

Cummins **Onan**



Parts Manual

Marine Generator Set

MDKAF (Spec A-C)

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>
MDKAF/	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 3 Phase



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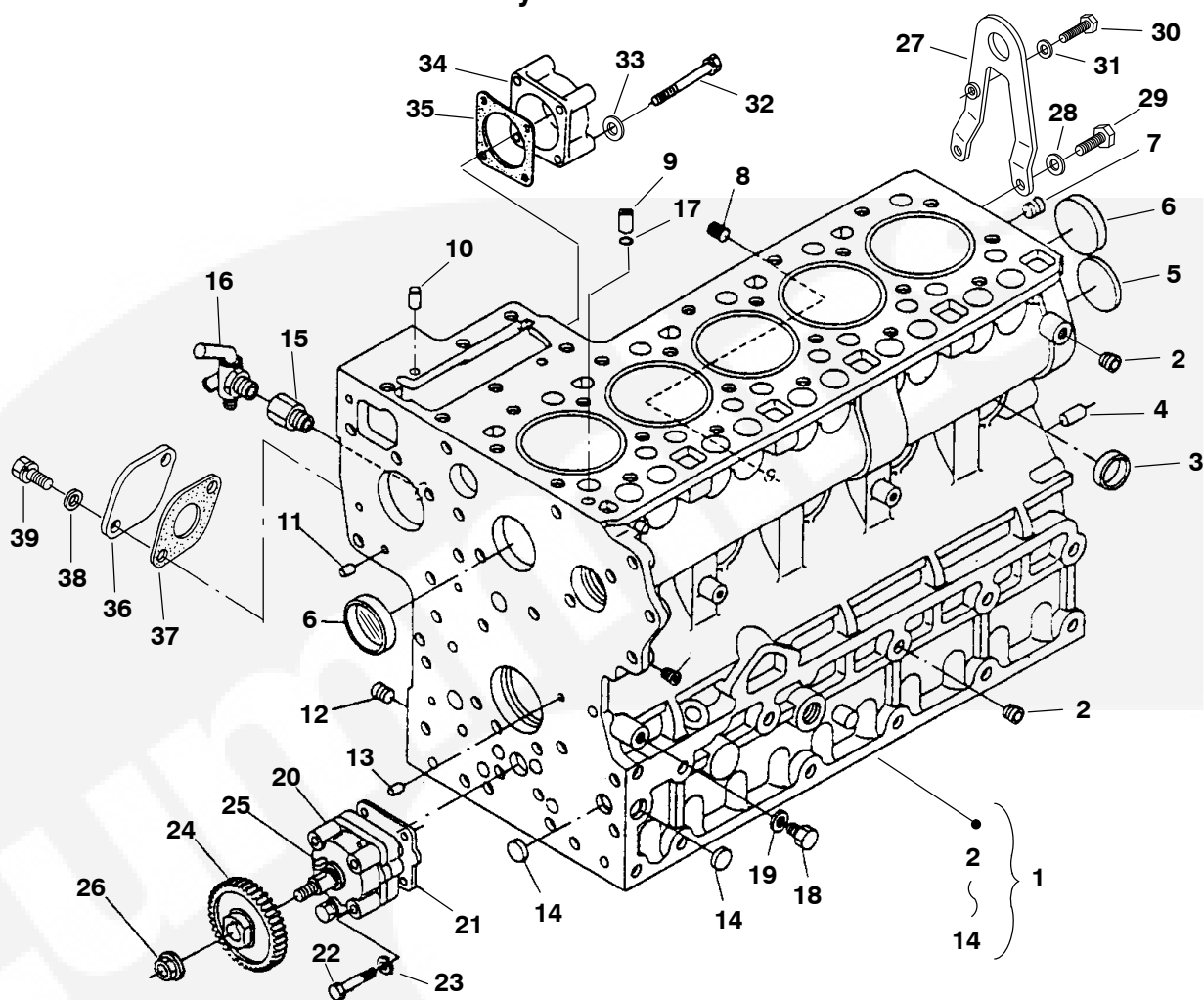
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Cylinder Block

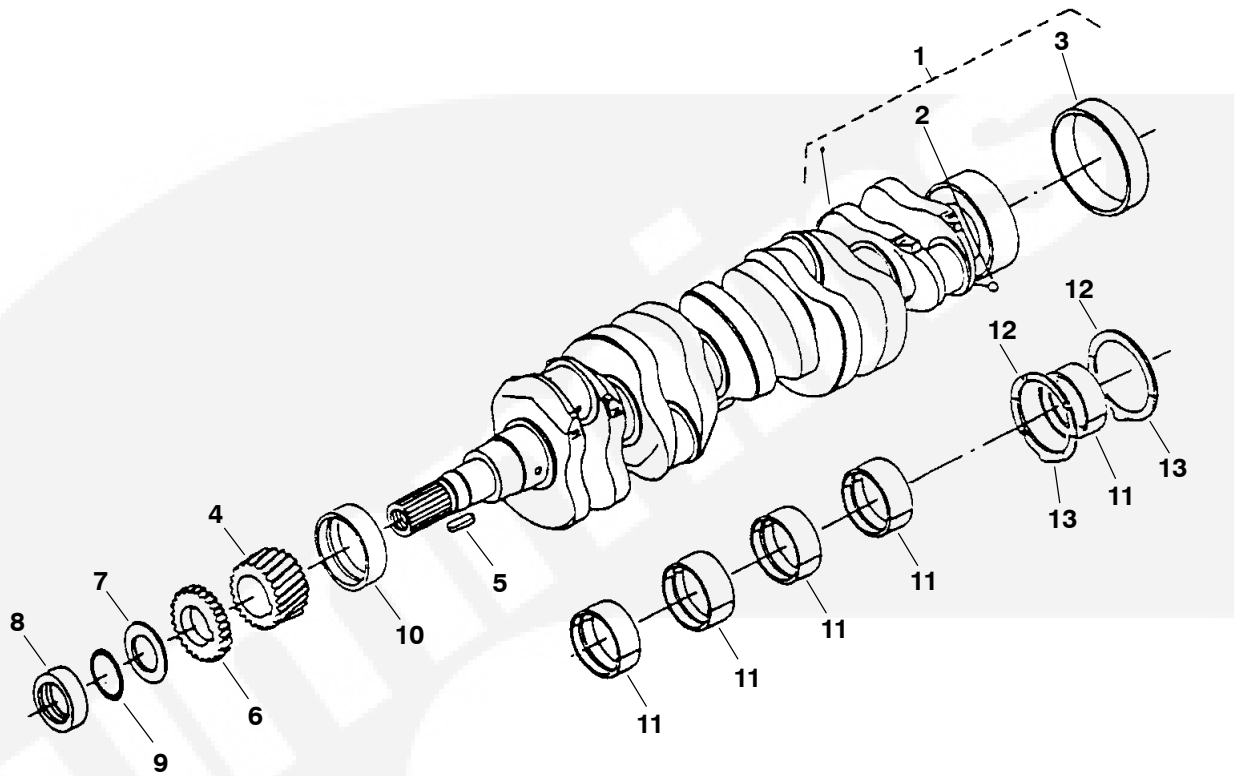


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Engine, Replacement	22	185-6042	4	Bolt
	100-3576-01	1	12V	23	185-6759	4	Washer, Spring
	100-3576-02	1	24V	24	185-6043	1	Gear, Oil Pump Drive
1	185-6038	1	Block Assy, Cylinder (Includes Parts Marked #)	25	185-2352	1	Key
2	185-6039	4	#Plug	26	185-7031	1	Nut, Flange
3	185-5840	8	#Cap, Sealing	27	403-3916-02	1	Bracket, Lifting
4	185-5844	1	#Pin, Straight	28	526-0399-64	2	Washer, Flat (M12)
5	185-6040	1	#Plug	29	800-3033	2	Screw, Hex Head Cap (M12 x 1.25 x 25mm)
6	185-5841	2	#Cap, Sealing	30	718-1035	1	Screw, Hex Head Cap (M8 x 1.25 x 16mm)
7	185-2234	2	#Plug	31	526-2100	1	Washer (M8)
8	185-2233	7	#Plug	32	185-5676	4	*Screw, Hex Head Cap (M8 x 70mm)
9	185-2094	1	#Pin, Pipe	33	526-2100	4	Washer, Flat
10	185-2350	2	#Pin, Straight	34	185-6772	1	*Cover
11	185-5842	2	#Pin, Straight	35	185-6982	1	*Gasket
12	185-5837	2	#Plug	36	185-6784	1	Cover, Hole
13	185-5843	2	#Pin, Straight	37	185-2125	1	Gasket, Hole Cover
14	185-6121	3	#Plug	38	850-2006	2	Washer, Flat
15	185-5847	1	Joint, Drain Cock	39	800-2034	2	Bolt
16	185-5846	1	Cock, Drain				
17	185-2095	1	O'Ring				
18	185-5845	1	Plug				
19	185-2338	1	Gasket				
20	185-6041	1	Pump, Oil				
21	185-5849	1	Gasket, Oil Pump				

- Parts included in Cylinder Block Assy.

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

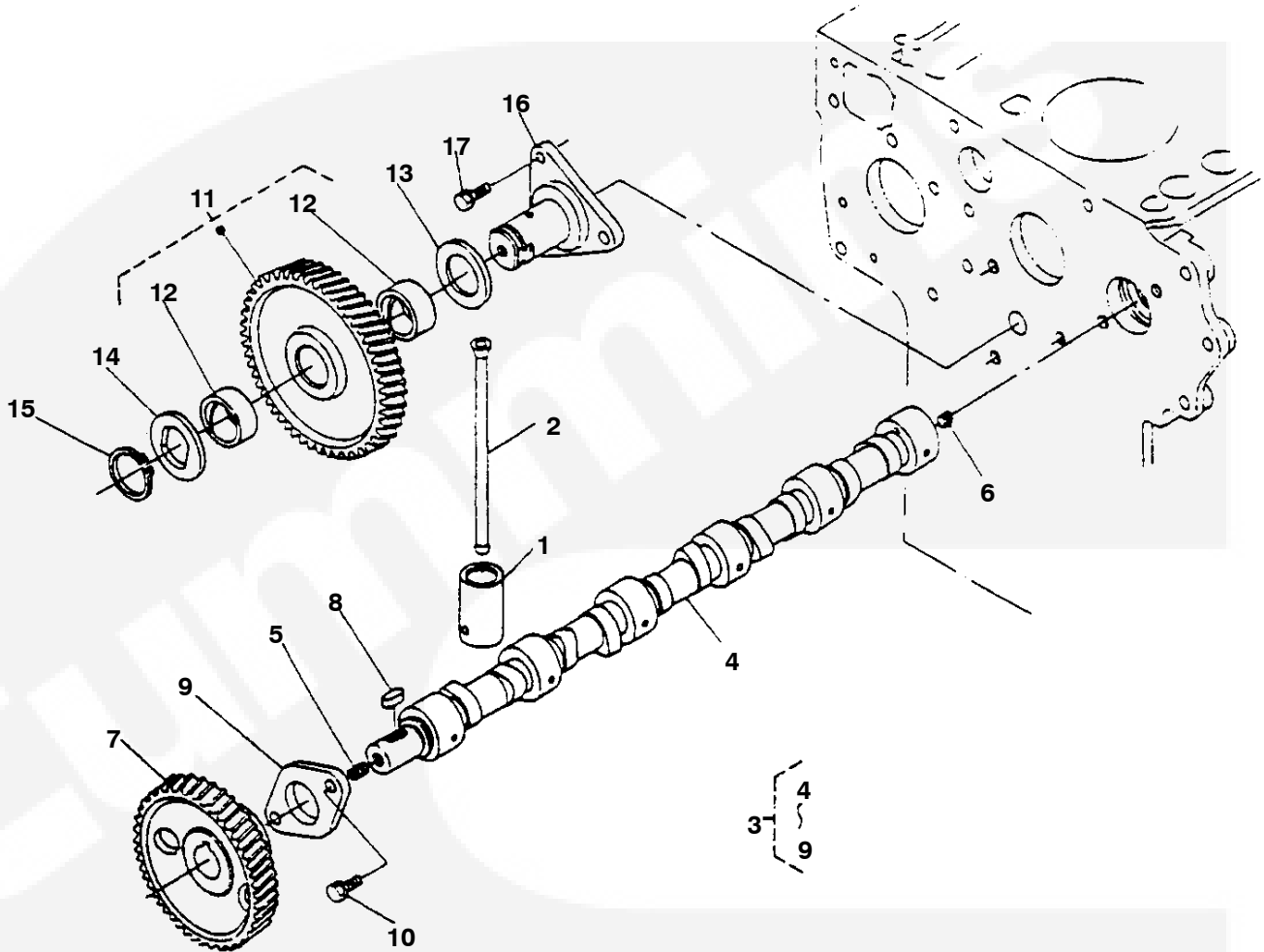
Crankshaft



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-7036	1	Crankshaft (Includes Balls and Sleeve)	11	185-6086	5	Bearing, Main Standard
2	185-5924	5	Ball	185-6976	5	0.2 mm Undersize	
3	185-6079	1	Sleeve	185-5937	5	0.4 mm Undersize	
4	185-6080	1	Gear	12	185-5938	2	Bearing, Thrust Standard
5	185-6081	1	Key	181-9044	2	0.2 mm Oversize	
6	185-6082	1	Gear, Oil Drive	185-6556	2	0.4 mm Oversize	
7	185-6083	1	Slinger, Oil	13	185-5941	2	Bearing, Thrust Standard
8	185-6084	1	Collar	185-6088	2	0.2 mm Oversize	
9	185-5929	1	O'Ring	185-6089	2	0.4 mm Oversize	
10			Bearing				
	185-6085	1	Standard				
	185-5933	1	0.2 mm Undersize				
	185-5934	1	0.4 mm Undersize				



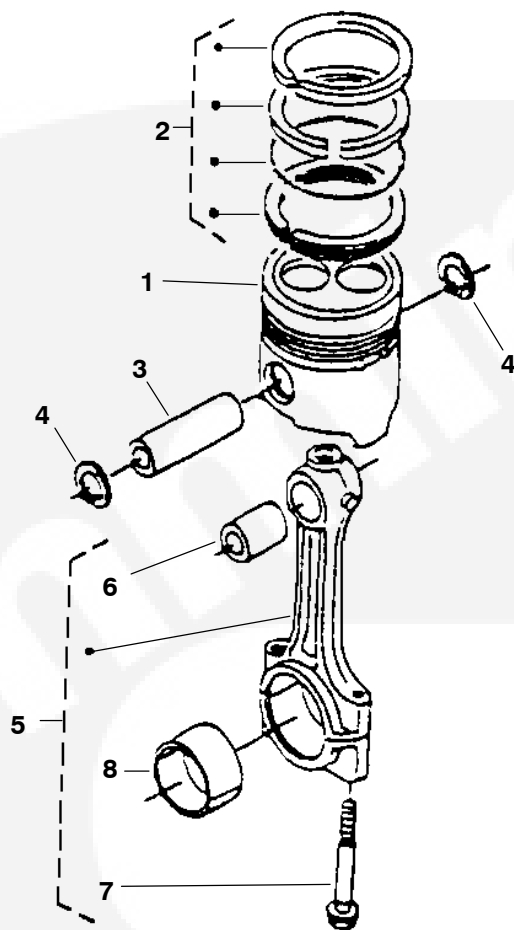
Camshaft



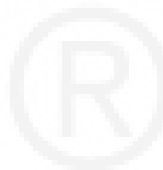
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5900	10	Tappet	11	185-6207	1	Gear Assy, Idle (Includes Bushing)
2	185-5901	10	Rod, Push	12	185-5098	2	Bushing, Idle Gear
3	185-6064	1	Camshaft Assy (Includes Parts Marked #)	13	185-5909	1	Collar
4	185-6065	1	#Camshaft	14	185-5910	1	Collar
5	185-6066	1	#Screw, Set	15	185-5911	1	Ring, External Retaining
6	185-5558	1	#Screw, Set	16	185-5912	1	Shaft, Idle Gear
7	185-6067	1	#Gear, Camshaft	17	185-2400	3	Bolt
8	185-5905	1	#Key				
9	185-5906	1	#Stopper, Camshaft				
10	185-2400	2	Bolt				

- Parts included in Camshaft Assy.

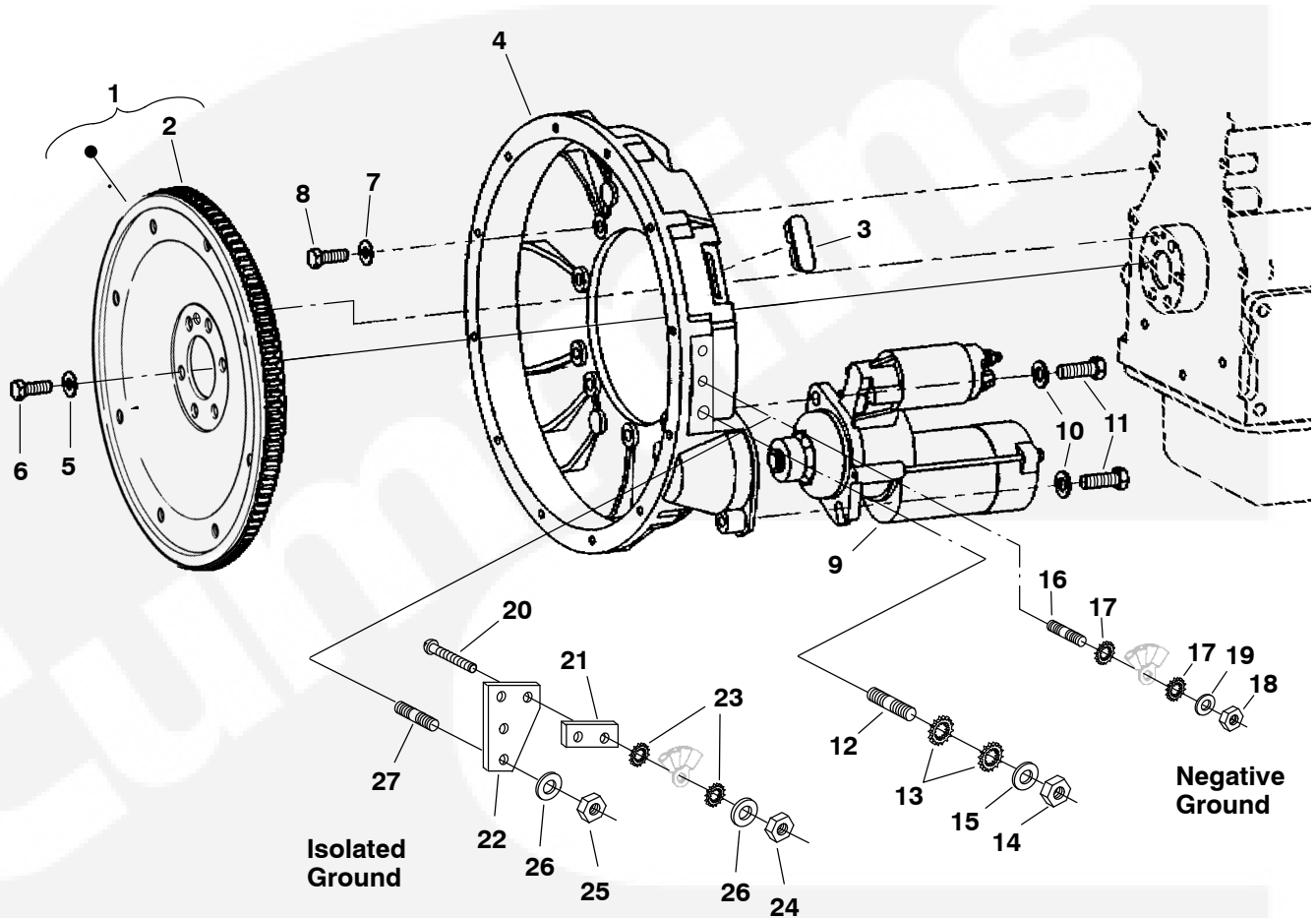
Piston



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5913	5	Piston	6	185-6209	5	Bushing
	185-6074	5	Standard	7	185-6771	10	Bolt
2			Set, Ring	8			Bearing
	185-5914	5	Standard		185-6076	5	Standard
	185-6075	5	0.5 mm Oversize		185-5921	5	0.2 mm Undersize
3	185-5915	5	Pin, Piston		185-5922	5	0.4 mm Undersize
4	185-5916	10	Ring, Retaining				
5	185-5917	5	Rod Assy, Connecting (Includes Bushing, Bearing and Bolts)				

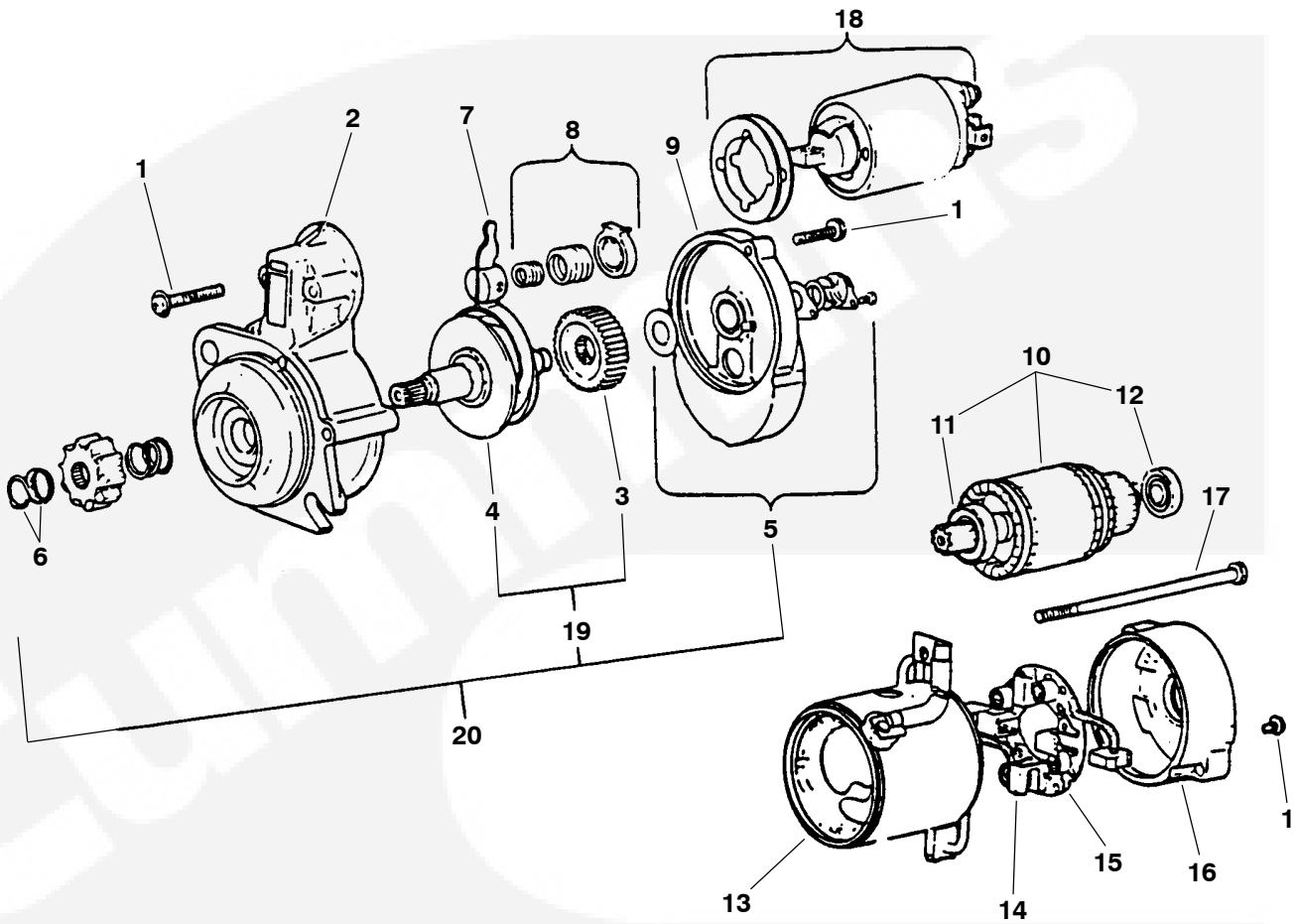


Flywheel



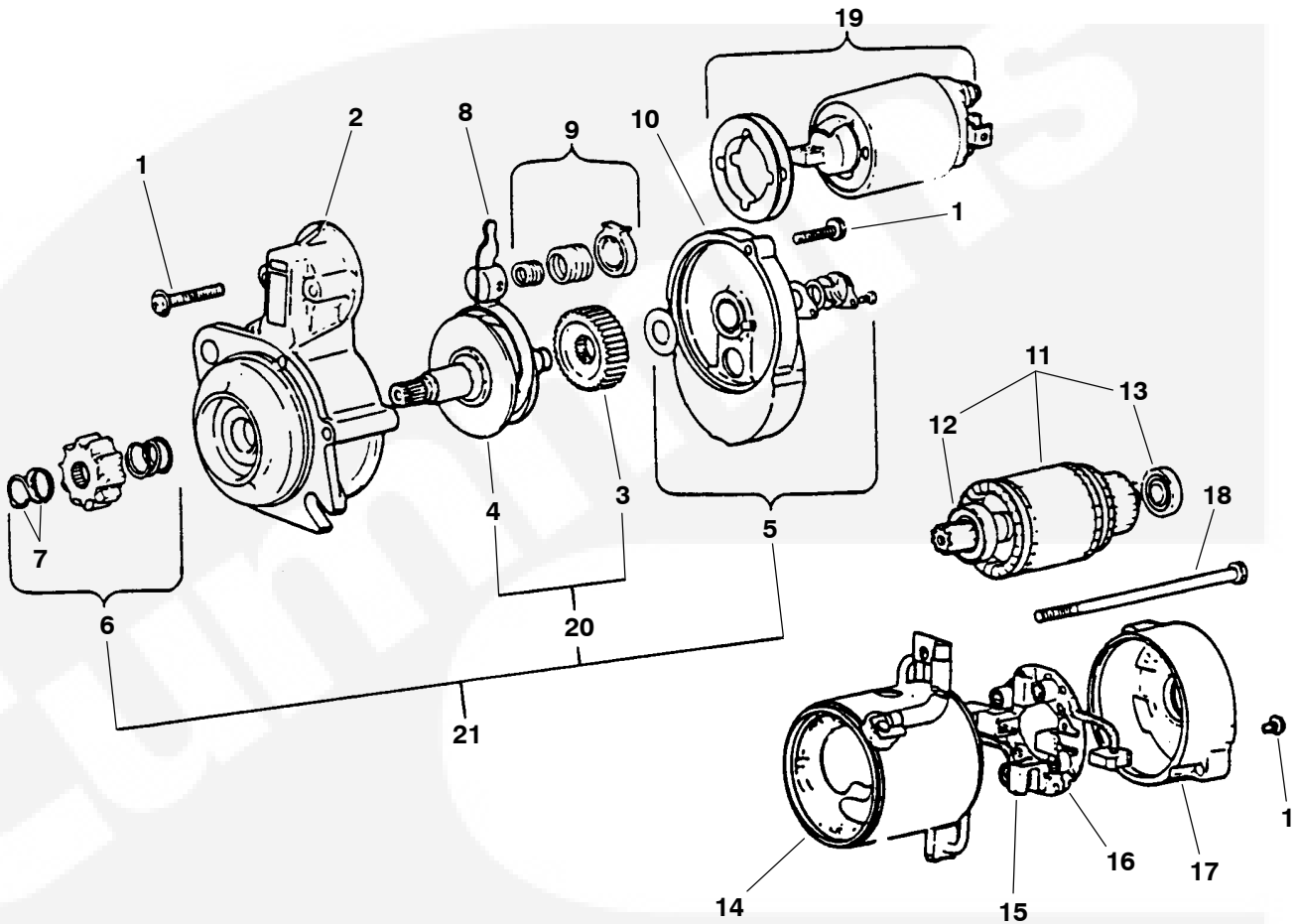
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	104-1927	1	Flywheel Assy (Includes Ring Gear)	13	856-0008	2	Washer, EIT Lock (5/16")
2	104-1666	1	Gear, Ring	14	871-0025	1	Nut, Hex Brass (5/16-18)
3	101-0811	1	Plug, Hole	15	526-0045	1	Washer, Flat (5/16")
4	101-0821-S0	1	Adapter, Engine	Negative Ground			
5	526-0145	6	Washer, Flat (M12)	16	520-1005	2	Stud, Stainless Steel
6	800-3032	6	Screw, Hex Head Cap (M12 x 1.25 x 30mm)	17	856-0006	4	Washer, EIT Lock (1/4)
7	526-0029	11	Washer, Flat (M10)	18	871-0015	2	Nut, Hex Brass (1/4-20)
8	800-3005	11	Screw, Hex Head Cap (M10 x 1.25 x 30mm)	19	526-0016	2	Washer, Flat (1/4")
9			Starter (See Separate Page for Components)	Isolated Ground			
	191-1959	1	12V	20	810-0156	2	Screw, Round Head Brass Machine (1/4-20 x 1-1/2")
	191-1550	1	24V	21	337-2970	1	Strip, Ground
10	526-0399-64	2	Washer, Flat (M12)	22	337-2969	1	Isolator, Ground
11	800-2113	2	Screw, Hex Head Cap (M12 x 1.75 x 35mm)	23	856-0006	4	Washer, EIT Lock
12	520-1006	1	Stud, Stainless Steel	24	871-0015	2	Nut, Hex Brass (1/4-20)
				25	862-0013	2	Nut, Hex (1/4-20)
				26	526-0016	4	Washer, Flat (1/4")
				27	520-1005	2	Stud, Stainless Steel

Starter Components (12V)



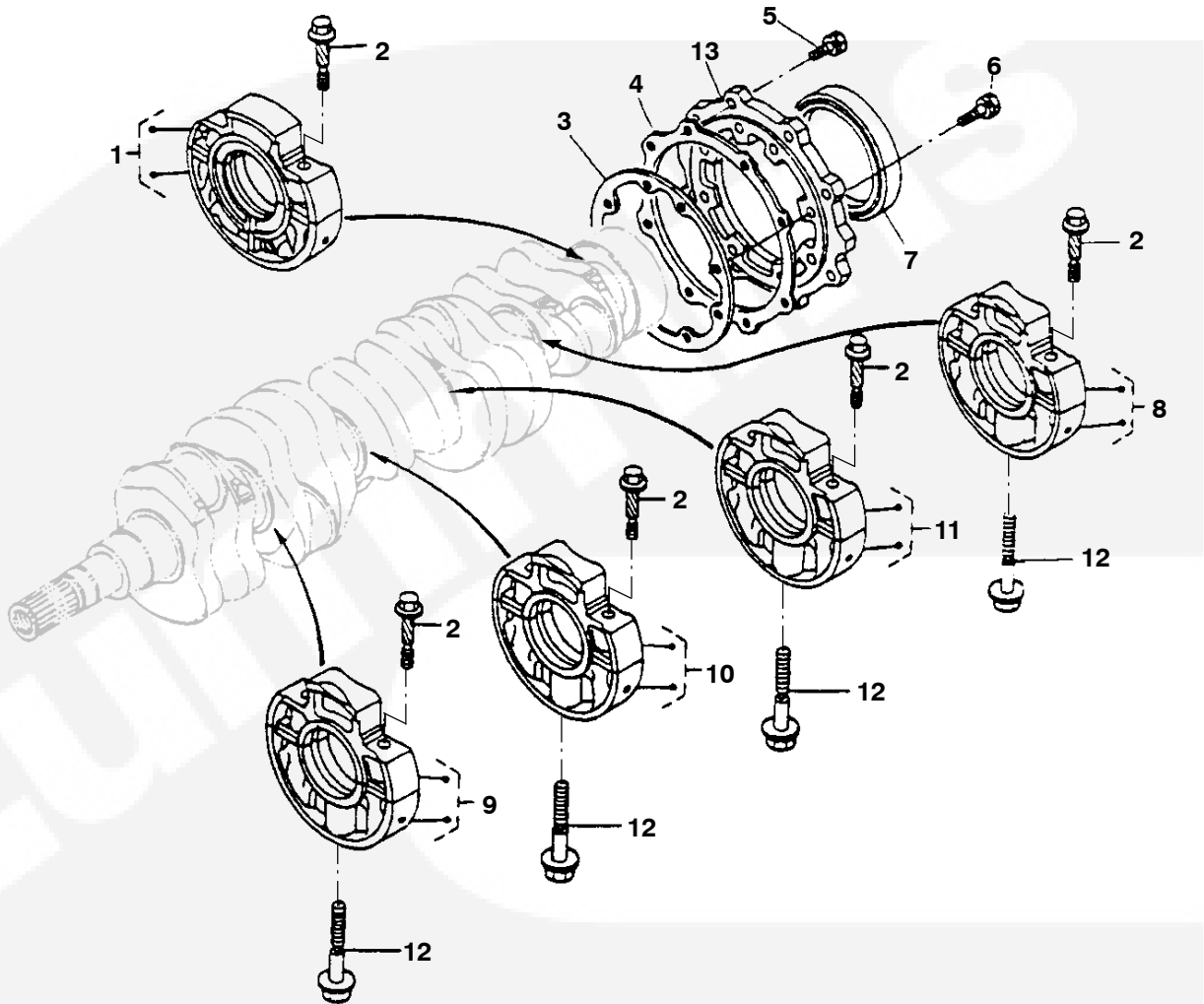
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	191-1959	1	Starter	11	191-1437	1	Bearing, Center
1	191-1450	4	Screw, Set	12	191-1436	1	Bearing, Rear
2	191-1449	1	Bracket Assy, Front	13	191-1992	1	Yoke Assy
3	191-1446	1	Gear	14	191-1993	1	Holder Assy, Brush
4	191-1445	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	Screw, Set	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

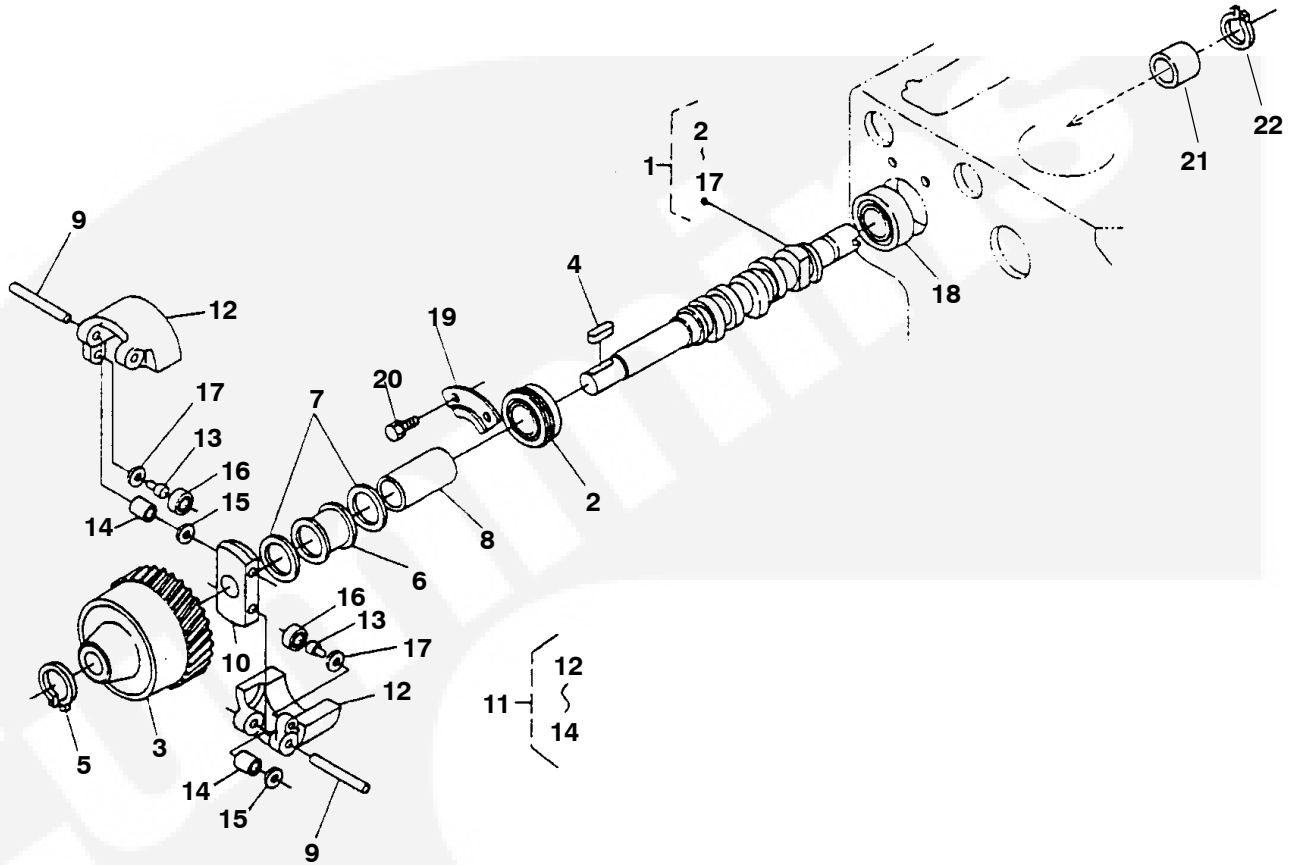
Main Bearing Housing



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5889	1	Housing, Main Bearing	8	185-5896	1	Housing, Main Bearing
2	185-5890	10	Bolt, Bearing Housing	9	185-5897	1	Housing, Main Bearing
3	185-6766	1	Gasket, Bearing Housing	10	185-5898	1	Housing, Main Bearing
4	185-5893	1	Gasket, Bearing Housing Cover	11	185-6063	1	Housing, Main Bearing
5	185-2403	8	Bolt	12	185-5899	4	Bolt, Bearing Housing
6	185-2404	8	Bolt	13	185-5892	1	Cover, Bearing Housing
7	185-6062	1	Seal, Oil				



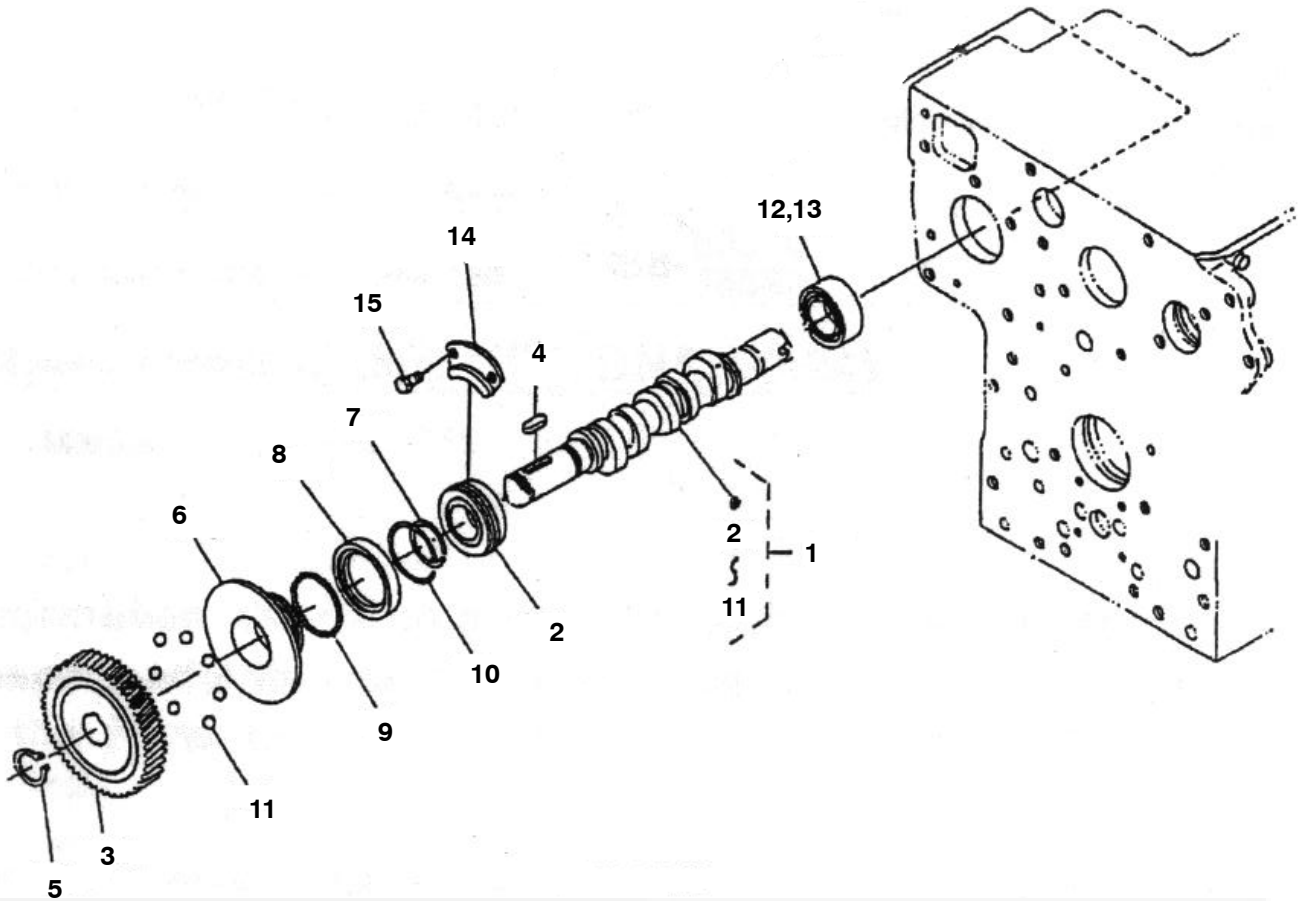
Fuel Camshaft – Tier 1 (1991–Dec. 2003)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6211	1	Camshaft Assy, Fuel (Includes Parts Marked #)	12	185-7039	2	Washer Weight, Governor
2	185-5947	1	#Bearing, Ball	13	185-5957	2	#Pin, Governor Weight
3	185-5948	1	#Gear, Injection Pump	14	185-5958	4	#Bushing
4	185-5949	1	#Key	15	185-5966	4	#Washer, Flat
5	185-5950	1	#Ring, External Retaining	16	185-5959	2	#Bearing
6	185-5951	1	#Sleeve, Governor	17	185-5960	2	#Washer
7	185-5952	2	#Washer, Thrust	18	185-5961	1	Bearing, Ball
8	185-5953	1	#Collar	19	185-5962	1	Stopper, Fuel Camshaft
9	185-5954	2	#Shaft, Governor Weight	20	185-6956	2	Bolt
10	185-5955	1	#Holder, Governor Weight	21	185-7040	1	Collar
11	185-5956	2	#Weight Assy, Governor (Includes Weight, Pin and Washer)	22	185-5963	1	Ring, External Retaining



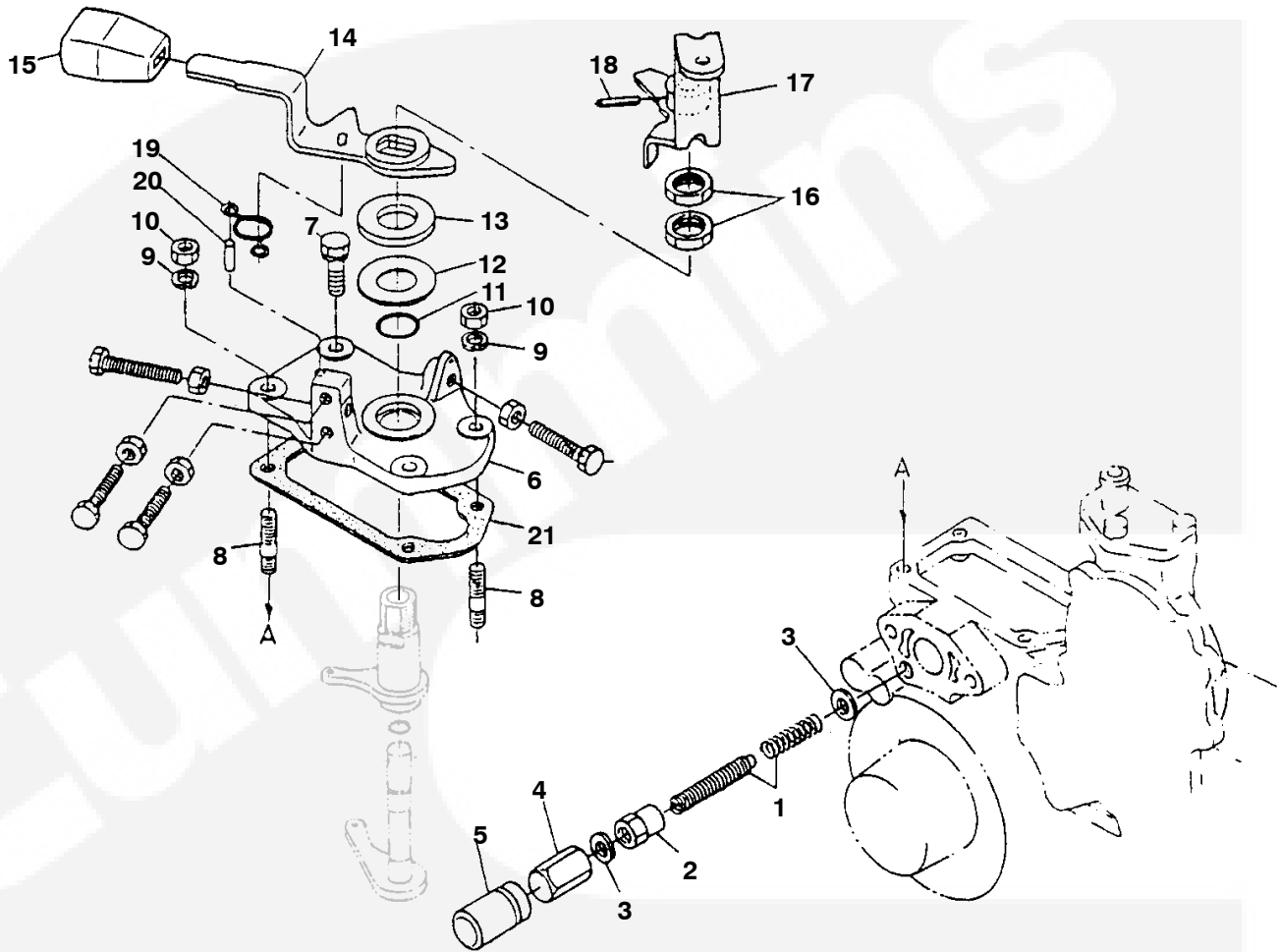
Fuel Camshaft – Tier 2 (Jan. 2004–Current)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	A034T397	1	Camshaft Assy, Fuel (Includes Parts Marked #)	8	150-3000	1	Case, Governor Ball
2	185-5947	1	Bearing, Ball	9	105-0740	39	Ball
3	147-0882	1	Gear, Injection Pump	10	518-0713	1	Ring, External Retaining
4	185-2354	1	Key, Feather	11	105-0741	7	Ball
5	185-5950	1	Ring, External Retaining	12	185-5961	1	Bearing, Ball
6	150-2798	1	Sleeve, Governor	13	A034T399	1	Bearing, Ball
7	518-0712	1	Ring, External Retaining (Gov. Sleeve)	14	185-5962	1	Stopper, Fuel Camshaft
				15	A040P213	2	Bolt

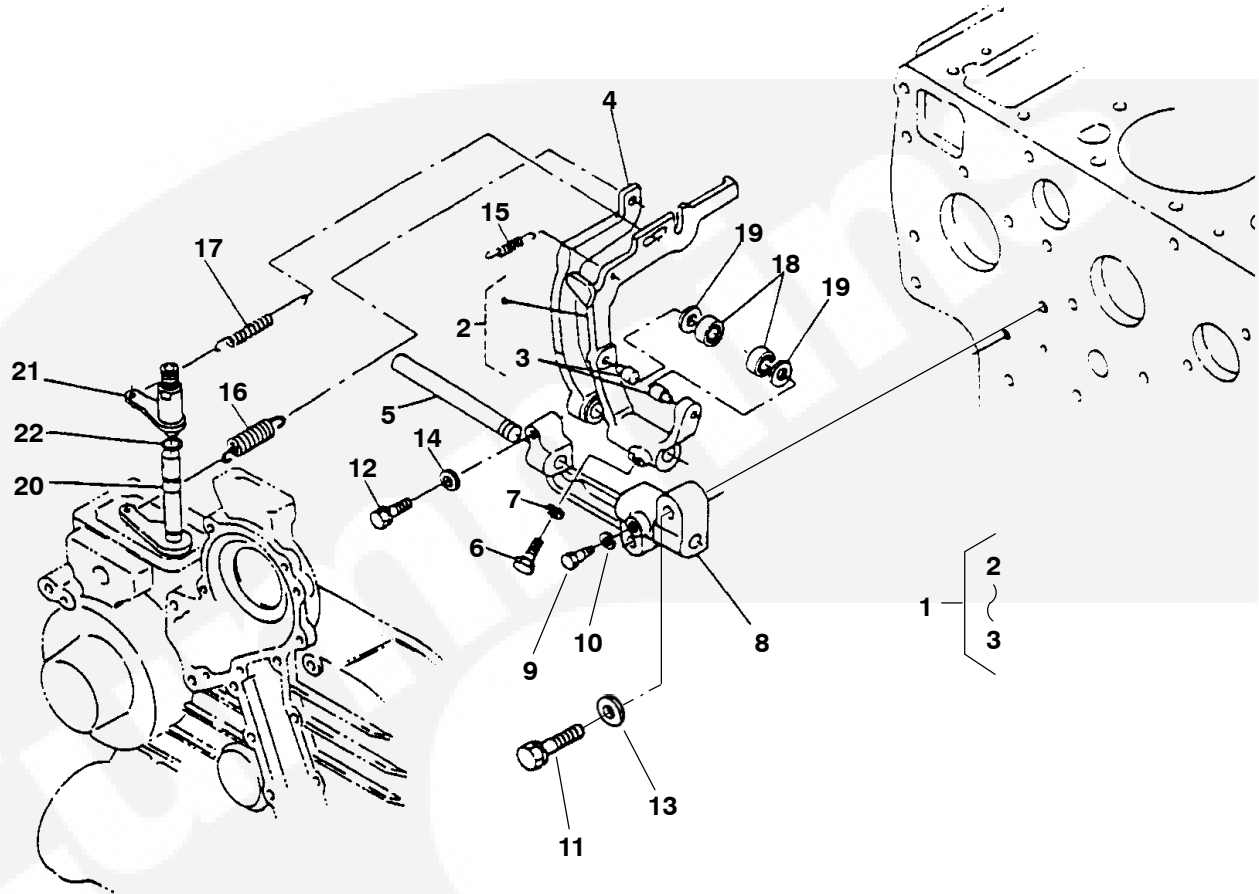


Speed Control



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6168	1	Bolt, Adjusting – Maximum Fuel Stop	11	185-5691	1	O'Ring
2	185-6169	1	Nut	12	185-3397	1	Shim (0.50 mm)
3	185-2284	2	Seal, Oil	13	185-6174	1	Collar
4	185-5529	1	Nut, Cap	14	185-6175	1	Lever
5	185-2283	1	Cap	15	185-6176	1	Grip, Lever
6	185-6171	1	Plate, Speed Control	16	185-5693	2	Nut
7	185-2390	2	Bolt	17	185-7048	1	Lever, Speed Control
8	185-2105	2	Stud	18	185-5696	1	Pin, Spring
9	185-6759	2	Washer, Spring	19	185-6178	1	Spring
10	185-4255	6	Nut	20	185-7001	1	Pin, Straight
				21	185-6180	1	Gasket

Governor

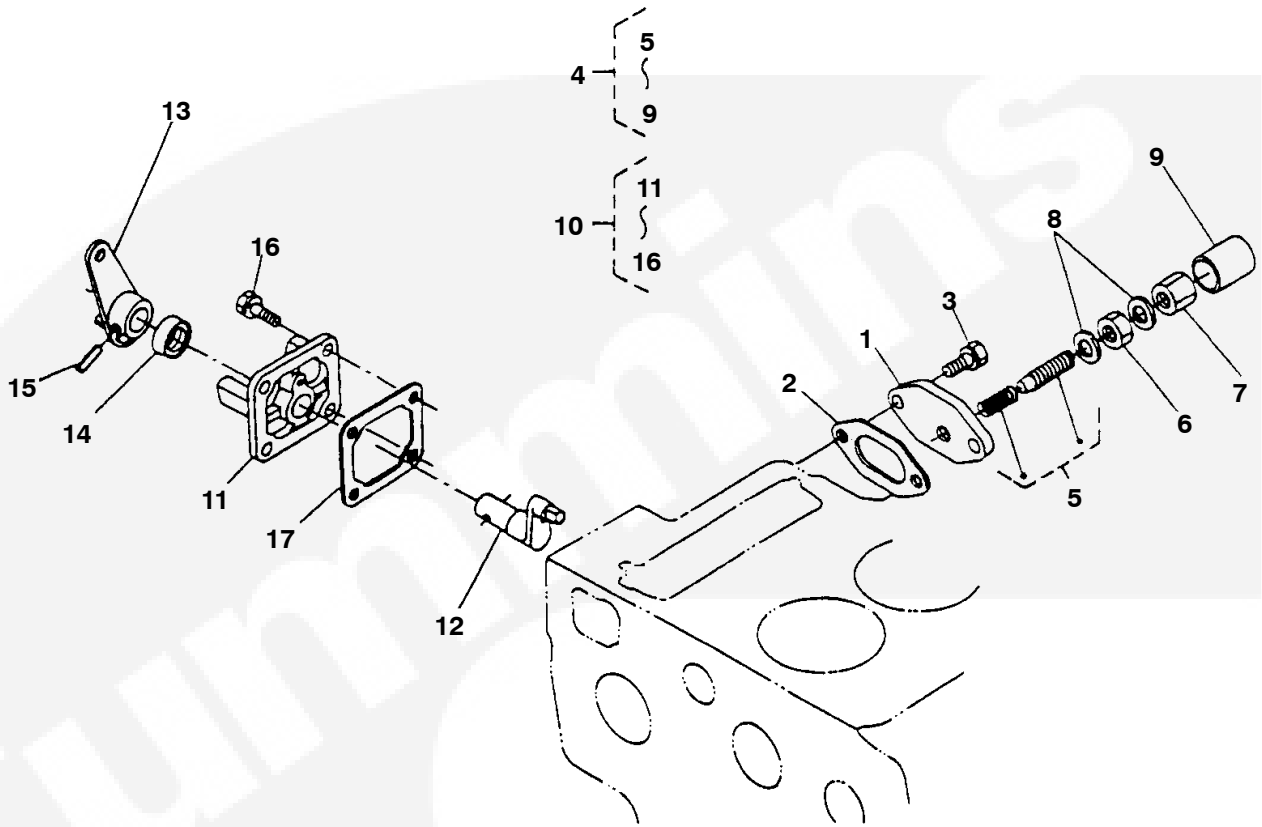


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6801	1	Lever Assy, Fork (Includes Parts Marked *)	13	740-1006	2	Washer, Flat
2	185-6158	1	*Lever Assy, Fork (Includes Pin)	14	740-1004	1	Washer, Flat
3	185-5957	2	Pin, Governor Weight	15	185-6165	1	Spring, Start
4	185-6779	1	*Lever, Fork	16	185-6799	1	Spring, Governor (No.1)
5	185-6160	1	*Shaft, Fork Lever	17	185-6800	1	Spring, Governor (No.2)
6	185-6161	1	*Bolt	18	185-5959	2	Bearing
7	185-6999	1	*Washer, Spring	19	185-5960	2	Washer
8	185-6780	1	*Holder Assy, Fork Lever (Includes Ball)	20	185-6172	1	Shaft, Lever
9	185-6164	1	*Screw, Set	21	185-6173	1	Lever, Governor
10	185-6163	2	*Washer, Flat	22	185-2347	1	O'Ring
11	185-6781	2	Bolt				
12	185-2392	1	Bolt				

* - Parts Included in Fork Lever Assy.



Engine Stop Lever

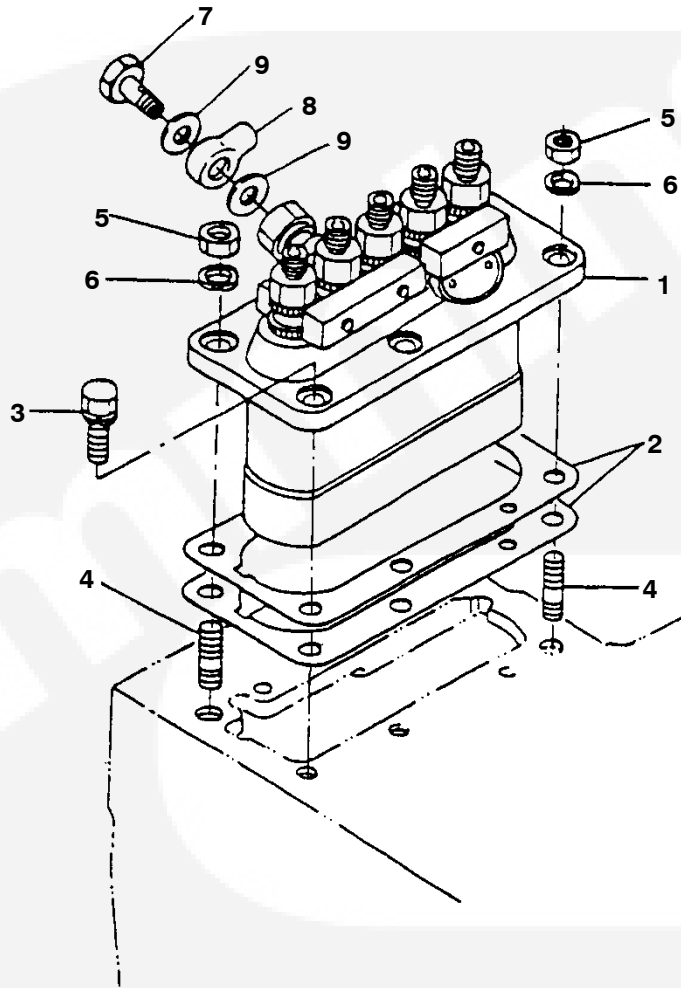


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6213	1	Cover	11	185-6134	1	#Cover, Injection Pump
2	185-7041	1	Gasket	12	185-6135	1	#Shaft, Lever
3	185-2388	2	Bolt	13	185-6775	1	#Lever, Engine Stop
4	185-7042	1	Bolt Assy, Adjusting - Governor Adjust (Includes Parts Marked *)	14	185-2461	1	#Seal, Oil
5	185-6774	1	*Bolt, Adjusting	15	185-2351	1	#Pin, Spring
6	185-5969	1	*Nut	16	185-2389	4	#Bolt
7	185-5970	1	*Nut, Cap	17	185-6985	1	Gasket
8	185-2338	2	*Gasket				
9	185-5971	1	*Cap				
10	185-6726	1	Lever Assy, Engine Stop (Includes Parts Marked #)				

* - Parts Included in Adjusting Bolt Assy.
- Parts Included in Engine Stop Lever Assy.



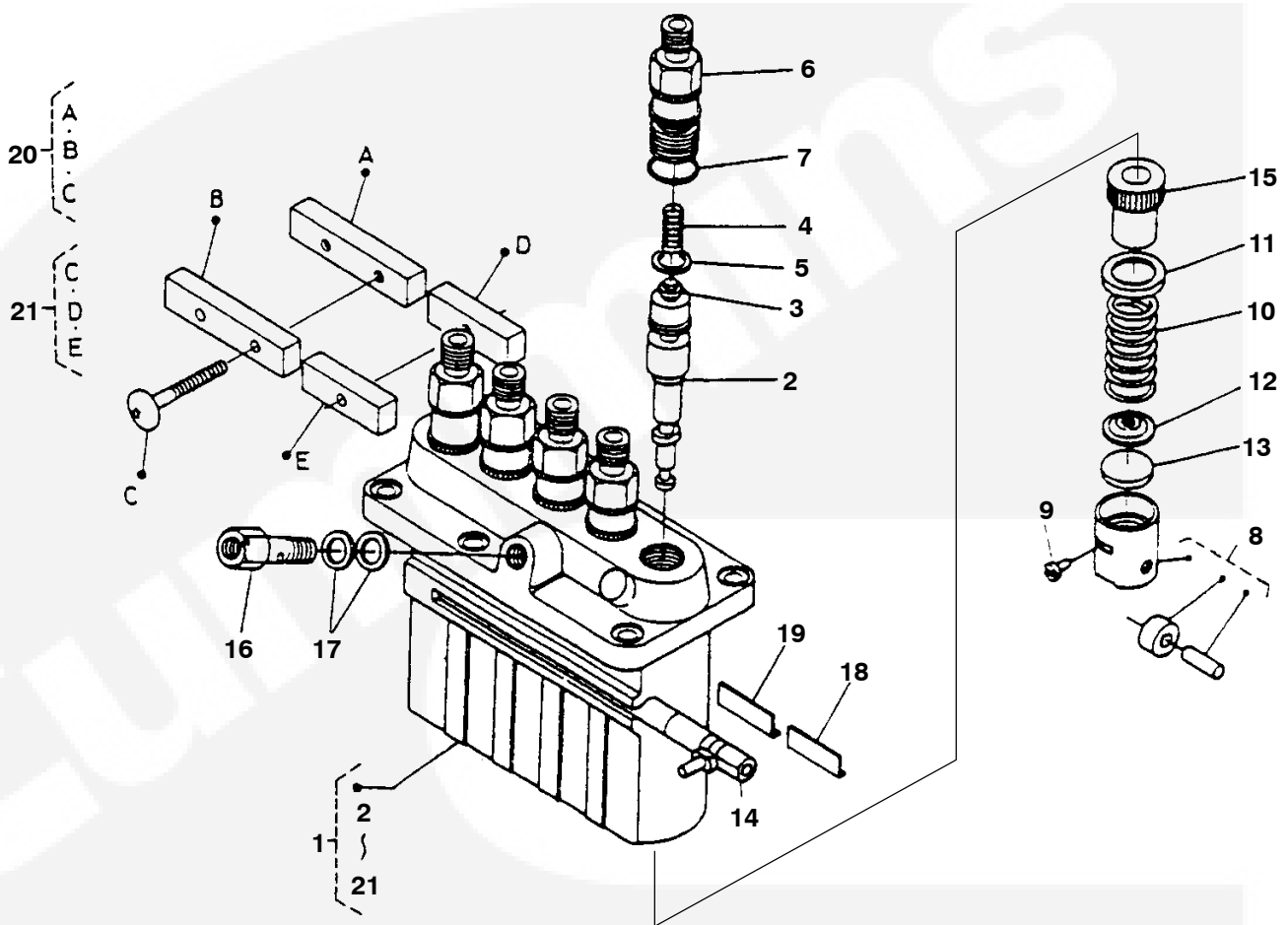
Injection Pump



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-7443	1	Pump Assy, Injection (See Separate Page for Components)	3	185-2402	4	Bolt
2			Shim	4	185-2362	2	Stud
	185-6796	1	.20mm	5	185-2367	2	Nut
	185-6091	1	.25mm	6	185-6957	2	Washer, Spring
	185-6795	1	.30mm	7	185-7045	1	Screw, Follow
				8	185-6418	1	Joint
				9	185-2578	2	Gasket

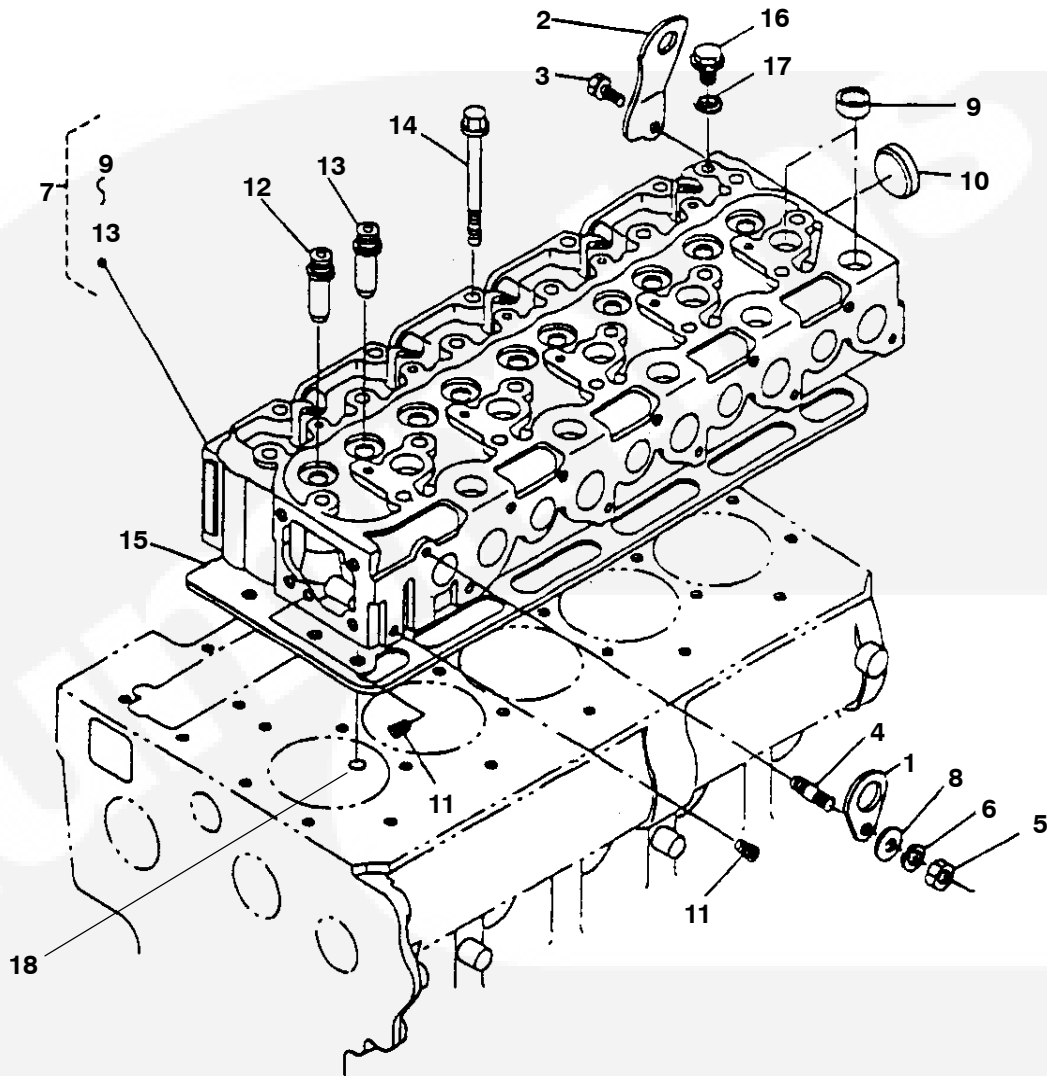


Injection Pump Components



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-7443	1	Pump Assy, Injection	12	185-6778	5	Seat, Lower Spring
2	185-6216	5	Plunger, Pump	13	185-6151	5	Shim
3	185-6217	5	Valve, Delivery	14	185-6219	1	Rack, Control
4	185-6218	5	Spring, Delivery Valve	15	185-6152	5	Sleeve, Control
5	185-6141	5	Gasket, Delivery Valve	16	185-6153	1	Screw, Hollow
6	185-6142	5	Holder, Delivery Valve	17	185-6154	2	Gasket
7	185-6155	5	O'Ring	18	185-6146	1	Plate
8	185-6144	5	Tappet Assy	19	185-6994	1	Plate
9	185-6145	5	Pin, Tappet Guide	20	185-6143	1	Plate Assy, Lock
10	185-6147	5	Spring, Plunger	21	185-6220	1	Plate Assy, Lock
11	185-6148	5	Seat, Upper Spring				

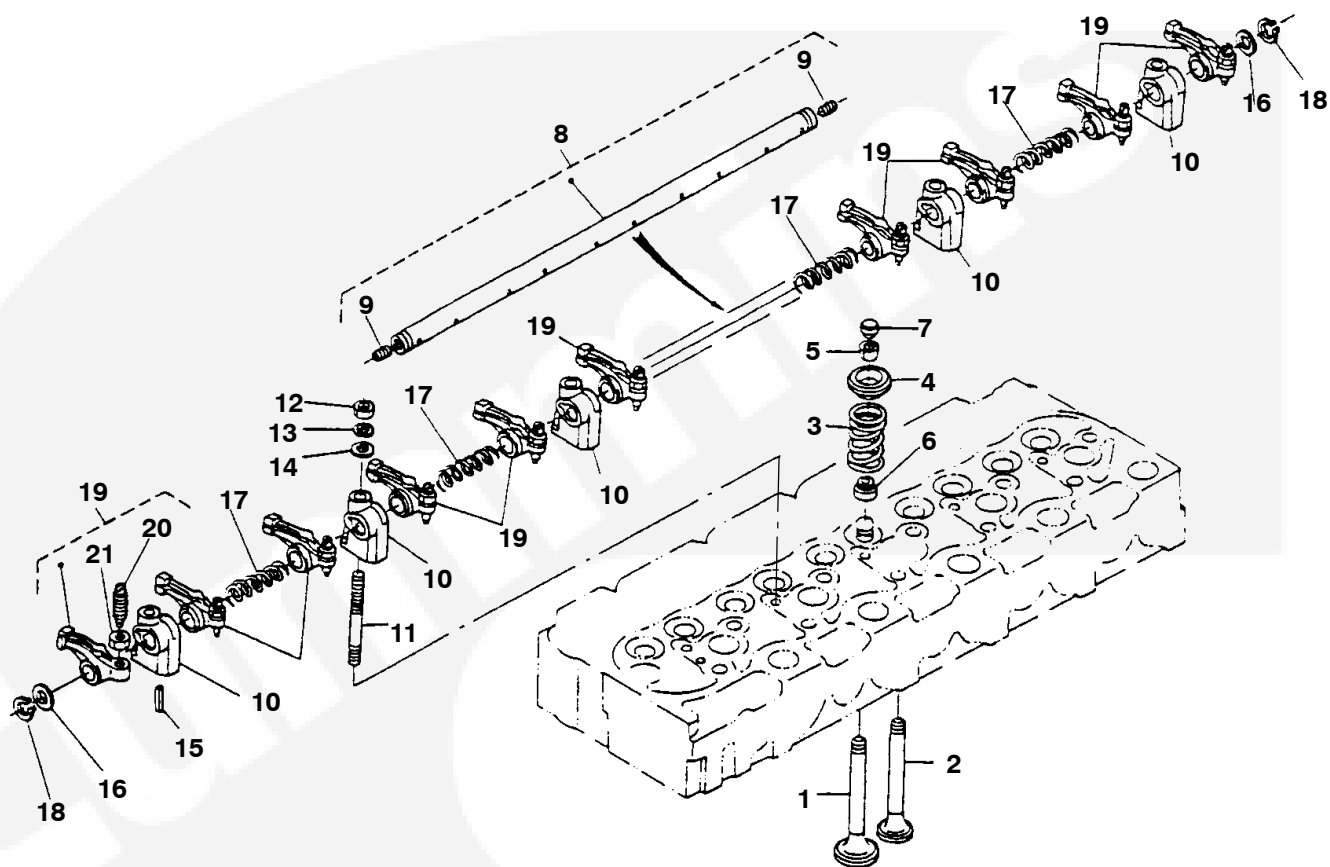
Cylinder Head



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-2414	1	Hook, Engine	11	185-2188	2	#Plug
2	185-5859	1	Hook, Engine	12	185-5862	5	#Guide, Inlet Valve
3	185-2563	1	Bolt	13	110-3987	5	#Guide, Exhaust Valve
4	185-6048	1	Stud	14	185-5865	22	Bolt, Cylinder Head
5	185-2367	1	Nut	15	185-6050	1	Gasket, Cylinder Head
6	185-6957	1	Washer, Spring	16	185-5867	1	Plug
7	185-6049	1	Head Assy, Cylinder (Includes Parts Marked #)	17	185-5868	1	Washer (with Rubber)
8	740-1006	1	Washer, Flat	18	185-2095	1	O'Ring
9	185-5861	15	#Cap, Sealing				
10	185-2412	1	#Cap, Sealing				

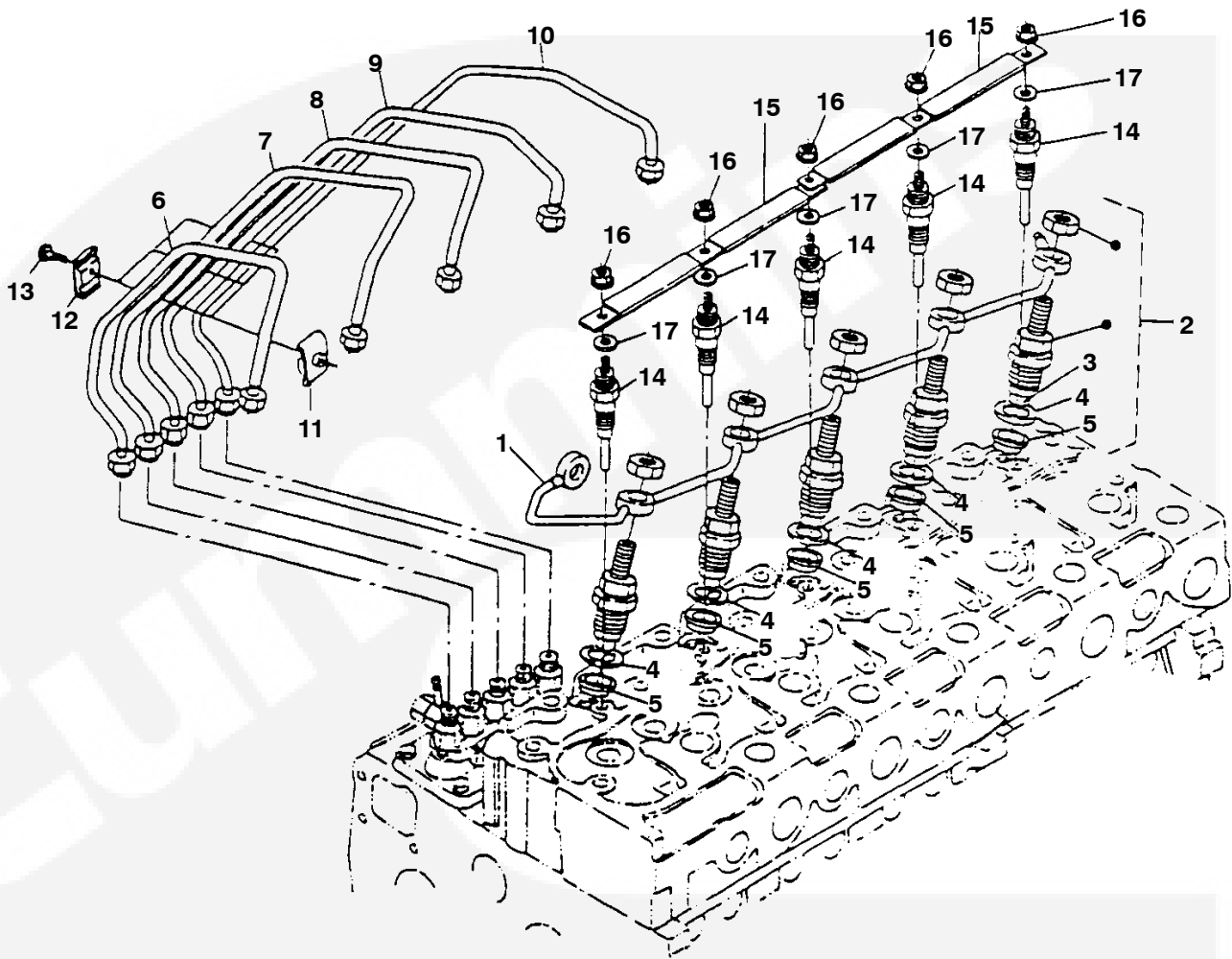
- Parts Included in Cylinder Head Assy.

Rocker Arm



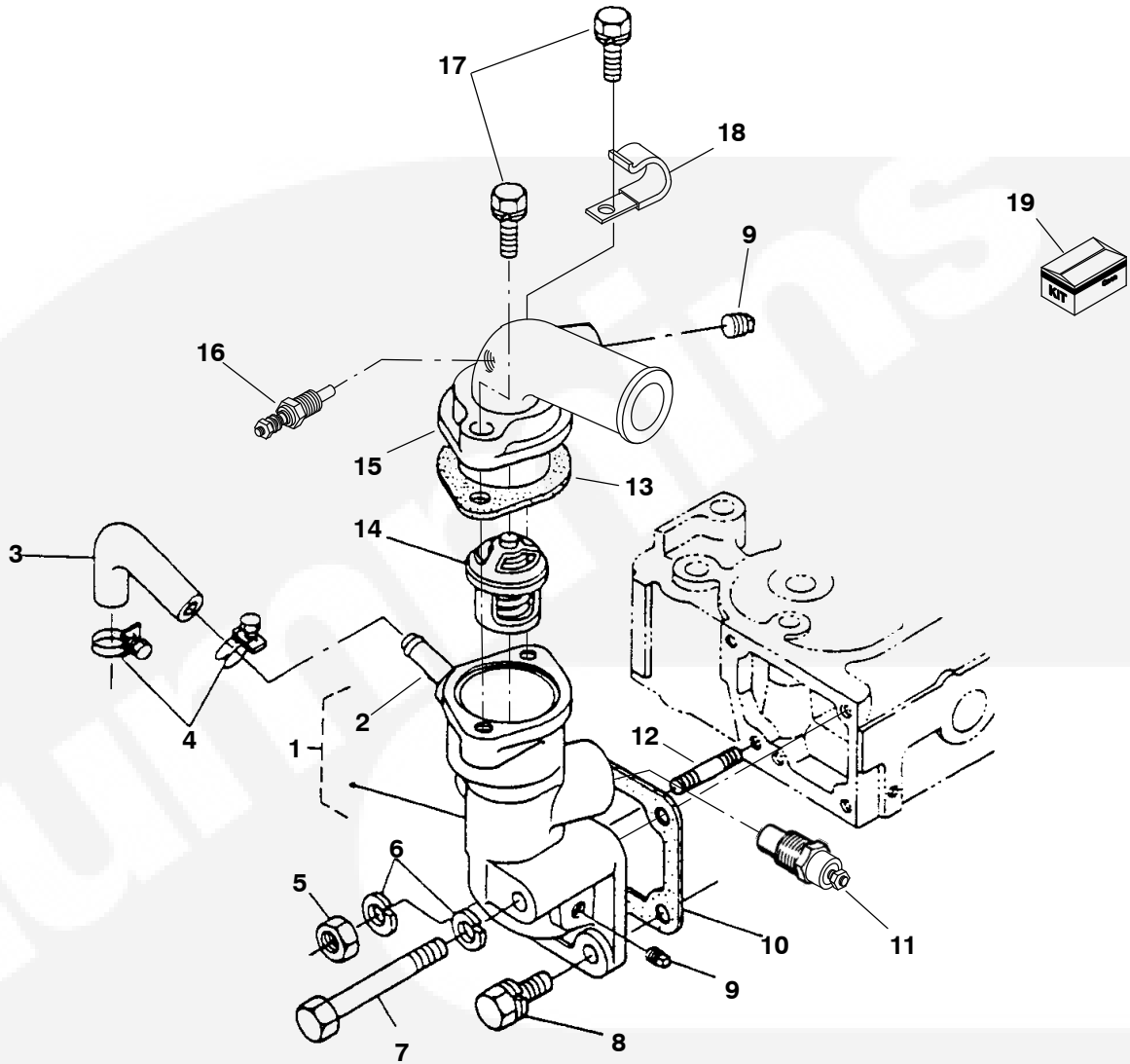
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6107	5	Valve, Inlet	12	185-2367	5	Nut
2	185-6108	5	Valve, Exhaust	13	185-6957	5	Washer, Spring
3	185-6016	10	Spring, Valve	14	740-1006	5	Washer, Flat
4	185-6017	10	Retainer, Valve Spring	15	185-6789	1	Pin, Spring
5	110-2752	10	Collet, Valve Spring	16	185-6025	2	Washer
6	185-6018	10	Seal, Valve Stem	17	185-6026	4	Spring, Rocker Arm
7	185-6019	10	Cap, Valve	18	185-6027	2	Ring, External Retaining
8	185-7063	1	Shaft Assy, Rocker Arm (Includes Set Screws)	19	185-6028	10	Arm Assy, Rocker (Includes Screw and Nut)
9	185-6242	2	Screw, Set	20	185-6029	10	Screw, Adjusting
10	185-6022	5	Bracket, Rocker Arm	21	185-6030	10	Nut
11	185-6023	5	Stud				

Nozzle Holder and Glow Plug



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-7050	1	Pipe, Overflow	11	185-5612	5	Clamp, Pipe
2	185-6094	5	Holder Assy, Nozzle (Includes Nozzle, Gasket and Heat Seal)	12	185-2345	5	Clamp, Pipe
3	185-6095	5	Nozzle	13	185-2385	5	Screw (With Washer)
4	185-5418	5	Gasket	14			Plug, Glow
5	185-5985	5	Seal, Heat		185-5990	5	12V
6	185-6096	1	Pipe, Injection		185-6725	5	24V
7	185-6097	1	Pipe, Injection	15	185-6225	2	Cord, Glow Plug
8	185-6098	1	Pipe, Injection	16	185-5615	5	Nut, Flange
9	185-6099	1	Pipe, Injection	17	185-7004	5	Washer, Flat
10	185-6100	1	Pipe, Injection				

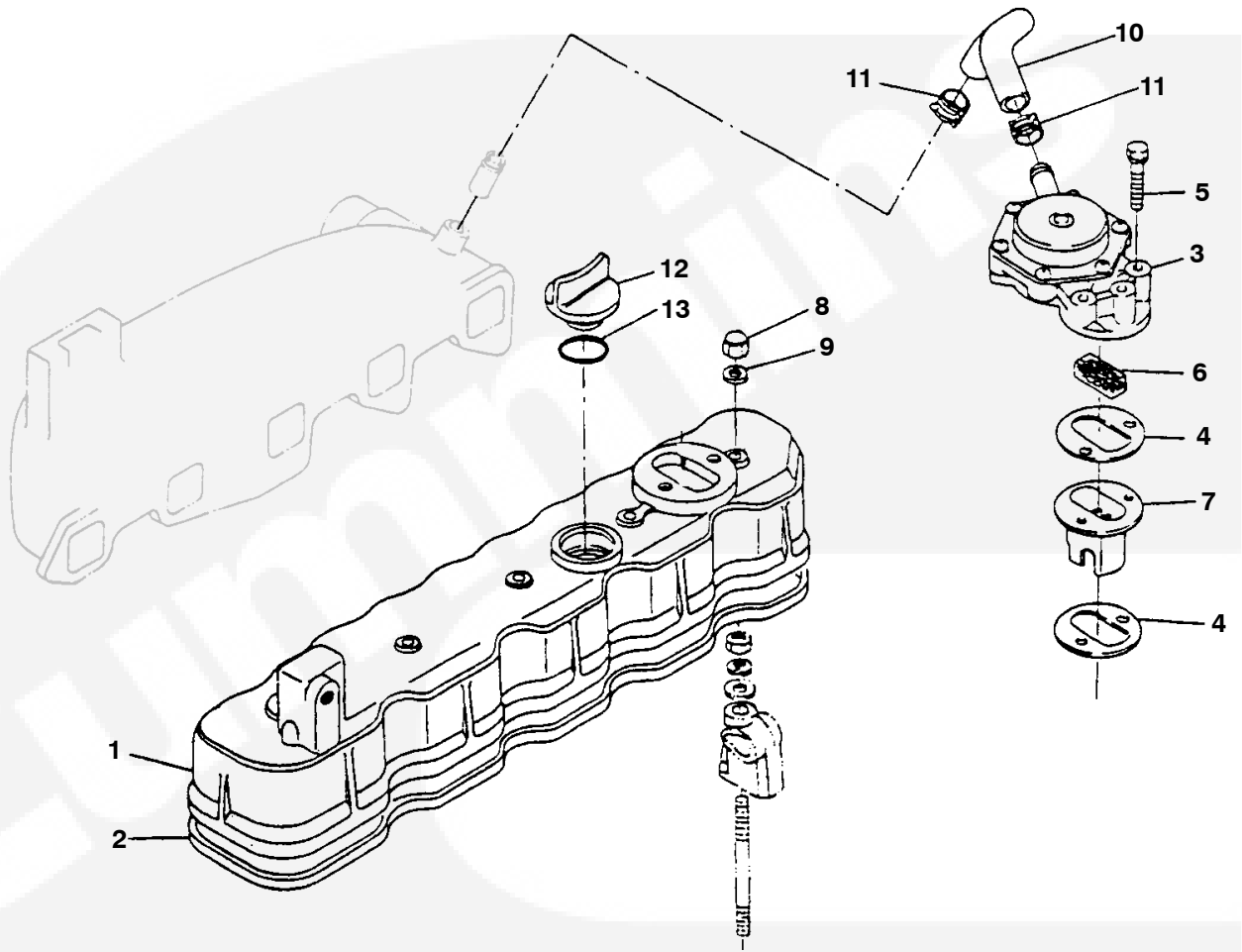
Water Outlet Flange



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)	14	185-6005	1	Thermostat
2	185-6103	1	Pipe, Water Return	15	185-6003	1	Cover, Thermostat
3	185-6000	1	Pipe, Water Return	16			Sender, Water Temperature (E2)
4	185-6001	2	Clamp, Hose		193-0318	1	Negative Ground
5	185-2367	1	Nut		193-0457-01	1	Isolated Ground
6	185-6957	2	Washer, Spring	17	185-2565	2	Bolt
7	185-7060	1	Bolt	18	518-0515	1	Clip, Wire
8	185-2402	2	Bolt	19			*Kit, Sender (Includes Water Temperature Sender)
9	185-5826	2	Plug, Square Head Pipe (3/8)		300-5040	1	Negative Ground
10	185-5999	1	Gasket		300-5041	1	Isolated Ground
11			Switch, High Water Temperature (S2)				
	309-0601	1	Negative Ground				
	309-0673	1	Isolated Ground				
12	185-2362	1	Stud				
13	185-6004	1	Gasket				

* - Kit Also Includes Oil Pressure Sender Listed on Oil System Page.

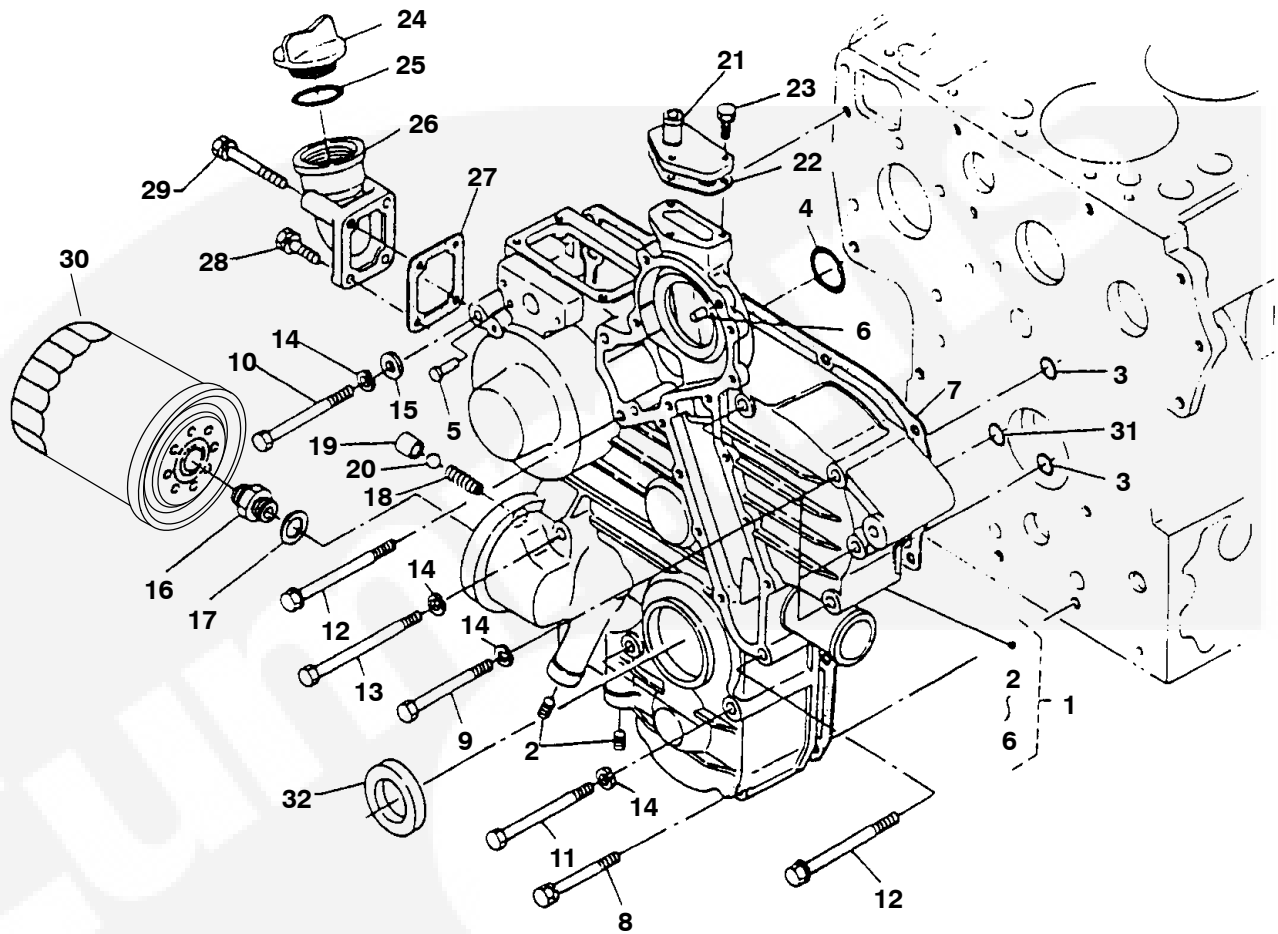
Cylinder Head Cover



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6804	1	Cover, Cylinder Head	8	185-5888	5	Nut, Cap
2	185-6054	1	Gasket, Cover	9	185-2338	5	Gasket
3	185-6720	1	Breather	10	185-6719	1	Tube, Breather
4	185-6717	2	Gasket	11	185-6722	2	Clamp
5	718-1040	2	Bolt	12	185-5407	1	Cover, Oil Fill
6	185-6721	1	Element, Breather	13	185-2349	1	O'Ring
7	185-6718	1	Plate				



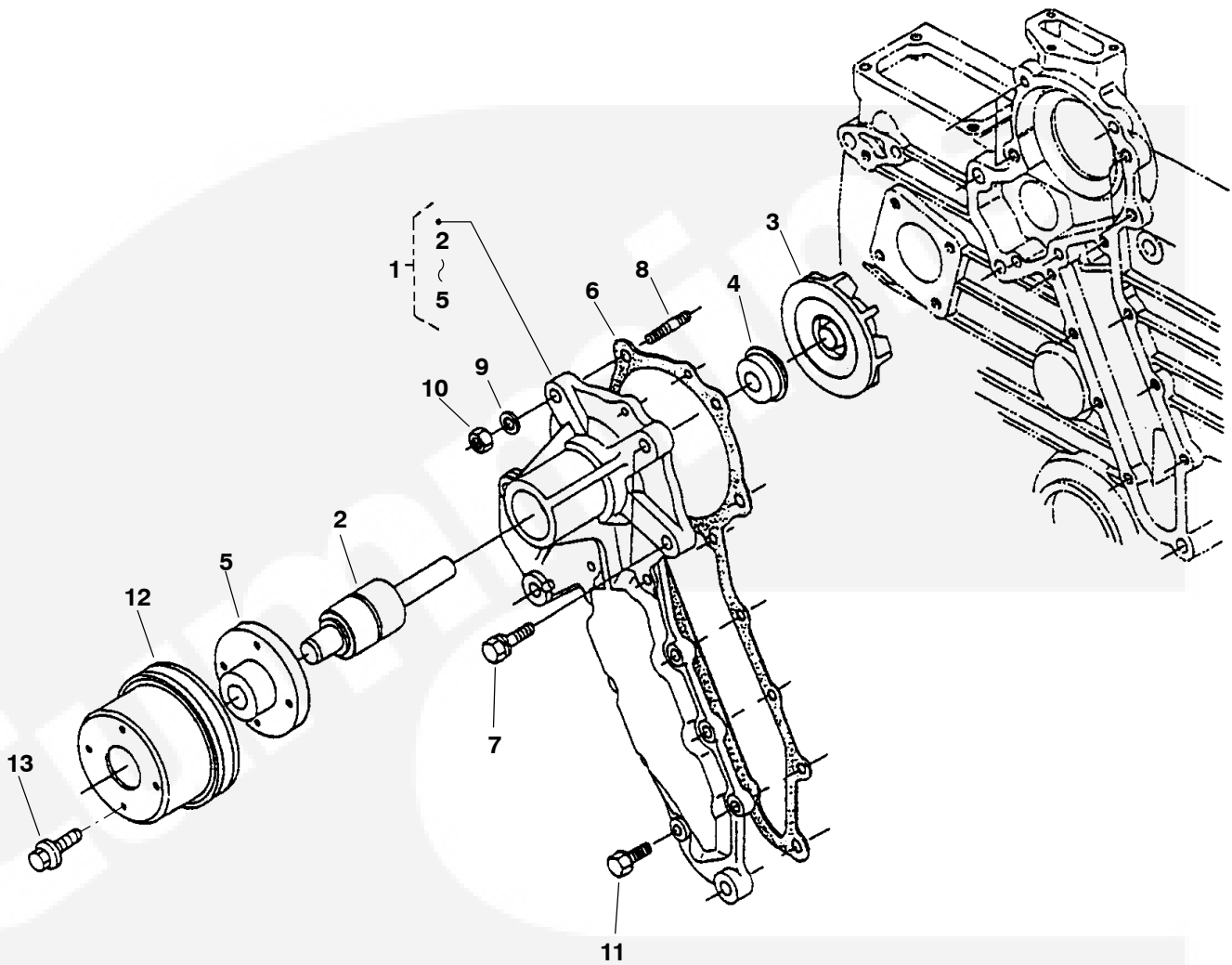
Gearcase



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6712	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	2	*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	185-6960	1	Gasket, Gear Cover	24	185-5407	1	Cover, Oil Fill
8	185-2405	2	Bolt	25	185-2349	1	O'Ring
9	185-5443	5	Bolt	26	185-6124	1	Flange, Oil Fill
10	185-5872	1	Bolt	27	185-6125	1	Gasket
11	185-5873	2	Bolt	28	185-2389	2	Bolt (Bottom)
12	185-5874	3	Bolt	29	185-5833	2	Bolt (Top)
13	185-6078	2	Bolt	30	122-0810	1	Filter, Oil
14	185-6957	10	Washer, Spring	31	185-5126	1	O'Ring
15	740-1006	1	Washer, Flat	32	185-6204	1	Seal, Oil
16	505-2256	1	Joint, Pipe				
17	185-5876	1	Washer, Flat				

* - Parts Included in Gearcase Assy.

Water Pump

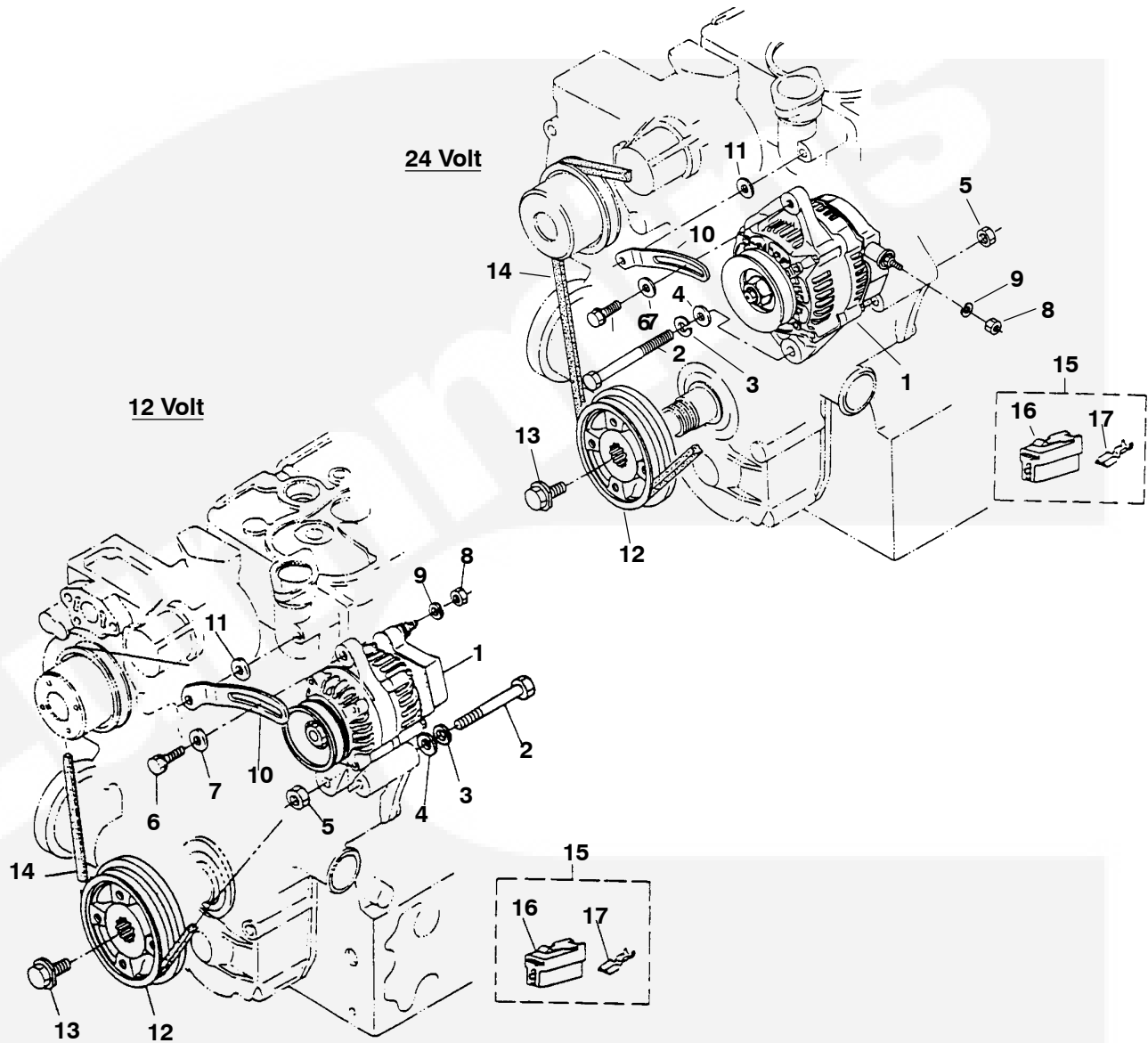


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	132-0484	1	Pump Assy, Water (Includes Parts Marked *)	9	185-6957	2	Washer, Spring
2	185-6007	1	*Bearing, Ball	10	185-2367	2	Nut
3	185-7020	1	*Impeller	11	185-2389	8	Bolt
4	185-7021	1	*Seal	12	185-6710	1	Pulley
5	185-6821	1	*Flange	13	185-7062	4	Bolt, Flange
6	185-6011	1	Gasket				
7	185-2404	2	Bolt				
8	185-6012	2	Stud				

* - Parts Included in Water Pump Assy.

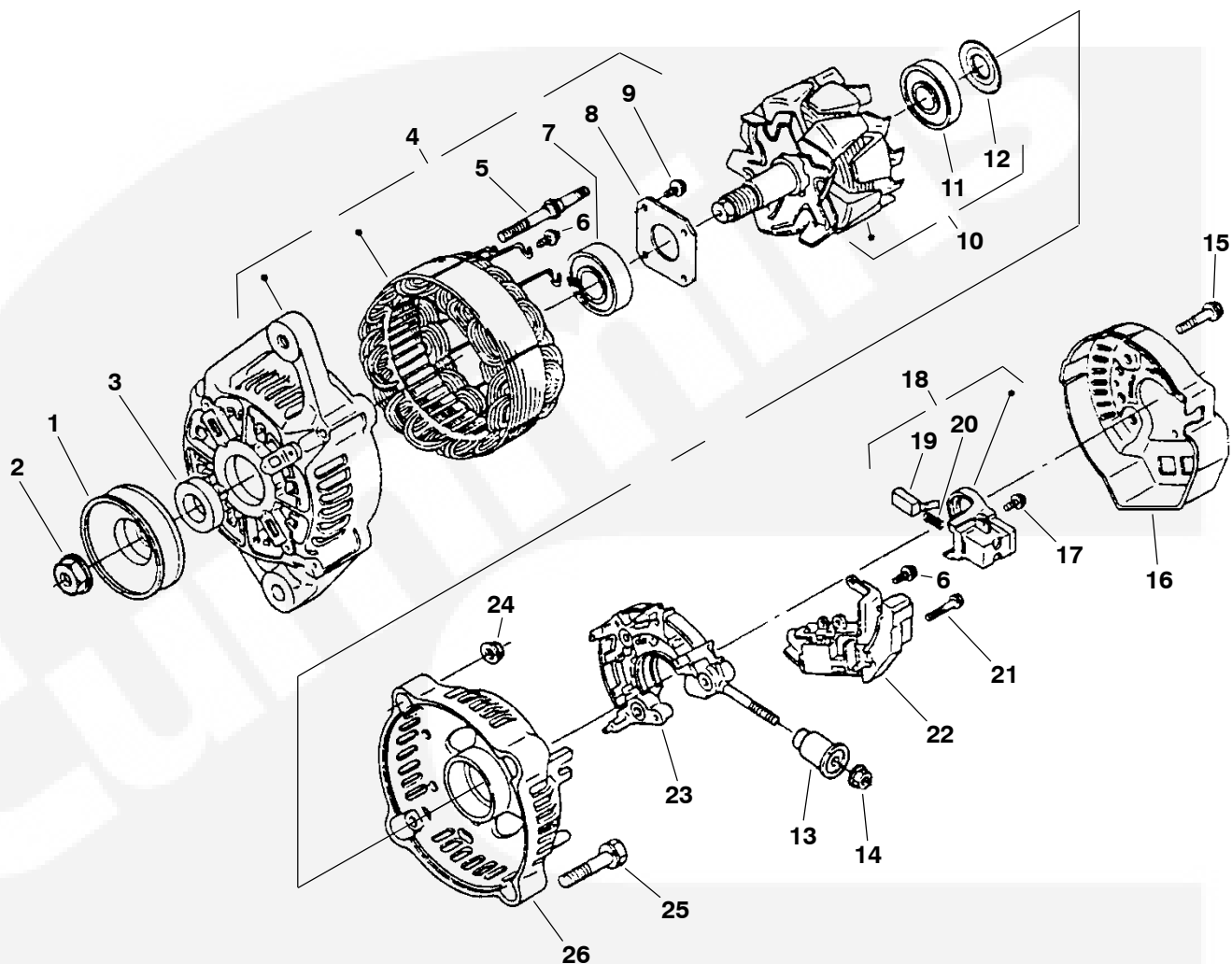


Alternator (Negative Ground)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Alternator (See Separate Page for Components)	9	185-6759	1	Washer, Spring
	185-5994	1	12V	10	185-7012	1	Bracket, Adjusting
	185-6724	1	24V		185-6733	1	12V
2	185-7052	1	Bolt		185-7055	1	24V
3	185-6785	1	Washer, Spring	11	185-6228	1	Collar
4	185-6630	1	Washer, Flat	12	185-7053	1	Pulley
5	185-6787	1	Nut	13	185-7054	1	Bolt
6	185-2564	1	Bolt	14	185-7055	1	Belt
7	185-6786	1	Washer, Flat	15	185-5447	1	Coupler Assy
8	185-4255	1	Nut	16	185-6440	1	Connector
				17	185-6347	1	Terminal

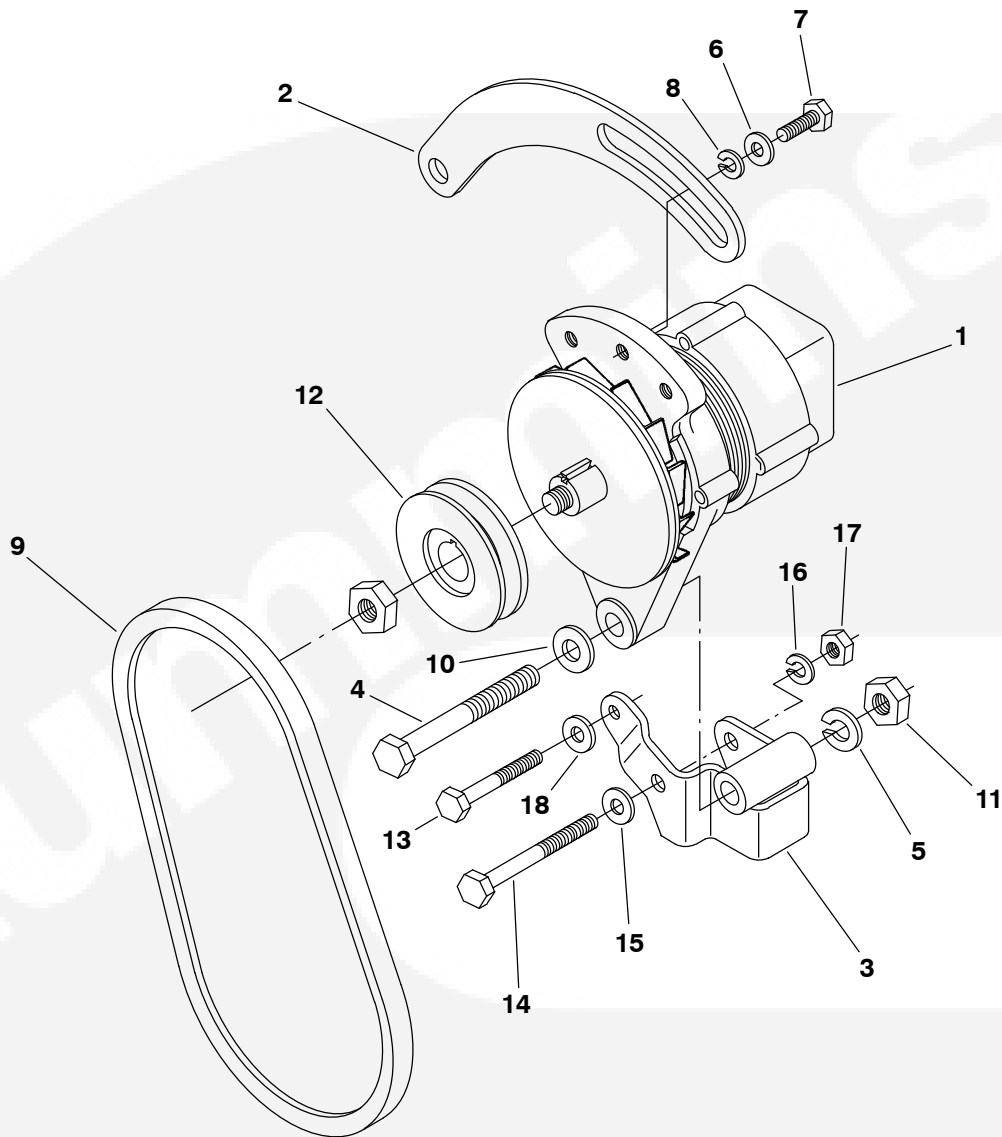
Alternator Components (Negative Ground) (24V)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	185-6724	1	Alternator	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	185-7056	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				

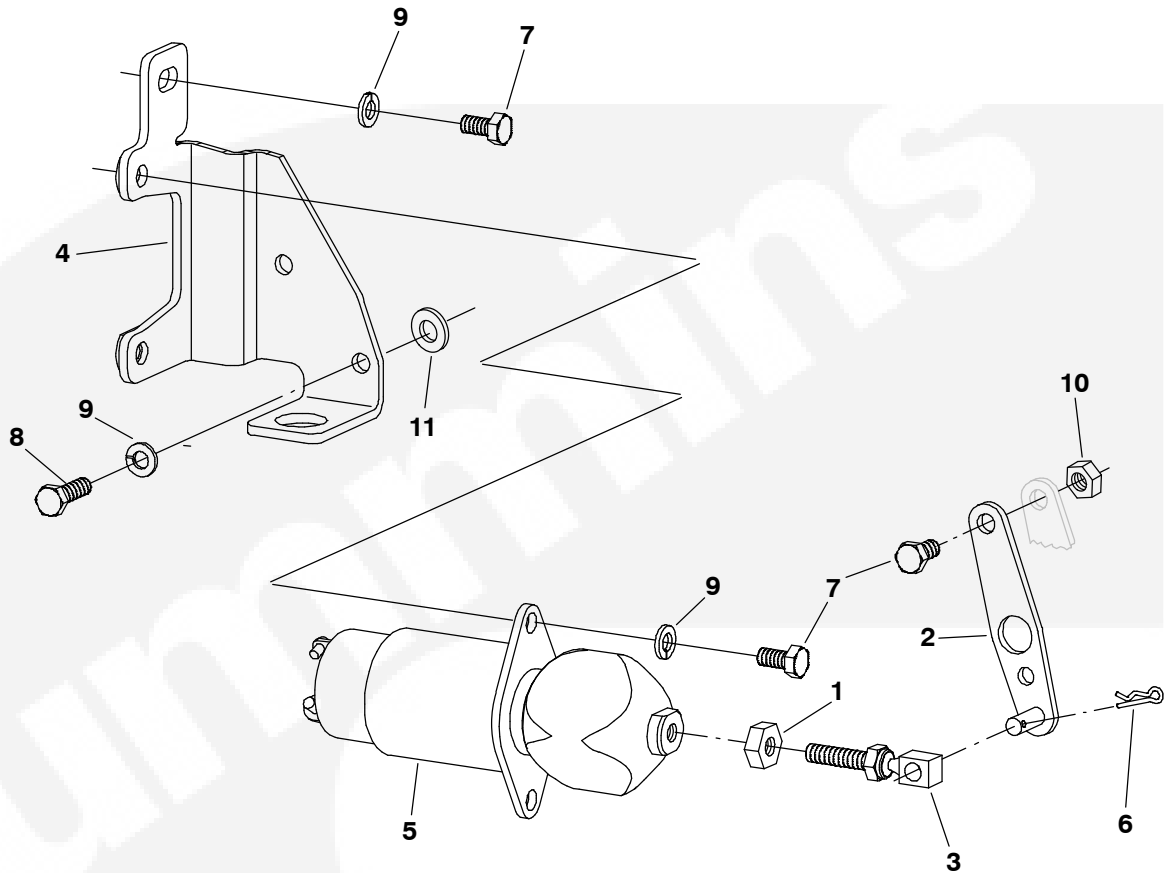
* - Parts Included in Drive End Frame.

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)	9	511-0211	1	V-Belt
	191-2169-02	1	12V	10	526-0219	1	Washer, Flat (1/2")
	191-2169-01	1	24V	11	862-0016	1	Nut (1/2-13)
2	191-2168-03	1	Bracket, Adjusting	12	191-2170	1	Pulley, Alternator
3	191-2167-03	1	Bracket, Alternator	13	800-2071	1	Screw, Hex Head Cap (M8 x 90mm)
4	800-0104	1	Screw, Hex Head Cap (1/2-13 x 4-1/2")	14	800-2100	1	Screw, Hex Head Cap (M10 x 100)
5	850-0060	1	Washer, Lock (1/2")	15	526-2120	1	Washer, Flat (M10)
6	526-0045	1	Washer, Flat (5/16")	16	850-2010	1	Washer, Lock (M10)
7	800-0027	1	Screw, Hex Head Cap (5/16-18 x 7/8")	17	750-1008	1	Nut, Hex (M10)
8	850-0045	1	Washer, Lock (5/16")	18	526-0313	1	Washer

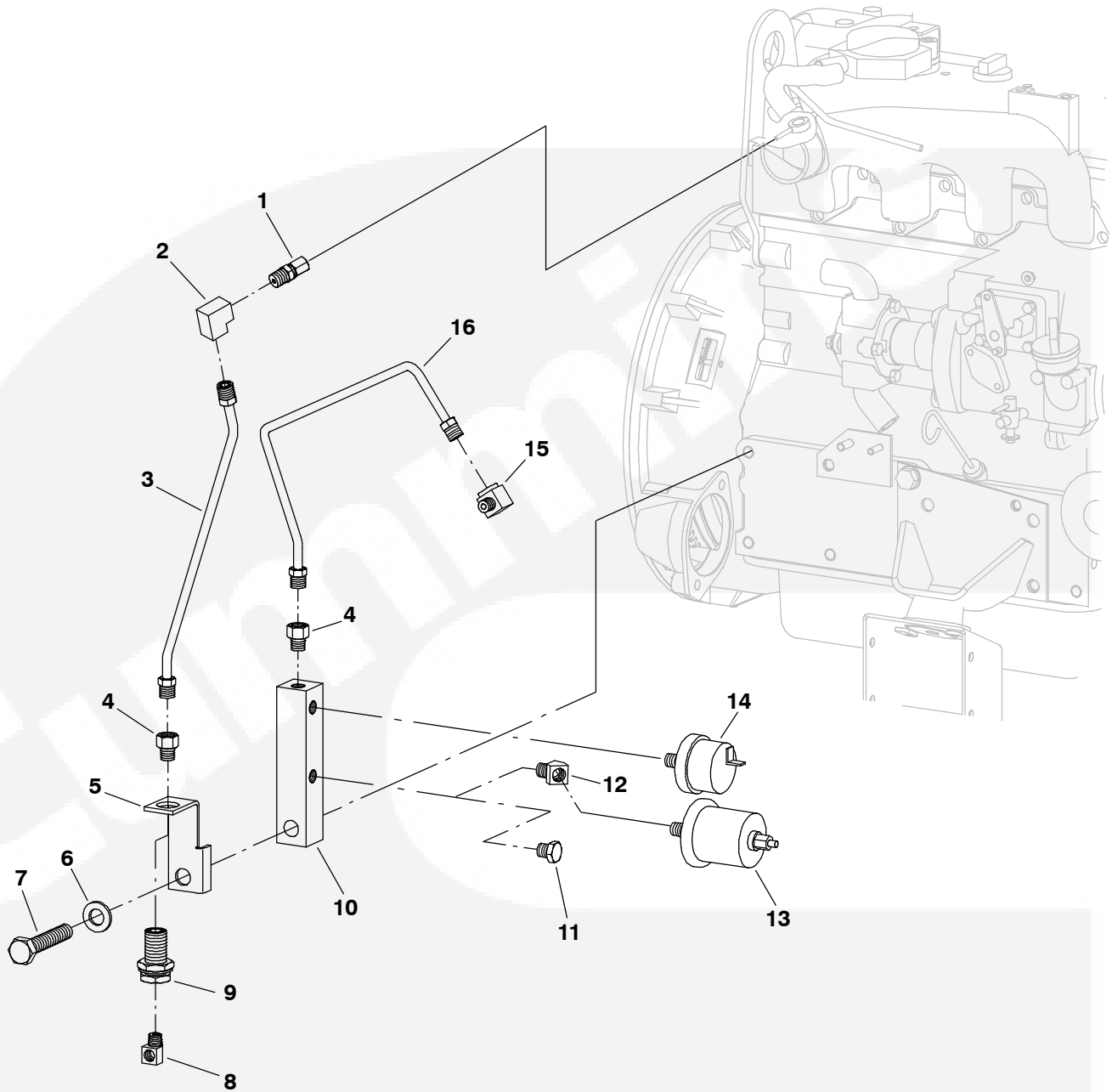
Stop Solenoid



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	115-0025	1	Nut, Tappet (1/4-28)	7	800-2029	3	Screw, Hex Head Cap (M6 x 1 x 12mm)
2	150-2567-03	1	Lever, Stop	8	800-2034	2	Screw, Hex Head Cap (M6 x 1 x 20mm)
3	150-2579	1	Swivel, Ball Joint	9	850-2006	5	Washer, Lock (M6)
4	307-2808-02	1	Bracket, Solenoid	10	870-2054	1	Nut, Lock Flange (M6 x 1)
5	307-2820	1	Solenoid, Stop (K7) 12V	11	526-2081	2	Washer, Flat (M6)
	307-2820-01	1	24V				
6	518-0656	1	Clip, Linkage				



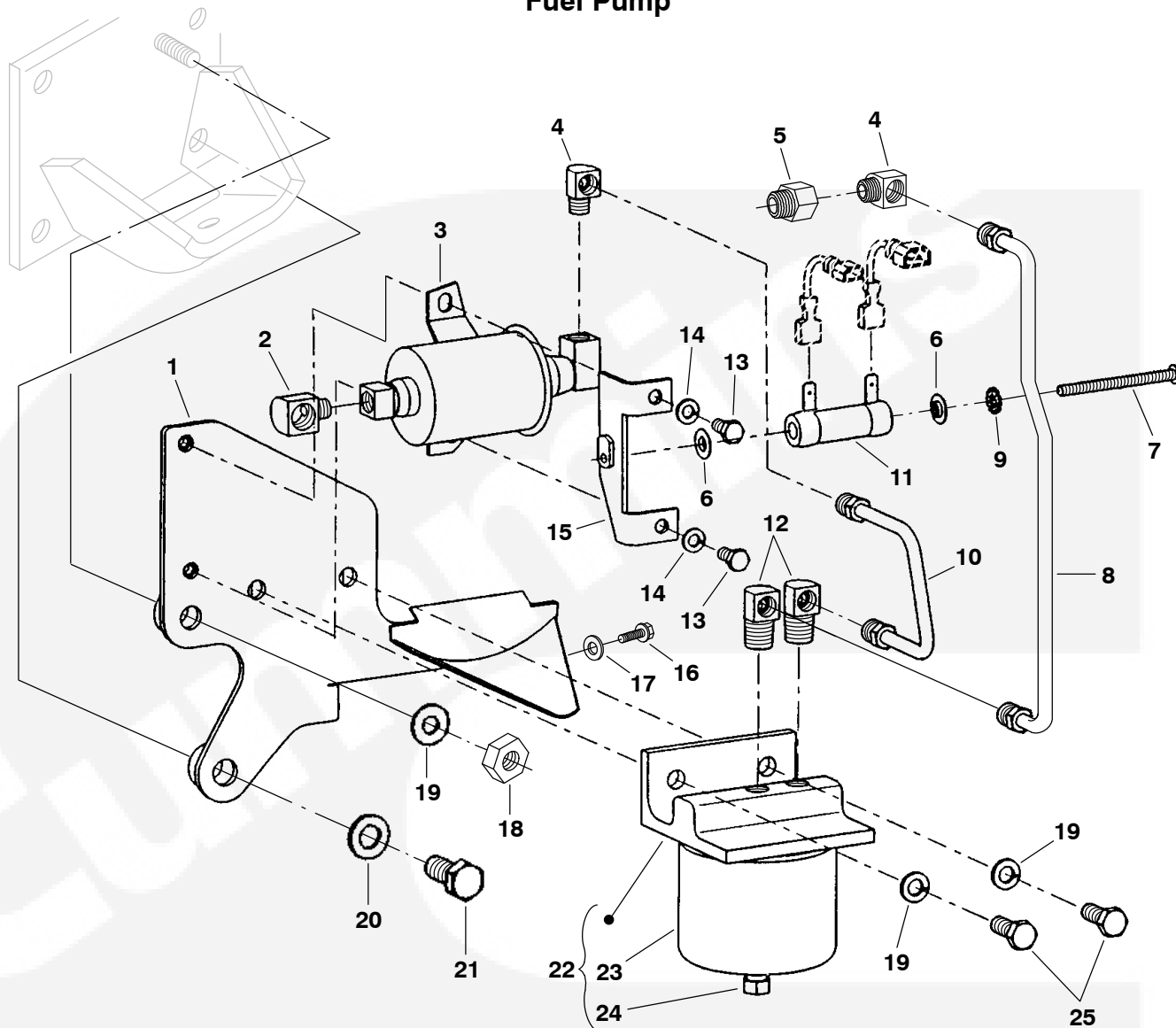
Fuel Return/Oil Sender



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	502-1245	1	Adapter, Pipe	13			*Sender, Oil Pressure (E1)
2	502-0005	1	Elbow, Inverted Female	193-0244	1		Negative Ground
3	149-2488	1	Line, Fuel Return	193-0430-01	1		Isolated Ground
4	502-0003	2	Connector, Inverted Male	14			Switch, Oil Pressure (S4)
5	149-2489-03	1	Support, Fuel Return	309-0641-03	1		Negative Ground
6	526-0399-64	2	Washer, Flat (M12)	309-0641-05	1		Isolated Ground
7	800-3029	1	Screw, Hex Head Cap (M12 x 1.25 x 45mm)	15	502-1309	1	Elbow, Male
8	502-0020-01	1	Elbow, Street Pipe	16	122-0813	1	Line, Oil
9	502-1244	1	Coupling, Anchor				
10	120-1319	1	Manifold, Oil Pressure				
11	502-0028	1	Plug, Hex Head Pipe				
12	502-0053	1	Elbow, Street Pipe 45°				

* - Part Included in Sender Kit Listed on Water Outlet Flange Page.

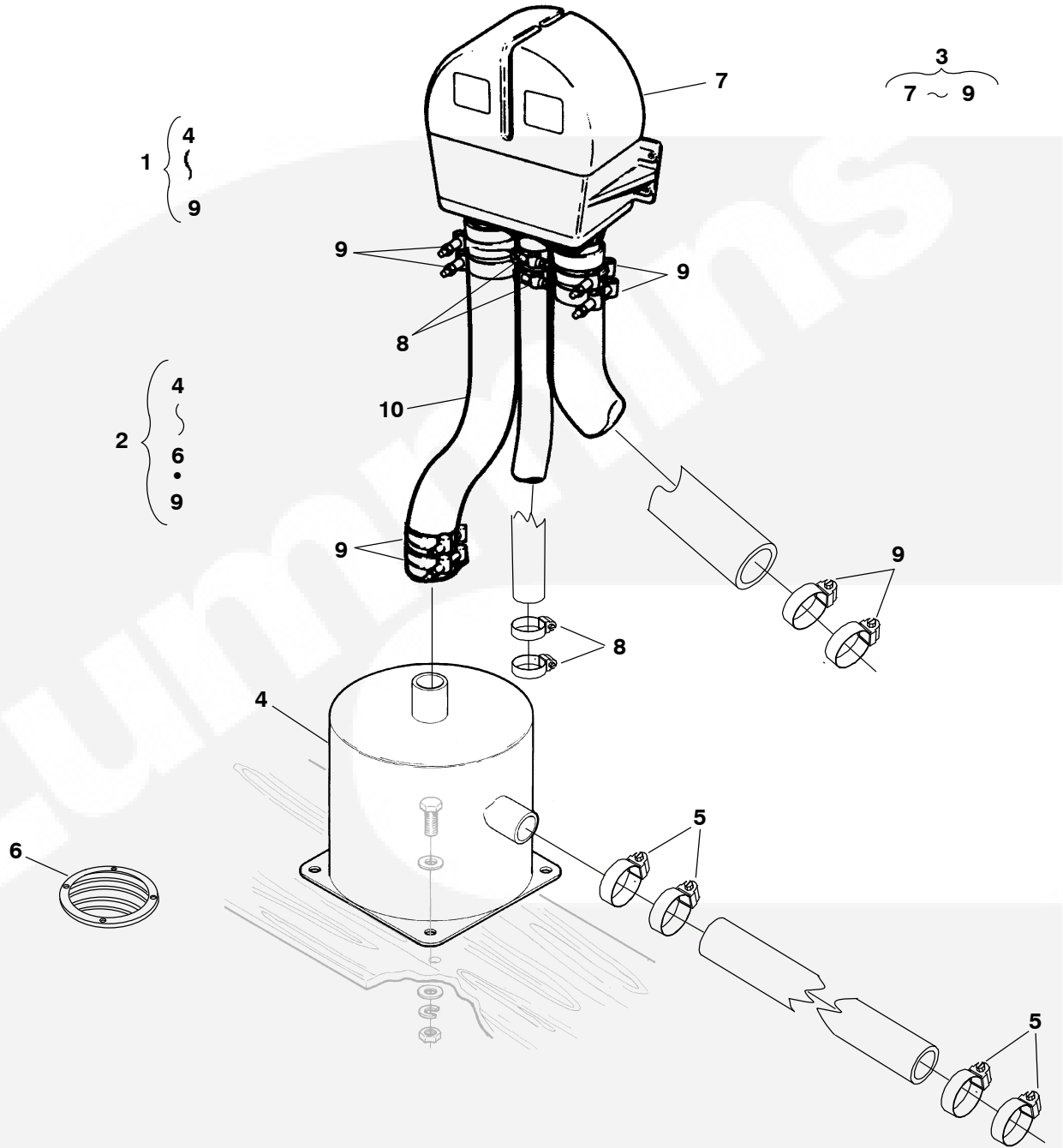
Fuel Pump



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	1	Washer
2	502-0099	1	Elbow, Street Pipe	18	750-1006	1	*Nut (M8 x 1.25mm)
3	A029G424	1	Pump, Electric Fuel (E5)	19	850-2008	2	*Washer, Flat (M8)
4	502-0002	1	Elbow, Inverted Male	20	526-0399-64	1	Washer, Flat (M12)
5	502-0175	1	Adapter, Pipe	21	800-3032	1	Screw, Hex Head Cap (M12 x 1.25 x 30mm)
6	304-0796	2	Washer, Centering (3/16") (24V)	22	149-2100	1	Filter, Fuel (Includes Element Aluminum Base and Plug)
7	813-0112	1	Screw, Round Head Machine (#10-32 x 2.5") (24V)	23	A026K278	1	Element, Fuel Filter
8	149-2437	1	Line, Fuel	24	502-0028	1	Plug, Fuel Filter Drain
9	856-0003	1	Washer, EIT (#10) (24V)	25	800-2057	2	Screw, Hex Head Cap (M8 x 1.25 x 20mm)
10	149-2436	1	Line, Fuel				
11	350-1238	1	Resistor (R6) (24V)				
12	502-0041	2	Elbow, Inverted Male				
13	800-2031	2	Screw, Hex Head Cap (M6 x 1 x 14mm)				
14	850-2006	2	Washer, Lock (M6)				
15	304-0828-02	1	Bracket, Resistor (24V)				
16			Screw, Hex Head Cap W/O PTO (M10 x 1.25 x 20mm)				
	815-0585	1	W/O PTO (M10 x 1.25 x 20mm)				
	815-0904	1	* W/PTO				

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

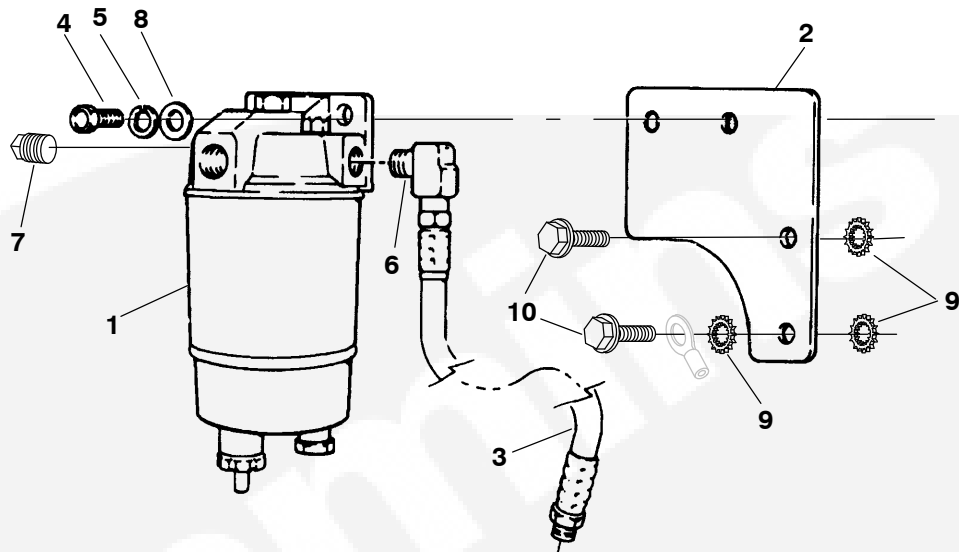
Water Separator/Muffler



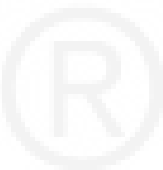
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	155-3223	1	Kit, Muffler/Separator (Includes Parts Marked *)	9			Clamp, Hose (2-1/2")
2	155-3222	1	Kit, Muffler (Includes Parts Marked +)	503-1143	6	*+	Muffler and Muffler/Separator Kits
3	155-3224	1	Kit, Water Separator (Includes Parts Marked •)	503-1143	4	•	Water Separator Kit
4	155-3220	1	*+ Muffler, Marine	10	503-1302	1	Hose, Wet Exhaust (Cut into 3, 5 or 10 Foot Lengths)
5	503-1142	4	*+ Clamp, Hose (2")				
6	155-1002	1	*+ Strainer, Water Pickup				
7	155-3221	1	*• Separator, Water (2-1/2")				
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.

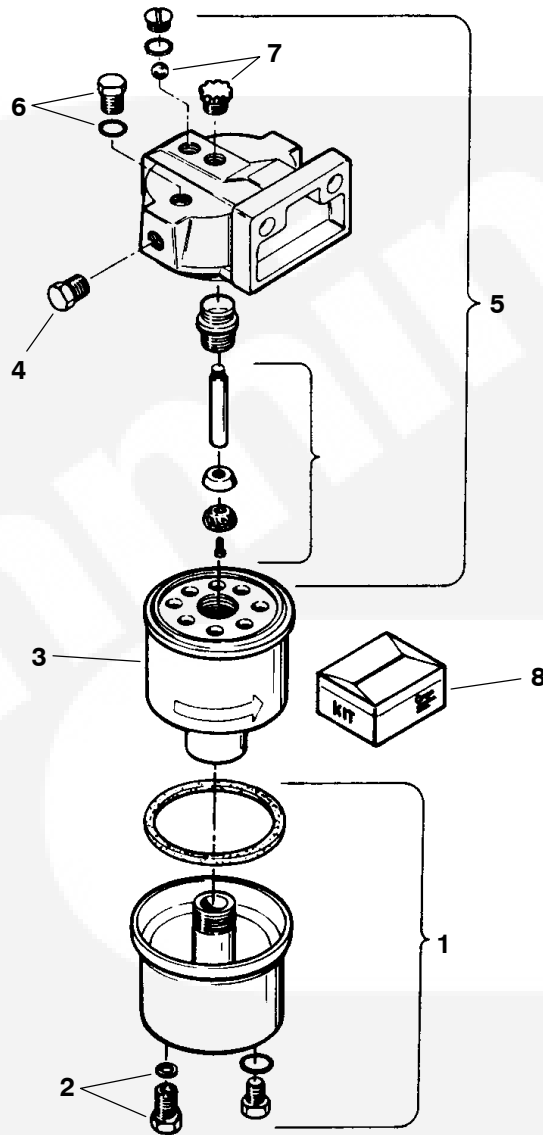
Remote Water Separator



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)

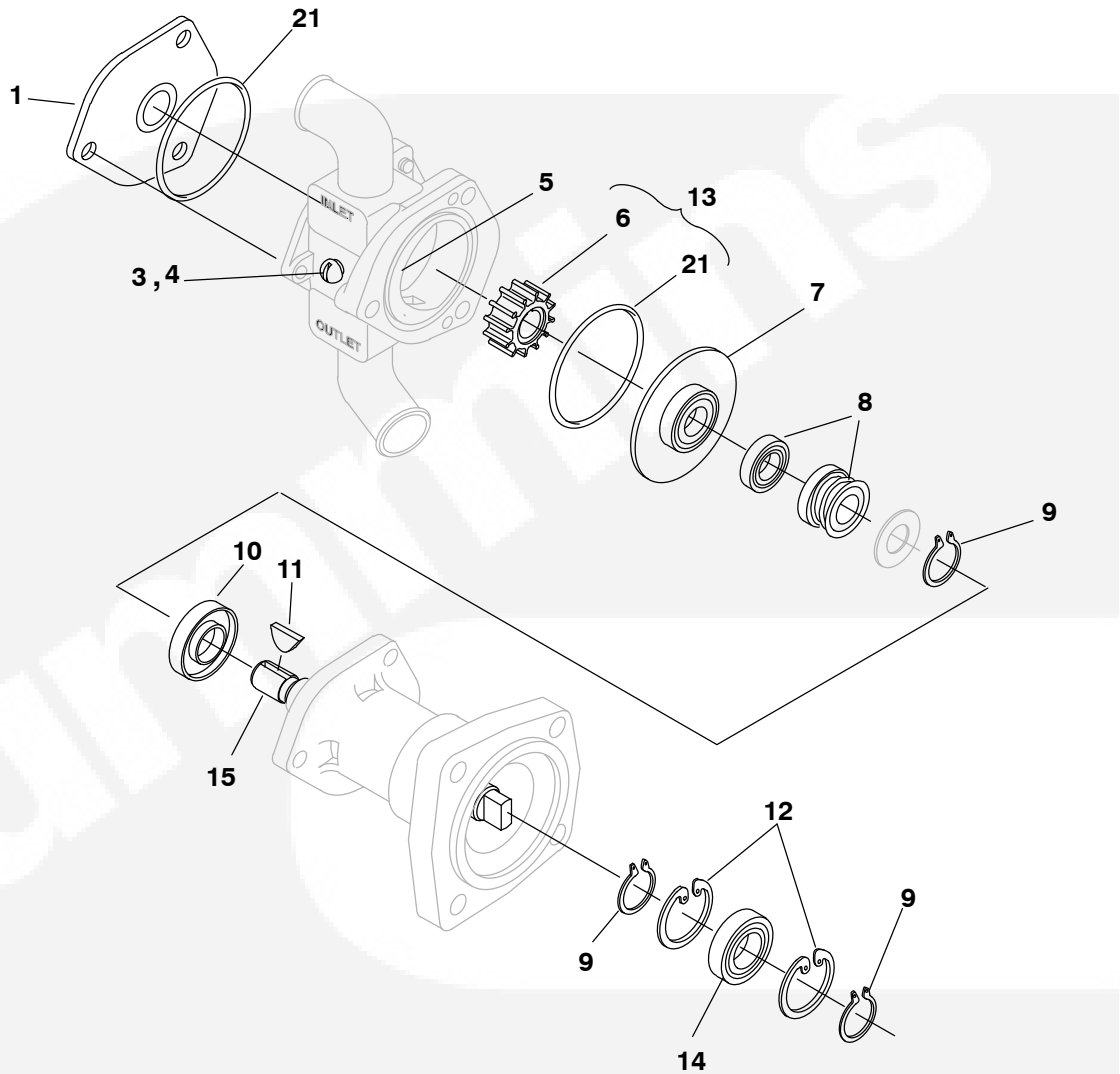


Water Separator Components



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	149-1908-05	1	Separator, Water	6	149-1952	1	Plug, Vent (Includes O-Ring)
1	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	149-1914-01	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)				

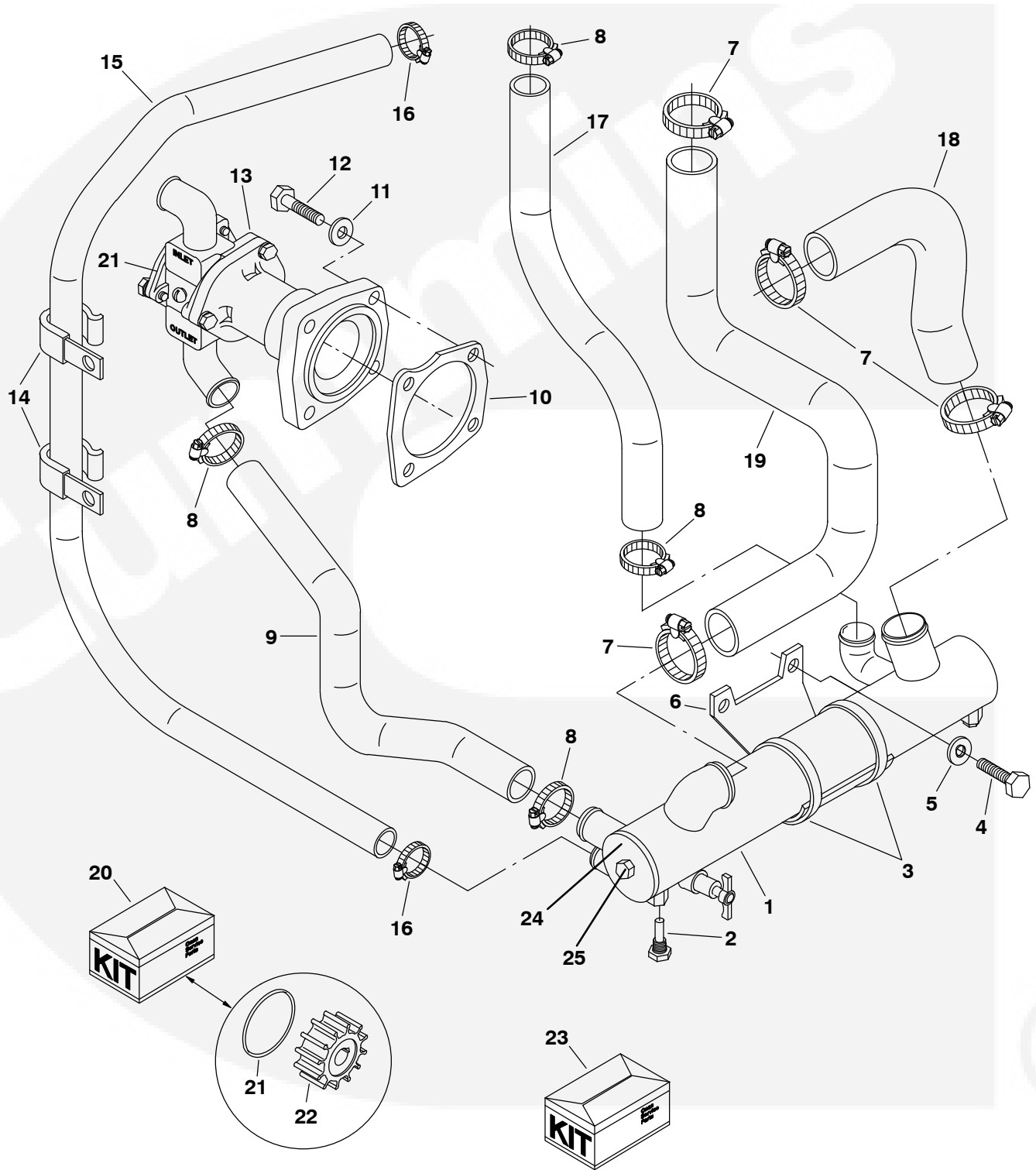
Water Pump Components



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	132-0414	1	Kit, Major Service	11	132-0391	1	*Key
1	132-0386	1	*Cover	12	132-0392	2	*Ring, Retaining
2	132-0293	2	*O'Ring	13	132-0349	1	Kit, Minor Water Pump Service (Includes Impeller and O'Ring)
3	132-0390	1	*Screw, Cam	14	132-0417	1	Bearing
4	132-0389	1	*Washer, Seal	15	132-0416	1	Shaft
5	132-0388	1	*Cam	16	132-0420	1	Ring, Retaining (Not Shown)
6	132-0348	1	*Impeller				
7	132-0385	1	*Plate, Wear				
8	132-0387	1	*Seal, Seat Assy				
9	132-0393	3	*Ring, Retaining				
10	132-0394	1	*Seal, Lip				

* - Parts Included in Major Service Kit

Heat Exchanger

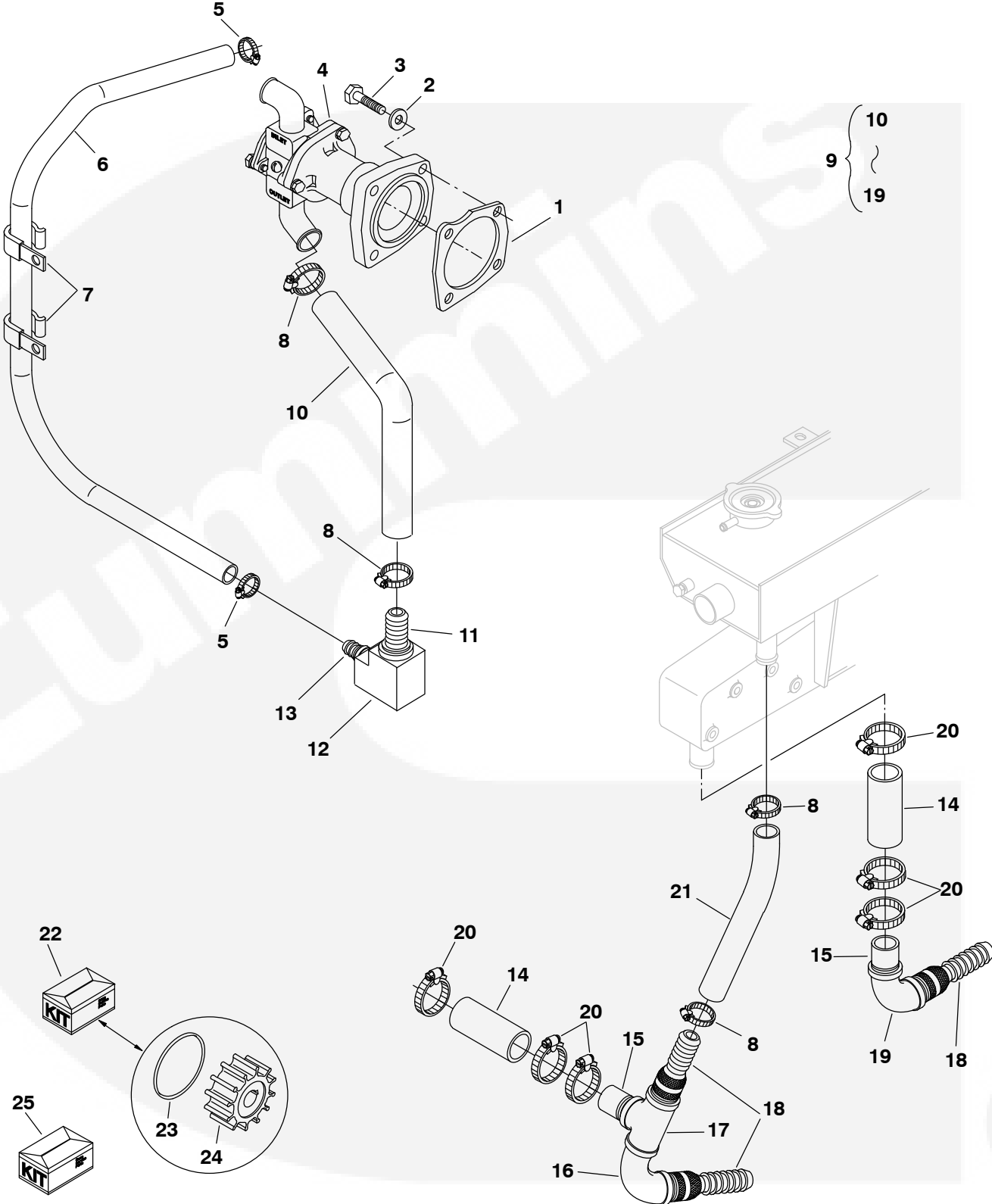


Heat Exchanger

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	130-6549-02	1	Exchanger, Heat				(Wet Exhaust)
2	130-4434	1	Pencil, Zinc	17	503-1163	1	Hose, Coolant Tank Lower
3	503-1144	2	Clamp, Hose (3")	18	503-1998	1	Hose, Engine Coolant
4	815-0585	2	Screw, Hex Head Cap (M10 x 1.25 x 20mm)	19	503-1977	1	Hose, Exhaust Manifold (1-3/8") (Includes Sleeving)
5	526-2120	2	Washer, Flat (10M)	20	541-1521	1	Kit, Minor Service (Includes O'Ring and Impeller)
6	130-4628-03	1	Bracket, Heat Exchanger	21	132-0293	1	O'Ring
7	503-1138	4	Clamp, Hose (1-3/8")	22	132-0499	1	Impeller
8	503-1137	4	Clamp, Hose (1")	23			Kit, Major Service (Includes Impeller, O'Rings, Wear Plate, Cover, Lip Seal, Cam, Seal Washer, Cam Screw and Key)
9	503-2034	1	Hose, Water Pump		541-1523	1	For Old Pump (132-0347)
10	132-0346	1	Gasket, Water Pump		541-1523	1	For New Pump (132-0413)
11	526-2100	4	Washer, Flat (M8)	24	130-5617	1	Gasket, Heat Exchanger
12	800-2057	4	Screw, Hex Head Cap (M8 x 1.25 x 20mm)	25	130-5618	1	Cover, Heat Exchanger
13	132-0413	1	Pump, Raw Water				
14	327-0923	2	Clamp, "J"				
15	503-2122	1	Hose, Mixer (5/8" x 43" Lg) (Wet Exhaust)				
16	503-0977	2	Clamp, Hose (5/8")				



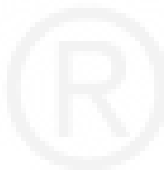
Keel Cooling (Wet Exhaust)



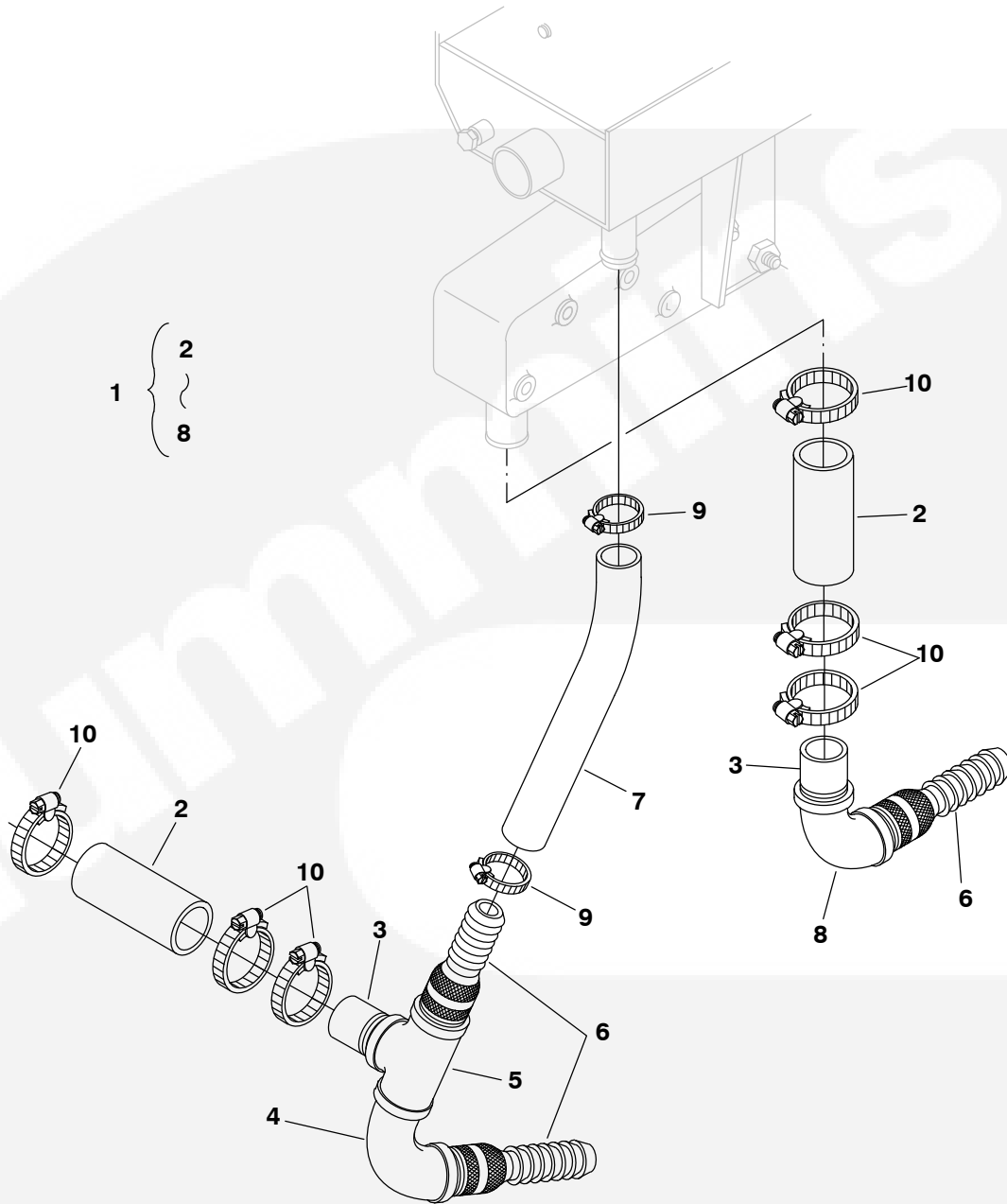
Keel Cooling (Wet Exhaust)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	132-0346	1	Gasket, Water Pump	18	505-0759	3	*Barb, Hose
2	526-2100	4	Washer, Flat (M8)	19	505-0041	1	*Elbow
3	800-2057	4	Screw, Hex Head Cap (M8 x 20mm)	20	503-1138	6	Clamp, Hose (1-3/8")
4	132-0413	1	Pump, Raw Water	21	503-2079	1	Hose, Outlet (10")
5	503-0977	2	Clamp, Hose (5/8")	22	541-1521	1	Kit, Water Pump Service (Includes Impeller and O'Ring)
6	503-1013	1	Hose	23	132-0293	1	O'Ring
7	327-0923	2	Clamp, "J"	24	132-0499	1	Impeller
8	503-1137	4	Clamp, Hose (1")	25			Kit, Water Pump Service (Includes Impeller, O'Ring, Wear Plate, Cover, Lip Seal, Cam, Seal Washer, Cam Screw and Key.)
9	155-3148-02	1	Kit, Keel Cooling (Includes Parts Marked *)				Old (For 132-0347)
10	503-2079	2	*Hose, Outlet (12")		541-1523	1	New (For 132-0413)
11	502-1295-02	1	*Adapter (3/4" NPT x 1" Barb)		541-1523	1	
12	502-1297	1	*Elbow, 90°				
13	502-1295-03	1	*Adapter (3/4" NPT x 3/4" Barb)				
14	503-2023	2	*Hose, Coolant				
15	503-2122	2	*Nipple, Half				
16	505-0003	1	*Elbow				
17	505-0304	1	*Tee				

* - Parts Included in Keel Cooling Kit.



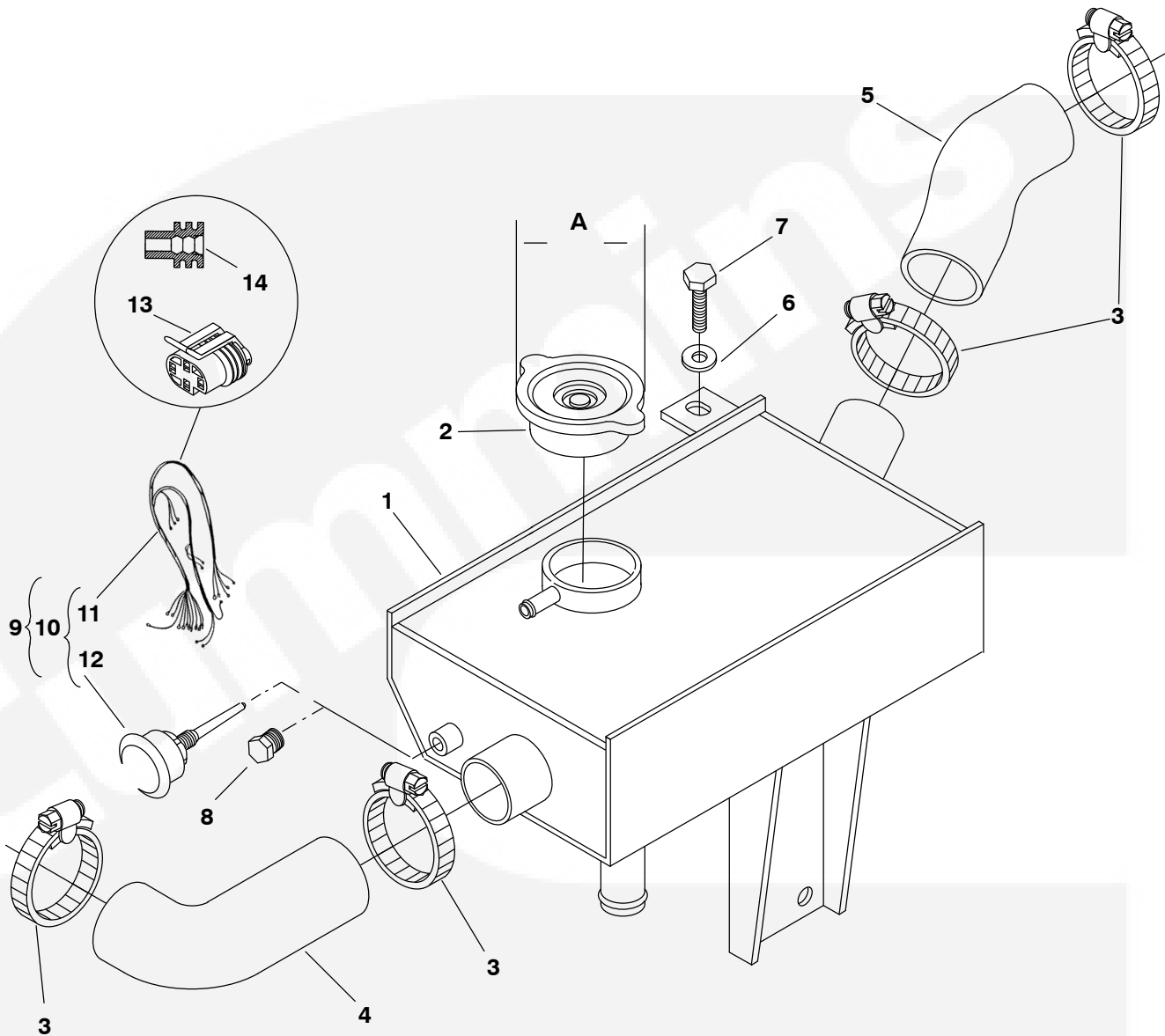
Keel Cooling (Dry Exhaust)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	155-3087	1	Kit, Keel Cooling (Includes Parts Marked *)	7	503-2079	1	*Hose, Coolant (10")
2	503-2023	2	*Hose, Coolant	8	505-0041	1	*Elbow
3	505-0446-01	2	*Nipple, Half	9	503-1137	2	Clamp, Hose (1")
4	505-0003	1	*Elbow	10	503-1138	6	Clamp, Hose (1-3/8")
5	505-0304	1	*Tee				
6	505-0759	3	*Barb, Hose				

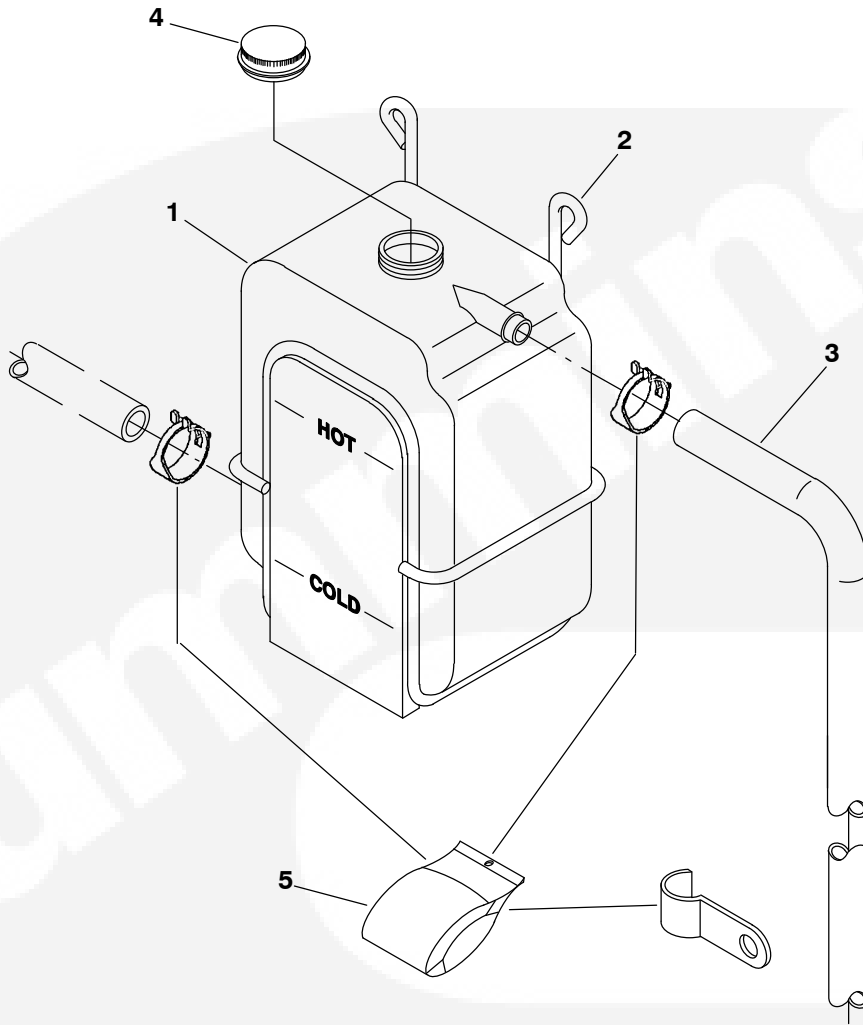
* - Parts Included in Keel Cooling Kit.

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	7	800-2054	1	Screw, Hex Head Cap (M8 x 1.25 x 14mm)
2			Cap, Tank Pressurized	8	502-0153	1	Plug, Hex Pipe (1/4-NPT)
	130-2248	1	2-3/4" (Measurement A)	9	300-4686	1	Kit, Low Coolant Sender (Includes Switch and Harness)
	130-3721	1	2-1/4" (Measurement A) Not Pressurized	10	193-0481	1	Sender Assy, Low Coolant
	130-4718	1	2-3/4" (Measurement A)	11	338-3594	1	Harness, Pigtail (Includes Housing and Seal)
	130-4642	1	2-1/4" (Measurement A)	12	193-0468	1	Sender, Low Coolant
3	503-1138	4	Clamp, Hose (1-3/8")	13	323-1765	1	Housing, Connector (4 Pin)
4	503-1999	1	Hose, Upper Elbow	14	323-1708	4	Seal, Cable
5	503-1899	1	Hose, Upper "S" (1-3/8")				
6	526-2100	1	Washer, Flat (M8)				

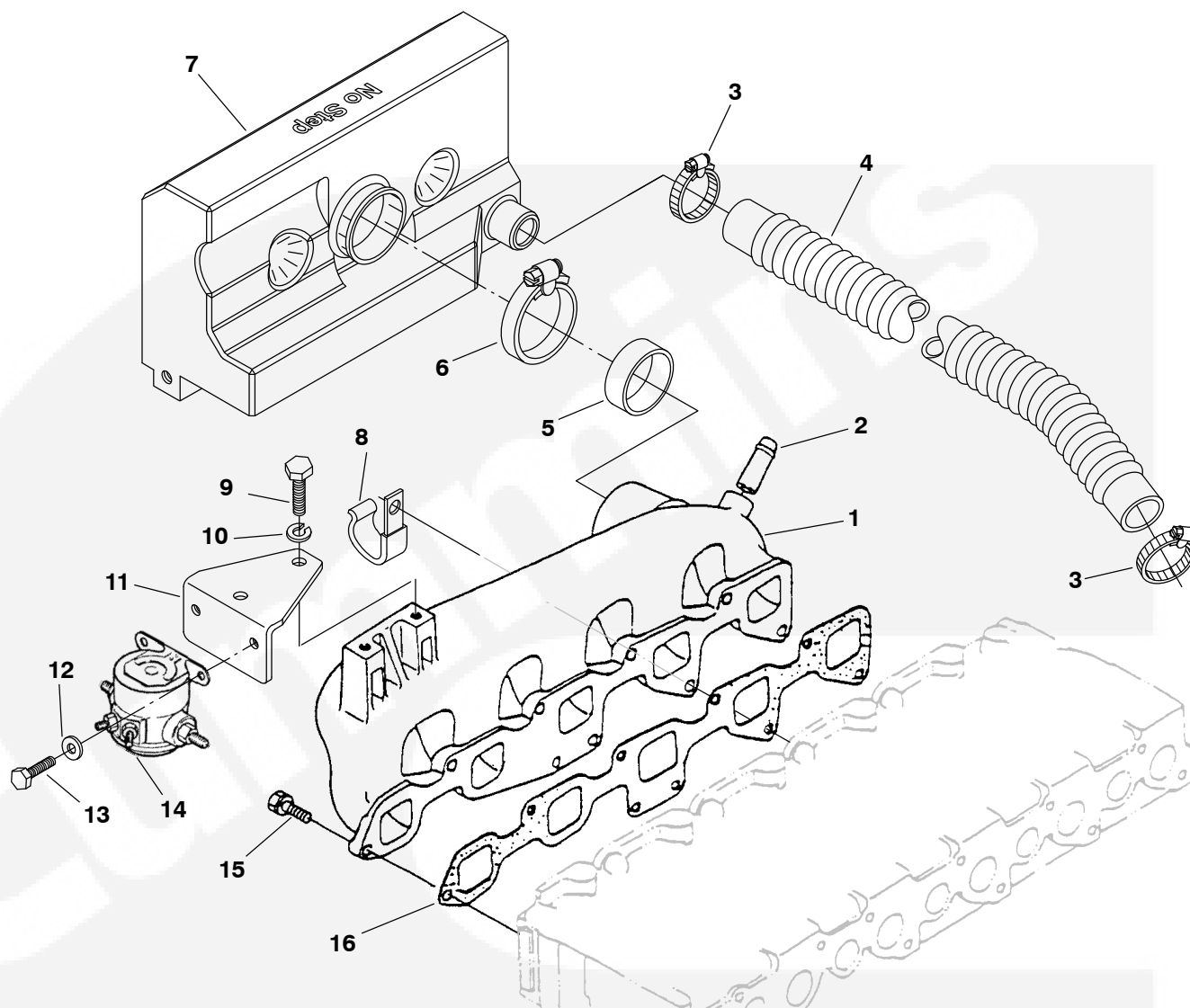
Coolant Recovery



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	130-3574	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.)				



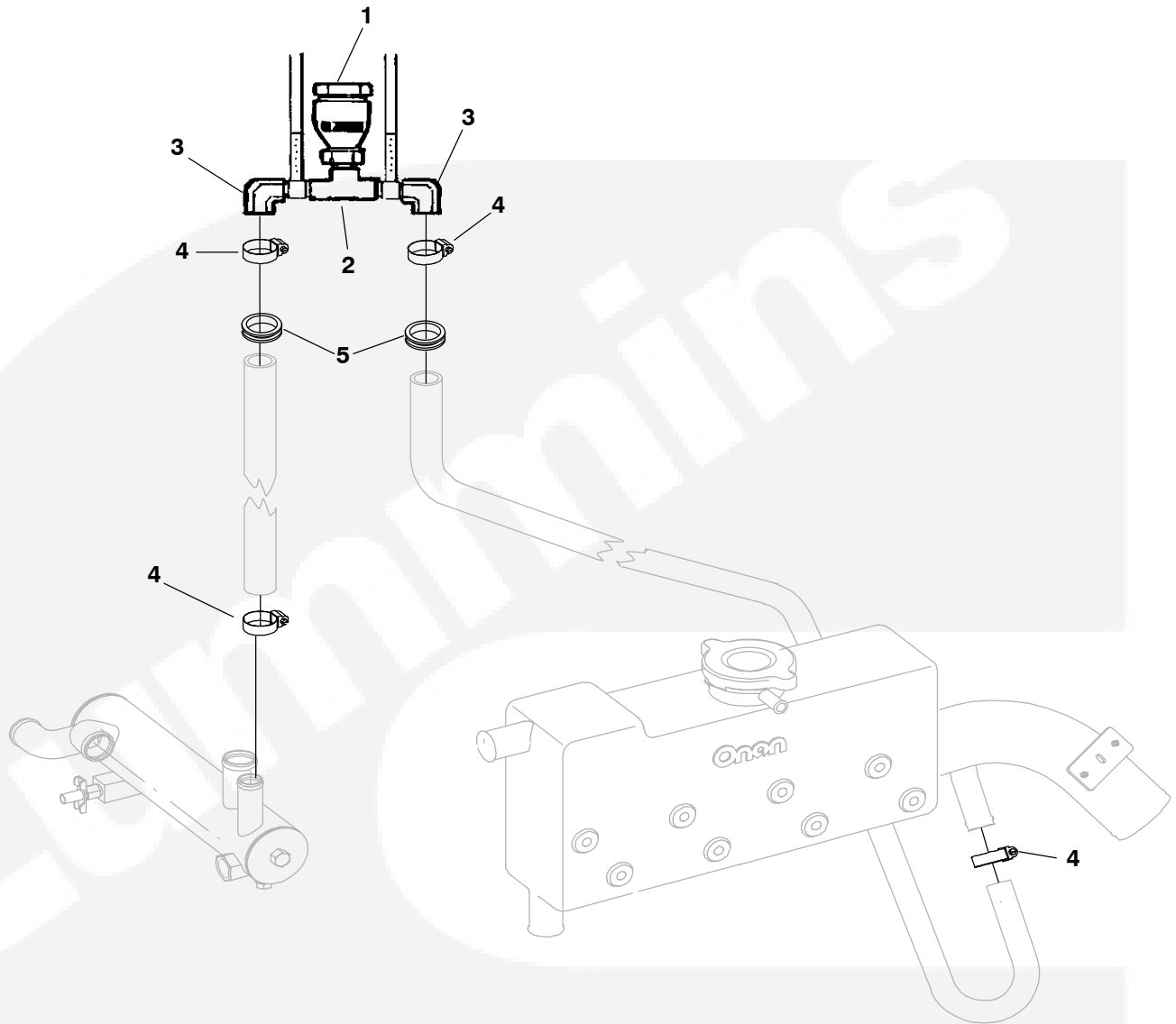
Intake Manifold



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6803	1	Manifold Assy, Intake (Includes Pipe Joint)	12	526-2080	2	Washer, Flat (M6) (Isolated Ground)
2	185-6723	1	Joint, Breather	13	800-2029	2	Screw, Hex Head Cap (M6 x 12mm) (Isolated Ground)
3	503-1139	2	*Clamp, Hose (2")	14			Relay, Solenoid (Isolated Ground) (K9)
4	503-2009	1	Hose, Intake		307-1617	1	12V
5	140-3048	1	Sleeve, Air Intake		307-2656	1	24V
6	503-1143	1	Clamp, Hose (3")	15	185-2402	9	Bolt
7	140-3021	1	Resonator, Intake	16	185-7065	1	Gasket
8	327-0923	1	Clamp, "J"				
9	800-6057	2	Screw, Hex Head Cap (M8 x 1.25 x 20mm) (Isolated Ground)				
10	850-2008	2	Washer, Lock (M10) (Isolated Ground)				
11	191-2166-03	1	Bracket, Solenoid Relay (Isolated Ground)				

* - Part Included in Sound Shield Kit Listed on Sound Shield Page.

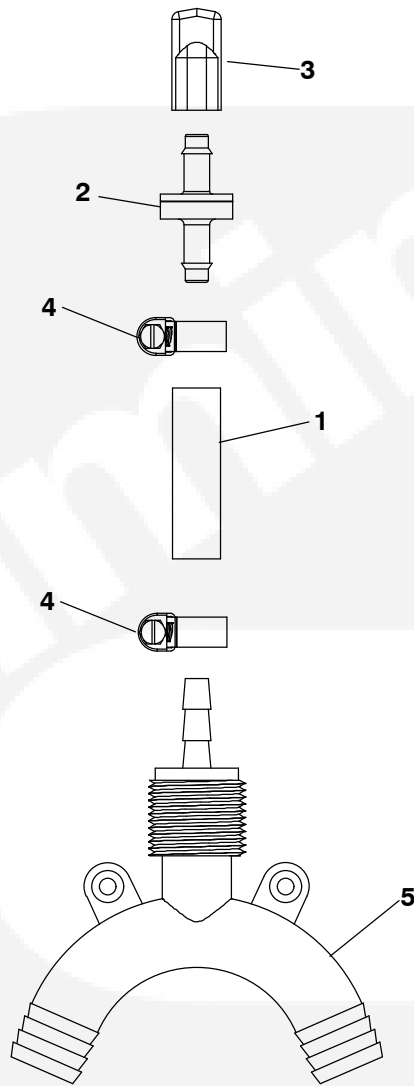
Vacuum Relief Valve (Original)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	541-0876-01	1	Kit, Siphon Break (Replaced by 541-0876-01)	3	502-1030	2	Elbow, 90° Hose (1/2 Npt X 3/4")
1	504-0062	1	Valve, Vacuum Relief	4	503-0977	4	Clamp, Hose (#10)
2	502-0161	1	Tee (1/2")	5	508-1102	2	Grommet



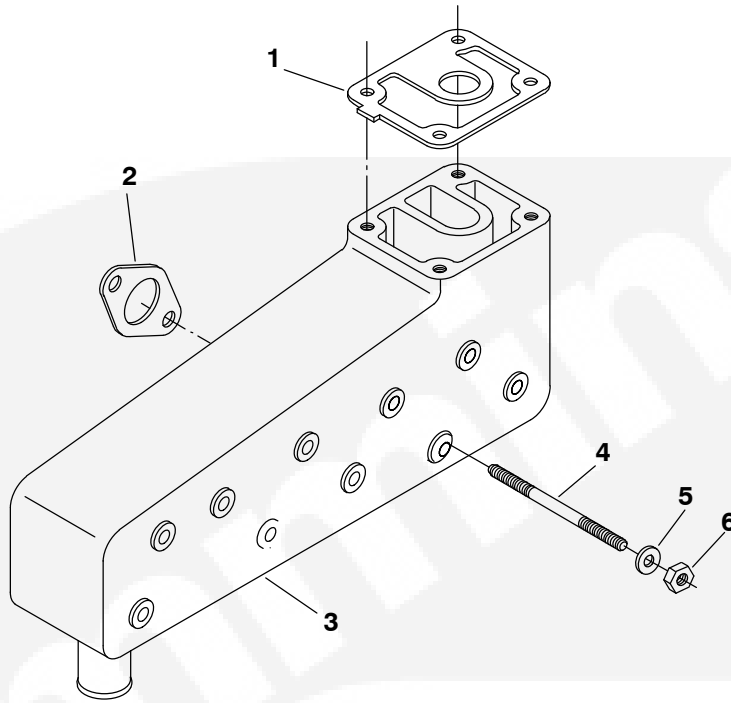
Vacuum Relief Valve (Replacement)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	541-0876-01	1	Kit, Siphon Break Replaces (541-0876-01)	5	502-1463	1	Connector, Hose
1	503-2352	1	Hose, Coolant	6	503-2394	2	Hose, Water (Loose Pieces Not Shown)
2	504-0223	1	Valve, Check	7	508-1102	2	Grommet, Rubber (Loose Pieces Not Shown)
3	502-1425-02	1	Cap, Tube				
4	503-2309	2	Clamp, Hose				



Exhaust Manifold

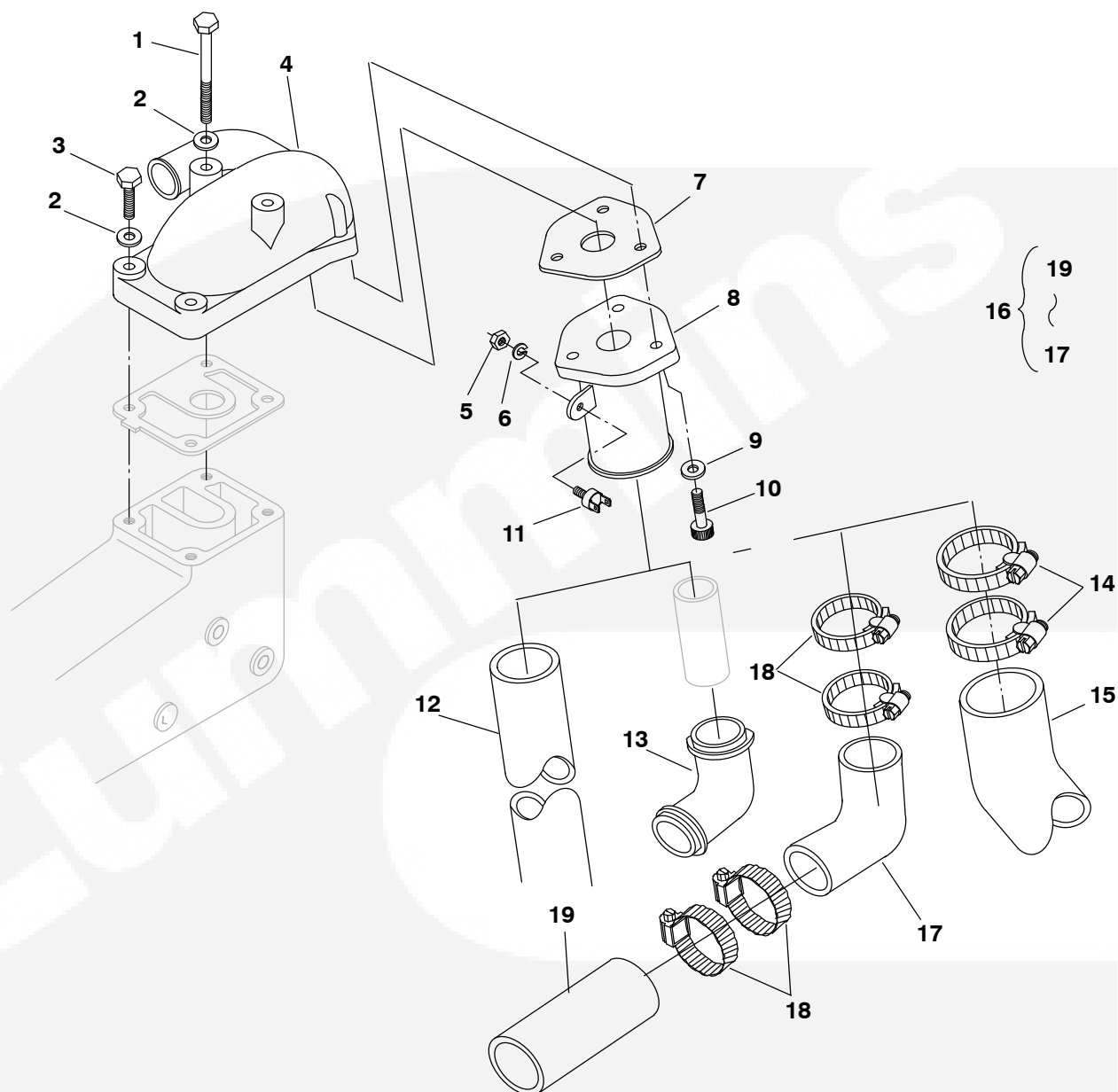


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	155-2975	1	*Gasket, Riser/Adapter	5	526-2100	10	Washer, Flat (M8)
2	154-2915	5	Gasket, Exhaust Manifold	6	750-1006	10	Nut (M8 x 1.25)
3	154-3002	1	Manifold, Exhaust				
4	185-7064	10	Stud				

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

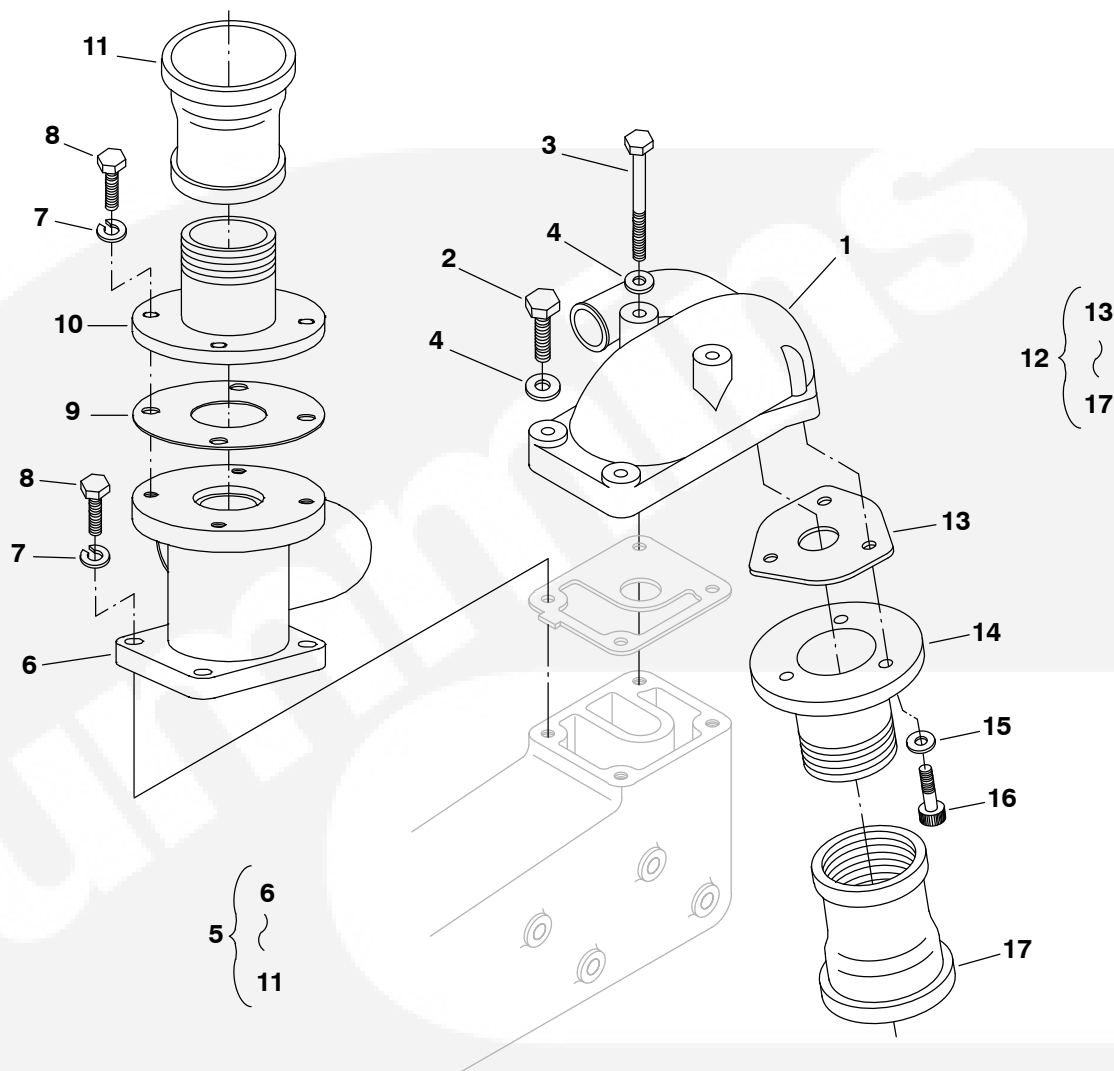


Wet Exhaust



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)	11	309-0597	1	Switch, High Exhaust Temperature (S5)
2	526-2100	4	Washer, Flat (M8)	12	503-1353	1	Hose, Exhaust
3	718-1038	2	Screw, Hex Head Cap (M8 x 1.25 x 30mm)	13	155-2033	1	Elbow, 90° Exhaust (2")
4	154-2891	1	Riser	14	503-1142	4	Clamp, Hose
5	860-0008	1	Nut, Hex (8-32)	15	503-2010	1	Hose, Exhaust
6	850-0025	1	Washer, Lock (M8)	16	155-3284	1	Kit, Front Exhaust (Includes Tube, Elbow and Clamps)
7	155-3061	1	Gasket, Mixer	17	503-1527	1	Elbow, Molded Exhaust
8	154-3142	1	Mixer	18	503-1142	4	Clamp, Hose
9	740-1004	3	Washer, Flat (M6)	19	154-2699	1	Tube, Exhaust
10	802-2068	3	Screw, Socket Cap (M6 x 1 x 20mm)				

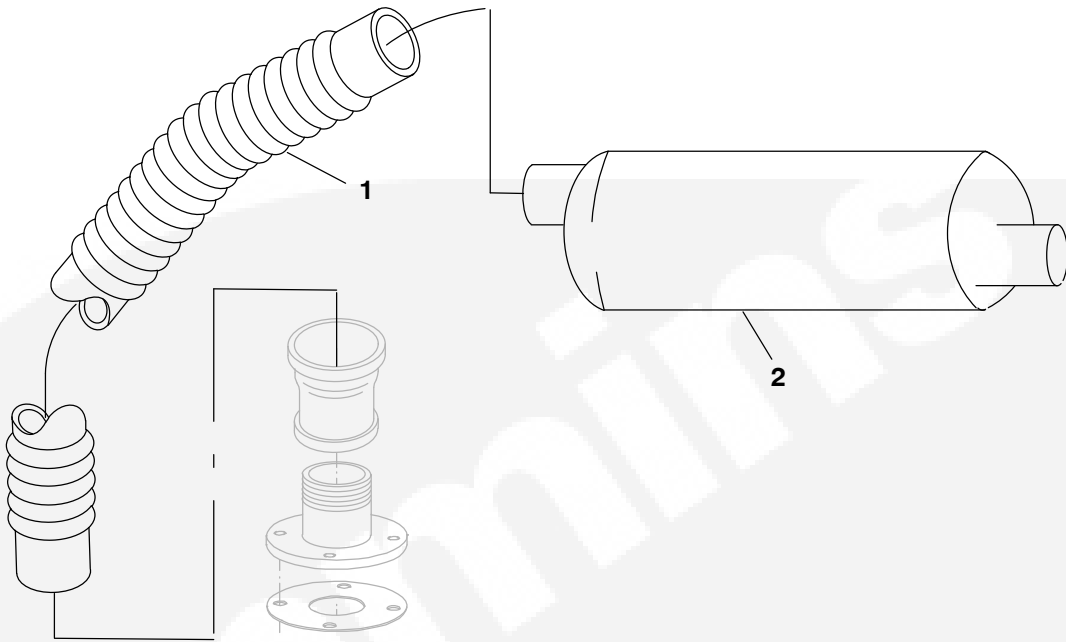
Dry Exhaust (Up or Down)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	154-2891	1	Riser	11	505-0339-02	1	*Coupling, Reducer (2 x 1-1/2")
2	718-1038	2	Screw, Hex Head Cap (M8 x 1.25 x 30mm)	12	155-4691	1	Kit, Exhaust Flange (Includes Parts Marked +)
3	800-2067	2	Screw, Hex Head Cap (M8 x 1.25 x 70mm)	13	155-3061	1	+Gasket, Exhaust
4	526-2100	4	Washer, Flat (M8)	14	155-3068-02	1	+Flange, Exhaust
5	155-4690	1	Kit, Exhaust Adapter (Includes Parts Marked *)	15	740-1004	3	+Washer, Flat (M6)
6	154-2963-02	1	*Adapter, Exhaust	16	802-2068	3	+Screw, Allen Socket Cap (M6 x 1 x 20mm)
7	850-2008	8	*Washer, Lock (M8)	17	505-0339-02	1	+Bushing, Reducer (1-1/2 x 2")
8	718-1037	8	*Screw, Hex Head Cap (M8 x 25mm)				
9	155-2981	1	*Gasket, Exhaust Adapter				
10	155-3069-02	1	*Flange, Exhaust				

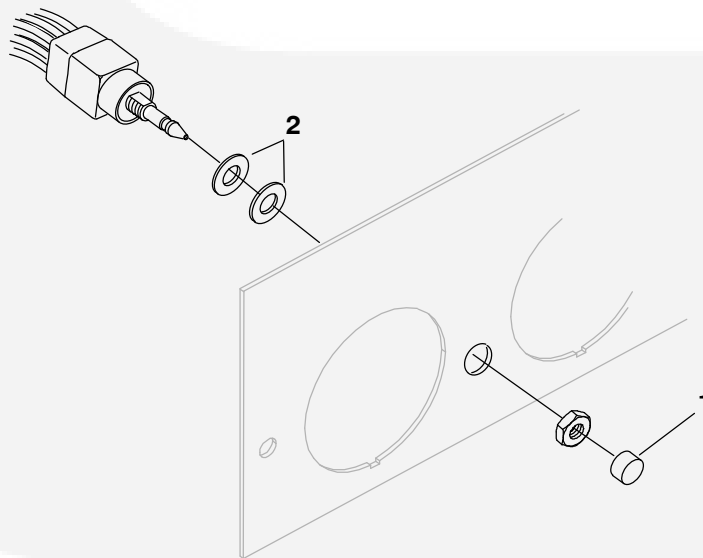
* - Parts Included in Exhaust Adapter Kit. (Also Includes Gasket on Exhaust Manifold Page.)
+ - Parts Included in Exhaust Flange Kit.

Muffler



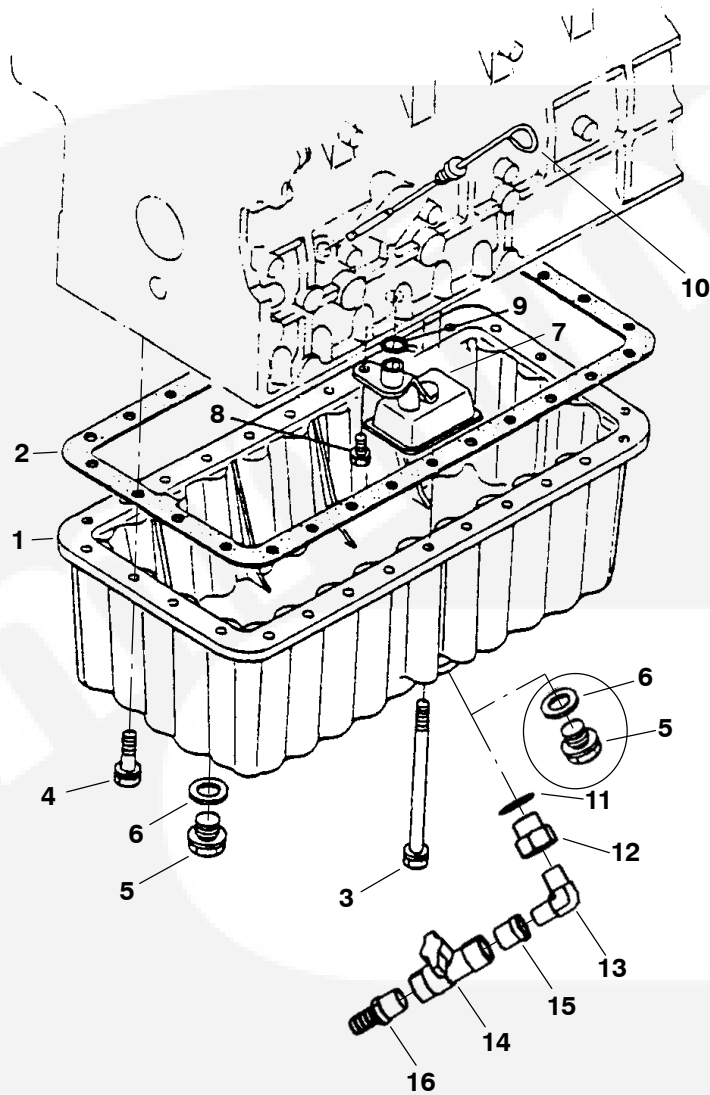
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	155-2355-04	1	Tube, Flexible Exhaust
2	155-2063-09	1	Muffler, Dry Exhaust (Up) Industrial
	155-2064-09	1	Critical

Dual Gauge Switch



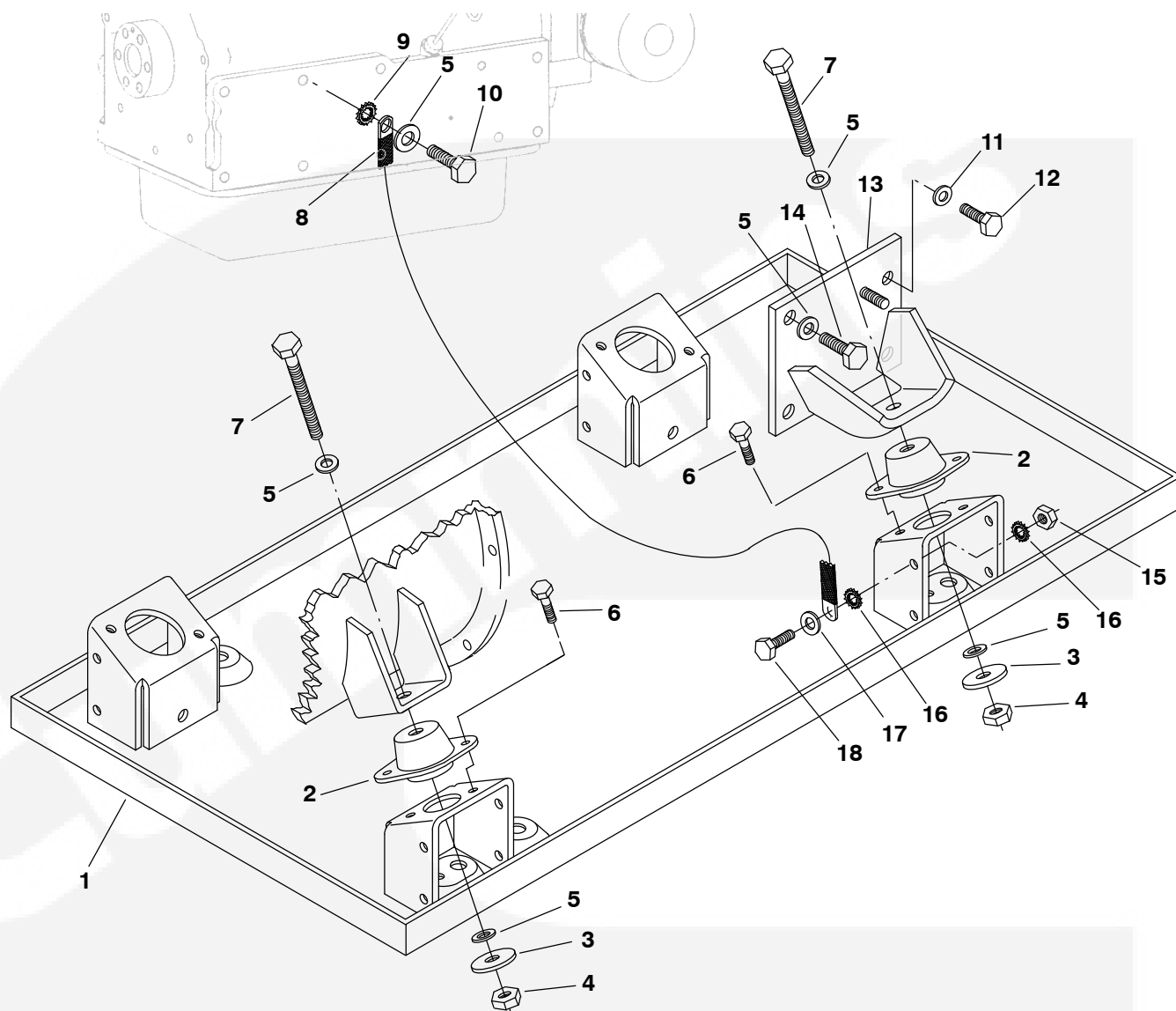
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	300-4835	1	Kit, Dual Gauge Switch (Nut is Part of Switch)
1	308-1072	1	Cap, Switch
2	850-0038	2	Washer, Flat (1/4)

Oil Pan



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6195	1	Pan, Oil	9	509-0254	1	O'Ring
2	185-6044	1	Gasket	10	185-6061	1	Indicator, Oil Level
3	185-6045	2	Bolt	11	526-0329	1	Washer, Oil Drain (7/8")
4	185-5476	26	Bolt	12	102-1448-02	1	Adapter, Oil Drain
5	185-6046	3	Plug (Provided with Engine)	13	502-1273	1	Elbow, Pipe
6	185-5495	3	Gasket (Provided with Engine)	14	504-0011	1	Valve, Shutoff
7	185-6047	1	Tube, Oil Pickup	15	502-0819	1	Bushing, Reducer
8	185-6956	1	Bolt	16	502-1006	1	Fitting, Hose Barb

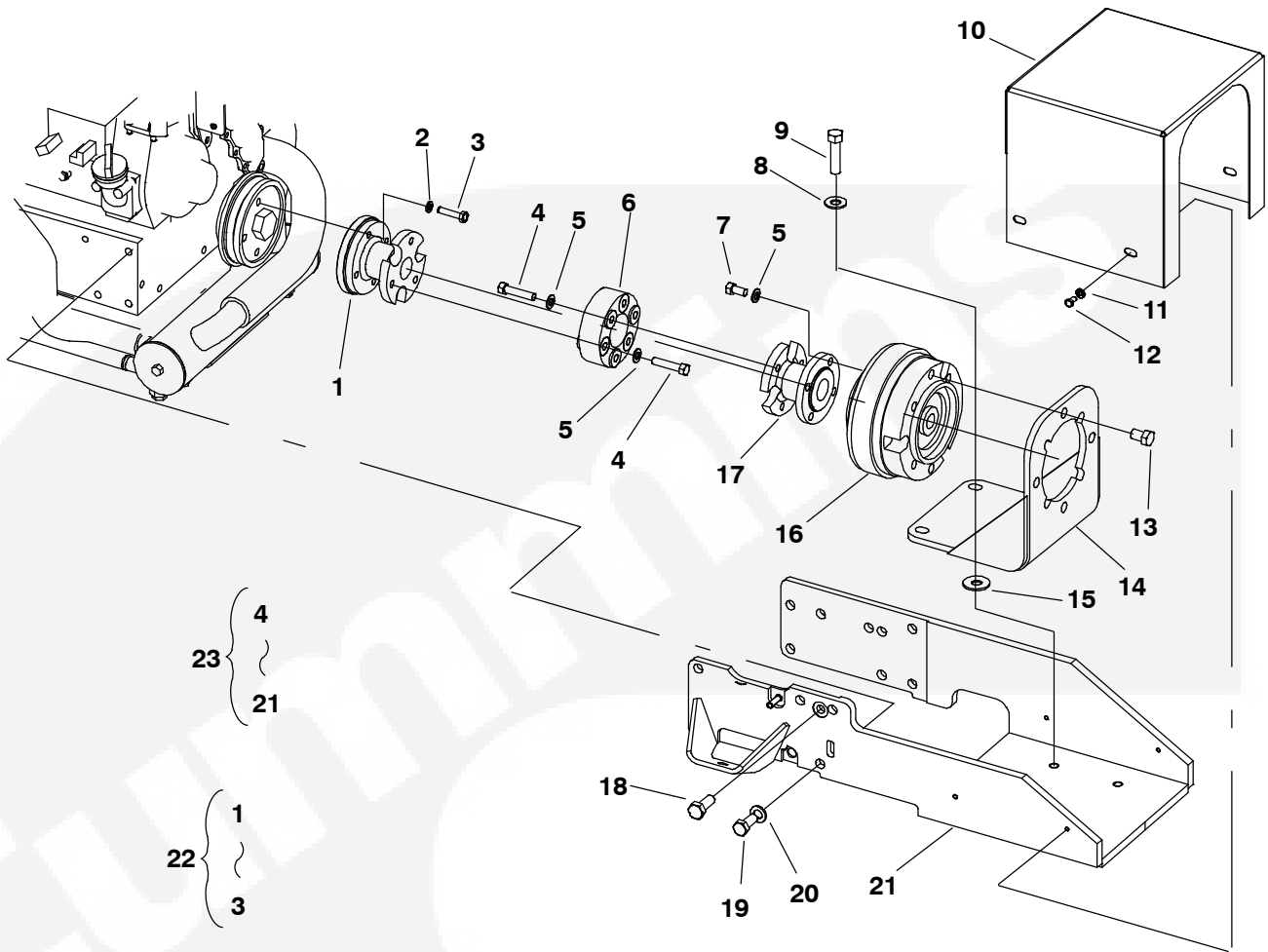
Mounting Base



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	403-3947-02	1	Base, Generator Mounting	11	526-2120	1	Washer, Rocker Ball
2	403-3955	4	Isolator, Mounting W/O PTO	12	815-0585	1	Screw, Hex Head Cap (M10 x 1.25 x 20mm)
	403-3955	2	Generator End	13	403-3972-S3	1	Mount, Engine With Fuel Pump Mounting Stud (Pictured)
	403-4091	2	* Engine End		403-4059-S3	1	Without Stud, Exhaust Side
3	526-0172	4	Washer, Flat (M12)	14	800-3031	6	Screw, Hex Head Cap (M12 x 1.25 x 20mm)
4	750-1010	4	Nut, Hex Machine (M12 x 1.75)	15	750-1006	1	Nut, Hex (M8)
5	526-0399-64	15	Washer, Flat (M12)	16	856-0008	2	Washer, EIT Lock (5/16")
6	821-6003-01	8	Screw, Hex Head Cap (M8 x 1.25 x 20mm)	17	526-2100	1	Washer, Flat (M8)
7	800-2118	4	Screw, Hex Head Cap (M12 x 1.75 x 60mm)	18	800-2057	1	Screw, Hex Head Cap (M8 x 1.25 x 20mm)
8	337-2785	1	Strap, Bond				
9	856-0013	1	Washer, EIT Lock (1/2")				
10	800-3031	1	Screw, Hex Head Cap				

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

PTO

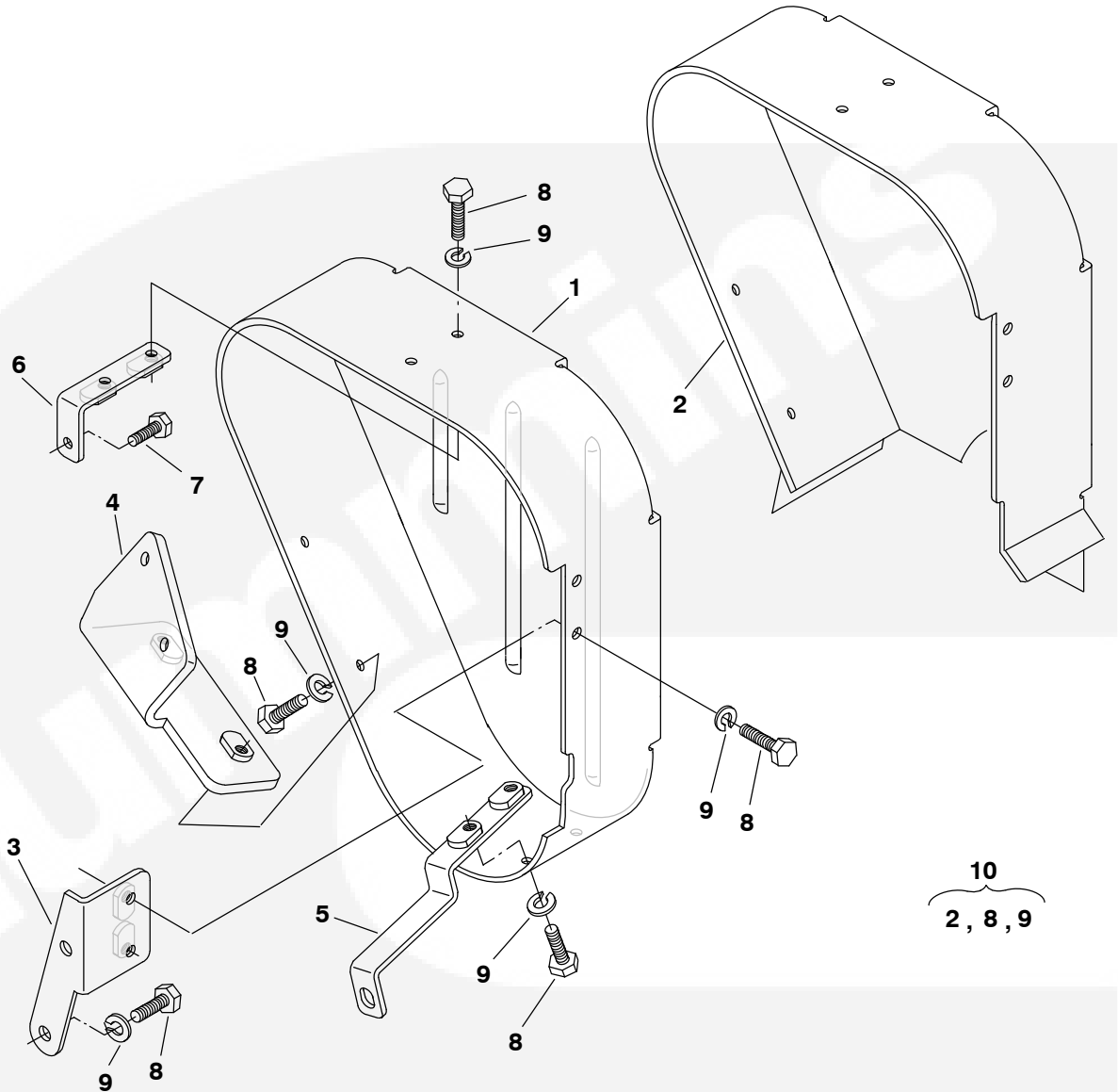


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	190-0737-02	1	+Adapter, Engine Coupling	17	190-0732-02	1	*Adapter, Coupling Clutch
2	526-2121	4	+Washer, Flat (M10)	18	800-3033	1	*Screw, Hex Head Cap
3	800-3011	4	+Screw, Hex Head Cap (M8 x 35)	19	800-3032	10	*Screw, Hex Head Cap (M12 x 1.25)
4	800-0054	6	*Screw, Hex Head Cap	20	526-0399-64	10	*Washer, Flat (M12)
5	526-0026	10	*Washer, Flat	21	190-0745-04	1	*Bracket, PTO
6	190-0731	1	*Coupling, Flex	22	190-0741	1	Kit, PTO Adapter (Includes Parts Marked +)
7	801-1050	4	*Screw, Hex Head Cap	23			Kit, PTO (Includes Parts Marked *)
8	526-0399-44	4	*Washer, Flat (1/2")	190-0738	1	12V	
9	800-0091	4	*Screw, Hex Head Cap	190-0739	1	24V	
10	190-0736-03	1	*Guard, Coupling				
11	526-2080	4	*Washer, Flat				
12	800-2029	4	*Screw, Hex Head Cap (M6 x 1 x 12)				
13	800-0090	2	*Screw, Hex Head Cap				
14	190-0734-03	1	*Bracket, PTO Clutch				
15			Shim, PTO				
	190-0756-01	AR	.005				
	190-0756-02	AR	.010				
	190-0756-03	AR	.020				
16			*Clutch				
	190-0729-01	1	12V				
	190-0729-02	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)

Belt Guard



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

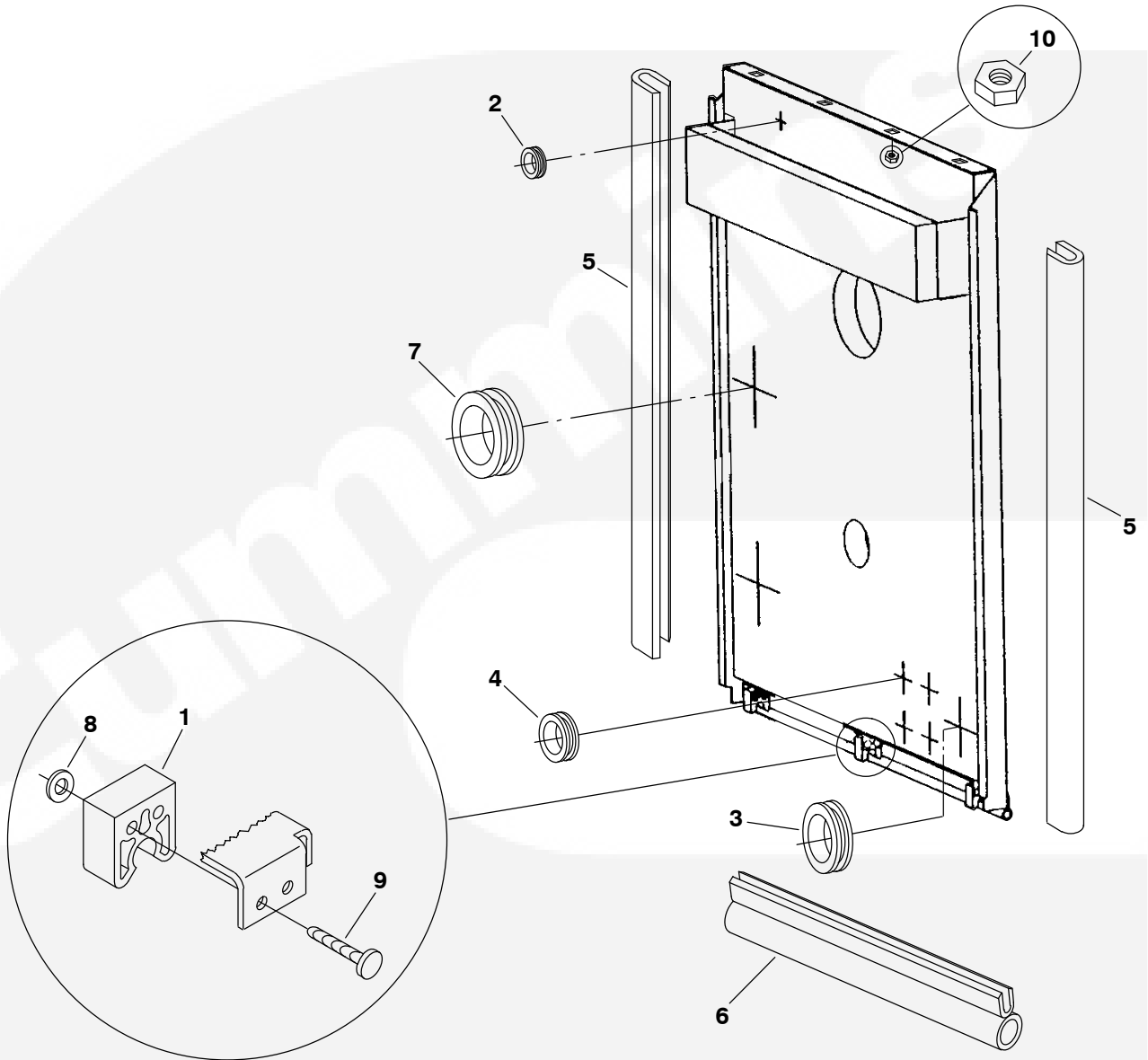
* - Parts Included in PTO Belt Guard Kit.

Sound Shield

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	405-5743	1	#Kit, Sound Shield (W/O PTO)	24	508-1095	2	◇Grommet, Rubber
1	402-0681	4	Isolator, Vibration	25			Roof Assy, Housing
2	405-5517-S0	2	Support Assy, Roof (Includes Edging)		405-5503-S2	1	Spec A (Includes Parts Marked +)
3	508-0210	1	+◇Edging (Use As Required)		405-6343-02	1	Begin Spec B (Includes Parts Marked @)
4	405-5499	1	Rail Assy, Door - Left Side (Includes Pin and Nut)	26			@+Cover, Access
5	405-5544	1	Rail Assy, Door - Right Side (Includes Pin and Nut)	405-4528		2	Spec A
6	405-5018-S0	1	Rail Assy, Door - Front (Includes Pin and Nut)	405-6340		2	Begin Spec B
7	405-3111	15	Pin, Clip	405-6340		2	# Begin Spec C (Includes Cover Flange and Gasket)
8	870-0400	30	Nut, Push Cap	27	406-0528-02	8	@+Catch, Spring
9	405-5514-S2	4	Door Assy, Housing (Includes Parts Marked *)	28	508-0210	2	+Edging (170mm)
10	405-1872	2	*Clip, Door	29	508-0210	4	+Edging (373mm)
11	406-0528-01	2	*Catch, Spring	30			@+Fastener
12	508-1011	1	*Seal, Edge (Use As Required)		815-0807	12	Spec A (Fillister Screw)
13	526-0003	4	*Washer, Flat (#8)		818-0239-03	12	Begin Spec B (Pop Rivet)
14	818-0150	4	*Rivet, Drive	31	870-0427	12	+Nut, Hex (#10-24) (Spec A)
15	818-0194	36	+*Rivet, Stainless Steel	32	405-5502-02	1	Base, Housing
16			Panel Assy, Front (See Separate Page for Components)	33	526-0022	6	Washer, Flat (M8)
	405-5511-S1	1	W/O PTO	34	800-0540	4	Screw, Hex Head Cap (5/16-18 x 1-5/8")
	405-6553-02	1	Bottom	35	800-2052	2	Screw, Hex Head Cap (M8 x 1.25 x 12mm)
	405-5727-S2	1	Top	36	808-0045	12	Screw, Round Head Sheet Metal (#12 x 1-1/2)
17			Housing Assy, Generator (See Separate Page for Components)	37	815-0498	8	Screw, Thread Forming Hex Head (#8-32 x 3/8")
	405-5505-S0	1	Right (W/O Control Box Mounting Hole)	38	815-0765	30	Screw, Truss (1/4-20 x 1/2")
	405-5508-S0	1	Left (W/Control Box Mounting Hole)	39	870-0257	4	Nut, Self-Lock (5/16-18)
18	405-5522-S0	1	Panel, Generator Housing (Includes Edging)	40	870-0413	4	Nut, Tee
19	405-5519-S0	1	Baffle Assy, Generator (Includes Parts Marked ◇)	# - Kit Also Includes Hose Clamp on Intake Manifold Page and Exhaust Hose, Clamps and Bulkhead Connection on Generator Housing Page.			
20	508-0115	2	◇Grommet, Rubber	* - Included in Housing Door Assy.			
21	508-0117	6	◇Grommet, Rubber	◇ - Included in Generator Baffle Assy.			
22	508-0330	1	◇Seal, Edge (Use As Required)	+ - Included in Housing Roof Assy.			
23	508-0210	3	+Edging (415mm,543mm, 415mm)				

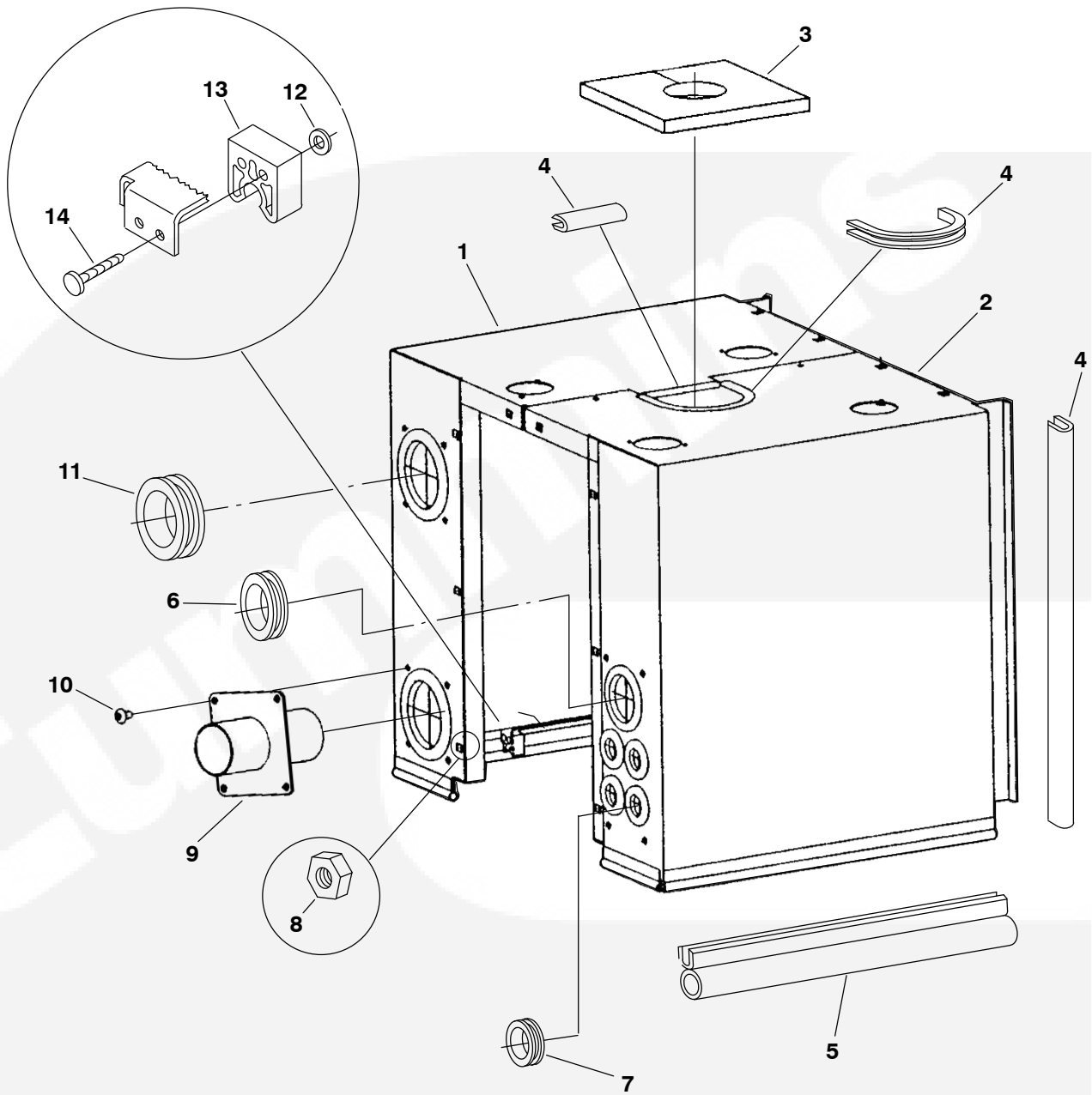


Housing Front Panel (W/O PTO)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	405-5511-S1	1	Panel Assy, Front	6	508-1011	1	Seal, Edge (Use As Required)
1	405-1872	3	Clip, Door	7	508-1095	2	Grommet, Rubber
2	508-0021	1	Grommet, Rubber	8	526-0003	6	Washer, Flat (#8)
3	508-0115	1	Grommet, Rubber	9	818-0150	6	Rivet, Drive
4	508-0117	4	Grommet, Rubber	10	870-0110	4	Nut, Retainer(1/4-20)
5	508-0210	1	Edging (Use As Required)				

Generator Housing

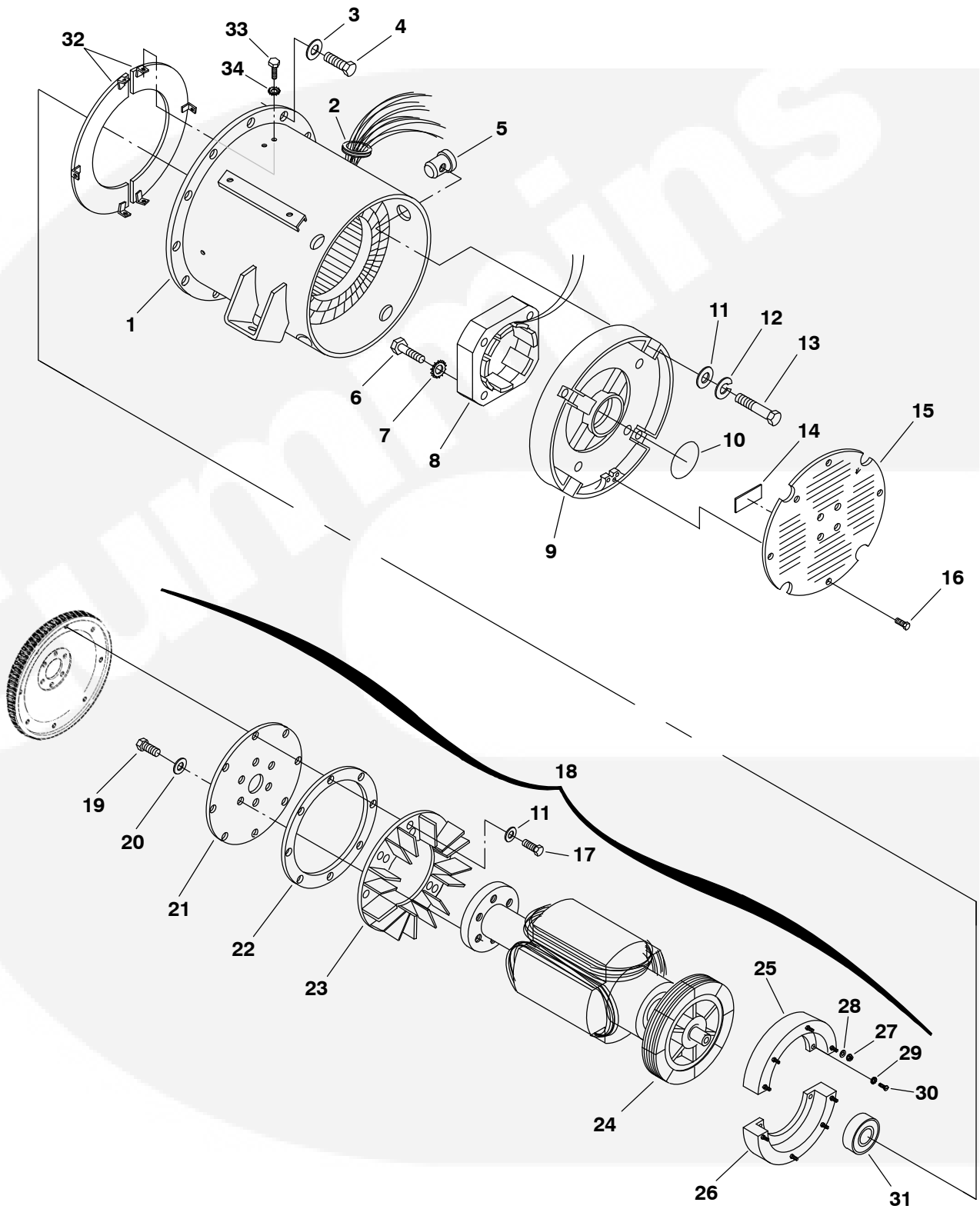


Generator Housing

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	405-5505-S0	1	Housing, Generator Right Side	9	405-5703-03	1	Bulkhead
2	405-5508-S0	1	Housing, Generator Left Side	10	815-0765	4	Screw, Truss Head
3	405-5114	1	Insulation, Control Box	11	508-1095	1	Grommet, Rubber (Right Side Housing)
4	508-0210	4	Edging (94mm, 237mm, 523mm and 523mm)	12	526-0003	8	Washer, Flat (#8)
5	508-1011	4	Seal, Edge (123mm, 450mm)	13	405-1872	4	Clip, Door
6	508-0115	1	Grommet, Rubber (Left Side Housing)	14	818-0150	8	Rivet, Drive
7	508-0117	4	Grommet, Rubber (Left Side Housing)	# - Parts Included in Sound Shield Kit Listed on Sound Shield Page.			
8	870-0110	14	Nut, Retainer (1/4-20)				



Generator



Generator

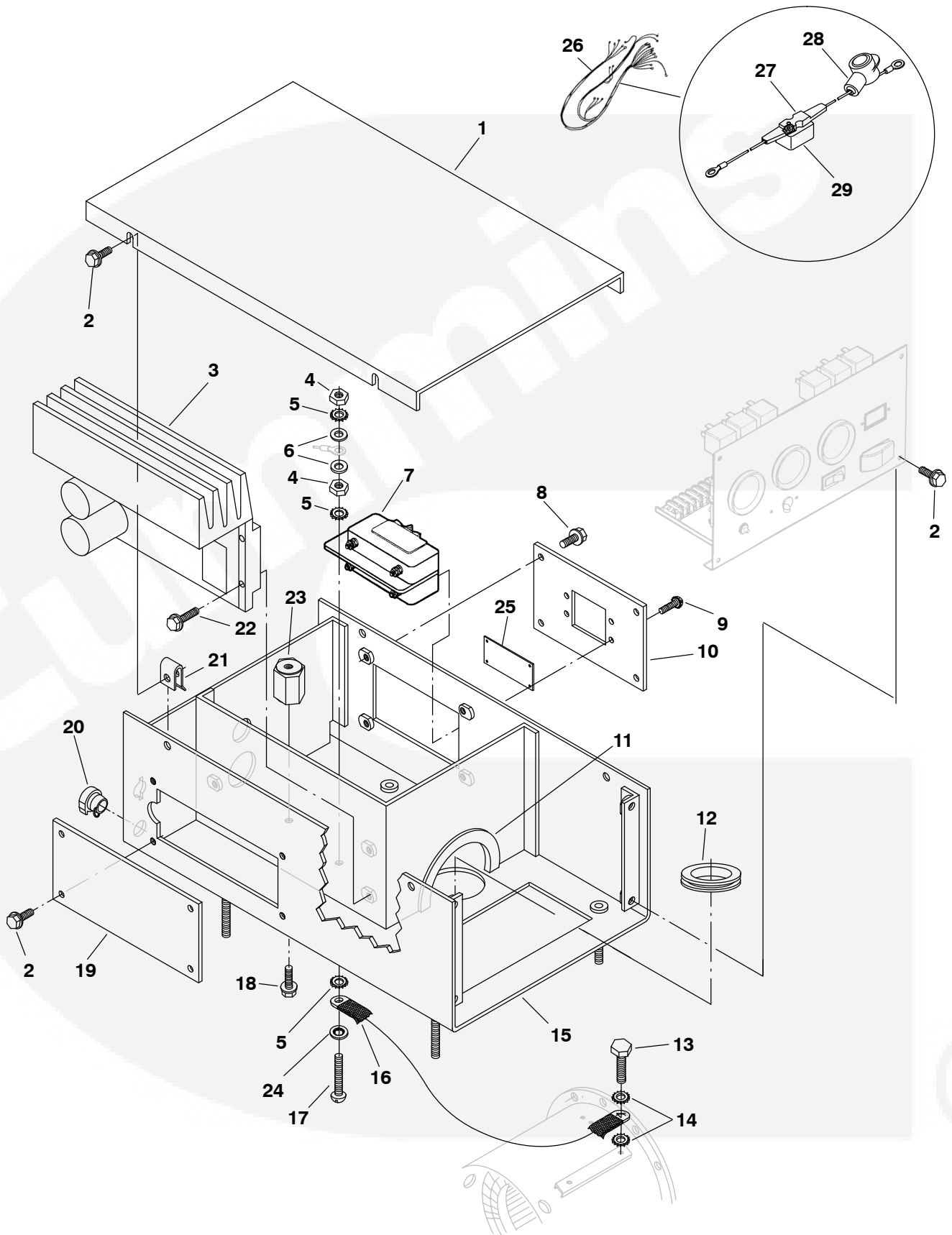
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Stator, Generator (Includes Grommet)	18	201-3517-06	1	Rotor Assy, Generator (Includes Parts Marked *)
	220-4417-06	1	Spec A 1 Phase	19	800-3017-52	6	*Bolt, Hex Head Cap (1/2-13 x 1")
	220-4451-06	1	3 Phase Begin Spec B	20	526-0399-73	6	*Washer, Flat (M12)
	220-4570-06	1	1 Phase	21	232-3945	1	*Disc, Drive
	220-4569-06	1	3 Phase	22	232-3826-02	1	*Spacer, Fan
2	508-1073	1	Grommet	23	205-0229-02	1	*Fan, Generator
3	526-0174	12	Washer, Flat (3/8)	24	201-3515-02	1	Rotor, Exciter (Includes Parts Marked +)
4	800-0051	12	Screw, Hex Head Cap (3/8-16 x 1-1/4)	25	358-0069	1	+Diode, Positive
5	232-3706-02	4	Retainer, Endbell	26	358-0070	1	+Diode, Negative
6	815-0935	4	Screw, Hex Head Thread Forming (1/4-20 x 2")	27	870-0131	8	*+Nut, ET Hex (#10-32)
7	853-0013	4	Washer, ET Lock (1/4")	28	526-0399-11	8	*+Washer, Flat (#10)
8	220-4413-02	1	Stator, Exciter	29	853-0008	4	+Washer, ET Lock (#10)
9	211-0465	1	Endbell	30	822-2160-37	4	+Screw, Pan Head Machine (#10-32 x 1/2)
10	509-0094	1	Seal, O'Ring	31	510-0112	1	*Bearing, Ball
11	526-0399-42	12	Washer, Flat (3/8)	32	234-0935-02	2	Baffle, Air (3 Phase)
12	850-0114-06	4	Washer, Lock (5/16")	33	800-0310-02	6	Screw, Hex Head Cap (1/4-20 x 1/2") (3 Phase)
13	800-0310-27	4	Screw, Hex Head Cap (5/16"-18 x 2-1/2")	34	853-0013	6	Washer, ET Lock (1/4") (3 Phase)
14	895-0308	2	Tape, Polyurethane (40mm)				
15	234-0876-01	1	Cover, Inlet				
16	815-0181	3	Screw, Hex Head Thread Cutting (#10-32 x 1/2")				
17	800-0310-36	8	Screw, Hex Head Cap (3/8-16 x 1)				

* - Parts Included in Generator Rotor Assy.

+ - Parts Included in Generator Exciter Rotor Assy.

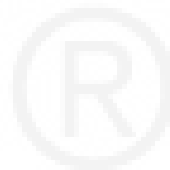


Control Box

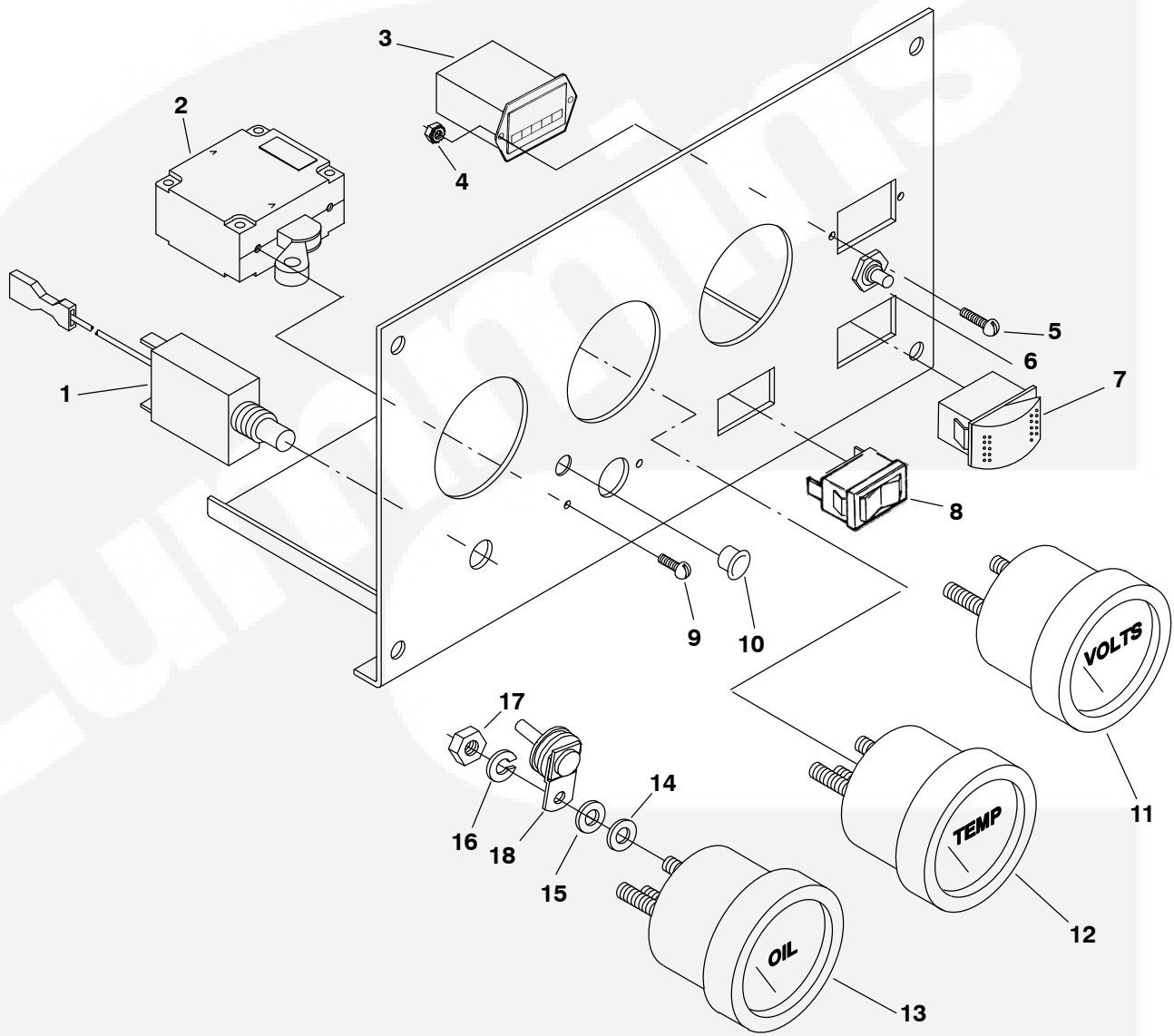


Control Box

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	319-2857-04	1	Cover, Control Box	11	508-0210	1	Edging (157mm)
2	815-0905-05	16	Screw, Lock Head Flange (10-32 x 1/2")	12	508-0063	1	Grommet
3	305-0896	1	Regulator, Voltage (SRA) (VR1)	13	800-2057	1	Screw, Hex Head Cap (M8 x 1.25 x 20mm)
4	871-0016	2	Nut, (1/4-32)	14	856-0008	2	Washer, EIT Lock (5/16")
5	856-0006	3	Washer, ET (1/4-20)	15	319-2856-03	1	Box, Control
6	526-0052	2	Washer, Brass (1/4-20)	16	337-2795	1	Strap, Bond
7			Breaker, Circuit (CB2)	17	810-0155	1	Bolt, Brass (1/4-20 x 1-1.4")
			1 Pole	18	821-0008	1	Screw, Round Head Machine (1/4-20 x 5/16")
	320-1690-14	1	95A	19	319-2917-03	1	Panel, VR Access
			2 Pole	20	508-0179	1	Bushing, Strain Relief
	320-1689-15	1	85A	21	870-0398	4	Clip, Nut (#10-32)
	320-1689-16	1	90A	22	821-0005	3	Screw, Lock Head Flange (#10-32 x 1/2")
	320-1689-17	1	95A	23	332-2370	1	Standoff
	320-1689-18	1	100A	24	854-0014	1	Washer, IT Lock (1/4")
			3 Pole	25	320-1813-02	1	Plate, Cover (Use W/Single Pole Circuit Breaker)
	320-1891-04	1	35A	26	338-3387	1	Harness, Engine (Includes Breaker, Boot and Nuts)
	320-1891-08	1	40A	27	320-1928-01	1	Breaker, Circuit (CB3)
	320-1891-07	1	45A	28	416-1021-03	1	Boot
	320-1836-11	1	65A	29	870-0131	2	Nut, ET Hex (#10-32)
	320-1836-12	1	70A				
	320-1836-13	1	75A				
	320-1836-14	1	80A				
	320-1836-15	1	85A				
	320-1836-16	1	90A				
8	821-0004	4	Screw, Lock Head (#10-32 x 5/16")	Shipped Loose in Plastic Bag:			
9			Screw, Cross Recessed ET Pan Head (#6-32 x 3/8")	323-1591	2	Plug, Seal	
	815-0550-01	4	1 Phase	323-1543	1	Wedge, Plug	
	815-0550-01	6	3 Phase	323-1541	1	Plug (8 Pin)	
10	319-2113-03	1	Panel, Breaker				



Control Panel



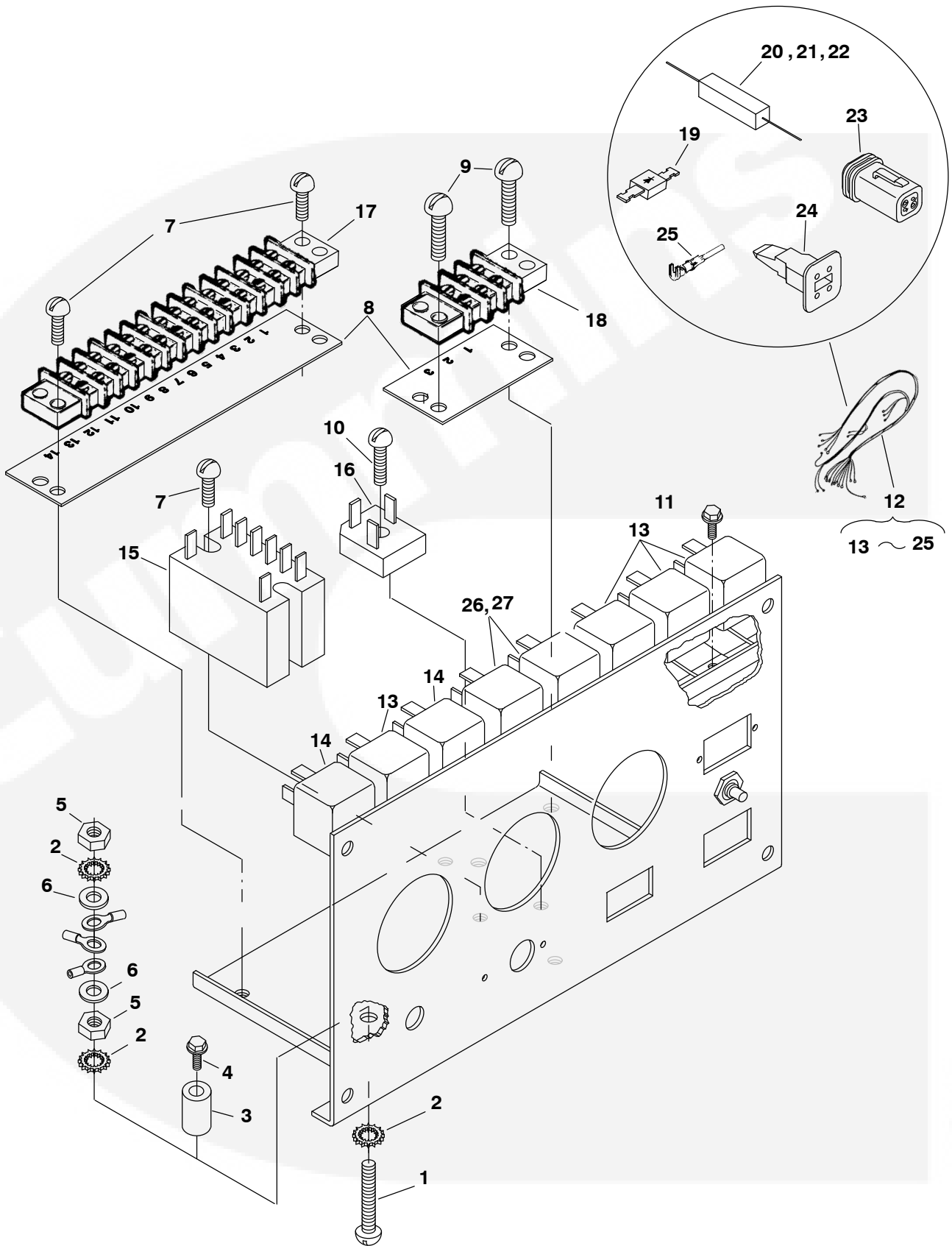
Control Panel

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")
300-5243		1	Negative Ground	6	320-1769-01	1	Breaker, Circuit (2A) (Begin Spec B)
300-5244		1	Isolated Ground	7	308-1027	1	*Switch, Rocker (S1)
			24V Sets	8			*Breaker, Circuit (CB4)
300-5245		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				
300-5247		1	Negative Ground	10	517-0131-02	1	Plug, Button
300-5248		1	Isolated Ground	11			*Voltmeter (M4)
			24V Sets		302-1641	1	12V Sets (8-18V)
300-5249		1	Negative Ground		302-1642	1	24V Sets (16-36V)
300-4875		1	Isolated Ground	12	193-0351	1	*Gauge, Coolant Temperature (M3)
			Begin Spec B	13	193-0352	1	*Gauge, Oil Pressure (M2)
			With Gauges	14	526-0409	8	*Washer, Nylon Flat (#10)
			12V Sets	15	526-0049	8	*Washer, Brass Flat (#10)
300-5243		1	Negative Ground	16	850-0030	8	*Washer, Lock (#10)
300-5244		1	Isolated Ground	17	871-0010	8	*Nut, Hex Brass Machine (#10-32)
			24V Sets	18	193-0250	2	*Resistor (24V Sets With Gauges) (R4, R5)
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		1	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

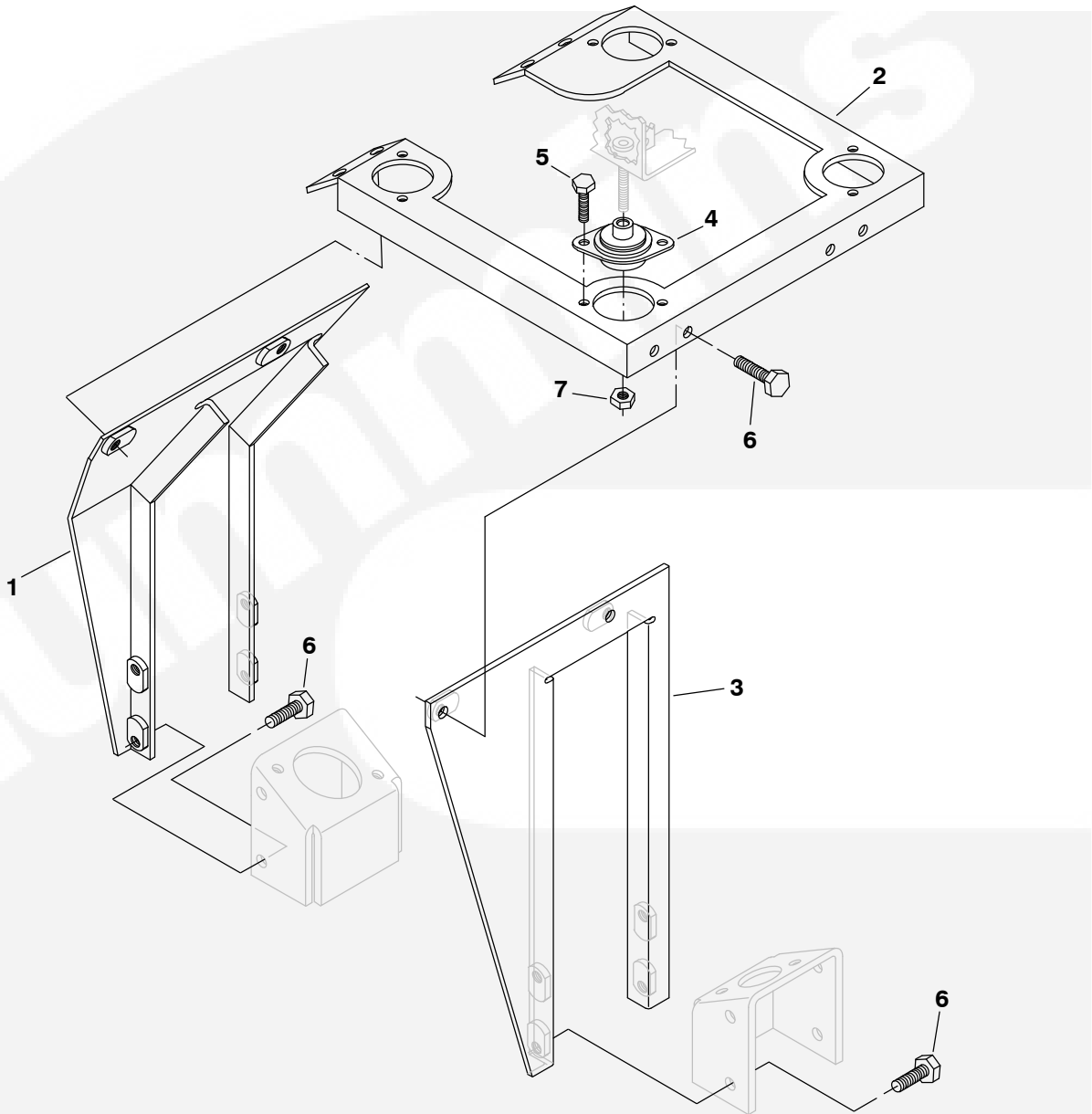
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	810-0155	1	*Screw Round Head Machine Brass (1/4-20 x 1-1/4") (Negative Ground)	15	307-2828-01	1	+ Relay (K4) 12V Sets
	821-0010	1	Lock Head (1/4-20 x 1/2") (Isolated Ground)	16	307-2828-02	1	24V Sets
2	856-0006	3	*Washer Lock EIT (1/4") (Negative Ground)	17	305-0548	1	+ Rectifier, Bridge (CR1)
	526-0052	1	Brass Flat (1/4") (Isolated Ground)	18	332-3385	1	+ Block, Terminal (14 Position) (TB2)
3	332-2370	1	*Standoff, Insulator	19	332-3297	1	+ Block, Terminal (3 Position) (TB1)
4	821-0008	1	*Screw, Lock Head (1/4-20 x 5/16")	20	357-0030	3	+ Rectifier (CR2, CR3, CR4)
5	871-0016	2	*Nut, Hex Brass Machine (1/4-20)	21	353-0053	1	+ Resistor (R1) 12V Sets (10 Ohms, 10W)
6	526-0052	2	*Washer, Brass Flat (1/4")	22	352-0197	1	24V Sets (36 Ohms, 15W)
7	812-0079	4	*Screw, Round Head Machine (#8-32 x 3/8")	23	352-0194	1	+ Resistor (R2) 12V Sets (10 Ohms, 5W)
8	332-3296	1	*Marker, Strip 14 Pos.	24	352-0196	1	24V Sets (24 Ohms, 10W)
	332-3298	1	3 Pos.	25	352-0195	1	+ Resistor (R3) 12V Sets (8.5 Ohms, 5W)
9	813-0102	2	*Screw, Round Head Machine (10-32 x 5/8")	26	352-0198	1	24V Sets (18 Ohms, 10W)
10	815-0539	1	*Screw, Round Head Machine (#8-32 x 5/8")	27	323-1546	1	+ Plug, (4 Pin) (P2)
11	821-0004	8	*Screw, Lock (#10-32 x 5/16")	28	323-1548	1	+ Wedge, Plug (P2)
12	338-3246	1	*Harness, Control (Includes Parts Marked +) With Gauges 12V Sets	29	323-1492	4	+ Pin (P2)
	338-3248	1	24V Sets	30	338-3383-01	1	Harness, Relay (Includes Relay) (Isolated Ground) 12V
	338-3247	1	Without Gauges 12V Sets	31	338-3383-02	1	K10, 7" (3 Leads)
	338-3249	1	24V Sets	32	338-3383-03	1	K11, 3" (4 Leads)
13	307-1886	4	+ Relay (K1, K2, K3, K6) 12V Sets	33	338-3383-04	1	24V
	307-2643	4	24V Sets	34	338-3383-03	1	K10, 7" (3 Leads)
14	307-2817-01	2	+ Relay (K5, K8) 12V Sets	35	338-3383-04	1	K11, 3" (4 Leads)
	307-2817-02	2	24V Sets	36	307-1886	1	Relay, K10, K11 (Isolated Ground) 12V
				37	307-2643	1	24V

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

+ - Parts Included in Control Harness.

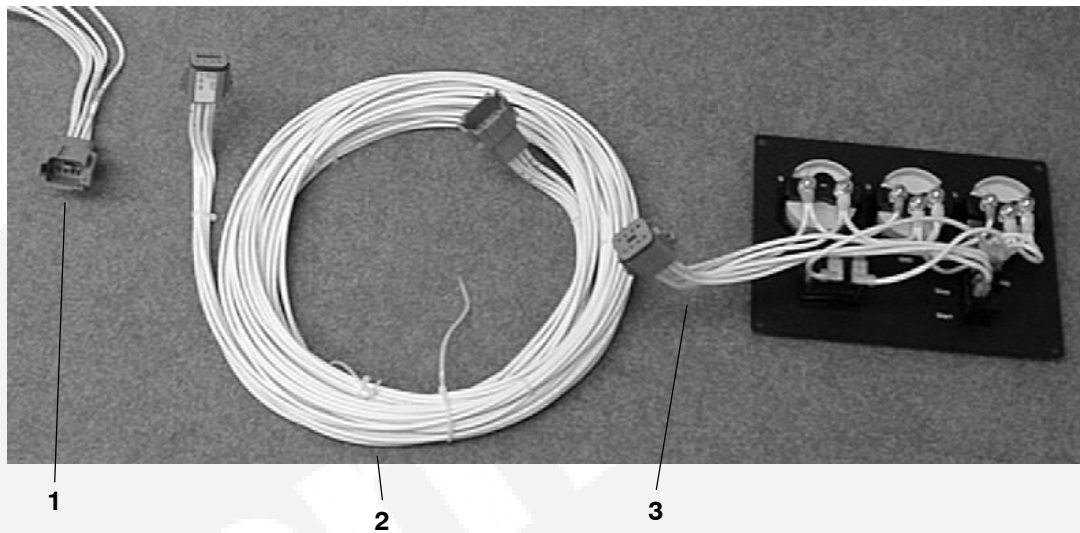


Control Box Mount



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	319-2494-03	1	Support, Control Bracket	5	815-0498	8	Screw, Hex Head Thread Forming (8-32 x 3/8")
2	319-2954-04	1	Bracket, Control Mounting	6	821-6003-02	12	Screw, Hex Head Cap (M8 x 16)
3	319-2493-03	1	Support, Control Bracket	7	870-0257	4	Nut, Self-Lock (5/16-18)
4	402-0681	4	Isolator, Vibration				

Harness Location

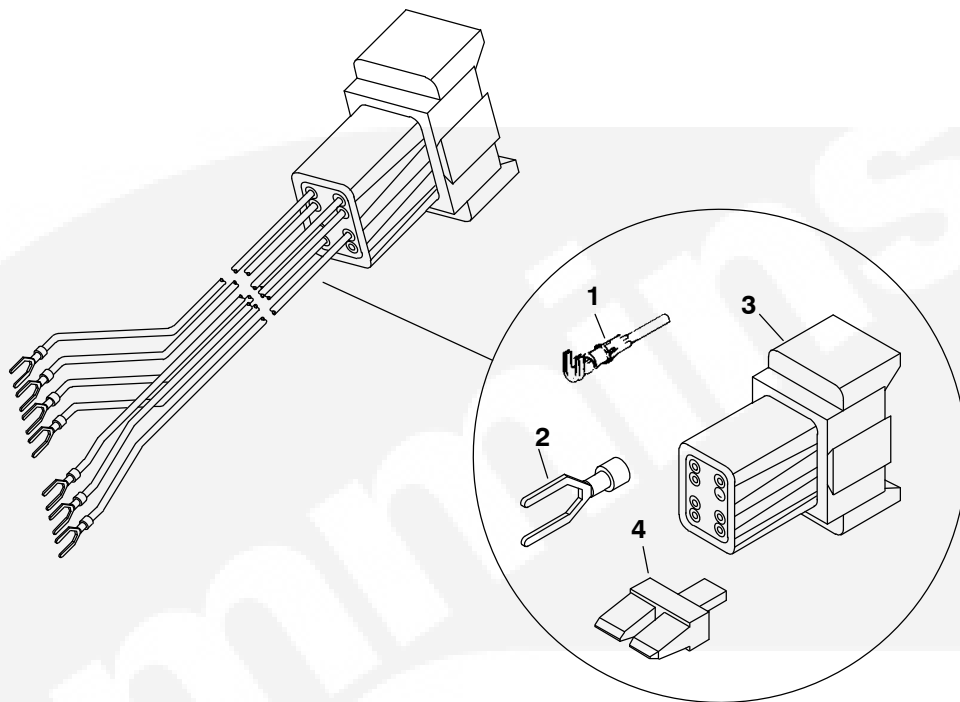


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	*	-	Harness, Remote Control (Reaches From Control Terminal Board to Extension or Customer Interface Pigtail Harness)
2	*	-	Harness, Extension (Or Customer Interface Pigtail) (Reaches From Remote Control Harness to Remote Panel Harness or Customer Hookup)
3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

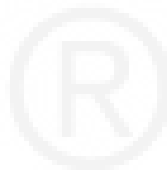
* - See Index for Page Numbers of Detailed Descriptions and Part Numbers.



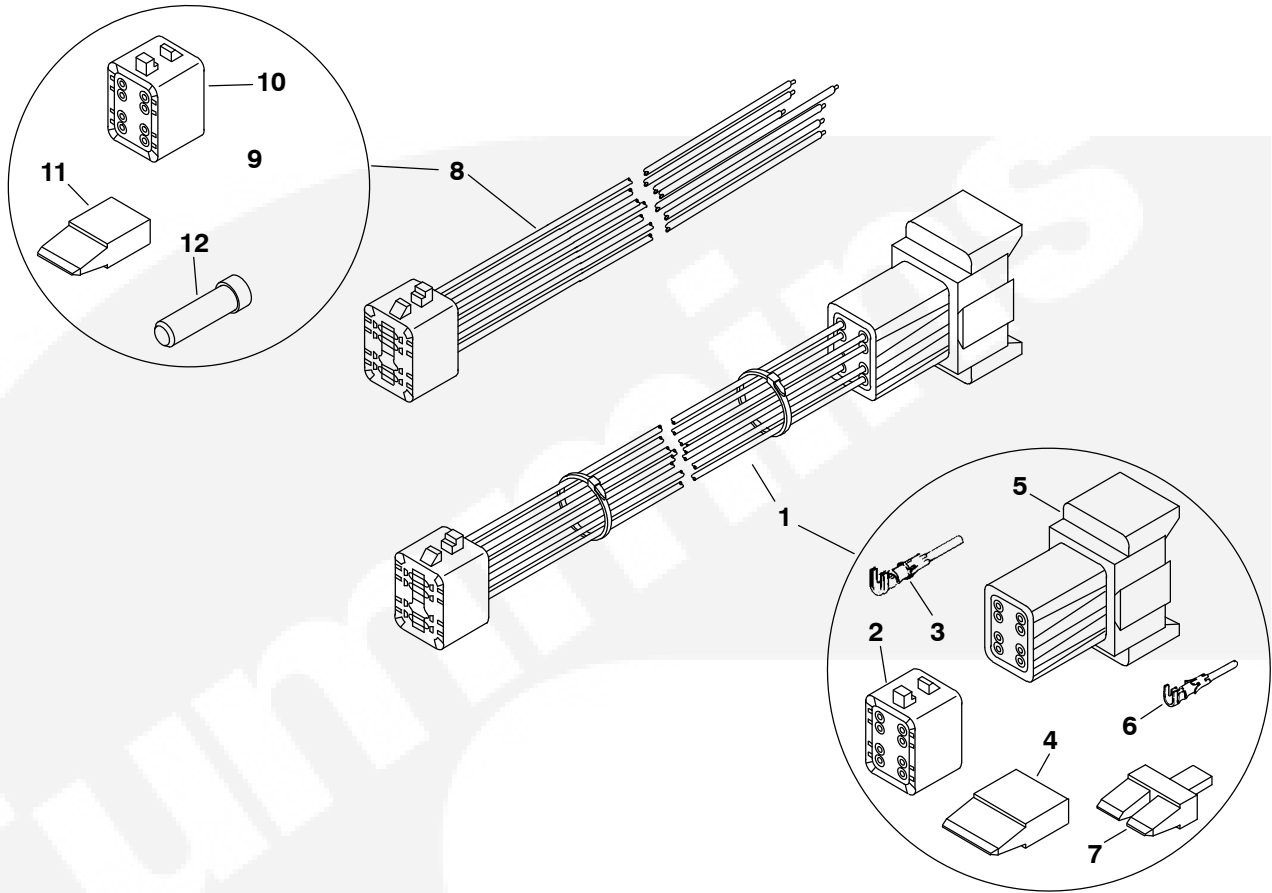
Remote Control Harness



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	323-1491	7	°Terminal, Pin
				2	332-2683	7	°Terminal, Spade (#6)
				3	323-1542	1	°Housing, Receptacle (8 Pin)
				4	323-1544	1	°Wedge, Receptacle (8 Pin)



Extension Harness and Customer Interface Pigtail Harness

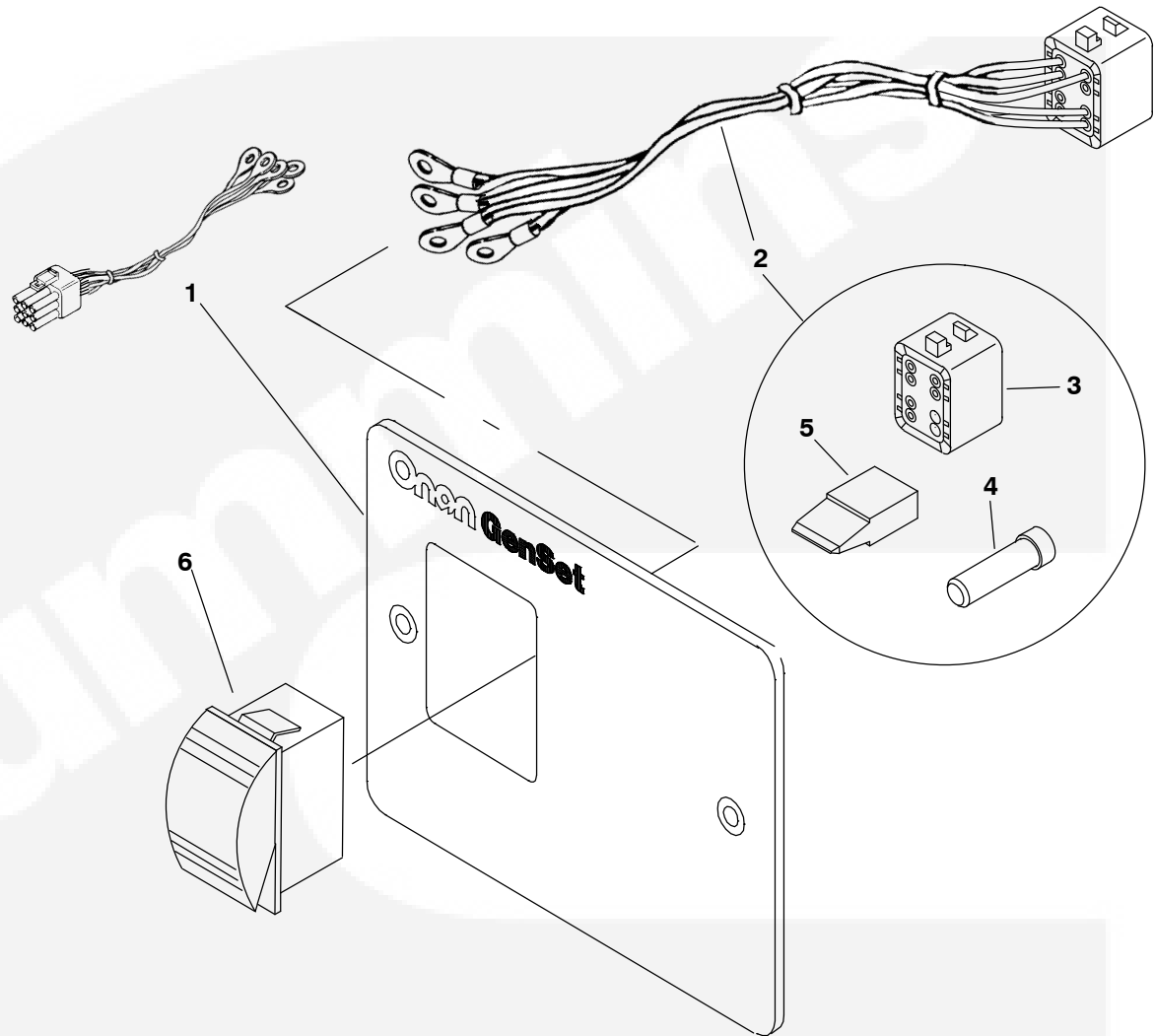


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Harness, Extension (Reaches From Remote Control Harness to Remote Panel Harness) (Includes Parts Marked #)	6	323-1491	8	# Terminal, Pin
	338-3167	1	15 feet	7	323-1544	1	#Wedge, Receptacle (8 Pin)
	338-3168	1	25 feet	8	338-3098	1	Harness, Customer Interface Pigtail (12") (Reaches from Remote Control Harness to Customer Hookup) (Includes Parts Marked *)
	338-3169	1	45 feet	9	323-1492	7	*Terminal, Pin
	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 Customer Interface Pigtail Harness.

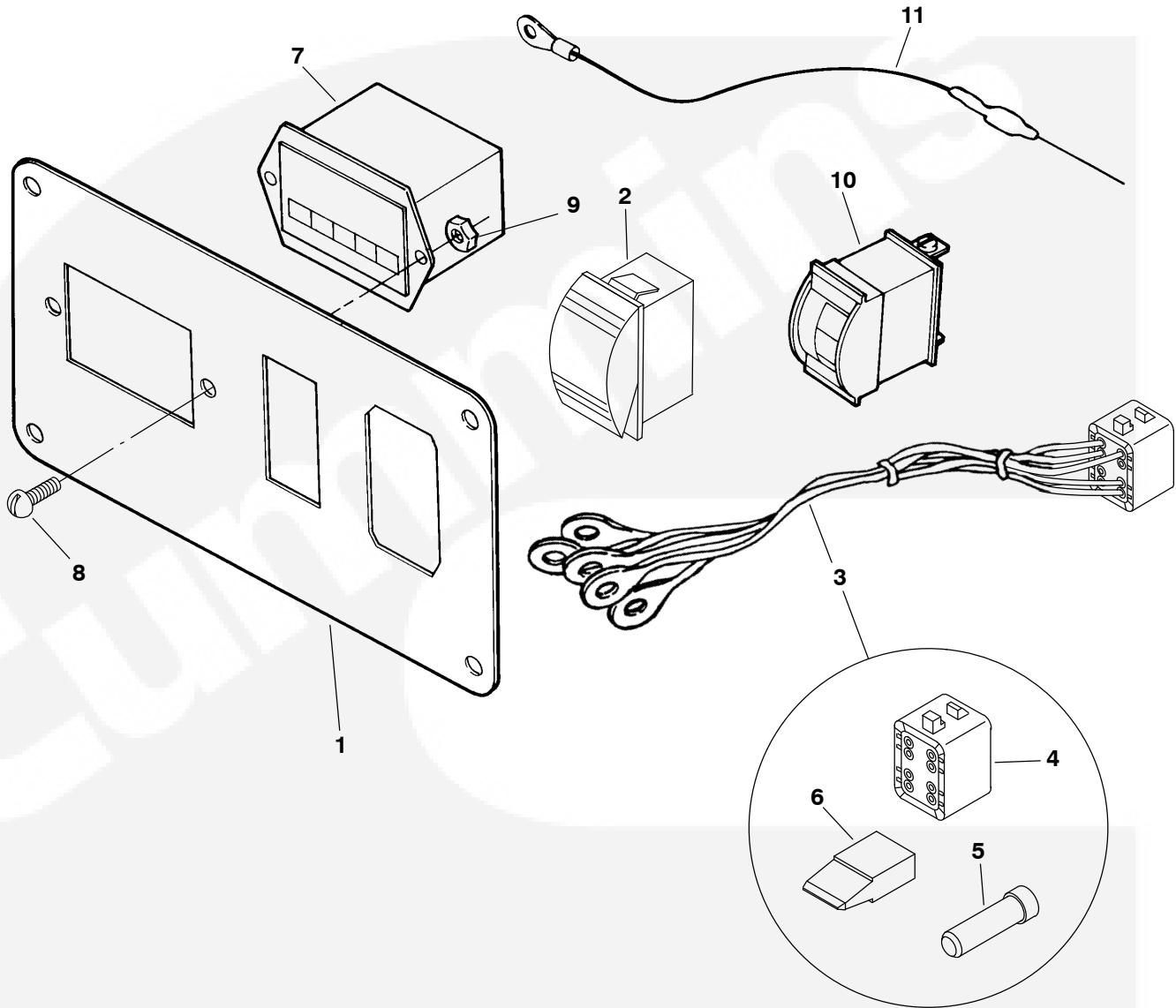
Basic Remote Control Panel (Ring Terminals)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	300-4679	1	Panel Assy, Remote 12V Sets	4	323-1591	3	*Plug, Connector
	300-4990-02	1	24V Sets	5	323-1543	1	*Wedge, Plug (8 Pin)
1	319-0491	1	Panel, Remote	6	308-0827	1	Switch, Rocker 12V Sets
2	338-3170	1	Harness, Remote Panel (Reaches From Extension Harness to Remote Panel) (Includes Parts Marked *)		308-0975	1	24V Sets
3	323-1541	1	*Plug (8 Pin)				

* - Parts Included in Remote Panel Harness.

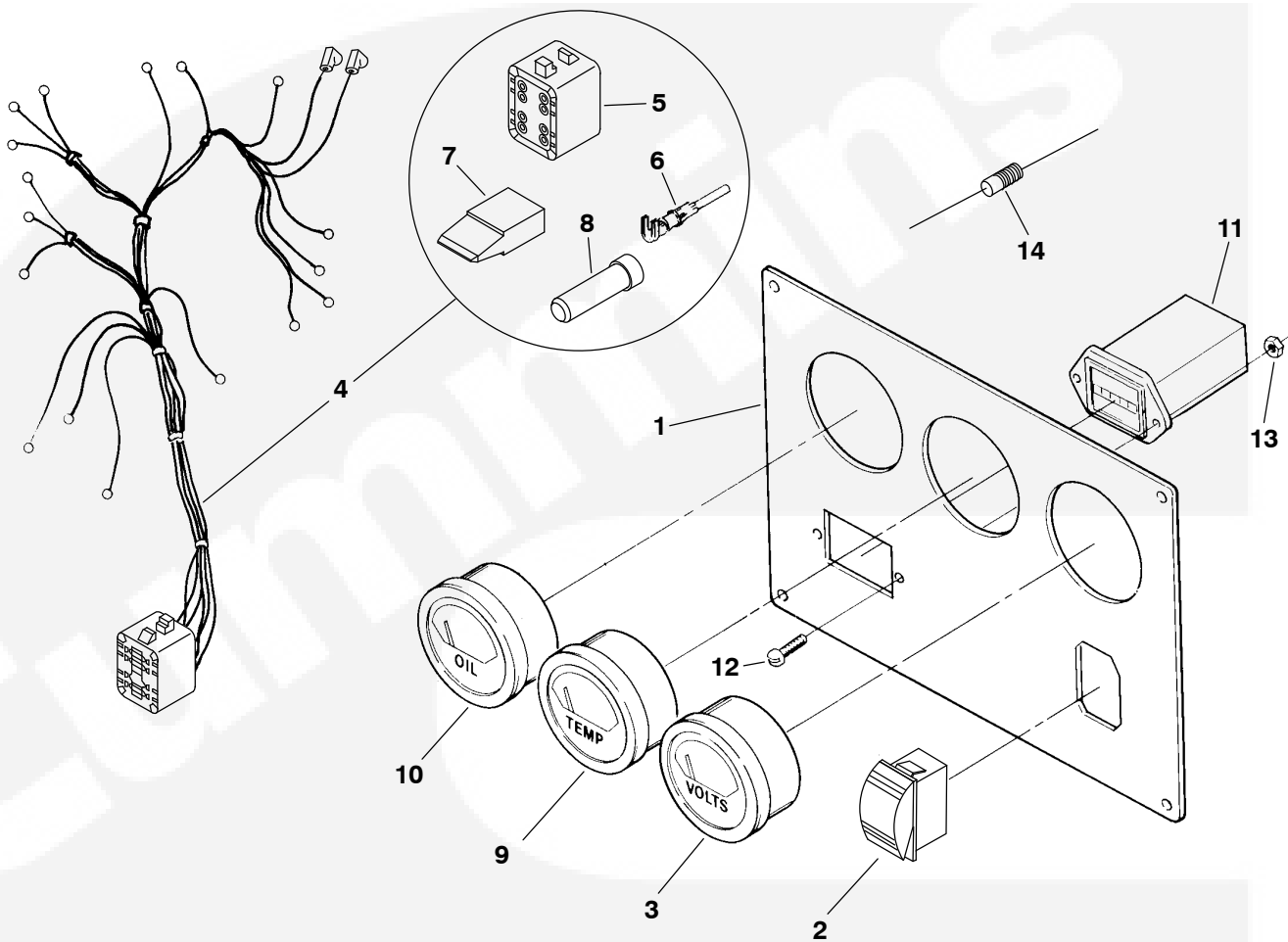
Deluxe Remote Control Panel (Ring Terminals)



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)	6	323-1543	1	*Wedge, Plug (8 Pin)
1	319-0492	1	Panel, Remote	7	302-0885	1	Meter, Running Time (M11)
2	308-0827	1	Switch, Rocker	8	815-0385	2	Screw, Round Head Machine (#6-32 x 1/2")
3	338-3170	1	Harness, Remote Panel (Reaches From Extension Harness to Remote Panel) (Includes Parts Marked *)	9	870-0183	2	Nut, Hex (#6-32)
4	323-1541	1	*Plug (8 Pin)	10	302-0888	1	Meter, Battery Voltage (M14)
5	323-1591	3	*Plug, Connector	11	359-0034	1	Diode and Lead Assy

* - Parts Included in Remote Panel Wiring Harness.

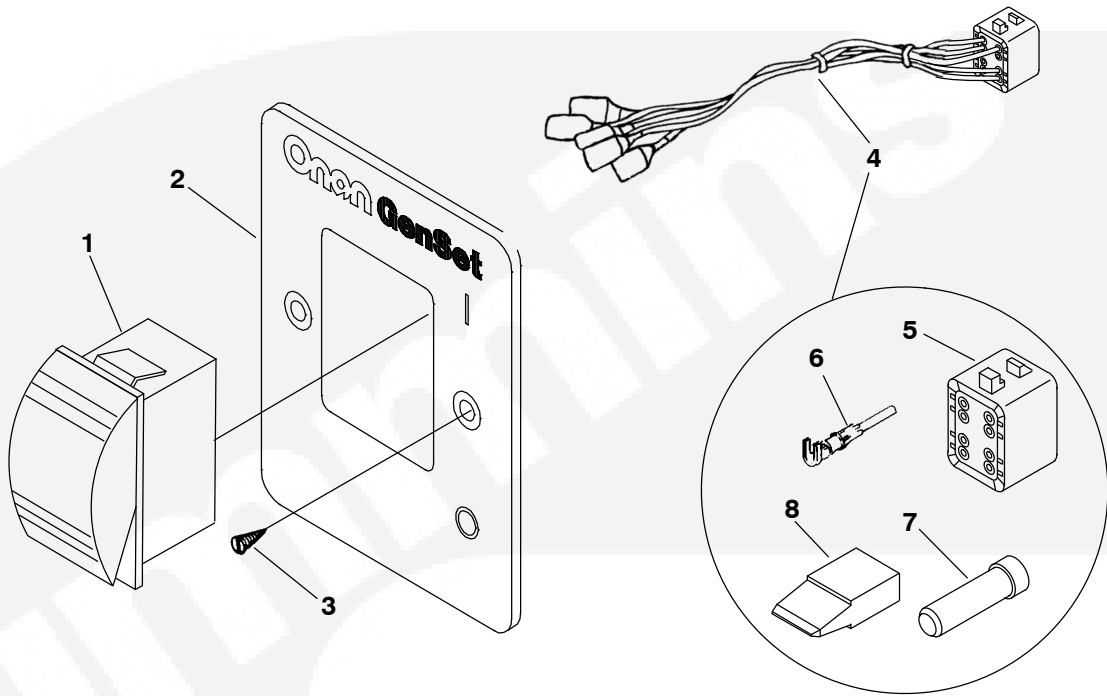
Remote Gauge Control Panel (Ring Terminals)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	300-4682	1	Panel Assy, Remote Gauge	6	323-1491	1	*Pin, Contact (Use as Required)
	300-5018-02	1	12V Sets	7	323-1543	1	*Wedge, Plug (8 Pin)
			24V Sets	8	323-1591	1	*Plug, Seal
1	319-0141	1	Panel, Remote	9	193-0351	1	Gauge, Water Temperature (M13)
2			Switch, Rocker	10	193-0352	1	Gauge, Oil Pressure (M12)
	308-0827	1	12V Sets	11	302-0885	1	Meter, Running Time (M11)
	308-0975	1	24V Sets	12	815-0385	2	Screw, Round Head Machine (#6-32 x 1/2")
3			Meter, Voltage (M14)	13	870-0183	2	Nut, Hex (#6-32)
	302-1641	1	12V Sets (8-18V)	14	193-0250	2	Resistor, Gauge (24V Only)
	302-1642	1	24V Sets (18-34V)				
4	338-3171	1	Harness, Remote Panel (Reaches From Extension Harness to Remote Panel) (Includes Parts Marked *)				
5	323-1541	1	*Plug (8 Pin)				

* - Parts Included in Remote Panel Harness.

Basic Remote Control Panel (Push-On Terminals)



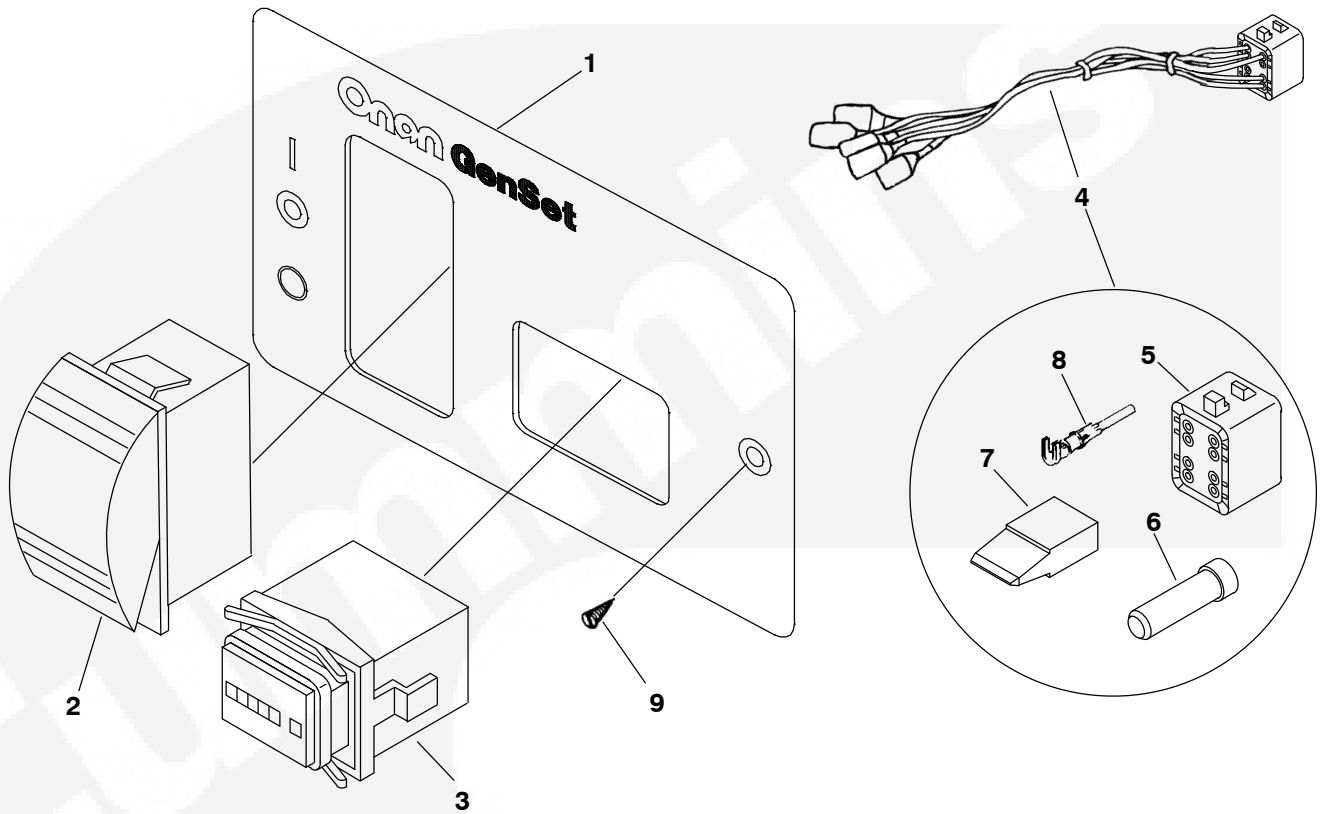
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Kit, Basic Panel
	300-4990-01	1	12V
	300-4990-02	1	24V
1			Switch, Rocker (S11)
	308-1062	1	12V
	308-1062-01	1	24V
2	319-2339-02	1	Panel, Remote (Includes Printing)
3	815-0910	2	Screw, Wood (#6 x 1)
4	338-3598	1	Harness, Remote Panel (Reaches From Extension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



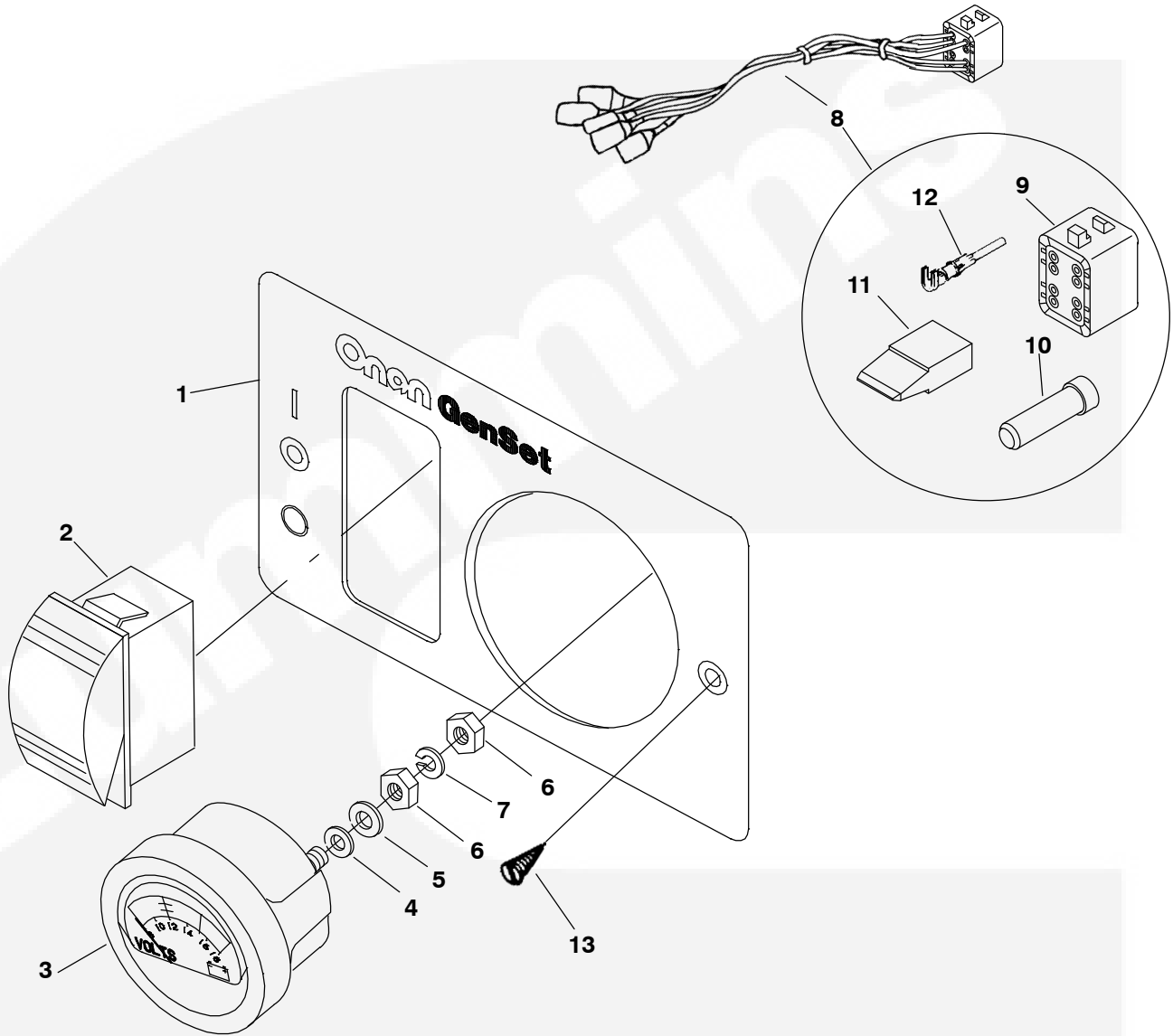
Deluxe Remote Control Panel W/Hour Meter (Push-On Terminals)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	300-4991-01	1	Kit, Deluxe Panel	5	323-1541	1	*Plug (8 Pin) (J4)
	300-4991-02	1	12V	6	323-1591	3	*Plug, Connector
1	319-6988-04	1	Panel, Remote	7	323-1543	1	*Wedge, Plug (8 Pin)
2	308-1062	1	Switch, Rocker (S11)	8	323-1492	5	*Pin, Contact
	308-1062-01	1	12V	9	815-0910	2	Screw, Wood (#6 x 1)
	308-1062-01	1	24V				
3	302-2002	1	Meter, Hour (M11)				* - Parts Included in Remote Panel Wiring Harness.
4	338-3599	1	Harness, Remote Panel (Reaches From Extension Harness to Remote Panel) (Includes Parts Marked *)				



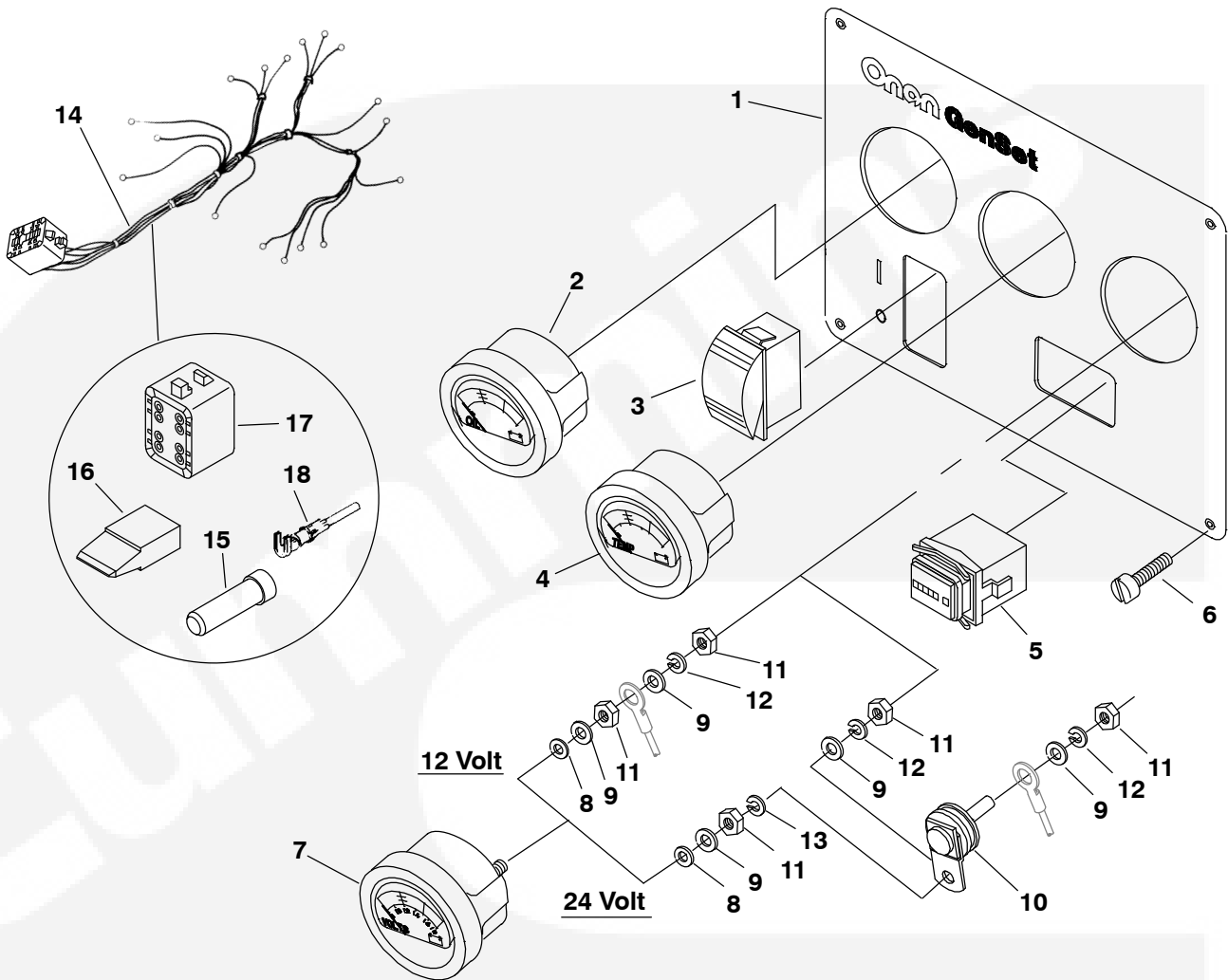
Deluxe Remote Control Panel W/Volt Meter (Push-On Terminals)



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 Extension Harness to Remote Panel) (Includes Parts Marked *)
	300-4989-02	1	24V				
1	319-6989-01	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.

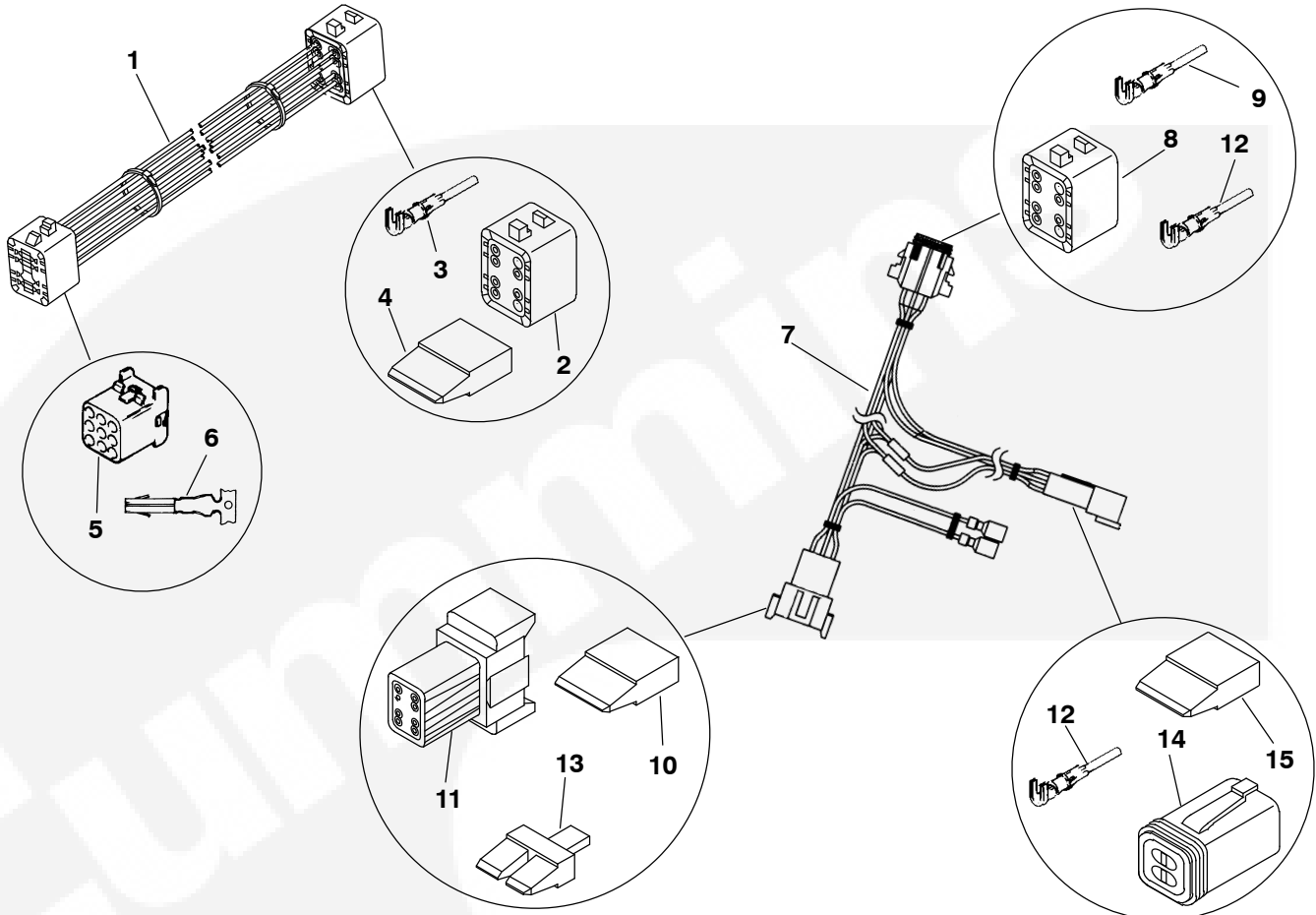
Remote Gauge Control Panel (Push-On Terminals)



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 Extension Harness to Remote Panel) (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	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			*Harness, Adapter (Includes Parts Marked °)	8	323-1541	1	+ Plug (9 Pin)
	338-3695	1	Single Circuit for On/Off /Preheat	9	323-1492	AR	+ Terminal, Socket
	338-3696	1	Two Circuits for On/Off and Preheat	10	323-1543	1	+ Wedge, Plug (8 Pin)
2	323-1541	1	° Plug (9 Pin)	11	323-1542	1	+ Receptacle (8 Pin)
3	323-1492	AR	° Terminal, Socket	12	323-1491	8	+ Terminal, Pin
4	323-1543	1	° Wedge, Plug (8 Pin)	13	323-1544	1	+ Wedge, Receptacle (8 Pin)
5	323-1325	1	° Cap, Connector	14	323-1549	1	+ Socket, Receptacle (4 Pin)
6	323-1200	AR	° Socket, Contact	15	323-1547	1	+ Wedge, Lock Receptacle (4 Pin)
7	338-3697	1	*Harness, Junction (Includes Parts Marked +)				

* - See Accessory Manual for Application Description.

° - Parts Included in Adapter Harness.

+ - Parts Included in Remote Extension Harness.



Labels, Gasket Kit

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
98-6757		1	Label, Voltage Regulator	185-5893		1	*Gasket, Bearing Case Cover
			Label, Control Front	185-6044		1	*Gasket, Oil Pan
			Spec A	185-6985		1	*Gasket, Pump Cover
98-7564		1	With Gauges	185-6960		1	*Gasket, Gearcase
98-7565		1	Without Gauges	185-6054		1	*Gasket, Head Cover
			Begin Spec B	185-6018		10	*Seal, Valve Stem
98-7564		1	With Gauges	185-6050		1	*Gasket, Cylinder Head
98-7565		1	Without Gauges	185-2461		1	*Seal, Stop Lever Oil
			Label, Control Back	185-2338		8	*Seal, O'Ring
98-7566		1	Spec A	185-5849		1	*Gasket, Oil Pump
98-7566		1	Begin Spec B	185-2284		2	*Seal, Oil
			Label, Control Top	185-5495		3	*Gasket, Drain Plug
98-7567		1	Spec A	185-6180		1	*Gasket, Speed Control Plate
98-7567		1	Begin Spec B	185-5999		1	*Gasket, Water Flange
98-7246		1	Label, Dual Gauge	185-6004		1	*Gasket, Thermostat Cover
98-6953		1	Label, Reconnection Chart	185-5880		1	*Gasket, Water Return Flange
98-5948		1	Decal, Front Panel – Basic	132-0346		1	*Gasket, Water Pump
			Remote Control	132-0293		1	*O'Ring, Water Pump
98-5945		1	Decal, Rear Panel – Basic	185-7065		1	*Gasket, Intake Manifold
			Remote Control	154-2915		5	*Gasket, Exhaust Manifold
98-5947		1	Decal, Front Panel – Deluxe	155-3061		1	*Gasket, Mixer
			Remote Control	155-2975		1	*Gasket, Riser
98-5944		1	Decal, Rear Panel – Deluxe	185-6717		2	*Gasket, Breather
			Remote Control	185-6125		1	*Gasket, Oil Fill
98-5803		1	Decal, Front Panel – Remote	185-5337		5	*Gasket, Injection Nozzle
			Gauge Control	185-2578		2	*Gasket, Injection Pump
98-5761		1	Decal, Rear Panel – Remote	185-7021		1	*Seal Assy, Water Pump
			Gauge Control	185-2349		2	*Seal, Oil Fill O'Ring
98-2235-02		1	Label, Ground	185-5869		2	*Seal, Gearcase Oil
98-4798-01		1	Label, Warning (Rotating Parts)	185-5870		1	*Seal, Gearcase Oil
			(Unhoused Sets)	509-0254		1	*Seal, Oil Pickup
			Label, No Step	185-2347		1	*O'Ring, Governor
98-6996		1	Unhoused Sets	185-2095		2	*Seal, O'Ring
98-6996		2	Housed Sets	185-6155		5	*O'Ring, Injection Pump
98-6074-02		1	Label, Warning (Operation)	185-6141		5	*Gasket, Delivery Valve
98-5347		1	Label, Danger (Voltage)	185-6154		2	*Gasket, Injection Pump
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98-5161		1	Label, Coolant (Housed Sets)	185-6982		1	*Gasket, Cover
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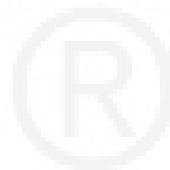
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