



Parts Manual

Cummins **Onan**

Performance you rely on.™



Hybrid Quiet Diesel Power System HQDSA

Power Unit HQDPC (Beginning Spec C)

Power Unit HQDPA (Prior to Spec C)

Inverter Charger HQDVA

Transfer Switch HQDTA

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 Cummins/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 Cummins/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!



Servicing and replacement of MARINE CRITICAL PARTS must be carried out by persons trained and experienced with marine gasoline engine-generator safety requirements!

Introduction

This parts catalog applies to the Hybrid Power System set listed below. Parts are arranged in groups of related items and each illustrated part is defined by a reference number corresponding to the same reference number in the parts list. Parts illustrations are typical. Using the model and specification number from your generator set nameplate, select parts that apply to your set. Right and left sides are determined by facing the generator end (front) of the set.

System Data Table

Model Identification	Unit Ident.	Watts			
810HQDSA-6028A/B	Sys. Hybrid QD	10kW			
8HQDPA-5480B	Pwr Unit	8kW			
10HQDVA-5940A	Inverter	3kW			
HQDTA50-6027A	Transfer SW				

* – The specification number denotes customer requested options or deviations from a standard (1A, 1B, etc.) model. The specification letter advances (A, to B, to C, etc.) with major manufacturing changes.

Index

Arm, Rocker, **18**
Assembly, Inverter Replacement , **40**
Assembly, Transfer Switch Replacement, **39**
Assy Bearing ,Main, **9**
Assy Panel, Back, **33**
Assy, Bearing Case Cover, **9**
Assy, Bearing Case Main, **9**
Assy, Cover Cylinder Head, **21 , 22**
Assy, Crankshaft, **6**
Assy, Exhaust (Flexible Pipe), **35**
Assy, Fan (Generator), **41**
Assy, Thermostat, **20**

Baffle, Air (Top), **34**
Ball, Crankshaft, **6**
Ball, Injection Pump Gear, **14**
Ball, Valve Seat, **23**
Band, Hose Clamp (1.06 to 2"), **34**
Base, Skid, **37**
Bearing Main, **9**
Bearing, Crankshaft Thrust, **6**
Bearing, Fuel Camshaft, **14**
Bearing, Water Pump Ball, **24**
Belt, Drive, **27**
Block, Cylinder, **5**
Block, Fuse, **44**
Block, Terminal (02, **37**
Bolt, Flywheel (W/ Engine), **41**
Bracket, Fuel Pump, **36**
Bracket, Heat Exchanger, **32**
Bracket, Rocker Arm, **18**
Bracket, Water Pump, **32**
Bushing, Connecting Rod, **6**
Bushing, Crankshaft, **6**
Bushing, Idle Gear, **7**

Camshaft, **7**

Camshaft, Fuel, **14**
Cap, Cylinder Block Sealing, **5**
Cap, Cylinder Head Sealing, **15**
Cap, Fill, **33**
Cap, Speed Control, **12**
Cap, Valve, **18**
Case, Governor Ball, **14**
Clamp, Hose, **31 , 32 , 33**
Clamp, Isolator (Flat), **35**
Clamp, Isolator (U-Shaped), **35**
Cock, Oil Drain, **5**
Collar, **25**
Collar, Crankshaft, **6**
Collet, Valve Spring, **18**
Comp. Plate, Speed, **25**
Components, Engine Coolant Pump, **24**
Components, Injection Nozzle, **17**
Components, Inverter, **40**
Control, Speed, **12 , 25**
Cord, Glow Plug, **16**
Coupling, Union, **32**
Cover, Access, **38**
Cover, Air Cleaner, **34**
Cover, Air Element, **34**
Cover, Bearing Case, **9**
Cover, Bearing Plate, **8**
Cover, Breather, **21**
Cover, Enclosure, **38 , 40**
Cover, Enclosure AC, **38**
Cover, Flywheel, **13**
Cover, Fuel Camshaft, **5**
Cover, Gearcase Hole, **23**
Cover, Governor, **26**
Cover, Heat Exchanger, **32**
Cover, Hole, **14**
Cover, Main Bearing, **8**
Cover, Transfer Switch, **39**
Cover, Valve, **21 , 22**
Cover, Water Temperature Thermostat, **19 , 20**
Crankshaft, **6**

Dipstick, **31**

Index

Display, Remote, **45**

Door Assy, Maintenance, **37**

Element, Air Cleaner, **34**

Enclosure, **38**

Engine, Replacement, **5**

Exchanger, Heat, **32**

Exhaust, **35**

Exhaust, Pipe Seal , **35**

Eye, Lifting, **15**

Fan, Heat Exchanger, **32**

Fan, Inverter, **40**

Filter, Fuel, **36**

Filter, Oil, **23 , 30**

Fitting, Bulkhead, **36**

Flange, Component Water Pump, **24**

Flange, Outlet Water Pump, **19 , 20**

Fuse, 25Amp (Glow Plug), **42**

Fuse, 25Amp (Starter), **42**

Fuse, 7.5Amp (Coolant Pump), **42**

Fuse, Shunt (2 Amp), **44**

Fuse, Shunt (400 Amp), **44**

Gasket, **14**

Gasket, Bearing Case, **9**

Gasket, Bearing Plate Cover, **8**

Gasket, Case Cover, **9**

Gasket, Cylinder Head, **15**

Gasket, Exhaust Manifold, **35**

Gasket, Gearcase, **23**

Gasket, Gearcase Hole Cover, **23**

Gasket, Head Cover, **21 , 22**

Gasket, Hole Cover, **14**

Gasket, Injector Nozzle, **16**

Gasket, Inlet Manifold, **28**

Gasket, Oil Filter Flange, **23**

Gasket, Oil Pan, **30**

Gasket, Oil Pump, **5**

Gasket, Speed Control, **12**

Gasket, Thermostat, **20**

Gasket, Water Flange, **19**

Gasket, Water Pump, **24**

Gasket, Water Temperature Thermostat, **19**

Gear, Camshaft, **7**

Gear, Crankshaft, **6**

Gear, Idle, **7**

Gear, Injection Pump, **14**

Gear, Oil Pump Drive, **5**

Gearcase, **23**

Generator, **41**

Guard, Fan, **37**

Guide, Valve, **15**

Harness, AC, **42**

Harness, Battery, **42**

Harnesses, **42 , 43**

Head, Cylinder, **15**

Heat, Exchanger, **32**

Hinged, Door, **37**

Holder Assy, Nozzle, **17**

Holder, Fork Lever, **11**

Holder, Main Bearing, **8 , 9**

Holder, Nozzle, **16**

Hose, Breather, **33**

Hose, Coolant, **32**

Hose, Engine (Lower), **33**

Hose, Fuel, **36**

Hose, Oil Fill, **31**

Hose, Radiator (Upper), **33**

House, Coolant (Inverter), **32**

Housing, Air Cleaner, **34**

Housing, Fan, **32 , 34**

Housing, Flywheel, **13**

Index

- Impeller, Water Pump, **24**
- Insulation, Baffle (Inlet), **34**
- Insulation, Door (Inlet), **32**
- Insulation, Panel (Top), **38**
- Intake, Air, **34**
- Isolator, Engine, **37**
- Isolator, Muffler, **35**

- Key, Camshaft Feather, **7**
- Key, Crankshaft Feather, **6**
- Key, Cylinder Block Feather, **5**
- Key, Fuel Camshaft Feather, **14**
- Kit, Accessory Harness (Ext Wake), **43**
- Kit, Control Harness (Battery Shunt 15'), **43**
- Kit, Control Harness (Transfer Switch Load Demand), **43**
- Kit, Holder Nozzle, **16**
- Kit, Power Unit Harness (30'), **43**
- Kit, Power Unit Harness (50'), **43**
- Kit, Power Unit Harness (60'), **43**
- Kit, Remote Display, **45**
- Kit, Remote Display Harness (25'), **43**
- Kit, Remote Display Harness (50'), **43**
- Kit, Shunt, **44**
- Kit, Transfer Switch Harness (15'), **43**
- Kit, Transfer Switch Harness (30'), **43**

- Label, Information (Package 1–5), **46**
- Label, Cool Level, **46**
- Label, Coolant / Oil Fill, **46**
- Label, Coolant Connections, **46**
- Label, Fuel Attachment, **46**
- Label, Ground, **46**
- Label, Hazard Voltage, **46**
- Label, Information, **46**
- Label, Information (Connector Led), **46**
- Label, Information (Package 1–11), **46**
- Label, Information (Pos Neg), **46**

- Label, Information (Stripped Wire), **46**
- Label, Installation Instructions, **46**
- Label, Multiple Warnings, **46**
- Label, Neutral/ Line, **46**
- Label, Patent Information, **46**
- Label, Service Information, **46**
- Label, Terminal Block Wiring, **46**
- Label, Warning (Hose Connector), **46**
- Label, Warning (Inverter), **46**
- Label, Warning (Transfer Switch HQDTA), **46**
- Labels, **46**
- Lever, Engine Stop, **25**
- Lever, Fork, **10 , 11**
- Lever, Governor, **25**

- Manifold, Inlet, **28 , 29**
- Muffler, Exhaust, **35**

- Nipple, Gearcase Hex Pipe, **23**
- Nozzle, Injection, **16**
- Nozzle, Injection Component, **17**

- O'Ring, Cylinder Block, **5**
- O'Ring, Cylinder Head, **15**
- O'Ring, Gearcase, **23**
- O'Ring, Oil Slinger, **6**
- Oil, Pan, **30**
- Outlet, Water, **19 , 20**

- Panel, Curb, **38**
- Panel, End Cap, **38**
- Panel, Rail, **38**
- PCB Assy, (ECM), **42**
- Pin, Cylinder Block Hollow, **5**
- Pin, Cylinder Block Straight, **5**

Index

Pin, Gearcase Spring, **23**
Pin, Governor Spring, **10 , 11**
Pin, Piston, **6**
Pipe, Breather, **28**
Pipe, Injection, **16**
Pipe, Overflow, **16**
Pipe, Water Pump Return, **24**
Pipe, Water Return, **19 , 20 , 21**
Piston, **6**
Plate, Camshaft Retaining, **7**
Plate, Fuel Camshaft Retaining, **14**
Plate, Speed Control, **25**
Plug, Cylinder Block, **5**
Plug, Cylinder Head Pipe, **15**
Plug, Gearcase Pipe, **23**
Plug, Glow, **16**
Pulley, Drive, **27**
Pulley, Fan, **27**
Pulley, Water Pump, **27**
Pump, Engine Coolant, **24**
Pump, Fuel, **36**
Pump, Injection, **14**
Pump, Inverter Coolant, **32**
Pump, Oil, **5**

Radiator, **33**
Resonator, Intake, **34**
Retainer, Valve Spring, **18**
Ring, Idle Gear Retaining, **7**
Ring, Piston Pin Retaining, **6**
Ring, Retainer, **26**
Rod, Camshaft Push, **7**
Rod, Connecting, **6**
Rod, Injection Nozzle Push, **17**
Rotor Assy, Generator, **41**
Rotor, Governor, **26**
Seal, Air Cleaner, **34**
Seal, Bearing Plate Cover Oil, **8**
Seal, Fuel Pump, **36**
Seal, Gearcase Oil, **23**
Seal, Injection Nozzle Heat, **16**
Seal, Oil, **9**
Seal, Oil Drain, **31**
Seal, Valve Stem, **18**
Seal, Water Pump, **24**
Seat, Valve, **23**
Sender, Water Temperature, **19 , 20**
Sensor, Temperature, **44**
Set, Crankshaft Bearing, **6**
Set, Piston Ring, **6**
Shaft, Governor, **10 , 11**
Shaft, Idle Gear, **7**
Shaft, Lever, **25**
Shaft, Rocker Arm, **18**
Shield, Breather Oil, **21**
Shim, Injection Pump, **14**
Shunt, Battery, **44**
Sleeve, Crankshaft, **6**
Sleeve, Governor, **14**
Slinger, Oil, **6**
Spacer, Idle Gear, **7**
Spacer, Injection Nozzle, **17**
Spring, Fork Lever Governor, **10 , 11**
Spring, Governor, **26**
Spring, Injection Nozzle, **17**
Spring, Rocker Arm, **18**
Spring, Valve, **18**
Spring, Valve Seat, **23**
Starter, **13**
Stator, Wound, **26 , 41**
Switch, Oil Pressure, **5**
Switch, Rocker, **42**
Switch, Transfer, **39**
System, Cooling, **33**
System, Fuel, **36**
System, Mounting , **37**
System, Oil, **30 , 31**

Tank, Coolant, **32**

Index

Tappet, Camshaft, **7**

Thermostat, Water Temperature, **19**

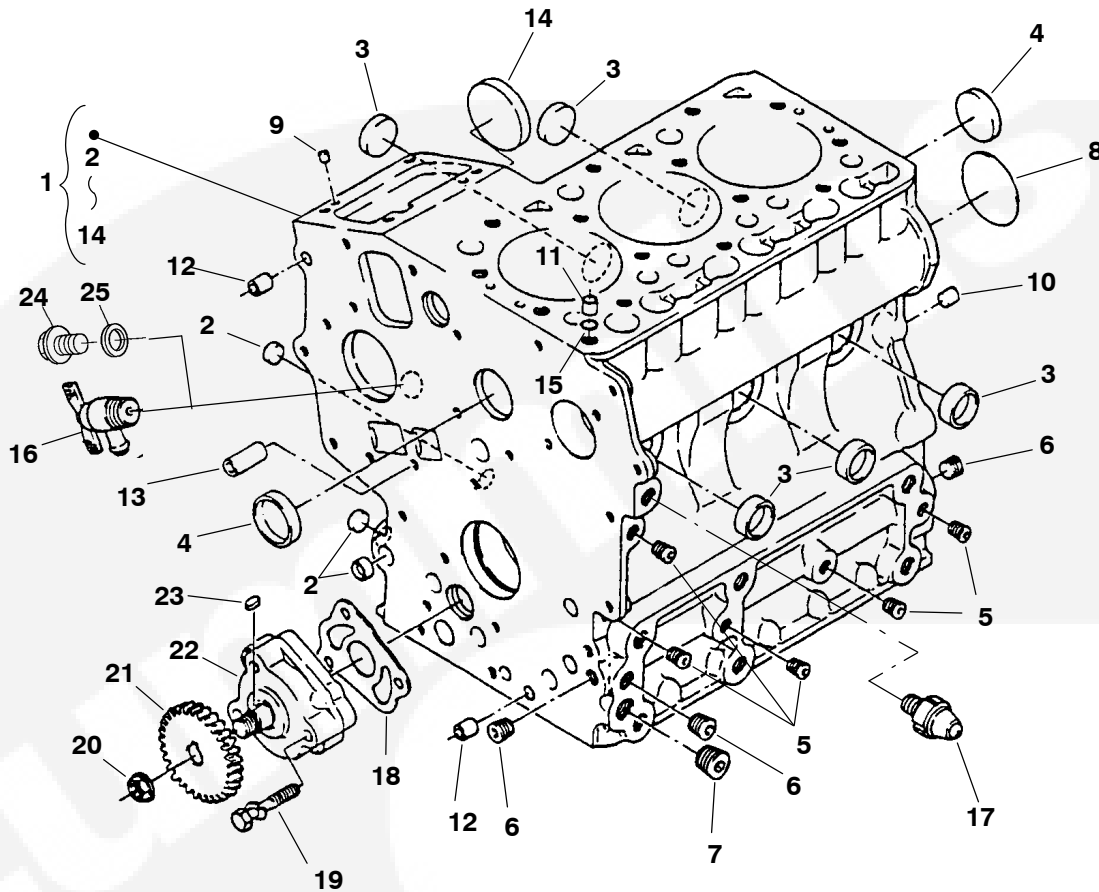
Trough, Oil Dran, **36**

Valve, Exhaust, **18**

Valve, Intake, **18**



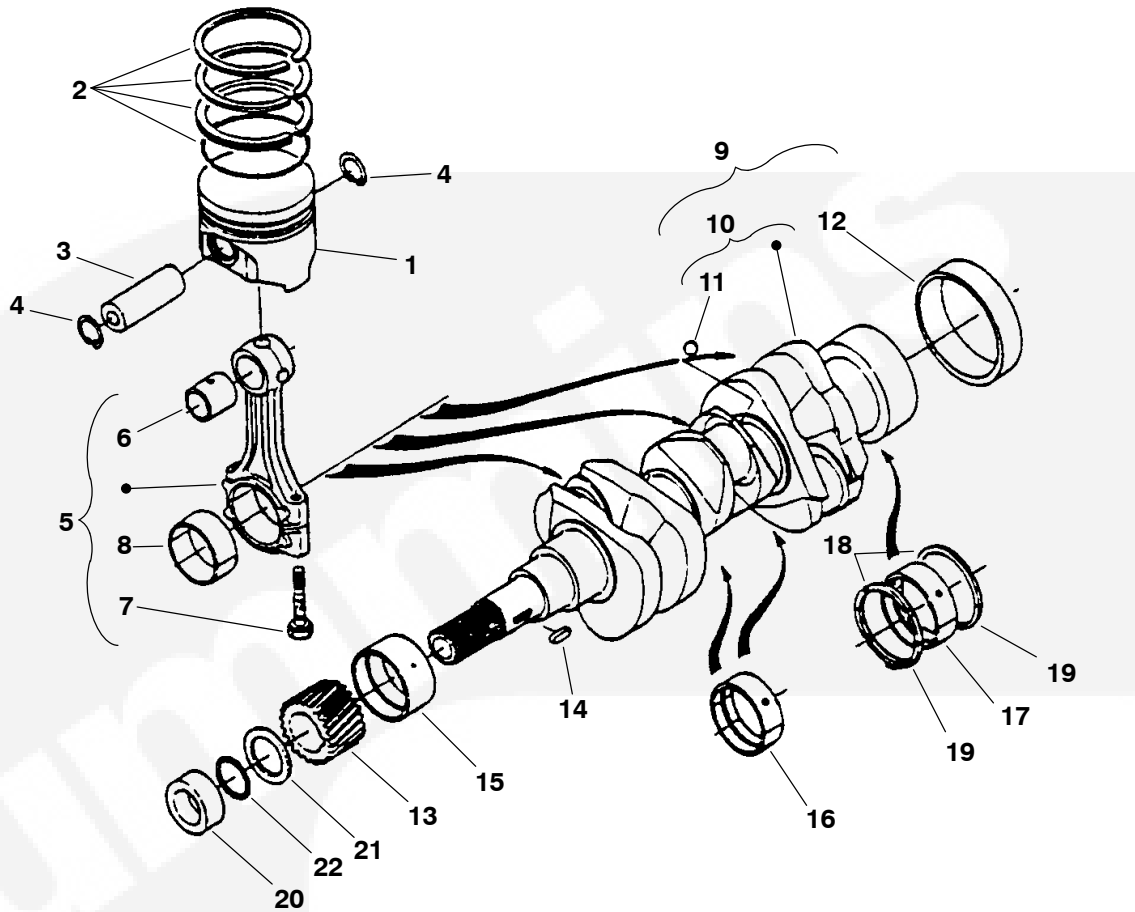
Cylinder Block



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Engine, Replacement	13	185-5488	2	*Pin, Hollow
	100-3957	1	Spec A-B	14	185-5489	1	*Cover, Fuel Camshaft (Spec A-B)
	100-4111	1	Begin Spec C	15	185-2095	1	*O'Ring (Spec A-B)
1		1	Block Assy, Cylinder (Includes Parts Marked *)	16	185-5490	1	*Cock, Drain (Spec A-B)
	181-9183	1	Spec A-B	17	185-5492	1	Switch, Oil Pressure (S15)
	110-4125	1	Begin Spec C	18	185-5413	1	*Gasket, Oil Pump
2	185-5482	3	*Cap, Sealing	19	185-5491	3	*Screw, Hex Head Cap
3	185-5483	5	*Cap, Sealing	20	185-5416	1	*Nut, Flange Hex
4	185-5484	2	*Cap, Sealing	21	185-5414	1	*Gear, Oil Pump Drive
5	185-2188	5	*Plug, Pipe	22	181-9165	1	*Pump, Oil
6	185-2233	3	*Plug, Pipe	23	185-5415	1	*Key, Feather
7	185-2234	1	*Plug, Pipe	24	181-9022	1	*Bolt, Plug (Spec C)
8	185-5485	1	*Plug	25	509-0549	1	*Washer, Oil Seal (Spec C)
9	185-5486	2	*Pin, Straight				
10	185-5487	2	*Pin, Straight				
11	185-2094	1	*Pin, Hollow				
12	185-2115	2	*Pin, Hollow				

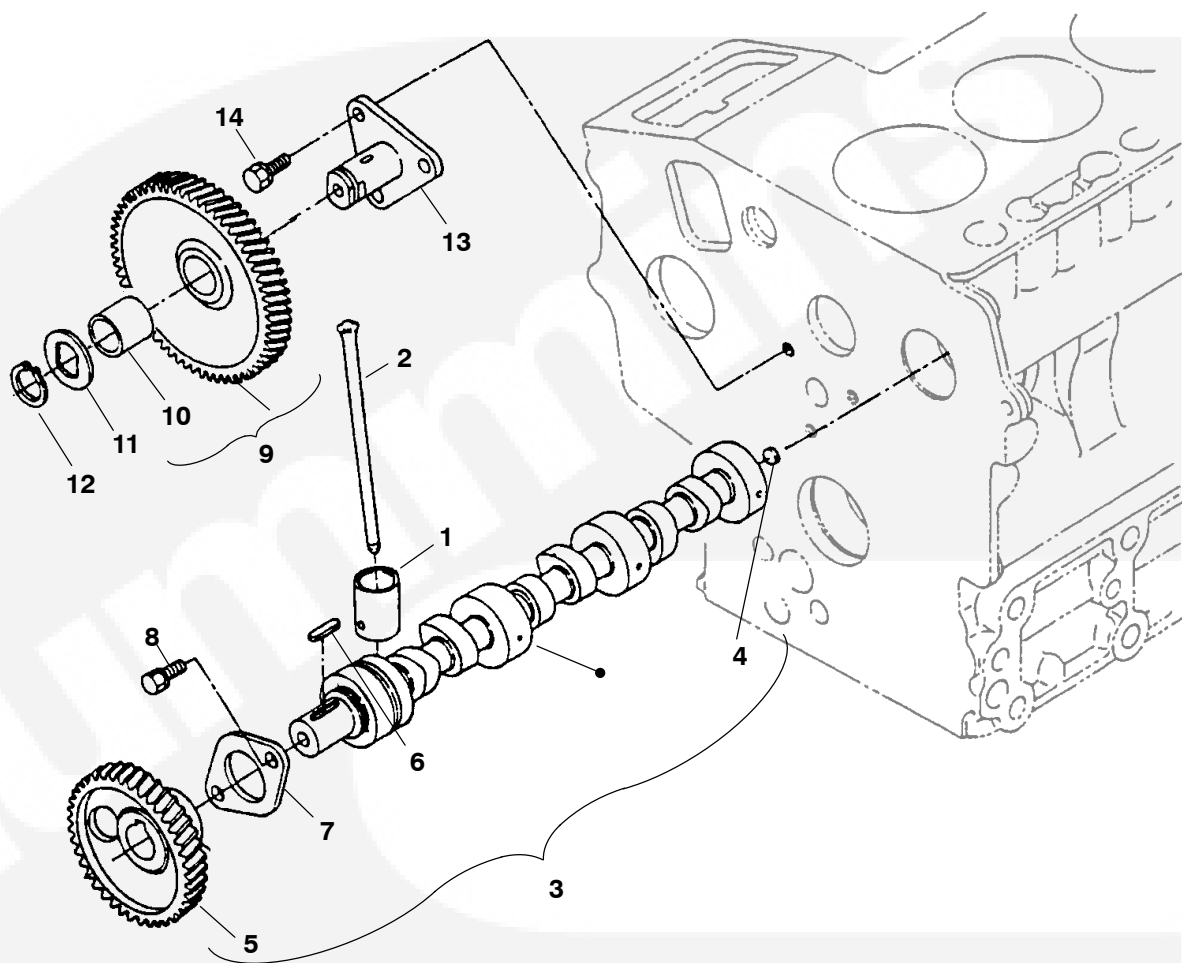
* - Parts Included in Cylinder Block Assy.
Power Unit Replacement 8HQDPA-6329B

Crankshaft



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Piston	15			Bushing, Crankshaft
	112-0332	3	Standard		185-5577	1	Standard
	185-5350	3	+ 0.25 mm		185-5578	1	- 0.20 mm
2			Set, Piston Ring		185-5579	1	- 0.40 mm
	185-7076	3	Standard	16			Set, Bearing
	185-7386	3	+ 0.25 mm		185-5581	2	Standard
3	185-5568	3	Pin, Piston		185-5360	2	- 0.20 mm
4	185-2016	6	Ring, Retaining		185-5361	2	- 0.40 mm
5	181-9162	3	Rod, Connecting (Includes Bushings and Bolt)	17			Set, Bearing
6	508-1255	3	Bushing, Connecting Rod		185-5580	2	Standard
7	185-5570	6	Bolt, Connecting Rod		185-5356	2	- 0.20 mm
8			Bushing, Connecting Rod		185-5357	2	- 0.40 mm
	104-2174	3	Standard	18			Bearing, Thrust
	185-5572	3	- 0.20 mm		185-2022	2	Standard
	185-5573	3	- 0.40 mm		185-2028	2	+ 0.20 mm
9	181-9179	1	Assy, Crankshaft (Includes Parts Marked *)		185-2029	2	+ 0.40 mm
10	185-7415	1	*Crankshaft (Includes Ball and Sleeve)	19			Bearing, Thrust
11	185-5575	3	*Ball		185-2023	2	Standard
12	185-2033	1	*Sleeve		104-2169	2	+ 0.20 mm
13	185-5576	1	Gear, Crankshaft		185-2031	2	+ 0.40 mm
14	185-2353	1	Key, Feather	20	185-7407	1	Collar
				21	185-5583	1	Slinger, Oil
				22	509-0380	1	O'Ring

Camshaft

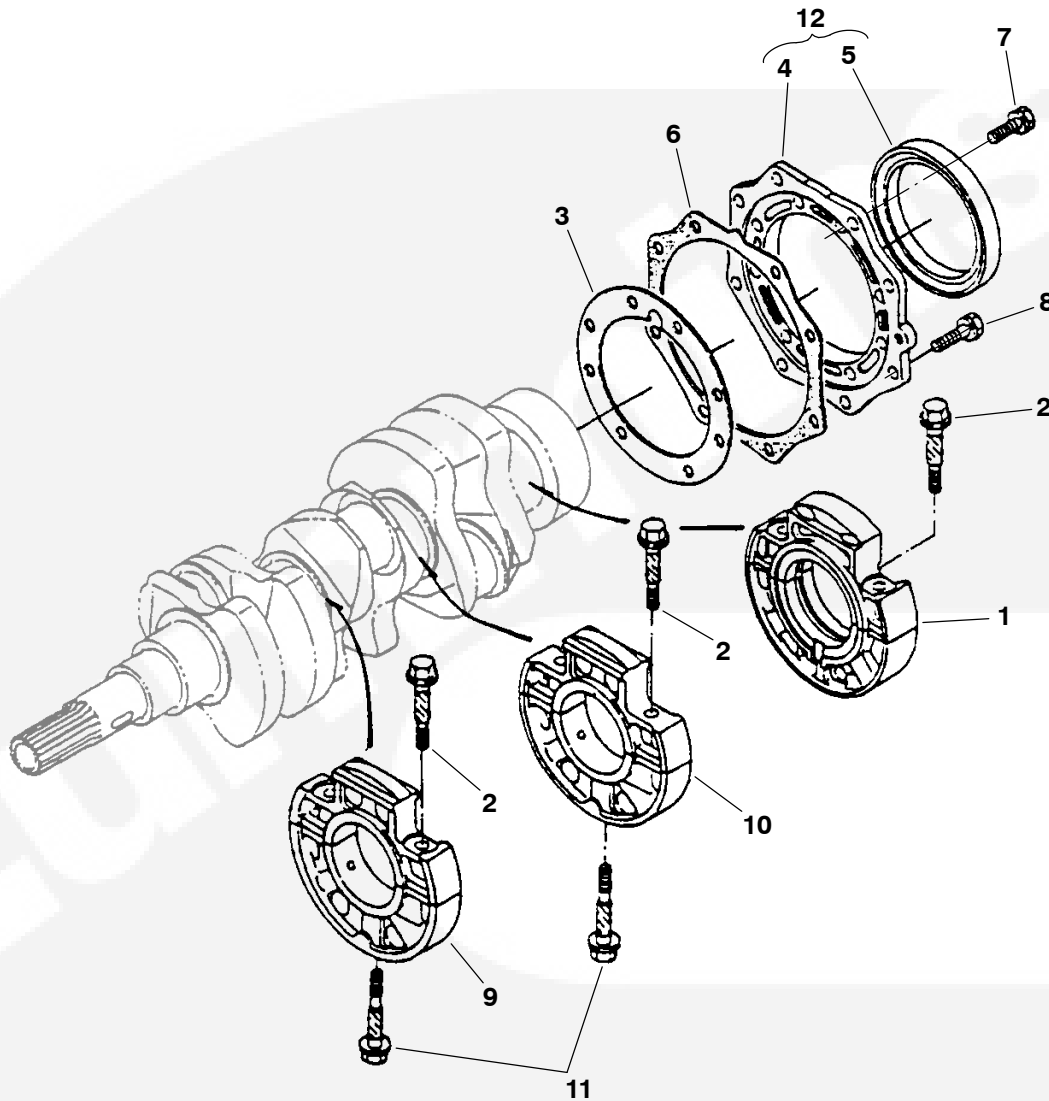


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	181-9159	6	Tappet
2	185-5555	6	Rod, Push
3	185-7074	1	Camshaft Assy (Includes Parts Marked *)
4	185-5924	1	*Bearing, Ball
5	185-7075	1	*Gear, Camshaft
6	185-5560	1	*Key, Feather
7	185-5561	1	*Plate, Retaining
8	185-2380	2	Screw, Hex Washer Head W/Lock Cap (M6 x 12mm)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
9	185-5562	1	Gear, Idle (Includes Bushing)
10	185-7385	1	Bushing, Idle Gear
11	185-5563	1	Spacer
12	185-5564	1	Ring, Retaining
13	185-5565	1	Shaft, Idle Gear
14	185-2387	3	Screw, Hex Washer Head Cap W/ Lock (M6 x 14mm)

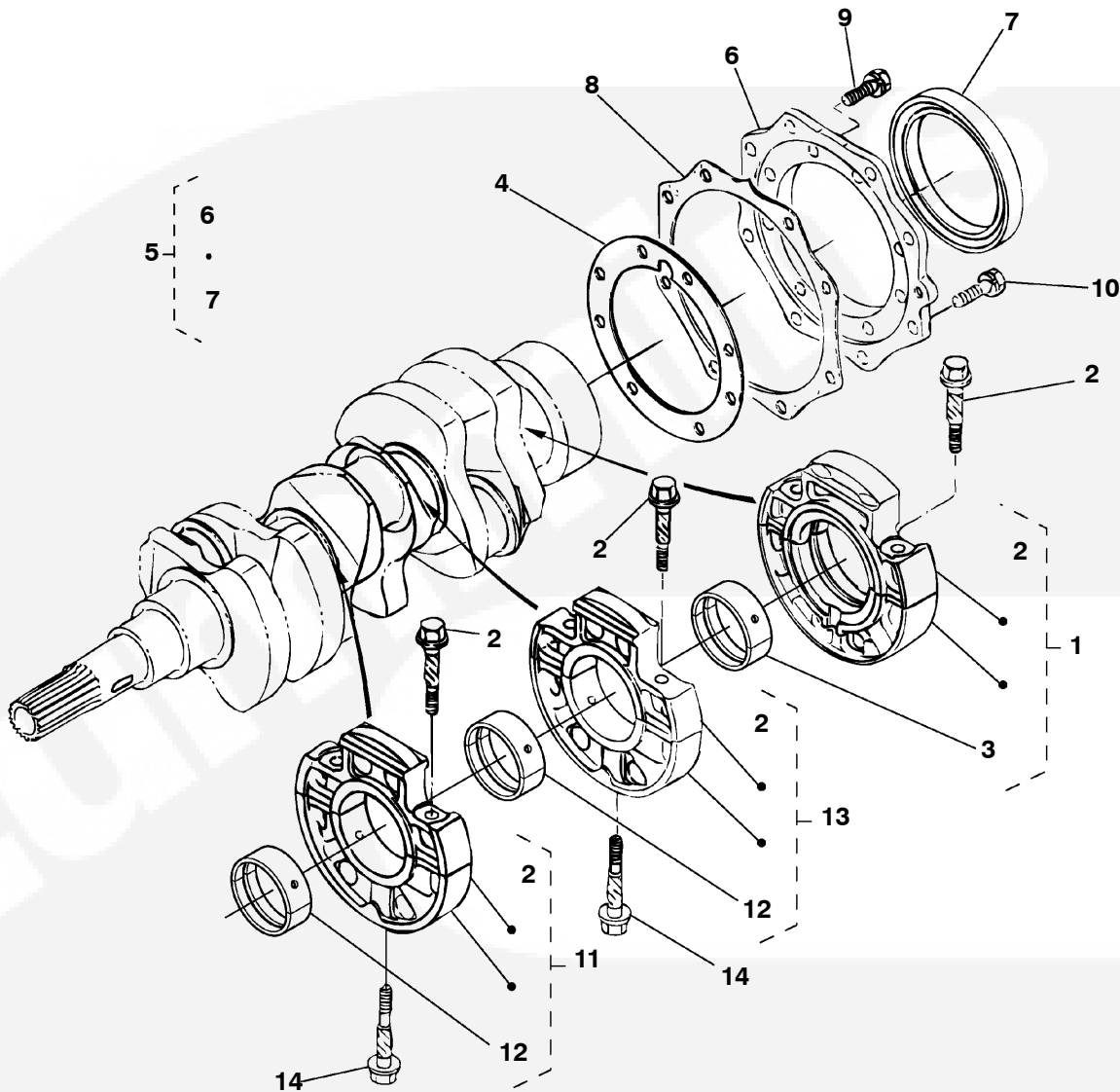
* - Parts Included in Camshaft Assy.

Main Bearing Holders (Spec A-B)



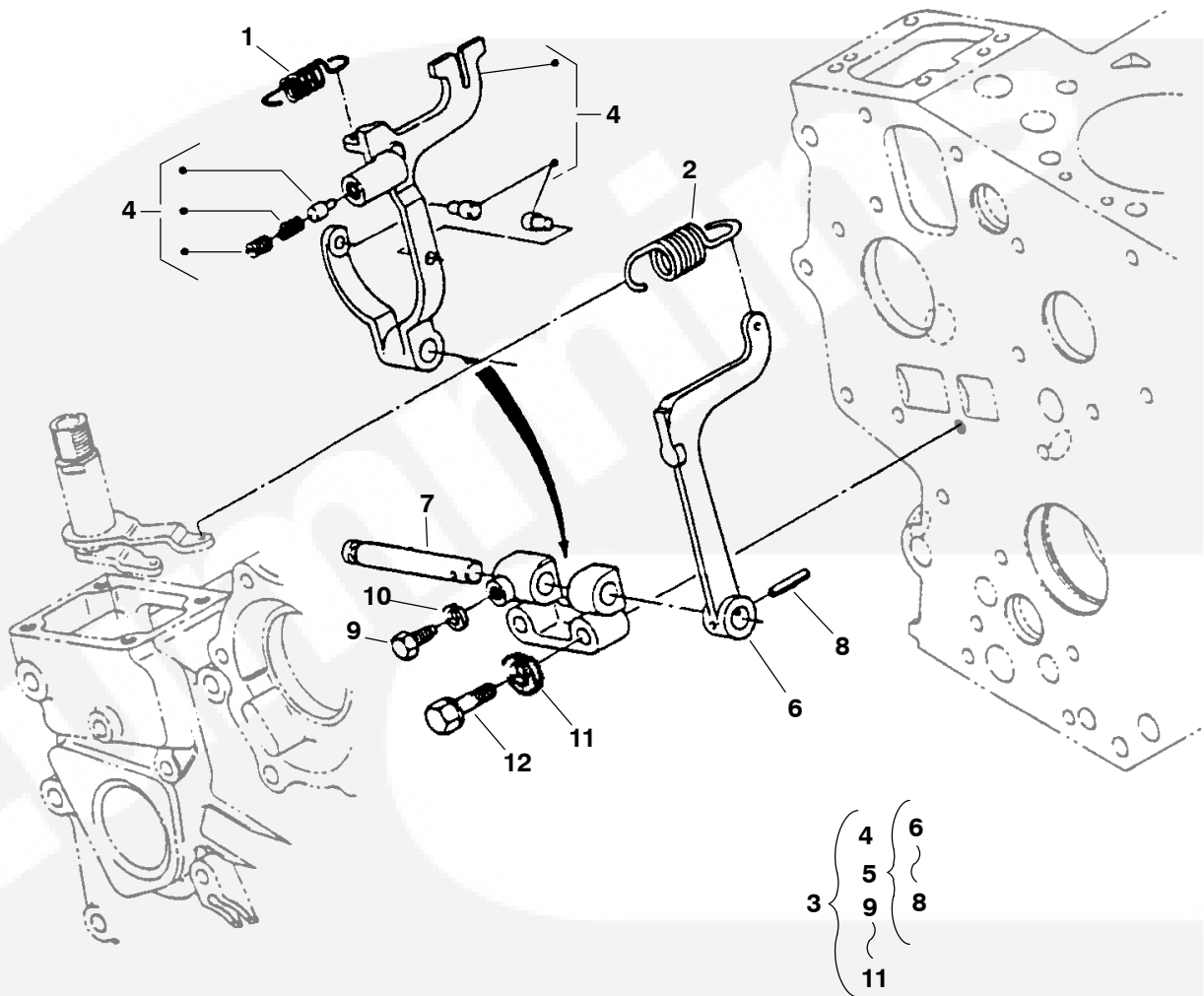
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-7072	1	Holder, Main Rear Bearing	8	185-2559	8	Screw, Hex Head Cap
2	185-5515	6	Screw, Hex Head Cap	9	185-5517	1	Holder, Main Front Bearing
3	185-5438	1	Gasket	10	185-5808	1	Holder, Main Center Bearing
4	185-5516	1	Cover, Bearing Plate	11	185-5519	2	Bolt, Bearing Case
5	185-5437	1	Seal, Oil	12	185-7073	1	Cover Assy, Main Bearing Case (Includes Cover and Seal)
6	185-7383	1	Gasket				
7	185-2390	8	Screw, Hex Head W/ Lock Cap Washer (M6 x 20mm)				

Main Bearing Holders (Begin Spec C)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	232-4193	1	Assy Bearing ,Main	8	101-0872	1	Gasket, Case Cover
2	185-5515	6	Screw, Hex Head Cap	9	185-2390	8	Bolt, Bearing Case
3	185-5580	1	Bearing Main	10	185-2559	8	Bolt, Bearing Case
4	185-5438	1	Gasket, Bearing Case	11	232-4192	1	Assy, Bearing Case Main
5	185-7073	1	Assy, Bearing Case Cover	12	185-5581	2	Bearing Main
6	185-5516	1	Cover, Bearing Case	13	16851-0705-0	1	Holder, Main Center Bearing
7	185-5437	1	Seal, Oil	14	185-5519	2	Bolt, Bearing Case

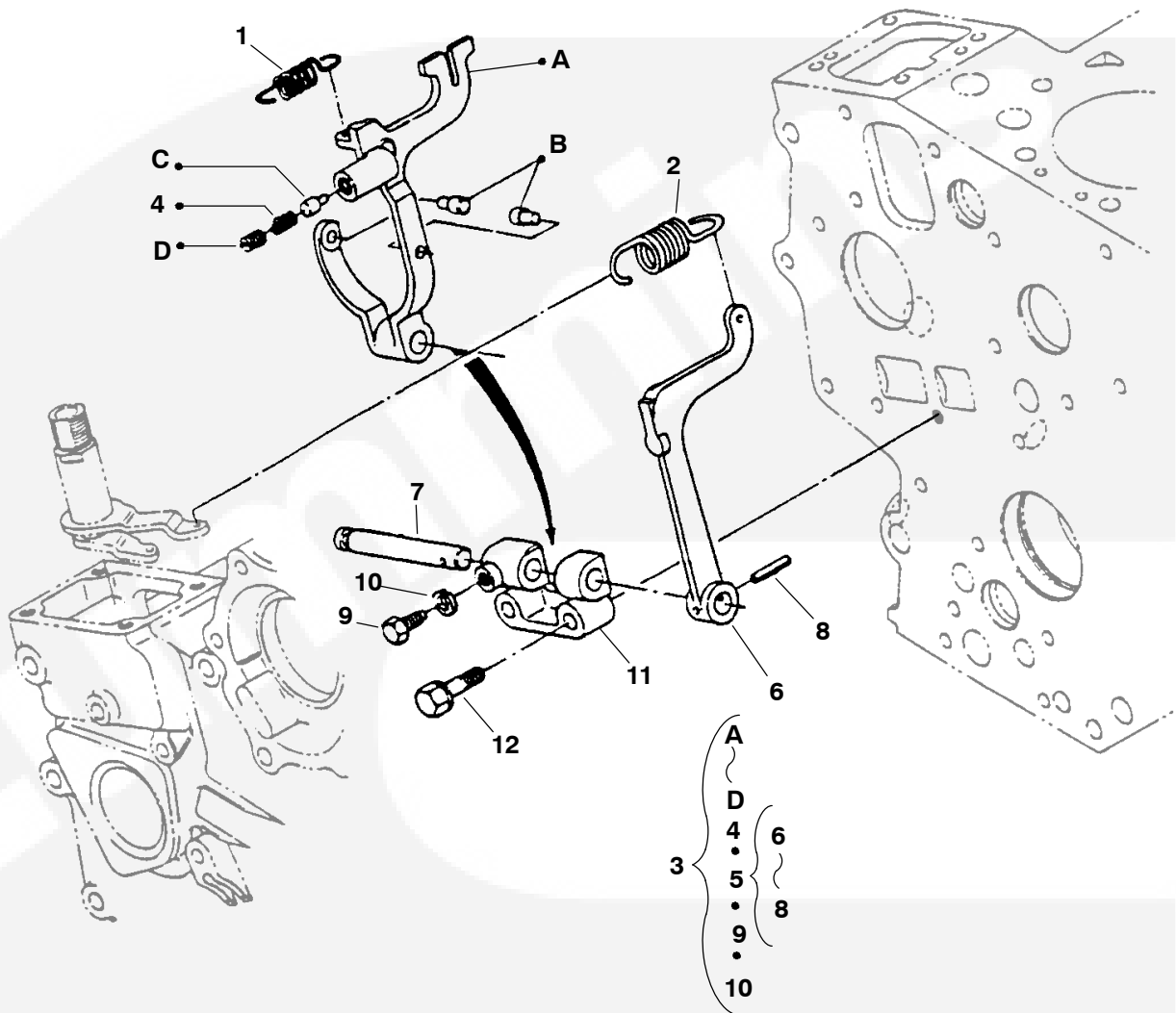
Fork Lever (Spec A-B)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	181-9169	1	Spring, Start	8	185-5696	1	*Pin, Spring
2	148-1389	1	Spring, Governor	9	185-2173	1	*Screw, Hex Head Cap
3	150-2996	1	Lever Assy, Fork (Includes Parts Marked *)	10	185-6999	1	*Washer, Spring Lock
4	181-9203	1	*Lever, Inner Fork	11	185-5966	2	Washer, Plain
5	185-5701	1	*Lever Assy, Outer Fork (Includes Lever, Shaft and Pin)	12	185-2393	2	Screw, Hex Head Cap (M6 x 35mm)
6	185-5702	1	*Lever, Outer Fork				
7	185-5703	1	*Shaft				

* - Parts Included in Fork Lever Assy.

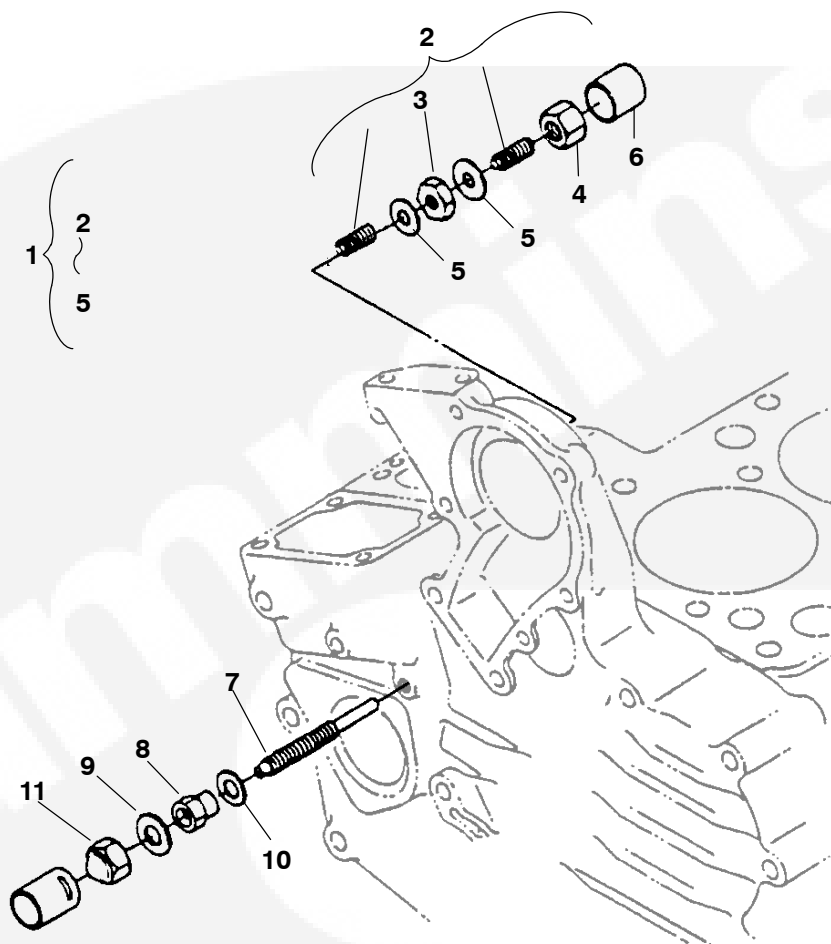
Fork Lever (Begin Spec C)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	181-9169	1	Spring, Start	8	185-5696	1	*Pin, Spring
2	148-1389	1	Spring, Governor	9	185-2173	1	*Screw, Hex Head Cap
3	150-2996	1	Lever Assy, Fork (Includes Parts Marked *)	10	185-6999	1	*Washer, Spring Lock
4	181-9203	1	*Lever, Inner Fork	11	185-5704	1	Holder, Fork Lever
5	185-5701	1	*Lever Assy, Outer Fork (Includes Lever, Shaft and Pin)	12	185-2393	2	Screw, Hex Head Cap (M6 x 35mm)
6	185-5702	1	*Lever, Outer Fork				
7	185-5703	1	*Shaft				

* - Parts Included in Fork Lever Assy.

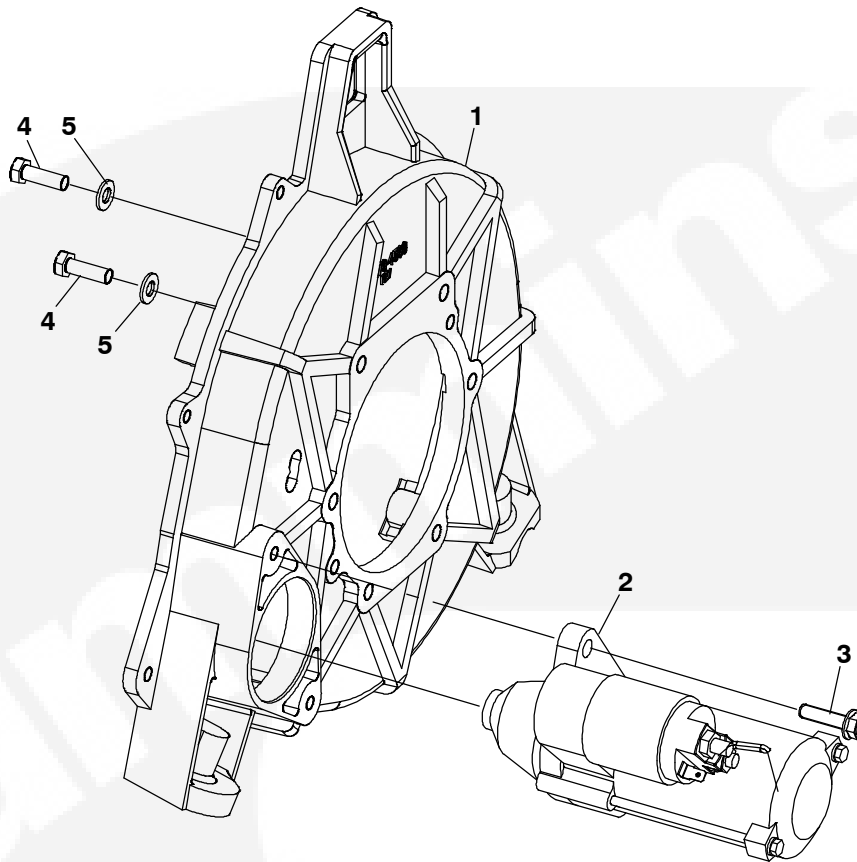
Speed Control



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5679	1	Assy, Idle Apparatus (Includes Parts Marked *)	7	150-2872	1	Bolt, Adjusting
2	185-5680	1	*Assy, Adjusting Bolt (Includes Parts Marked +)	8	185-5684	1	Nut, Lock
3	185-2180	1	+*Nut, Hex	9	185-2284	1	Gasket
4	185-5681	1	+*Nut, Hex	10	185-7313	1	Gasket
5	185-2338	2	+*Gasket	11	185-6931	1	Nut
6	185-5682	1	+Cap				

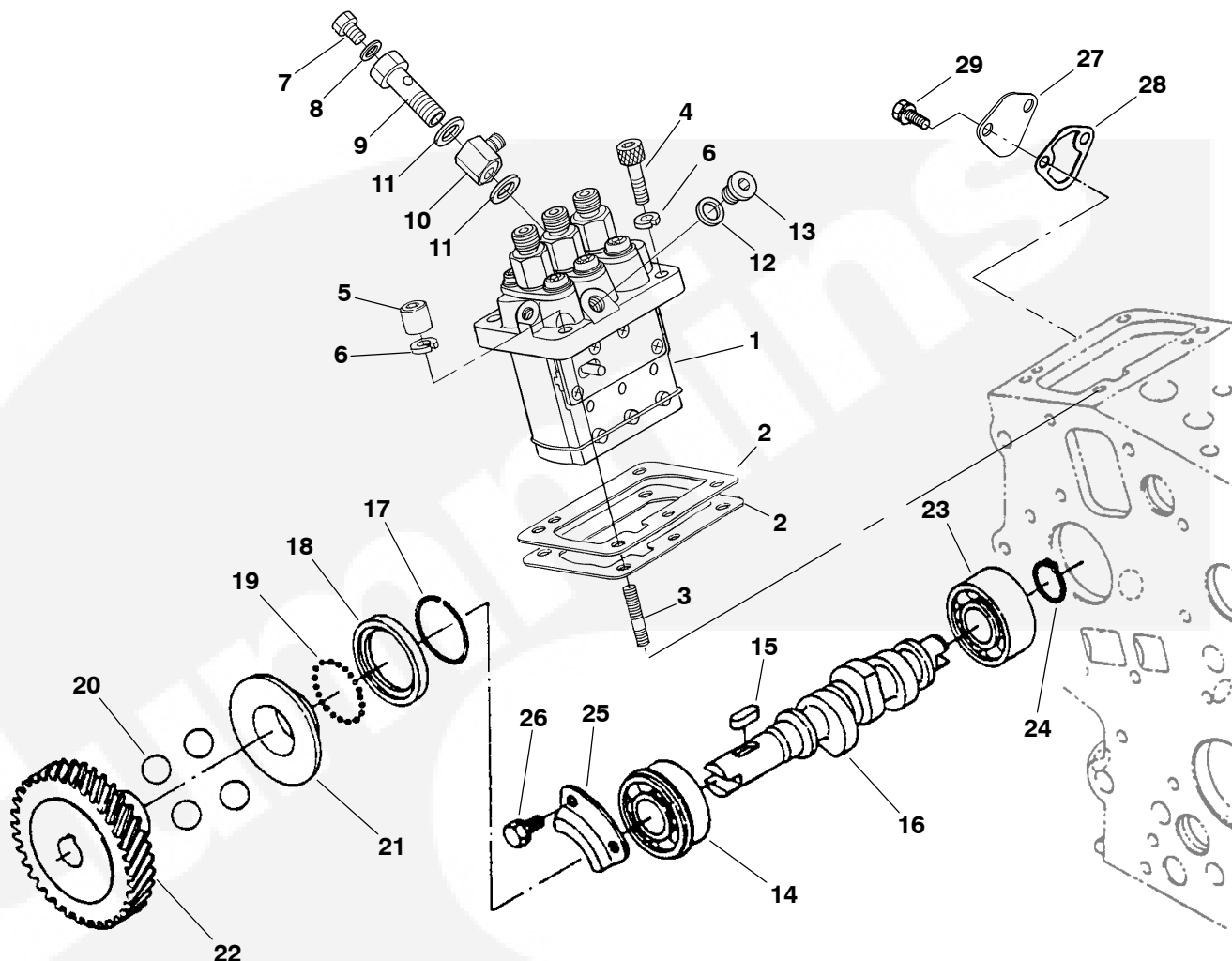
* - Parts Included in Idle Assy.

Flywheel Cover



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	104-1890	1	Housing, Flywheel	4	800-2058	6	Screw, Hex Head Cap (M8 1.25 x 25mm)
2	191-2200	1	Starter	5	526-2100	6	Washer, Flat (M8)
3	815-0781	2	Screw, Hex Thread Form (M8 x 1.25 x 30mm)				

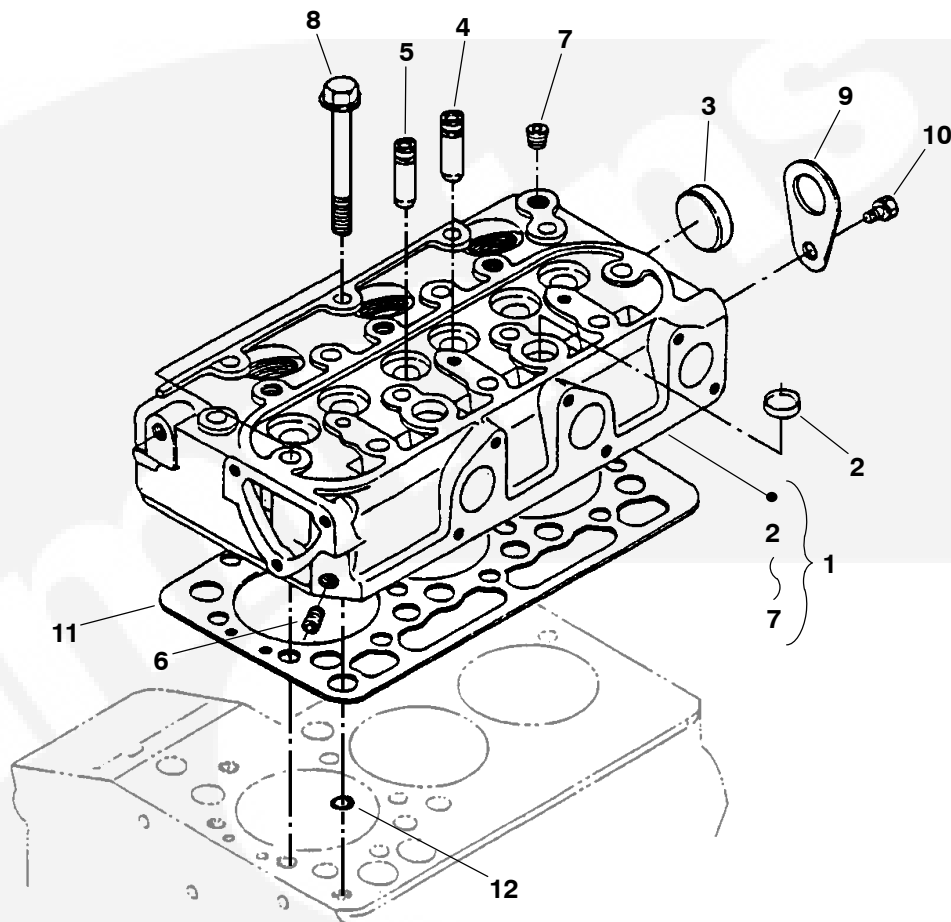
Injection Pump



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Camshaft Assy, Fuel (Includes Parts Marked +)	13	185-6888	1	*Plug
	181-9201	1	Spec A-B	14	185-5629	1	+Bearing, Ball
	105-0777	1	Begin Spec C	15	185-2353	1	+Key, Feather
1	185-5425	1	Pump, Injection (Includes Parts Marked*)	16	181-9075	1	+Camshaft, Fuel
2			Shim, Injection Pump	17	185-2163	1	+Circlip, Governor Sleeve
	147-0970	1	0.175mm	18	185-5632	1	+Case, Governor Ball
	185-6883	1	0.20mm	19	185-2357	32	+Ball
	185-6739	1	0.25mm	20	185-5633	4	+Ball
	185-6845	1	0.30mm	21	185-5631	1	+Sleeve, Governor
	147-0971	1	0.350mm	22	185-5630	1	+Gear, Injection Pump
3	185-5624	2	Stud	23	510-0229	1	Bearing
4	185-5623	2	Screw, Socket Head Cap	24	185-5634	1	Circlip
5	185-5625	2	Nut, Cap	25	185-5635	1	Plate, Retaining
6	185-6759	4	Washer, Spring Lock	26	185-2386	2	Screw, Hex Lock Washer Cap (M6 x 12mm)
7	185-5662	1	*Screw	27	185-5798	1	Cover, Hole
8	185-5663	1	*Gasket	28	185-6919	1	Gasket, Hole Cover
9	185-5660	1	*Screw, Hollow	29	185-2389	2	Screw, Hex Head Cap
10	185-5626	1	Joint, Eye				
11	185-5661	2	*Gasket				
12	185-5820	1	*Gasket				

* - Parts Included in Fuel Camshaft Assy.

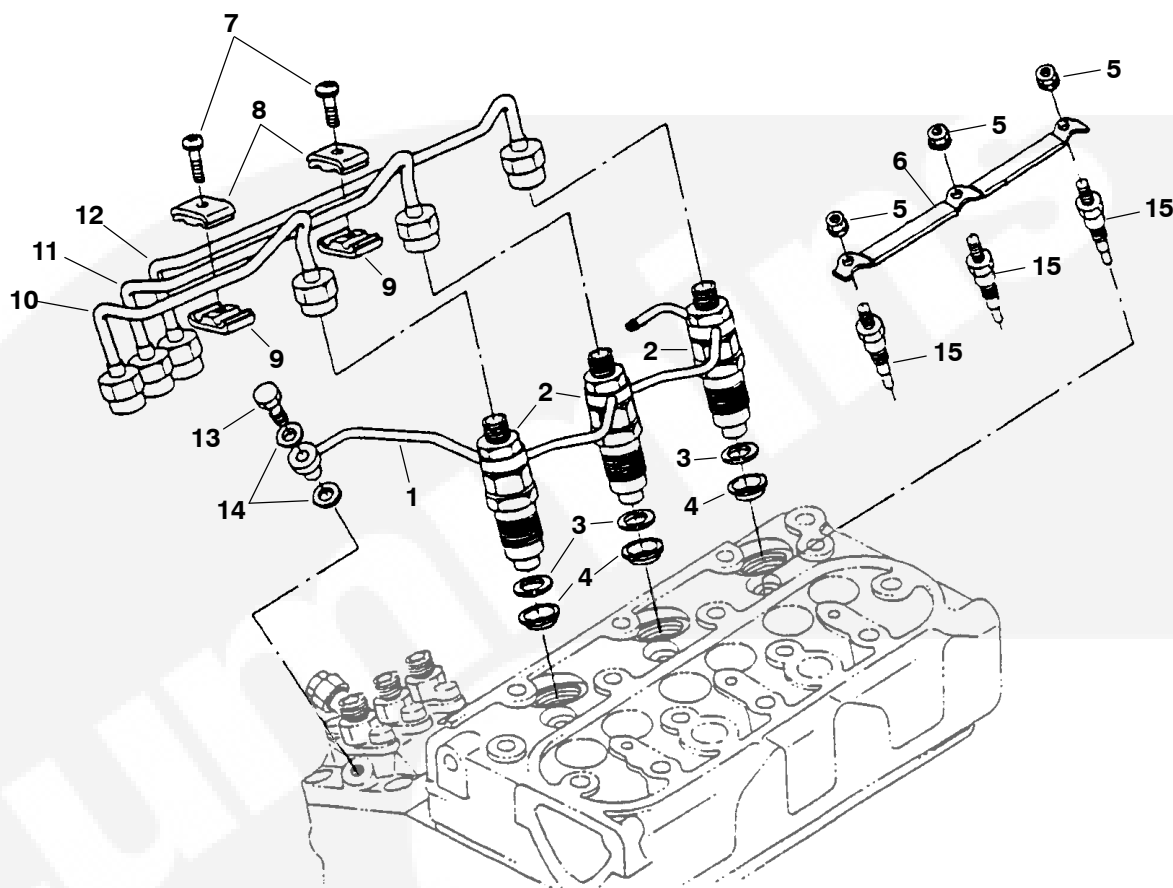
Cylinder Head



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Head Assy, Cylinder (Includes Parts Marked *)	7	185-5502	1	Plug, Pipe
	181-9247	1	Spec A-B	8	185-5503	14	Bolt, Cylinder Head
	110-4128	1	Begin Spec C	9	185-2414	1	Eye, Lifting
2	185-2413	2	*Cap, Sealing	10	185-6762	1	Screw, Hex Head Cap
3	185-2411	1	*Cap, Sealing	11	185-6120	1	Gasket, Cylinder Head
4	185-5501	3	*Guide, Exhaust Valve	12	185-2095	1	O'Ring (Spec A-B)
5	185-5500	3	*Guide, Intake Valve				
6	185-2412	1	*Plug, Pipe				

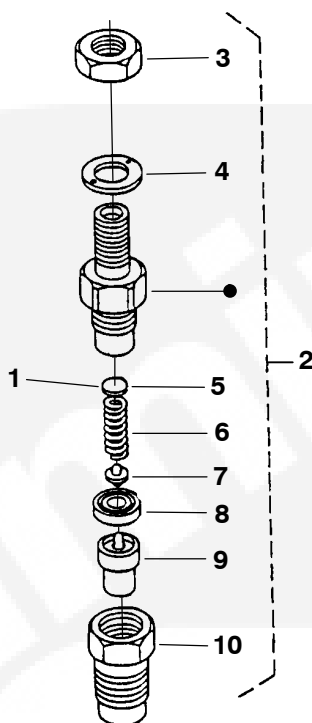
* - Parts Included in Cylinder Head Assy.

Injection Nozzle



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	181-9084	1	Kit, Holder Nozzle (Includes Parts Mark *)	10			Pipe, Injection
1	181-9202	1	Pipe, Overflow	501-0927	1		Spec A-B
2	185-6738	3	*Holder, Nozzle	501-1128	1		Begin Spec C
3	185-5337	3	*Gasket	11			Pipe, Injection
4	185-5985	3	*Seal, Heat	181-9168	1		Spec A-B
5	185-5615	3	Nut, Flange	501-1130	1		Begin Spec C
6	185-5823	1	Cord, Glow Plug	12			Pipe, Injection
7	185-2385	2	Screw, Pan Head Machine W/Lock Washer	181-9177	1		Spec A-B
8	185-5613	2	Clamp, Top Pipe	501-1131	1		Begin Spec C
9	185-5612	2	Clamp, Bottom Pipe	13	185-7082	1	Screw, Air Bleeder
				14	185-2284	2	O'Ring
				15	337-3782	3	Plug, Glow

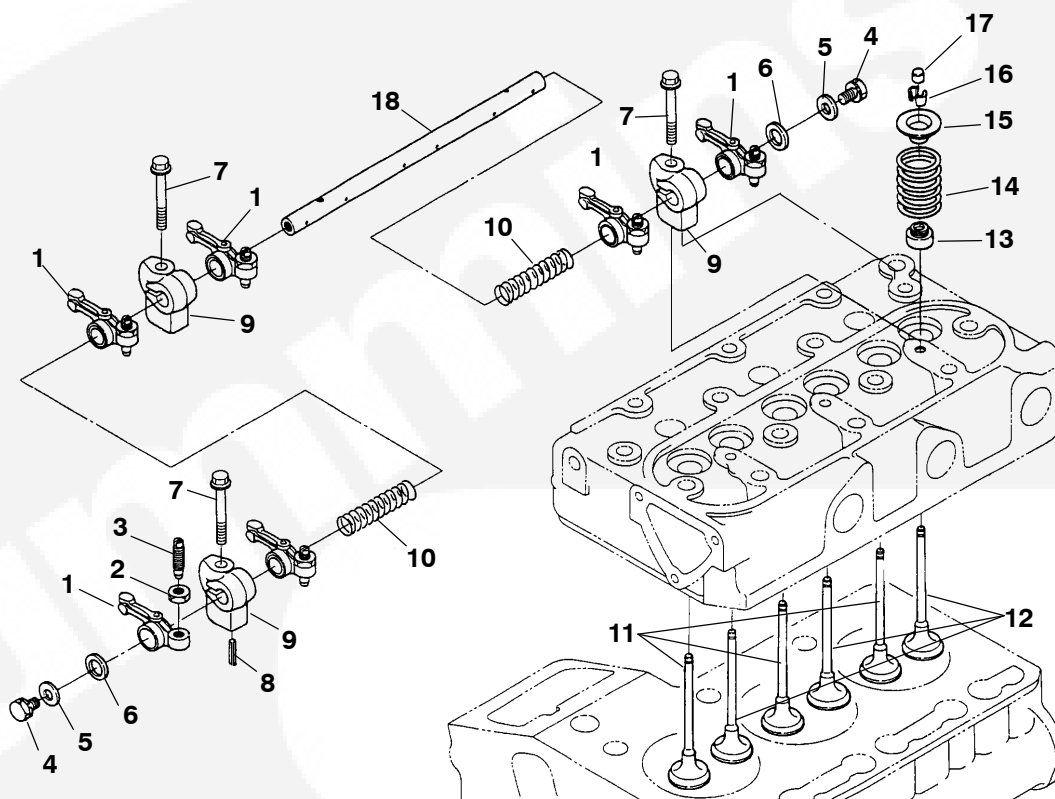
Injection Nozzle Components



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5363	3	Washer Assy – Includes the Following Adjusting Washers:	185-5391	3	1.575 mm	
	185-5364	3	0.900 mm	185-5392	3	1.600 mm	
	185-5365	3	0.925 mm	185-5393	3	1.625 mm	
	185-5366	3	0.950 mm	185-5394	3	1.650 mm	
	185-5367	3	0.975 mm	185-5395	3	1.675 mm	
	185-5368	3	1.000 mm	185-5396	3	1.700 mm	
	185-5369	3	1.025 mm	185-5397	3	1.725 mm	
	185-5370	3	1.050 mm	185-5398	3	1.750 mm	
	185-5371	3	1.075 mm	185-5399	3	1.775 mm	
	185-5372	3	1.100 mm	185-5400	3	1.800 mm	
	185-5373	3	1.125 mm	185-5401	3	1.825 mm	
	185-5374	3	1.150 mm	185-5402	3	1.850 mm	
	185-5375	3	1.175 mm	185-5403	3	1.875 mm	
	185-5376	3	1.200 mm	185-5404	3	1.900 mm	
	185-5377	3	1.225 mm	185-5405	3	1.925 mm	
	185-5378	3	1.250 mm	185-5406	3	1.950 mm	
	185-5379	3	1.275 mm	2	185-6738	3	Holder Assy, Nozzle (Includes Parts Marked *)
	185-5380	3	1.300 mm	3	185-5616	3	*Nut, Hex
	185-5381	3	1.325 mm	4	185-5621	3	*Washer
	185-5382	3	1.350 mm	5	185-5364	3	*Washer, Adjusting
	185-5383	3	1.375 mm	6	185-5617	3	*Spring
	185-5384	3	1.400 mm	7	185-5619	3	*Rod, Push
	185-5385	3	1.425 mm	8	185-5618	3	*Spacer
	185-5386	3	1.450 mm	9	185-5622	3	*Nozzle
	185-5387	3	1.475 mm	10	185-6825	3	*Nut, Nozzle
	185-5388	3	1.500 mm				
	185-5389	3	1.525 mm				
	185-5390	3	1.550 mm				

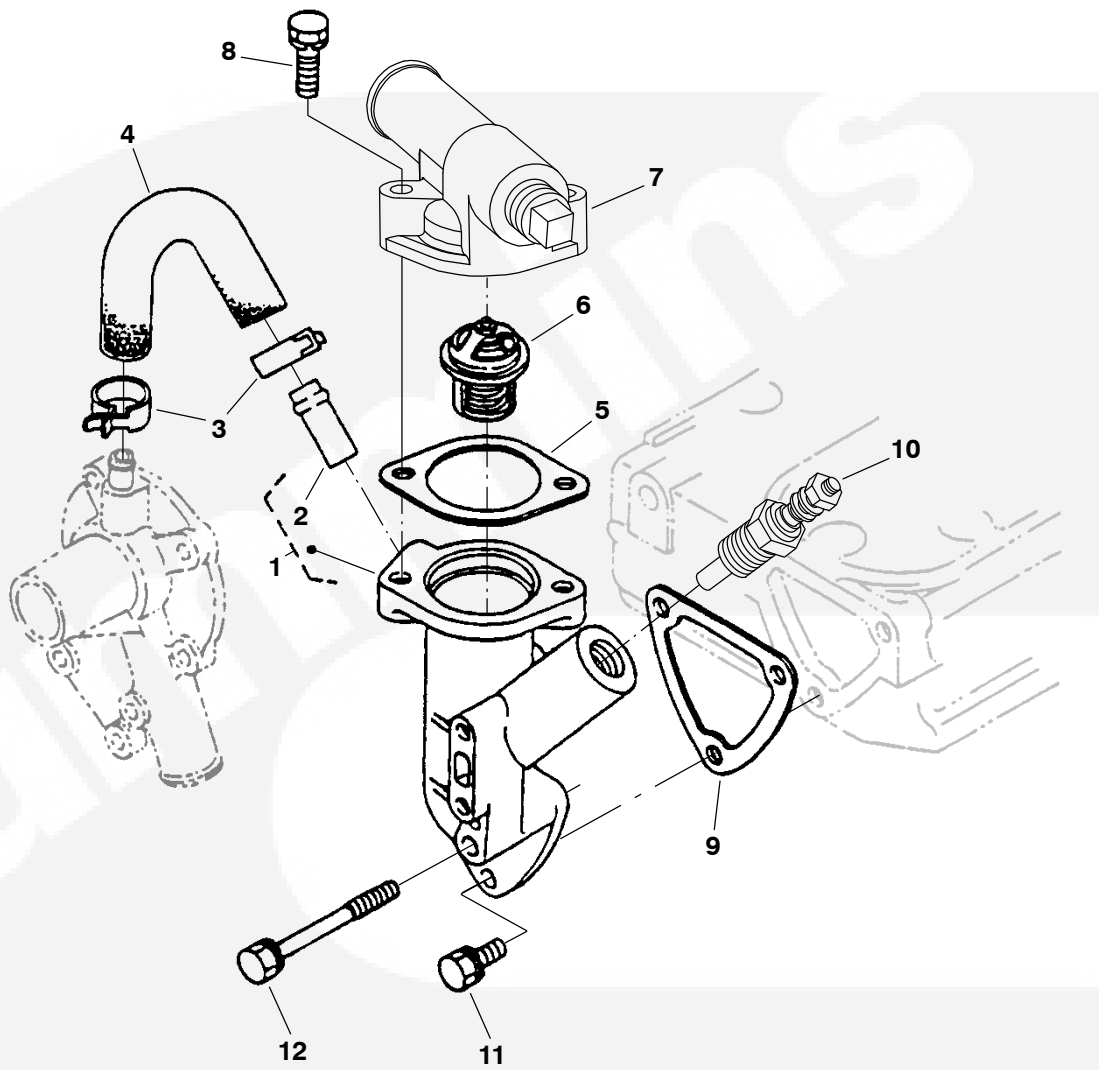
* – Parts Included in Nozzle Holder Assy.

Rocker Arm



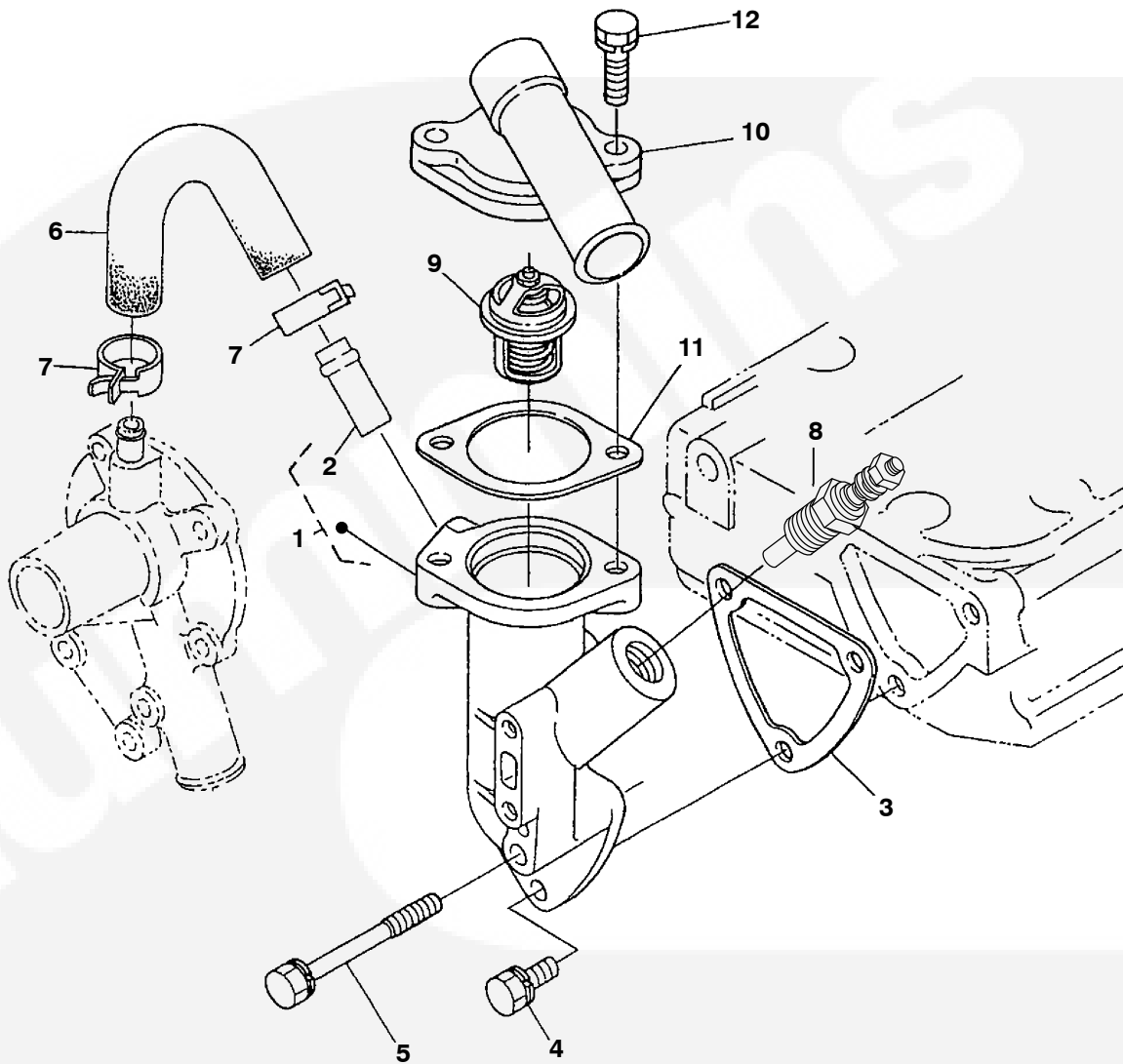
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5551	6	Arm, Rocker (Includes Nut and Screw)	12			Valve, Exhaust
2	185-5553	6	Nut	185-5538	3		Spec A-B
3	185-5552	6	Screw, Adjusting	110-3991	3		Begin Spec C
4	185-2386	2	Screw, Hex Head Cap (M6 x 12mm)	13	185-5348	6	Seal, Valve Stem
5	185-7395	2	Washer, Flat	14	185-5539	6	Spring, Valve
6	185-7086	6	Washer, Flat	15	185-5540	6	Retainer, Valve Spring
7	800-6372	3	Bolt, Flange	16	185-5541	6	Collet, Valve Spring
8	185-2351	1	Pin, Spring	17	185-5793	6	Cap, Valve
9	181-9251	3	Bracket, Rocker Arm	18			Shaft, Rocker Arm
10	185-5550	2	Spring, Rocker Arm	185-7085	1		Spec A-B
11			Valve, Intake	185-5827	1		Begin Spec C
	185-5537	3	Spec A-B				
	110-3990	3	Begin Spec C				

Water Outlet (Spec A-B)



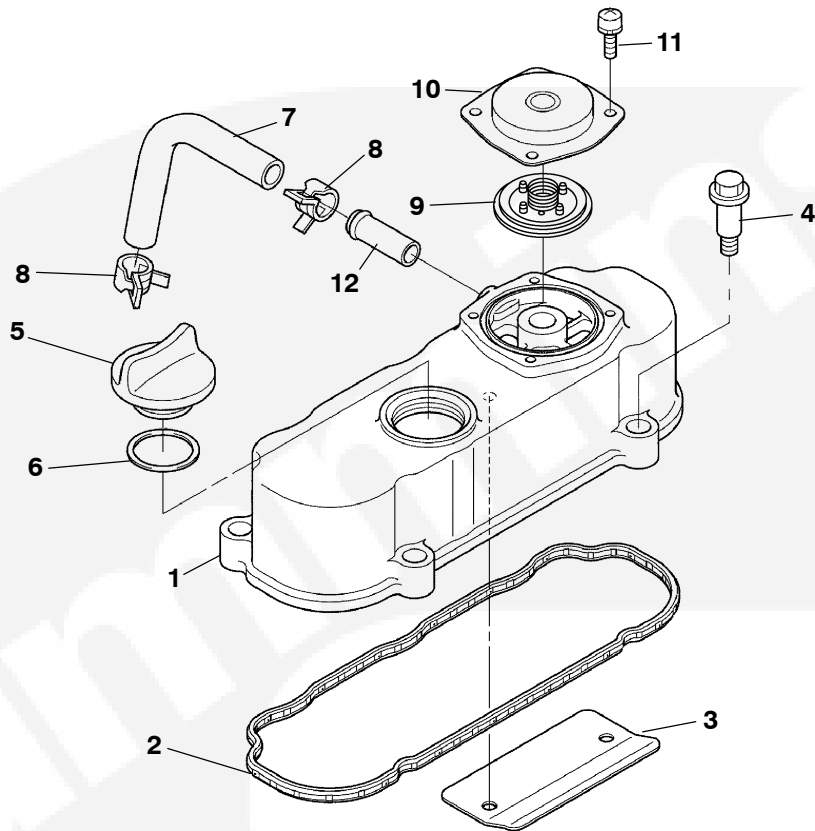
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	181-9185	1	Flange, Water Pump (Includes Water Return Pipe)	7	181-9196	1	Cover, Thermostat
2	185-5719	1	Pipe, Water Return	8	185-6669	2	Bolt
3	185-5723	2	Band, Pipe	9	185-5720	1	Gasket, Water Flange
4	185-5722	1	Pipe, Water Return	10	193-0318	1	Sender, Water Temperature
5	185-2238	1	Gasket, Thermostat	11	185-2388	2	Bolt (M6 x 16mm)
6	185-5458	1	Thermostat	12	185-7069	1	Bolt

Water Outlet (Begin Spec C)



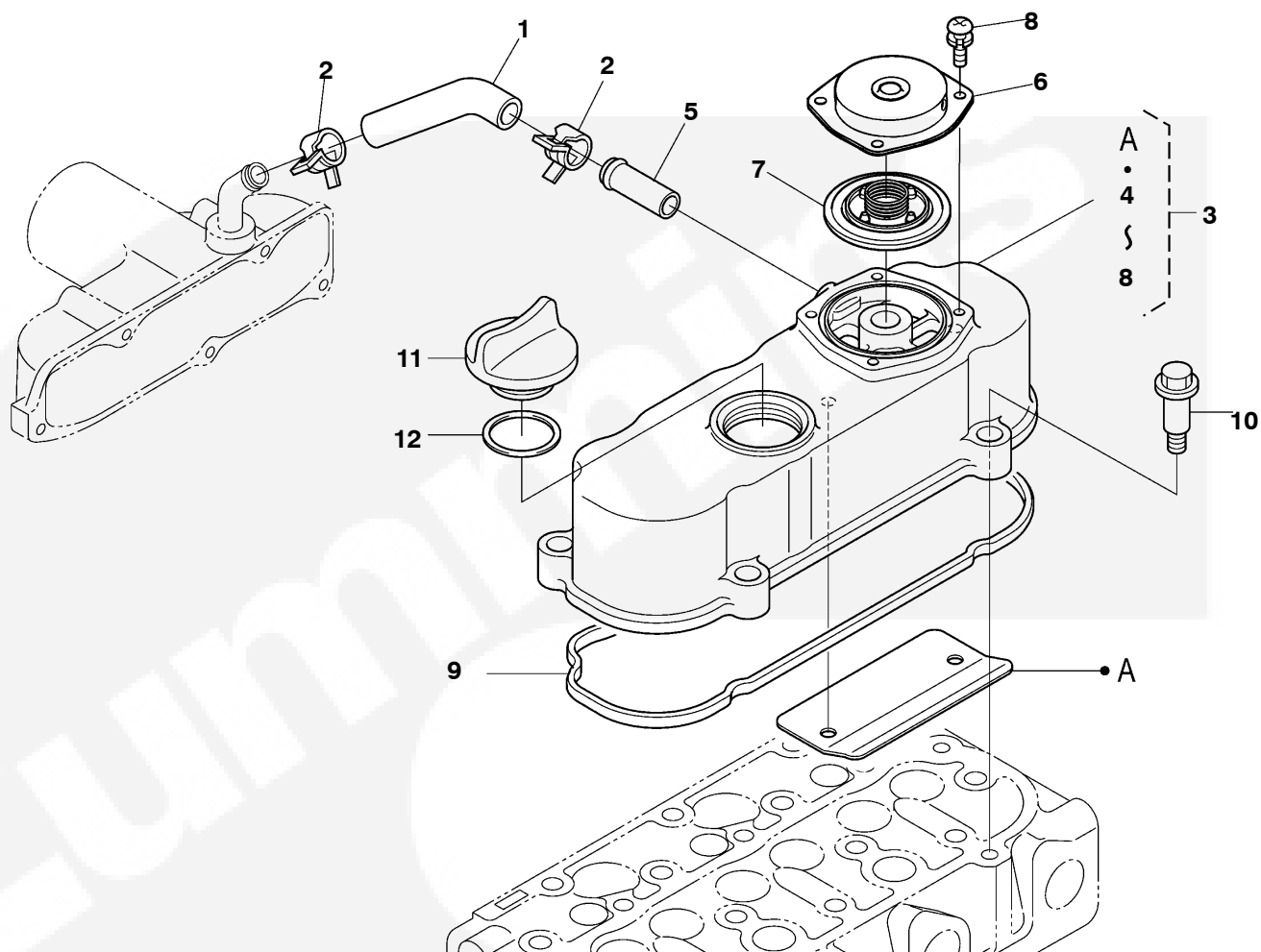
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	181-9185	1	Flange, Water Pump (Includes Water Return Pipe)	7	185-6667	2	Clamp, Hose
2	185-6445	1	Pipe, Water Return	8	193-0318	1	Sender, Water Temperature
3	181-9059	1	Gasket, Water Flange	9	185-5458	1	Assy, Thermostat
4	185-2386	2	Bolt	10	185-5792	1	Cover, Thermostat
5	185-7069	1	Bolt	11	185-2238	1	Gasket, Thermostat
6	185-5722	1	Pipe, Water Return	12	185-6677	2	Bolt

Valve Cover (Spec A-B)



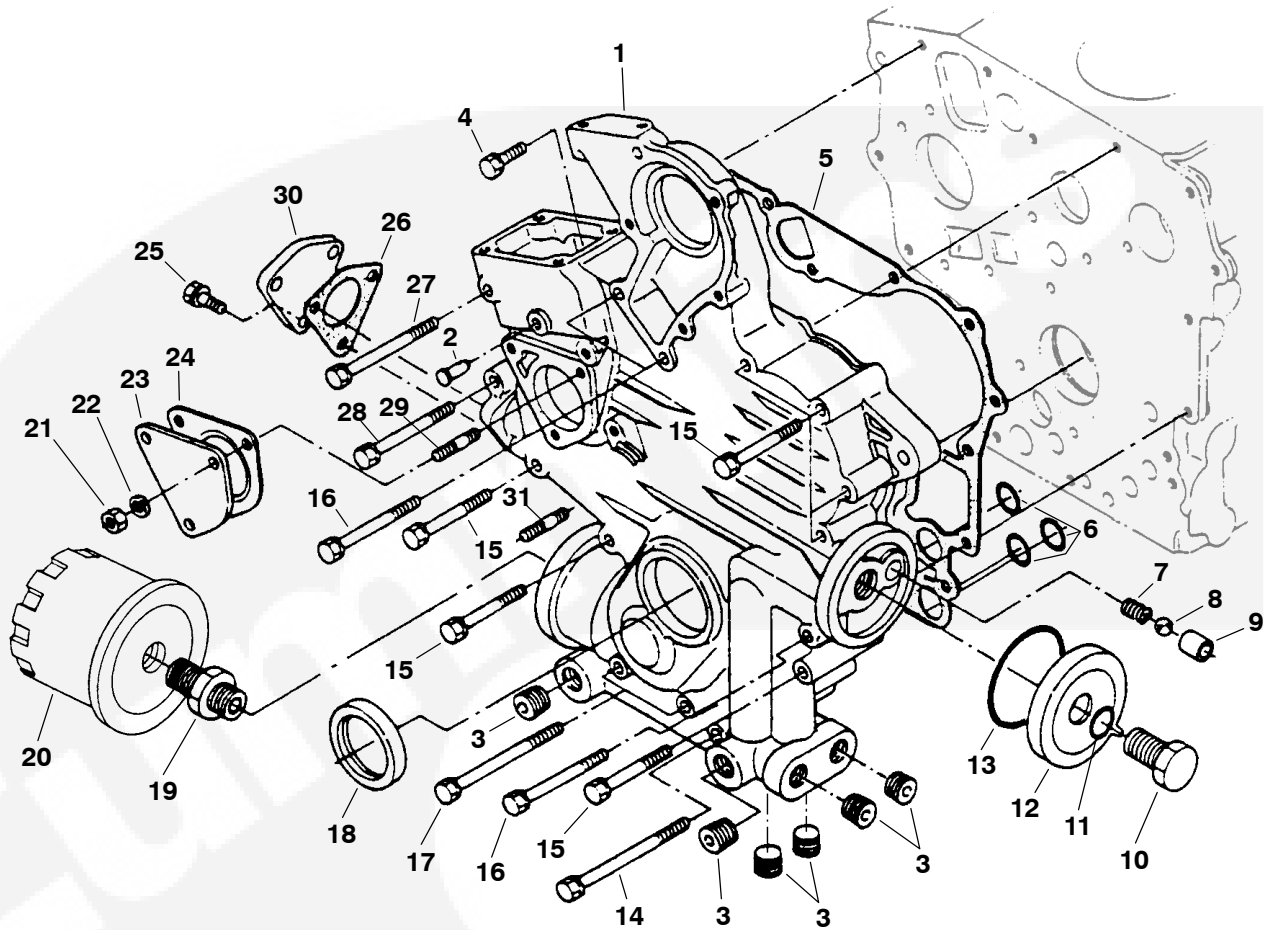
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	181-9252	1	Assy, Cover Cylinder Head	7	181-9249	1	Tube, Breather
2	181-9253	1	Gasket, Head Cover	8	185-5162	2	Clamp, Hose
3	123-2303	1	Shield, Breather Oil	9	123-2301	1	Comp. Valve, Breather
4	800-6330	4	Bolt	10	123-2268	1	Cover, Breather
5	181-9000	1	Cap, Oil Filler	11	185-2384	4	Screw, Flanger
6	185-7426	1	O'Ring	12	185-6445	1	Pipe, Water Return

Valve Cover (Begin Spec C)



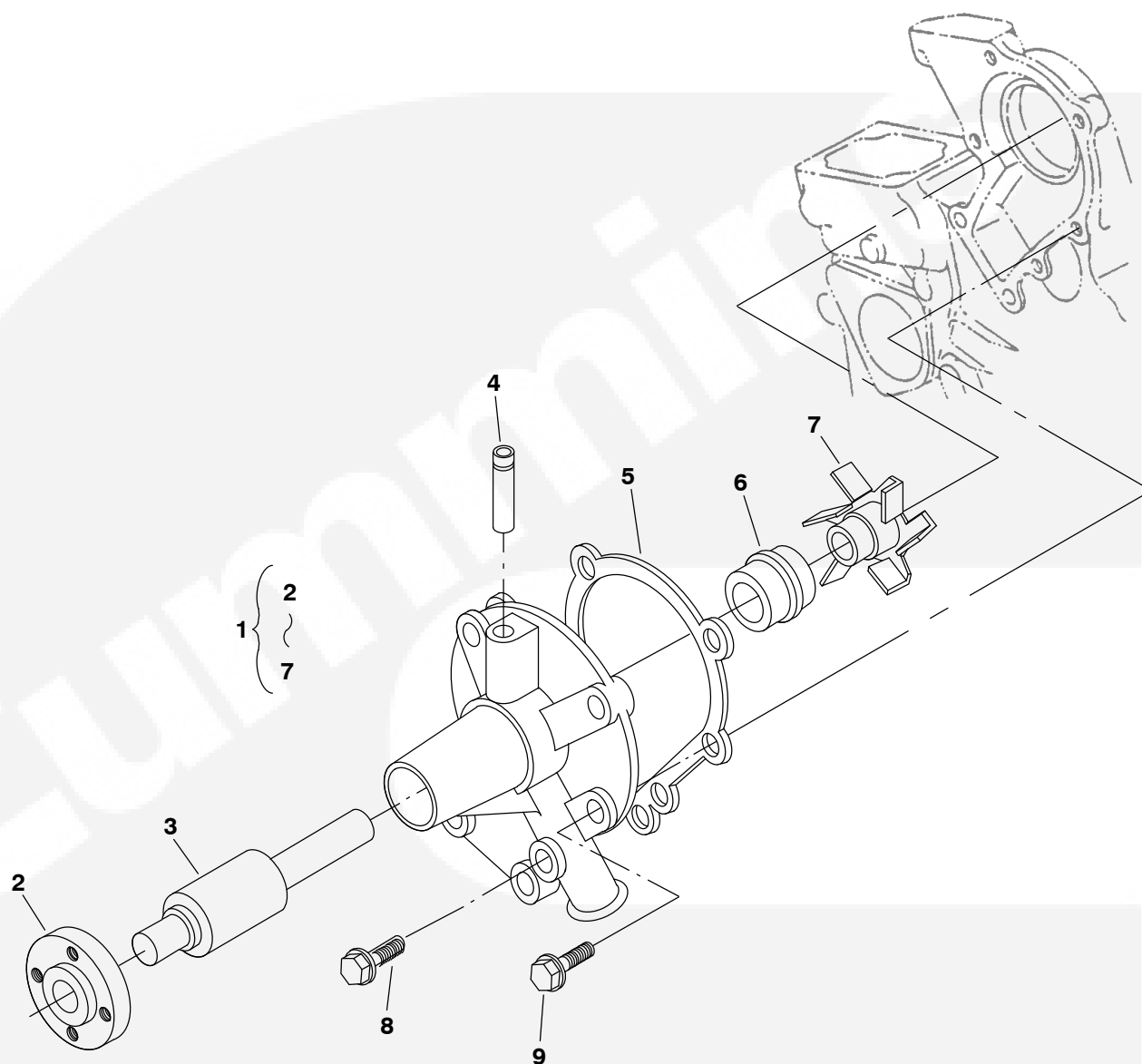
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	181-9249	1	Tube, Breather	7	181-9241	1	Comp. , Breather Valve
2	181-9024	2	Clamp, Hose	8	185-2384	4	Screw, w/ Washer
3	134-5396	1	Assy, Cover Cylinder Head	9	181-9254	1	Gasket, Head Cover
4	134-5395	1	Cover, Cylinder Head	10	800-6330	4	Bolt
5	185-6445	1	Pipe, Water Return	11	123-2428	1	Cap, Oil Filler
6	181-9238	1	Cover, Breather	12	185-7426	1	O'Ring

Gearcase



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Gearcase Assy (Includes Pin and Plugs)	15	185-7069	7	Screw, Hex Head Cap (M6 x 50mm)
	185-5800	1	Spec A-B	16	185-5507	3	Screw, Hex Head Cap (M6 x 1 x 62mm)
	103-0844	1	Begin Spec C	17	185-5745	2	Bolt
2	185-5506	1	Pin, Start Spring	18	185-5410	1	Seal, Front Oil
3			Plug, Pipe	19	185-2124	1	Nipple, Hex Pipe
	185-5505	8	Spec A-B	20			Filter, Oil
	185-2234	8	Begin Spec C		122-0833	1	Spec A-B
4	185-2389	1	Screw, Hex Head Cap (M6 x 18mm)		122-0946	1	Begin Spec C
5	185-7382	1	Gasket, Gearcase	21	185-4255	3	Nut, Hex
6	185-2374	3	O'Ring (Spec A-B)	22	185-6759	3	Washer, Spring Lock
7	185-5509	1	Spring	23	185-5512	1	Cover
8	185-5511	1	Ball	24	185-5513	1	Gasket
9	185-5510	1	Seat, Valve	25	185-2389	3	Bolt (M6 x 18mm)
10	185-5742	1	Bolt	26	181-9211	1	Gasket, Flange
11	185-5744	1	O'Ring	27	185-7070	1	Screw, Hex Head Cap (M6 x 70mm)
12			Cover	28	185-2395	1	Bolt (M6 x 60mm)
	185-5741	1	Spec A-B	29	185-2105	3	Stud
	122-0912	1	Begin Spec C	30	181-9213	1	Cover
13	185-5743	1	O'Ring	31	185-5727	1	Stud
14	185-5746	1	Screw, Hex Head Cap (M6 x 1 x 87mm)				

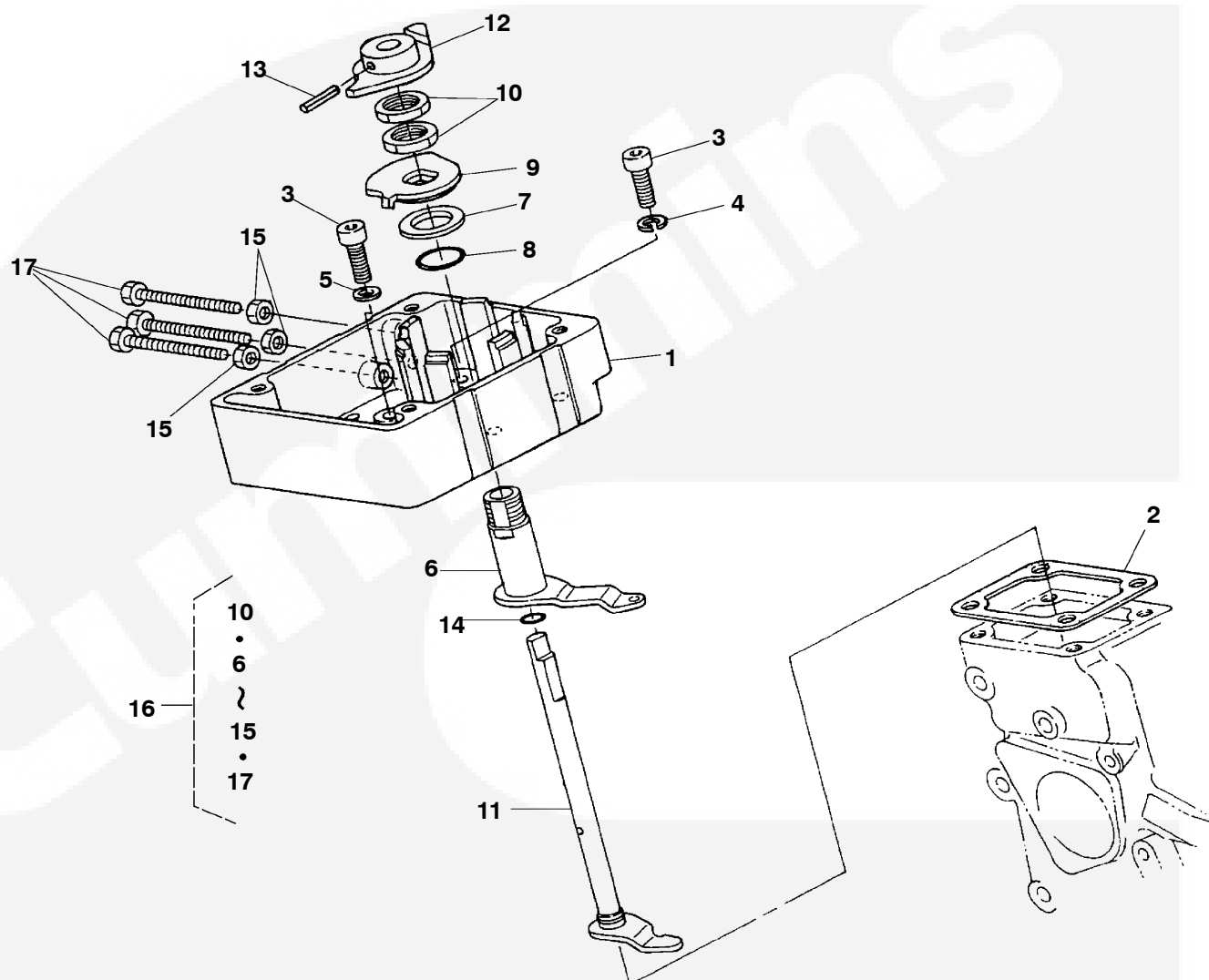
Water Pump Components



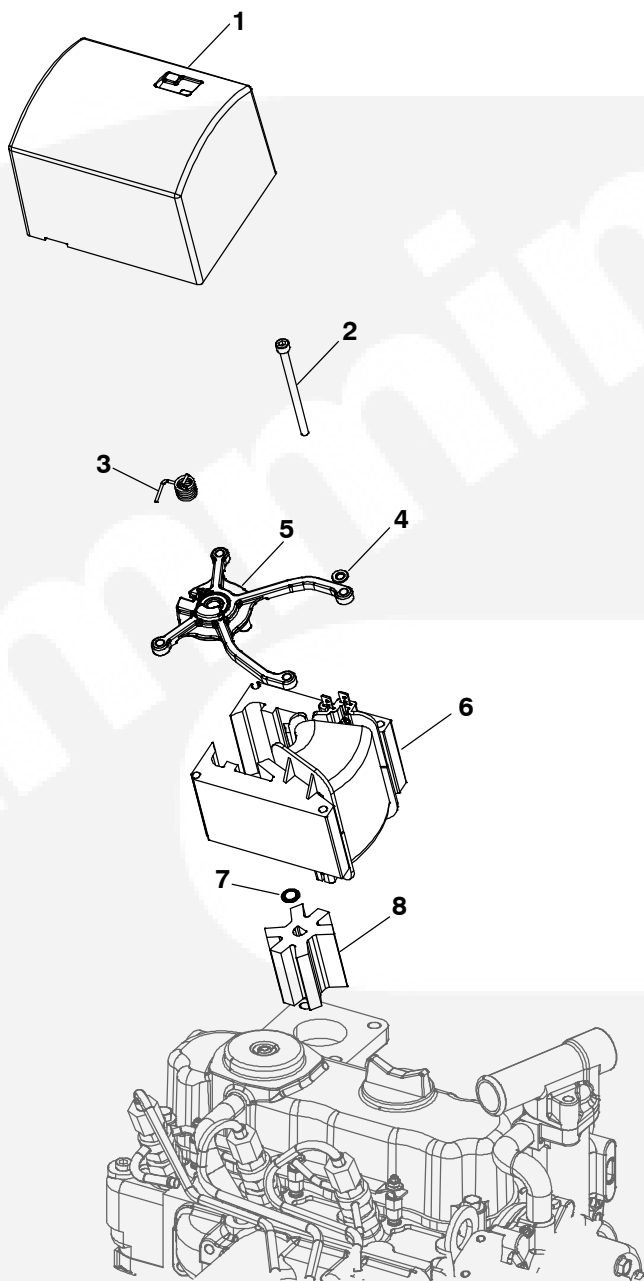
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Pump, Water (Includes Parts Marked *)	6	185-5714	1	*Seal
	185-5433	1	Spec A-B	7			*Impeller
	132-0492	1	Begin Spec C		185-5715	1	Spec A-B
2	185-5712	1	*Flange, Water Pump		132-0493	1	Begin Spec C
3	185-5713	1	*Bearing, Ball	8	185-5717	1	Bolt
4	185-5716	1	*Pipe, Return	9	185-2559	4	Bolt
5			Gasket, Water Pump				
	185-5434	1	Spec A-B				
	132-0525	1	Begin Spec C				

* - Parts Included in Water Pump.

Speed Control

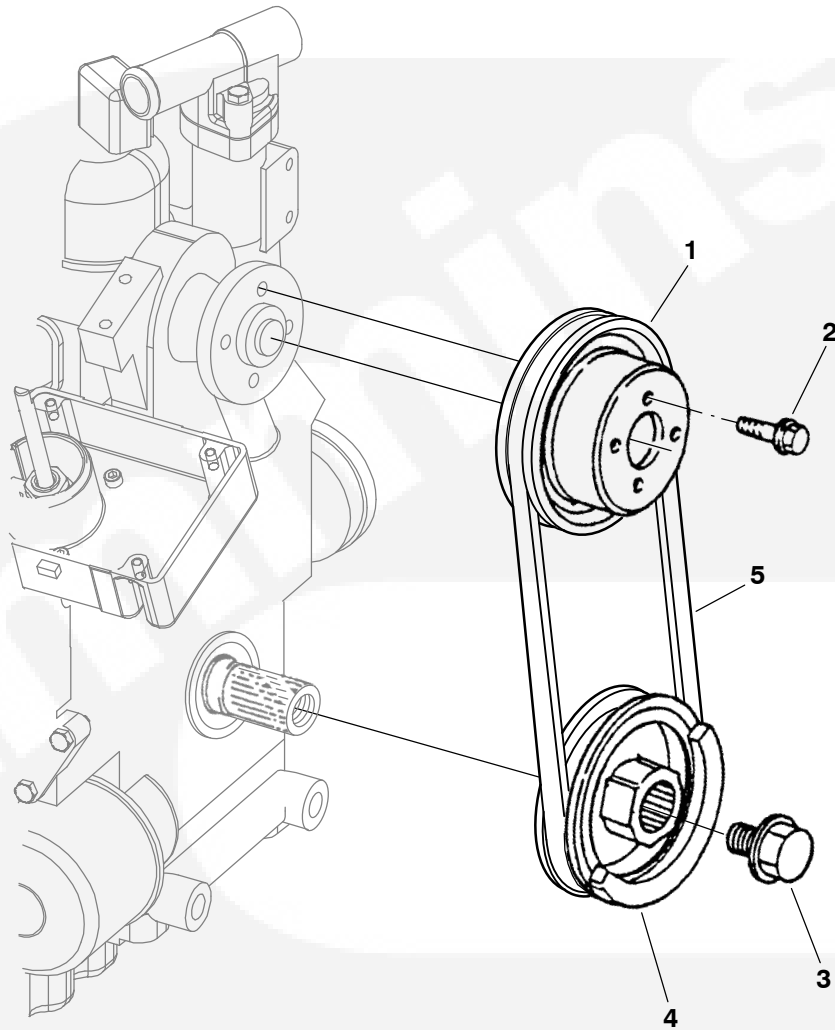


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6847	1	Plate, Speed Control	11	184-0060	1	Shaft, Lever
2	185-7080	1	Gasket, Control Plate	12	184-0059	1	Lever, Engine Stop
3	184-0013	4	Screw, Hex Socket Head	13	185-5696	1	Pin, Spring
4	185-6759	2	Washer, Spring	14	184-0017	1	O'Ring
5	185-2284	2	Gasket	15	185-4255	3	Nut
6	184-0053	1	Lever, Governor	16	185-7267	1	Comp. Plate, Speed
7	184-0057	1	Collar	17	181-9205	3	Screw
8	184-0019	1	O'Ring				
9	184-0056	1	Lever, Speed Control				
10	181-9063	2	Nut, Speed Control				



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	150-2641	1	Cover, Governor	5	150-2643	1	Carrier
2	815-0877	4	Screw, Screw Socket Head	6	150-2630	1	Stator, Wound
3	150-2724	1	Spring, Governor	7	518-0672	1	Ring, Retainer
4	740-1002	4	Washer, Flat (M5)	8	150-2639	1	Rotor, Governor

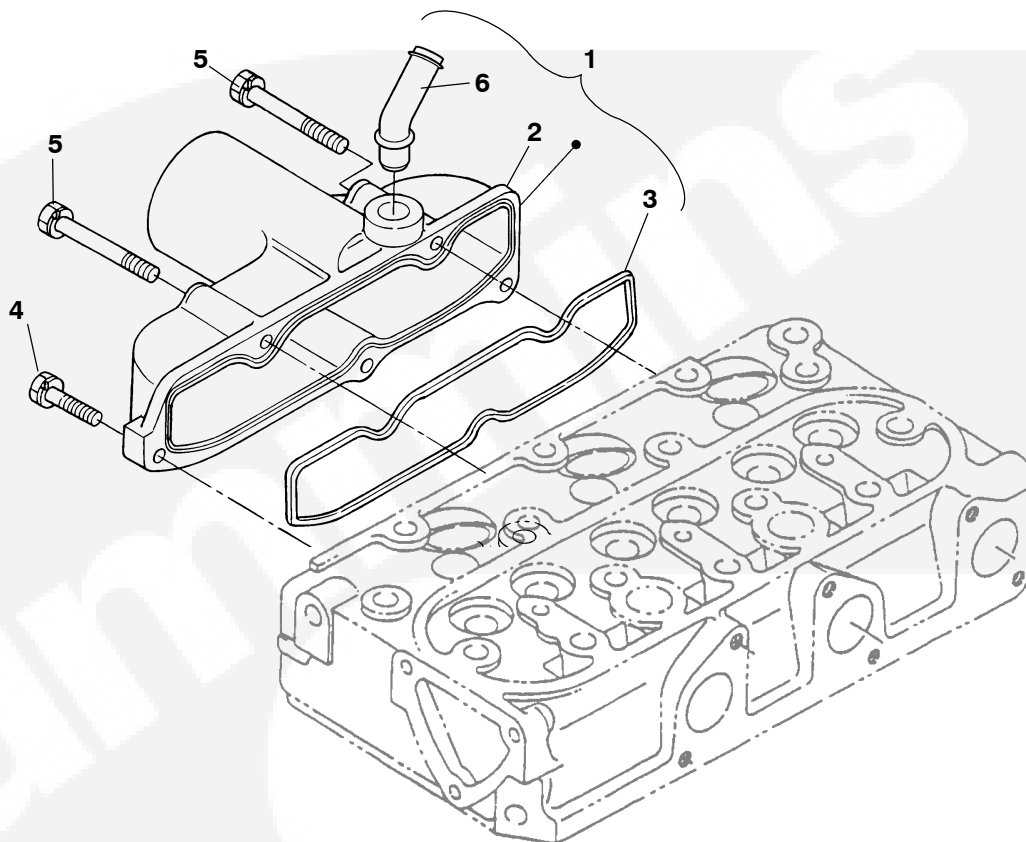
Pulley



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-5707	1	Pulley, Water Pump
2	800-6542	4	Screw, Hex Head Flange
3	185-5709	1	Screw, Hex Head Cap

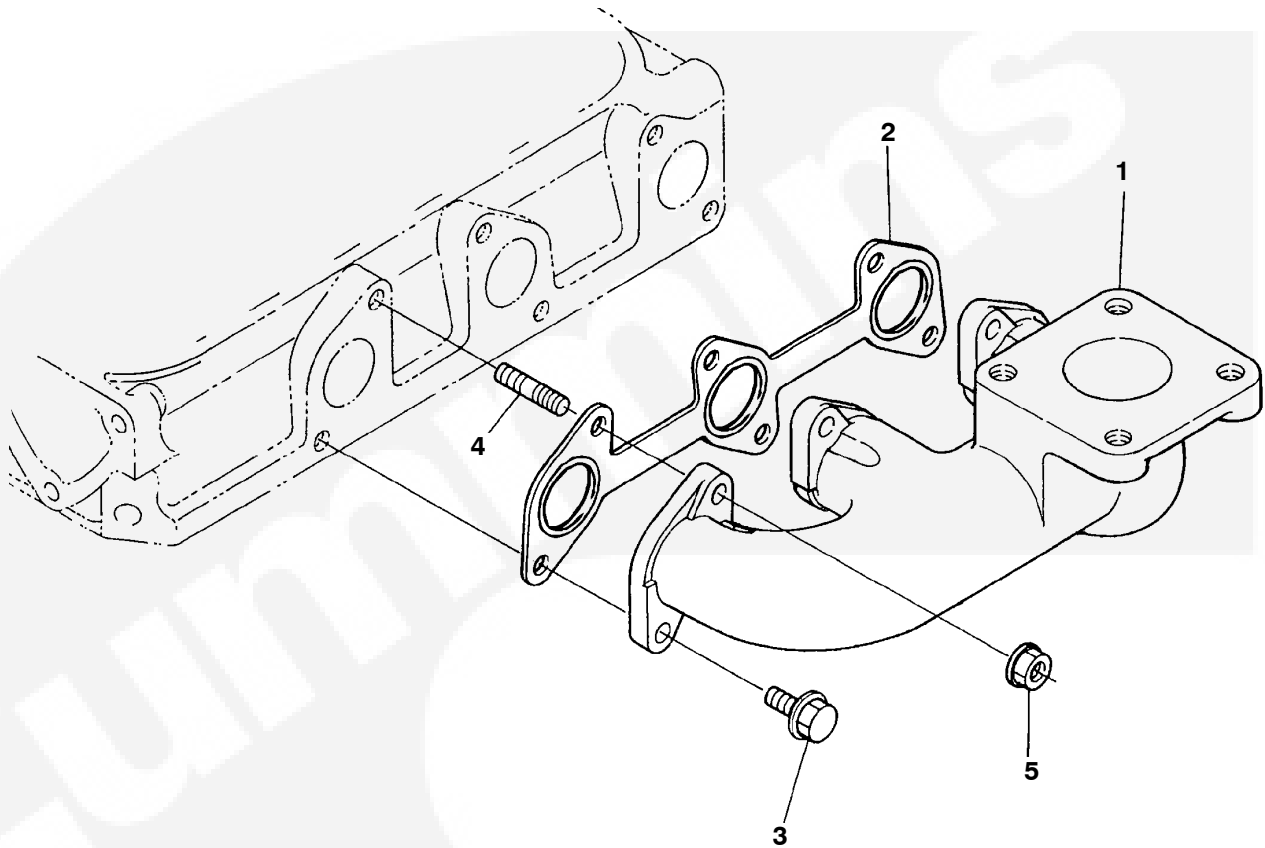
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
4	185-7083	1	Pulley, Drive
5	511-0235	1	Belt, Drive

Inlet Manifold



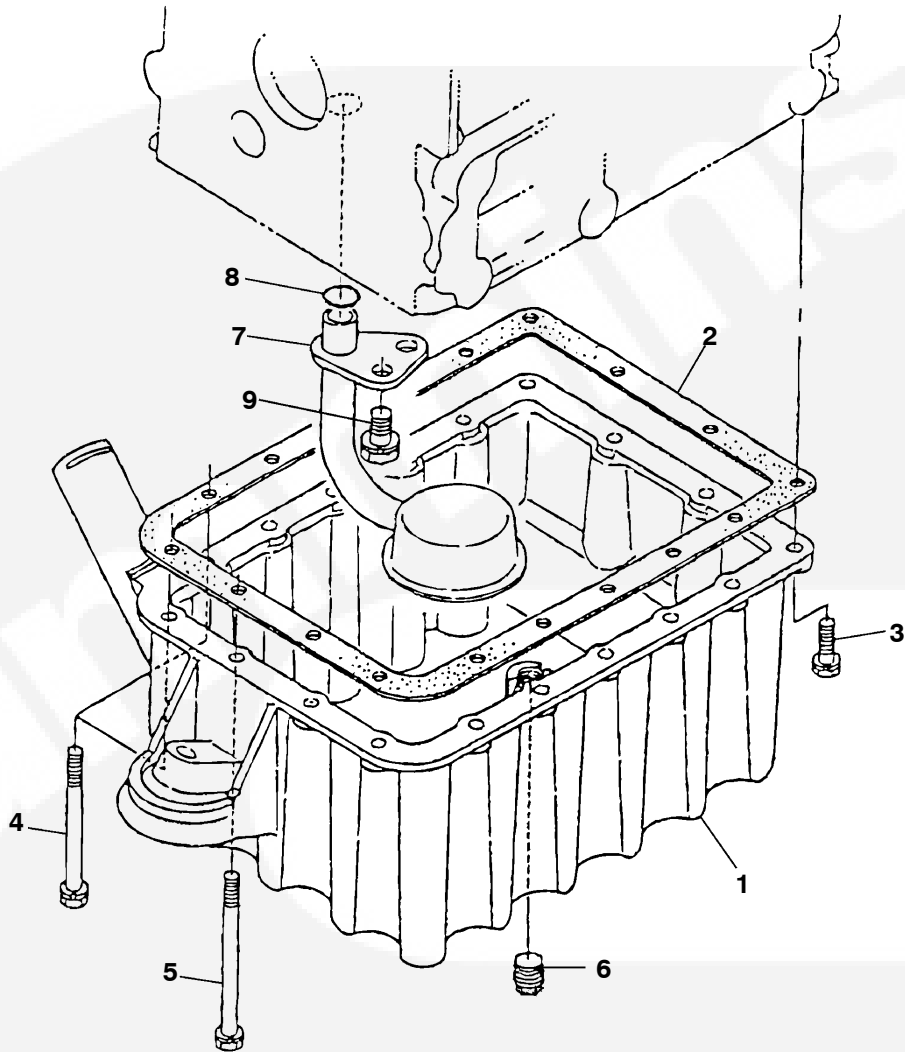
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-7087	1	Manifold Assy, Inlet (Includes Manifold and Gasket)	4	185-2389	2	Bolt
2	185-5831	1	Manifold, Inlet	5	185-5833	3	Bolt
3	185-5832	1	Gasket, Manifold	6	123-2300	1	Pipe, Breather

Outlet Manifold



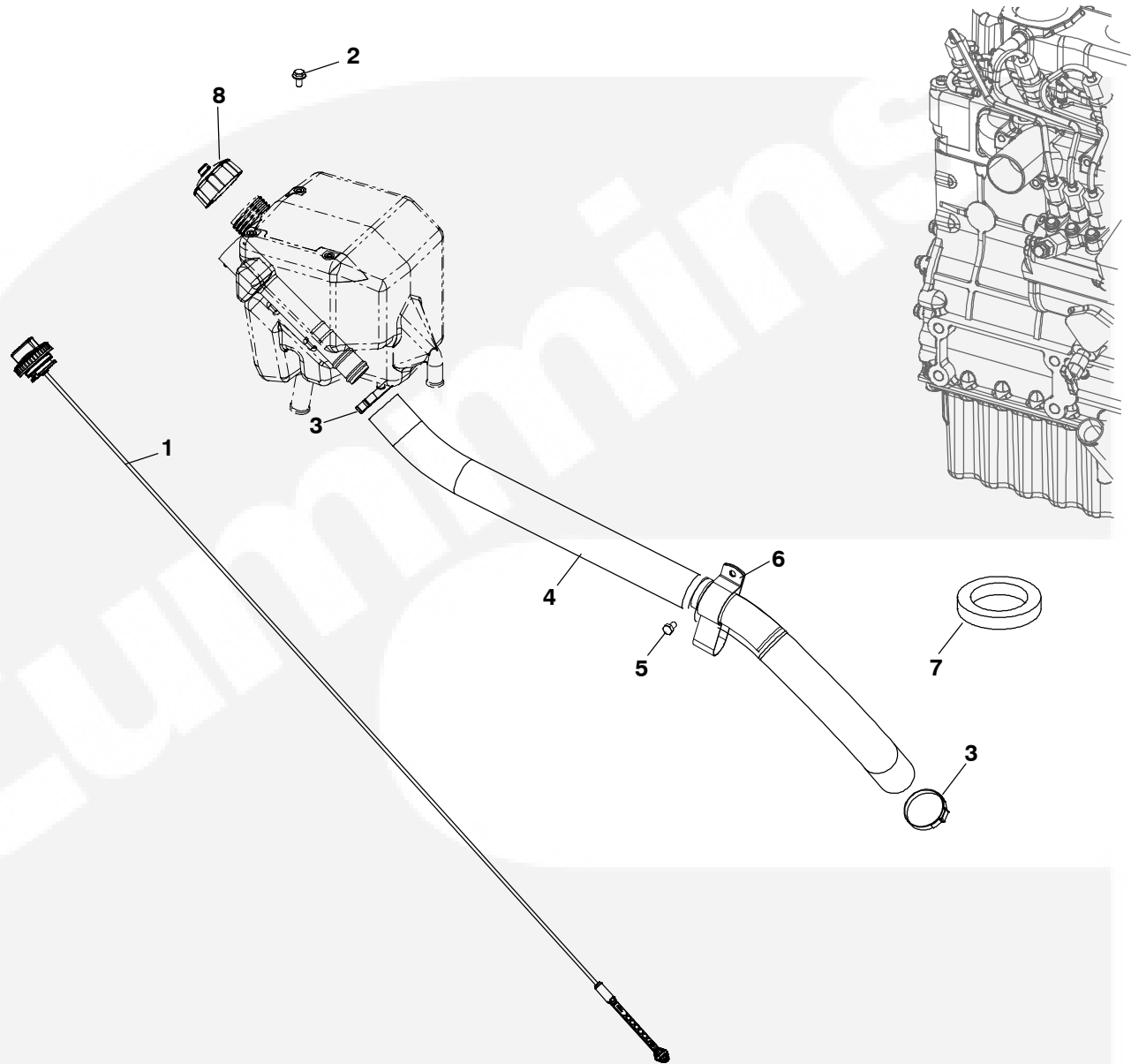
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	181-9226	1	Manifold Exhaust	4	185-2359	3	Stud
2	154-3294	1	Gasket, Exhaust Manifold	5	185-5536	3	Nut
3	185-5534	3	Screw				

Oil System



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	185-6846	1	Oil, Pan	6	181-9227	1	Plug
2	181-9210	1	Gasket, Oil Pan	7	181-9164	1	Filter, Oil
3	185-2389	15	Bolt	8	185-7421	1	O'Ring
4	181-9005	2	Bolt	9	185-6956	1	Bolt
5	185-2398	1	Bolt				

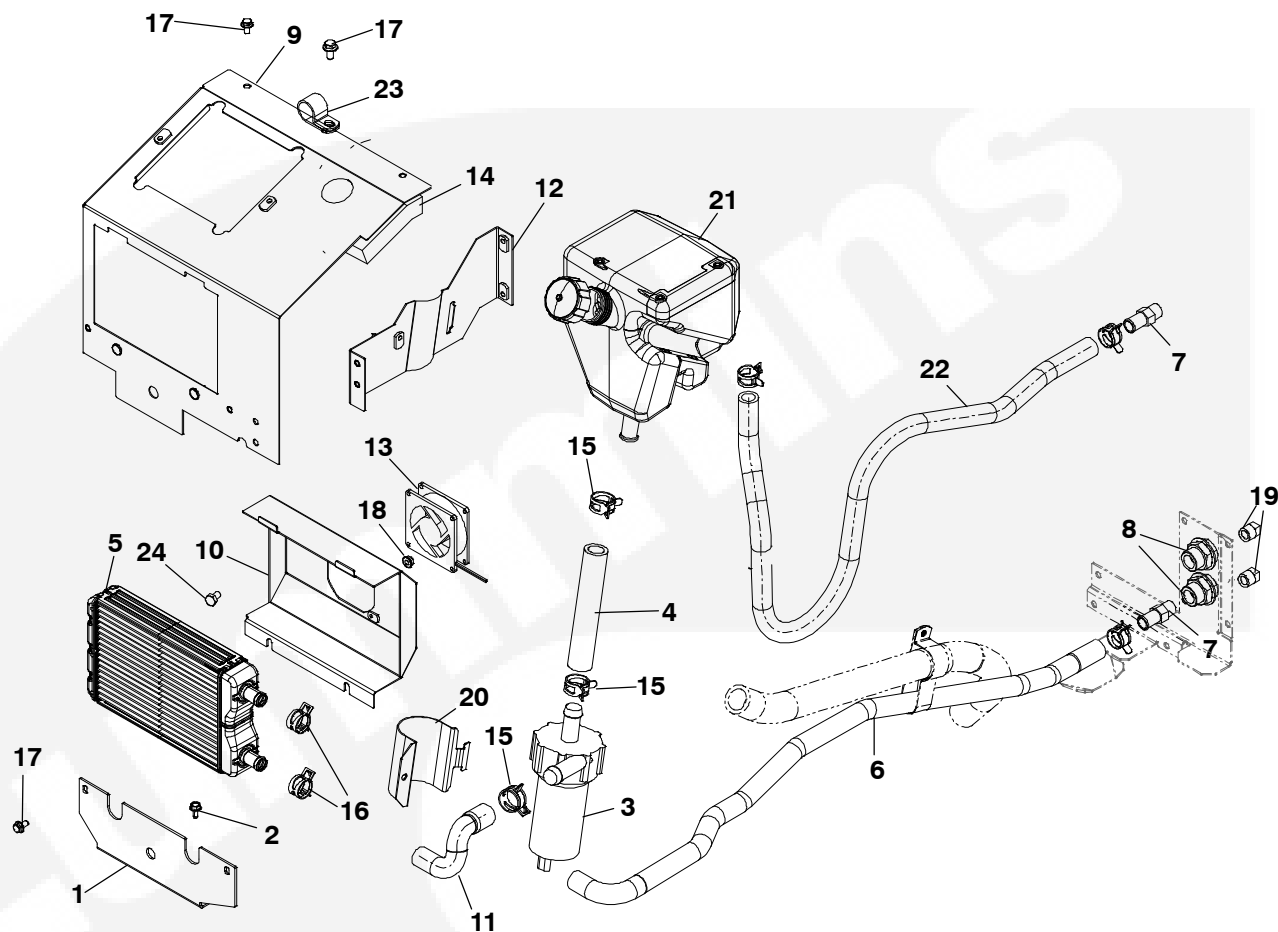
Oil System



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	123-2051	1	Dipstick
2	821-2096-02	3	Screw, Lock Flange (M6 x 1 x 12mm)
3	503-1951-46	2	Clamp, Hose
4	123-2120	1	Hose, Oil Fill

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	800-2027	1	Screw, Pan Head Machine Torx (M6 x 1 x 10mm)
6	503-2836	1	Clamp, Hose
7	403-3859	1	Seal, Oil Drain
8	159-1722	1	Cap, Coolant

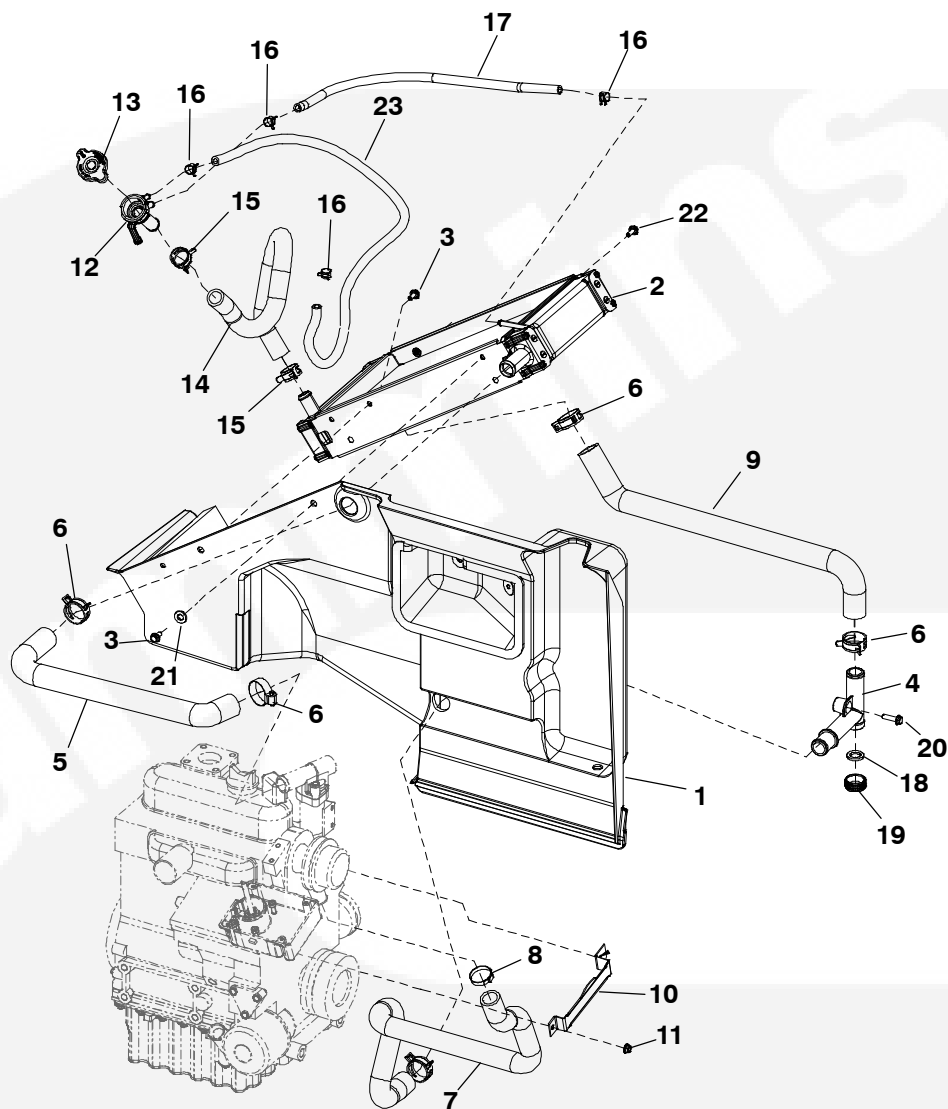
Heat Exchanger



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	130-7073-02	1	Bracket, Heat Exchanger (Bottom Support)
2	815-0578	2	Screw, Thread Form (M6 x 1.0mm)
3	132-0450	1	Pump, Inverter Coolant
4	503-2781	1	Hose, Coolant (Pump to Bottom)
5	130-7062	1	Heat, Exchanger
6	503-2606	1	Hose, Coolant
7	502-1561	2	Connector, Hose
8	502-1209	2	Coupling, Union
9	130-7374-02	1	Cover, Heat Exchanger
10	130-7381-02	1	Bracket, Heat Exchanger
11	503-2780	1	Hose, Coolant
12	132-0465-02	1	Bracket, Water Pump

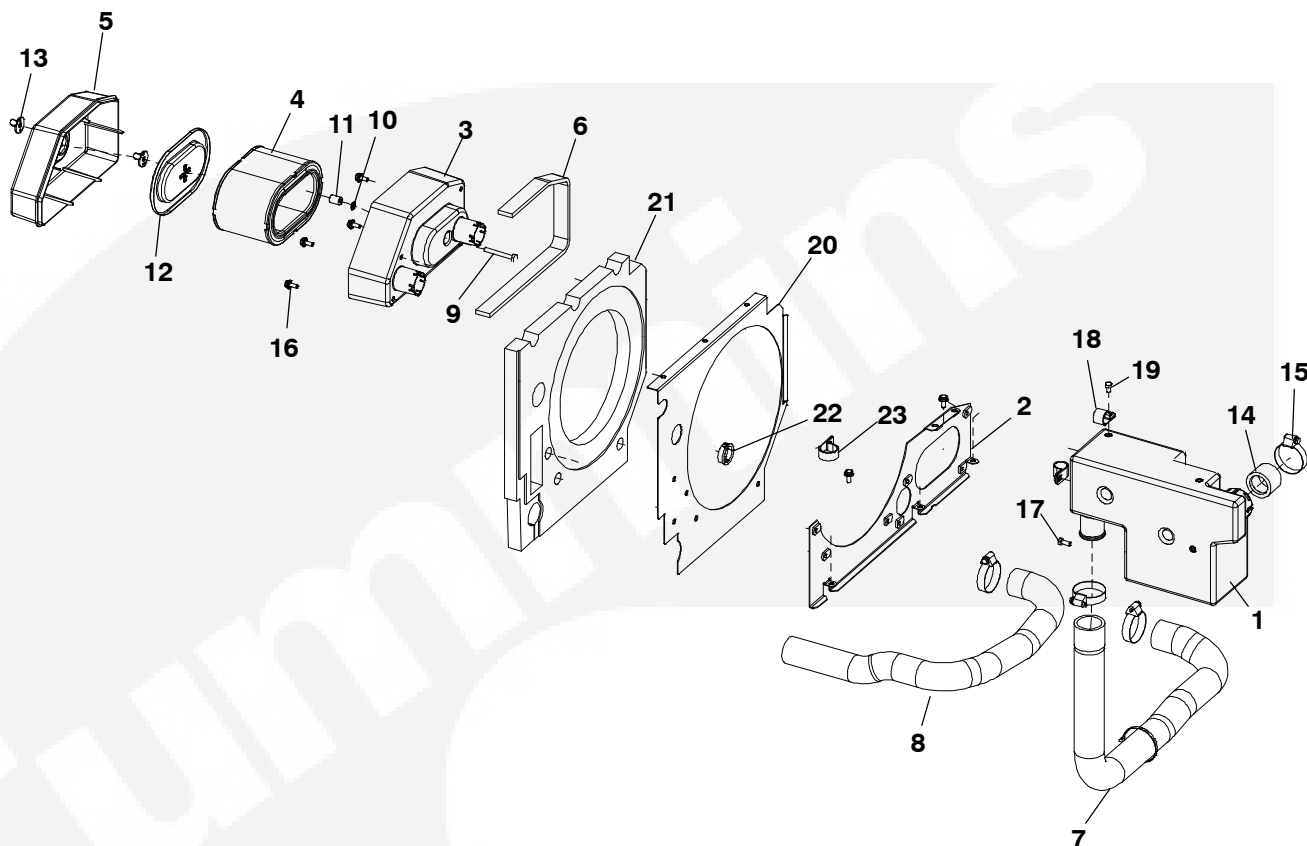
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
13	205-0330	1	Fan, Heat Exchanger
14	405-9650	1	Insulation, Door (Inlet)
15	503-2816-02	3	Clamp, Hose
16	503-2816-01	5	Clamp, Hose
17	821-2096-02	8	Screw, Locking Flange (M6 x 1 x 12mm)
18	870-2054	2	Nut, Locking Flange (M6 x 1)
19	505-0110	2	Plug, Square Head
20	134-5359-02	1	Housing, Fan
21	130-6863	1	Tank, Coolant
22	503-2820	1	House, Coolant (Inverter)
23	332-1356	1	Clamp, Loop
24	819-1167-01	2	Screw, Pan Head Torx (#10-14 x.50")

Cooling System



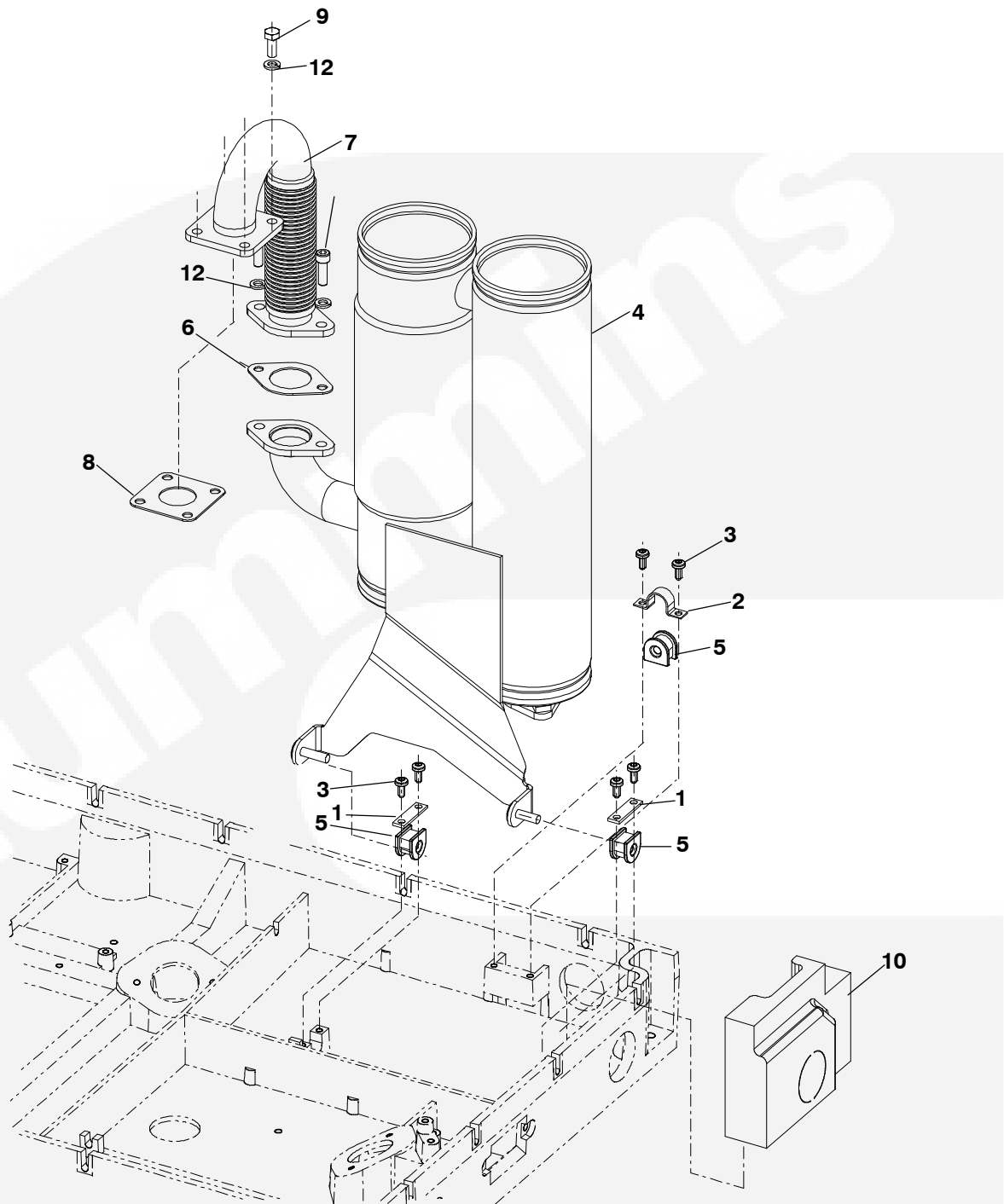
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	404-0179	1	Assy Panel, Back	14	503-1922	1	Hose, Fill Neck
2	130-6936	1	Radiator	15	503-2816-02	2	Clamp, Hose
3	815-0753	2	Screw, Locking Flange	16	503-2822-01	4	Clamp, Hose
4	130-4391	1	Fitting, Hose (Tee)	17	503-1959	1	Hose, Air Bleeder
5	503-1920	1	Hose, Radiator (Upper)	18	130-4462	1	Seal, Garden Hose
6	503-2816-03	5	Clamp, Hose	19	130-4392	1	Cap, Drain
7	503-1921	1	Hose, Engine (Lower)	20	821-2035	1	Screw, Locking Flanged (M6 x 1 x 25mm)
8	503-1951-40	1	Clamp, Hose	21	526-0399-59	1	Washer, Flat (M6)
9	503-1954	1	Hose, Radiator (Lower)	22	821-2096-03	2	Screw, Locking Flanged (M6 x 1 x 16mm)
10	503-1970-02	1	Clamp, Hose	23	503-2783	1	Hose, Breather
11	870-2054	1	Nut, Locking Flanged (M6 x 1)				
12	130-4321	1	Neck, Fill				
13	130-7902	1	Cap, Fill				

Air Intake



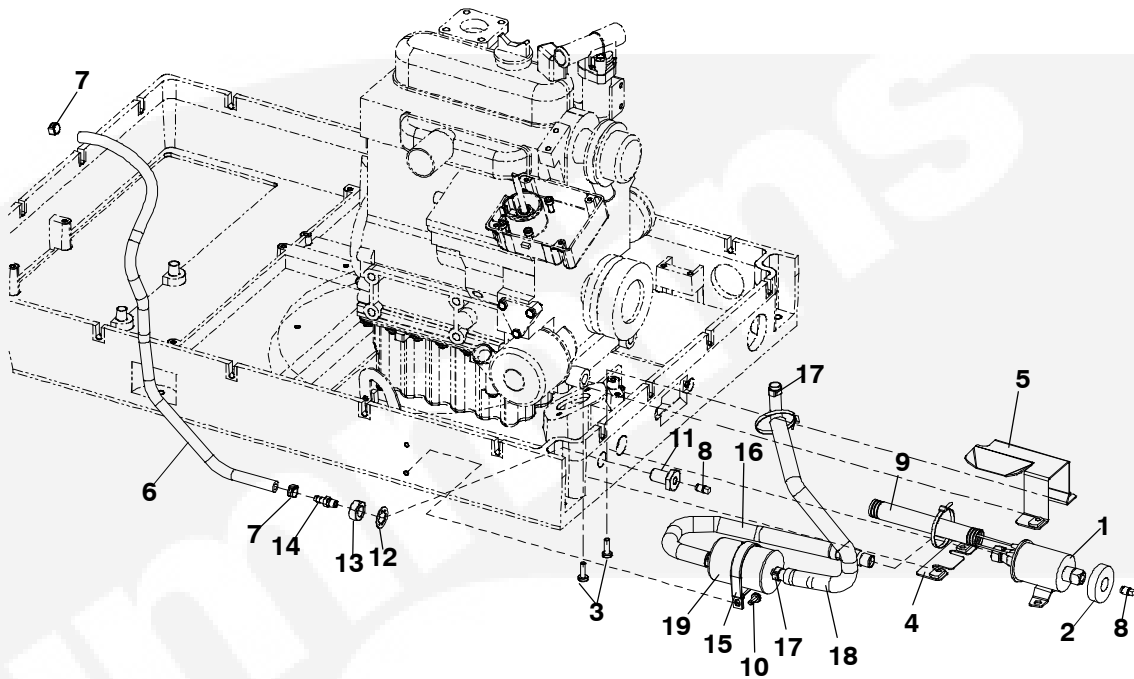
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	134-5126	1	Resonator, Intake Spec A-B	13	865-0029	2	Nut, Wing
	140-4273	1	Begin Spec C	14	140-2898	1	Sleeve, Air Intake
2	134-5369-02	1	Housing, Fan	15	503-0429	4	Band, Hose Clamp (1.06 to 2")
3	140-3231	1	Housing, Air Cleaner	16	815-0753	12	Screw, Lock Flange
4	140-2897	1	Element, Air Cleaner	17	800-2031	2	Screw, Hex Head (M6 x 1 x 14mm)
5	140-3232	1	Cover, Air Cleaner	18	332-1356	1	Clamp, Loop
6	140-4018	1	Seal, Air Cleaner	19	800-2027	1	Screw, Hex Head Cap (M6 x 1 x 10mm)
7	503-1985	1	Hose, Intake	20	405-9962-02	1	Baffle, Air (Top)
8	503-1979	1	Hose, Intake	21	405-9961	1	Insulation, Baffle (Inlet)
9	800-0603-01	1	Screw, Hex Head	22	508-1268-02	1	Bushing
10	870-0540-03	1	Nut, Push-on	23	332-1553	1	Clamp, Loop
11	140-2536-05	1	Seal, Air Cleaner Spacer (.625")				
12	140-2961-02	1	Cover, Air Element				

Exhaust



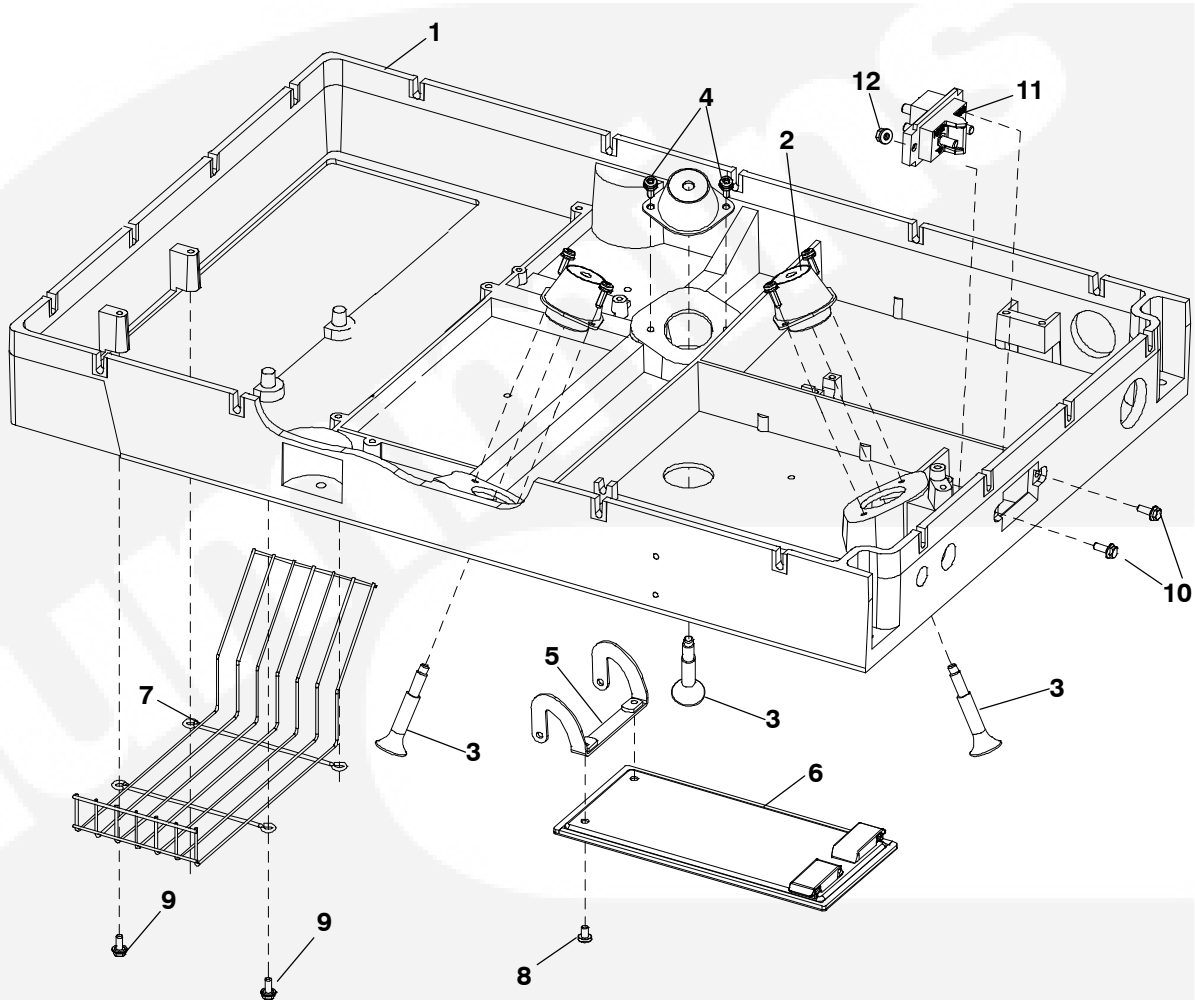
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	402-0688-02	2	Clamp, Isolator (Flat)	8	185-6853	1	Gasket, Exhaust Manifold (With Engine)
2	402-0695-02	1	Clamp, Isolator (U-Shaped)	9	725-1051	6	Screw, Hex Head Cap (M8 x 1.25 x 20mm)
3	823-0003-02	6	Pan Head Torx Thread Forming (M6 x 1 x 14mm)	10	405-5787	1	Block, Fiberglass
4	155-4661	1	Muffler, Exhaust	11	405-5755	1	Exhaust, Pipe Seal (Not Shown)
5	402-0687-01	3	Isolator, Muffler	12	850-2008	6	Washer, Space Locking (M8)
6	154-2800	1	Gasket, Exhaust Manifold				
7	154-3018	1	Assy, Exhaust (Flexible Pipe)				

Fuel System



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	541-1442	1	Kit, Fuel Filter (Includes Filter and Clamps)	11	502-1296-02	1	Fitting, Bulkhead
1	149-2790	1	Pump, Fuel	12	854-0028	1	Washer, Locking (5/8 ID 1.071 OD)
2	403-3860	1	Seal, Fuel Pump	13	868-0007	1	Nut, Hex Jam (5/8-18UNF)
3	823-1002-05	2	Screw, Pan Hd Mach Torx (M6 x 1 x 20mm)	14	502-0395	1	Connector, Hose
4	149-2782-02	1	Bracket, Fuel Pump	15	518-0548-61	1	Clamp, Hose
5	403-3863-02	1	Trough, Oil Drain (Begin Spec C)	16	503-2889-01	1	Hose
6	503-2895	1	Hose, Fuel	17	503-1951-13	3	Clamp, Hose
7	503-1951-09	2	Clamp, Hose	18	503-2890-01	1	Hose
8	517-0273	2	Plug, Pipe	19	147-0860	1	Filter, Fuel (Sold in Kit Only)
9	898-1196-33	1	Sleeve, Convolutd				
10	823-0003-02		Screw, Pan Head Torx Tread Form (M6 x 1.0 x 14mm)				

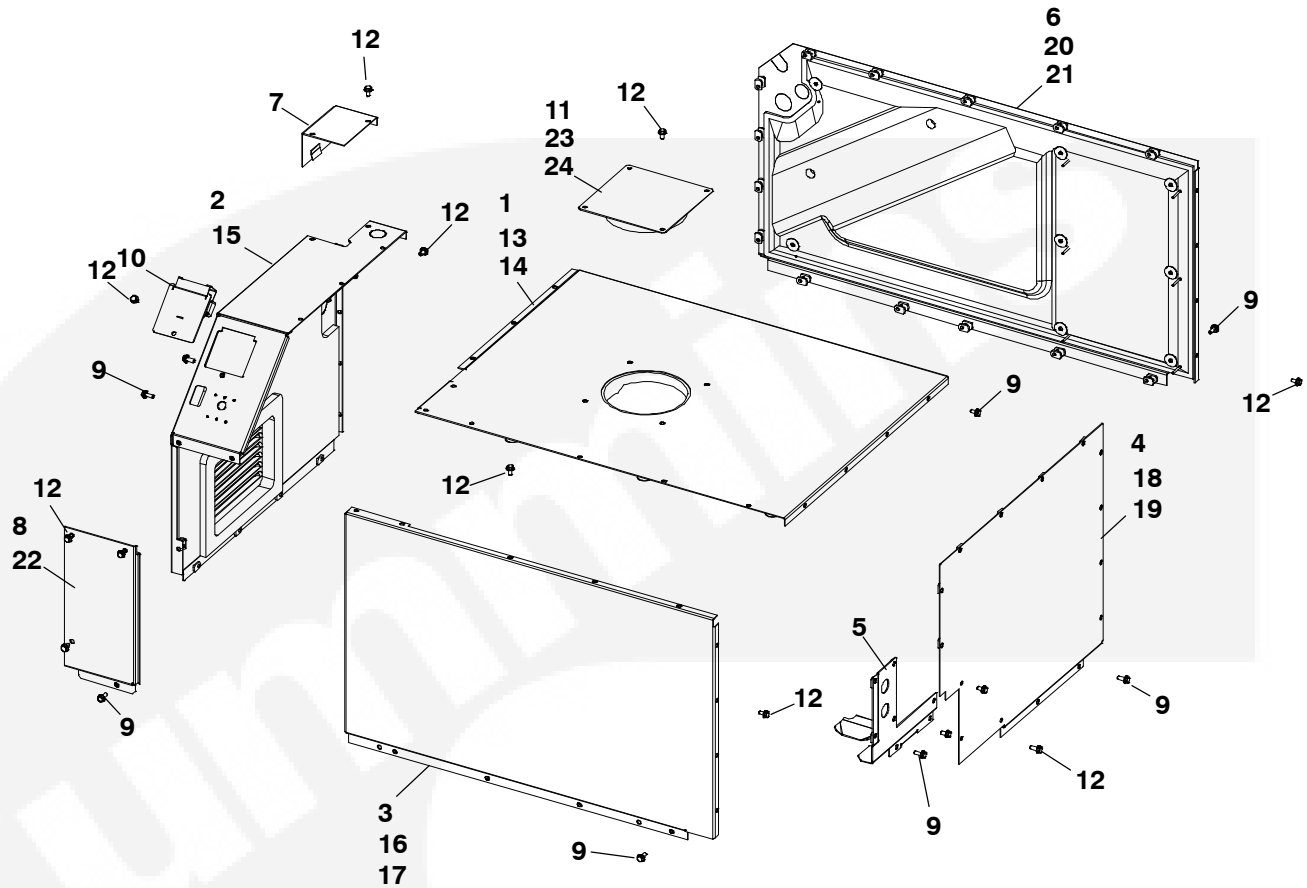
Mounting System



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	403-3847-04	1	Base, Skid
2	402-0680-01	3	Isolator, Engine
3	815-0861	3	Screw, Isolator Mounting
4	823-0003-03	6	Screw, Pan Head (Torx M6 x 1 x 14mm)
5	402-0673-02	1	Hinged, Door
6	405-5818	1	Door Assy, Maintenance
7	130-4655	1	Guard, Fan
8	823-1002-03	2	Screw, Pan Head Torx (M6 x 1 x 16mm)

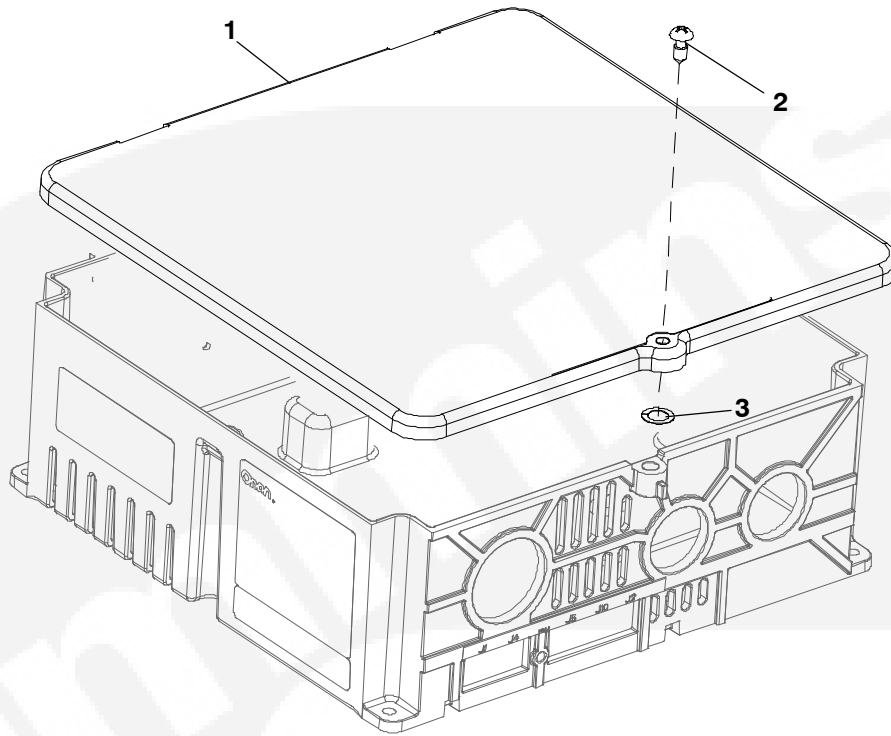
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
9	815-0753	4	Screw, Pan Head Torx (M6 x 1 x 14mm)
10	821-2096-03	2	Screw, Locking Flanged (M6 x 1 x 16mm)
11	332-3408	1	Block, Terminal (Include Captive Nuts Items)
12	870-2054	2	Nut, Hex Locking Flange (M6 x 1mm)

Enclosure



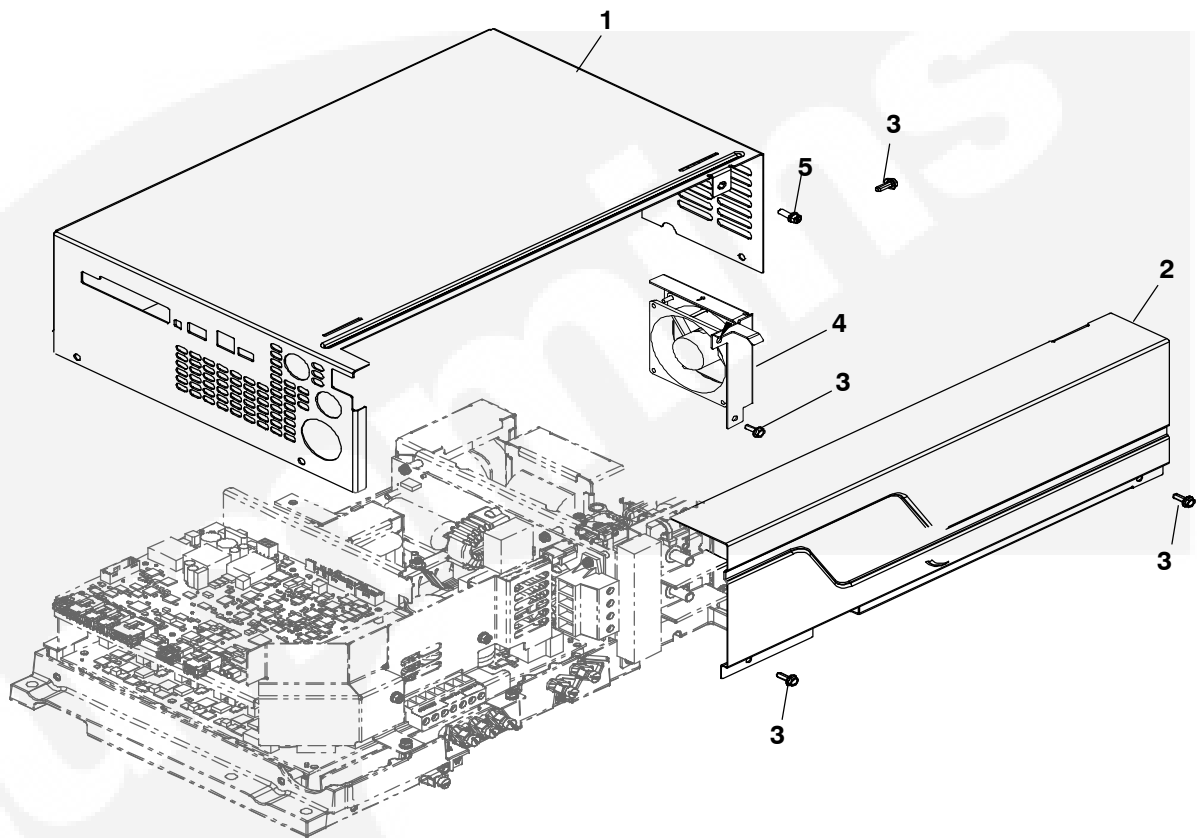
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	405-5096-03	1	Panel, Top	13	405-9608	1	Insulation, Panel (Top)
2	405-9046-02	1	Panel, End Cap	14	518-0581	7	Nut, Push On
3	405-5758-03	1	Panel, Curb	15	405-9652	1	Insulation, End Cap
4	405-9372-02	1	Cover, Enclosure	16	405-9607	1	Insulation, Panel
5	405-9373-02	1	Cover, Enclosure	17	518-0581	8	Nut, Push On
6	405-5876-03	1	Panel, Rail	18	405-9606	1	Insulation, Panel
7	405-5380-05	1	Cover, Enclosure AC	19	518-0581	5	Nut, Push On
8	405-9342-02	1	Cover, Enclosure	20	405-9605	1	Insulation, Panel
9	821-2096-03	18	Screw, Locking Flanged (M6 x 1 x 16mm)	21	518-0581	8	Nut, Push On
10	405-5309-03	1	Cover, Access	22	405-9651	1	Insulation, Enclosure
11	405-5545-02	1	Cover, Access	23	405-9609	1	Insulation, Cover
12	821-2096-02	40	Screw, Locking Flanged (M6 x 1 x 12mm)	24	518-0581	1	Nut, Push On

Transfer Switch



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	541-1397	1	Cover, Transfer Switch(Includes Screws, Retainer and Warning Label)	3	406-1207	1	Washer, Retainer
2	812-1159	1	Screw, Round Head XREC (M4 x .7 x 19mm)	* - Transfer Switch Replacement Assembly 541-1561 (Complete Inverter)			

Inverter Components

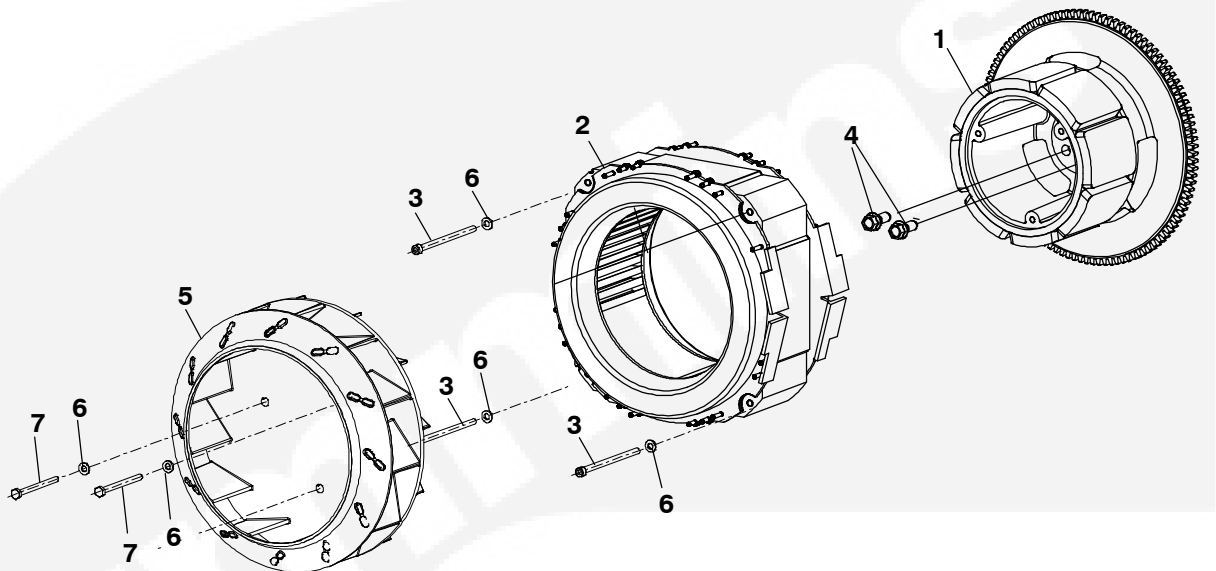


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	404-0873	1	Cover, Enclosure
2	404-0874	1	Cover, Enclosure (Side)
3	800-6383-02	6	Screw, Hex Head Flange (M5)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
4	205-0339	1	Fan, Inverter
5	815-1556-05	2	Screw, Hex Head Flange (M5)

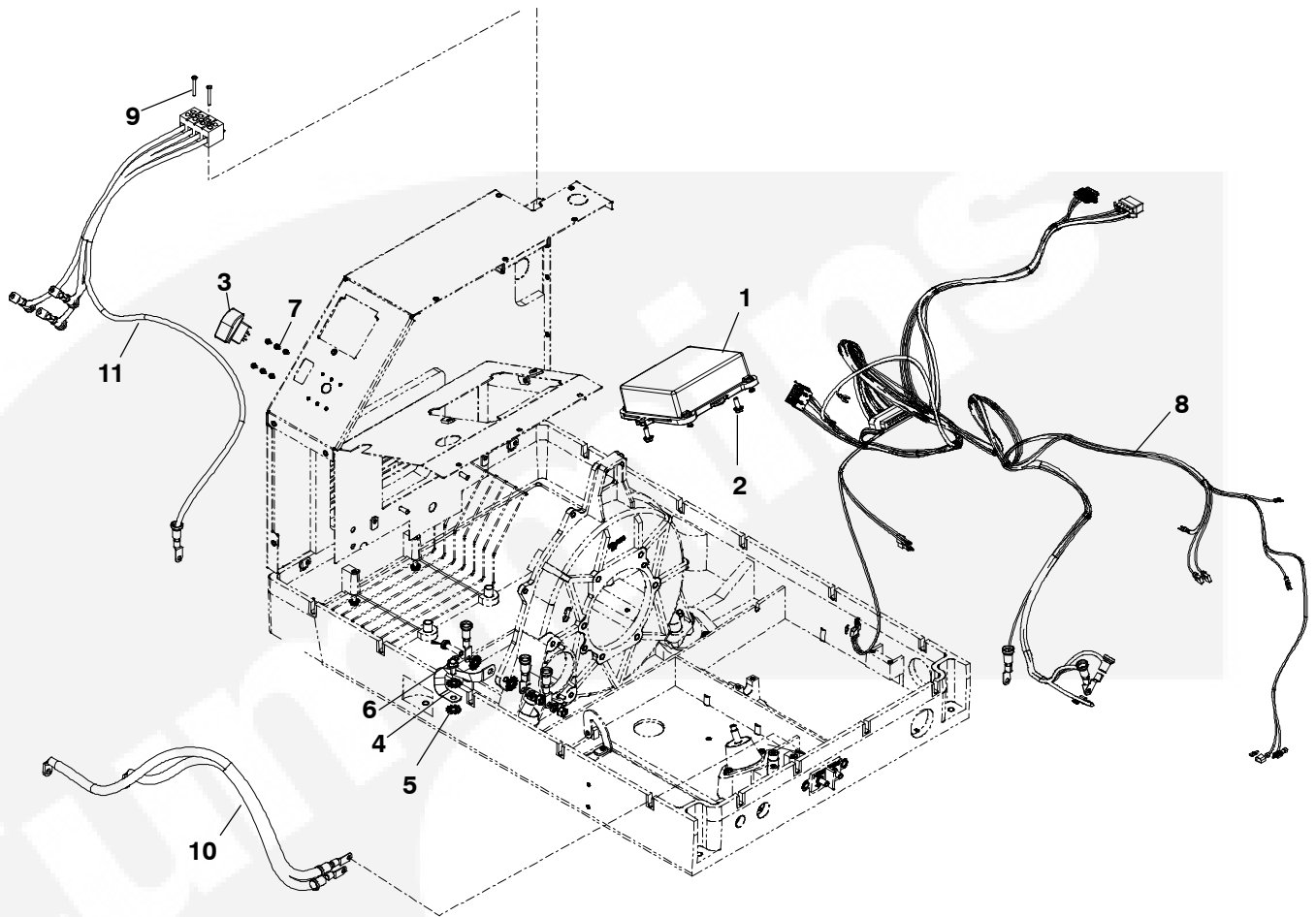
* - Inverter Replacement Assembly
 New - 541-1562-02
 Reconditioned - 541-1562-96

Generator

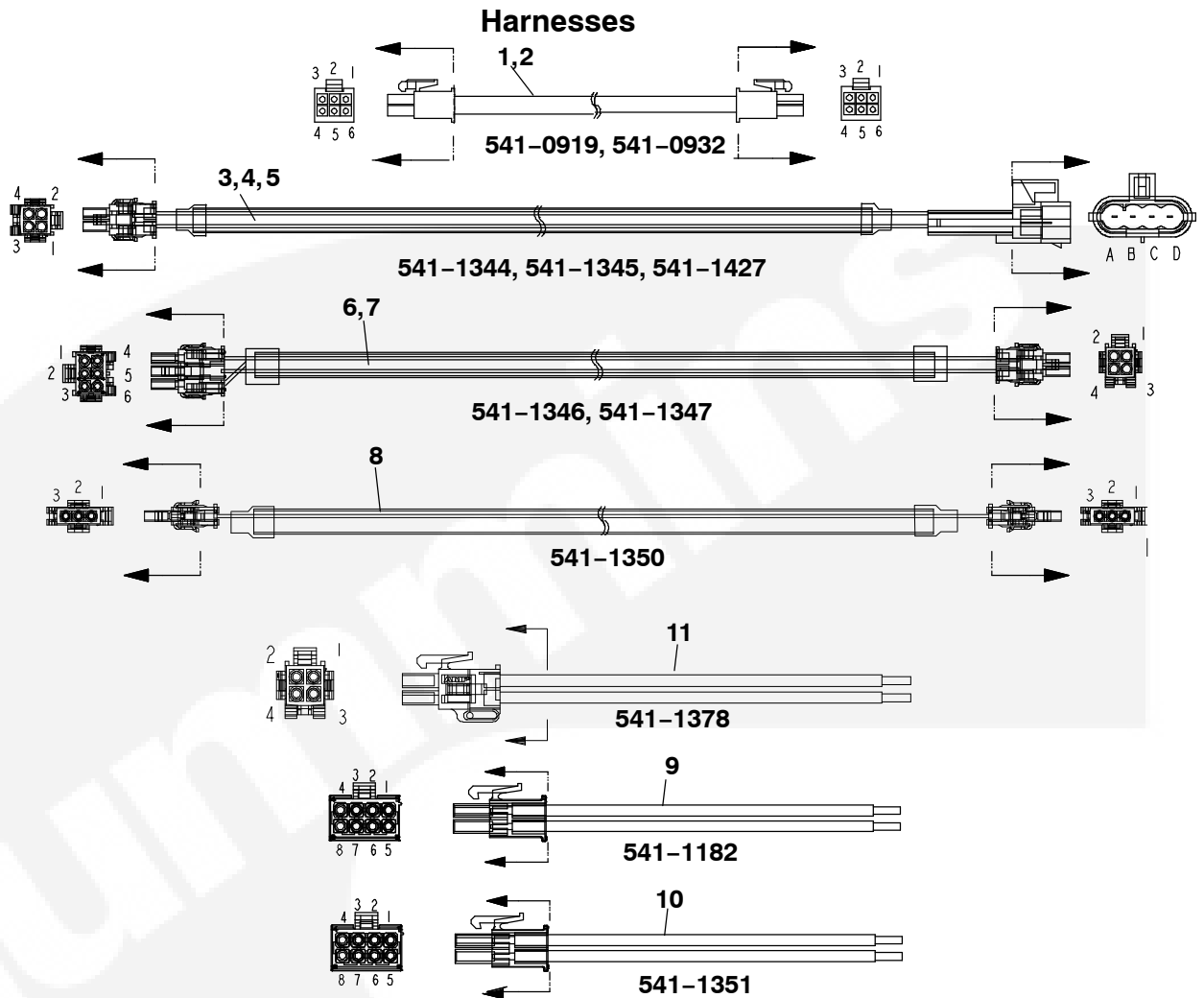


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	201-3540-02	1	Rotor Assy, Generator
2	220-4644-01	1	Stator, Wound
3	815-0936	4	Screw, Socket Head Cap (M6 x 1 x 90mm)
4	185-5587	5	Bolt, Flywheel (W/ Engine)
5	205-0302	1	Assy, Fan (Generator)
6	526-2080	7	Washer, Flat (M6)
7	800-2044	3	Screw, Hex Head Cap (M6 x 1 x 70mm)

Harnesses

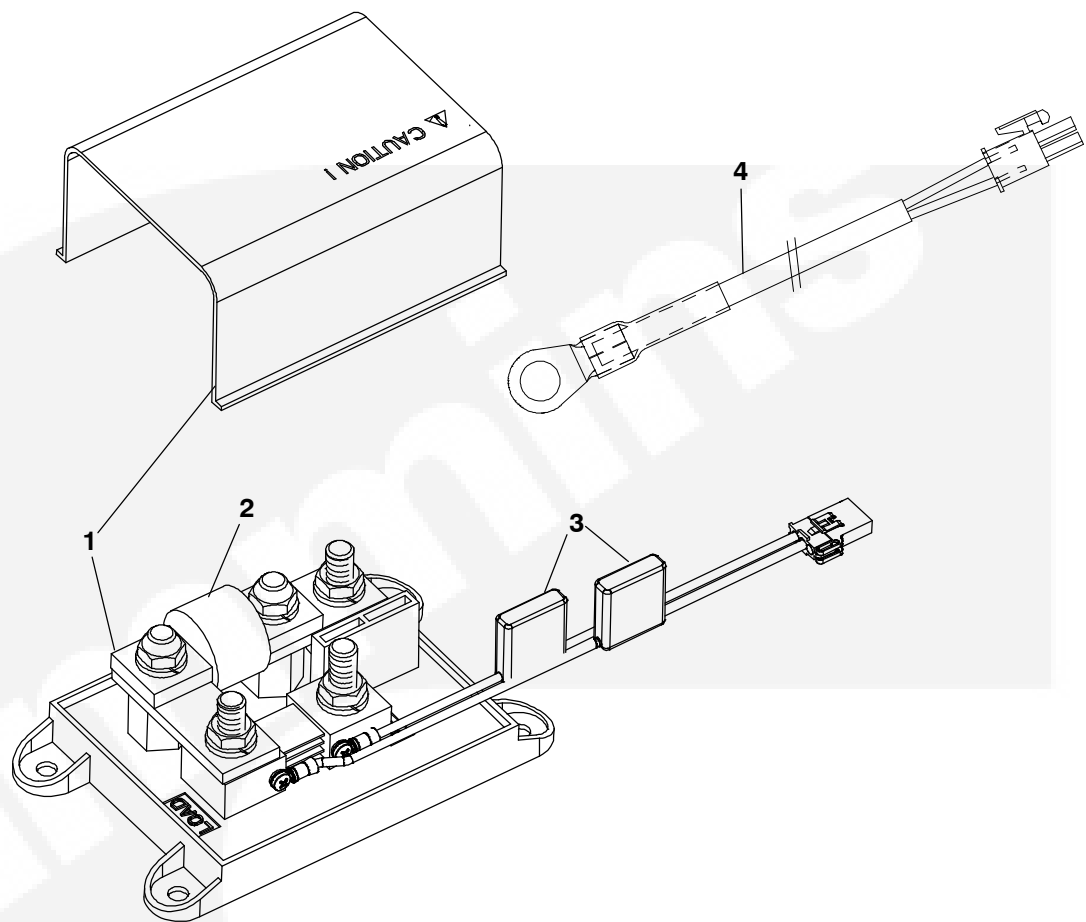


REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	300-6410	1	PCB Assy, (ECM) (Includes Parts Marked *)	8	338-4917	1	Harness, Engine
2	821-2096-03	2	Screw, Locking Flange (M6 x 1 x 12mm)	9	812-0070	2	Screw, Round Head (6-32 x 1.25")
3	308-1038	1	Switch, Rocker	10	338-4918	1	Harness, Battery
4	337-2845	1	Strap, Bond	11	338-4919	1	Harness, AC
5	856-0008	4	Washer, ETIT Lock (5/16)	12	321-0307-08	2	*Fuse, 25Amp 32V (F1 - Glow Plug, F2 - Starter Not Shown)
6	815-0829-04	1	Screw, Thread Form (M8 x 1.25 x 16mm)	13	321-0321-05	1	*Fuse, 7.5Amp 32V (F3 - Coolant Pump Not Shown)
7	815-0549-01	6	Screw, XREC (#6-32 x .375)				



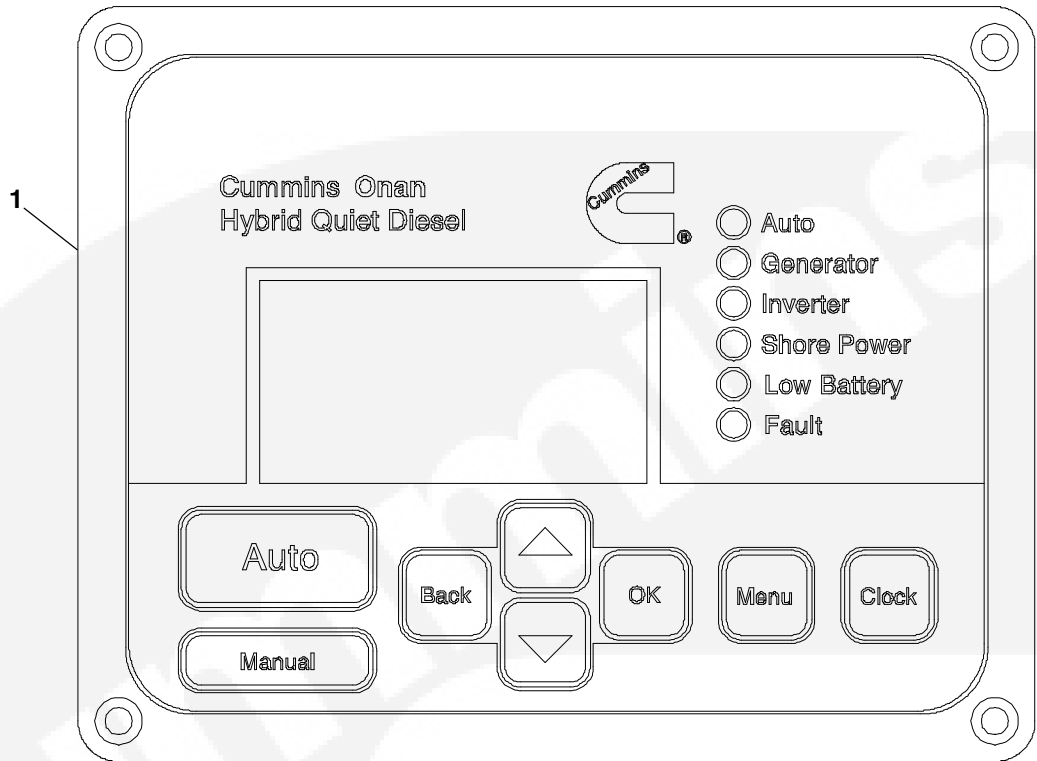
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	541-0919	1	Kit, Remote Display Harness (25')	8	541-1350	1	Kit, Control Harness
	338-4280	1	Harness, Accessory (25')		338-5022	1	Harness, Control (50')
2	541-0932	1	Kit, Remote Display Harness (50')	9	541-1182	1	Kit, Accessory Harness (Ext Wake)
	338-4281	1	Harness, Accessory (50')		338-4557	1	Harness, Accessory
3	541-1344	1	Kit, Power Unit Harness (30')	10	541-1351	1	Kit, Control Harness (Transfer Switch Load Demand)
	338-5033	1	Harness, Control (30')		338-4853	1	Harness, Control
4	541-1345	1	Kit, Power Unit Harness (50')	11	541-1378	1	Kit, Remote Harness
	338-5034	1	Harness, Control (50')		338-4876	1	Harness, Control (Remote)
5	541-1427	1	Kit, Power Unit Harness (60')	12		1	Kit, Inverter Installation – Not Shown (Includes the Following Parts)
	338-5035	1	Harness, Control (60')		850-0050	2	Washer, Lock
6	541-1346	1	Kit, Transfer Switch Harness (15')		862-0003	2	Nut, Hex
	338-5036	1	Harness, Control (30')		503-2816-01	2	Clamp
7	541-1347	1	Kit, Transfer Switch Harness (30')		331-0042	2	Connector, Conduit
	338-5037	1	Harness, Control (30')		331-0637	1	Connector, Conduit

Battery Shunt



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	541-1330	1	Kit, Shunt (Parts Included Marked*)
	321-0443	1	*Block, Fuse (500Amp)
		1	*Instructions Included
2	321-0390-03	1	*Fuse (400 Amp)
3	321-0321-01	2	*Fuse (2 Amp LittleFuse #297002)
4	193-0530	1	*Sensor, Temperature (Battery)

Remote Display



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	541-1333	1	Kit, Remote Display Assy, Control (HQDSA) Instructions Included
	300-6078	1	

Labels

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	98-8420	1	Label, Neutral/ Line
	98-8421	1	Label, Information (T Block Wiring)
	98-8447	1	Label, Information (Control Panel)
	98-8463	1	Label, Information (Package 1-11)
		1	Label, Hazard Voltage
		1	Label, Installation Instructions
		1	Label, Service Information
		1	Label, Ground
		1	Label, Patent Information
		1	Label, Coolant / Oil Fill
		1	Label, Multiple Warnings
		1	Label, Fuel Attachment
		1	Label, Cool Level
		1	Label, Terminal Block Wiring
		1	Label, Coolant Connections
	98-8464	1	Label, Warning (Service Door)
	98-8469	1	Label, Information (Tag Oil / Coolant)
	98-8553	1	Label, Information (Package 1-5)
		1	Label, Warning (Inverter)
		1	Label, Information (Connector Lead)
		1	Label, Warning (Hose Connector)
		1	Label, Information (Pos Neg)
		1	Label, Information (Stripped Wire)
	98-8559	1	Label, Information (4 Place Terminal Block)
	98-8560	1	Label, Information (8 Place Terminal Block)

Numerical Index

<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>
098-8420, 48		132-0450, 34		181-9075, 16		185-2033, 8	
098-8421, 48		132-0465-02, 34		181-9084, 18		185-2094, 7	
098-8447, 48		132-0492, 26		181-9159, 9		185-2095, 7 , 17	
098-8463, 48		132-0493, 26		181-9162, 8		185-2105, 25	
098-8464, 48		132-0525, 26		181-9164, 32		185-2115, 7	
098-8469, 48		134-5126, 36		181-9165, 7		185-2124, 25	
098-8553, 48		134-5359-02, 34		181-9168, 18		185-2163, 16	
098-8559, 48		134-5369-02, 36		181-9169, 12 , 13		185-2173, 12 , 13	
098-8560, 48		134-5395, 24		181-9177, 18		185-2180, 14	
100-3957, 7		134-5396, 24		181-9179, 8		185-2188, 7	
100-4111, 7		140-2536-05, 36		181-9183, 7		185-2233, 7	
103-0844, 25		140-2897, 36		181-9185, 21 , 22		185-2234, 7 , 25	
104-1890, 15		140-2898, 36		181-9196, 21		185-2238, 21 , 22	
104-2169, 8		140-2961-02, 36		181-9201, 16		185-2284, 14 , 18 , 27	
104-2174, 8		140-3231, 36		181-9202, 18		185-2338, 14	
105-0777, 16		140-3232, 36		181-9203, 12 , 13		185-2351, 20	
110-3990, 20		140-4018, 36		181-9205, 27		185-2353, 8 , 16	
110-3991, 20		140-4273, 36		181-9210, 32		185-2357, 16	
110-4125, 7		147-0860, 38		181-9211, 25		185-2359, 31	
110-4128, 17		147-0970, 16		181-9213, 25		185-2374, 25	
112-0332, 8		147-0971, 16		181-9226, 31		185-2380, 9	
122-0833, 25		148-1389, 12 , 13		181-9238, 24		185-2384, 23 , 24	
122-0912, 25		149-2782-02, 38		181-9241, 24		185-2385, 18	
122-0946, 25		149-2790, 38		181-9247, 17		185-2386, 16 , 20 , 22	
123-2051, 33		150-2630, 28		181-9249, 23 , 24		185-2387, 9	
123-2120, 33		150-2639, 28		181-9251, 20		185-2388, 21	
123-2268, 23		150-2641, 28		181-9252, 23		185-2389, 16 , 25 , 30 , 32	
123-2300, 30		150-2643, 28		181-9253, 23		185-2390, 10	
123-2301, 23		150-2724, 28		181-9254, 24		185-2393, 12 , 13	
123-2303, 23		150-2872, 14		184-0013, 27		185-2395, 25	
123-2428, 24		150-2996, 12 , 13		184-0017, 27		185-2398, 32	
130-4321, 35		154-2800, 37		184-0019, 27		185-2411, 17	
130-4391, 35		154-3018, 37		184-0053, 27		185-2412, 17	
130-4392, 35		154-3294, 31		184-0056, 27		185-2413, 17	
130-4462, 35		155-4661, 37		184-0057, 27		185-2414, 17	
130-4655, 39		159-1722, 33		184-0059, 27		185-2559, 10 , 11 , 26	
130-6863, 34		16851-0705-0, 11		184-0060, 27		185-4255, 25 , 27	
130-6936, 35		181-9000, 23		185-2016, 8		185-5162, 23	
130-7062, 34		181-9005, 32		185-2022, 8		185-5337, 18	
130-7073-02, 34		181-9022, 7		185-2023, 8		185-5348, 20	
130-7374-02, 34		181-9024, 24		185-2028, 8		185-5350, 8	
130-7381-02, 34		181-9059, 22		185-2029, 8		185-5356, 8	
130-7902, 35		181-9063, 27		185-2031, 8		185-5357, 8	

Numerical Index

<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>
185-5360, 8		185-5404, 19		185-5537, 20		185-5630, 16	
185-5361, 8		185-5405, 19		185-5538, 20		185-5631, 16	
185-5363, 19		185-5406, 19		185-5539, 20		185-5632, 16	
185-5364, 19		185-5410, 25		185-5540, 20		185-5633, 16	
185-5365, 19		185-5413, 7		185-5541, 20		185-5634, 16	
185-5366, 19		185-5414, 7		185-5550, 20		185-5635, 16	
185-5367, 19		185-5415, 7		185-5551, 20		185-5660, 16	
185-5368, 19		185-5416, 7		185-5552, 20		185-5661, 16	
185-5369, 19		185-5425, 16		185-5553, 20		185-5662, 16	
185-5370, 19		185-5433, 26		185-5555, 9		185-5663, 16	
185-5371, 19		185-5434, 26		185-5560, 9		185-5679, 14	
185-5372, 19		185-5437, 10 , 11		185-5561, 9		185-5680, 14	
185-5373, 19		185-5438, 10		185-5562, 9		185-5681, 14	
185-5374, 19		185-5458, 21 , 22		185-5563, 9		185-5682, 14	
185-5375, 19		185-5482, 7		185-5564, 9		185-5684, 14	
185-5376, 19		185-5483, 7		185-5565, 9		185-5696, 12 , 13 , 27	
185-5377, 19		185-5484, 7		185-5568, 8		185-5701, 12 , 13	
185-5378, 19		185-5485, 7		185-5570, 8		185-5702, 12 , 13	
185-5379, 19		185-5486, 7		185-5572, 8		185-5703, 12 , 13	
185-5380, 19		185-5487, 7		185-5573, 8		185-5704, 13	
185-5381, 19		185-5488, 7		185-5575, 8		185-5707, 29	
185-5382, 19		185-5489, 7		185-5576, 8		185-5709, 29	
185-5383, 19		185-5490, 7		185-5577, 8		185-5712, 26	
185-5384, 19		185-5491, 7		185-5578, 8		185-5713, 26	
185-5385, 19		185-5492, 7		185-5579, 8		185-5714, 26	
185-5386, 19		185-5500, 17		185-5580, 8 , 11		185-5715, 26	
185-5387, 19		185-5501, 17		185-5581, 8 , 11		185-5716, 26	
185-5388, 19		185-5502, 17		185-5583, 8		185-5717, 26	
185-5389, 19		185-5503, 17		185-5587, 43		185-5719, 21	
185-5390, 19		185-5505, 25		185-5612, 18		185-5720, 21	
185-5391, 19		185-5506, 25		185-5613, 18		185-5722, 21 , 22	
185-5392, 19		185-5507, 25		185-5615, 18		185-5723, 21	
185-5393, 19		185-5509, 25		185-5616, 19		185-5727, 25	
185-5394, 19		185-5510, 25		185-5617, 19		185-5741, 25	
185-5395, 19		185-5511, 25		185-5618, 19		185-5742, 25	
185-5396, 19		185-5512, 25		185-5619, 19		185-5743, 25	
185-5397, 19		185-5513, 25		185-5621, 19		185-5744, 25	
185-5398, 19		185-5515, 10 , 11		185-5622, 19		185-5745, 25	
185-5399, 19		185-5516, 10 , 11		185-5623, 16		185-5746, 25	
185-5400, 19		185-5517, 10 , 11		185-5624, 16		185-5792, 22	
185-5401, 19		185-5519, 10 , 11		185-5625, 16		185-5793, 20	
185-5402, 19		185-5534, 31		185-5626, 16		185-5798, 16	
185-5403, 19		185-5536, 31		185-5629, 16		185-5800, 25	

Numerical Index

<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>
185-5808, 10		185-7267, 27		338-5022, 45		501-1128, 18	
185-5820, 16		185-7313, 14		338-5033, 45		501-1130, 18	
185-5823, 18		185-7382, 25		338-5034, 45		501-1131, 18	
185-5827, 20		185-7383, 10		338-5035, 45		502-0395, 38	
185-5831, 30		185-7385, 9		338-5036, 45		502-1209, 34	
185-5832, 30		185-7386, 8		338-5037, 45		502-1296-02, 38	
185-5833, 30		185-7395, 20		402-0673-02, 39		502-1561, 34	
185-5924, 9		185-7407, 8		402-0680-01, 39		503-0429, 36	
185-5966, 12		185-7415, 8		402-0687-01, 37		503-1920, 35	
185-5985, 18		185-7421, 32		402-0688-02, 37		503-1921, 35	
185-6120, 17		185-7426, 23 , 24		402-0695-02, 37		503-1922, 35	
185-6445, 22 , 23 , 24		191-2200, 15		403-3847-04, 39		503-1951-09, 38	
185-6667, 22		193-0318, 21 , 22		403-3859, 33		503-1951-13, 38	
185-6669, 21		193-0530, 46		403-3860, 38		503-1951-40, 35	
185-6677, 22		201-3540-02, 43		403-3863-02, 38		503-1951-46, 33	
185-6738, 18 , 19		205-0302, 43		404-0179, 35		503-1954, 35	
185-6739, 16		205-0330, 34		404-0873, 42		503-1959, 35	
185-6759, 16 , 25 , 27		205-0339, 42		404-0874, 42		503-1970-02, 35	
185-6762, 17		220-4644-01, 43		405-5096-03, 40		503-1979, 36	
185-6825, 19		232-4192, 11		405-5309-03, 40		503-1985, 36	
185-6845, 16		300-6078, 47		405-5380-05, 40		503-2606, 34	
185-6846, 32		300-6410, 44		405-5545-02, 40		503-2780, 34	
185-6847, 27		308-1038, 44		405-5755, 37		503-2781, 34	
185-6853, 37		321-0307-08, 44		405-5758-03, 40		503-2783, 35	
185-6883, 16		321-0321-01, 46		405-5787, 37		503-2816-01, 34 , 45	
185-6888, 16		321-0321-05, 44		405-5818, 39		503-2816-02, 34 , 35	
185-6919, 16		321-0390-03, 46		405-5876-03, 40		503-2816-03, 35	
185-6931, 14		321-0443, 46		405-9046-02, 40		503-2820, 34	
185-6956, 32		331-0042, 45		405-9342-02, 40		503-2822-01, 35	
185-6999, 12 , 13		331-0637, 45		405-9372-02, 40		503-2836, 32 , 33	
185-7069, 21 , 22 , 25		332-1356, 34 , 36		405-9373-02, 40		503-2889-01, 38	
185-7070, 25		332-1553, 36		405-9605, 40		503-2890-01, 38	
185-7072, 10 , 11		332-3408, 39		405-9606, 40		503-2895, 38	
185-7073, 10 , 11		337-2845, 44		405-9607, 40		505-0110, 34	
185-7074, 9		337-3782, 18		405-9608, 40		508-1255, 8	
185-7075, 9		338-4280, 45		405-9609, 40		508-1268-02, 36	
185-7076, 8		338-4281, 45		405-9650, 34		509-0380, 8	
185-7080, 27		338-4557, 45		405-9651, 40		509-0549, 7	
185-7082, 18		338-4853, 45		405-9652, 40		510-0229, 16	
185-7083, 29		338-4876, 45		405-9961, 36		511-0235, 29	
185-7085, 20		338-4917, 44		405-9962-02, 36		517-0273, 38	
185-7086, 20		338-4918, 44		406-1207, 41		518-0548-61, 38	
185-7087, 30		338-4919, 44		501-0927, 18		518-0581, 40	

Numerical Index

<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>
518-0672, 28		541-1397, 41		800-6542, 29		821-2096-03, 35 , 39 , 40 , 44	
526-0399-59, 35		541-1427, 45		812-0070, 44		823-0003-02, 37 , 38	
526-2080, 43		541-1442, 38		812-1159, 41		823-0003-03, 39	
526-2100, 15		541-1561, 41		815-0549-01, 44		823-1002-03, 39	
541-0919, 45		541-1562-02, 42		815-0578, 34		823-1002-05, 38	
541-0932, 45		541-1562-96, 42		815-0753, 35 , 36 , 39		850-0050, 45	
541-1182, 45		725-1050, 37		815-0781, 15		850-2008, 37	
541-1330, 46		740-1002, 28		815-0829-04, 44		854-0028, 38	
541-1333, 47		800-0603-01, 36		815-0861, 39		856-0008, 44	
541-1344, 45		800-2027, 33 , 36		815-0877, 28		862-0003, 45	
541-1345, 45		800-2031, 36		815-0936, 43		865-0029, 36	
541-1346, 45		800-2044, 43		815-1556-05, 42		868-0007, 38	
541-1347, 45		800-2058, 15		819-1167-01, 34		870-0540-03, 36	
541-1350, 45		800-6330, 23 , 24		821-2035, 35		870-2054, 34 , 35 , 39	
541-1351, 45		800-6372, 20		821-2096-02, 33 , 34 , 40		898-1196-33, 38	
541-1378, 45		800-6383-02, 42					

Cummins Onan

Cummins Power Generation

1400 73rd Ave. NE
Minneapolis, MN 55432 USA

Phone 1 763 574 5000

Toll-free 1 800 888 6626

Fax 1 763 574 5298

Email www.cumminsonan.com/contact

www.cumminsonan.com

Cummins®, Onan®, the "C" logo, and "Performance you rely on." are trademarks of Cummins Inc.

©2011 Cummins Power Generation, Inc. All rights reserved.

