	Holder, Delivey Valve	9	185-6152	4	Sleeve, Control
2	185-6155	4	ORing	10	185-6148	4	Seat, Upper Spring
3	185-6140	4	Spring, Delivery Valve	11	185-6147	4	Spring, Plunger
4	185-6141	4	Gasket, Delivery Valve	12	185-6778	4	Seat, Lower Spring
5	185-6139	4	Valve, Delivery	13	185-6151	4	Shim
6			Plunger, Pump	14	185-6144	4	Tappet Assy
	185-6138	4	Old (Goes with Old Pump 185-6776)	15	185-6150	1	Rack, Control
	185-	4	New (Goes w/185-7111)	16	185-6154	2	Gasket
7	185-6146	2	Plate	17	185-6153	1	Screw, Hollow
				18	185-6143	2	Lock Assy, Plate

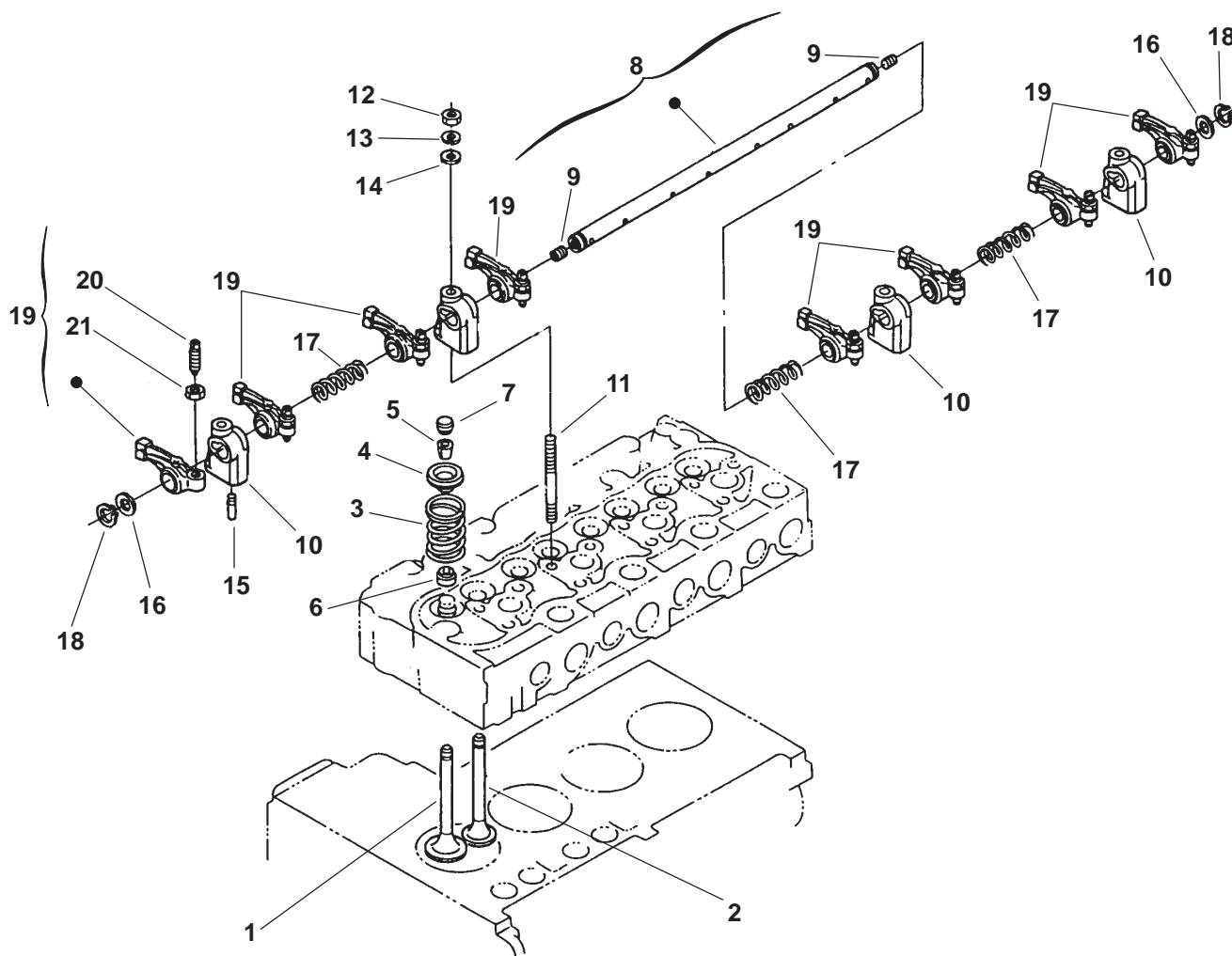
Cylinder Head



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-2106	1	MDKAD	7	185-5863	4	*Guide, Exhaust Valve
	185-6048	1	MDKAE	8	185-5868	1	Washer (With Rubber)
2			Head Assy, Cylinder (Includes Parts Marked *)	9	185-5867	1	Plug
	185-6763	1	MDKAD	10	185-5865	18	Bolt, Cylinder Head
	185-5860	1	MDKAE	11			Gasket, Cylinder Head
3	185-2188	2	*Plug		185-6764	1	MDKAD
4	185-5861	12	*Cap, Sealing		185-5866	1	MDKAE
5	185-2412	1	*Cap, Sealing	12	185-2095	1	O'Ring
6	185-5862	4	*Guide, Inlet Valve				

* – Parts Included in Cylinder Head Assy.

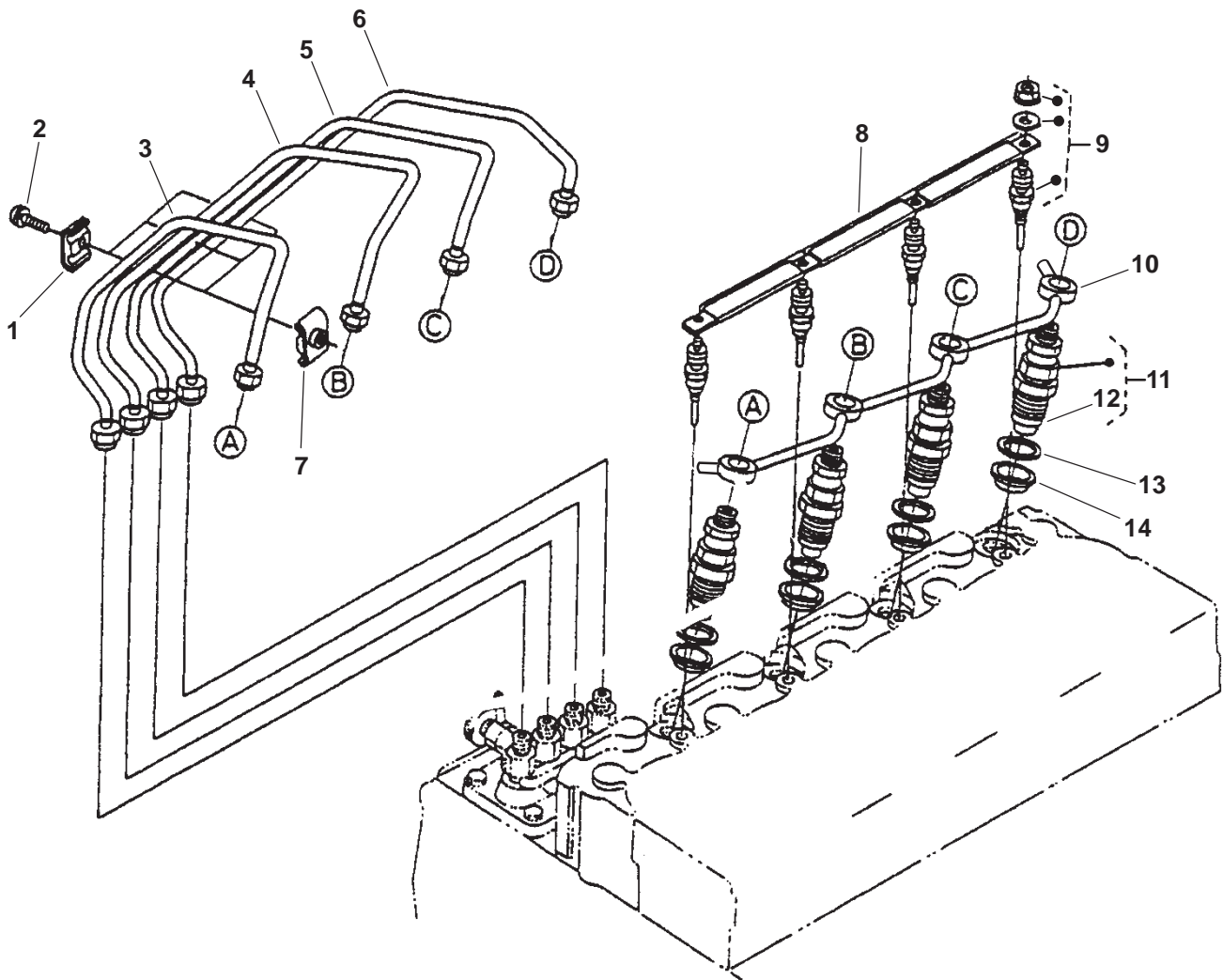
Rocker Arm



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6107	4	Valve, Inlet
2	185-6108	4	Valve, Exhaust
3	185-6016	8	Spring, Valve
4	185-6017	8	Retainer, Valve Spring
5	110-3584	8	Collet, Valve Spring
6	185-6018	8	Seal, Valve Stem
7	185-6019	8	Cap, Valve
8	185-6020	1	Shaft Assy, Rocker Arm (Includes Set Screws)
9	185-6242	2	Screw, Set
10	185-6022	4	Bracket, Rocker Arm
11	185-6023	4	Stud

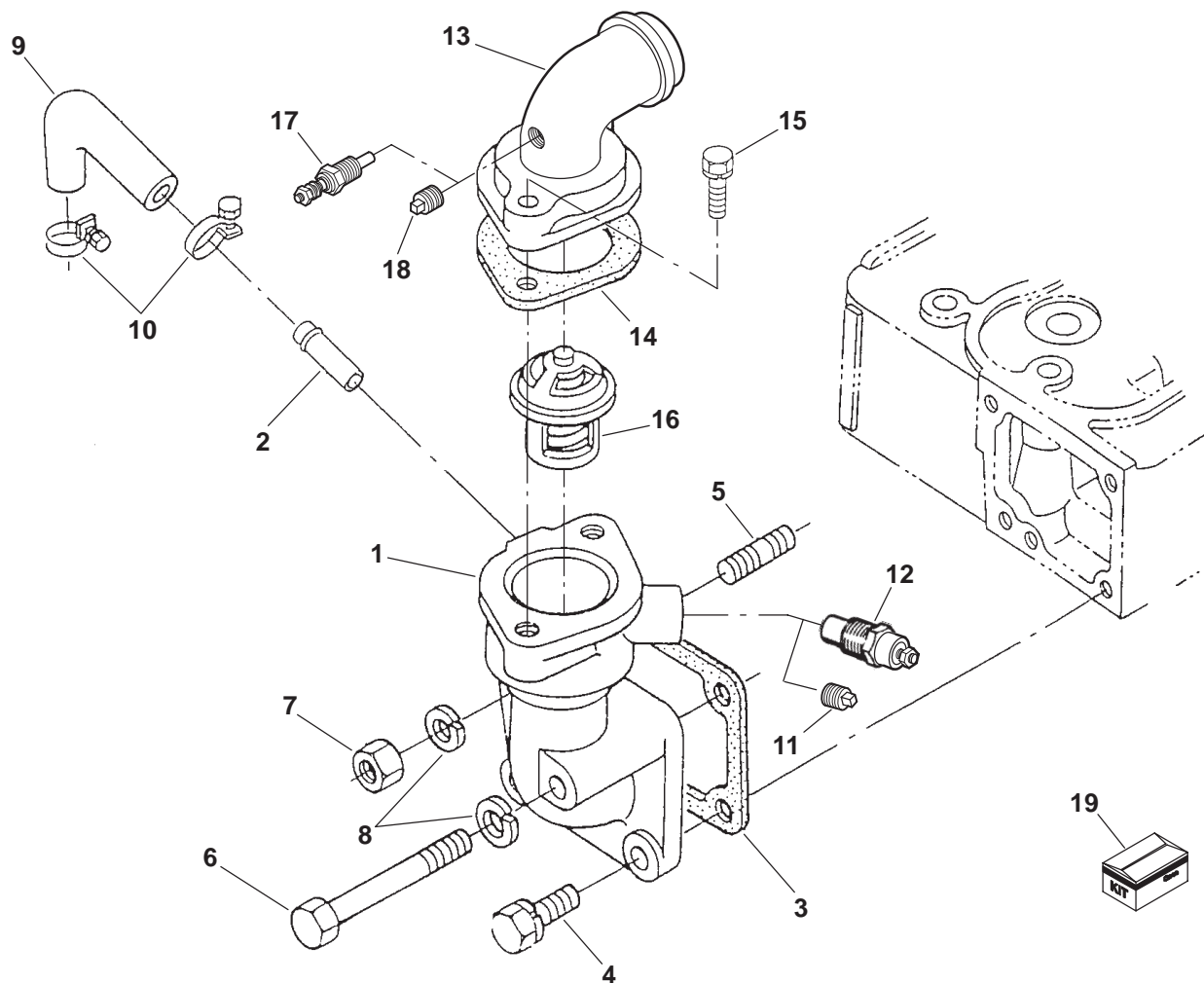
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
12	185-2367	4	Nut
13	185-6957	4	Washer, Spring
14	740-1006	4	Washer, Flat
15	185-6789	1	Pin, Spring
16	185-6025	2	Washer, Rocker Arm Shaft
17	185-6026	3	Spring, Rocker Arm
18	185-6027	2	Ring, External Retaining
19	185-6028	8	Arm Assy, Rocker (Includes Screw and Nut)
20	185-6029	8	Screw, Adjusting
21	185-6030	8	Nut

Nozzle Holder



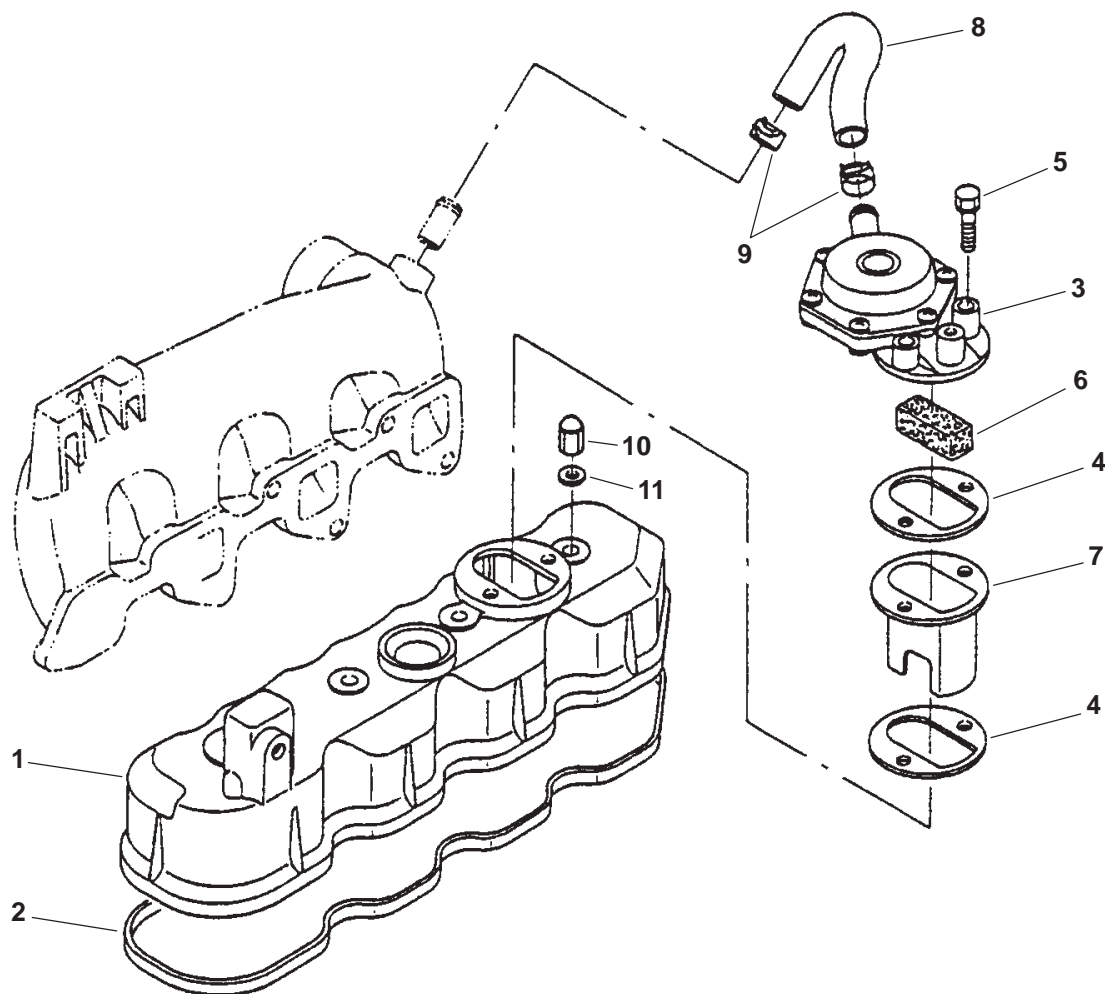
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-2345	3	Clamp, Pipe	10	185-6731	1	Pipe, Overflow
2	185-2385	3	Screw (With Washer)	11			Holder Assy, Nozzle (Includes
3	185-5986	1	Pipe, Injection				Nozzle)
4	185-5987	1	Pipe, Injection		185-6094	4	MDKAD
5	185-5988	1	Pipe, Injection		185-6752	4	MDKAE
6	185-5989	1	Pipe, Injection	12	185-6095	4	Nozzle
7	185-5612	3	Clamp, Pipe	13	185-5337	4	Gasket, Nozzle
8	185-5991	1	Cord, Glow Plug	14	185-5985	4	Seal, Heat
9			Plug, Glow				
	185-5990	4	12V				
	185-6725	4	24V				

Water Outlet Flange



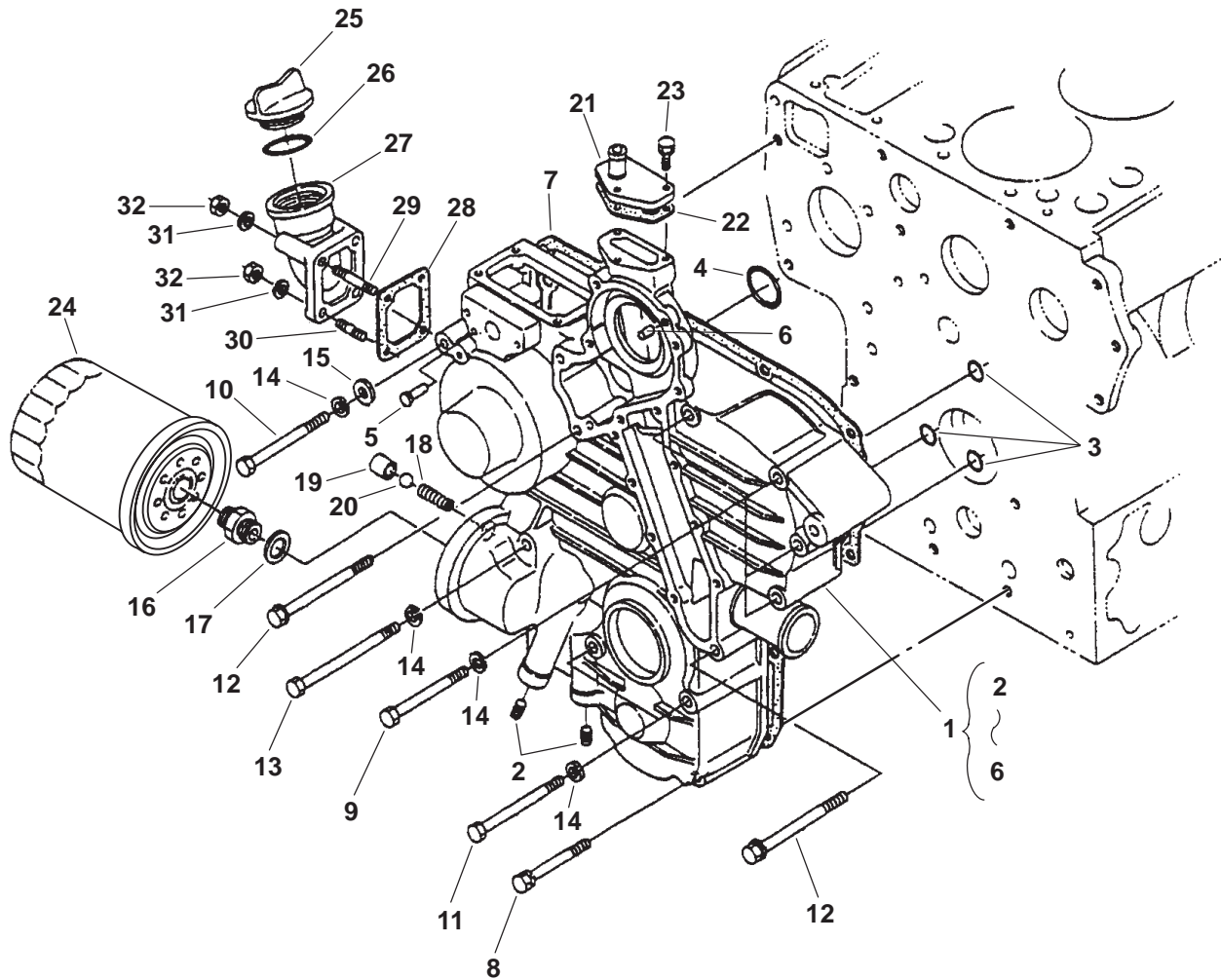
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6788	1	Flange, Water Outlet (Includes Pipe)	15	185-2365	2	Bolt
2	185-6103	1	Pipe, Water Return	16	185-6005	1	Thermostat
3	185-5999	1	Gasket	17			Sender, Water Temperature (E2)
4	185-2402	2	Bolt		193-0318	1	Negative Ground
5	185-2362	1	Stud		193-0457-01	1	Isolated Ground
6	185-5443	1	Bolt	18	505-0110	1	Plug, Square Head Pipe (3/8")
7	185-2367	1	Nut	19			*Kit, Sender (Includes Water Temperature Sender)
8	185-6957	2	Washer, Spring				
9	185-6000	1	Pipe, Water Return		300-5040	1	Negative Ground
10	185-6001	2	Band, Pipe		300-5041	1	Isolated Ground
11	185-5826	1	Plug				
12			*Switch, High Water Temperature (S2)				
	309-0601	1	Negative Ground				
	309-0576	1	Isolated Ground				
13	185-6003	1	Cover, Thermostat				
14	185-6004	1	Gasket, Thermostat Cover				

Cylinder Head Cover



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6716	1	Cover, Cylinder Head	7	185-6718	1	Plate
2	185-5887	1	Gasket, Cover	8	185-6719	1	Tube, Breather
3	185-6720	1	Breather	9	185-6722	2	Clamp, Hose
4	185-6717	2	Gasket, Breather	10	185-5888	4	Nut, Cap
5	718-1040	2	Bolt	11	185-2338	4	Gasket
6	185-6721	1	Element, Breather				

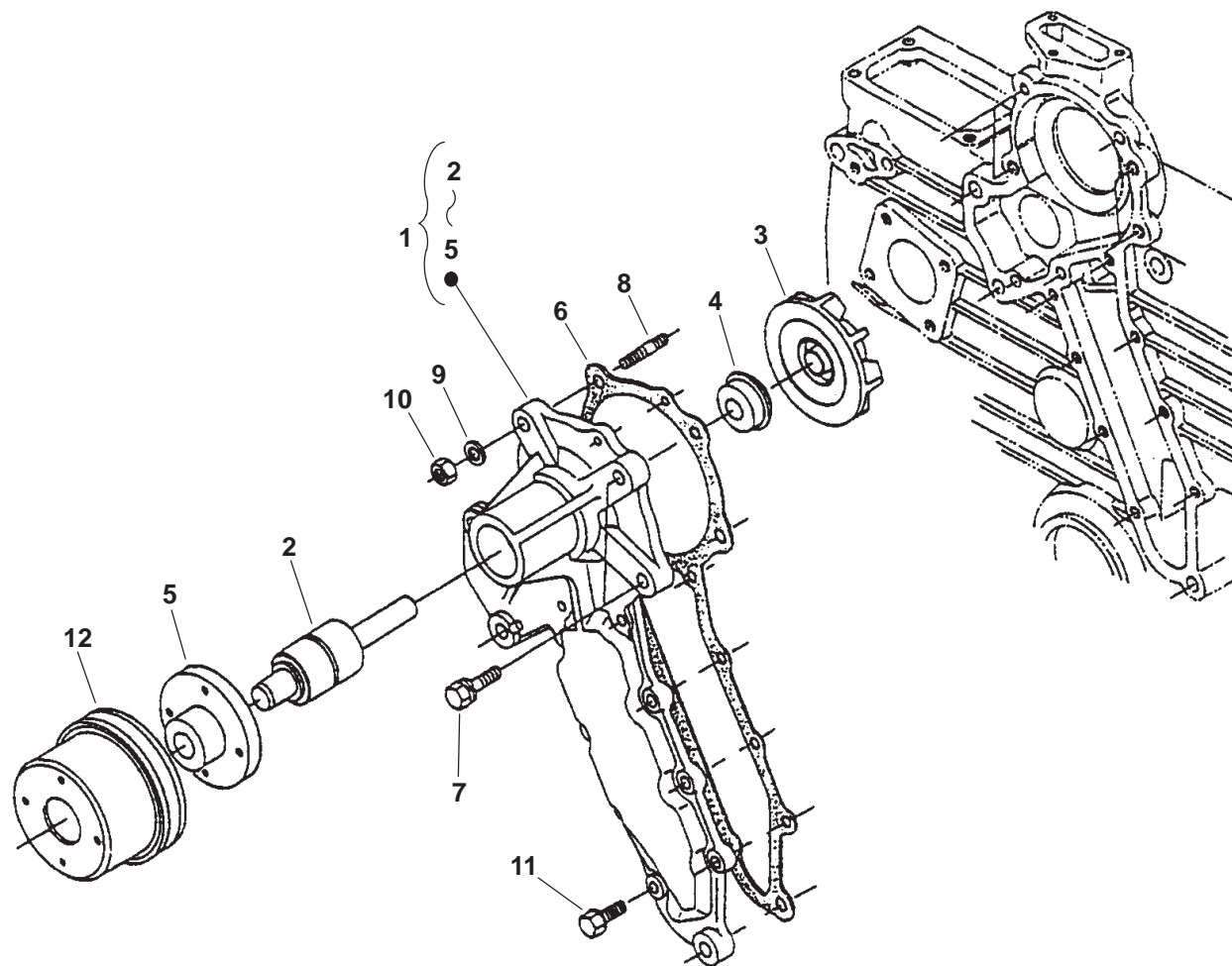
Gearcase



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6765	1	Gearcase Assy (Includes Parts Marked *)	18	185-5877	1	Spring
2	185-5505	2	*Plug	19	185-5878	1	Seat, Valve
3	185-5869	3	*O'Ring	20	185-6711	1	Ball
4	185-5870	1	*O'Ring	21	185-5879	1	Flange, Water Return
5	185-6197	1	*Pin, Start Spring	22	185-5880	1	Gasket
6	185-5843	2	*Pin, Straight	23	185-2390	3	Bolt
7	185-5871	1	Gasket	24	122-0810	1	Filter, Oil
8	185-2405	2	Bolt	25	185-5407	1	Plug, Oil Fill
9	185-5443	5	Bolt	26	185-2349	1	O'Ring
10	185-5872	1	Bolt	27	185-6124	1	Flange, Oil Fill
11	185-5873	2	Bolt	28	185-6125	1	Gasket
12	185-5874	3	Bolt	29	185-6126	2	Stud (Top)
13	185-6078	2	Bolt	30	185-6127	2	Stud (Bottom)
14	185-6957	10	Washer, Spring	31	185-6759	4	Washer, Spring
15	740-1006	1	Washer, Flat	32	185-4255	4	Nut
16	185-5875	1	Joint, Pipe				
17	185-5876	1	Washer, Flat				

* - Parts Included in Gearcase Assy

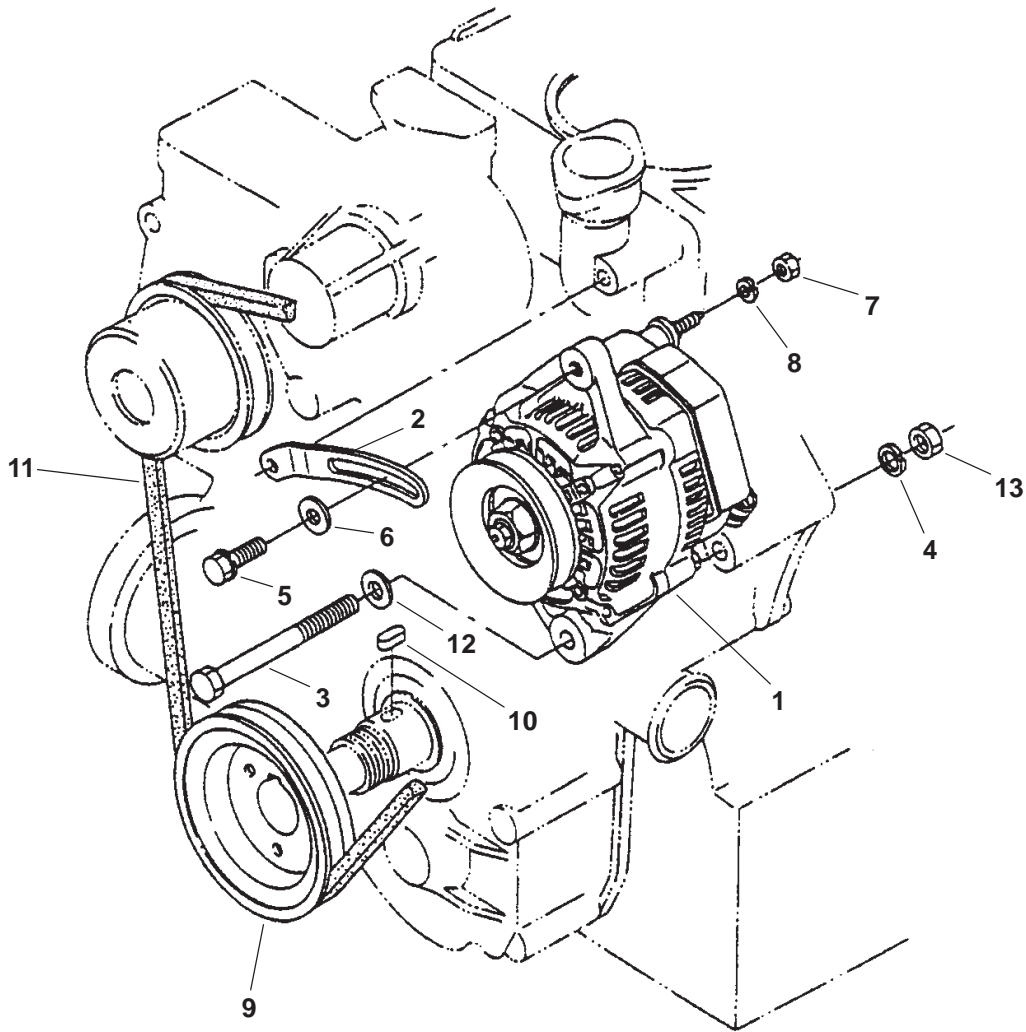
Water Pump



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6006	1	Pump Assy, Water (Includes Parts Marked *)	8	185-6012	2	Stud
2	185-6007	1	*Bearing, Ball	9	185-6957	2	Washer, Spring
3	185-7020	1	*Impeller	10	185-2367	2	Nut
4	185-7021	1	*Seal	11	185-2389	8	Bolt
5	185-6010	1	*Flange	12	185-6013	1	Pulley
6	185-6011	1	Gasket				
7	185-2404	2	Bolt				

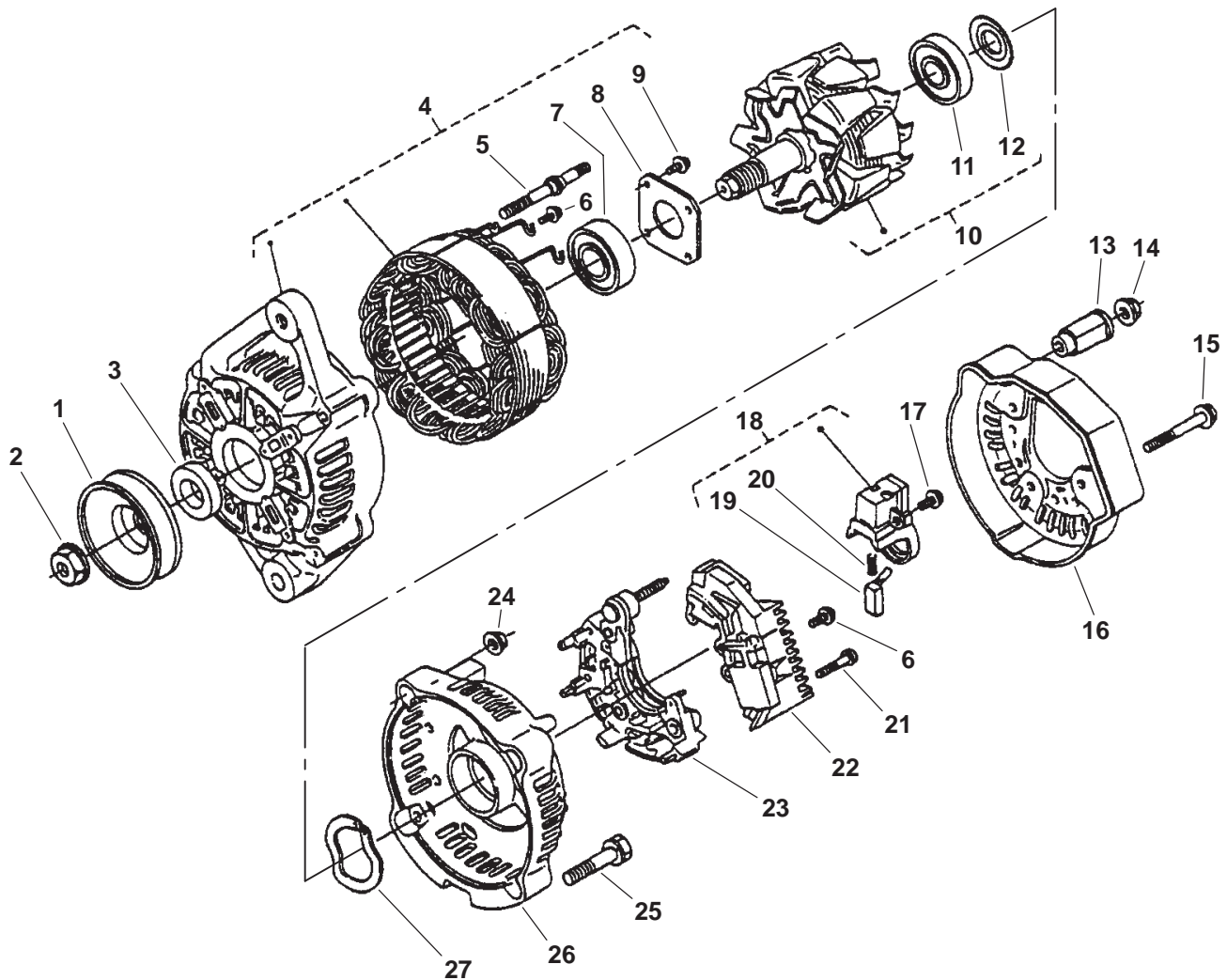
* – Parts Included in Water Pump Assy

Alternator (Negative Ground)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Alternator, Complete (See Separate Page for Components)	4	185-6785	1	Washer, Spring
	185-5994	1	12V	5	185-2564	1	Bolt
	185-6724	1	24V	6	185-6786	1	Washer, Flat
2			Bracket, Adjusting	7	185-4255	1	Nut
	185-6182	1	12V	8	185-2380	1	Washer, Spring
	185-6733	1	24V	9	185-6730	1	Pulley, Fan Drive
3			Bolt	10	185-5905	1	Key
	185-6734	1	MDKAD	11	185-6184	1	Belt
	185-6183	1	MDKAE	12	185-6185	1	Washer, Flat
				13	185-5445	1	Nut

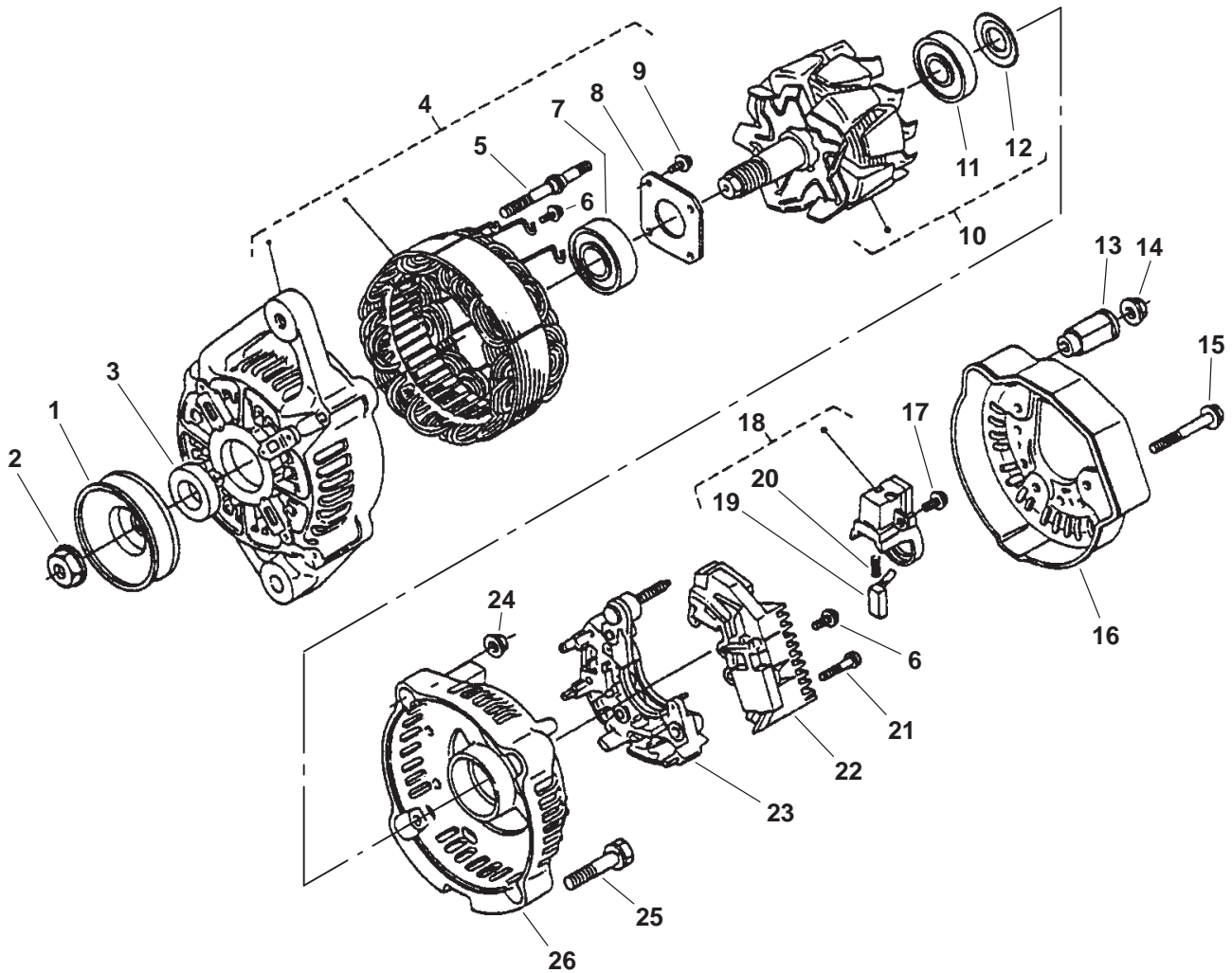
Alternator Components (Negative Ground) (12V)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	185-5994	1	Alternator (12V)	16	185-6189	1	Cover, End
1	185-6186	1	Pulley	17	185-5787	1	Screw, Round Head
2	185-5768	1	Nut	18	185-5782	1	Holder Assy, Brush (Includes Brushes and Springs)
3	185-5769	1	Collar	19	185-5783	2	Brush
4	185-5773	1	Frame, Drive End (Includes Parts Marked *)	20	185-5784	2	Spring, Brush
5	185-5776	2	*Bolt, Through	21	185-5785	2	Screw, Round Head
6	185-5786	6	Screw, Round Head	22	185-5791	1	Regulator
7	185-5777	1	*Bearing	23	185-6190	1	Rectifier
8	185-5774	1	*Plate, Retainer	24	185-5789	2	Nut
9	185-5775	4	*Screw, Round Head	25	185-5790	2	Bolt
10	185-5770	1	Rotor (Includes Bearing and Cover)	26	185-6188	1	Frame, End
11	185-5772	1	Bearing	27	185-6187	1	Washer, Thrust
12	185-5771	1	Cover, Bearing				
13	185-6191	1	Insulation, Brush				
14	185-2961	1	Nut				
15	185-5788	3	Bolt				

* - Parts Included in Drive End Frame

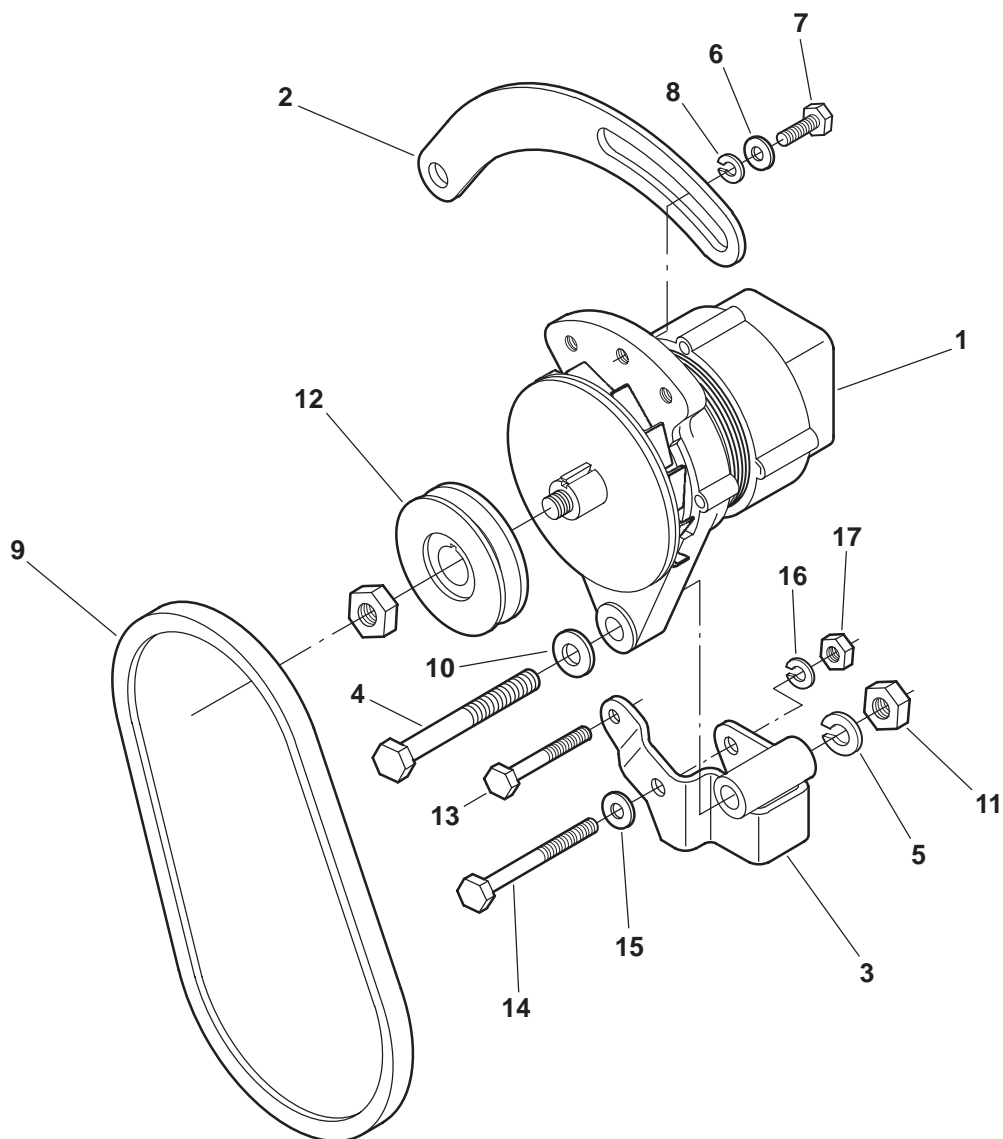
Alternator Components (Negative Ground) (24V)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	185-6724	1	Alternator (24V)	15	185-5788	3	Bolt
1	185-6809	1	Pulley	16	185-6815	1	Cover, End
2	185-5768	1	Nut	17	185-5787	1	Screw, Round Head
3	185-5769	1	Collar	18	185-6819	1	Holder Assy, Brush (Includes Brushes and Springs)
4	185-6812	1	Frame, Drive End (Includes Parts Marked *)	19	185-5783	2	Brush
5	185-5776	2	*Bolt, Through	20	185-5784	2	Spring, Brush
6	185-5786	6	Screw, Round Head	21	185-5785	2	Screw, Round Head
7	185-6813	1	*Bearing	22	185-6820	1	Regulator
8	185-5774	1	*Plate, Retainer	23	185-6816	1	Rectifier
9	185-5775	4	*Screw, Round Head	24	185-5789	2	Nut
10	185-6810	1	Rotor (Includes Bearing and Cover)	25	185-5790	2	Bolt
11	185-6811	1	Bearing	26	185-6814	1	Frame, End
12	185-5771	1	Cover, Bearing				
13	185-5781	1	Insulation, Brush				
14	185-2961	1	Nut				

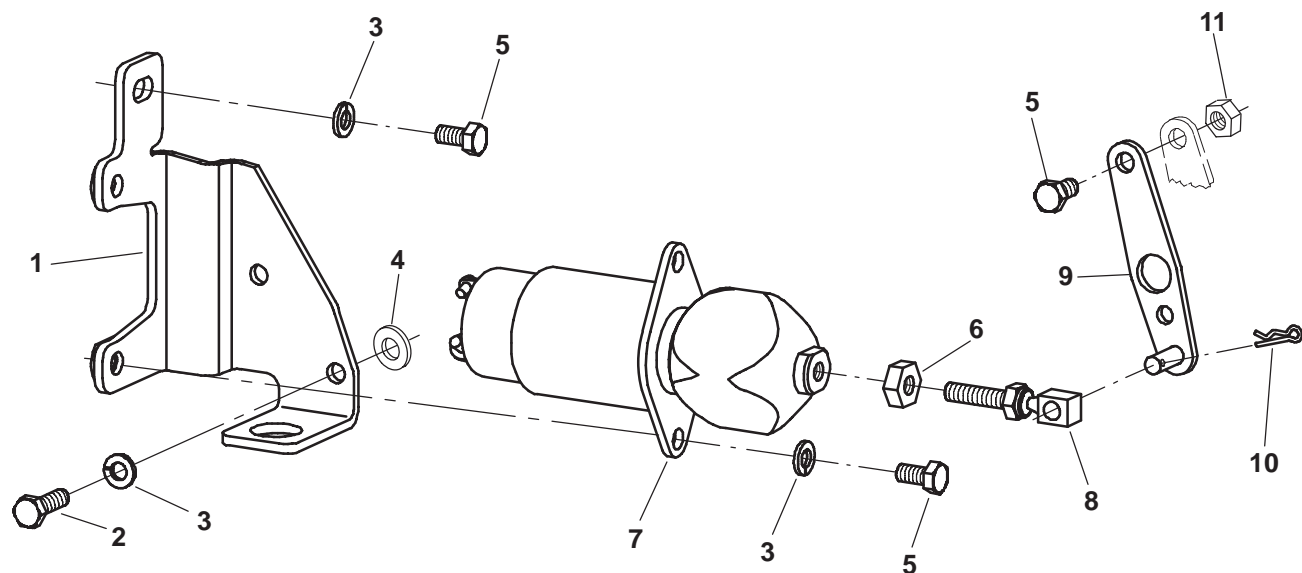
* - Parts Included in Drive End Frame

Alternator (Isolated Ground)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Alternator, Complete (No Components Available)	8	850-0045	1	Washer, Lock (5/16")
	191-2169-02	1	12V	9	511-0186	1	Belt
	191-2169-01	1	24V	10	526-0219	1	Washer, Flat (1/2")
2	191-2168-03	1	Bracket, Adjusting	11	862-0016	1	Nut (1/2-13)
3	191-2167-03	1	Bracket, Alternator	12	191-2170	1	Pulley, Alternator
4	800-0104	1	Screw, Hex Head Cap (1/2-13 x 4-1/2")	13	718-1048	1	Screw, Hex Head Cap (M8 x 80)
5	850-0060	1	Washer, Lock (1/2")	14	800-2100	1	Screw, Hex Head Cap (M10 x 100)
6	526-0045	1	Washer, Flat (5/16")	15	526-2120	1	Washer, (M10)
7	800-0027	1	Screw, Hex Head Cap (5/16-18 x 7/8")	16	850-2010	1	Washer, Lock (M10)
				17	750-1008	1	Nut, Hex (M10)

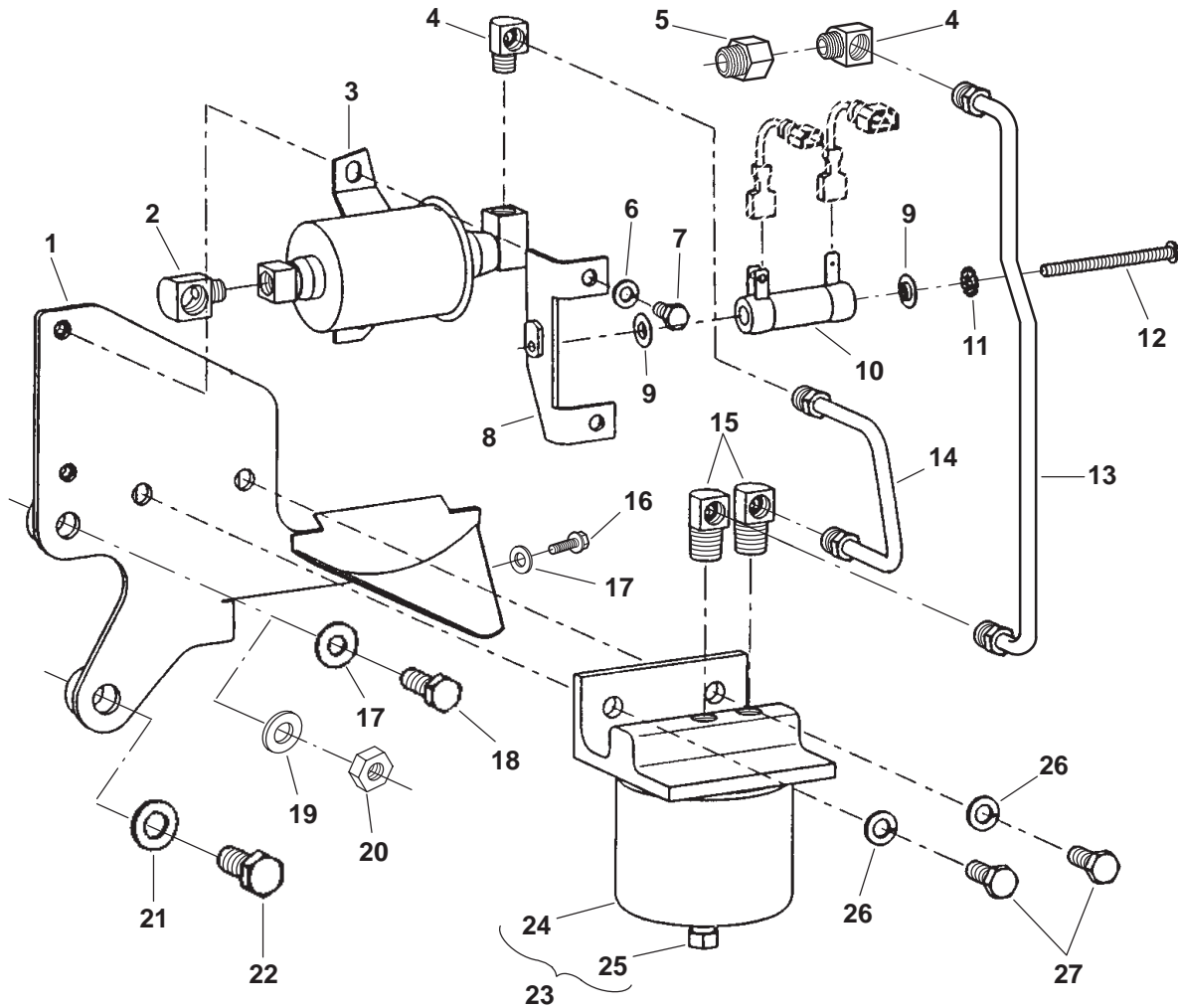
Stop Solenoid



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	307-2808-02	1	Bracket, Solenoid
2	800-2034	2	Screw, Hex Head Cap (M6 x 1 x 20mm)
3	850-2006	5	Washer, Lock (M6)
4	526-2081	2	Washer, Flat (M6)
5	800-2029	4	Screw, Hex Head Cap (M6 x 1 x 12mm)
6	115-0025	1	Nut, Tappet (1/4-28)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
7			Solenoid, Stop (K7)
	307-2820	1	12V
	307-2820-01	1	24V
8	150-2579	1	Swivel, Ball Joint
9	150-2567-03	1	Lever, Stop
10	518-0656	1	Clip, Linkage
11	870-2054	1	Nut, Lock Flange (M6 x 1)

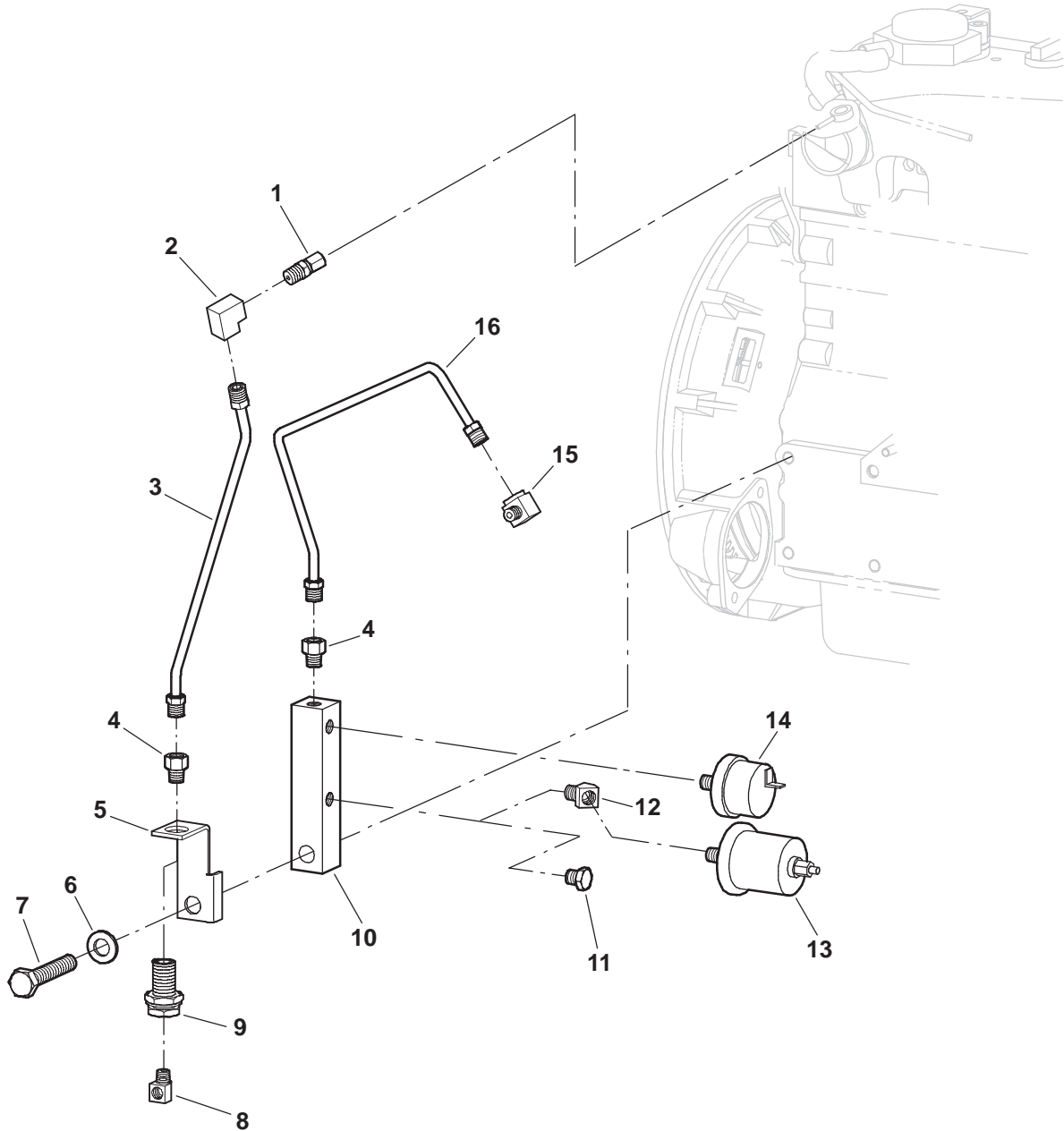
Fuel Pump



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	149-2531-04	1	Bracket, Fuel Pump	17	526-2120	2	Washer, Flat (M10) (W/O PTO)
2	502-0099	1	Elbow, Street Pipe	18	800-3005	1	Screw, Hex Head Cap (M10 x 1.25 x 30mm) (W/O PTO)
3	149-2331-01	1	Pump, Electric Fuel (E5)	19	526-2106	1	*Washer, Flat (W/PTO)
4	502-0002	2	Elbow, Inverted Male	20	860-2008	1	*Nut (W/PTO)
5	502-0175	1	Adapter, Pipe	21	526-0399-64	1	Washer, Flat (M12)
6	850-2006	2	Washer, Lock (M6)	22	800-3032	1	Screw, Hex Head Cap (M12 x 1.25 x 30mm)
7	718-1019	2	Screw, Hex Head Cap (M6 x 1 x 14mm)	23	149-2100	1	Filter, Fuel (Includes Element Plug and)
8	304-0828-02	1	Bracket, Resistor (24V)	24	149-2106	1	Element
9	304-0796	2	Washer, Centering (24V)	25	502-0028	1	Plug, Drain
10	304-0797	1	Resistor (24V) (R6)	26	850-2008	2	Washer, Lock (M8)
11	856-0003	1	Washer, EIT (#10) (24V)	27	718-1036	2	Screw, Hex Head Cap (M8 x 1.25 x 20mm)
12	813-0112	1	Screw, Round Head Machine (#10-32 x 2.5") (24V)				
13	149-2437	1	Line, Fuel				
14	149-2436	1	Line, Fuel				
15	502-0041	2	Elbow, Inverted Male				
16	800-3030	1	Screw, Hex Head Cap W/O PTO (M10 x 1.25 x 20mm)				
	815-0904	1	* W/PTO				

* - Parts Included in PTO Kit Found on PTO Page.

Fuel Return/Oil Sender

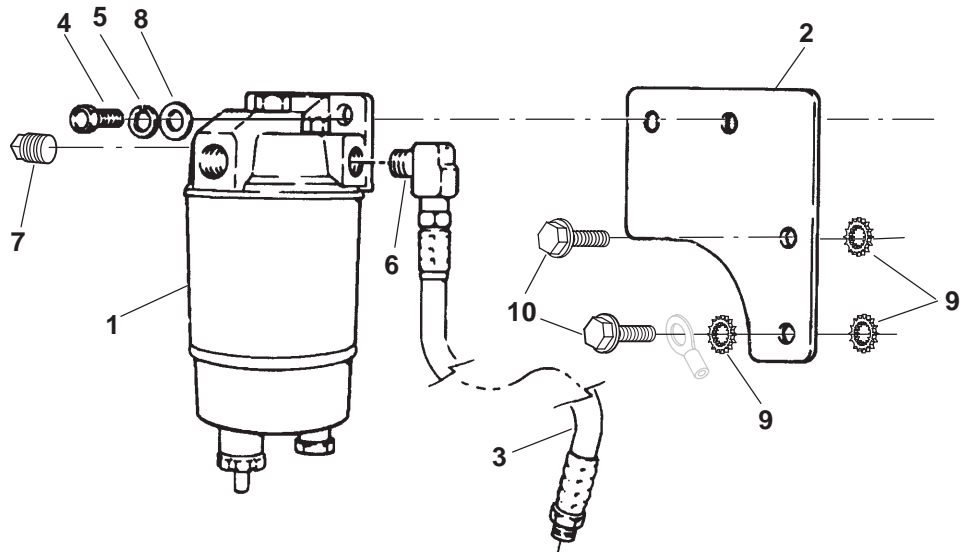


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	502-1245	1	Adapter, Pipe
2	502-0005	1	Elbow, Inverted Female
3	149-2488	1	Line, Fuel Return
4	502-0003	2	Connector, Inverted Male
5	149-2489-03	1	Support, Fuel Return
6	526-0399-64	1	Washer, Flat (M12)
7	800-3029	1	Screw, Hex Head Cap (M12 x 1.25 x 45mm)
8	502-0020-01	1	Elbow, Street Pipe
9	502-1244	1	Coupling, Anchor
10	120-1319	1	Manifold, Oil Pressure
11	502-0028	1	Plug, Hex Head Pipe

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
12	502-0053	1	Elbow, Street Pipe 45°
13			Sender, Oil Pressure (E1)
	193-0244	1	Negative Ground
	193-0430-01	1	Isolated Ground
14			Switch, Oil Pressure (S4)
	309-0561-05	1	Negative Ground
	309-0578	1	Isolated Ground
15	502-1309	1	Elbow, Male
16	122-0813	1	Line, Oil

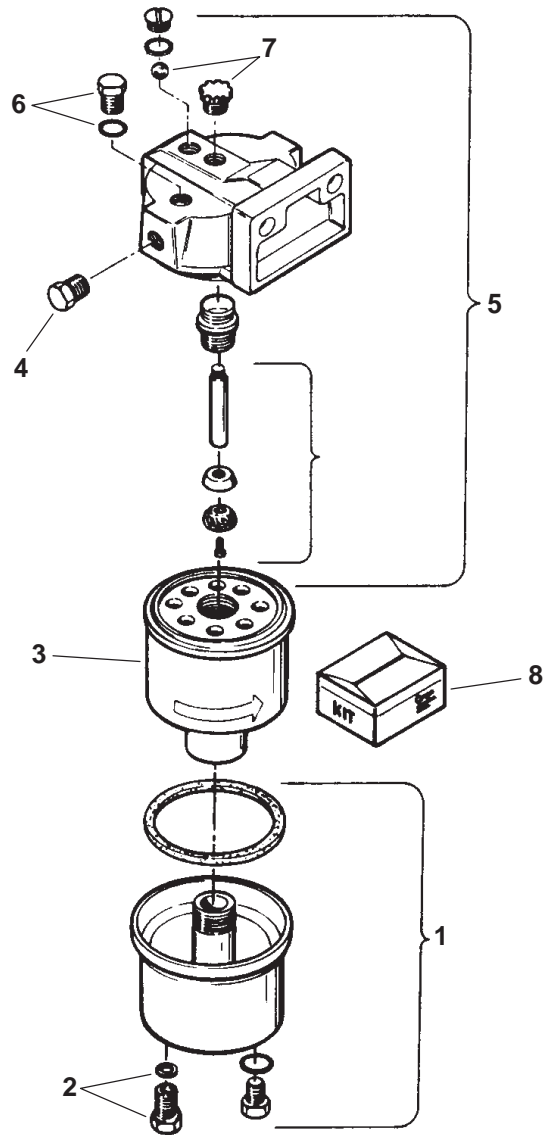
* — Part Included in Sender Kit Found on Water Outlet Flange Page.

Remote Water Separator



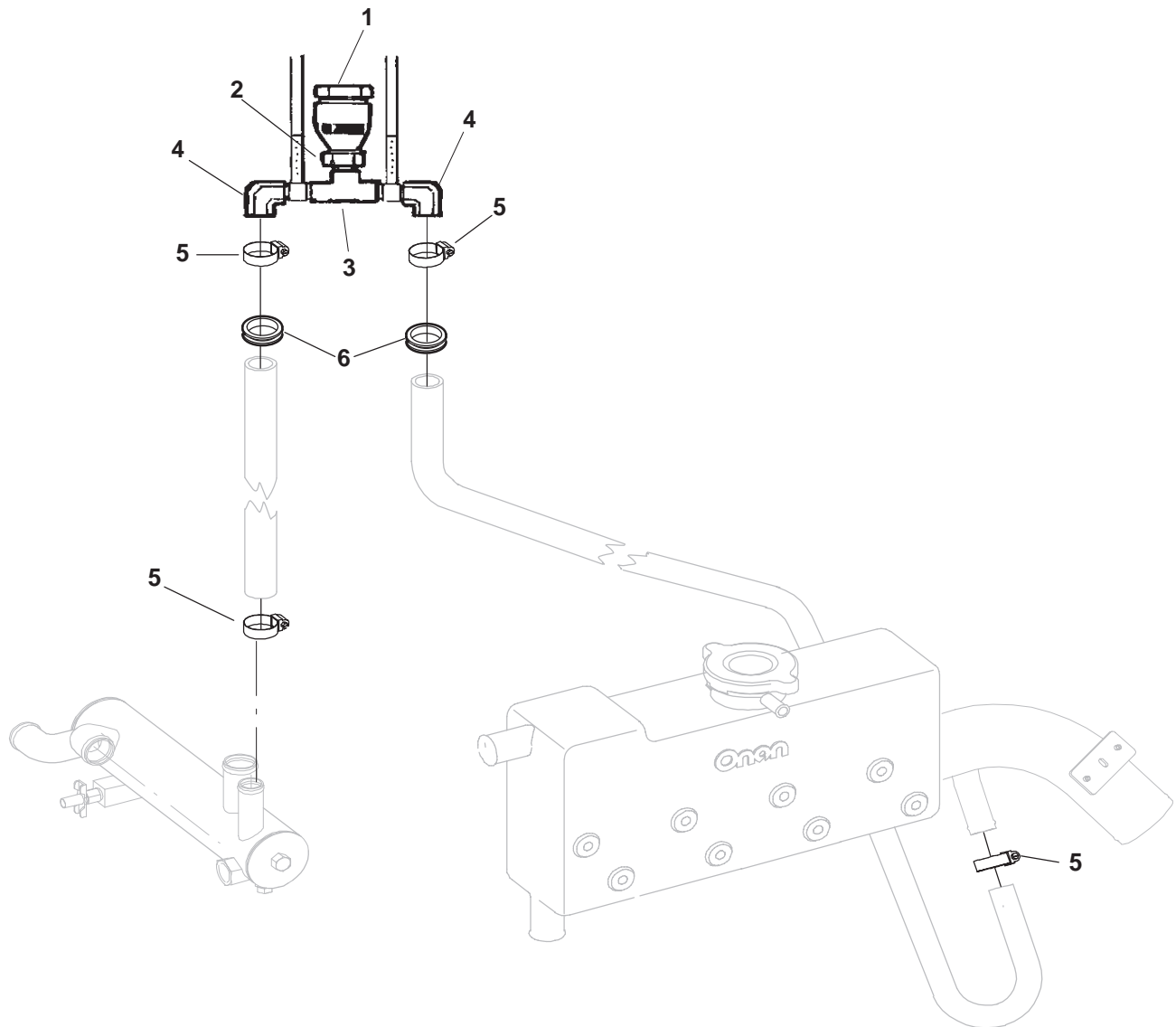
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	149-2313	1	Kit, Remote Fuel/Water Separator	5	850-2008	2	Washer, Lock (M8)
1	149-1908-05	1	Separator, Fuel/Water (See Separate Page for Components)	6	502-0054	1	Elbow, Street 90° (1/4 NPT)
2	149-2312	1	Bracket, Separator Mounting	7	502-0153	1	Plug, Hex Pipe (1/4 NPT)
3	501-0578	1	Line, Flex Fuel	8	526-2100	2	Washer, Flat (M8)
4	718-1038	2	Screw, Hex Head Cap (M8 x 1.25 x 30mm)	9	856-0012	3	Washer, EIT (7/16")
				10	718-1055	2	Screw, Hex Head Cap (M10 x 1.5 x 30mm)

Water Separator Components



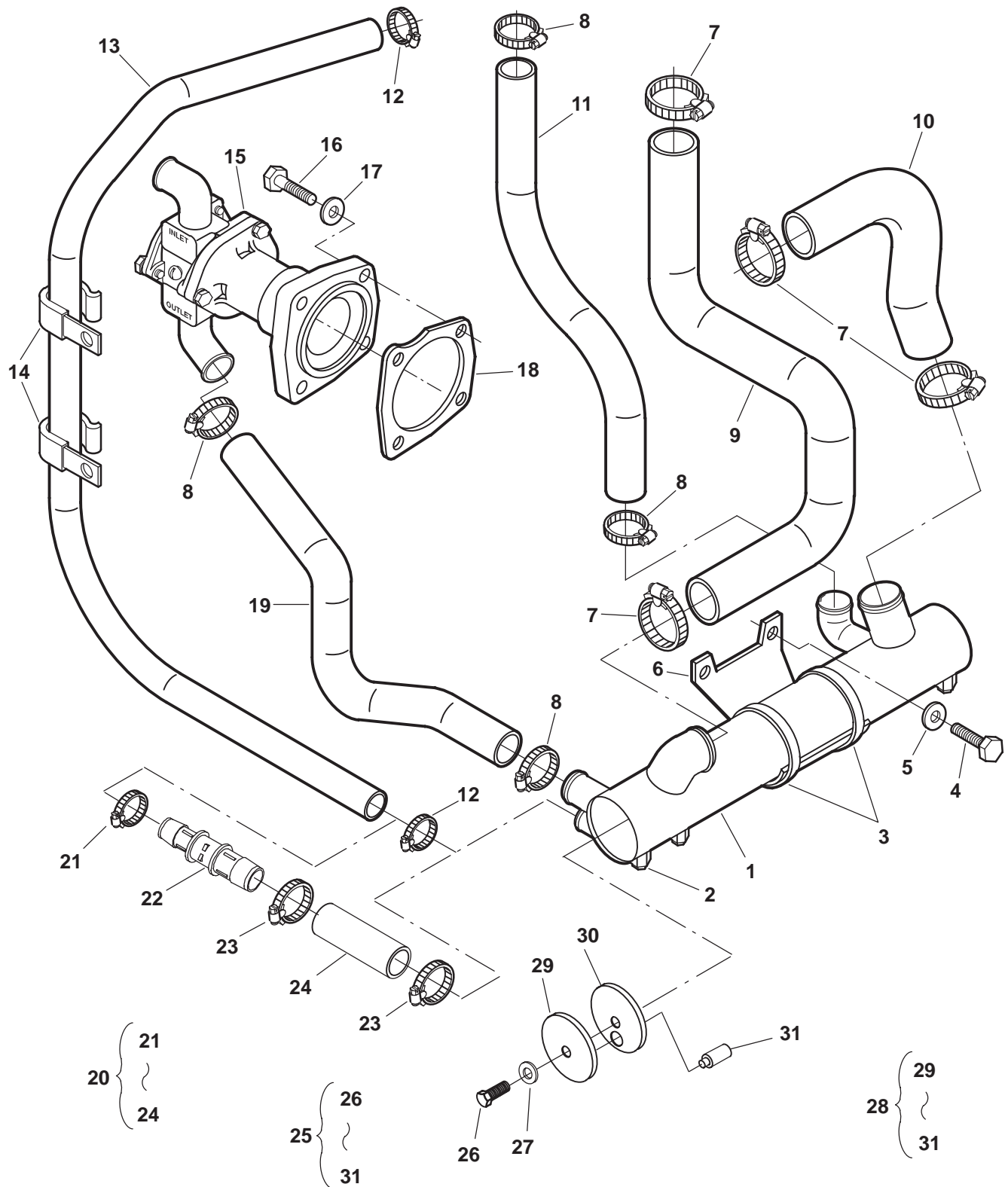
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	149-1908-05	1	Separator, Water	6	149-1952	1	Plug, Vent (Includes O-Ring)
	149-2046	1	Kit, Metal Bowl Replacement (Includes Plug, O-Rings and Drain Assy)	7	149-2047	1	Pump Assy (Includes Plunger, Retainer, Shaft, Check Ball, Knob and Screw)
2	149-1953	1	Drain Assy (Includes Knob and Seal)	8	149-2045	1	O'Ring Kit (Includes Seal and Plunger)
3	149-1914-05	1	Element (Includes Seals)				
4	502-0153	1	Plug, Hex (1/4")				
5	149-1949	1	Head Assy, Replacement (Includes Vent Plug, O-Rings, Seal, Cap, Tube and Pump Assy)				

Vacuum Relief Valve



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	155-2950	1	Kit, Siphon Break	4	502-0942	2	Elbow, 90 Hose (3/8 Npt X 5/8")
1	504-0062	1	Valve, Vacuum Relief	5	503-0977	4	Clamp, Hose (#10)
2	502-0270	1	Adapter, Pipe (3/8" x 1/2")	6	508-1102	2	Grommet
3	502-0090	1	Tee (3/8")				

Heat Exchanger



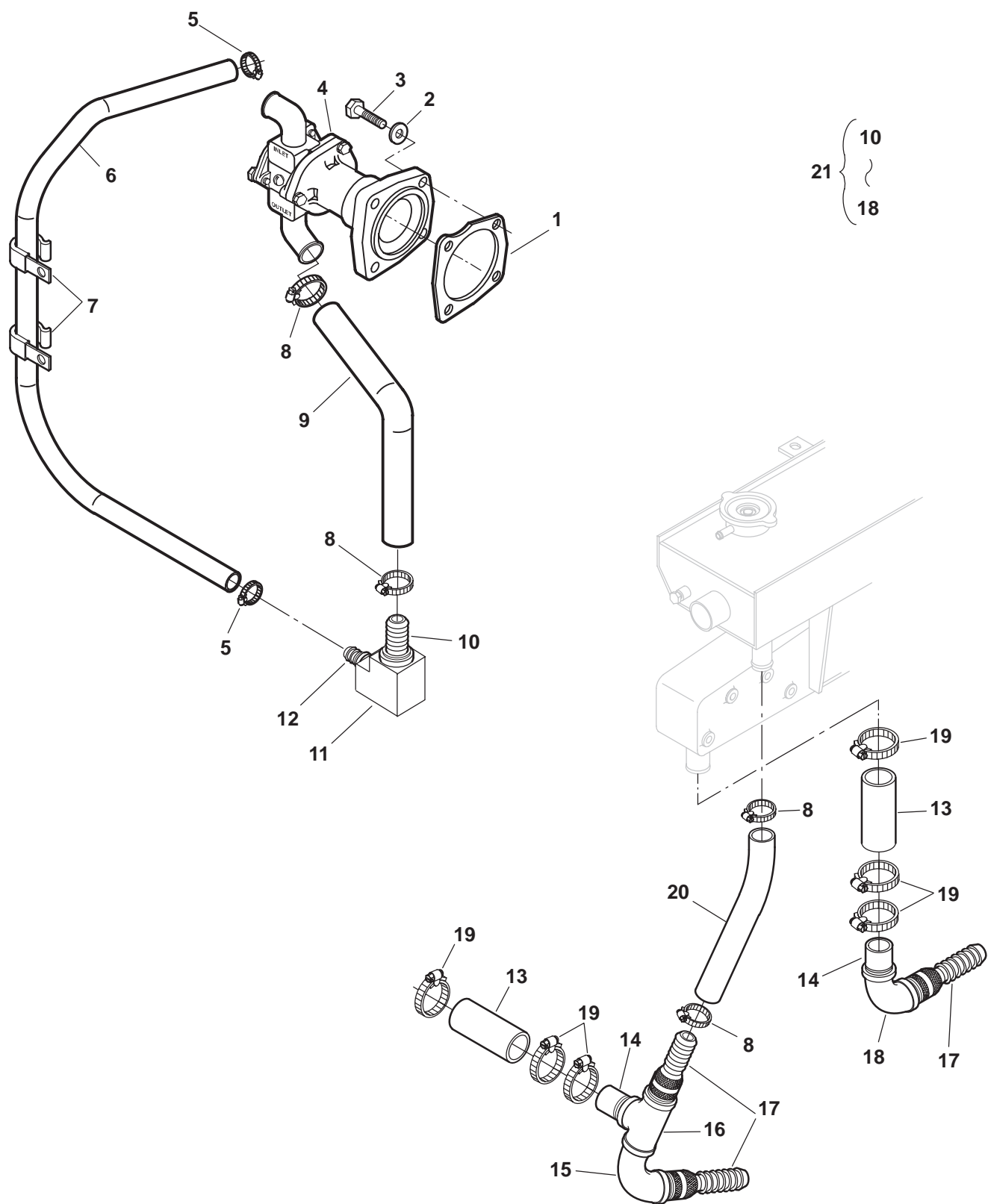
Heat Exchanger

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Exchanger, Heat	18	132-0346	1	Gasket, Water Pump
	130-4433-02	1	Spec A-B	19	503-1978	1	Hose, Water Pump (1")
	130-5006-02	1	Begin Spec C	20	130-5008	1	Kit, Heat Exchanger (Includes Connector, Hose and Clamps)
2	130-4434	1	Pencil, Zinc (w/Screw)				(Adapt Old Hoses to New Heat Exchanger)
3	503-1143	2	Clamp, Hose (3")	21	503-1134	1	Clamp, Hose
4	800-3030	2	Screw, Hex Head Cap (M10 x 1.25 x 20mm)	22	503-2106	1	Connector, Reducer
5	526-2120	2	Washer, Flat (M10)	23	503-1135	2	Clamp, Hose
6	130-4234-03	1	Bracket, Heat Exchanger	24	503-1194	1	Hose, Rubber
7	503-1138	4	Clamp, Hose (1-3/8")	25	130-4979	1	Kit, Heat Exchanger Zinc Pencil (Includes Parts Marked +)
8	503-1137	4	Clamp, Hose (1")	26	800-0317	1	+ Screw, Hex Head (5/16-18 x 3/4")
9	503-1977	1	Hose, Exhaust Manifold (1-3/8") (Includes Slewing)	27	850-0165	1	+ Washer, Lock (5/16")
10	503-1896	1	Hose, Engine Coolant (1-3/8")	28	130-5012	1	+ Kit, End Cover (Includes Parts Marked *)
11			Hose, Coolant Tank Lower (1" x 22")	29			Cover, Heat Exchanger W/O Zinc Pencil Boss)
	503-1163	1	Spec A-B		130-4567	1	+* W/Zinc Pencil Boss)
	503-0501	1	Begin Spec C	30			Gasket, Cover W/O Zinc Pencil Hole
12	503-0977	2	Clamp, Hose		130-4962-01	1	+* W/Zinc Pencil Hole
13			Hose, Mixer	31	130-4961	1	+* Pencil, Zinc (w/o Screw)
	503-1562-02	1	Spec A-B (5/8 x 43")				
	503-2122	1	Begin Spec C (3/4 x 43")				
14	332-2634	2	Clamp, "J"				
15	132-0356	1	Pump, Raw Water (See Separate Page for Components)				
16	718-1036	4	Screw, Hex Head Cap (M8 x 1.25 x 20)				
17	526-2100	4	Washer, Flat (M8)				

+ - Parts Included in Heat Exchanger Zinc Pencil Kit.

* - Parts Included in End Cover Kit.

Keel Cooling
(Wet Exhaust)

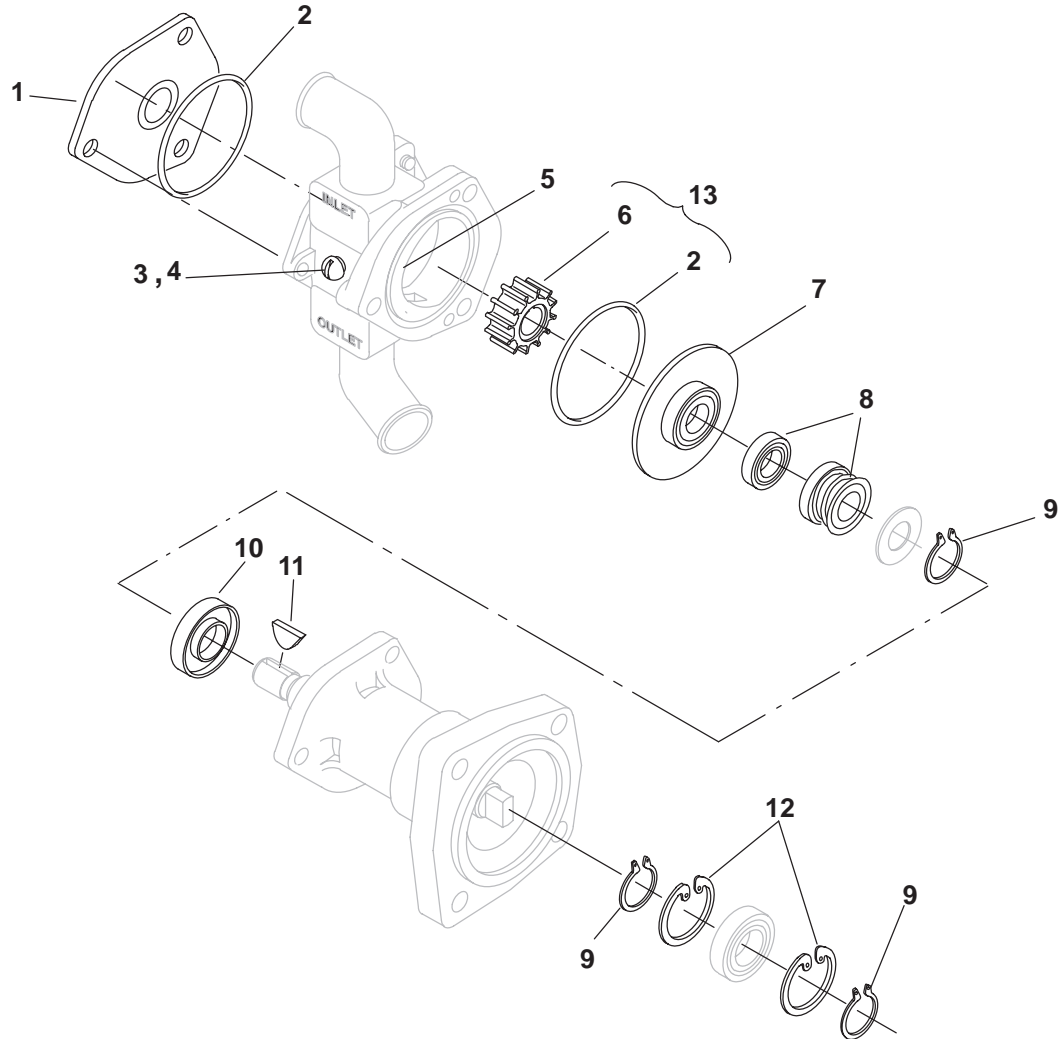


Keel Cooling (Wet Exhaust)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	132-0346	1	Gasket, Water Pump	13	503-2023	2	*Hose, Coolant (1-3/8" x 4")
2	526-2100	4	Washer, Flat (M8)	14	505-0446-01	2	*Nipple, Half
3	718-1036	4	Screw, Hex Head Cap (M8 x 20mm)	15	505-0003	1	*Elbow
4	132-0356	1	Pump, Raw Water	16	505-0304	1	*Tee
5	503-0977	2	Clamp, Hose	17	505-1509	3	*Barb, Hose
6			Hose	18	505-0041	1	*Elbow
	503-1168	1	Spec A-B (5/8")	19	503-1138	6	Clamp, Hose (1-3/8")
	503-0200	1	Begin Spec C (3/4" x 36")	20	503-2025-01	1	Hose, Coolant (1" x 10")
7	332-2634	2	Clamp, "J"	21	155-3148-01	1	Kit, Keel Cooling (Includes Parts Marked *)
8	503-1137	4	Clamp, Hose (1")				
9	503-2025-02	1	Hose, Outlet (1" x 12")				
10	502-1295-02	1	*Adapter (3/4" NPT x 1" Barb)				
11	502-1297	1	*Elbow, 90				
12			*Adapter (3/4"NPT)				
	502-1295-01	1	Spec A-B (5/8" Barb)				
	502-1295-03	1	Begin Spec C (3/4" Barb)				

* - Parts Included in Keel Cooling Kit.

Water Pump Components



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
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MDKAD

*Old Water Pump Prior to S/N F96353298

*New Water Pump Begin S/N F96353298

MDKAE

*Old Water Pump Prior to S/N F963543104

*New Water Pump Begin S/N F963543104

			Kit, Major Service
	132-0350	1	Old (Includes Parts Marked *)
	132-0384	1	New (Includes Parts Marked +)
1			Cover
	—	1	# Old Pump
	132-0386	1	+ New Pump
2	132-0293	2	#+O'Ring
3	132-0390	1	##Screw, Cam
4	132-0389	1	##+Washer, Seal

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
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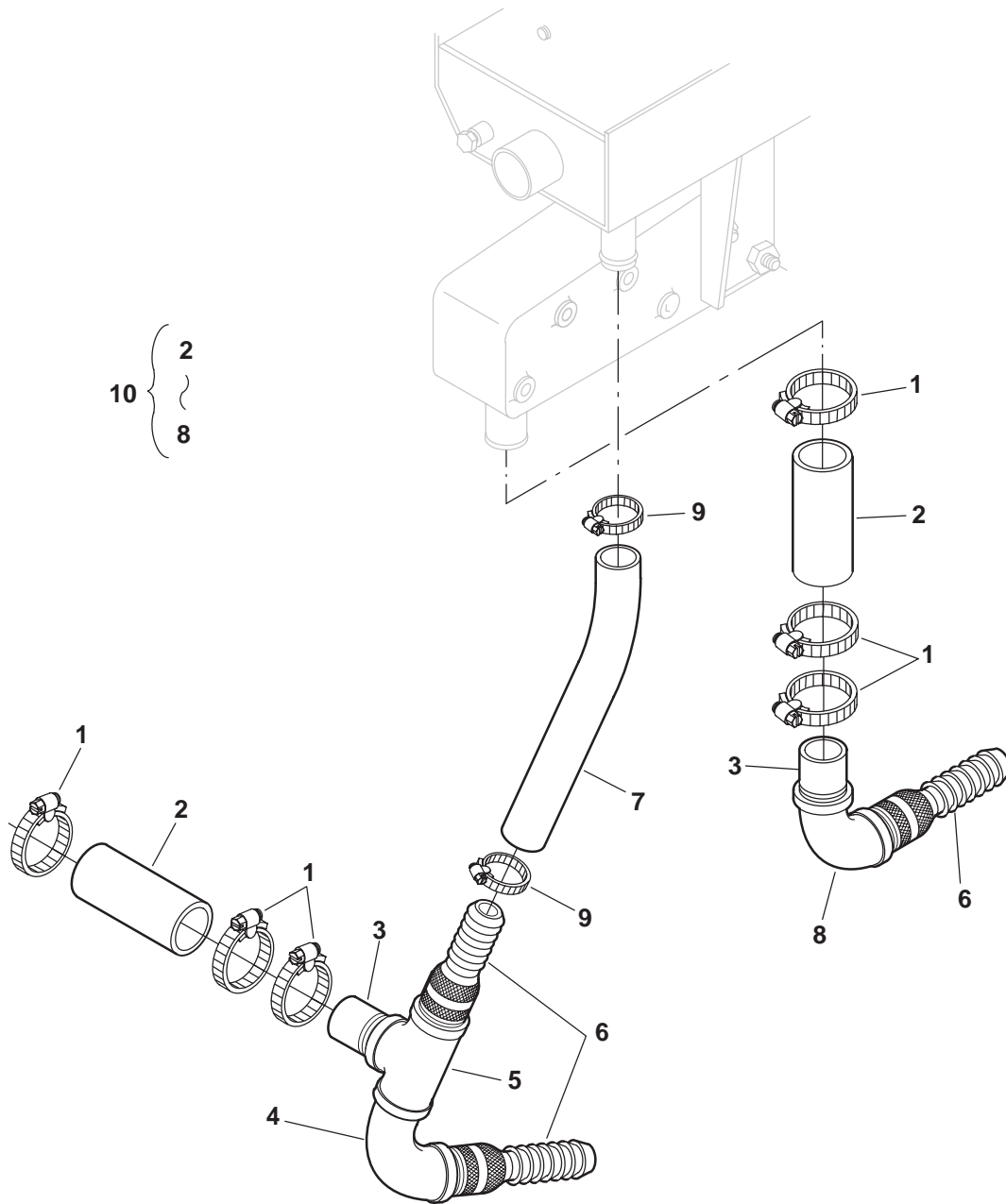
5	132-0388	1	##+Cam
6	132-0348	1	##+Impeller
7		1	Plate, Wear
	—	1	# Old Pump
	132-0385	1	+ New Pump
8		1	Seal/Seat Assy
	—	1	# Old Pump (Lip)
	132-0387	1	+ New Pump (Mechanical)
9	132-0393	3	+Ring, Retaining
10	132-0394	1	+Seal, Lip
11	132-0391	1	##+Key
12	132-0392	2	+Ring, Retaining
13	132-0349	1	Kit, Minor Water Pump Service (Includes Impeller and O'Ring)

* — See Definition Above.

— Parts Included in Major Service Kit for *Old Pump.

+ — Parts Included in Major Service Kit for *New Pump.

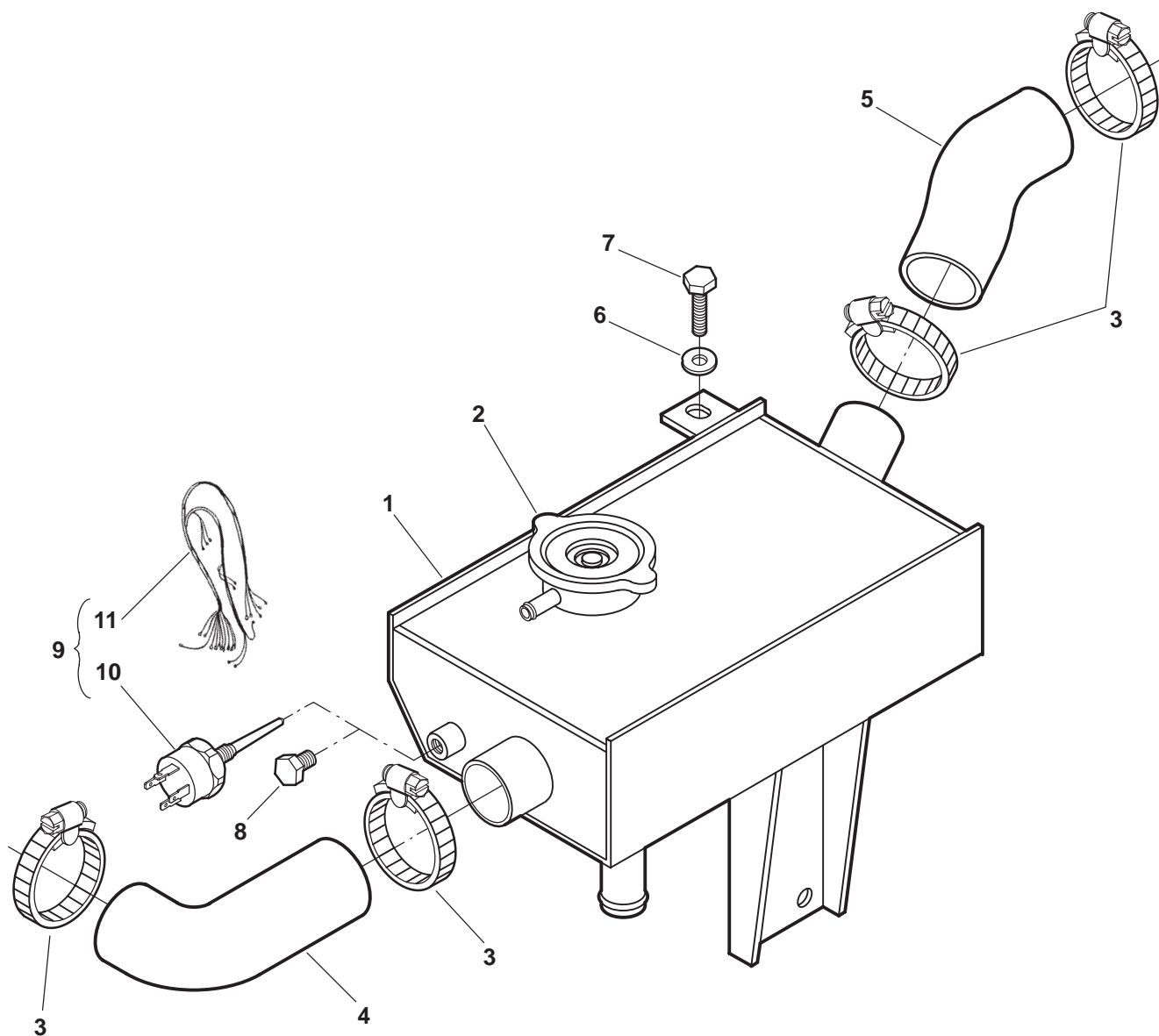
Keel Cooling System (Dry Exhaust)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-1138	6	Clamp, Hose (1-3/8")	9	503-1137	2	Clamp, Hose (1")
2	503-2023	2	*Hose, Coolant (1-3/8" x 4")	10	155-3087	1	Kit, Keel Cooling (Includes Parts Marked *)
3	505-0446-01	2	*Nipple, Half				
4	505-0003	1	*Elbow				
5	505-0304	1	Tee				
6	505-1509	3	*Barb, Hose				
7	503-2025-01	1	*Hose, Coolant (1" x 10")				
8	505-0041	1	*Elbow				

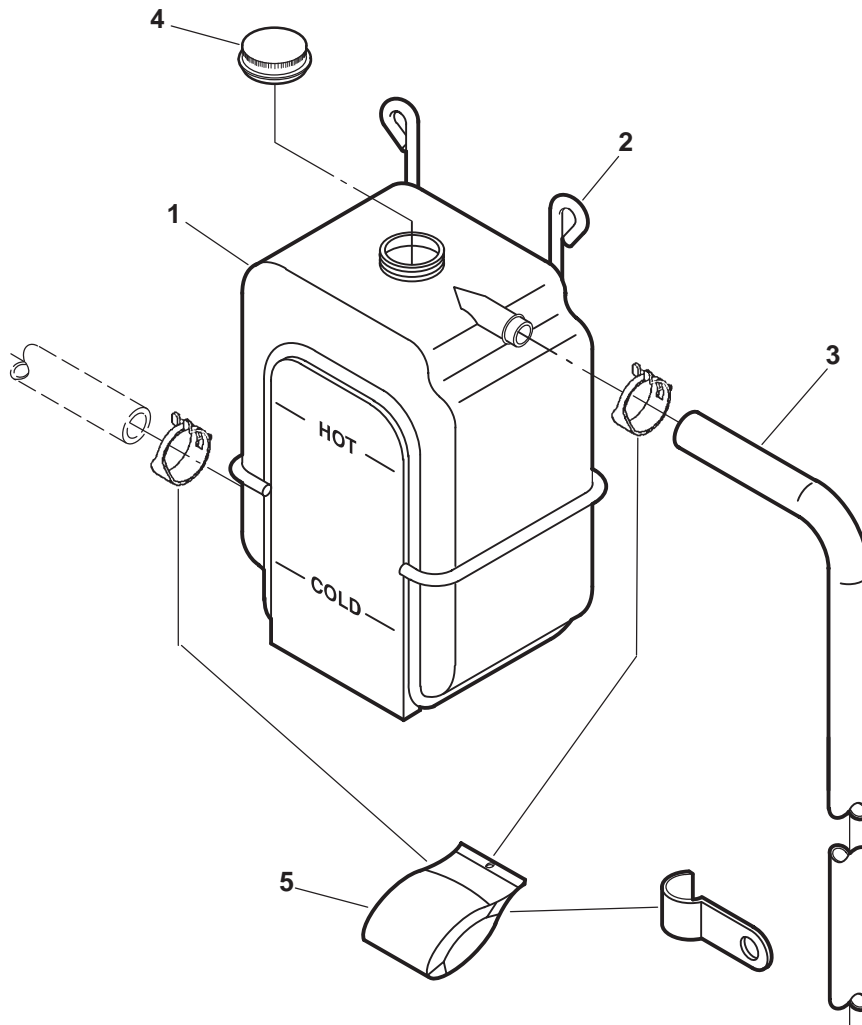
* - Parts Included in Keel Cooling Kit. (Also Includes Cover, Gasket and Hardware Found on Cylinder Block Page.)

Coolant Tank



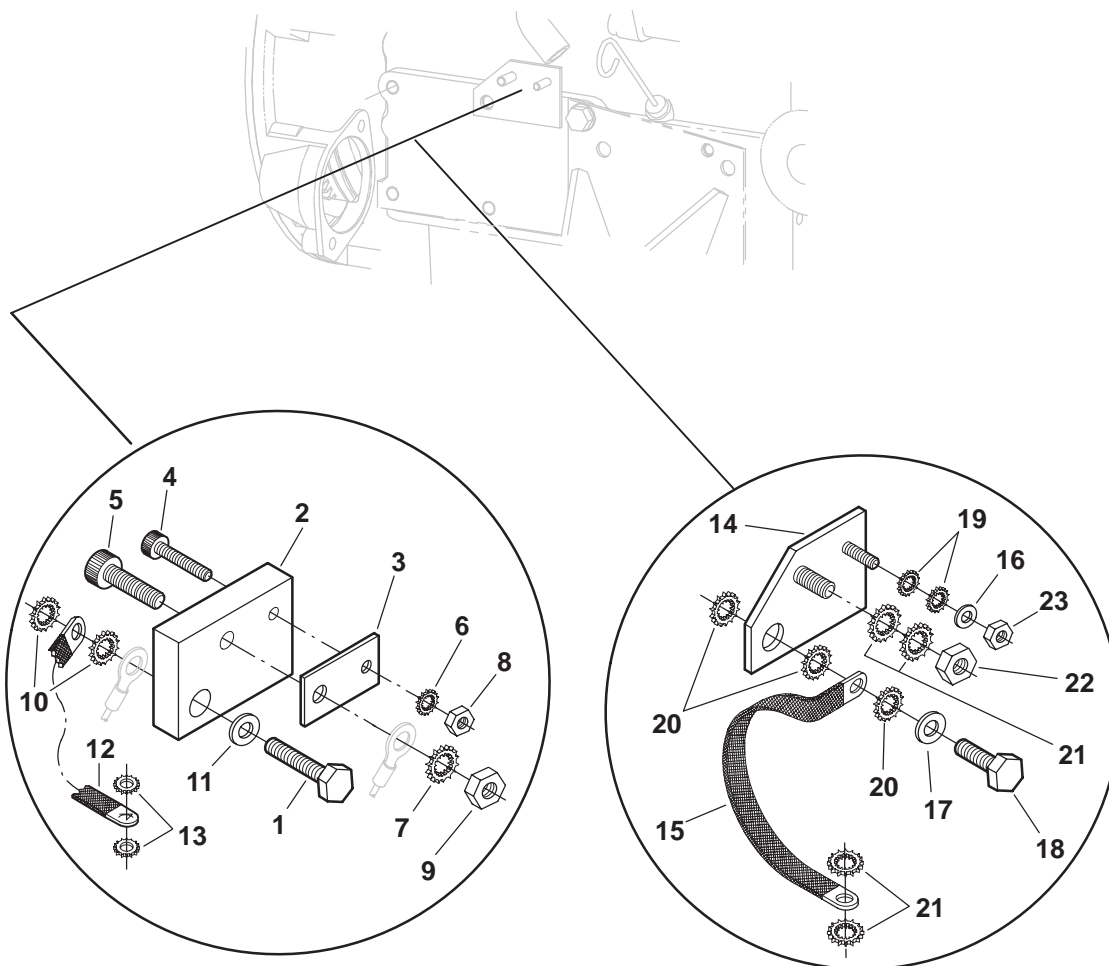
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	130-4881-02	1	Tank, Coolant	5	503-1899	1	Hose, Upper "S" (1-3/8")
2	130-2248	1	Cap, Tank Old (Used w/Old Tank 130-4235-02)	6	526-2100	1	Washer, Flat (M8)
	130-3721	1	New (Used w/New Tank 130-4881-01)	7	800-2054	1	Screw, Hex Head Cap (M8 x 1.25 x 14mm)
	130-4718	1	Accy (Used w/Second Coolant Tank)	8	502-0153	1	Plug, Hex Pipe (1/4)
3	503-1138	4	Clamp, Hose (1-3/8")	9	300-4686	1	Kit, Low Coolant Sender (Includes Switch and Harness)
4	503-1898	1	Hose, Upper Elbow (1-3/8")	10	193-0468	1	Sender, Low Coolant
				11	338-3594	1	Harness, Pigtail

Coolant Recovery



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	130-3574	1	Kit, Coolant Recovery	4	130-3572	1	Cap, Tank
1	130-3570	1	Tank, Coolant Recovery	5	130-3573	1	Hardware Package (Includes Mounting Hardware)
2	130-3571	1	Hanger, Tank				
3	503-1692	1	Hose (5/16 I.D. x 120" Lg.)				

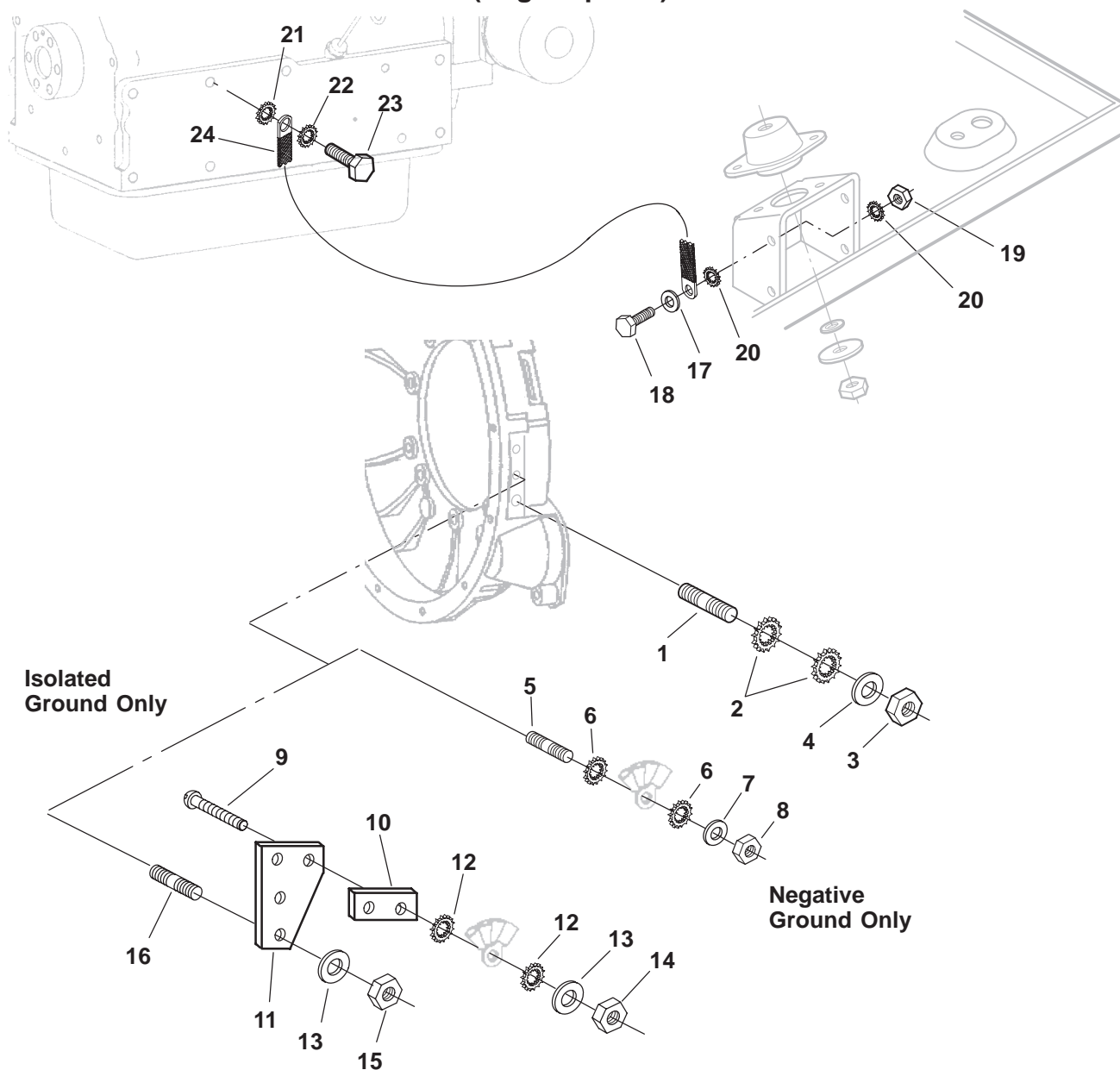
Grounding System (Spec A-B)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
<u>Isolated Ground</u>			
1	800-2115	1	Screw, Hex Head Cap (M12 x 45)
2	337-2832	1	Isolator, Ground
3	337-2833-02	1	Strip, Ground
4	802-0038	1	Screw, Socket Head (1/4-20 x 1.5")
5	802-0057	1	Screw, Socket Head (5/16-18 x 1.5")
6	856-0006	1	Washer, EIT Lock (1/4)
7	856-0008	1	Washer, EIT Lock (5/16")
8	862-0001	1	Nut, Hex (1/4-20)
9	862-0015	1	Nut, Hex (5/16-18)
10	856-0013	2	Washer, EIT Lock (1/2")
11	526-2140	1	Washer, Flat (M12)
12	337-2785	1	Strap, Bond
13	856-1008	3	Washer, Lock - EIT(5/16")

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
<u>Negative Ground</u>			
14	337-2784-02	1	Bar, Bus
15	337-2785	1	Strap, Bond
16	526-0052	1	Washer, Flat (17/64) (Used with 12V Sets Only)
17	526-2140	1	Washer, Flat (M12)
18	800-3033	1	Screw, Cap - Hex Head (M12 x 1.25 x 25mm)
19	856-0006	2	Washer, Lock - EIT (1/4")
20	856-0013	3	Washer, Lock - EIT(1/2")
21	856-1008	4	Washer, Lock - EIT(5/16")
22	862-0015	1	Nut, Hex (5/16-18)
23	871-0016	1	Nut, Hex (1/4-20)

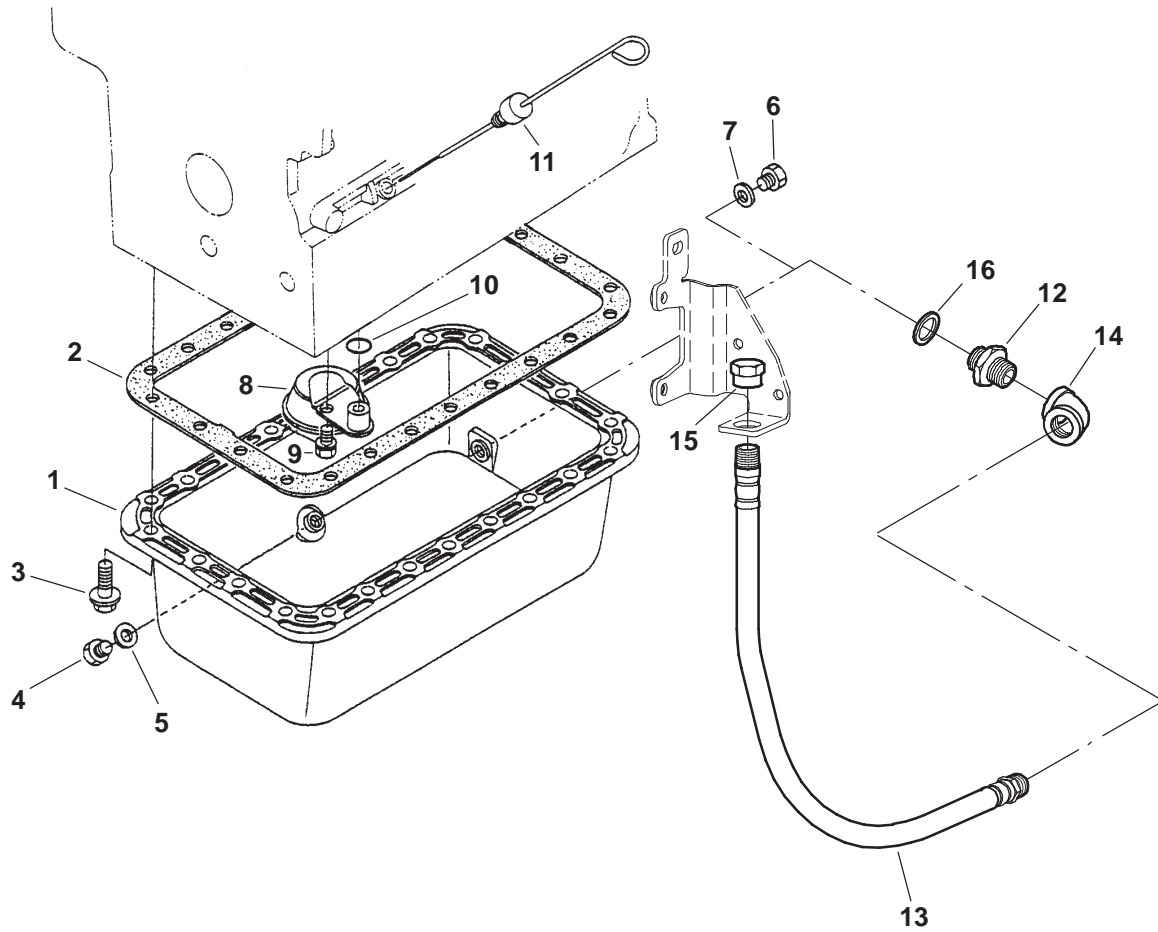
Grounding System (Begin Spec C)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	520-1006	1	Stud, Stainless Steel
2	856-0008	2	Washer, EIT Lock (5/16")
3	871-0025	1	Nut, Hex Brass (5/16-18)
4	526-0045	1	Washer, Flat (5/16")
Negative Ground Only			
5	520-1005	2	Stud, Stainless Steel
6	856-0006	4	Washer, EIT Lock (1/4)
7	526-0016	2	Washer, Flat (1/4")
8	871-0015	2	Nut, Hex Brass (1/4-20)
Isolated Ground Only			
9	810-0156	2	Screw, Round Head Brass Machine (1/4-20 x 1-1/2")
10	337-2970	1	Strip, Ground
11	337-2969	1	Isolator, Ground

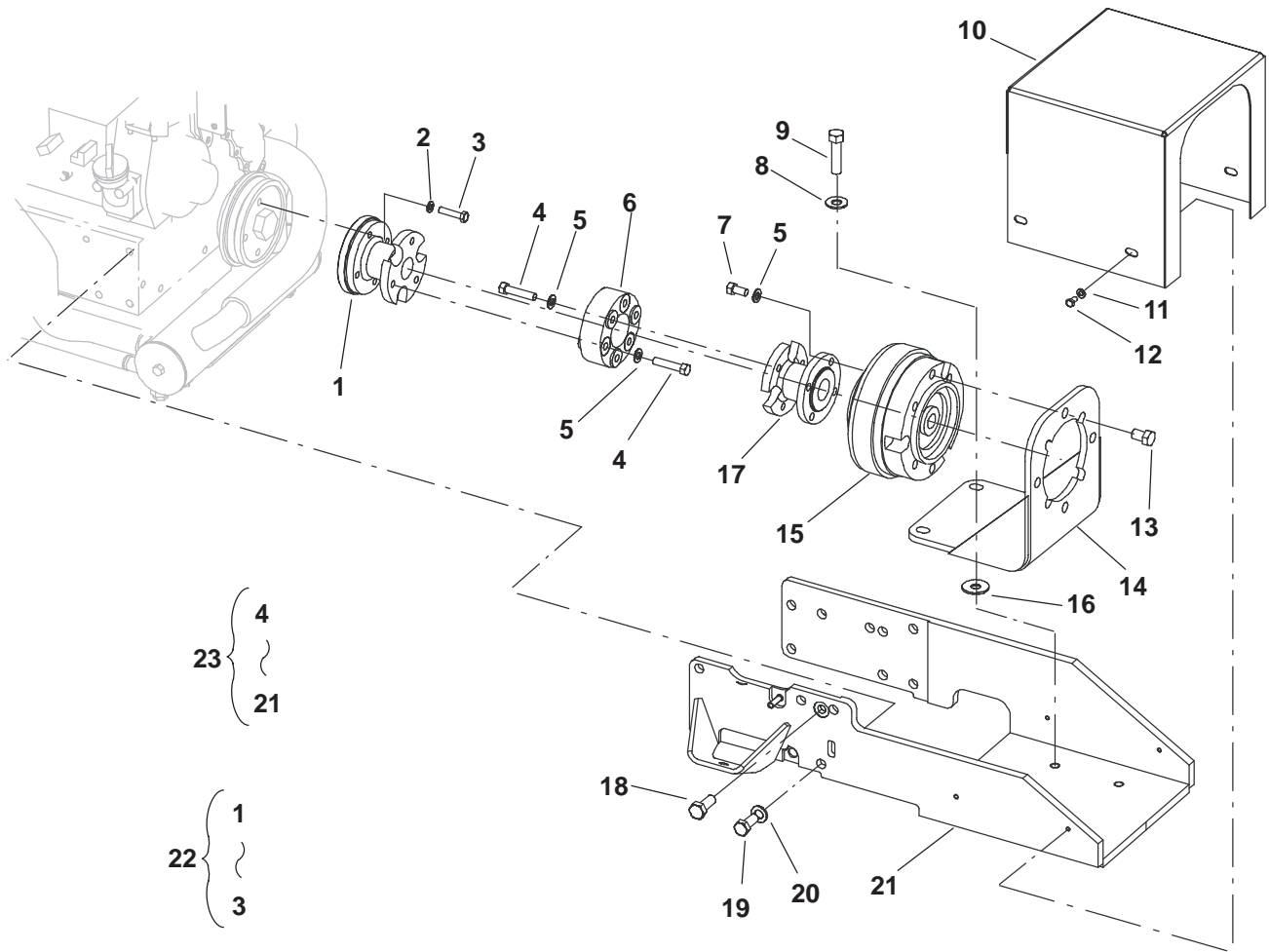
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
12	856-0006	4	Washer, EIT Lock
13	526-0016	4	Washer, Flat (1/4")
14	871-0015	2	Nut, Hex Brass (1/4-20)
15	862-0013	2	Nut, Hex (1/4-20)
16	520-1005	2	Stud, Stainless Steel
17	526-2100	1	Washer, Flat (M8)
18	718-1036	1	Screw, Hex Head Cap (M8 x 1.25 x 20mm)
19	860-2008	1	Nut, Hex (M8)
20	856-0008	2	Washer, EIT Lock (5/16")
21	856-0013	1	Washer, EIT Lock (1/2")
22	526-0399-64	15	Washer, Flat (M12)
23	800-3031	1	Screw, Hex Head Cap
24	337-2785	1	Strap, Bond

Oil Pan



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6727	1	Pan, Oil	10	185-3078	1	O'Ring
2	185-5854	1	Gasket	11	185-6122	1	Indicator, Oil Level
3	185-5855	24	Bolt, Flange	12	102-1449-01	1	Adapter, Oil Drain
4	185-2096	1	Plug	13	501-0624	1	Line, Flex Oil (24")
5	185-2343	1	Gasket	14	502-0263	1	Elbow, Pipe
6	185-6760	1	Bolt	15	502-1123	1	Cap, Pipe
7	185-6761	1	Gasket	16	526-0413	1	Washer, Oil Drain
8	185-6728	1	Tube, Oil Pickup				(.625ID x .875OD x .075Thk)
9	185-6762	1	Bolt				

PTO



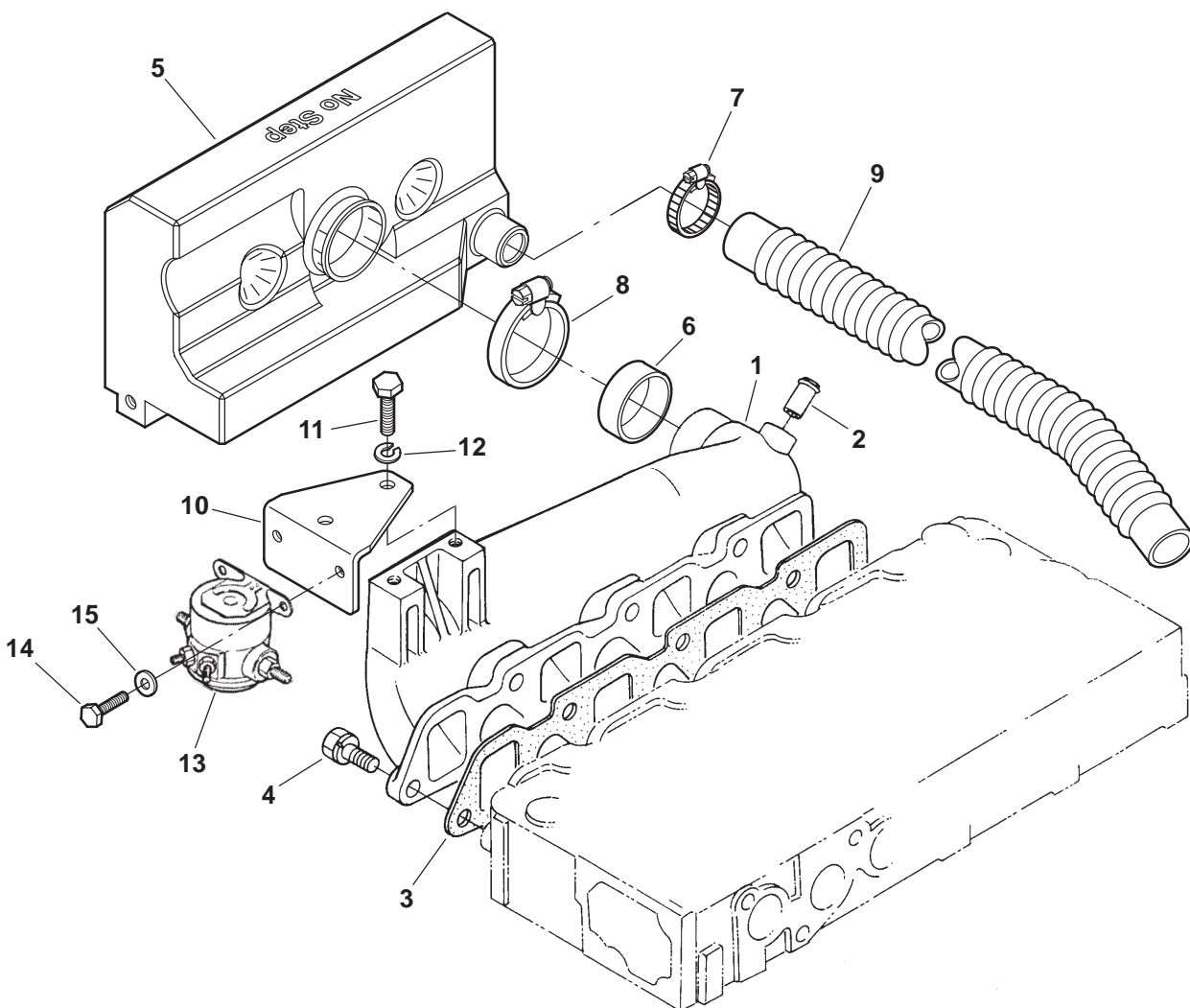
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	190-0730-02	1	+Adapter, Engine Coupling
2	526-2101	3	+Washer, Flat (M8)
3	800-2060	3	+Screw, Hex Head Cap (M8 x 35)
4	800-0054	6	*Screw, Hex Head Cap
5	526-0026	10	*Washer, Flat
6	190-0731	1	*Coupling, Flex
7	801-1050	4	*Screw, Hex Head Cap
8	526-0399-44	4	*Washer, Flat (1/2")
9	800-0091	4	*Screw, Hex Head Cap
10	190-0736-03	1	*Guard, Coupling
11	526-2080	4	*Washer, Flat
12	800-2029	4	*Screw, Hex Head Cap (M6 x 12)
13	800-0090	2	*Screw, Hex Head Cap
14	190-0734-03	1	*Bracket, PTO Clutch
15		1	*Clutch
	190-0729-01	1	12V
	190-0729-02	1	24V
16			Shim, PTO
	190-0756-01	AR	.005
	190-0756-02	AR	.010
	190-0756-03	AR	.020

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
17	190-0732-02	1	*Adapter, Coupling Clutch
18	800-3033	1	*Screw, Hex Head Cap
19	800-3032	10	*Screw, Hex Head Cap (M12 x 1.25)
20	526-0399-64	10	*Washer, Flat
21	190-0745-04	1	*Bracket, PTO
22	190-0740	1	Kit, PTO Adapter (Includes Parts Marked +)
23			Kit, PTO (Includes Parts Marked *)
	190-0738	1	12V
	190-0739	1	24V

+ - Parts Included in PTO Adapter Kit. (Also Includes Mounting Isolator Found on Mounting Base Page)

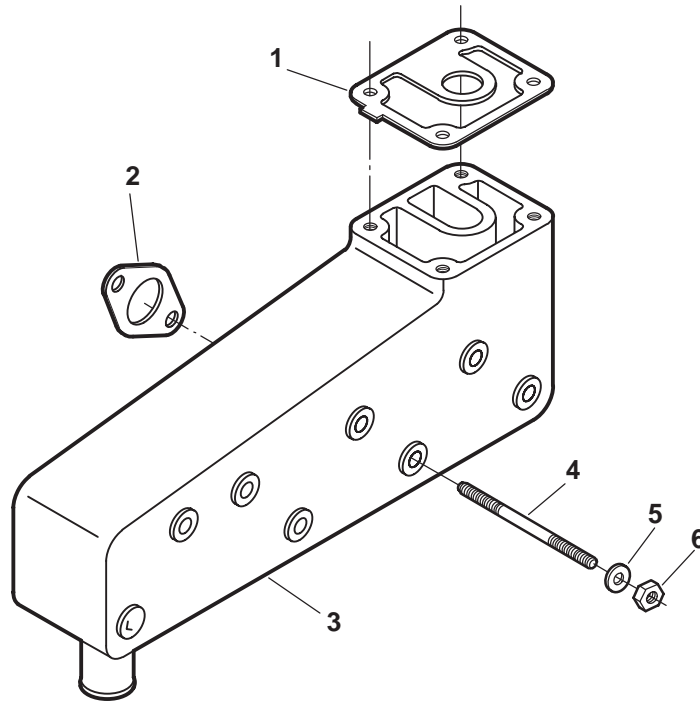
* - Parts Included in PTO Kit. (Also Includes Fuel Pump Mounting Hardware Found on Fuel Pump Page)

Intake Manifold



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6715	1	Manifold, Intake	12	850-2010	2	Washer, Lock (M10) (Isolated Ground)
2	185-6723	1	Joint, Breather	13			Relay, Solenoid (Isolated Ground)
3	185-6035	1	Gasket		307-1617	1	12V
4	185-2402	7	Bolt		307-2656	1	24V
5	140-2859	1	Resonator, Intake	14	800-2029	2	Screw, Hex Head Cap (M6 x 12mm) (Isolated Ground)
6	140-3048	1	Sleeve, Air Intake	15	526-2080	2	Washer, Flat (M6) (Isolated Ground)
7	503-1138	1	Clamp, Hose (1-3/8")				
8	503-1143	1	Clamp, Hose (3")				
9	503-1939	1	Hose, Intake (1-3/8" x 28"Lg)				
10	191-2166-03	1	Bracket, Solenoid Relay (Isolated Ground)				
11	800-3018	2	Screw, Hex Head Cap (M10 x 16mm) (Isolated Ground)				

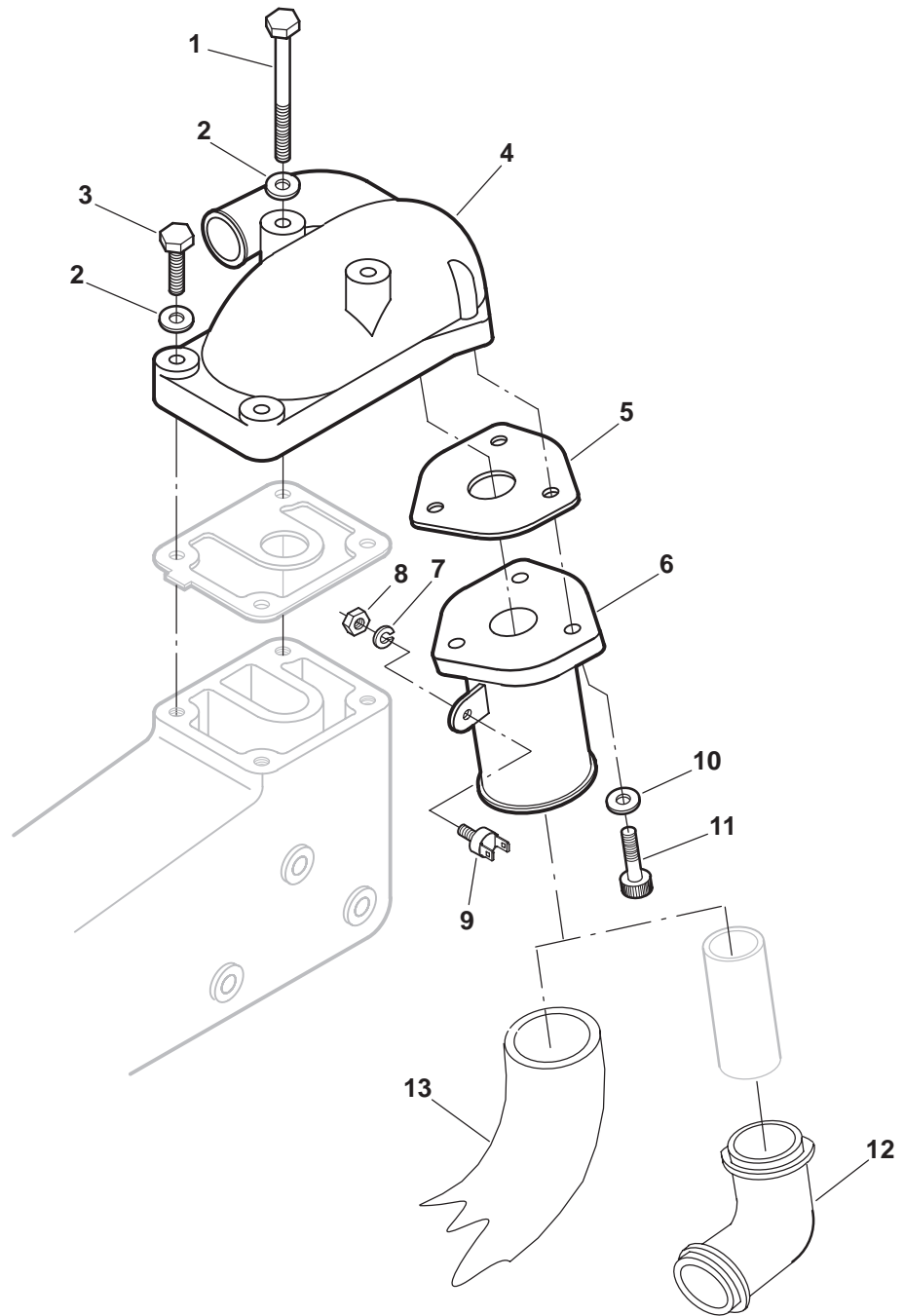
Exhaust Manifold



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	155-2975	1	*Gasket, Riser/Adapter	5	526-2100	8	Washer, Flat (M8)
2	154-2915	4	Gasket, Exhaust Manifold	6	750-1006	8	Nut (M8 x 1.25)
3	154-2887	1	Manifold, Exhaust				
4	520-2218-01	8	Stud				

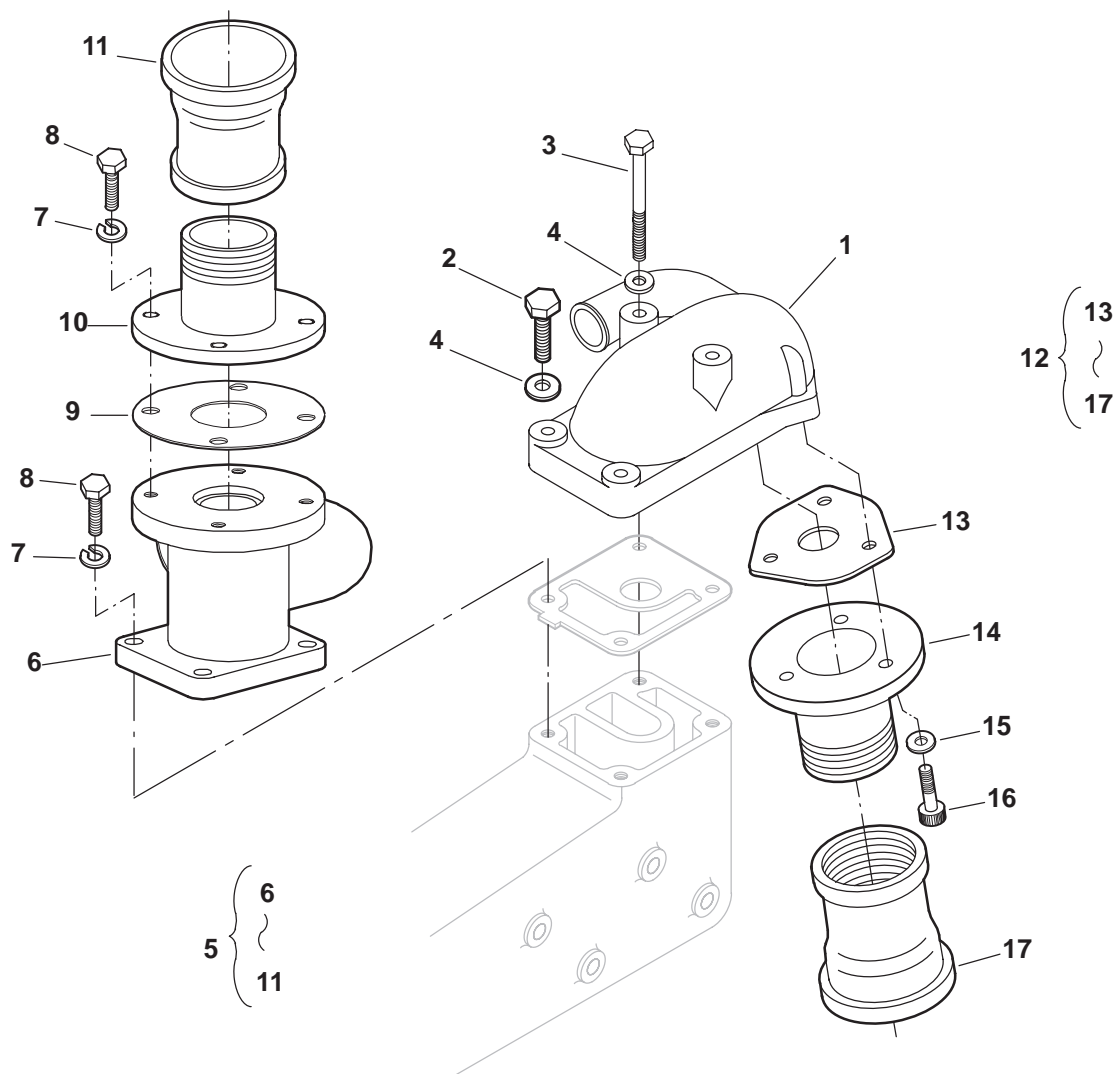
* – Part Included in Exhaust Adapter Kit Found on Dry Exhaust Page.

Wet Exhaust



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-2067	2	Screw, Hex Head Cap (M8 x 1.25 x 70mm)	9	309-0597	1	Switch, High Exhaust Temperature (S5)
2	526-2100	4	Washer, Flat (M8)	10	740-1004	3	Washer, Flat (M6)
3	718-1038	2	Screw, Hex Head Cap (M8 x 1.25 x 30mm)	11	802-2068	3	Screw, Socket Cap (M6 x 1 x 20mm)
4	154-2891	1	Riser	12	155-2033	1	Elbow, 90° Exhaust (2")
5	155-3061	1	Gasket, Mixer	13			Hose, Exhaust
6			Mixer		503-1963-04	1	2" x 3'
	154-2768	1	Spec A-B (5/8")		503-1963-05	1	2" x 5'
	154-3006	1	Begin Spec C (3/4")		503-1353	1	2" x 10'
7	850-0025	1	Washer, Lock (M8)		503-1320	1	2" (Bulk Hose)
8	860-0008	1	Nut, Hex (8-32)				

Dry Exhaust (Up or Down)



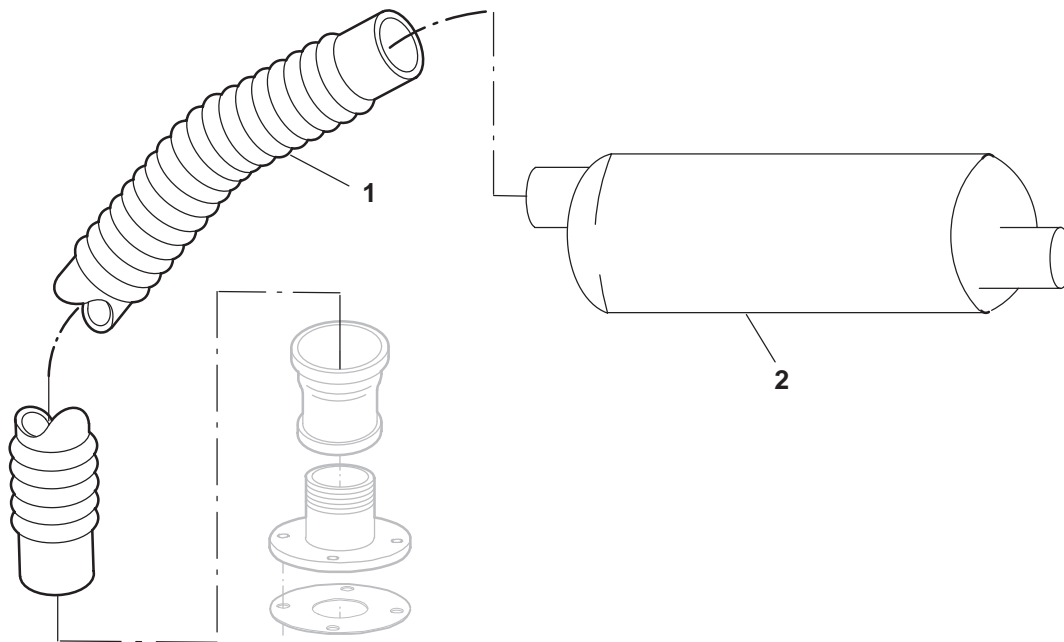
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	154-2891	1	Riser
2	718-1038	2	Screw, Hex Head Cap (M8 x 1.25 x 30mm)
3	800-2067	2	Screw, Hex Head Cap (M8 x 1.25 x 70mm)
4	526-2100	4	Washer, Flat (M8)
5	155-2980	1	Kit, Exhaust Adapter (Includes Parts Marked *)
6	154-2963-02	1	*Adapter, Exhaust
7	850-2008	8	*Washer, Lock (M8)
8	800-2058	8	*Screw, Hex Head Cap (M8 x 25mm)
9	155-2981	1	*Gasket, Exhaust Adapter
10	155-3069-02	1	*Flange, Exhaust

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
11	505-0339-02	1	*Coupling, Reducer (2 x 1-1/2")
12	155-3094	1	Kit, Exhaust Flange (Includes Parts Marked +)
13	155-3061	1	+Gasket, Exhaust
14	155-3068-02	1	+Flange, Exhaust
15	740-1004	3	+Washer, Flat (M6)
16	802-2068	3	+Screw, Allen Socket Cap (M6 x 1 x 20mm)
17	505-0339-02	1	+Bushing, Reducer (1-1/2 x 2")

* - Parts Included in Exhaust Adapter Kit. (Also Includes Gasket on Exhaust Manifold Page.)

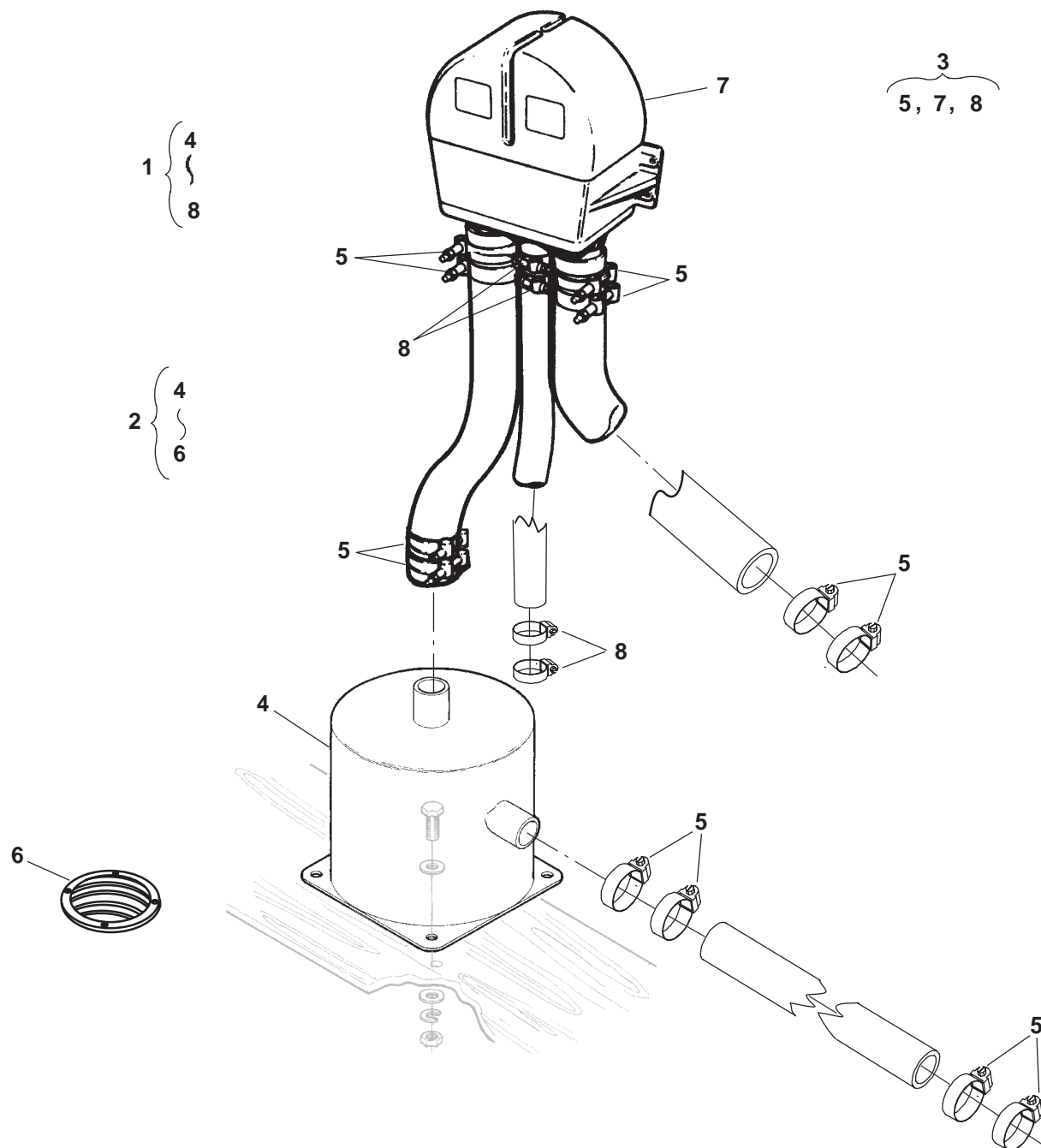
+ - Parts Included in Exhaust Flange Kit.

Muffler



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	155-2355-04	1	Tube, Flexible Exhaust (2")
2	155-2063-09	1	Muffler, Dry Exhaust (Up) (2")
	155-2064-09	1	Industrial Critical

Water Separator/Muffler

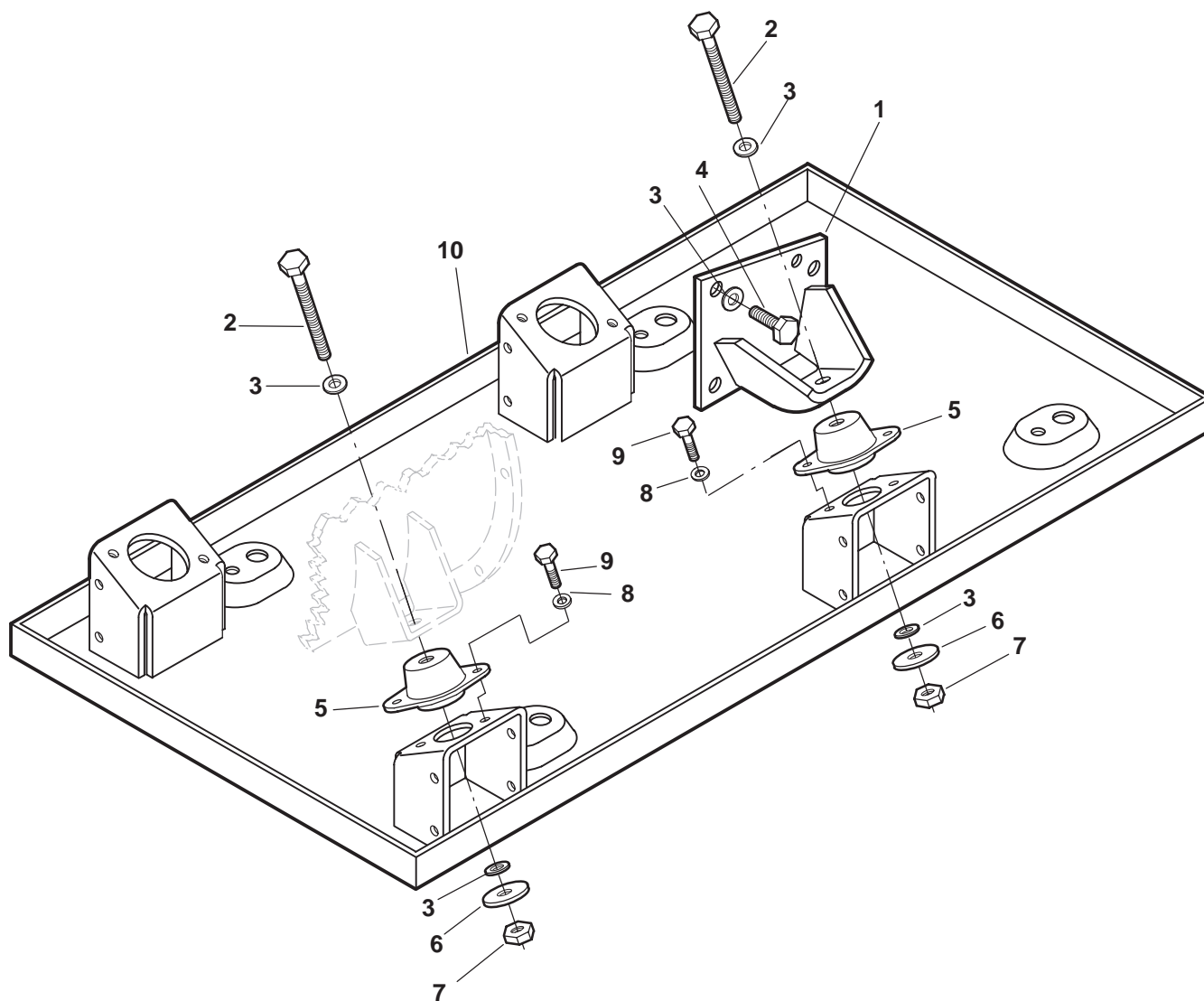


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	155-3217	1	Kit, Muffler/Separator (Includes Parts Marked *)
2	155-2030	1	Kit, Muffler (Includes Parts Marked +)
3	155-3216	1	Kit, Water Separator (Includes Parts Marked •)
4	155-2029	1	*+Muffler, Marine
5			Clamp, Hose (2")
	503-1142	8	+ Muffler Kit
	503-1142	4	• Separator Kit
	503-1142	10	* Muffler/Separator Kit

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
6	155-1002	1	*+Strainer, Water Pickup
7	155-3218	1	*•Separator, Water (2")
8	503-1139	4	*•Clamp, Hose (1-1/2")

* - Parts Included in Muffler/Separator Kit.
+ - Parts Included in Muffler Kit.
• - Parts Included in Water Separator Kit.

Mounting Base

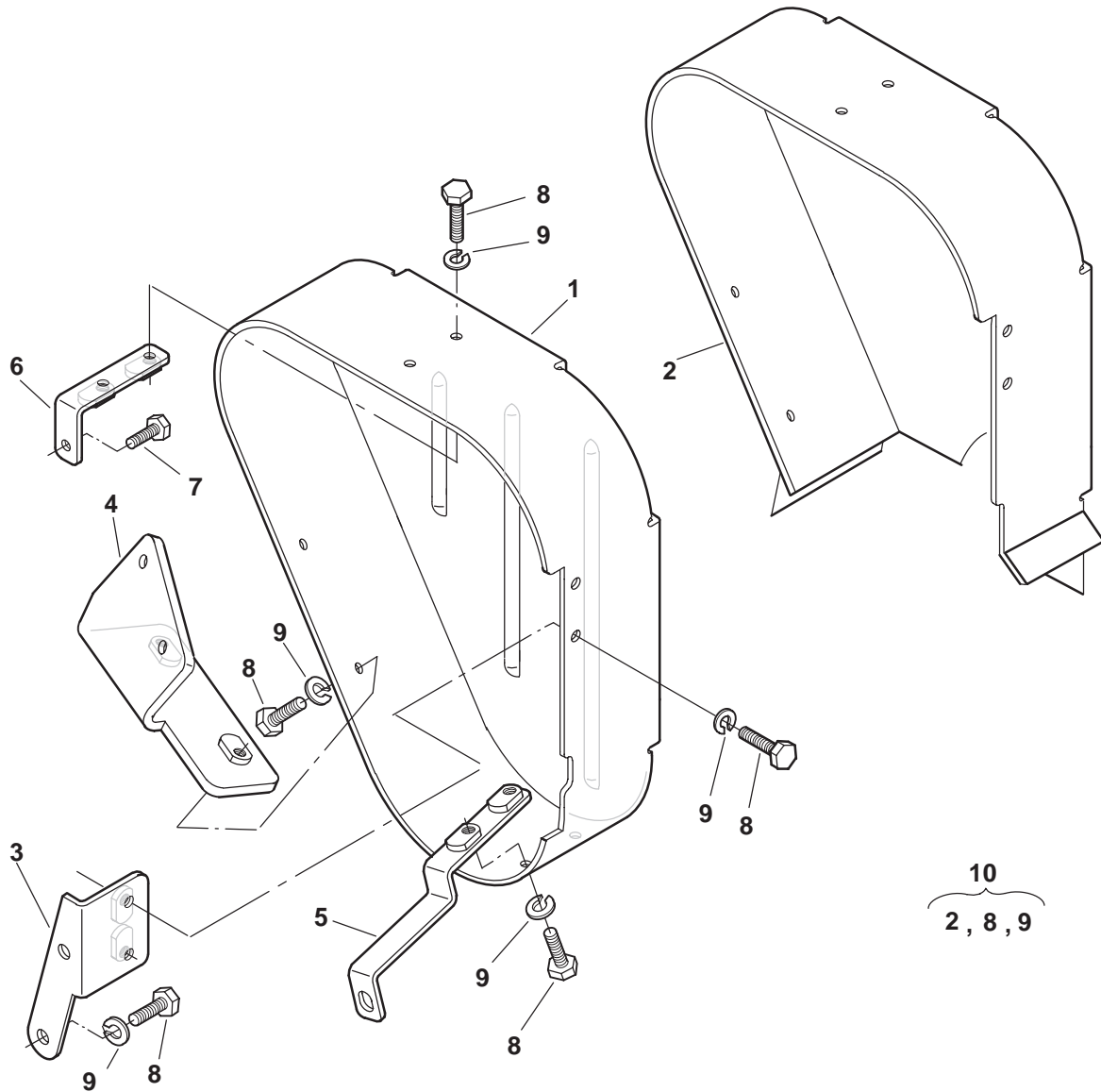


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	403-4059-03	2	Mount, Engine (W/O PTO)
2	800-2118	4	Screw, Cap – Hex Head (M12 x 1.75 x 60mm)
3	526-0399-64	15	Washer, Flat (M12)
4	800-3031	7	Screw, Cap – Hex Head (M12 x 1.25 x 25mm)
5			Isolator, Mounting
	403-3573	4	W/O PTO
	403-3573	2	Generator End
	403-3955	2	* Engine End

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
6	526-0172	4	Washer, Flat (M12)
7	750-1010	4	Nut, Hex Machine (M12 x 1.75)
8	526-2106	8	Washer, Flat (M8) (Spec A)
9	821-6003-02	8	Screw, Cap – Hex Head (M8 x 20mm)
10	403-3737-02	1	Base, Generator Mounting

* – Part Included in PTO Adapter Kit Found on PTO Page.

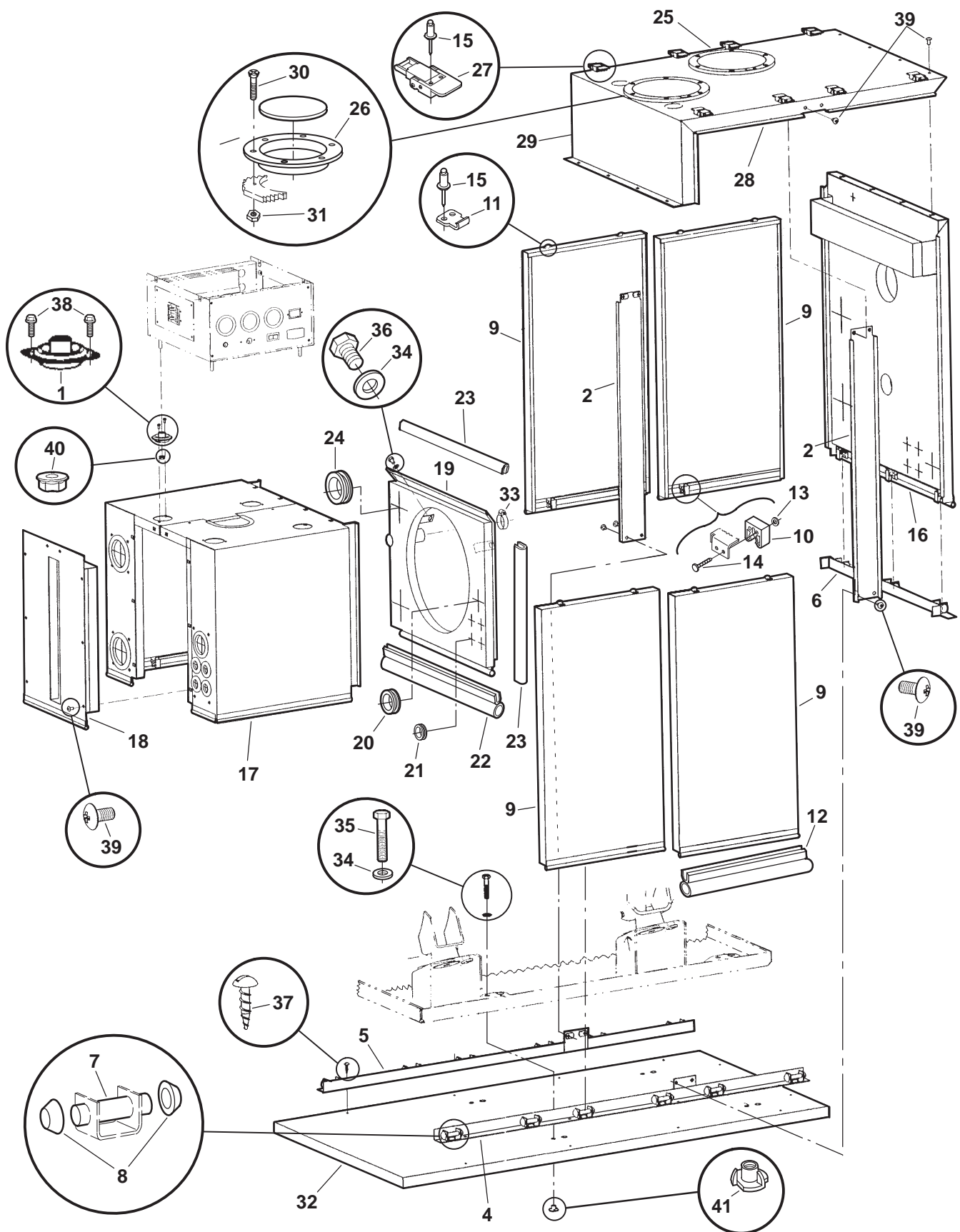
Belt Guard



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Guard, Belt W/O PTO Spec A-B	7	718-1047	1	Screw, Hex Head Cap (M8 x 75) (Negative Ground)
	130-4331-03	1	Negative Ground	8			Screw, Hex Head Cap (M6 x 12)
	130-4414-03	1	Isolated Ground		800-2029	8	Negative Ground (W/O PTO)
			Begin Spec C		800-2029	6	* Negative Ground (W/PTO)
	130-4652-03	1	Negative Ground		800-2029	4	Isolated Ground
	130-4714-03	1	Isolated Ground	9			Washer, Lock (M6)
2	130-4633-04	1	*Guard, Belt W/PTO		850-2006	8	Negative Ground (W/O PTO)
3	130-4381-03	1	Bracket, Guard		850-2006	6	* Negative Ground (W/PTO)
4			Bracket, Guard		850-2006	4	Isolated Ground
	130-4382-03	1	Negative Ground	10	190-0744	1	Kit, PTO Belt Guard (Includes Parts Marked *)
	130-4411-03	1	Isolated Ground				
5	130-4491-03	1	Bracket, Guard (Negative Ground) (W/O PTO)				
6	130-4492-03	1	Bracket, Guard (Negative Ground)				

* - Parts Included in PTO Belt Guard Kit.

Sound Shield

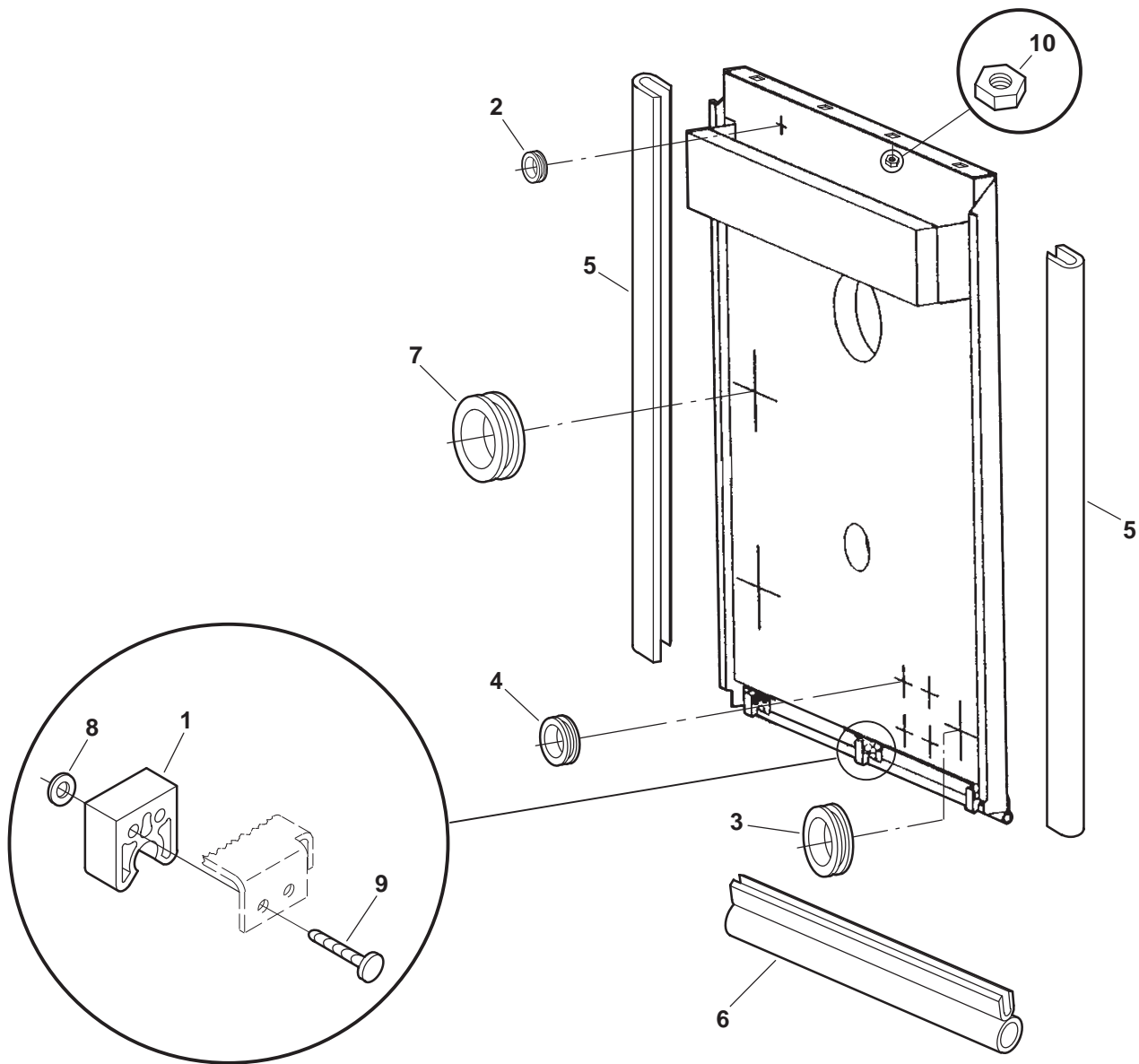


Sound Shield

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Kit, Sound Shield (W/O PTO)	23	508-0210	3	◇ Edging (415mm, 543mm, 415mm)
	405-5253	1	MDKAD	24	508-1095	2	◇ Grommet, Rubber
	405-5252	1	MDKAE	25			Roof Assy, Housing
1	402-0681	4	Isolator, Vibration		405-5043-S2	1	Spec A-B (Includes Parts Marked +)
2	405-5013	2	Support Assy, Roof (Includes Edging)		405-6341-02	1	Begin Spec C (Includes Parts Marked #)
3	508-0210	4	Edging (632mm)				Cover, Access
4	405-5015-S1	1	Rail Assy, Door – Left Side (Includes Pin and Nut)	26			+ Spec A-B
5	405-5015-S2	1	Rail Assy, Door – Right Side (Includes Pin and Nut)		405-6340	2	# Begin Spec C
6	405-5018	1	Rail Assy, Door –Front (Includes Pin and Nut)	27	406-0528-02	8	++ Catch, Spring
7	405-3111	15	Pin, Clip	28	508-0210	4	++ Edging (289mm)
8	870-0400	30	Nut, Push Cap	29	508-0210	2	++ Edging (170mm)
9	405-5023-S2	4	Door Assy, Housing (Includes Parts Marked *)	30	815-0807	12	+ Screw, Cross Fillister Recessed Fastener
10	405-1872	2	* Clip, Door	31			
11	406-0528-01	2	* Catch, Spring		870-0427	12	+ Nut, Hex (#10-24)
12	508-1011	1	* Seal, Edge (353mm)		818-0239-03	12	# Rivet, Stainless Steel
13	526-0003	4	* Washer, Flat (#8)	32			Base, Housing
14	818-0150	4	* Rivet, Drive		405-5045-02	1	MDKAD
15	818-0194	36	+* Rivet, Stainless Steel		405-5045-01	1	MDKAE
16			Panel Assy, Front (See Separate Page for Components)	33	503-1138	1	Clamp, Hose (1-3/8")
	405-5026-S2	1	W/O PTO	34	526-0022	6	Washer, Flat (M8)
			W/PTO	35	800-0540	4	Screw, Hex Head Cap (5/16-18 x 1-5/8")
	405-5701	1	• Top	36	800-2052	2	Screw, Hex Head Cap (M8 x 1.25 x 12mm)
	405-5727-02	1	• Bottom	37	808-0045	10	Screw, Round Head Sheet Metal (#12 x 1-1/2)
17			Housing Assy, Generator (See Separate Page for Components)	38	815-0498	8	Screw, Thread Forming Hex Head (#8-32 x 3/8")
			MDKAD	39			Screw, Truss
	405-5034-S2	1	Right Side		815-0765	26	W/O PTO
	405-5036-S2	1	Left Side		815-0765	30	• W/PTO
			MDKAE	40	870-0257	4	Nut, Self-Lock
	405-5034-S1	1	Right Side	41	870-0413	4	Nut, Tee
	405-5036-S1	1	Left Side	42	190-0742	1	Kit, Front Panel (Includes Parts Marked •)
18	405-5037	1	Panel, Generator Housing (Includes Edging)				
19	405-5038	1	Baffle Assy, Generator (Includes Parts Marked ◇)				
20	508-0115	1	◇ Grommet, Rubber				
21	508-0117	4	◇ Grommet, Rubber				
22	508-0330	1	◇ Seal, Edge (495mm)				

- * – Parts Included in Housing Door Assy.
- ◇ – Parts Included in Generator Baffle Assy.
- + – Parts Included in Spec A-B Housing Roof Assy.
- # – Parts Included in Spec C Roof Assy.
- – Parts Included in Front Panel Kit (Includes Qty 4 Screws)

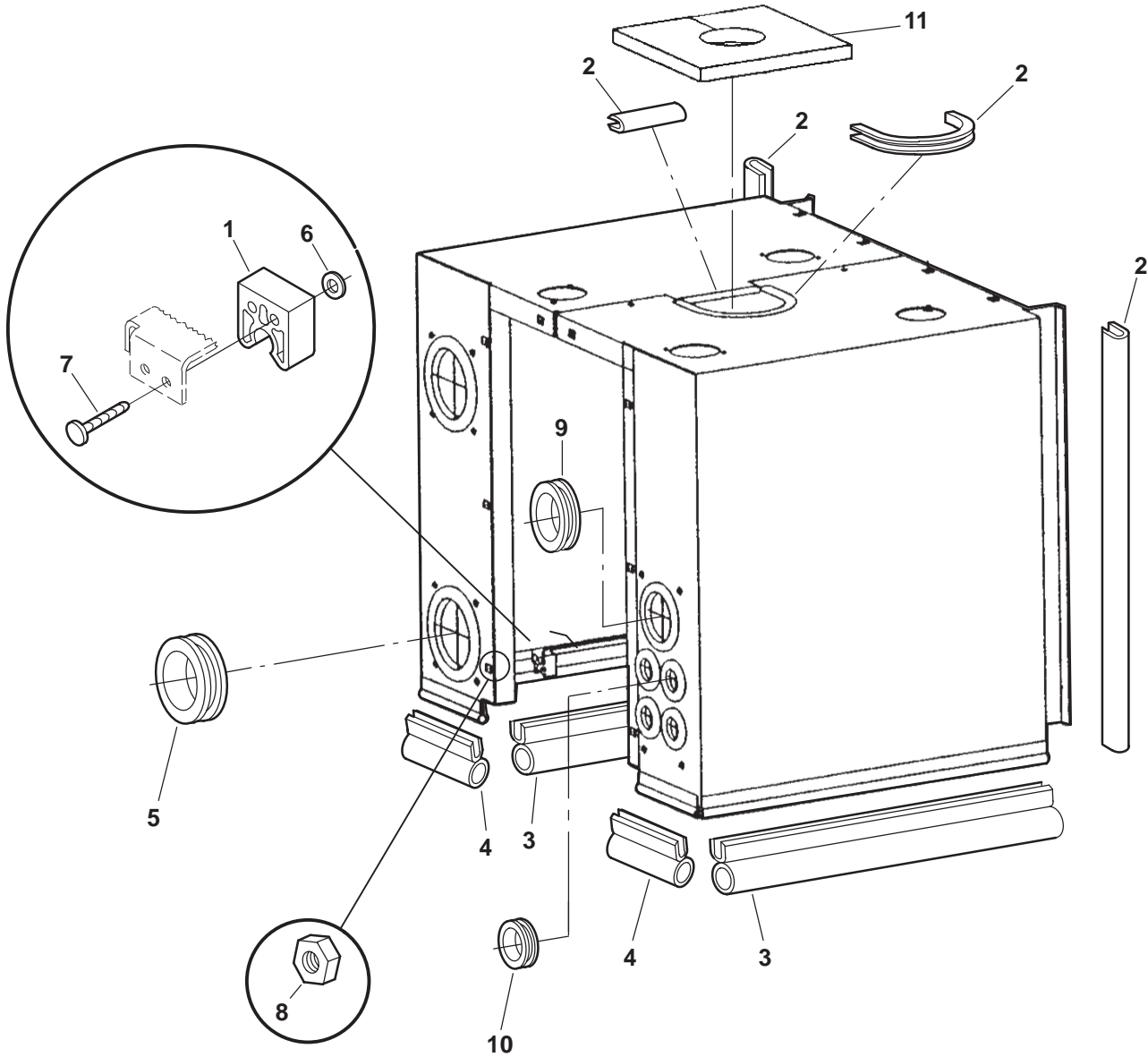
Housing Front Panel



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	405-5026	1	Panel Assy, Front W/O PTO W/PTO
	405-5701	1	Top
	405-5727-02	1	Bottom
1	405-1872	3	Clip, Door
2	508-0021	1	Grommet, Rubber
3	508-0115	1	Grommet, Rubber

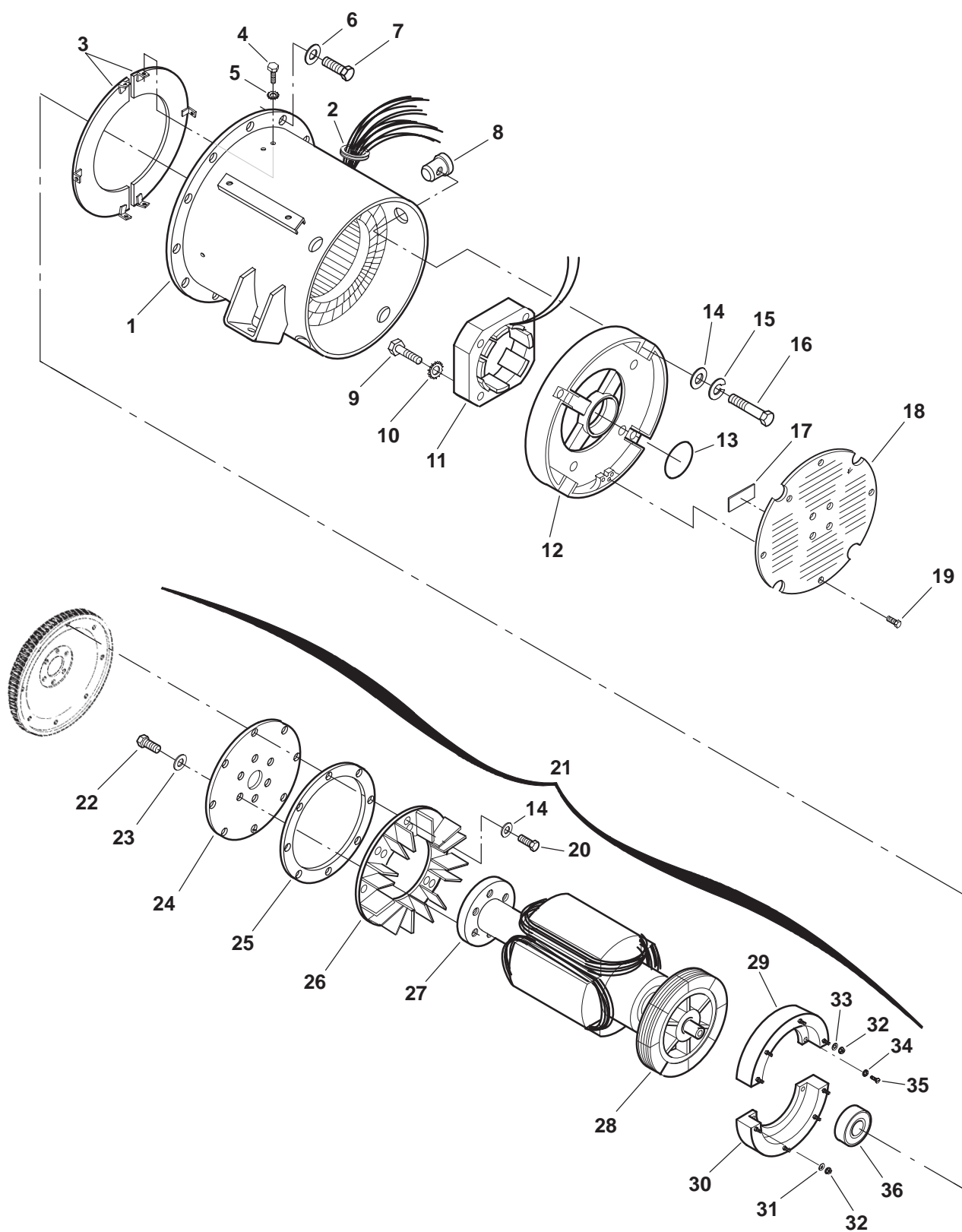
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
4	508-0117	4	Grommet, Rubber
5	508-0210	2	Edging (628mm)
6	508-1011	1	Seal, Edge (514mm)
7	508-1095	2	Grommet, Rubber
8	526-0003	6	Washer, Flat (#8)
9	818-0150	6	Rivet, Drive
10	870-0110	4	Nut, Retainer(1/4-20)

Generator Housing



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Housing, Generator	4	508-1011	2	Seal, Edge (123mm)
	405-5034-S2	1	MDKAD	5	508-1095	2	Grommet, Rubber (Right Side Housing)
	405-5036-S2	1	Left Side	6	526-0003	8	Washer, Flat (#8)
			MDKAE	7	818-0150	8	Rivet, Drive
	405-5034-S1	1	Right Side	8	870-0110	14	Nut, Retainer (1/4-20)
	405-5036-S1	1	Left Side	9	508-0115	1	Grommet, Rubber (Left Side Housing)
1	405-1872	4	Clip, Door				
2	508-0210	4	Edging (458mm, 94mm, 237mm, 458mm)	10	508-0117	4	Grommet, Rubber (Left Side Housing)
3			Seal, Edge	11	405-5114	1	Insulation, Control Box
	508-1011	2	MDKAD (388mm)				
	508-1011	2	MDKAE (425mm)				

Generator



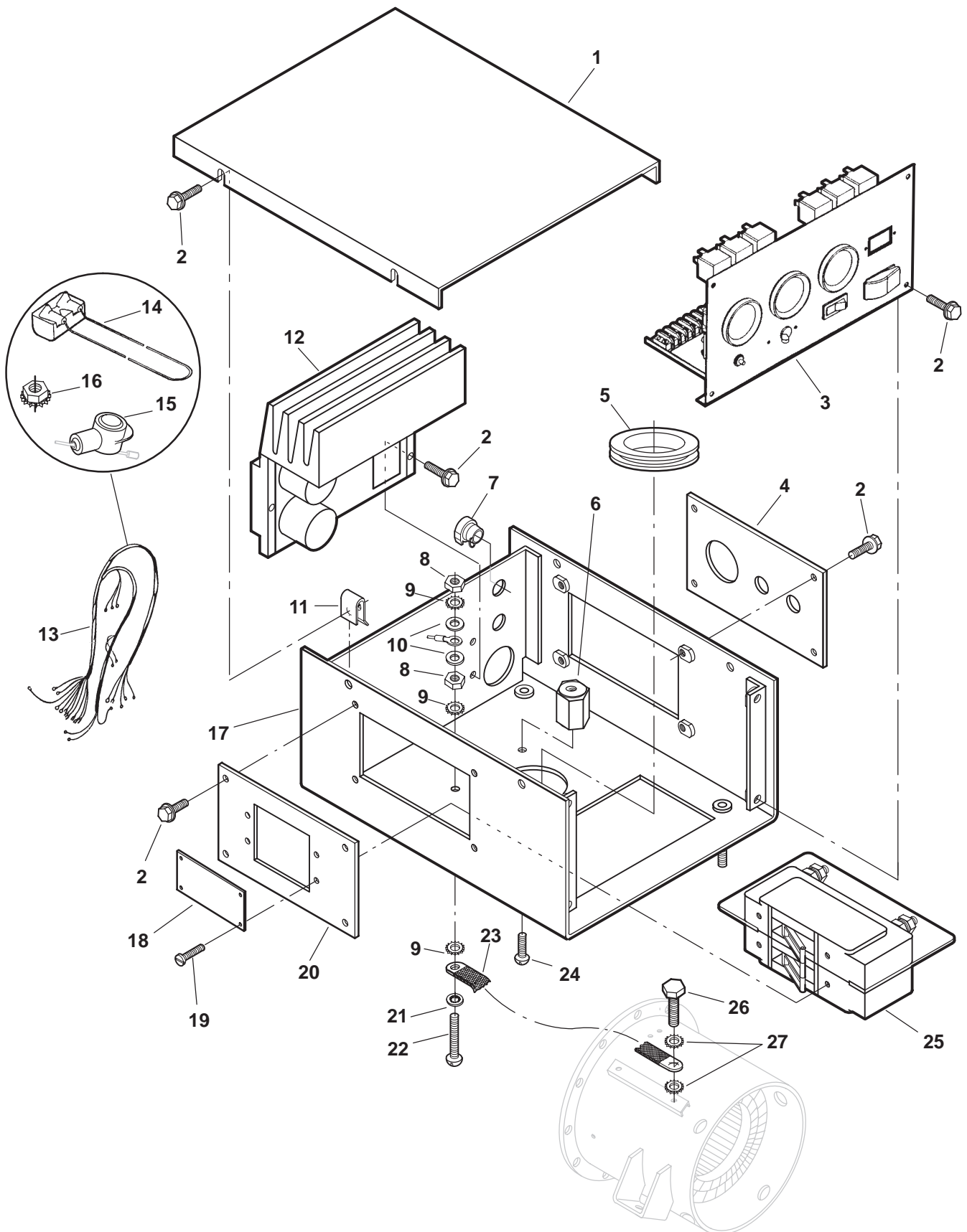
Generator

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Stator, Generator	15	850-0114-06	4	Washer, Lock (5/16")
			1 Phase (Includes Grommet)	16	800-0310-27	4	Screw, Hex Head Cap (5/16"-18 x 2-1/2")
			Spec A-B	17	895-0308	1	Tape, Polyurethane (40mm)
	220-4417-02		MDKAD	18	234-0876-01	1	Cover, Inlet
	220-4417-04		MDKAE	19	815-0181	3	Screw, Hex Head Thread Cutting (#10-32 x 1/2")
			Begin Spec C	20	800-0310-36	8	Screw, Hex Head Cap (3/8-16 x 1)
	220-4570-02		MDKAD	21			Rotor Assy, Generator (Includes Parts Marked *)
	220-4570-04		MDKAE		201-3517-02	1	MDKAD
			3 Phase (Includes Parts Marked +)		201-3517-04	1	MDKAE
			Spec A-B	22	800-0310-64	6	*Bolt, Hex Head Cap (1/2-13 x 1")
	220-4451-02		MDKAD	23	526-0399-44	6	*Washer, Flat (M12)
	220-4451-04		MDKAE	24	232-3672-03	1	*Disc, Drive
			Begin Spec C	25	232-3826-02	1	*Spacer, Fan
	220-4569-02		MDKAD	26	205-0229-02	1	*Fan, Generator
	220-4569-04		MDKAE	27	232-3705-01	1	*Hub, Drive
2	508-1073	1	+Grommet	28	201-3515-02	1	*Rotor, Exciter
3	234-0935-02	2	+Baffle, Air (3 Phase)	29	358-0069	1	*Diode, Positive
4	800-0310-02	6	+Screw, Hex Head Cap (1/4-20 x 1/2") (3 Phase)	30	358-0070	1	*Diode, Negative
5	853-0040-05	6	+Washer, ET Lock (1/4") (3 Phase)	31	526-0008	2	*Washer, Flat (#10)
6	526-0174	12	Washer, Flat (3/8)	32	870-0131-01	8	*Nut, ET Hex (#10)
7	800-0051	12	Screw, Hex Head Cap (3/8-16 x 1-1/4)	33	526-0399-11	8	*Washer, Flat (#10)
8	232-3706-02	4	Retainer, Endbell	34	853-0040-04	4	*Washer, ET Lock (#10)
9	815-0935	4	Screw, Hex Head Thread Forming (1/4-20 x 2")	35	822-2160-37	4	*Screw, Pan Head Machine (#10-32 x 1/2)
10	853-0013	4	Washer, ET Lock (1/4")	36	510-0112	1	*Bearing, Ball
11	220-4413-02	1	Stator, Exciter				
12	211-0435-01	1	Endbell				
13	509-0094	1	Seal, O'Ring				
14	526-0399-42	12	Washer, Flat (3/8)				

+ - Parts Include in 3 Phase Generator Stator.

* - Parts Included in Generator Rotor Assy.

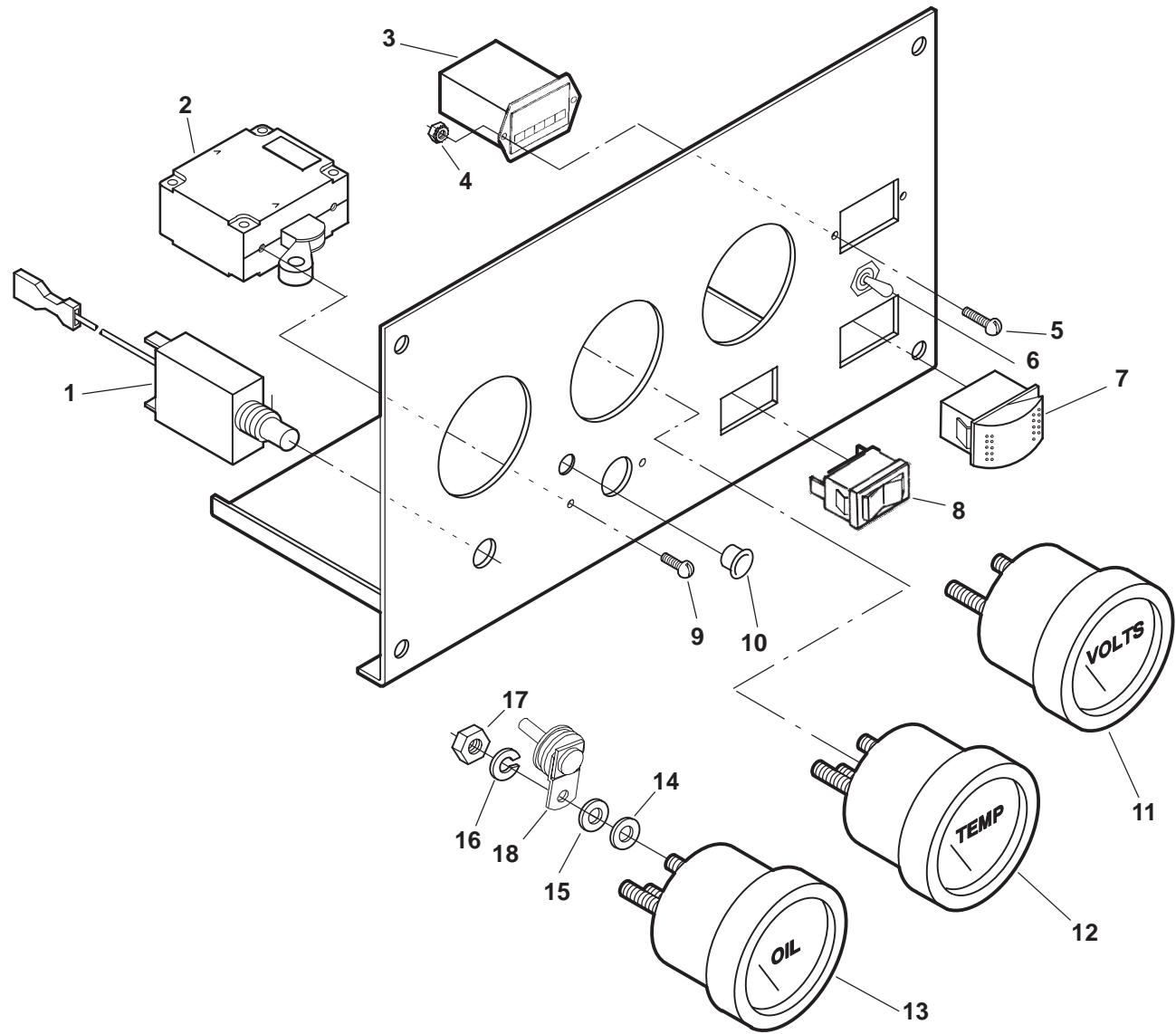
Control Box



Control Box

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	319-2106-04	1	Cover, Control Box	21	854-0014	1	Washer, IT Lock
2	821-0005	19	Screw, Lock Head Flange (#10-32 x 1/2")	22	810-0155	1	Bolt, Brass (1/4-20 x 1-1.4")
3			Panel Assy, Control (See Separate Page for Components) With Gauges	23	337-2795	1	Strap, Bond
			12V	24	821-0008	1	Screw, Round Head Machine (1/4-20 x 5/16")
	300-4658	1	Negative Ground	25			Breaker, Circuit (CB2) Single Pole (Use with Cover)
	300-4872	1	Isolated Ground	320-1690-10	1		55A
			24V	320-1690-03	1		60A
	300-4662	1	Negative Ground	320-1690-11	1		65A
	300-4874	1	Isolated Ground	320-1690-12	1		75A
			Without Gauges	320-1690-13	1		85A
			12V				Two Pole
	300-4659	1	Negative Ground	320-1689-08	1		50A
	300-4873	1	Isolated Ground	320-1689-09	1		55A
			24V	320-1689-10	1		60A
	300-4663	1	Negative Ground	320-1689-11	1		65A
	300-4875	1	Isolated Ground	320-1689-12	1		70A
4	319-2114-03	1	Cover, Breaker	320-1689-13	1		75A
5	508-0116	1	Grommet	320-1689-15	1		85A
6	332-2370	1	Standoff	320-1689-17	1		95A
7	508-0179	1	Bushing, Strain Relief				Three Pole
8	871-0016	2	Nut, (1/4-32)	320-1891-03	1		20A
9	856-0006	3	Washer, ET (1/4-20)	320-1891-01	1		25A
10	526-0052	2	Washer, Brass (1/4-20)	320-1891-02	1		30A
11	870-0398	4	Clip, Nut (#10-32)	320-1891-04	1		35A
12	305-0896	1	Regulator, Voltage (SRA)	320-1836-06	1		40A
13			Harness, Engine (Includes Circuit Breaker, Boot and Nuts)	320-1836-07	1		45A
	338-2930	1	Spec A-B	320-1836-08	1		50A
	338-3387	1	Begin Spec C	320-1836-09	1		55A
14			Breaker, Circuit (CB3)(40A)	320-1836-10	1		60A
	320-1658	1	Spec A-B	320-1836-11	1		65A
	320-1928-01	1	Begin Spec C	320-1836-12	1		70A
15	416-1021-03	1	Boot	320-1836-13	1		75A
16	870-0131	2	Nut, ET Hex (10-32)	26	718-1036	1	Screw, Hex Head Cap (M8 x 20mm)
17	319-2107-03	1	Box, Control	27	856-0008	2	Washer, EIT Lock
18	320-1813-02	1	Cover, Plate (Use with Single Pole Circuit Breaker)	Shipped Loose in Plastic Bag:			
19			Screw, Cross Recessed ET Pan Head (#6-32 x 3/8")	323-1591	2		Plug, Seal
	815-0550-01	4	1 Phase Sets	323-1543	1		Wedge, Plug
	815-0550-01	6	3 Phase Sets	323-1541	1		Plug (8 Pin)
20			Panel, Breaker				
	319-2108-03	1	1 Phase				
	319-2113-03	1	3 Phase				

Control Panel

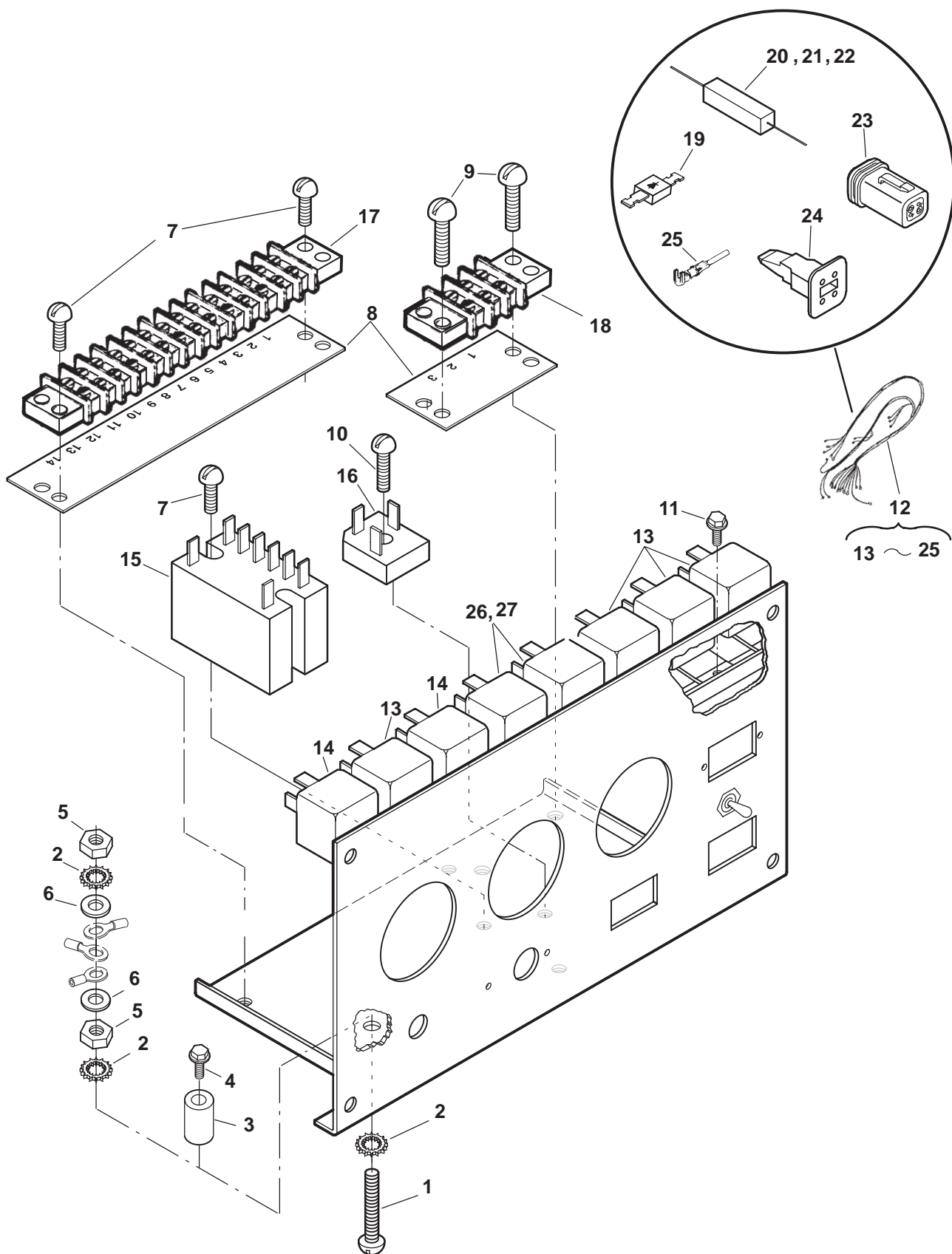


Control Panel

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Panel Assy, Control (Includes Parts Marked *)	2	320-1862-01	1	*Breaker, Circuit (50A) (CB1)
			Spec A	3	302-0885	1	*Meter, Time Totalizing (M1)
			With Gauges	4	870-0183	2	*Nut, ET Hex (#6-32)
			12V Sets	5	815-0385	2	*Screw, Round Head Machine (#6-32 x 1/2")
300-4658	1		Negative Ground	6	320-1769-01	1	Breaker, Circuit (2A) (Begin Spec B)
300-4872	1		Isolated Ground	7	308-1027	1	*Switch, Rocker (S1)
			24V Sets	8			*Breaker, Circuit (CB4)
300-4662	1		Negative Ground		320-1710	1	12V Sets (20A)
300-4874	1		Isolated Ground		320-1140	1	24V Sets (15A)
			Without Gauges	9	812-0059	2	*Screw, Round Head Machine (6-32 x 1/4")
			12V Sets				Plug, Button
300-4659	1		Negative Ground	10	517-0131-02	1	*Voltmeter (M4)
300-4873	1		Isolated Ground	11			12V Sets (8-18V)
			24V Sets		302-1641	1	24V Sets (16-36V)
300-4663	1		Negative Ground		302-1642	1	*Gauge, Coolant Temperature (M3)
300-4875			Isolated Ground	12	193-0351	1	*Gauge, Oil Pressure (M2)
			Begin Spec B	13	193-0352	1	*Washer, Nylon Flat (#10)
			With Gauges	14	526-0409	8	*Washer, Brass Flat (#10)
			12V Sets	15	526-0049	8	*Washer, Lock (#10)
300-5243	1		Negative Ground	16	850-0030	8	*Nut, Hex Brass Machine (#10-32)
300-5244	1		Isolated Ground	17	871-0010	10	*Resistor (24V Sets With Gauges) (R4, R5)
			24V Sets				
300-5245	1		Negative Ground				
300-5246	1		Isolated Ground				
			Without Gauges				
			12V Sets				
300-5247	1		Negative Ground				
300-5248	1		Isolated Ground				
			24V Sets				
300-5249	1		Negative Ground				
300-5250			Isolated Ground				
1	320-1863	1	*Breaker Assy (Includes Terminal)				

* – Parts Included in Control Panel Assy (Also include Parts Marked on Control Harness Page).

Control Harness

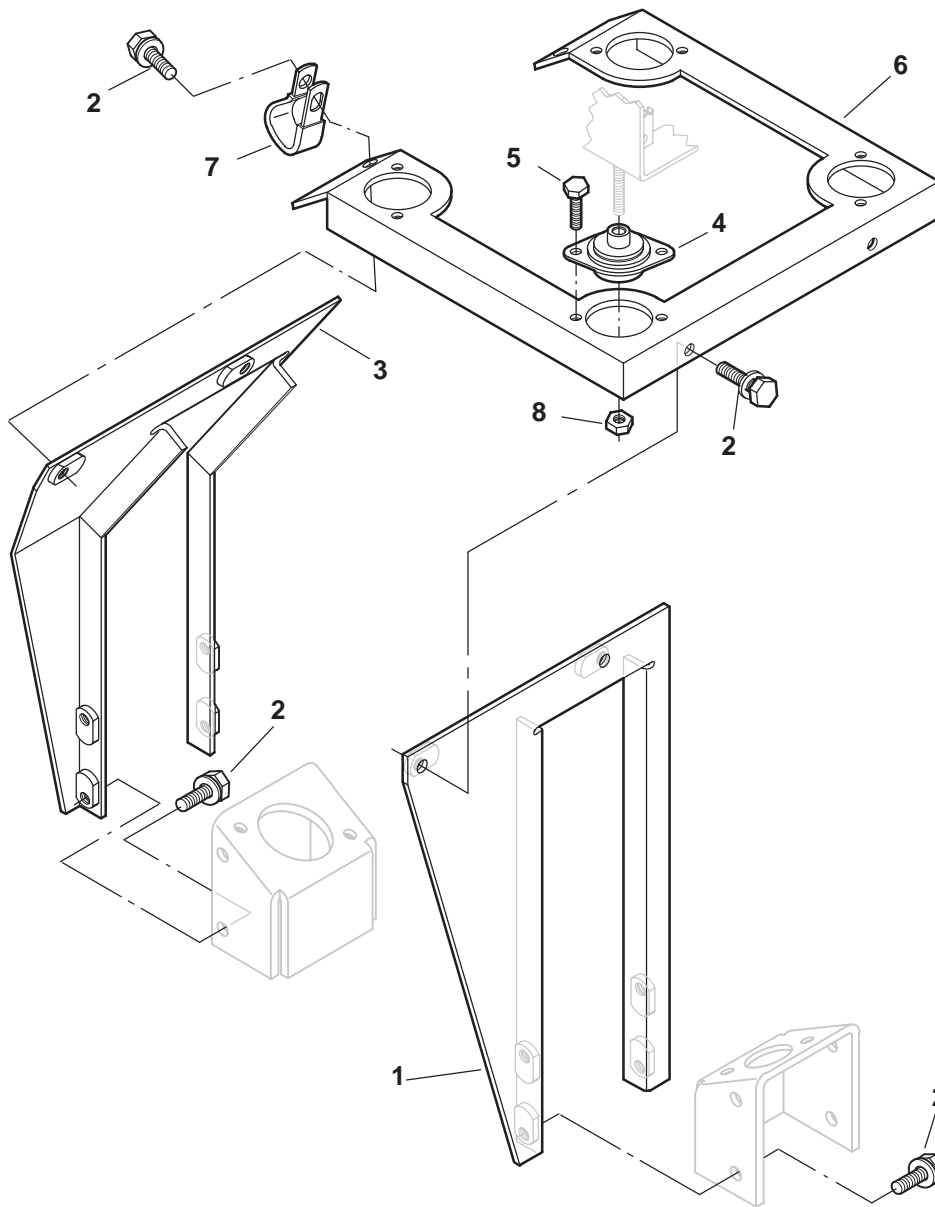


Control Harness

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	810-0155	1	*Screw Round Head Machine Brass (1/4-20 x 1-1/4") (Negative Ground)	14	307-2817-01	2	+Relay (K5, K8) 12V Sets
	821-0010	1	Lock Head (1/4-20 x 1/2") (Isolated Ground)		307-2817-02	2	24V Sets
2	856-0006	3	*Washer Lock EIT (1/4") (Negative Gound)	15	307-2828-01	1	+Relay (K4) 12V Sets
	526-0052	1	Brass Flat (1/4") (Isolated Ground)		307-2828-02	1	24V Sets
3	332-2370	1	*Standoff, Insulator (Isolated Ground)	16	305-0548	1	+Rectifier, Bridge (CR1)
4	821-0008	1	*Screw, Lock Head (Isolated Ground) (1/4-20 x 5/16")	17	332-3385	1	+Block, Terminal (14 Position) (TB2)
5	871-0016	2	*Nut, Hex Brass Machine (1/4-20) (Negative Ground)	18	332-3297	1	+Block, Terminal (3 Position) (TB1)
6	526-0052	2	*Washer, Brass Flat (1/4") (Negative Ground)	19	357-0030	3	+Rectifier (CR2, CR3, CR4)
7	812-0079	4	*Screw, Round Head Machine (#8-32 x 3/8")	20	353-0053	1	+Resistor (R1) 12V Sets (10 Ohms, 10W)
8	332-3296	1	*Marker, Strip 14 Pos.		352-0197	1	24V Sets (36 Ohms, 15W)
	332-3298	1	3 Pos.	21	352-0194	1	+Resistor (R2) 12V Sets (10 Ohms, 5W)
9	813-0102	2	*Screw, Round Head Machine (10-32 x 5/8")		352-0196	1	24V Sets (24 Ohms, 10W)
10	815-0539	1	*Screw, Round Head Machine (#8-32 x 5/8")	22	352-0195	1	+Resistor (R3) 12V Sets (8.5 Ohms, 5W)
11	821-0004	6	*Screw, Lock (#10-32 x 5/16")		352-0198	1	24V Sets (18 Ohms, 10W)
12			*Harness, Control (Includes Parts Marked +) With Gauges	23	323-1546	1	+Plug, (4 Pin) (P2)
	338-3246	1	12V Sets	24	323-1548	1	+Wedge, Plug (P2)
	338-3248	1	24V Sets	25	323-1492	4	+Pin (P2)
	338-3247	1	12V Sets	26			Harness, Relay (Includes Relay) (Isolated Ground) 12V
	338-3249	1	24V Sets		338-3383-01	1	K10, 7" (3 Leads)
13			+Relay (K1, K2, K3, K6)		338-3383-02	1	K11, 3" (4 Leads) 24V
	307-1886	4	12V Sets		338-3383-03	1	K10, 7" (3 Leads)
	307-2643	4	24V Sets		338-3383-04	1	K11, 3" (4 Leads)
				27			Relay, K10, K11 (Isolated Ground)
					307-1886	1	12V
					307-2654	1	24V

* - Parts Included in Control Panel Assy Listed on Control Panel Page.
+ - Parts Included in Control Harness.

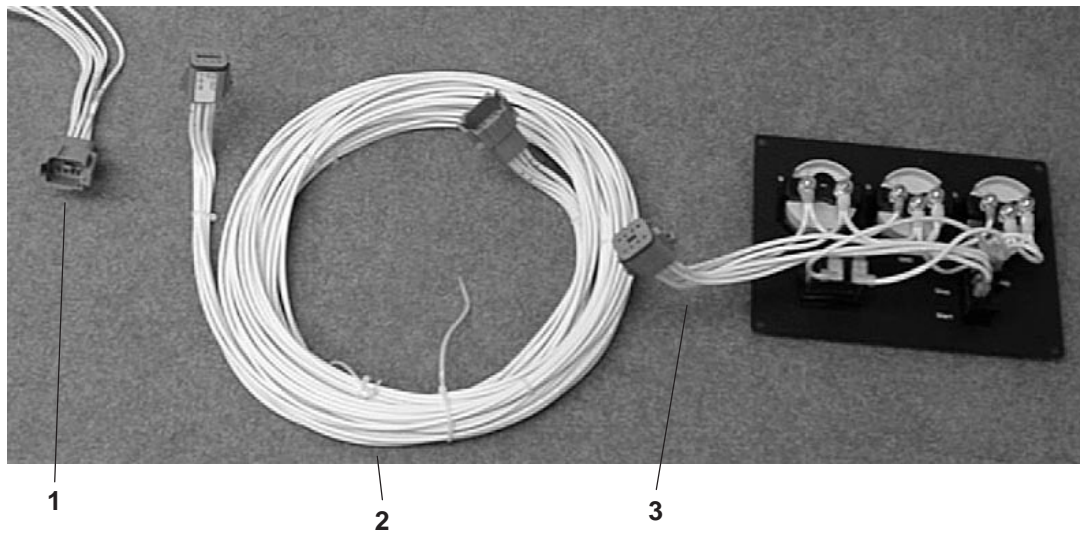
Control Box Mount



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	319-2493-03	1	Support, Control Bracket
2	821-6003-02	12	Bolt (M8 x 16)
3	319-2494-03	1	Support, Control Bracket
4	402-0681	4	Isolator, Vibration
5	815-0498	8	Screw, Hex Head Thread Forming

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
6	319-2954-04	1	Bracket, Control Mounting
7	503-2040	1	Clip, Tube
8	870-0257	4	Nut, Self-Lock

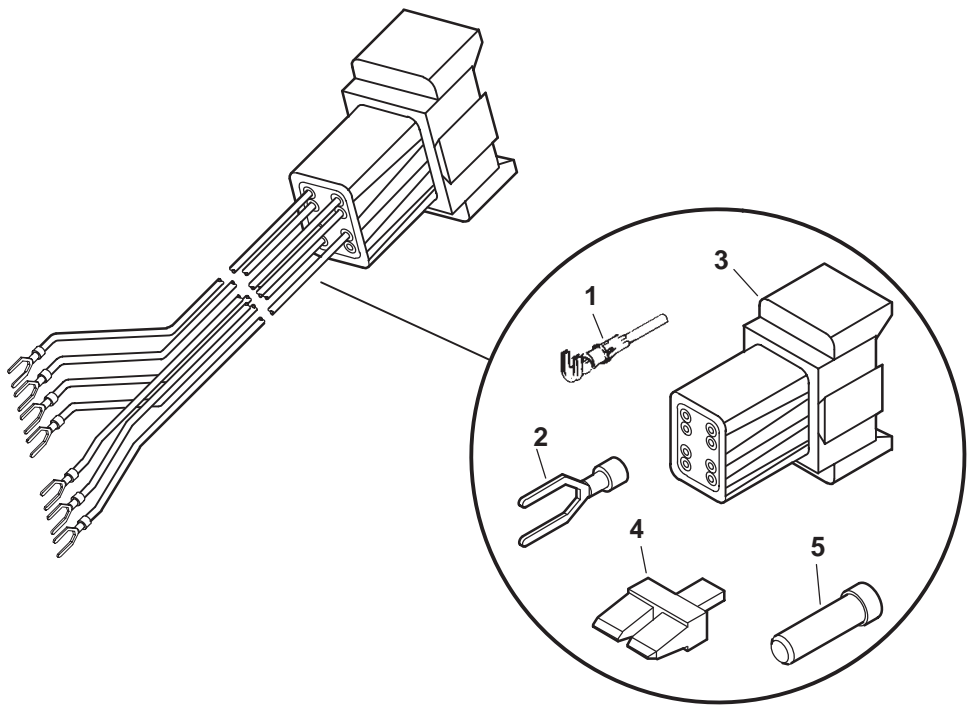
Harness Location



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	*	–	Harness, Remote Control (Reaches From Control Terminal Board to Extension or Customer Interface Pigtail Harness)
2	*	–	Harness, Extension (Or Customer Interface Pigtail) (Reaches From Remote Control Harness to Remote Panel Harness or Customer Hookup)
3	*	–	Harness, Remote Panel (Reaches From Remote Panel to Extension Harness)

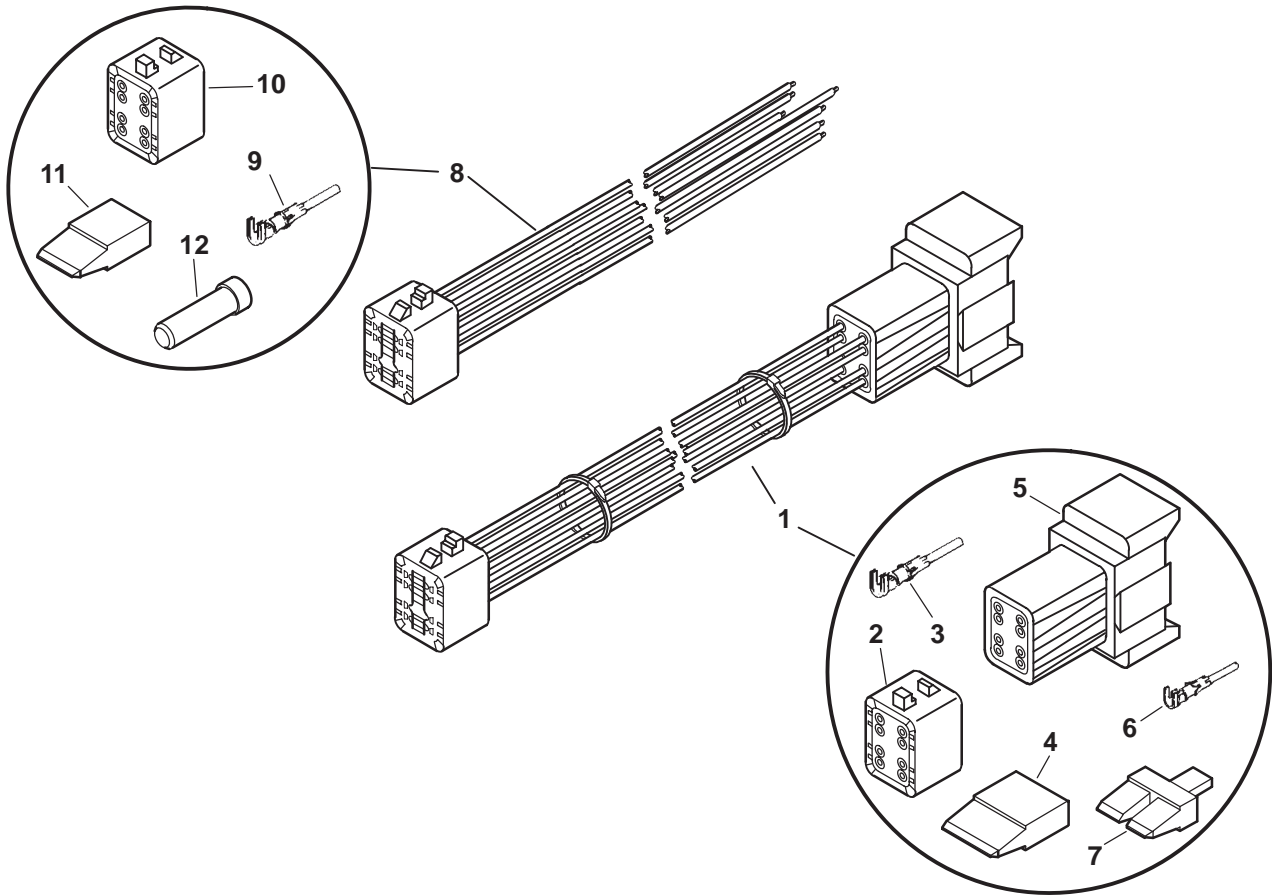
* – See Index for Page Numbers of Detailed Descriptions and Part Numbers.

Remote Control Harness



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	338-3093	1	Harness, Remote Control (21") (Reaches From Terminal Block to Extension Harness or Customer Interface Pigtail Harness)	1	323-1492	7	°Terminal, Pin
				2	332-2683	7	°Terminal, Spade
				3	323-1542	1	°Housing, Receptacle (8 Pin)
				4	323-1544	1	°Wedge, Receptacle (8 Pin)
				5	323-1591	1	°Plug

Extension and Pigtail Harness (Deutsch Connector – Gray)

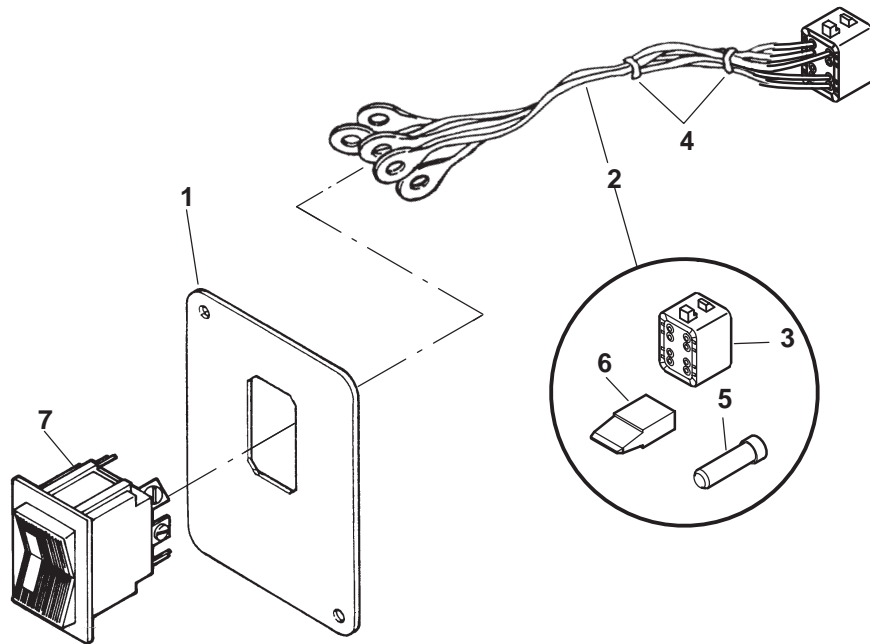


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Harness, Extension (Reaches From Remote Control Harness to Remote Panel Harness) (Includes Parts Marked #)	6	323-1491	8	#Terminal, Pin
	338-3167	1	15 feet	7	323-1544	1	#Wedge, Receptacle (8 Pin)
	338-3168	1	25 feet	8	338-3098	1	Harness, Pigtail (Customer Interface) (12") (Reaches from Remote Control Harness to Customer Hookup) (Includes Parts Marked *)
	338-3169-00	1	45 feet	9	323-1492	7	*Terminal, Socket
	338-3169-01	1	75 feet	10	323-1541	1	*Plug (8 Pin)
	338-3169-02	1	100 feet	11	323-1543	1	*Wedge, Plug (8 Pin)
	338-3169-03	1	150 feet	12	323-1591	1	*Plug, Connector
2	323-1541	1	#Plug (8 Pin)				
3	323-1492	8	#Terminal, Socket				
4	323-1543	1	#Wedge, Plug (8 Pin)				
5	323-1542	1	#Receptacle (8 Pin)				

– Parts Included in Extension Harness.

* – Parts Included in Pigtail (Customer Interface) Harness.

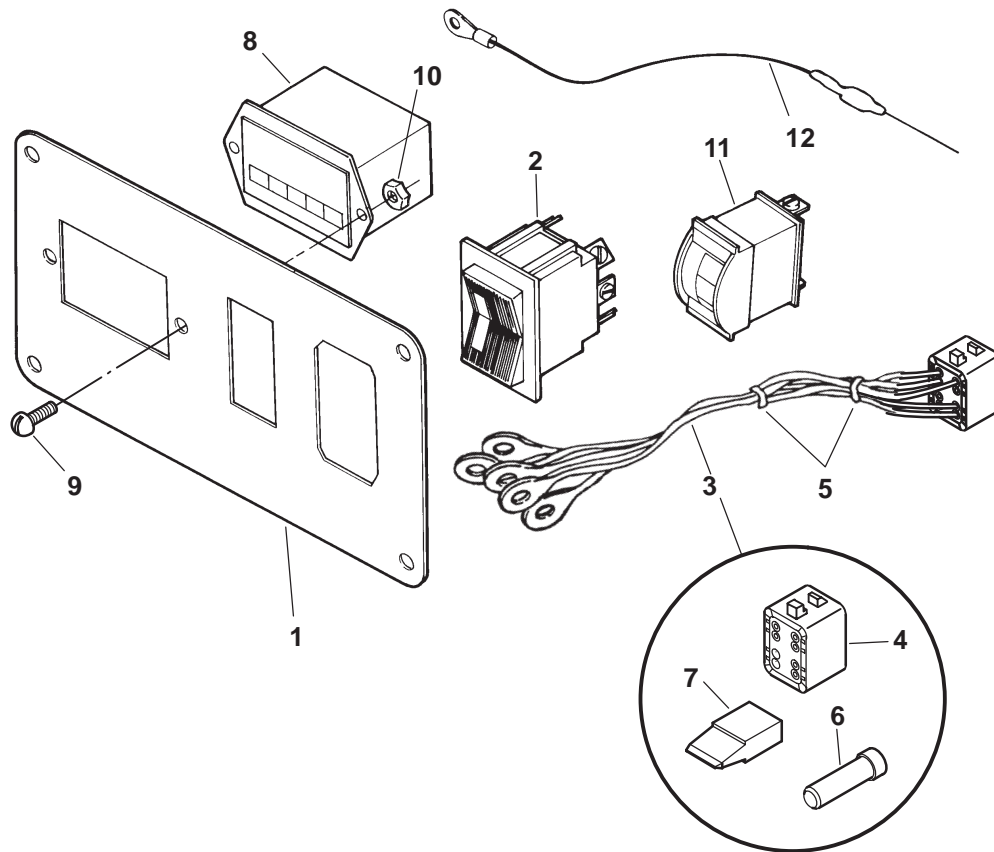
Basic Remote Control Panel (Ring Terminals)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	300-4679	1	Panel Assy, Remote 12V	4	332-1445	2	*Tie, Cable
	300-4680	1	24V	5	323-1591	3	*Plug, Connector
1	319-0491	1	Panel, Remote	6	323-1543	1	*Wedge, Plug (8 Pin)
2	338-3170	1	Harness, Remote Panel (Reaches From Remote Panel to Extension Harness) (Includes Parts Marked *)	7			Switch, Rocker
					308-0827	1	12V
					308-0975	1	24V
3	323-1541	1	*Plug (8 Pin)				

* – Parts Included in Remote Panel Harness.

Deluxe Remote Control Panel (Ring Terminals)

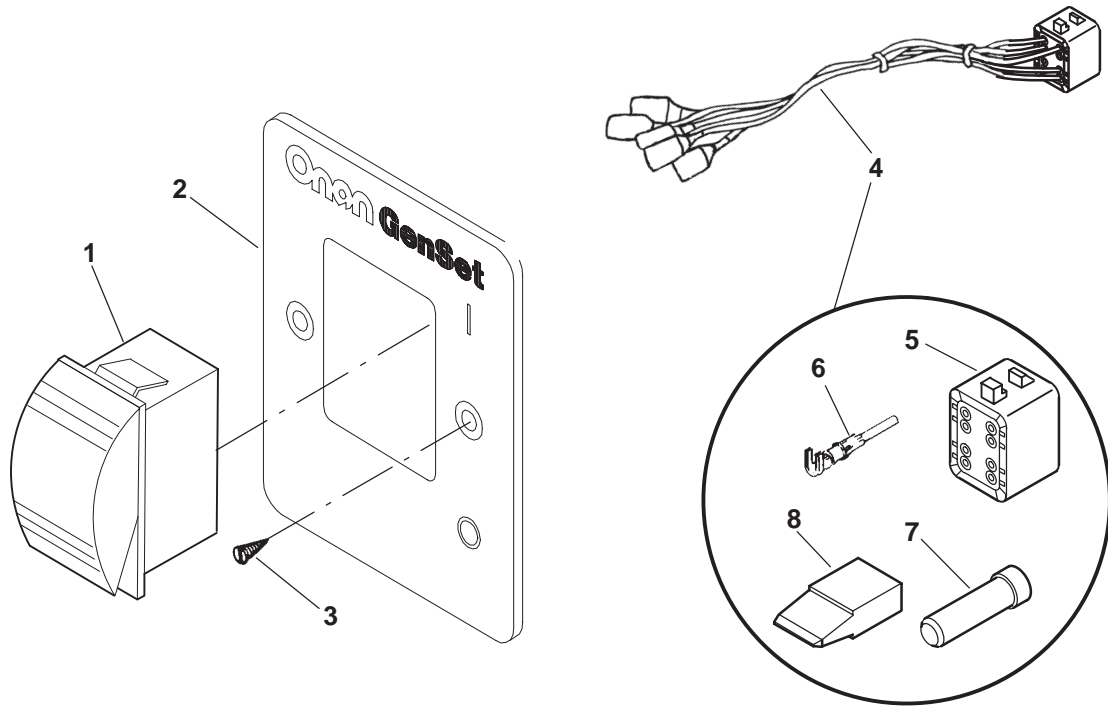


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	300-4681	1	Panel Assy, Deluxe Remote (12V Only)	7	323-1543	1	*Wedge, Plug (8 Pin)
1	319-0492	1	Panel, Remote	8	302-0885	1	Meter, Running Time (M11)
2	308-0827	1	Switch, Rocker	9	815-0385	2	Screw, Round Head Machine (#6-32 x 1/2")
3	338-3170	1	Harness, Remote Panel (Reaches From Remote Panel to Extension Harness) (Includes Parts Marked *)	10	870-0183	2	Nut, Hex (#6-32)
4	323-1541	1	*Plug (8 Pin)	11	302-0888	1	Meter, Battery Voltage (M14)
5	332-1445	2	*Tie, Cable	12	359-0034	1	Diode and Lead Assy
6	323-1591	3	*Plug, Connector				* - Parts Included in Remote Panel Wiring Harness.

This exploded view diagram illustrates the components of a dashboard instrument cluster. The main assembly includes a rectangular faceplate (1) with three circular gauge openings and two rectangular switch openings. The gauges are labeled OIL (11), TEMP (10), and VOLTS (3). The switches are labeled 2 and 12. A wiring harness (7) with a multi-pin connector (4) is shown on the left. A circular inset provides a detailed view of the wiring harness connector (4) and its mating components: a multi-pin connector (5), a switch component (8), a pin (9), and a plug (6). Other components shown include a screw (13) for the faceplate, a pin (14) for the switch, and a pin (15) for the gauge.

* – Parts Included in Remote Panel Harness.

Basic Remote Control Panel (Push-On Terminals)

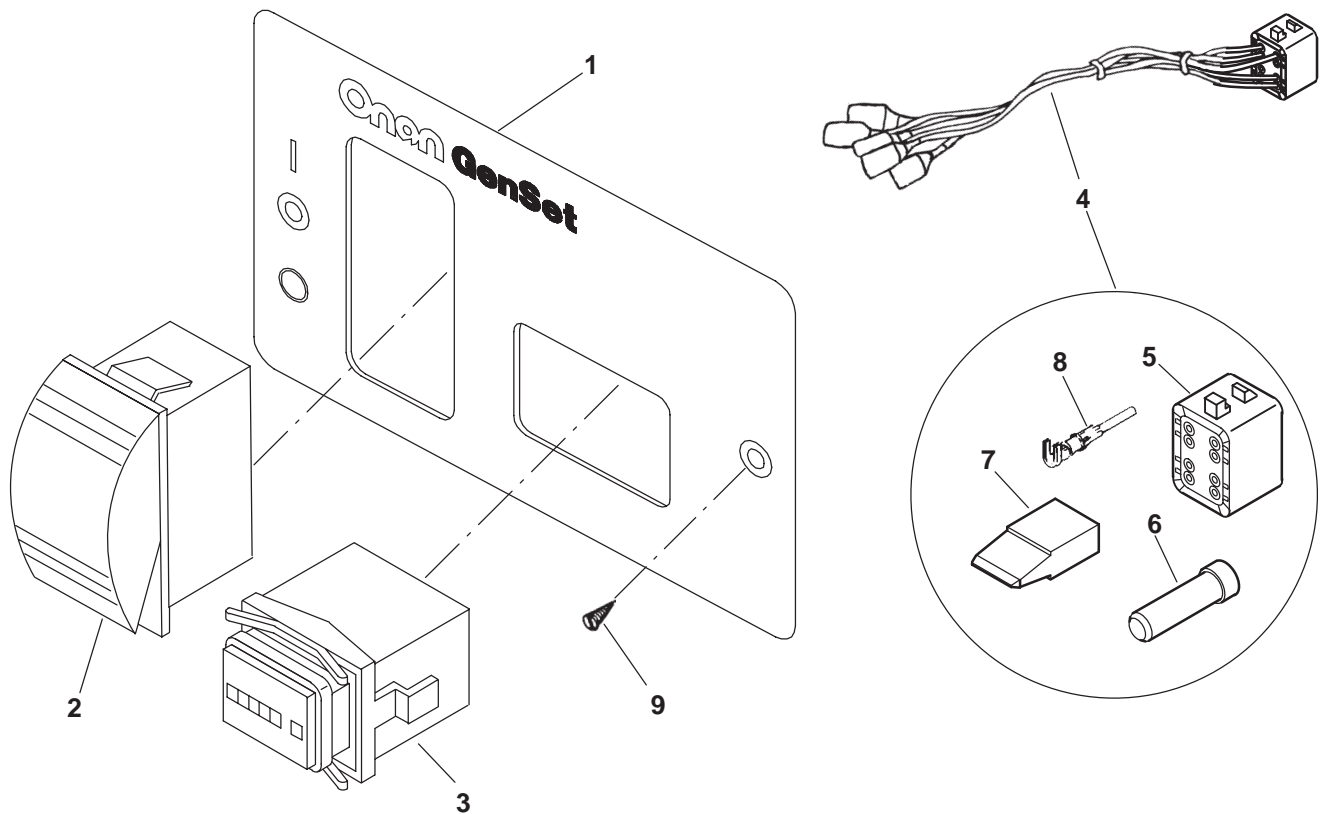


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Kit, Basic Panel
	300-4990-01	1	12V
	300-4990-02	1	24V
1	308-1062	1	Switch, Rocker (S11)
	308-1062-01	1	12V
	308-1062-01	1	24V
2	319-2339-02	1	Panel, Remote (Includes Printing)
3	815-0910	2	Screw, Wood (#6 x 1)
4	338-3598	1	Harness, Remote Panel (Reaches From Remote Panel to Extension Harness) (Includes Parts Marked *)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	323-1541	1	*Plug (8 Pin) (J4)
6	323-1492	5	*Pin, Contact
7	323-1591	3	*Plug, Seal
8	323-1543	1	*Wedge, Plug (8 Pin)

* – Parts Included in Remote Panel Harness.

Deluxe Remote Control Panel W/Hour Meter (Push-On Terminals)

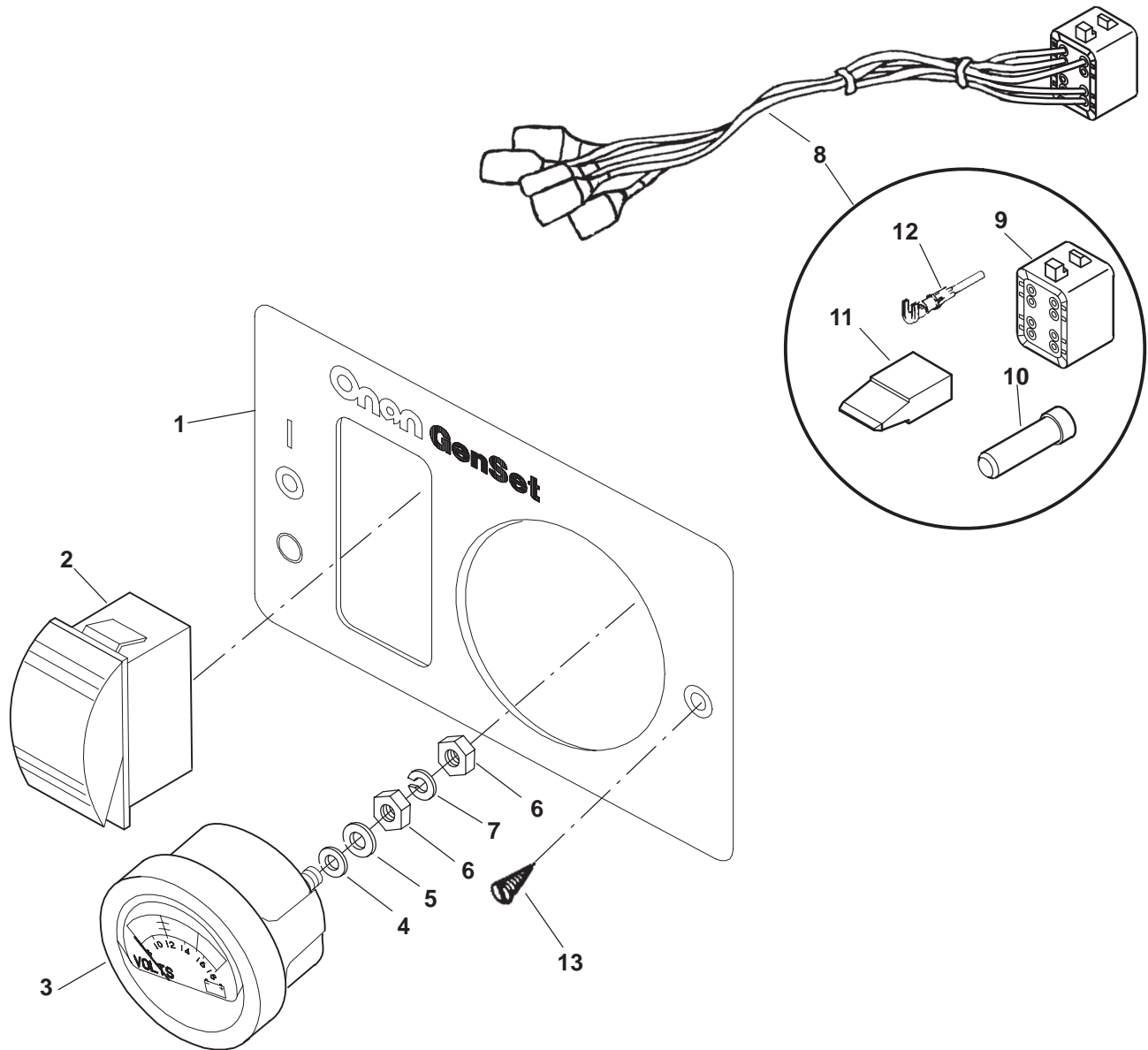


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	300-4991-01	1	Kit, Deluxe Panel
	300-4991-02	1	12V
1	319-2340-04	1	Panel, Remote
2			Switch, Rocker (S11)
	308-1062	1	12V
	308-1062-01	1	24V
3	302-2002	1	Meter, Hour (M11)
4	338-3599	1	Harness, Remote Panel (Reaches From Remote Panel to Extension Harness) (Includes Parts Marked *)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	323-1541	1	*Plug (8 Pin) (J4)
6	323-1591	3	*Plug, Connector
7	323-1543	1	*Wedge, Plug (8 Pin)
8	323-1492	5	*Pin, Contact
9	815-0910	2	Screw, Wood (#6 x 1)

* – Parts Included in Remote Panel Wiring Harness.

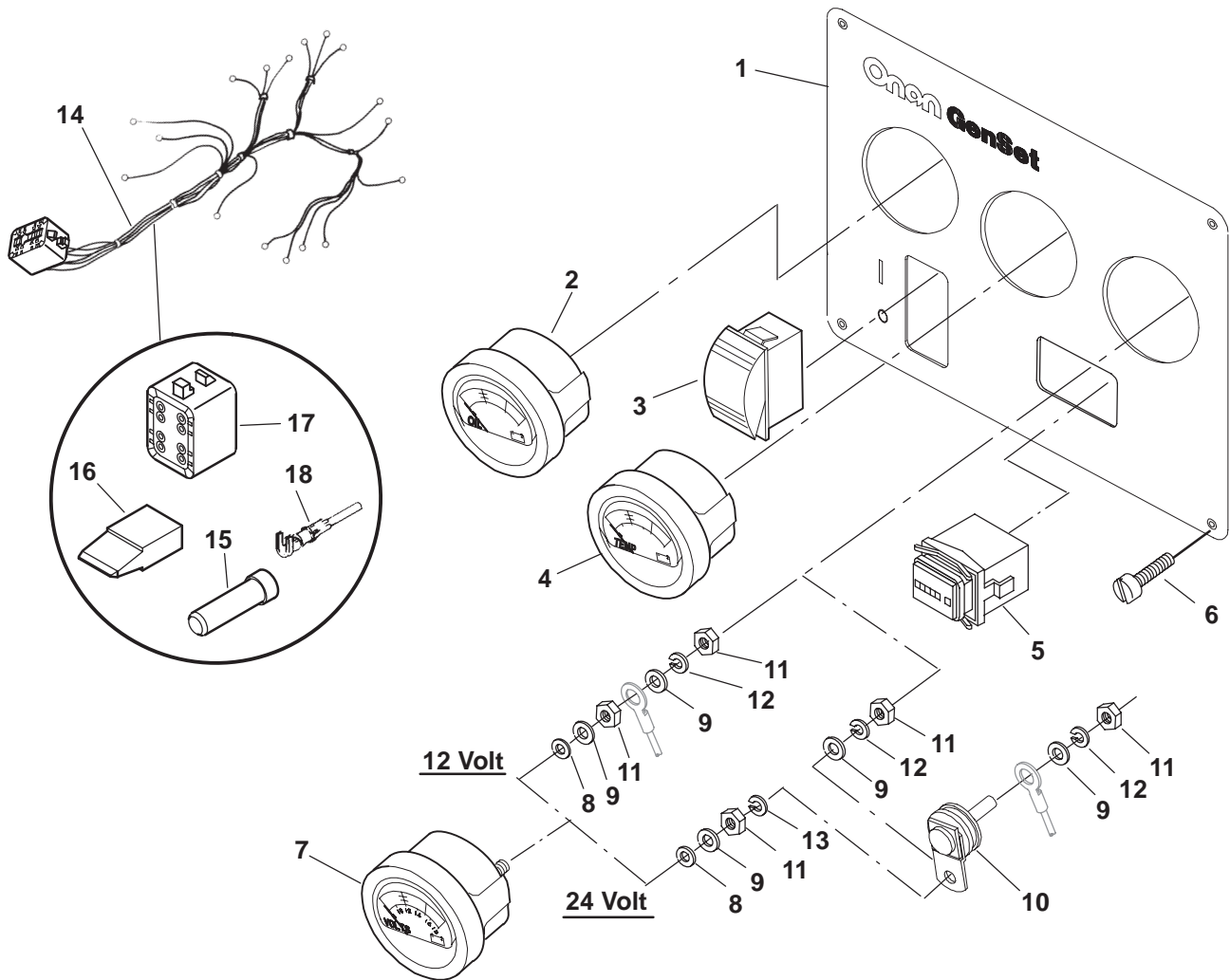
Deluxe Remote Control Panel W/Volt Meter (Push-On Terminals)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Kit, Remote Panel	7	850-0030	2	Washer, Lock
	300-4989-01	1	12V	8	338-3597	1	Harness, Remote Panel (Reaches From Remote Panel to Extension Harness) (Includes Parts Marked *)
	300-4989-02	1	24V				
1	319-3132-01	1	Panel, Remote	9	323-1541	1	*Plug (8 Pin) (J4)
2			Switch, Rocker (S11)	10	323-1591	3	*Plug, Connector
	308-1062	1	12V	11	323-1543	1	*Wedge, Plug (8 Pin)
	308-1062-01	1	24V	12	323-1492	5	*Pin, Contact
3			Meter, Volt (M14)	13	815-0910	2	Screw, Wood (#6 x 1)
	302-1641	1	12V (8-18V)				
	302-1642	1	24V (16-36V)				
4	526-0409	2	Washer, Nylon				
5	526-0049	4	Washer, Flat				
6	871-0010	4	Nut, Hex Brass (10-32)				

* - Parts Included in Remote Panel Wiring Harness.

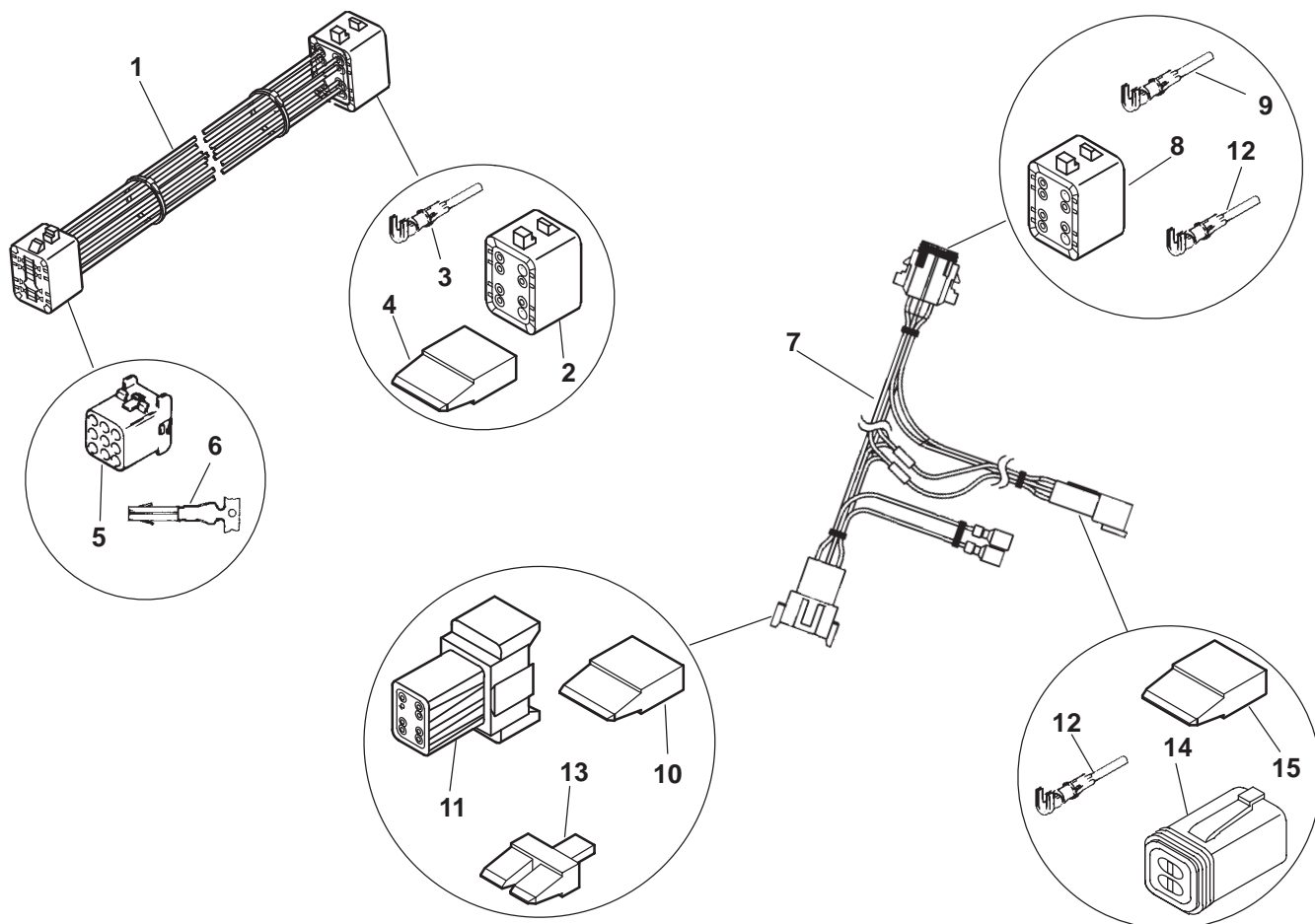
Remote Gauge Control Panel (Push-On Terminals)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Kit, Remote Gauge Panel	10	193-0250	1	Resistor (24V Only)
	300-5018-01	1	12V	11			Nut, Brass Hex (#10-32)
	300-5018-02	1	24V		871-0010	16	12V
1	319-3254-02	1	Panel, Remote		871-0010	18	24V
2	193-0352	1	Gauge, Oil Pressure (M12)	12			Washer, Lock (#10)
3			Switch, Rocker (SPDT) (S11)		850-0030	8	12V
	308-1062	1	12V Sets		850-0030	10	24V
	308-1062-01	1	24V Sets	13	853-0008	1	Washer, ET Lock (#10) (24V Only)
4	193-0351	1	Gauge, Water Temperature (M13)	14	338-3625	1	Harness, Remote Panel (Reaches From Remote Panel to Extension Harness) (Includes Parts Marked +)
5	302-2002	1	Meter, Running Time (M11)				
6	808-0023	4	Screw, Pan Head Sheet Metal (#8 x .50)	15	323-1591	1	+ Plug, Seal
7			Meter, Volt (M14)	16	323-1543	1	+ Wedge, Plug (8 Pin)
	302-1641	1	12V Sets (8-18V)	17	323-1541	1	+ Plug (8 Pin) (P4)
	302-1642	1	24V Sets (18-34V)	18	323-1492	7	+ Contact, Socket
8	526-0409	8	Washer, Nylon (.194")				
9			Washer, Brass Flat (#10-32)				
	526-0049	16	12V				
	526-0049	18	24V				

+ - Parts Included in Remote Panel Harness

Adapter and Junction Harness



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			*Harness, Adapter (Includes Parts Marked °)
	338-3695	1	Single Circuit for On/Off /Preheat
	338-3696	1	Two Circuits for On/Off and Preheat
2	323-1541	1	°Plug (9 Pin)
3	323-1492	AR	°Terminal, Socket
4	323-1543	1	°Wedge, Plug (8 Pin)
5	323-1325	1	°Cap, Connector
6	323-1200	AR	°Socket, Contact
7	338-3697	1	*Harness, Junction (Includes Parts Marked +)

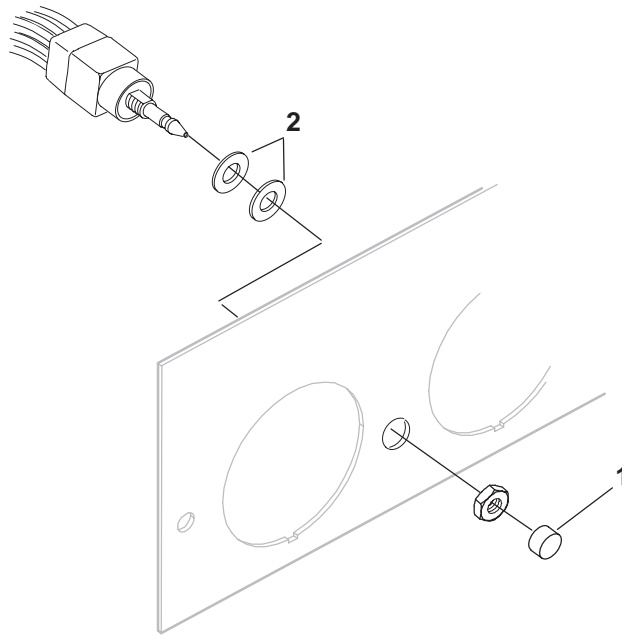
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
8	323-1541	1	+Plug (9 Pin)
9	323-1492	AR	+Terminal, Socket
10	323-1543	1	+Wedge, Plug (8 Pin)
11	323-1542	1	+Receptacle (8 Pin)
12	323-1491	8	+Terminal, Pin
13	323-1544	1	+Wedge, Receptacle (8 Pin)
14	323-1549	1	+Socket, Recrptacke (4 Pin)
15	323-1547	1	+Wedge, Lock Receptacle (4 Pin)

* – See Accessory Manual for Application Description.

° – Parts Included in Adapter Harness.#

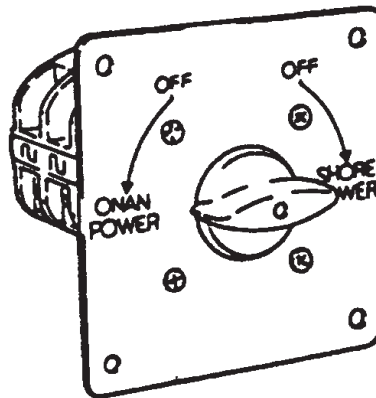
+ – Parts Included in Remote Extension Harness.

Dual Gauge Switch



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
300-4835		1	Kit, Dual Gauge Switch (Nut is Part of Switch)	1	308-1072	1	Cap, Switch
				2	850-0038	2	Washer, Flat (1/4)

Manual Transfer Switch



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	308-0269	1	Switch, On Shore/Off Shore Rotary 120V (2 Wire)
	308-0270	1	120/240V (3 Wire)

Isolated Ground System Unique Parts*

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Isolated Ground Insulation Assy	130-4411-03			Bracket, Belt Guard (Bottom)
337-2832	1		Isolator, Ground	130-4414-03			Guard, Belt
337-2833-02	1		Strip, Ground	800-2029	2		Screw, Hex Head Cap (M6 x 12mm)
802-0038	1		Screw, Socket Head (1/4-20 x 1.5")				Panel Assy, Control (Includes But is Not Limited to Parts Marked °)
802-0057	1		Screw, Socket Head (5/16-18 x 1.5")				Without Gauges
856-0006	1		Washer, EIT Lock (1/4")	300-4873	1		12V
856-0008	1		Washer, EIT Lock (5/16")	300-4875	1		24V
862-0001	1		Nut, Hex (1/4-20)				With Gauges
862-0015	1		Nut, Hex (5/16-18)	300-4872	1		12V
800-2115	1		Screw, Hex Head Cap (M12 x 45mm)	300-4874	1		24V
			Alternator, Complete				°Marker, Strip (14 Pos.)
191-2169-01	1		12V	332-3296	1		14 Pos.
191-2169-02	1		24V	332-3298	1		3 Pos.
191-2168-03	1		Bracket, Adjusting	821-0010	1		°Screw, Lock Head (1/4-20 x .5")
800-0104	1		Bolt	821-0008	1		°Screw, Lock Head (1/4-20 x .312)
850-0060	1		Washer, Spring	526-0052	1		°Washer, Flat Brass (1/4")
526-0045	1		Washer, Lock	332-2370	1		°Standoff, Insulator
800-0028	1		Screw, Hex Head Cap (5/16-18 x 1)				Relay, Solenoid
850-0045	1		Washer, Spring	307-1617	1		12V
511-0186	1		Belt	307-2656	1		24V
526-0219	1		Washer, Flat	191-2166-03	1		Bracket, Solenoid Relay (Isolated Ground)
862-0016	1		Nut	800-3018	2		Screw, Hex Head Cap (M10 x 16mm) (Isolated Ground)
191-2170	1		Pulley, Alternator	526-2080	2		Washer, Flat (M6) (Isolated Ground)
718-1048	1		Screw, Hex Head Cap (M8 x 80)				
800-2100	1		Screw, Hex Head Cap (M10 x 100)				
526-2133	1		Washer, (M10)				
850-2010	1		Washer, Lock (M10)				
750-1008	1		Nut, Hex (M10)				
309-0578	1		Switch, Pressure				
193-0415	1		Sender, Low Coolant				
309-0576	1		Thermostat				

* – These Parts Duplicated Here for Handy Reference. Also Found on Appropriate Pages Throughout This Book.
° – Parts Included in Control Panel Assy.

Labels

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
98-5948		1	Decal, Front Panel – Basic Remote Control	98-6862		1	Label, Control Top Spec A–B
98-5945		1	Decal, Rear Panel – Basic Remote Control	98-7567		1	Begin Spec C
98-5947		1	Decal, Front Panel – Deluxe Remote Control	98-5161		1	Label, Coolant (Housed Sets)
98-5944		1	Decal, Rear Panel – Deluxe Remote Control	98-5347		1	Label, Danger (Voltage)
98-5803		1	Decal, Front Panel – Remote Gauge Control	98-2235		1	Label, Ground
98-5761		1	Decal, Rear Panel – Remote Gauge Control	98-6997		1	Label, Lifting Eye (Housed Sets) Label, No Step
98-6861		1	Label, Control Back Spec A–B	98-6996		1	Unhoused Sets
98-7566		1	Begin Spec C Label, Control Front Spec A–B	98-6996		2	Housed Sets
98-6860		1	With Gauges	98-1714		1	Label, Onan (Housed Sets)
98-6925		1	Without Gauges Begin Spec C	98-6388-01		1	Label, Phone Info
98-7564		1	With Gauges	98-6953		1	Label, Recon Chart
98-7565		1	Without Gauges	98-6757		1	Label, Voltage Regulator
				98-5667		1	Label, Warning (Coolant) (Housed Sets)
				98-5755		1	Label, Warning (Backfeed)
				98-6995		5	Label, Warning (Housed Sets)
				98-6074-02		1	Label, Warning (Operation)
				98-4798-01		1	Label, Warning (Rotating Parts) (Unhoused Sets)
				98-7541		1	Label, Zinc Anode

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