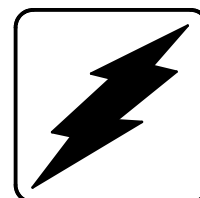


Service Parts

Industrial Generator Sets



Models:

900-1600ROZD

See Group 701, Literature for
Engine and Accessory Parts Catalogs

KOHLER[®]
POWER SYSTEMS

ISO 9001
KOHLER
GENERATORS
INTERNATIONALLY REGISTERED
U.S.A. Plant ISO Registered

Specification Series 132

TP-5602 5/97a

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Introduction

This manual contains a list of generator and some engine service replacement parts for Kohler industrial generator sets. Refer to the Specification Number Index for models and specifications covered.

This manual includes the following main sections:

- *Table of Contents*: Lists the sections of this catalog.
- *Introduction (and other information sections)*: Contains introductory material followed by sections on specification numbers, part numbers, and hardware.
- *Index*: Indexes generator set specifications and their groups.
- *Group Parts Lists*: Lists part numbers of parts in the groups.
- *Kit List and kit sections*: Lists controller and cooling system kits (by model) and their parts. See Parts Catalog TP-5707 for parts lists of optional accessory kits installed on the generator set.
- *Appendices*: Includes Glossary of Abbreviations, Common Hardware Application Guidelines, Common Hardware Identification, General Torque Specifications, and Common Hardware List.

Number Significance

This catalog uses a variety of numbering systems. A description of these follows:

- *Specification Number*: The generator specification number (spec number) is six digits with a PA-, PB-, or PE-prefix (Specification Number Index does not show prefixes). The first three digits designate generator size and engine model (specification series). The remaining digits are in sequence and identify a particular spec in a series. Spec numbers break down into groups.
- *Group Number*: A group consists of parts needed to perform one or more related functions. For example, the 101 group is the generator set Air Intake group.
- *Variation Number*: A group might have several variations. Parts comprising each variation perform the same function, but parts lists vary. For example, a 50 Hz generator alternator and 60 Hz generator alternator both perform the same function. However, they are constructed of different parts. Each of these differences necessitates the assignment of a group variation number.
- *Part Number*: The part number identifies an individual assembly, subassembly, component, or accessory kit.

How to Find Part Numbers

FOLLOW THESE STEPS to identify a part:

STEP 1: Turn to the Specification Number Index. The first column lists generator set specification numbers grouped by model. The headings across the top identify the groups

of parts that make up the generator set. The intersection of the specification number and the group numbers is the variation number corresponding to the components of that specification number. Note the variation number.

STEP 2: Find the page number of the group in the Table of Contents and turn to that page or page forward until you find the group. Variation numbers in the column heading of the group page correspond to variations found in the Specification Number Index. Find the description of the part you need in the description column. The intersection of the description row with the variation column identifies the quantity of that part used in that group. Find the part number to order to the left of the description in the part number column.

Hardware Grades

When replacing hardware do not substitute inferior grade hardware. All hex. head screws are hardness grade 5, except where noted. Socket head screws are similar to grade 8. All replacement hardware should be at least equal to original manufacturer's hardware quality. Refer to Common Hardware Application Guidelines and Common Hardware Identification in the back of the manual.

Hardware References

Many common hardware items will appear in parts catalogs as common hardware entries or hardware references. A common hardware entry refers to the size of common hardware to apply in accordance with hardware guidelines. For example, an item may appear as "3/8-16 hardware" in the text. It indicates that the piece is 3/8-16 size. See Common Hardware Application Guidelines.

A hardware reference has the abbreviation "ref." in the part's description. Hardware references specify common hardware items; however, size or some other characteristic requires specification in that application. For example, item 1 in Figure 1 below might appear in the text as follows:

Screw, 3/8-16 x 1, ref. X-6021-1

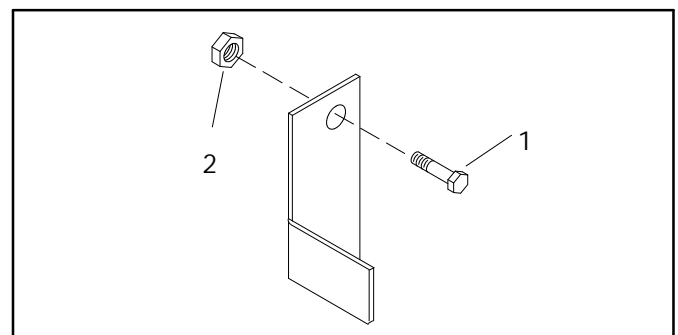


Figure 1. Hardware References

Specification Number Index

GROUP TITLE & NUMBER	<i>Air Intake</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switches</i>	<i>Skid and Plant Mounting</i>	<i>Water Temperature Switches</i>	<i>Starter</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>		
GROUP NO.	101	104	105	107	108	109	110	112	201	301	701		
SPEC NO.	VARIATION NUMBER												

900ROZD													
132334	15	8	32	15	7	28	11	7	97	41	32		
132335	15	*	32	15	7	28	11	7	105	&	32		
132336	15	*	32	15	7	28	11	7	106	&	32		
132337	15	*	32	15	7	6	11	7	107	&	32		
132338	15	*	32	15	7	28	11	7	108	&	32		
132339	15	*	29	15	7	28	11	7	109	&	32		
132366	15	8	32	15	7	28	11	7	106	29	32		
132564	15	8	32	15	7	28	11	7	199	60	70		
132565	15	*	32	15	7	28	11	7	203	&	70		
132566	15	*	32	15	7	28	11	7	204	&	70		
132567	15	8	32	15	7	28	11	7	205	61	70		
132568	15	*	32	15	7	28	11	7	205	&	70		
132569	15	*	32	15	7	6	11	7	206	&	70		
132570	15	*	29	15	7	28	11	7	207	&	70		
132583	26	31	54	50	18	39	16	15	211	60	71		
132584	26	*	54	50	18	39	16	15	211	&	71		
132585	26	*	54	50	18	39	16	15	212	&	71		
132586	26	31	54	50	18	39	16	15	212	61	71		
132587	26	*	54	50	18	40	16	15	215	&	71		
132588	26	*	54	50	18	39	16	15	213	&	71		
132589	26	*	54	50	18	39	16	15	214	&	71		
132684	47	39	70	71	E70	60	E70	E70	359	131	71		
132685	47	39	70	71	E70	60	E70	E70	360	122	71		
132686	47	39	70	71	E70	60	E70	E70	361	122	71		
132687	47	39	70	71	E70	60	E70	E70	362	122	71		
132688	@	@	70	71	E70	@	E70	E70	@	&	71		

* See Cooling System Kits in kits section for parts list.

& See Controller Kits in kits section for parts list.

@ Desired air intake, cooling, skid, and generator kit chosen from price list. Determine kit number from generator set nameplate and see Group parts sections for parts list.

Specification Number Index

GROUP TITLE & NUMBER	<i>Air Intake</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switches</i>	<i>Skid and Plant Mounting</i>	<i>Water Temperature Switches</i>	<i>Starter</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>		
GROUP NO.	101	104	105	107	108	109	110	112	201	301	701		
SPEC NO.	VARIATION NUMBER												

1000ROZD													
132340	15	9	33	15	7	6	9	7	107	30	32		
132341	15	*	33	15	7	6	11	7	107	&	32		
132342	15	*	33	15	7	6	11	7	110	&	32		
132343	15	*	33	15	7	6	11	7	111	&	32		
132344	15	*	33	15	7	6	11	7	112	&	32		
132571	15	9	33	15	7	6	9	7	205	49	70		
132572	15	*	33	15	7	6	11	7	205	&	70		
132573	15	*	33	15	7	6	11	7	208	&	70		
132574	15	*	33	15	7	6	11	7	209	&	70		
132575	15	*	25	15	7	6	11	7	210	&	70		
132590	26	31	54	42	18	40	16	15	215	49	71		
132591	26	*	54	42	18	40	16	15	215	&	71		
132592	26	*	54	42	18	40	16	15	216	&	71		
132593	26	*	54	42	18	40	16	15	217	&	71		
132594	26	*	54	42	18	40	16	15	218	&	71		
132959	15	*	33	10	7	6	8	7	54	&	12		
132589	47	39	70	73	E70	60	E70	E70	351	122	71		
132690	47	39	70	73	E70	67	E70	E70	367	122	71		
132691	47	39	70	73	E70	67	E70	E70	368	132	71		
132692	47	39	70	73	E70	67	E70	E70	369	132	71		
132693	47	39	70	73	E70	67	E70	E70	370	136	71		
132694	@	@	70	73	E70	@	E70	E70	@	&	71		

- * See Cooling System Kits in kits section for parts list.
- & See Controller Kits in kits section for parts list.
- @ Desired air intake, cooling, skid, and generator kit chosen from price list. Determine kit number from generator set nameplate and see Group parts sections for parts list.

Specification Number Index

GROUP TITLE & NUMBER	<i>Air Intake</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switches</i>	<i>Skid and Plant Mounting</i>	<i>Water Temperature Switches</i>	<i>Starter</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>		
GROUP NO.	101	104	105	107	108	109	110	112	201	301	701		
SPEC NO.	VARIATION NUMBER												

1200ROZD													
132345	15	19	36	15	7	23	11	7	113	30	54		
132346	15	*	36	15	7	23	11	7	113	&	54		
132347	15	*	36	15	7	23	11	7	114	&	54		
132348	15	*	36	15	7	23	11	7	115	&	54		
132349	15	*	36	15	7	23	11	7	116	&	54		
132350	15	*	36	15	7	23	11	7	117	&	54		
132367	15	19	36	15	7	23	11	7	114	30	54		
132387	22	28	46	41	14	34	14	11	113	30	54		
132388	22	*	46	41	14	34	14	11	113	&	54		
132389	22	28	46	41	14	34	14	11	114	30	54		
132390	22	*	46	41	14	34	14	11	114	&	54		
132391	22	*	46	41	14	33	14	11	115	&	54		
132392	22	*	46	41	14	34	14	11	116	&	54		
132393	22	*	46	41	14	34	14	11	117	&	54		
132576	24	29	51	41	16	36	15	14	168	49	46		
132577	24	*	51	41	16	36	15	14	168	&	46		
132578	24	29	51	41	16	36	15	14	169	&	46		
132579	24	*	51	41	16	36	15	14	169	&	46		
132580	24	*	51	41	16	37	15	14	170	&	46		
132581	24	*	51	41	16	36	15	14	171	&	46		
132582	24	*	51	41	16	36	15	14	172	&	46		
132730	55	47	82	81	E82	66	E82	E82	358	140	46		
132731	55	47	82	81	E82	66	E82	E82	392	140	46		
132732	55	47	82	81	E82	69	E82	E82	376	140	46		
132733	55	47	82	81	E82	66	E82	E82	393	140	46		
132734	55	47	82	81	E82	69	E82	E82	380	140	46		
132735	55	47	82	81	E82	66	E82	E82	394	132	46		
132736	55	47	82	81	E82	69	E82	E82	395	132	46		
132737	55	47	82	81	E82	66	E82	E82	396	148	46		
132738	55	47	82	81	E82	66	E82	E82	397	148	46		
132739	@	@	82	81	E82	@	E82	E82	@	&	46		

* See Cooling System Kits in kits section for parts list.
 & See Controller Kits in kits section for parts list.
 @ Desired air intake, cooling, skid, and generator kit chosen from price list. Determine kit number from generator set nameplate and see Group parts sections for parts list.

Specification Number Index

GROUP TITLE & NUMBER	<i>Air Intake</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switches</i>	<i>Skid and Plant Mounting</i>	<i>Water Temperature Switches</i>	<i>Starter</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>		
GROUP NO.	101	104	105	107	108	109	110	112	201	301	701		
SPEC NO.	VARIATION NUMBER												
1250ROZD													
132740	55	47	78	81	E78	66	E78	E78	358	140	83		
132741	55	47	78	81	E78	66	E78	E78	392	140	83		
132742	55	47	78	81	E78	69	E78	E78	376	140	83		
132743	55	47	78	81	E78	66	E78	E78	393	140	83		
132744	55	47	78	81	E78	69	E78	E78	380	140	83		
132745	55	47	78	81	E78	66	E78	E78	395	142	83		
132746	55	47	78	81	E78	69	E78	E78	397	148	83		
132747	@	@	78	81	E78	@	E78	E78	@	@	83		

@ Desired air intake, cooling, skid, and generator kit chosen from price list. Determine kit number from generator set nameplate and see Group parts sections for parts list.

Specification Number Index

GROUP TITLE & NUMBER	<i>Air Intake</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switches</i>	<i>Skid and Plant Mounting</i>	<i>Water Temperature Switches</i>	<i>Starter</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>		
GROUP NO.	101	104	105	107	108	109	110	112	201	301	701		
SPEC NO.	VARIATION NUMBER												

1500ROZD													
132351	8	10	27	15	7	9	11	7	118	31	55		
132352	8	*	27	15	7	9	11	7	118	&	55		
132353	8	*	27	15	7	9	11	7	119	&	55		
132354	8	*	27	15	7	9	11	7	120	&	55		
132355	8	*	27	15	7	9	11	7	121	&	55		
132394	23	27	44	41	14	35	14	11	118	31	55		
132395	23	*	44	41	14	35	14	11	118	&	55		
132396	23	*	44	41	14	35	14	11	119	&	55		
132397	23	*	44	41	14	35	14	11	120	&	55		
132398	23	*	44	41	14	35	14	11	121	&	55		
132423	25	30	52	51	17	38	15	14	173	55	61		
132424	25	*	52	51	17	38	15	14	173	&	61		
132425	25	*	52	51	17	38	15	14	174	&	61		
132426	25	*	52	51	17	38	15	14	175	&	61		
132427	25	*	52	51	17	38	15	14	176	&	61		
132748	56	48	80	87	E80	68	E80	E80	376	140	84		
132749	56	48	80	87	E80	68	E80	E80	378	140	84		
132750	56	48	80	87	E80	68	E80	E80	380	140	84		
132751	56	48	80	87	E80	68	E80	E80	382	140	84		
132752	56	48	80	87	E80	68	E80	E80	385	142	84		
132753	56	48	80	87	E80	68	E80	E80	388	146	84		
132754	56	48	80	87	E80	68	E80	E80	390	146	84		
132755	56	@	80	87	E80	@	E80	E80	@	&	84		

* See Cooling System Kits or Kits in kits section for parts list.

& See Controller Kits in kits section for parts list.

@ Desired air intake, cooling, skid, and generator kit chosen from price list. Determine kit number from generator set nameplate and see Group parts sections for parts list.

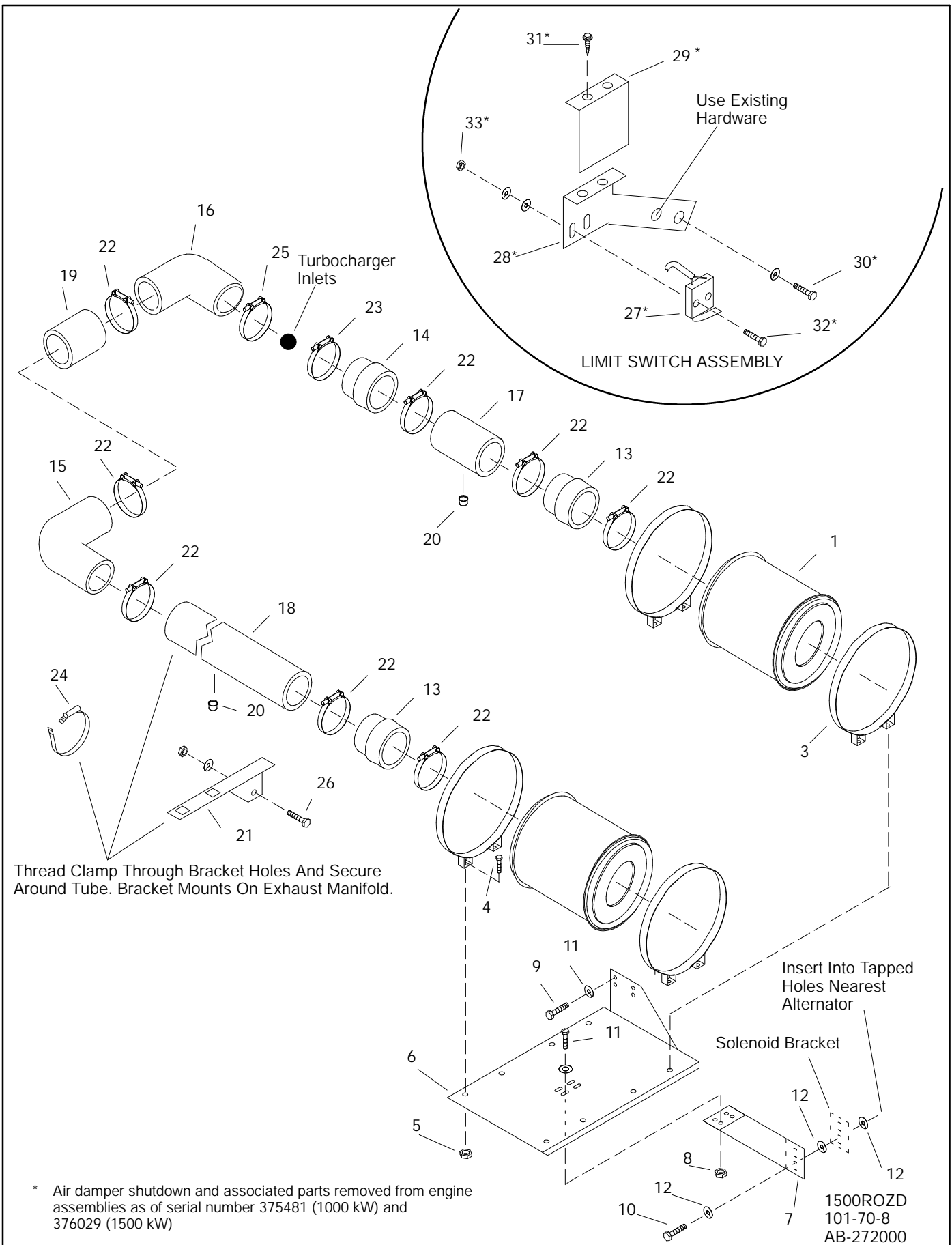
Specification Number Index

GROUP TITLE & NUMBER	<i>Air Intake</i>	<i>Cooling System</i>	<i>Engine</i>	<i>Nameplates and Decals</i>	<i>Oil Pressure Switches</i>	<i>Skid and Plant Mounting</i>	<i>Water Temperature Switches</i>	<i>Starter</i>	<i>Generator and Mounting</i>	<i>Controller and Mounting</i>	<i>Literature</i>		
GROUP NO.	101	104	105	107	108	109	110	112	201	301	701		
SPEC NO.	VARIATION NUMBER												

1600ROZD													
132356	8	10	38	15	7	9	11	7	119	31	55		
132357	8	*	38	15	7	9	11	7	119	&	55		
132358	8	*	38	15	7	9	11	7	122	&	55		
132359	8	*	38	15	7	9	11	7	120	&	55		
132360	8	*	38	15	7	9	11	7	121	&	55		
132412	23	27	45	41	14	35	14	11	119	31	55		
132413	23	*	45	41	14	35	14	11	122	&	55		
132414	23	*	45	41	14	35	14	11	120	&	55		
132415	23	*	45	41	14	35	14	11	121	&	55		
132428	25	30	53	52	17	38	15	14	174	55	61		
132429	25	*	53	52	17	38	15	14	174	&	61		
132430	25	*	53	52	17	38	15	14	177	&	61		
132431	25	*	53	52	17	38	15	14	175	&	61		
132432	25	*	53	52	17	38	15	14	176	&	61		
132756	56	48	81	87	E81	68	E81	E81	378	140	84		
132757	56	48	81	87	E81	68	E81	E81	386	144	84		
132758	56	48	81	87	E81	68	E81	E81	380	144	84		
132759	56	48	81	87	E81	68	E81	E81	382	144	84		
132760	56	48	81	87	E81	68	E81	E81	385	142	84		
132761	56	48	81	87	E81	68	E81	E81	388	146	84		
132762	56	48	81	87	E81	68	E81	E81	390	146	84		
132763	@	@	81	87	E81	@	E81	E81	@	&	84		

- * See Cooling System Kits in kits section for parts list.
- & See Controller Kits in kits section for parts list.
- @ Desired air intake, cooling, skid, and generator kit chosen from price list. Determine kit number from generator set nameplate and see Group parts sections for parts list.

Group 101: Air Intake



Group 101: Air Intake

Item	Part Number	Description	Quantity															
			Variation/Kit Number															
			8	15	22	23	24	25	26	47	55	56						
1	274821	Air Cleaner	4			4		4										4
1	274252	Air Cleaner		4	4		4	4	4	4	4	4	4	4	4			4
2	-	Element (Replace with item 1)	4	4	4	4	4	4	4	4	4	4	4	4	4			4
3	272983	Clamp, 13-39/64 (air clnr. mtg.)	8	8	8	8	8	8	8	8	8	8	8	8	8			8
4	#	Hardware, 3/8-16	16	16	16	16	16	16	16	16	16	16	16	16	8			4
4	#	Hardware, 3/8-16 (radiator end)																4
4	X-6238-2	Screw, ref. (generator end)																4
5	X-101-13	Nut, Nylon Lock, 3/8-16	16	16	16	16	16	16	16						8			8
5	#	Hardware, 3/8-16										16	16					
6	274613	Bracket, RH Air Cleaner	1	1	1	1	1	1	1									
6	328683	Bracket, RH Air Cleaner									1	1						
6	354239	Bracket, RH Air Cleaner														1		
6	274615	Bracket, LH Air Cleaner	1	1	1	1	1	1	1									
6	328682	Bracket, LH Air Cleaner									1	1						
6	354468	Bracket, LH Air Cleaner (radiator end)																1
6	354466	Bracket, RH Air Cleaner (radiator end)																1
6	354467	Bracket, Air Cleaner (generator end)																2
7	274614	Bracket, RH Air Cleaner	1	1	1	1	1	1	1									
7	354240	Bracket, RH Air Cleaner													1			
7	328685	Bracket, RH Air Cleaner									1	1						
7	274616	Bracket, LH Air Cleaner	1	1	1	1	1	1	1									
7	354444	Bracket, Air Cleaner															2	
7	328684	Bracket, LH Air Cleaner									1	1						
7	X-25-30	Washer, Plain (between engine block and brackets for clearing rocker cover)									4	4						
8	X-101-13	Nut, Nylon Lock, 3/8-16	8	8	8	8	8	8	8									
9	X-6238-11	Screw, Ref., 3/8-16 x 1	8	8	8	8	8	8	8								8	8
9	X-6024-2	Screw, 7/16-14 x 1.00, ref.									4	4						
9	X-6238-20	Screw, ref. (radiator end)																4
9	X-6238-11	Screw, ref. (generator end)																8
10	X-6021-4	Screw, Ref., 5/8-11 x 1-14	4	4	4	4	4	4	4									8
11	#	Hardware, 3/8-16	8	8	8	8	8	8	8									4
11	X-400-41	Spacer																8
12	X-22-43	Washer, Split Lock, 5/8, ref.	2	2	2	2	2	2	2									
13	291679	Hose, Hump, 7.0 ID x 6.0-7.0 L	4	4	4	4	4	4	4									
13	354441	Hose, Hump															4	
13	354447	Hose, Hump																4
14	291560	Hose, Hump, 5.5/7.0 ID x 6.0-7.4 L	2			2		2	2									
14	274430	Hose, Hump, 5.0/7.0 ID x 7.0 L		2	2		2	2	2		2	2						
15	291678	Hose, Elbow 90°, (7 ID)	2	2	2	2	2	2	2									
15	328686	Hose									2	2						
16	291567	Hose, Elbow 90°, (5 1/2-7 ID)	2			2		2	2									
16	274240	Hose, Elbow 90°, (5-7 ID)		2	2		2	2	2									
17	274819	Tube Assembly, 7 OD x 10.4"	2			2		2	2									
17	274664	Tube Assembly, 7 OD x 5"		2	2			2	2									
17	328609	Reducer, Hose Insert									2	2						
18	274820	Tube Assembly, 7 OD x 46.6"	2			2		2	2									
18	274663	Tube Assembly, 7 OD x 41.2"		2	2			2	2									
19	X-522-66	Tubing, Steel, 7 OD x 5 L	2	2	2	2	2	2	2									
20	X-268-7	Cap, Pipe, 1/8 NPT	4	4	4	4	4	4	4									
21	274617	Bracket, Air Intake Tube Support	2	2	2	2	2	2	2									
22	280998	Clamp, Hose (band), 7 7/8	16	16	16	16	16	16	16		4	4						4
23	291504	Clamp, Hose (band), 6	2			2		2	2									4
23	254344	Clamp, Hose (band), 5 1/2		4	4			4	4		2	2				4		
24	291559	Clamp, Hose (band), 7 1/2	2	2	2	2	2	2	2									
25	274976	Clamp, Hose, 5.94-6.25 ID	2			2		2	2									
25	272960	Clamp, Hose									2	2						
26	#	Hardware, 3/8-16	1	1	1	1	1	1	1									
27	272790	Switch Assembly*	1	1	1	1	1	1	1		1							
28	279565	Bracket, Mounting*	1	1	1	1	1	1	1									
28	279945	Bracket, Mounting*									1							
28	347231	Bracket, Mounting*																
29	279562	Guard, Limit Switch*	1	1	1	1	1	1	1									
30	#	Hardware, 1/4-20*	1	1	1	1	1	1	1									
31	X-794-2	Screw, Drill, 8-18 x .44/.56*	2	2	2	2	2	2	2									
32	X-49-3	Screw, 6-32 x 7/8*	2	2	2	2	2	2	2									
32	X-49-6	Screw, 6-32 x 3/4*									2							
33	#	Hardware, 6-32*	2	2	2	2	2	2	2		2							

Common Hardware; Procure Locally

Group 101: Air Intake

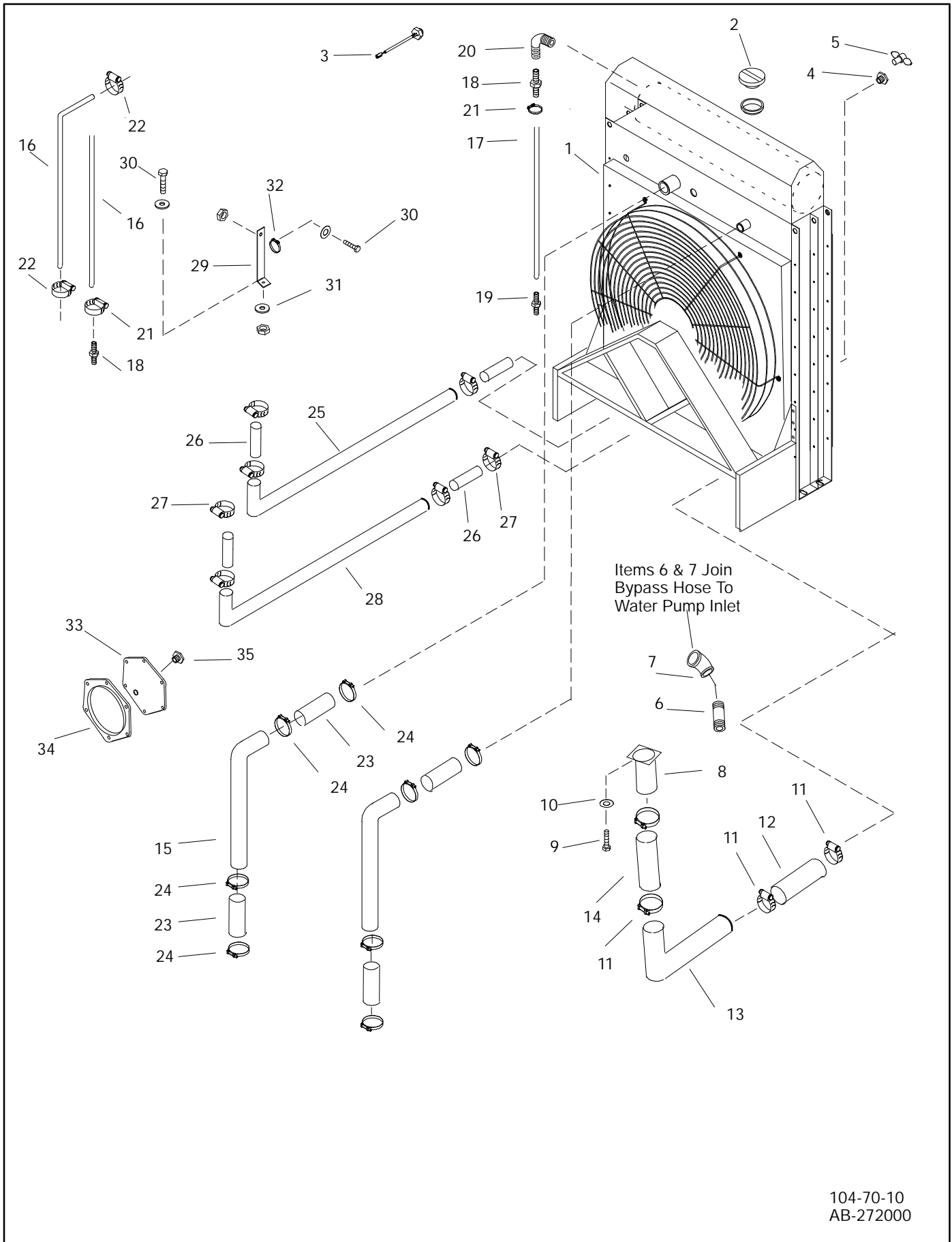
Some modular generator specs listed in the specification number index require an air cleaner kit. Refer to the generator set nameplate to identify the air cleaner kit number installed on your generator set. The parts list of the kit is identical to a variation shown in this group. Use the following table to identify the equivalent variation number. See kit part list section for heavy-duty air cleaner kits.

Modular Spec Cross-Reference Table

Air Cleaner Kit	Equivalent Variation Number
347497	47
347379	55
354017	56

Notes

Group 104: Cooling System



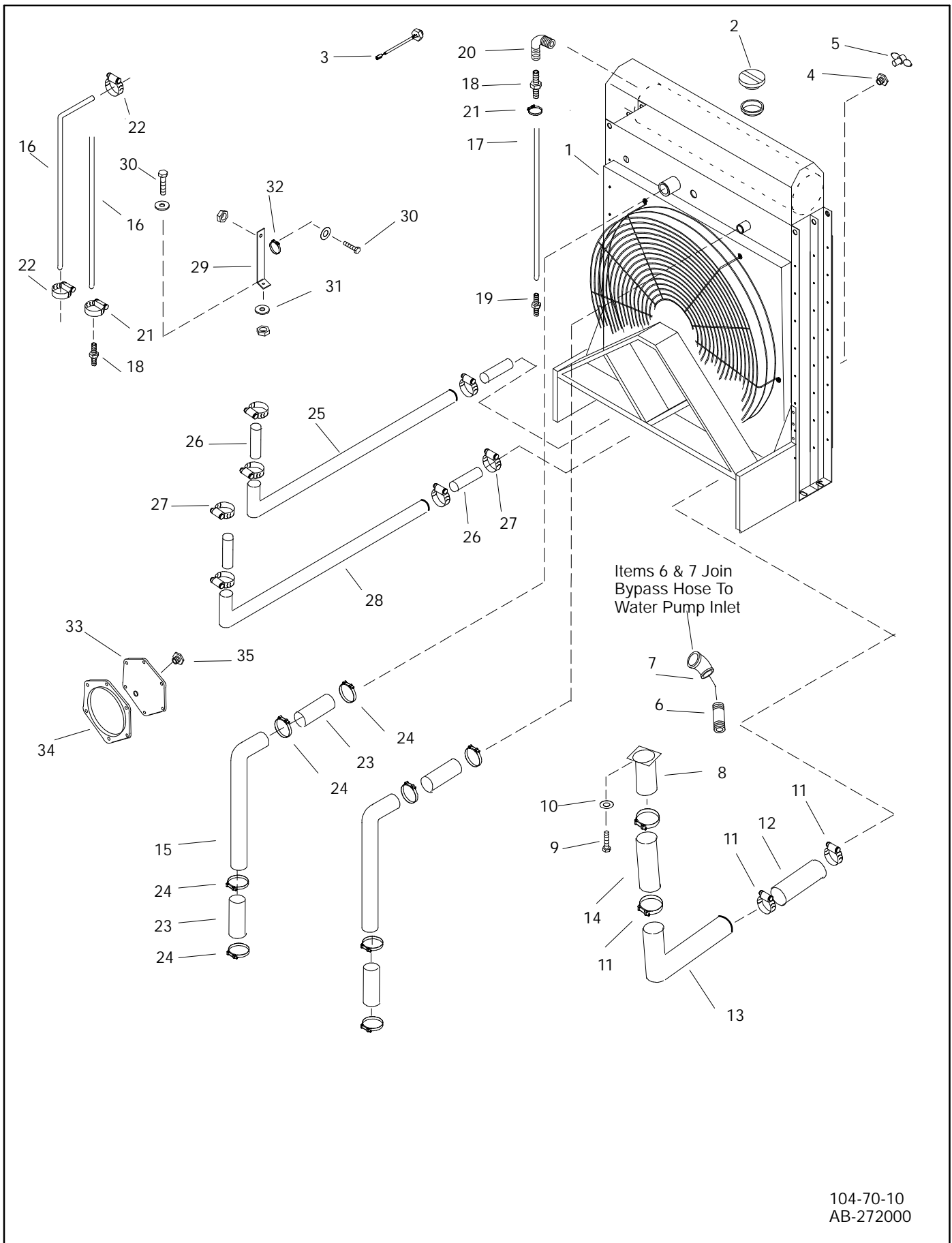
104-70-10
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Group 104: Cooling System, Continued

Item	Part Number	Description	Quantity														
			Variation/Kit Number														
			8	9	10	19	27	28	29	30	31	39	47	48			
1	A-272883	Radiator Assembly	1														
1	A-272884	Radiator Assembly		1													
1	A-274823	Radiator Assembly			1												
1	A-279537	Radiator Assembly				1											
1	A-299850	Radiator Assembly						1									
1	A-299851	Radiator Assembly							1								
1	A-328242	Radiator Assembly								1							
1	A-328241	Radiator Assembly									1						
1	A-328379	Radiator Assembly										1					
1	A-354037	Radiator Assembly											1				
1	A-354191	Radiator Assembly														1	
1	A-354202	Radiator Assembly															1
2	224357	Cap, Radiator	1	1													
2	224359	Cap, Radiator			1	1											
2	328012	Cap, Radiator						1	1								
3	273469	Coolant Level Switch (before serial number 363369)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	254832	Coolant Level Switch (serial numbers 363369 and after)									1	1	1	1	1	1	1
3	X-202-28	Bushing, Reducer, 3/8 F x 1/2 M (serial numbers 363369 and after)									1	1	1	1	1	1	1
4	X-202-28	Bushing, Reducer, 3/8 F x 1/2 M	2	2	2	2	2	2	2	3	3	2	2	2	3	3	3
5	X-256-1	Valve, Drain, 3/8 NPT	2	2	2	2	2	2	2	3	3	2	2	2	3	3	3
5	X-256-5	Valve, Drain Upper Radiator (not shown)								2	2					2	2
6	X-205-7	Nipple, 1 1/2 NPT x 4"				1	1	1	1								
6	X-206-2	Nipple, Pipe 3/4 x 2										1	1				
7	X-225-3	Elbow, 45°, 1 1/2 NPT				1	1	1	1			1	1				
7	X-215-15	Elbow, Pipe															
7	X-6014-33	Hose, Bypass, 1 1/2 ID x 76 (not shown)	1	1													
7	X-6014-82	Hose (not shown)											1	1			
7	X-751-4	Adapter, 1 1/2 ID x 1 1/2 NPT (not shown)	1	1													
7	272930	Adapter, Hose											1	1			
7	X-426-4	Clamp, Hose, 1 3/8	1	1													
7	279699	Clamp, Hose											1	1			
7	X-202-1	Bushing, Reducer 3/4											1	1			
8	274265	Tube, Inlet, 4.68 OD x 4.25 L	1	1	1	1	1	1	1	1	1	1			1	1	1
8	274300	Gasket, Inlet (not shown)	1	1	1	1	1	1	1	1	1	1			1	1	1
9	X-6238-4	Screw, 3/8-16 x 1	4	4	4	4	4	4	4	4	4	4			4	4	4
10	#	Washer, 3/8	4	4	4	4	4	4	4	4	4	4			4	4	4
11	274443	Clamp, Hose (band), 4 7/8	4	4	4	4	4	4	4	4	4	4			4	4	4
11	274545	Clamp, Hose											2	2			
12	X-6014-34	Hose, Radiator, 4 1/2 ID x 5"				1	1	1	1								
13	274907	Pipe, Radiator Inlet, 5.0/4.5 OD, with 3/4 NPT Half Coupling & Plug				1	1	1	1								
13	X-75-6	Plug, Pipe (not shown)				1	1	1	1								
14	X-6014-51	Hose, Radiator, 4.5 ID x 10 L				1	1	1	1	1	1				2	1	
14	274390	Tube, Radiator, 4.7 OD, 3/4 NPT Flange with Plug	1	1				1	1								
14	328274	Tube, Lower Radiator								1	1						
14	328380	Hose, Lower Radiator										1	1				
14	354192	Tube, Lower Radiator												1	1	1	1
15	274445	Tube, Upper Radiator, 3.5 OD	2	2													
15	328493	Tube, Upper Radiator										2	2				
15	274897	Pipe, Radiator Inlet, 3.5 OD			2	2	2	2	2								
15	X-468-7	Tie, Cable (not shown)	8	8	8	8	8	8	8								
15	328092	Tube, Upper Radiator								2					2		
15	328081	Tube, Upper Radiator									2						2
16	X-651-3	Hose, Rubber 3/8 x 18"									2						
16	X-652-1	Fitting, Hose									4						
16	X-422-6	Line, Flexible 1/2 x 8									2						2
16	X-582-5	Connector, Hose									4				3	4	
17	X-422-27	Line, Vent Hose, 1/2 ID	2	2													
17	X-651-11	Line, Vent Hose 3/8 " x 46"										1	1		3		
17	X-422-30	Hose, Vent								3					3		
17	X-422-32	Hose, Vent									3				3		3
18	X-582-4	Connector, Hose								3	3				3	3	
19	X-582-5	Connector, Hose								3	7				7	7	
19	X-582-4	Adapter, 1/2 ID x 3/8 NPT (not shown)	2	2													
19	X-652-1	Fitting, Hose	7	7									2	2			
20	X-211-3	Elbow									3						3
21	X-426-3	Clamp, Hose, 3 1/4" (not shown)	4	4													

Common Hardware; Procure Locally

Group 104: Cooling System, Continued



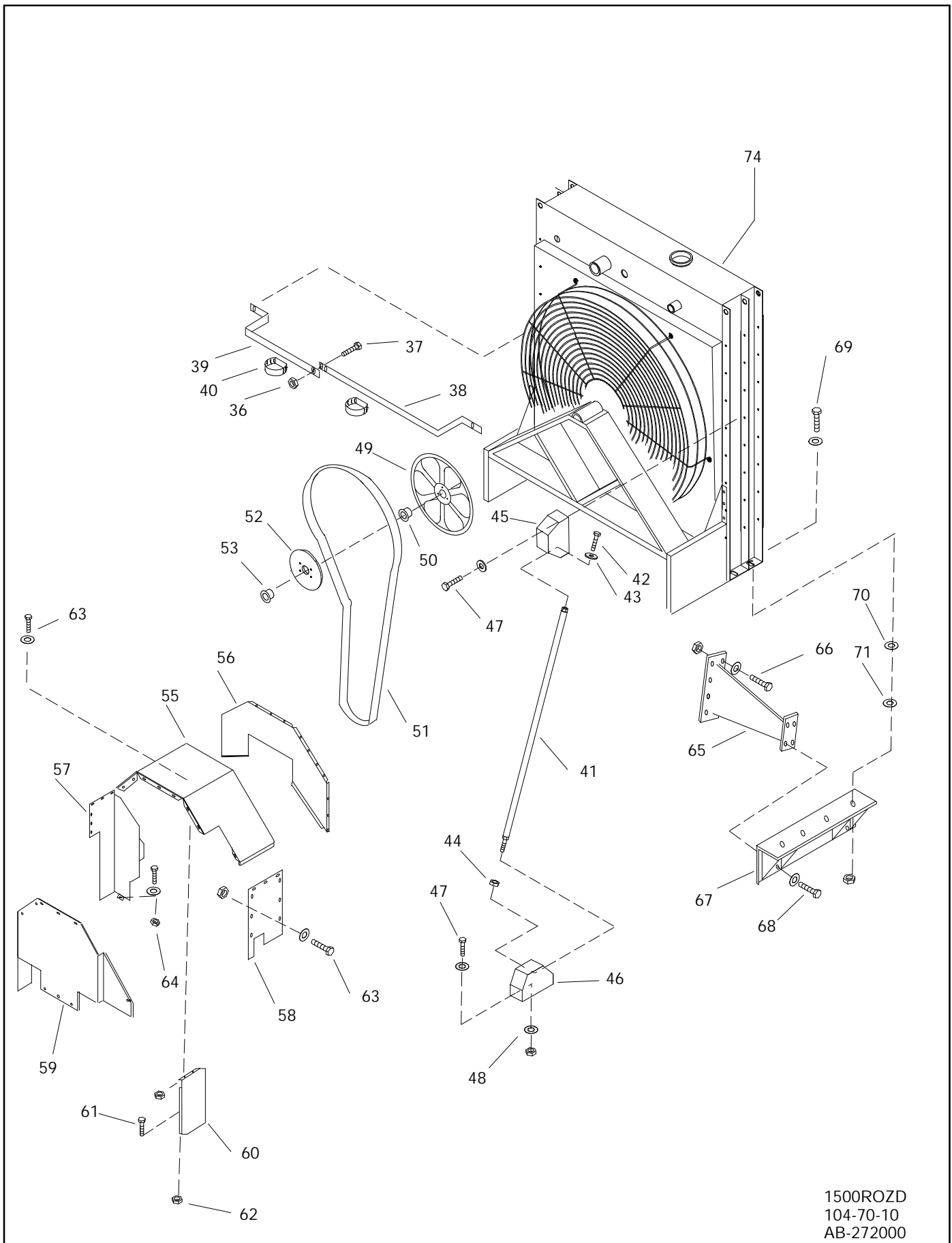
104-70-10
AB-272000

Group 104: Cooling System, Continued

Item	Part Number	Description	Quantity													
			Variation/Kit Number													
			8	9	10	19	27	28	29	30	31	39	47	48		
21	X-426-9	Clamp, Hose											2	2		
21	X-426-10	Clamp, Hose									6	10			6	10
22	X-426-9	Clamp, Hose														
23	X-6014-41	Hose, 3 1/2 ID x 8"			4	4	4									
23	X-6006-3	Hose, 3 1/2 ID x 4"	4	4												
23	X-507-6	Hose, Radiator											4	4		
23	X-6006-4	Hose, Radiator													4	4
24	291537	Clamp, Hose, 4	8		8		8	8	8	4	4				8	8
24	274824	Clamp, Hose, 3.68-4.00 OD				8		8	8							
24	291542	Clamp, Hose											8	8		
24	X-75-22	Plug, Pipe 1 NPT (replace existing square-headed plugs)	2													
25	274896	Pipe, Intercooler Return			1		1									
25	328028	Pipe, Intercooler Return								1					1	
25	279570	Pipe, Intercooler Return				1		1								
25	328026	Pipe, Intercooler Return									1					1
26	X-6014-8	Hose, 2 ID x 5"			4	4	4	4								
26	X-281-29	Hose, 0.67 ft.								2	2				2	2
26	X-281-31	Hose, 0.46 ft.								2	2				2	2
27	294887	Clamp, Hose (band), 4 7/8			8	8	8	8	8	8	8				8	8
28	274895	Pipe, Intercooler Supply			1		1									
28	279571	Pipe, Intercooler Supply				1		1								
28	328027	Pipe, Intercooler Supply								1	1				1	1
29	279499	Bracket, Tube Mounting			2	2	2	2								
29	328021	Bracket, Tube Mounting								2	2				2	2
30	#	Hardware, 1/4-20			4	4	4	4	4	4	4				4	4
31	X-6011-4	Washer, Beveled .44 ID, 2"/12" Slope			2		2			2	2				2	2
32	X-672-18	Clamp, Insulated, 2.12 ID			2	2	2	2		2	2				2	2
33	279558	Cover, Pressure Sensing			1	1	1	1								
34	279557	Gasket, Pressure Sensing			1	1	1	1								
35	X-75-41	Plug, Pipe, 1/4 NPTF			1	1	1	1								
36	X-101-13	Nut, Elastic, 3/8-16			2	2	2	2	2	2	2				2	2
37	#	Hardware, 3/8-16			2	2	2	2	2	2	2				2	2
38	279582	Brace, Upper Radiator Hose			1	1										
38	299866	Brace, Upper Radiator Hose					1	1								
38	328290	Brace, Upper Radiator Hose							1	1					1	1
39	279583	Brace, Upper Radiator Hose			1	1										
39	299867	Brace, Upper Radiator Hose					1	1								
39	328291	Brace, Upper Radiator Hose							1	1					1	1
40	291590	Clamp, Hose, 4.00-4.31 ID			2	2	2	2		2	2				2	2
40	X-426-5	Clamp, Hose								2	2					
41	279494	Bracket, Radiator Support			2	2										
41	279539	Brace, Radiator	2	2												
41	299863	Brace, Radiator					2	2								
41	328266	Brace, Radiator							2	2	2				2	2
41	347873	Brace, Radiator											2	2	2	2
42	X-6239-3	Screw, 3/4-10 x 1 1/2	2	2	2	2	2	2								
43	#	Washer, 3/4	2	2	2	2	2	2								
44	#	Nut, 3/4-10	2	2	2	2	2	2								
45	279491	Support, Radiator (RH)			1	1										
45	299857	Support, Radiator (RH)					1	1								
45	279492	Support, Radiator (LH)			1	1										
45	299858	Support, Radiator (LH)					1	1								
45	279542	Support, Radiator (RH)	2	2												
46	279495	Support, Radiator (RH)			1	1										
46	299855	Support, Radiator (RH)					1	1								
46	279496	Support, Radiator (LH)			1	1										
46	299856	Support, Radiator (LH)					1	1								
46	279543	Support, Radiator (LH)	2	2												
47	#	Hardware, 5/8-11	4	4	4	4	4	4					8	8	8	8
48	X-6011-3	Washer, Beveled, 68 ID	4	4	4	4	4	4	4	4	4	4	4	4	4	4
49	274906	Pulley			1	1	1	1							1	1
49	328253	Pulley							1	1						
50	274905	Bushing, Pulley			1		1	1	1	1	1				1	1

Common Hardware; Procure Locally

Group 104: Cooling System, Continued

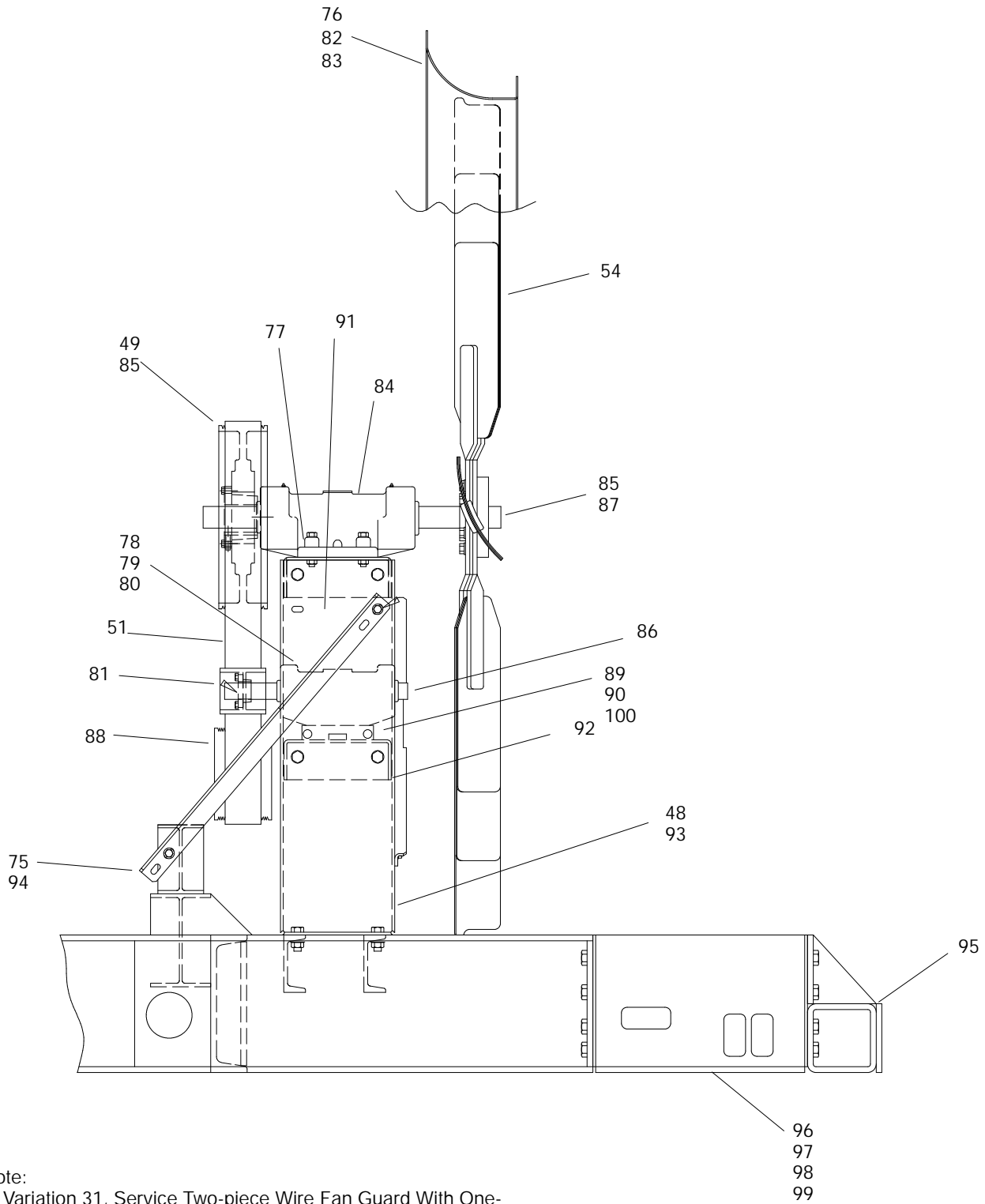


Group 104: Cooling System, Continued

Item	Part Number	Description	Quantity														
			Variation/Kit Number														
			8	9	10	19	27	28	29	30	31	39	47	48			
51	274915	Belt			1	1	1	1									
51	328260	Belt							1						1		
51	328695	Belt										1					1
51	274440	Belt	1														
51	274385	Belt		1													
52	274904	Pulley, Idler			1	1	1	1									1
53	274903	Bushing, Idler			1	1	1	1									1
54	272956	Fan	1						1	1							
54	272969	Fan		1									1	1			
54	328492	Fan															
54	328247	Fan								1					1		
54	328246	Fan									1						1
54	274247	Guard, LH Fan (not shown)		1													
54	274246	Guard, RH Fan (not shown)		1													
54	X-101-8	Nut, Elastic Stop, 1/4-20 (not shown)		11													
54	X-465-16	Screw, 1/4-20 x 3/4 (not shown)		45													
54	X-129-50	Screw, 1/2-13 x 5, Gr. 8 (not shown)	6	6													
54	X-129-53	Screw, Hex. Cap (not shown)											6		6		
54	290945	Washer, Hardened, 17/32 x 1 1/16 x 1/16 (not shown)	6	6									6		6		
54	X-20-1	Washer, Split Lock, 1/4 (not shown)	38	38													
55	274908	Guard, Belt (top)			1	1	1	1									
55	328020	Guard, Belt (top)									1					1	
55	272629	Guard, Belt (top)	1														
55	274254	Guard, Belt (top)		1													
55	328605	Guard, Belt (top)											1	1			
55	328276	Guard, Belt (top)											1				1
55	#	Hardware, 1/4-20			24	24	24	24									
55	274666	Brace, Belt Guard (top) (not shown)		1													
56	274909	Guard, Belt (rear)			1	1	1	1									
56	279662	Guard, Belt (rear)															
56	272630	Guard, Belt (rear)	1	1													
56	328275	Guard, Belt (rear)									1	1				1	1
57	274910	Guard, Belt (left)			1												
57	279572	Guard, Belt (left)				1											
57	272679	Guard, Belt (left)	1														
57	299859	Guard, Belt (left)						1	1								
57	328272	Guard, Belt (left)								1	1					1	1
57	328602	Guard, Belt (left)										1	1				
57	274825	Bracket, Left Belt Guard	1														
57	274256	Guard, Belt (left)		1													
58	274911	Guard, Belt (right)			1	1											
58	272659	Guard, Belt (right)	1														
58	274255	Guard, Belt (right)		1													
58	299864	Guard, Belt (right)						1	1								
58	328273	Guard, Belt (right)								1	1					1	1
58	328603	Guard, Belt (right)											1	1			
58	299865	Guard, Belt (left)						1	1								
58	274826	Bracket, Belt Guard (not shown)	1														
58	328601	Bracket, Belt Guard (not shown)											1	1			
58	328590	Guard, Belt (bottom)											1	1			
59	279485	Guard, Belt			1	1											
59	299860	Guard, Belt						1	1								
59	299861	Guard, Front (right)						1	1								
59	299862	Guard, Front (left)						1	1								
60	274913	Bracket, Mounting			2	2											
61	#	Bolt, 1/4-20			4	4	4	4									
62	X-101-8	Nut, Elastic, 1/4-20	4		4	4	4	4	4								
63	#	Hardware, 1/4-20	4	4	4	4	4										
64	#	Hardware, 3/8-16			1	1											
64	X-6216-1	Screw, Lock, 10-24 x 1/2	12	32													
65	274894	Support, Radiator (at Skid)			4	4	4	4									
66	#	Hardware, 5/8-11			32	32	32	32									
67	274893	Bracket, Radiator Support			2		2	2									
67	279568	Bracket, Radiator Support				2											
68	#	Hardware, 1/2-13			16		16	16									
69	#	Hardware, 3/4-10			8		8	8									
70	279497	Shim			12	12	12	12									
71	279498	Shim			12	12	12	12									
72	X-801-8	Washer, Hardened (not shown)											4	4			

Common Hardware; Procure Locally

Group 104: Cooling System, Continued



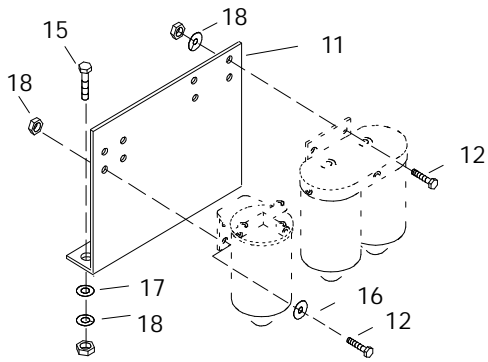
1200ROZD
 104-70-29
 GX-272000

Group 104: Cooling System, Continued

Item	Part Number	Description	Quantity													
			Variation/Kit Number													
			8	9	10	19	27	28	29	30	31	39	47	48		
73	328589	Guard, Wire Fan											1	1		
73	239497	Mount, Vibro (not shown)											1	1		
73	328783	Support, Fan Guard (not shown)											1	1		
74	328726	Guard, Radiator Core											1	1		
75	X-400-206	Spacer								2						
76	X-801-6	Washer, Hardened								12	12				12	12
77	X-801-8	Washer, Hardened								8	8				8	8
78	328255	Block, Pillow								1	1				1	1
79	273738	Set Screw, Special								4	4				4	4
80	290945	Washer, Hardened								8	8				8	8
81	274903	Bushing, Idler								1	1				1	1
82	328248	Shroud, Fan								1	1					
82	354195	Shroud, Fan													3	1
83	328249	Guard, Flat Fan								4	4				4	4
84	328254	Block, Pillow								1	1				1	1
85	328256	Key								1	1				1	1
86	328257	Shaft, Idler								1	1				1	1
87	328258	Shaft, Fan								1	1				1	1
88	328259	Pulley, Idler								1	1				1	1
89	328261	Block, Idler Slide (inner)								1	1				1	1
90	328262	Block, Idler Slide (outer)								1	1				1	1
91	328263	Support, Fan Bearing								1	1				1	1
92	328264	Support, Idler Bearing								1	1				1	1
93	328265	Support, Fan Bearing								2					2	
93	328278	Support, Fan Bearing									2					2
93	328289	Shim, Fan and Support								4	4				4	4
94	328267	Brace, Fan								3	3				3	3
95	328268	Guard, Radiator								1	1					
95	354196	Guard, Radiator													1	1
96	328269	Bracket, Radiator (right Side)								1	1					
96	354193	Bracket, Radiator (right Side)													1	1
97	328270	Shim, Radiator								4	4				4	4
98	328271	Shim, Radiator								4	4				4	4
99	328301	Bracket, Radiator (left Side)								1	1					
99	354194	Bracket, Radiator (left Side)													1	1
100	328283	Bolt, Adjusting								2	2				2	2
101	328708	Support, Fan Guard (not shown)								4	4				4	4

Common Hardware; Procure Locally

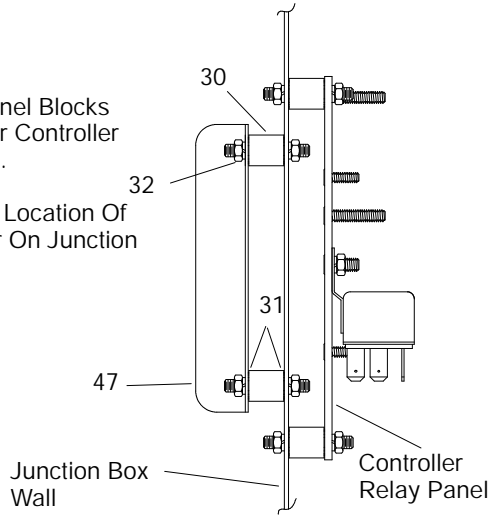
Group 105: Engine



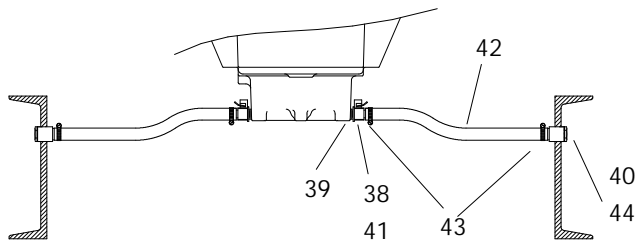
Fuel Filter Mounting
Bracket
And Hardware

Controller Relay Panel Blocks
Access To Governor Controller
Mounting Hardware.

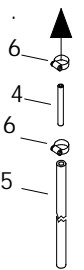
See Group 201 For Location Of
Governor Controller On Junction
Box.



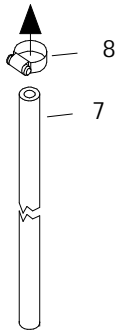
Governor Controller Mounting



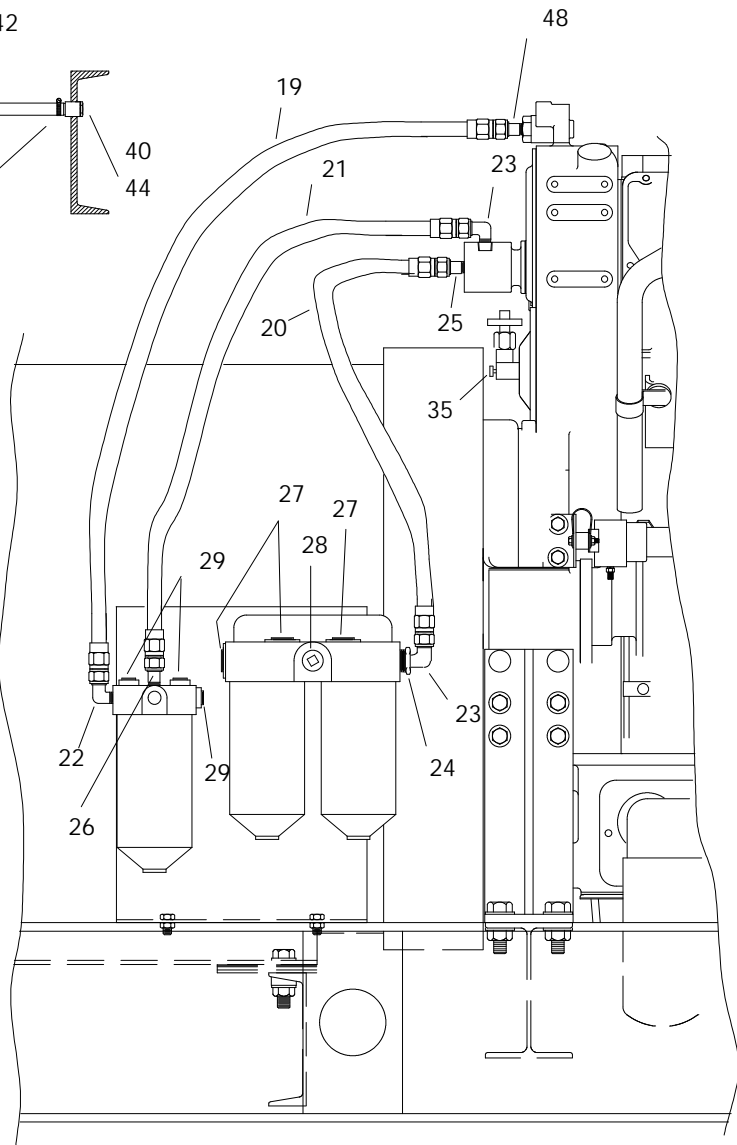
Attach
To Air
Box
Drains



Attach To
Valve Cover
Breathers.



Items Not Shown: 45, 46



1500ROZD
105-70-27
AB-272000

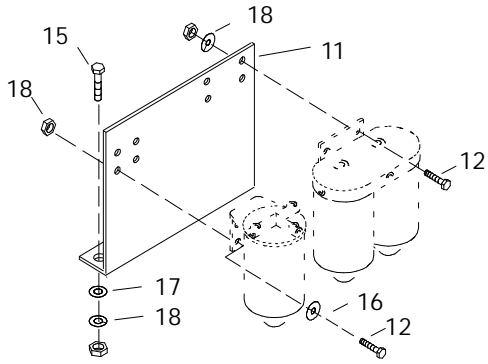
Group 105: Engine, Continued

Item	Part Number	Description	Quantity													
			Variation/Kit Number													
			25	26	27	29	32	33	36	38	44	45	46			
1	A-272752	Engine Assembly (12V-149TI)	1						1							
1	A-272753	Engine Assembly (12V-149TIB)		1												
1	A-272754	Engine Assembly (16V-149TIB)			1							1				
1	A-272957	Engine Assembly (12V-149TI)				1	1									
1	A-279670	Engine Assembly (12V-149TI)								1						1
1	A-279790	Engine Assembly (16V-149TIB)									1			1		
2	See Chart Below	Wiring Harness														
2	233959	Diode, 6 Amp. 100 Volt	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2	239408	Connector, 4 Position	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	292370	Connector, 2 Position	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	292800	Connector, Cable	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	295145	Connector, 24 Position	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	292838	Pin, Female Gold Plated	13	13	13	13	13	13	13	13	13	13	13	13	13	13
2	292879	Terminal	4	4	4	4	4	4	4	4	4	4	4	4	4	4
3	243320	Grommet (in Junction Box Wall)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	X-432-12	Line, Fuel (copper) 3/8 OD x 2"		4	4					4	4	4	4	4	4	4
5	X-651-32	Hose, .375 ID x 12 L		4	4					4	4	4	4	4	4	4
5	X-651-27	Hose, .375 ID x 20 L				4	4	4								
6	X-426-9	Clamp, Hose, 5/8	2	8	8	4	4	2	8	8	8	8	8	8	8	8
7	X-6261-1	Hose, 1 1/2 ID x 54"		1	3	2	2		1		3	1				
7	X-6261-2	Hose, 1 1/2 ID x 142"		2		1	1		2			2				
8	X-426-4	Clamp, Hose, 2 1/4	3	3	3	3	3	3	3	3	3	3	3	3	3	3
9	X-672-18	Clamp, Insul. (at Solenoids)	2	2		2	2	2	2	2						2
10	X-752-1	Clip, Conduit (not Shown)	1		1	1	1	1	1							
11	274395	Bracket, Mounting	1			1										
11	274626	Bracket, Mounting		1	1			1	1	1	1	1	1	1	1	1
12	X-129-19	Screw, 1/2-13 x 1 1/2	8	8	8	8	8	8	8	8	8	8	8	8	8	8
13	X-6238-11	Screw, 3/8-16 x 1	6			6										
14	#	Hardware, 3/8-16 (not shown)	6			6										
15	X-129-21	Screw, 1/2-13 x 2		2	2		2	2	2	2	2	2	2	2	2	2
16	X-25-26	Washer, Plain, 17/32 x 1 1/16	4	4	4	4	4	4	4	4	4	4	4	4	4	4
17	X-6011-3	Washer, Beveled		2	2		2	2	2	2	2	2	2	2	2	2
18	#	Hardware, 1/2-13	8	8	8	8	8	8	8	8	8	8	8	8	8	8
19	274228	Line, Flex. Fuel, 1/2 ID x 63"		1	1			1	1	1	1	1	1	1	1	1
19	274503	Line, Flex. Fuel, 1/2 ID x 17"	1			1										
20	274633	Line, Flex. Fuel, 1/2 ID x 49"		1	1			1	1	1	1	1	1	1	1	1
20	274502	Line, Flex. Fuel, 1/2 ID x 35"	1			1										
21	274634	Line, Flex. Fuel, 1/2 ID x 59"		1	1			1	1	1	1	1	1	1	1	1
21	274501	Line, Flex. Fuel, 1/2 ID x 28"	1			1										
22	X-447-14	Elbow, 7/8-14 x 3/8 NPT	2	1	1	2	1	1	1	1	1	1	1	1	1	1
23	X-447-8	Elbow, 7/8-14 x 1/2 NPT		2	2		2	2	2	2	2	2	2	2	2	2
24	168848	Bushing, Reducer, 1/2 F x 1 M	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	X-296-7	Connector, Half-union	2	2	2	2	2	2	2	2	2	2	2	2	2	2
26	X-296-8	Connector, 7/8-14 x 3/8 IP		1	1	1	1	1	1	1	1	1	1	1	1	1
27	X-75-22	Plug, Pipe, 1 NPT	3	3	3	3	3	3	3	3	3	3	3	3	3	3
28	X-75-3	Plug, Pipe, 1/2 NPT	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	X-75-10	Plug, Pipe, 3/8 NPT	3	3	3	3	3	3	3	3	3	3	3	3	3	3
30	282829	Mount, Vibro	4	4	4	4	4	4	4	4	4	4	4	4	4	4
31	X-22-20	Washer, Shakeproof, 8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
32	#	Hardware, 8-32	8	8	8	8	8	8	8	8	8	8	8	8	8	8
33	X-256-3	Valve, Drain 1/4 NPT	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34	X-202-12	Bushing, Reducer, 1/4 F x 1/2 M	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35	X-465-7	Screw, 1/4-20 x 1 (speed sensor)		1	1						1					
36	-	Oil Filter (See Recommended Spares Section)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37	-	Fuel Filter (See Recommended Spares Section)	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Variations	Wiring Harness Part Number	
	Before Serial Number 363369	Serial Numbers 363369 And After
25, 29, 32, 33	272878	272878
46, 51	274889	347229
44, 45, 52, 53	272946	347230
54	328608	347228

Common Hardware; Procure Locally

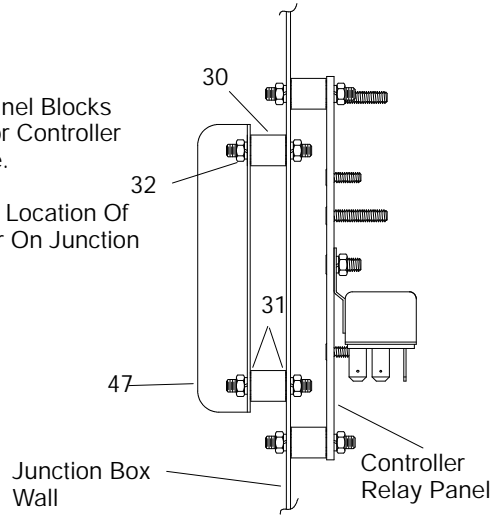
Group 105: Engine, Continued



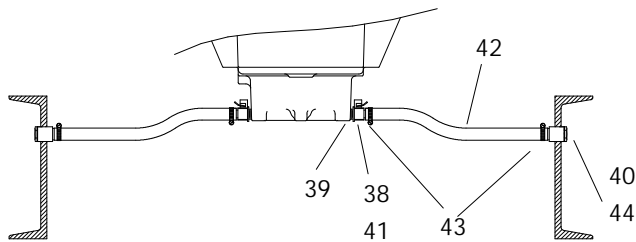
Fuel Filter Mounting
Bracket
And Hardware

Controller Relay Panel Blocks
Access To Governor Controller
Mounting Hardware.

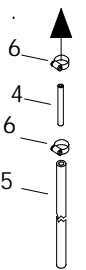
See Group 201 For Location Of
Governor Controller On Junction
Box.



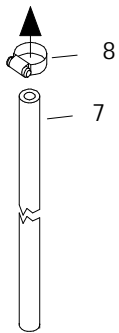
Governor Controller Mounting



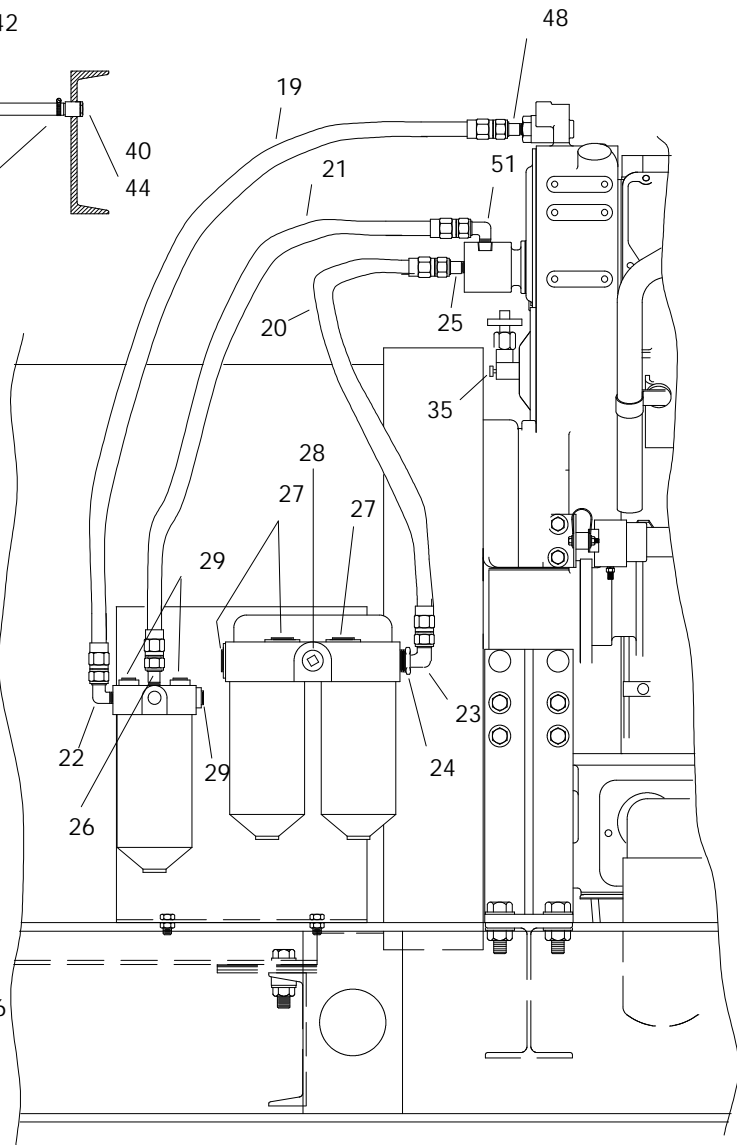
Attach
To Air
Box
Drains



Attach To
Valve Cover
Breathers.



Items Not Shown: 33, 34, 45, 46



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Group 105: Engine, Continued

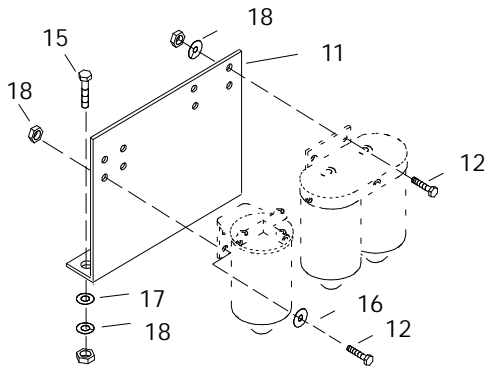
Item	Part Number	Description	Quantity										
			Variation/Kit Number										
			51	52	53	54	70	78	80	81	82		
1	A-347102	Engine Assembly (See Chart 1)				1	1						
1	A-347107	Engine Assembly (See Chart 1)		1							1		
1	A-347109	Engine Assembly (See Chart 1)			1							1	
1	A-354179	Engine Assembly							1				
1	A-347105	Engine Assembly (See Chart 1)	1										1
2	See Chart 2	Wiring Harness (includes *)											
2	233959	*Diode, 6 Amp. 100 Volt	4	4	4	4	4	4	4	4	4	4	4
2	292800	*Connector, Cable	1	1	1	1	1	1	1	1	1	1	1
2	295145	*Connector, 24 Position	1	1	1	1	1	1	1	1	1	1	1
2	292838	*Pin, Female Gold Plated	13	13	13	13	13	13	13	13	13	13	13
2	292879	*Terminal	4	4	4	4	4	4	4	4	4	4	4
3	243320	Grommet (in Junction Box Wall)											
4	X-432-12	Line, Fuel (copper) 3/8 OD x 2"	4	4	4				4	4	4	4	4
4	X-6260-8	Hose, 1.25 ID x 4.9"				2	2						
5	X-651-32	Hose, .375 ID x 12 L	4	4	4				4	4	4	4	4
5	X-651-5	Hose, .375 ID x 20 L				4	4						
6	X-426-9	Clamp, Hose, 5/8		8	8	4	4		8	8	8	8	8
6	X-426-8	Clamp, Hose, 5/8				2	2						
7	X-6261-1	Hose, 1 1/2 ID x 54"	1	3						3			
7	X-6261-2	Hose, 1 1/2 ID x 142"	2										
7	X-6260-11	Hose, 1 1/4 ID x 4.9"				2	2						
8	X-426-4	Clamp, Hose, 2 1/4	3	3	3								
8	X-426-8	Clamp, Hose, 5/8				2	2						
9	X-672-18	Clamp, Insul. (at Solenoids)	2	2	2	2	2						
10	X-752-1	Clip, Conduit (not Shown)											
11	274626	Bracket, Mounting	1	1	1				1	1	1	1	1
12	X-129-19	Screw, 1/2-13 x 1 1/2	8	8	8								
12	#	Hardware, 1/2-13							4	8	8	4	4
13	X-6238-11	Screw, 3/8-16 x 1											
14	#	Hardware, 3/8-16											
15	X-129-21	Screw, 1/2-13 x 2	2	2	2								
15	#	Hardware, 1/2-13								2	2		
16	X-25-26	Washer, Plain, 17/32 x 1 1/16	4	4	4								
17	X-6011-3	Washer, Beveled	2	2	2				2	2	2	2	2
18	#	Hardware, 1/2-13	8	8	8				6	8	8	6	6
19	274228	Line, Flex. Fuel, 1/2 ID x 63"	1	1	1				1	1	1	1	1
20	344358	Line, Flex. Fuel	1	1	1				1	1	1	1	1
21	274634	Line, Flex. Fuel, 1/2 ID x 59"	1	1	1				1	1	1	1	1
22	X-447-14	Elbow, 7/8-14 x 3/8 NPT	1	1	1				1	1	1	1	1
23	X-447-18	Elbow	1	1	1				1	1	1	1	1
24	X-202-1	Bushing, Reducer	1	1	1				1	1	1	1	1
25	X-296-15	Connector, Half-union	1	1	1				1	2	2	1	1
26	X-296-8	Connector, 7/8-14 x 3/8 IP	1	1	1				1	1	1	1	1
27	X-75-22	Plug, Pipe, 1 NPT	2	2	2				2	3	3	2	2
28	X-75-3	Plug, Pipe, 1/2 NPT	1	1	1				1	1	1	1	1
28	X-202-1	Bushing, Reducer	1	1	1				1				1
28	X-75-18	Plug, Pipe	1	1	1				1				1

Chart 1, Engine Assemblies

Variation	Engine Assembly Part Number	
	With Air Damper	Without Air Damper
51	A-328252	A-347105
52	A-328251	A-347107
53	A-328250	A-347109
54	A-328617	A-347102

Common Hardware; Procure Locally

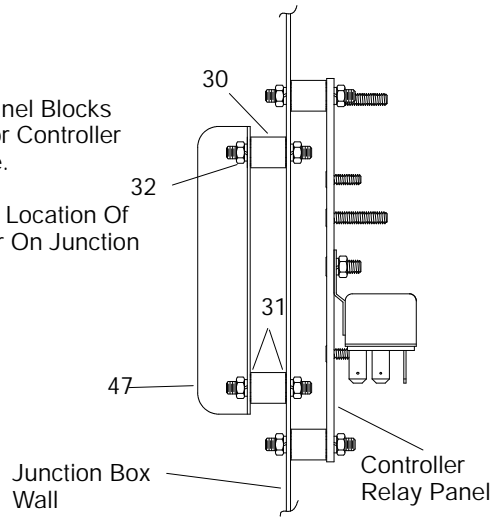
Group 105: Engine, Continued



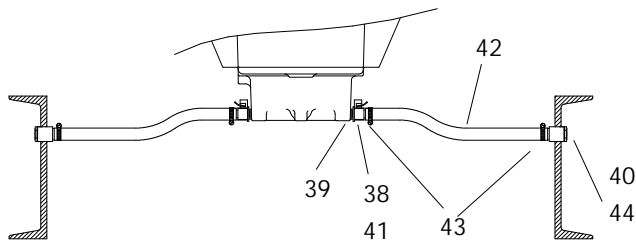
Fuel Filter Mounting
Bracket
And Hardware

Controller Relay Panel Blocks
Access To Governor Controller
Mounting Hardware.

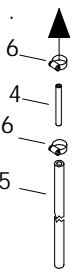
See Group 201 For Location Of
Governor Controller On Junction
Box.



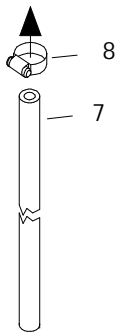
Governor Controller Mounting



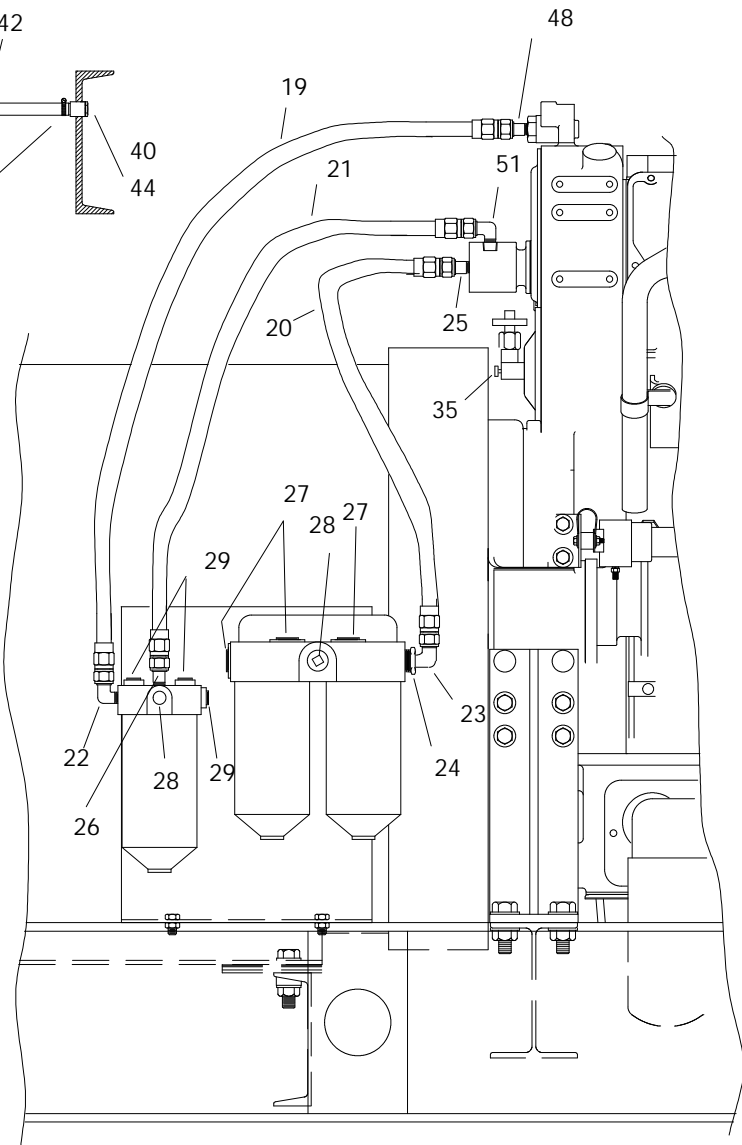
Attach
To Air
Box
Drains



Attach To
Valve Cover
Breathers.



Items Not Shown: 33, 34, 45, 46



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Group 105: Engine, Continued

Item	Part Number	Description	Quantity								
			Variation/Kit Number								
			51	52	53	54	70	78	80	81	82
29	X-75-10	Plug, Pipe, 3/8 NPT	3	3	3			3	3	3	3
30	282829	Mount, Vibro	4	4	4			4	4	4	4
31	X-22-20	Washer, Shakeproof, 8	8	8	8				8	8	
32	#	Hardware, 8-32	8	8	8				8	8	
33	X-256-3	Valve, Drain, 1/4 NPT	1	1	1			1	1	1	1
34	X-202-12	Bushing, Reducer, 1/4 F x 1/2 M	1	1	1				1	1	1
35	X-465-7	Screw, 1/4-20 x 1 (speed sensor)									
36	See Spares Section	Oil Filter	1	1	1	1	1	1	1	1	1
37	See Spares Section	Fuel Filter	1	1	1	1	1	1	1	1	1
38	272701	Valve, Oil Drain				2	2	2	2	2	
39	273918	O-Ring, Oil Drain				2	2				
39	280562	Decal, Oil Drain					2	2			
40	276552	Nylon Washer, Oil Drain				2	2	2	2	2	
41	273857	Adapter, Oil Drain				2	2				
41	SA-472	Elbow, Street 3/4							2	2	
41	X-274-13	Elbow, Street 45 Degree						2			2
41	X-202-41	Bushing, Reducer 1/2 x 3/4						1	2	2	1
42	X-577-48	Hose, Oil Drain 1.58 ft.				2	2				
42	X-577-28	Hose, .625 x 17"						1			1
42	X-577-34	Hose, .625 x 2 ft.						1			1
42	X-577-18	Hose, .625 x 25"								2	
42	X-577-35	Hose, 2.5 ft.								2	2
43	X-426-3	Clamp, Hose .56-1.06 in.				4	4				
43	X-426-8	Clamp, Hose .81-1.75 in.							4	4	
43	X-426-10	Clamp, Hose							4		4
44	241062	Plug, Drain				2	2	2	2	2	2
45	274444	Guard, Alternator Belt (not Shown)				1	1				
46	X-400-89	Spacer (not Shown)				1	1				
47	347840	Governor Controller	1	1	1	1	1	1	1	1	1
48	X-296-7	Connector, Half-Union 7/8-14 x 1/2	1	1	1			1	1	1	1
50	287363	Ground Strap, Starting Motor						1	1	1	1
51	X-447-8	Elbow, 7/8-14 x 1/2 NPT	1	1	1			1	1	1	1

Chart 2, Serial Number-Contingent Wiring Harnesses

Variations	Wiring Harness Part Number		
	Before Serial Number 363369	Serial Numbers 363369 And After	
		Engine With Air Damper	Engine Without Air Damper
36, 46, 51	274889	347229	347305
27, 38, 44, 45, 52, 53	272946	347230	347306
54	328608	347228	347304
70	-	-	347304
78	-	-	347305
80, 81	-	-	347306

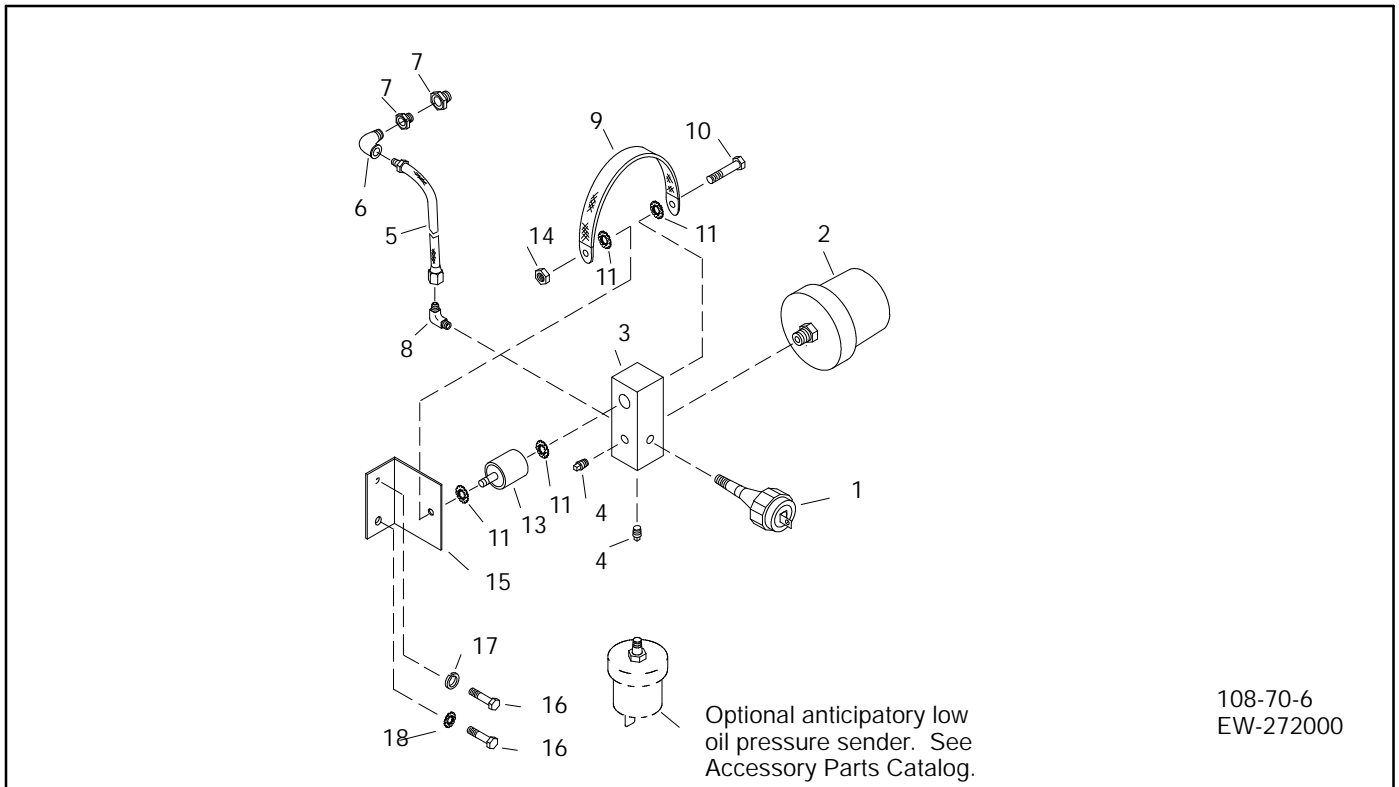
Common Hardware; Procure Locally

Group 107: Nameplates and Decals

Nameplates and Decals not illustrated.

Item	Part Number	Description	Quantity																	
			Variation Number																	
			15	41	42	50	51	52	71	73	81	87								
1	X-6229-3	Logo, Kohler	2																	
1	X-6275-7	Logo, Kohler		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1	X-6276-8	Logo, Kohler		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	238402	Decal, Positive Terminal	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	249809	Decal, Warning Hot Engine	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	X-67-5	Screw, Drive 2 x 3/16	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	274323	Decal, Warning Rotating Parts	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	224234	Decal, 1-800 Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	224233	Decal, 1-800 Number																	1	1
7	257438	Decal, Danger Hazardous Voltage	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	258815	Decal, Warning Voltage/Backfeed	1	1	1															
9	279564	Tag, Caution Do Not Stand On...	1	1	1															
10	279598	Tag, Caution Manually Operate Damper	1	1	1															
11	327004	Nameplate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	293990	Decal, Caution Lifting Support	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	255882	Decal, For Standby Service...		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	347166	Nameplate, CSA																		
15	347272	Decal, Power		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	347273	Decal, System		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	X-6232-3	Decal, Stripes		1	1															
17	X-6232-6	Decal, Stripes				1														
18	X-6246-1	Decal, Kohler Power System		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	343165	Decal, Not a Step		2				2	2											2
20	X-6347-10	Decal, "1200"		1																
20	X-6347-9	Decal, "1000"			1															
20	X-6347-8	Decal, "900"				1														
20	X-6347-11	Decal, "1500"						1												
20	X-6347-12	Decal, "1600"							1											

Group 108: Oil Pressure Switches



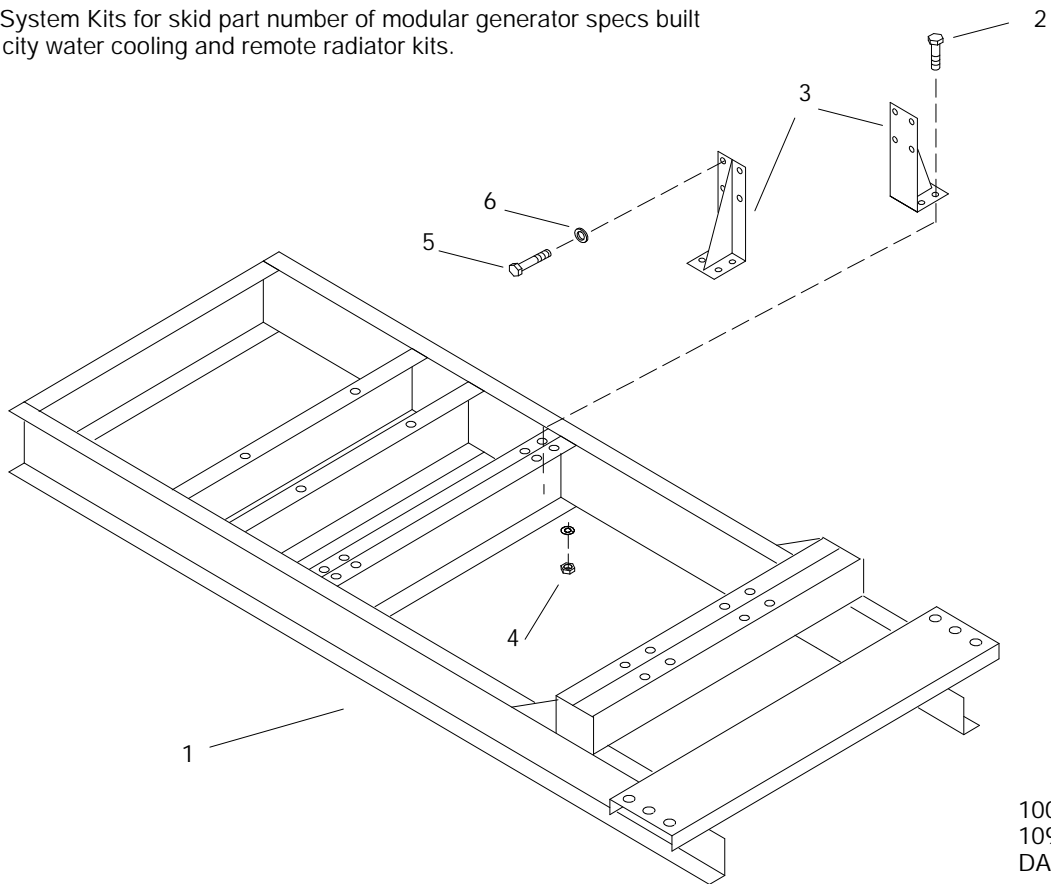
108-70-6
EW-272000

Item	Part Number	Description	Quantity										
			Variation/Kit Number										
			7	14	16	17	18	E70	E78	E80	E81	E82	
1	328309	Switch, Oil Pressure	1	1	1	1	1	1	1	1	1	1	1
2	264390	Sender, Oil Pressure	1	1	1	1	1	1					
2	328071	Sender, Oil Pressure							1	1	1	1	1
3	267548	Block, Oil Gauge	1	1	1	1	1	1	1	1	1	1	1
4	X-75-1	Plug, Pipe (Steel), 1/8	2	2	2	2	2	2	2	2	2	2	2
5	280905	Line, Flex Fuel	1	1	1	1	1	1		1	1	1	1
5	239728	Line, Flex Fuel							1				
6	X-274-3	Elbow, 45° Street, 1/4 NPT	1	1	1	1	1	1		1	1	1	1
6	153659	Bushing, Reducer							1				
7	X-202-27	Bushing, Reducer, 1/8 F x 1/4 M	1	1	1	1	1	1		1	1	1	1
7	X-202-29	Bushing, Reducer							1				
7	X-211-10	Elbow							1				
8	X-447-10	Elbow, 90°, 7/16-20 x 1/8 NPT	1	1	1	1	1	1	1	1	1	1	1
9	223033	Strap, Ground, 3/8 x 5	1	1	1	1	1	1	1	1	1	1	1
10	X-465-8	Screw, 1/4-20 x 1 1/4	1	1	1	1	1	1	1	1	1	1	1
11	X-22-12	Washer, Int./Ext. Tooth Lock, 1/4	4	4	4	4	4	4	4	4	4	4	4
12	X-400-172	Spacer, .640 ID x .531 L (not shown)	1	1									
13	259632	Bumper	1	1	1	1	1	1	1	1	1	1	1
14	#	Nut, 1/4-20	1	1	1	1	1	1	1	1	1	1	1
15	279602	Bracket, Sender	1	1	1	1	1	1		1	1	1	1
15	274299	Bracket							1				
16	X-6021-3	Screw, 5/8-11 x 1	2	2	2	2	2	2	2	2	2	2	2
16	X-6238-11	Screw							2				
17	#	Washer, Lock, 5/8	1	1	1	1	1	1					
18	X-22-30	Washer, Shakeproof, 5/8	4	4	4	4	4	4		4	4	4	4
18	X-22-14	Washer, Int./Ext. Tooth Lock, 3/8							4				

Common Hardware; Procure Locally

Group 109: Skid and Plant Mounting

See Cooling System Kits for skid part number of modular generator specs built with optional city water cooling and remote radiator kits.



1000ROZD
109-70-6
DA-272000

Item	Part Number	Description	Quantity																
			Variation/Kit Number																
			6	9	23	26	28	33	34	35	36	37	38	60	66	67	68	69	
1	272881	Skid	1																
1	274899	Skid		1															
1	279567	Skid			1														
1	279984	Skid				1													
1	299888	Skid					1												
1	299853	Skid						1											
1	299854	Skid							1										
1	299852	Skid								1									
1	328244	Skid									1								
1	328245	Skid										1							
1	328243	Skid											1						
1	354035	Skid												1					
1	354208	Skid													1				
1	354036	Skid														1			
1	354203	Skid															1		
1	354190	Skid																	1
2	#	Hardware, 3/4-10	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
3	272879	Support, Rear Engine	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	328496	Support, Rear Engine													2		2		
3	328495	Support, Front Engine													1		1		
3	X-801-5	Washer, Hardened													2		2		
3	#	Hardware, 5/8-11	8	8	8	8	8	8	8	8	8	8	8	8	4		4		
4	#	Hardware, 3/4-10	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
5	#	Screw, 5/8-11 (existing bolts)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	X-6021-1	Screw, H.C.													4				
6	#	Hardware, 5/8	4	4	4	4	4	4	4	4	4	4	4	4	4	1	4	4	1
															2				2

Common Hardware; Procure Locally

Group 109: Skid and Plant Mounting

Some modular generator set specs listed in the specification number index require a skid kit. Refer to the generator set nameplate to identify the skid kit number installed on your generator set. The parts list of some skid kits is identical to a variation shown in this group. Use the following table to identify the equivalent variation number.

Modular Spec Cross-Reference Table

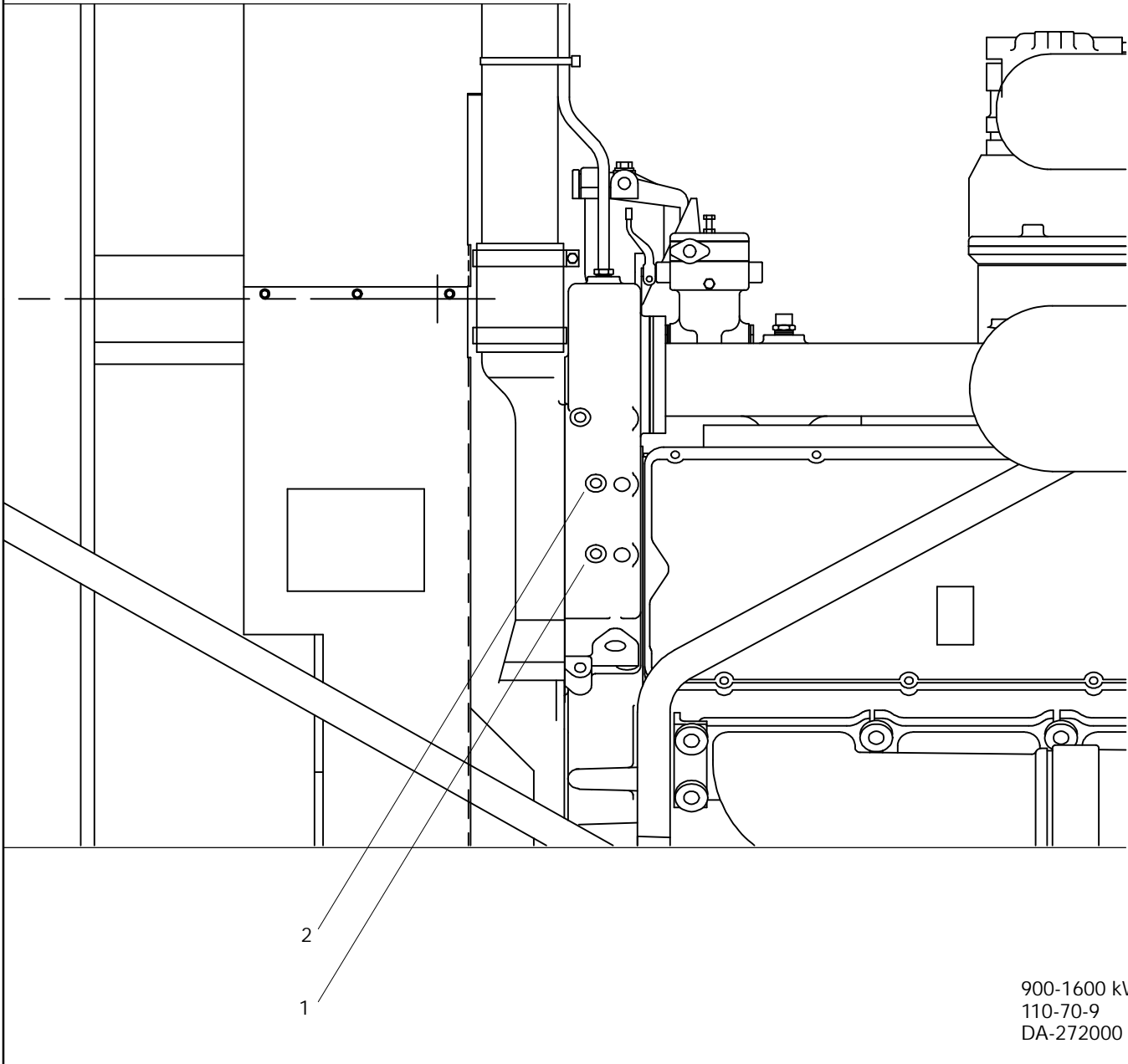
Skid Kit	Equivalent Variation Number	Skid Part Number
347498	60	354035
347573	67	354036
347574*	67	354052
347671	66	354208
347672	69	354190
354018	68	354203
354172*	60	354051
354173*	60	354050
354187*	67	354053
354313*	66	354311
354314*	66	354312

* Parts list of skid kit is identical to variation except for the skid part number. Use number in Skid Part Number column.

Group 110: Water Temperature Switches

Left Side View

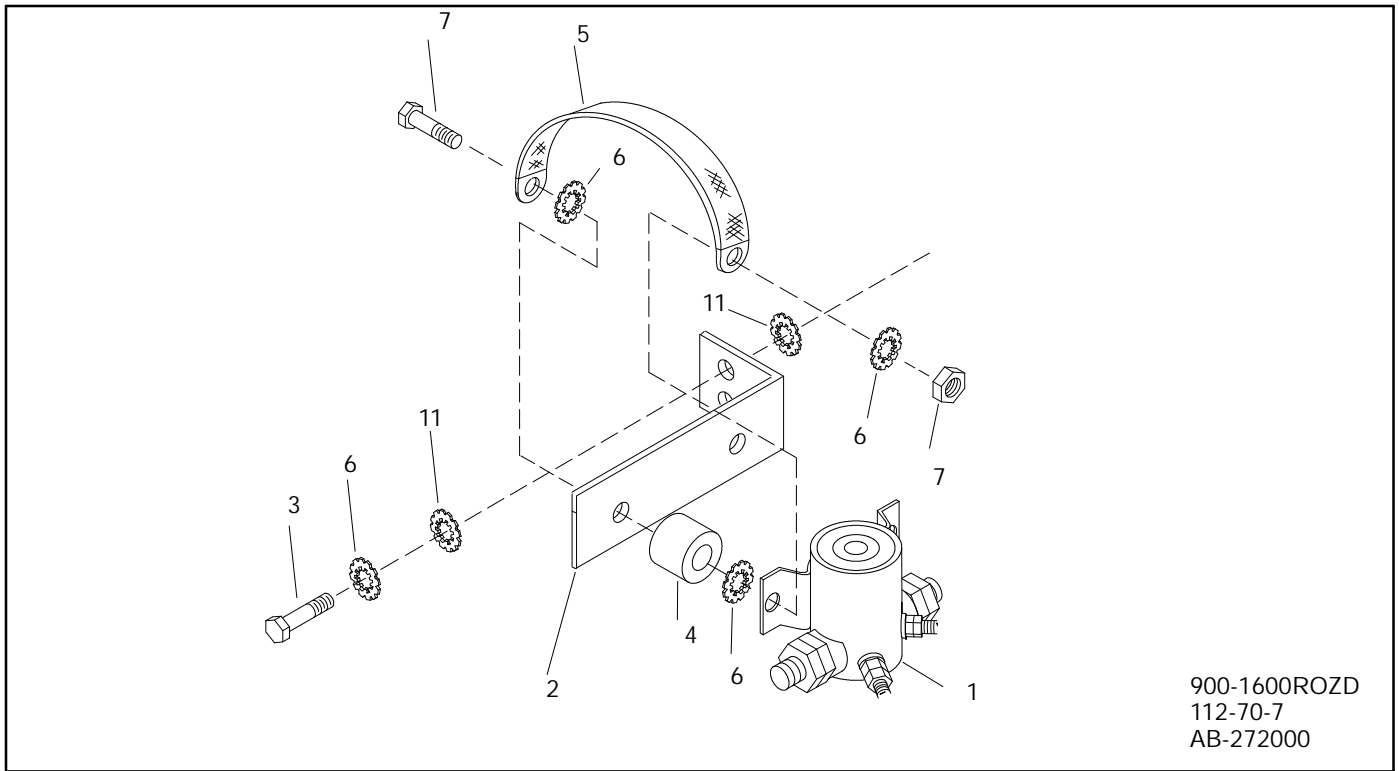
NOTE:
Items in parts list are on opposite
(right) side of engine.



900-1600 kW
110-70-9
DA-272000

Item	Part Number	Description	Quantity										
			Variation/Kit Number										
			8	9	11	14	15	16	E70	E78	E80	E81	E82
1	268298	Sender, Water Temperature	1	1	1	1	1	1	1	1	1	1	1
2	241481	Switch, Water Temperature Shutdown	1	1	1	1	1	1	1	1	1	1	1
3	153659	Bushing, Reducer (not shown)	1					1	1				

Group 112: Starter



900-1600ROZD
112-70-7
AB-272000

Item	Part Number	Description	Quantity								
			Variation/Kit Number								
			7	11	14	15	E70	E78	E80	E81	E82
1	272713	Solenoid, Cranking	2	2	2	2	2	2	2	2	2
2	274327	Bracket, Relay Mounting	2	2	2			2	2	2	2
2	272762	Bracket, Mounting				2	2				
3	X-6021-4	Screw, Ref., 5/8-11 x 1.25	4	4	4			4	4	4	4
3	X-6238-11	Screw					4				
4	259632	Bumper	4				4	4	4	4	4
5	223033	Strap, Ground, 5"	2				2	2	2	2	2
6	X-22-12	Washer, Int./Ext. Tooth Lock, 1/4	16	16	8	8	8	8	8	8	8
7	#	Hardware, 1/4-20	4	4	4			4			4
7	X-465-6	Screw, Ref. 1/4-20 x 0.50				4	4		4	4	
8	266581	Lead, Ground (not shown)	2	2							
8	287363	Lead, Ground (not shown)			2	2	2	2	2	2	2
9	274614	Bracket (not shown)		1							
10	274616	Bracket (not shown)		1							
11	X-22-14	Washer, Shakeproof 3/8					8				
11	X-22-43	Washer, Lock 5/5						8	8	8	8

Common Hardware; Procure Locally

Recommended Spare Parts

Part Description	Model/Spec		
	900ROZD* 1000ROZD*	1200ROZD*	1500ROZD* 1600ROZD*
Fuse, 1.5 Amp	291207	291207	291207
Fuse, 3 Amp	243273	243273	243273
Fuse, 15 Amp	283645	283645	283645
Voltage Regulator	328725	328725	328725
Main Circuit Board	A-336415	A-336415	A-336415
Indicator Board	A-336432	A-336432	A-336432
Bulb	283420	283420	283420
Lamp	291740	291740	291740
Upper Radiator Hose	X-507-6	X-6006-4	X-6006-4
Lower Radiator Hose	328380	X-6014-51	X-6014-51
Belt	347702	328260	328695
Thermostat	328585	328585	328585
Thermostat Seal	328586	328586	328586
Thermostat Gasket	328587	328587	347336
Air Cleaner	272981	272981	274821
Primary Fuel Filter	328215	328215	328215
Secondary Fuel Filter	328216	328216	328216
Oil Filter	279260	279260	279260

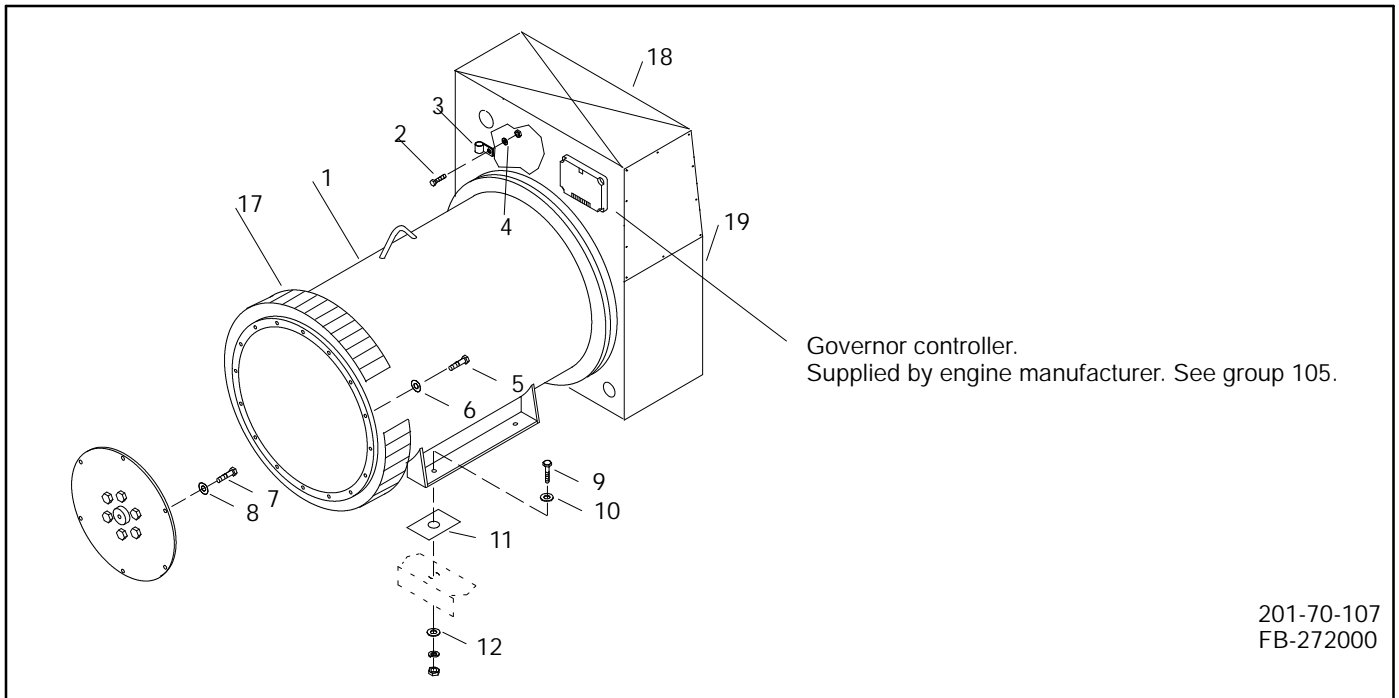
* Part numbers are listed for standard models with standard air cleaner, unit-mounted radiator, and 16-light controller.

Maintenance Kits

Models	Kit Part Number
900-1200 kW	PA-328748
1500-1600 kW	PA-328749

Maintenance kits include air cleaner, oil filter, primary fuel filter, and secondary fuel filter.

Group 201: Generator and Mounting

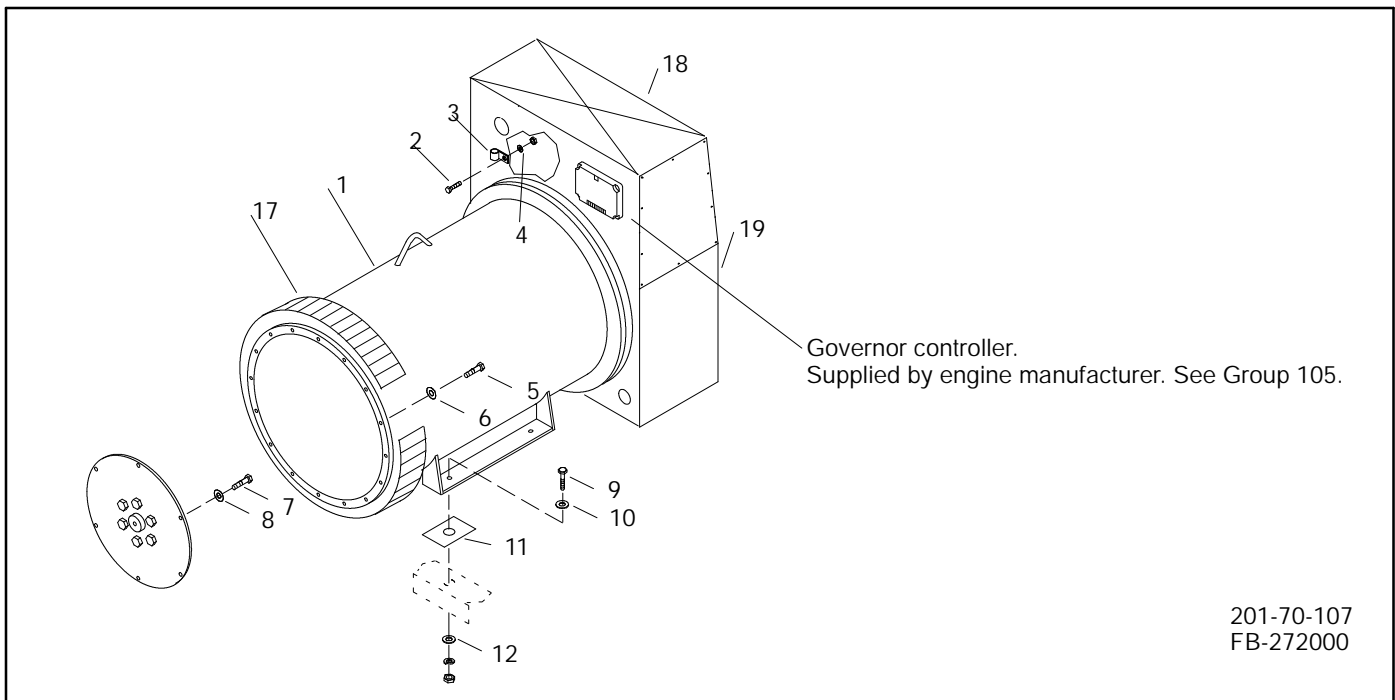


Item	Part Number	Description	Quantity												
			Variation/Kit Number												
			54	97	105	106	107	108	109	110	111	112	113	114	
1	A-292478	Alternator Assembly*	1												
1	B-279959	Alternator Assembly*		1	1										
1	B-279960	Alternator Assembly*				1									
1	B-292447	Alternator Assembly*					1								
1	B-279961	Alternator Assembly*						1							
1	B-279962	Alternator Assembly*								1					
1	B-292448	Alternator Assembly*									1				
1	B-292478	Alternator Assembly*										1			
1	B-279592	Alternator Assembly*											1		
1	A-279996	Alternator Assembly*												1	
1	B-292450	Alternator Assembly*													1
2	X-50-15	Screw, 10-24 x 1/2	1	1	1	1	1	1	1	1	1	1	1	1	1
3	X-672-13	Clamp, Insulated	1	1	1	1	1	1	1	1	1	1	1	1	1
4	X-19-1	Washer, Split Lock, 10	1	1	1	1	1	1	1	1	1	1	1	1	1
5	X-129-20	Screw, Ref., 1/2-13 x 1 3/4	16	16	16	16	16	16	16	16	16	16	16	16	16
6	290945	Washer, Hardened, 17/32 x 1 1/16	16	16	16	16	16	16	16	16	16	16	16	16	16
7	X-6021-13	Screw, H.C.	6				6				6	6	6	6	4
7	X-6021-14	Screw, H.C.			6	6		6	6	6					
8	X-801-5	Washer, Hardened, 21/32 x 1 1/16 x 3/32	6	6	6	6	6	6	6	6	6	6	6	6	6
9	#	Hardware, 3/4-10	4		4	4	4	4	4	4	4	4	4	4	4
10	X-801-8	Washer, Plain	4	4	4	4	4	4	4	4	4	4	4	4	4
11	290743	Shim, 16 Gauge	6	6	6	6	6	6	6	6	6	6	6	6	6
11	290744	Shim, 7 Gauge	12	12	12	12	12	12	12	12	12	12	12	12	12
11	291191	Shim, .010	4	4	4	4	4	4	4	4	4	4	4	4	4
12	X-6011-1	Washer, Beveled, 13/16 dia.	4	4	4	4	4	4	4	4	4	4	4	4	4
13	X-400-172	Spacer, .640 ID x .531 L							6						
14	274324	Support, Generator			2	2			2	2					
15	X-6011-1	Washer, Beveled 13/16 dia.			8	8			8	8					
16	#	Hardware, 3/4-10			8	8			8	8					
17	328903	Screen													
17	328904	Screen													
18	328897	Cover, Top Back													
18	328898	Cover, Top Back													
19	328900	Cover, Louvered													
19	328901	Cover, Louvered													

* Alternator assembly includes parts not shown on the illustration. See page 39.

Common Hardware; Procure Locally.

Group 201: Generator and Mounting



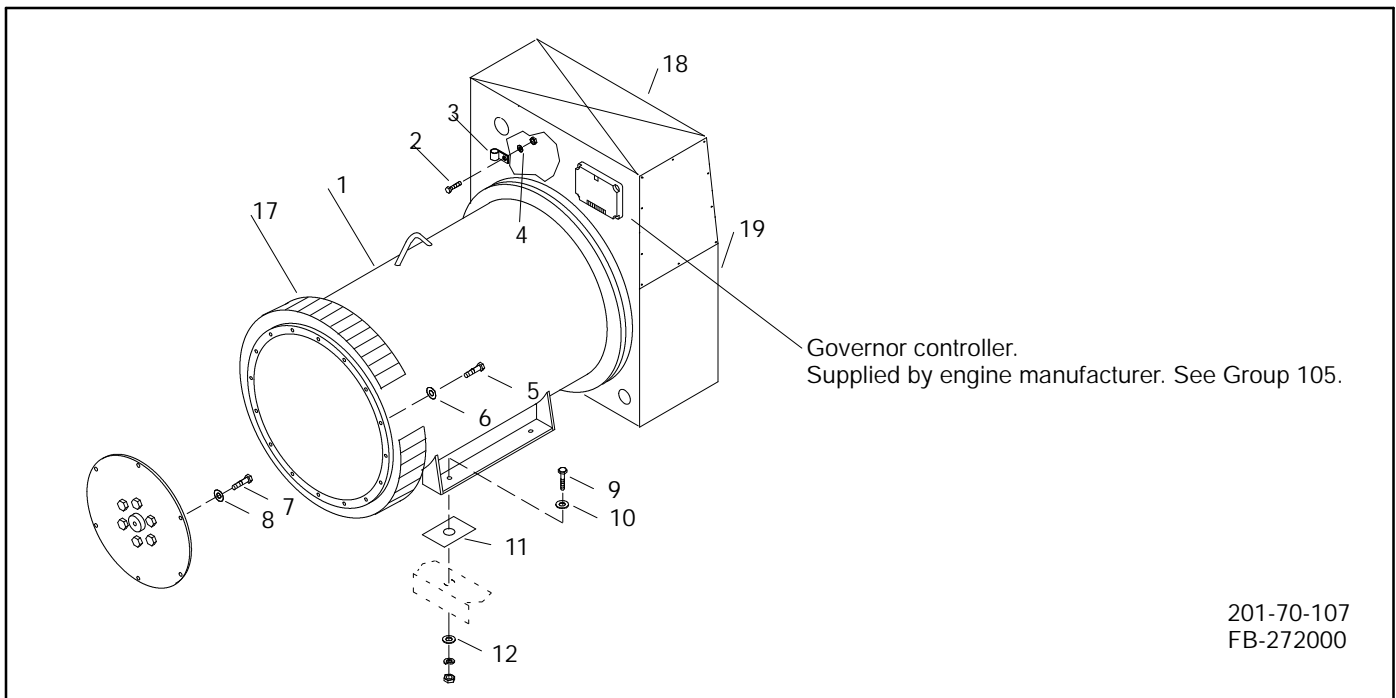
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Item	Part Number	Description	Quantity														
			Variation/Kit Number														
			115	116	117	118	119	120	121	122	168	169	170	171			
1	A-279982	Alternator Assembly*	1			1											
1	B-292479	Alternator Assembly*		1													
1	A-279979	Alternator Assembly*			1												
1	B-279907	Alternator Assembly*						1									
1	A-279983	Alternator Assembly*							1								
1	A-279980	Alternator Assembly*								1							
1	B-279908	Alternator Assembly*									1						
1	A-328811	Alternator Assembly*										1					
1	A-328112	Alternator Assembly*											1				
1	A-328113	Alternator Assembly*													1		
1	A-328135	Alternator Assembly*															1
2	X-50-15	Screw, 10-24 x 1/2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	X-672-13	Clamp, Insulated	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	X-19-1	Washer, Split Lock, 10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	X-129-20	Screw, Ref., 1/2-13 x 1 3/4	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
6	290945	Washer, Hardened, 17/32 x 1 1/16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
7	X-6021-13	Screw, H.C.	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	X-6021-14	Screw, H.C.	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
8	X-801-5	Washer, Hardened, 21/32 x 1 1/16 x 3/32	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
9	#	Hardware, 3/4-10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
10	X-801-8	Washer, Plain	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
11	290743	Shim, 16 Gauge	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
11	290744	Shim, 7 Gauge	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
11	291191	Shim, .010	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
12	X-6011-1	Washer, Beveled, 13/16 dia.	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
13	X-400-172	Spacer, .640 ID x .531 L		6					6								6
14	274324	Support, Generator															
15	X-6011-1	Washer, Beveled 13/16 dia.															
16	#	Hardware, 3/4-10															
17	328903	Screen										1	1	1	1	1	1
17	328904	Screen															
18	328897	Cover, Top Back										1	1	1	1	1	1
18	328898	Cover, Top Back															
19	328900	Cover, Louvered										1	1	1	1	1	1
19	328901	Cover, Louvered															

* Alternator assembly includes parts not shown on the illustration. See page 39.

Common Hardware; Procure Locally.

Group 201: Generator and Mounting



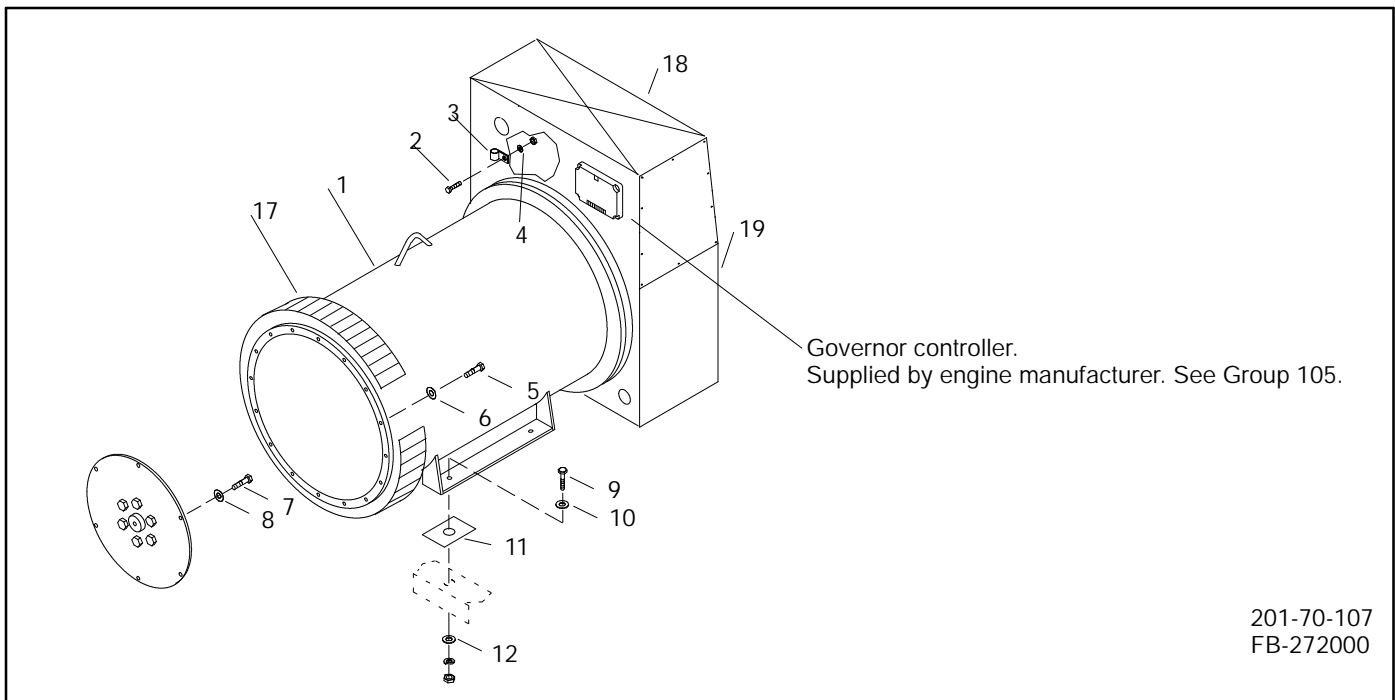
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Item	Part Number	Description	Quantity															
			Variation/Kit Number															
			172	173	174	175	176	177	199	203	204	205	206	207				
1	A-328124	Alternator Assembly*	1															
1	A-328113	Alternator Assembly*		1														
1	A-328114	Alternator Assembly*			1													
1	A-328137	Alternator Assembly*				1												
1	A-328125	Alternator Assembly*					1											
1	A-328115	Alternator Assembly*						1										
1	A-328107	Alternator Assembly*							1									
1	A-328108	Alternator Assembly*								1								
1	A-328109	Alternator Assembly*									1							
1	A-328132	Alternator Assembly*										1					1	
1	A-328122	Alternator Assembly*																1
2	X-50-15	Screw, 10-24 x 1/2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	X-672-13	Clamp, Insulated	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	X-19-1	Washer, Split Lock, 10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	X-129-20	Screw, Ref., 1/2-13 x 1 3/4	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
6	290945	Washer, Hardened, 17/32 x 1 1/16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
7	X-6021-13	Screw, H.C.	6	6	6	6	6	6	6	6				6	6			
7	X-6021-14	Screw, H.C.									6	6						6
8	X-801-5	Washer, Hardened, 21/32 x 1 1/16 x 3/32	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
9	#	Hardware, 3/4-10																
10	X-801-8	Washer, Plain	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
11	290743	Shim, 16 Gauge	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
11	290744	Shim, 7 Gauge	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
11	291191	Shim, .010	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
12	X-6011-1	Washer, Beveled, 13/16 dia.	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
13	X-400-172	Spacer, .640 ID x .531 L				6												6
14	274324	Support, Generator																
15	X-6011-1	Washer, Beveled 13/16 dia.																
16	#	Hardware, 3/4-10																
17	328903	Screen	1	1	1	1	1	1	1	1								
17	328904	Screen																
18	328897	Cover, Top Back	1	1	1	1	1	1	1	1								
18	328898	Cover, Top Back																
19	328900	Cover, Louvered	1	1	1	1	1	1	1	1								
19	328901	Cover, Louvered																

* Alternator assembly includes parts not shown on the illustration. See page 39.

Common Hardware; Procure Locally.

Group 201: Generator and Mounting



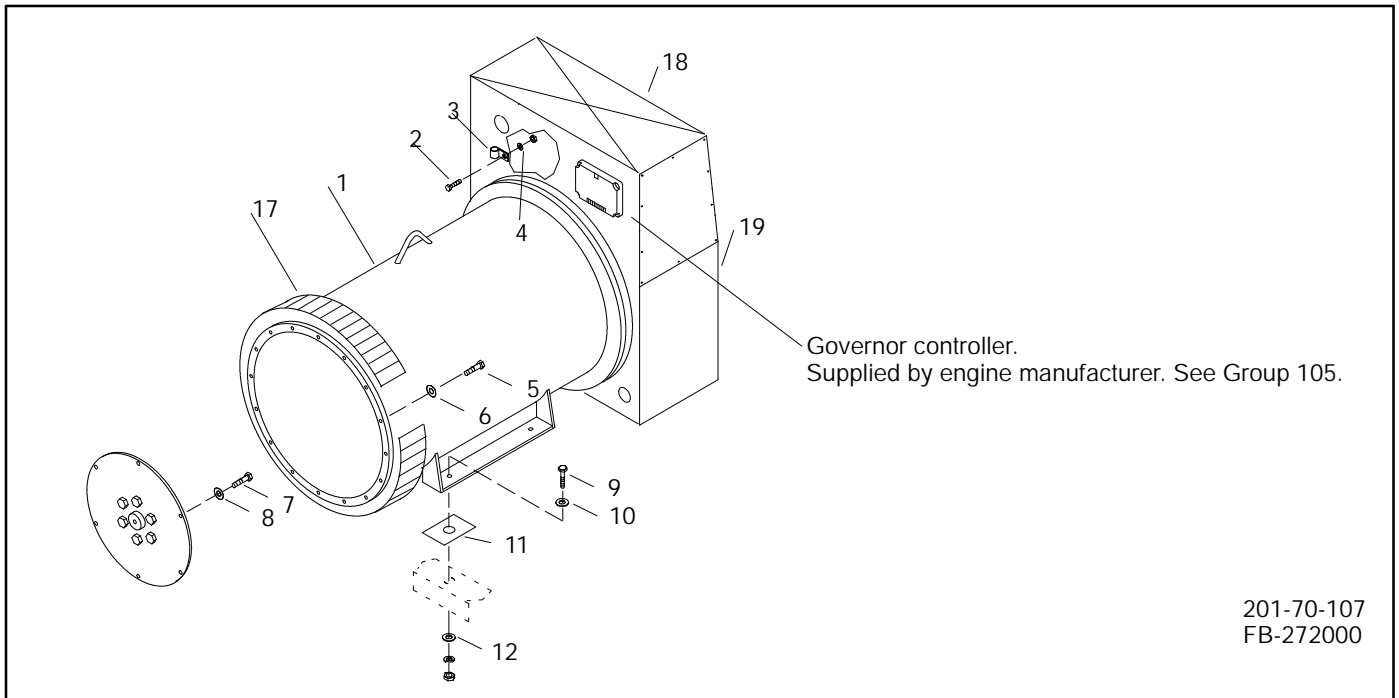
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Item	Part Number	Description	Quantity														
			Variation/Kit Number														
			208	209	210	211	212	213	214	215	216	217	218	351			
1	A-328110	Alternator Assembly*	1										1				
1	A-328133	Alternator Assembly*		1											1		
1	A-328123	Alternator Assembly*			1											1	
1	A-328107	Alternator Assembly*				1											
1	A-328108	Alternator Assembly*						1									
1	A-328132	Alternator Assembly*							1								
1	A-328122	Alternator Assembly*								1							
1	A-328109	Alternator Assembly*									1						
1	A-328403	Alternator Assembly*										1					1
2	X-50-15	Screw, 10-24 x 1/2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	X-672-13	Clamp, Insulated	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	X-19-1	Washer, Split Lock, 10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	X-129-20	Screw, Ref., 1/2-13 x 1 3/4	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
6	290945	Washer, Hardened, 17/32 x 1 1/16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
7	X-6021-13	Screw, H.C.	6	6	6				6	6	6	6	6	6	6	6	6
7	X-6021-14	Screw, H.C.				6	6	6									
8	X-801-5	Washer, Hardened, 21/32 x 1 1/16 x 3/32	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
9	#	Hardware, 3/4-10															
10	X-801-8	Washer, Plain	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
11	290743	Shim, 16 Gauge	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
11	290744	Shim, 7 Gauge	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
11	291191	Shim, .010	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
12	X-6011-1	Washer, Beveled, 13/16 dia.	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
13	X-400-172	Spacer, .640 ID x .531 L															
14	274324	Support, Generator															
15	X-6011-1	Washer, Beveled 13/16 dia.															
16	#	Hardware, 3/4-10															
17	328903	Screen				1	1	1	1								
17	328904	Screen								1	1	1	1	1	1	1	1
18	328897	Cover, Top Back				1	1	1	1								
18	328898	Cover, Top Back								1	1	1	1	1	1	1	1
19	328900	Cover, Louvered				1	1	1	1								
19	328901	Cover, Louvered								1	1	1	1	1	1	1	1

* Alternator assembly includes parts not shown on the illustration. See page 39.

Common Hardware; Procure Locally.

Group 201: Generator and Mounting



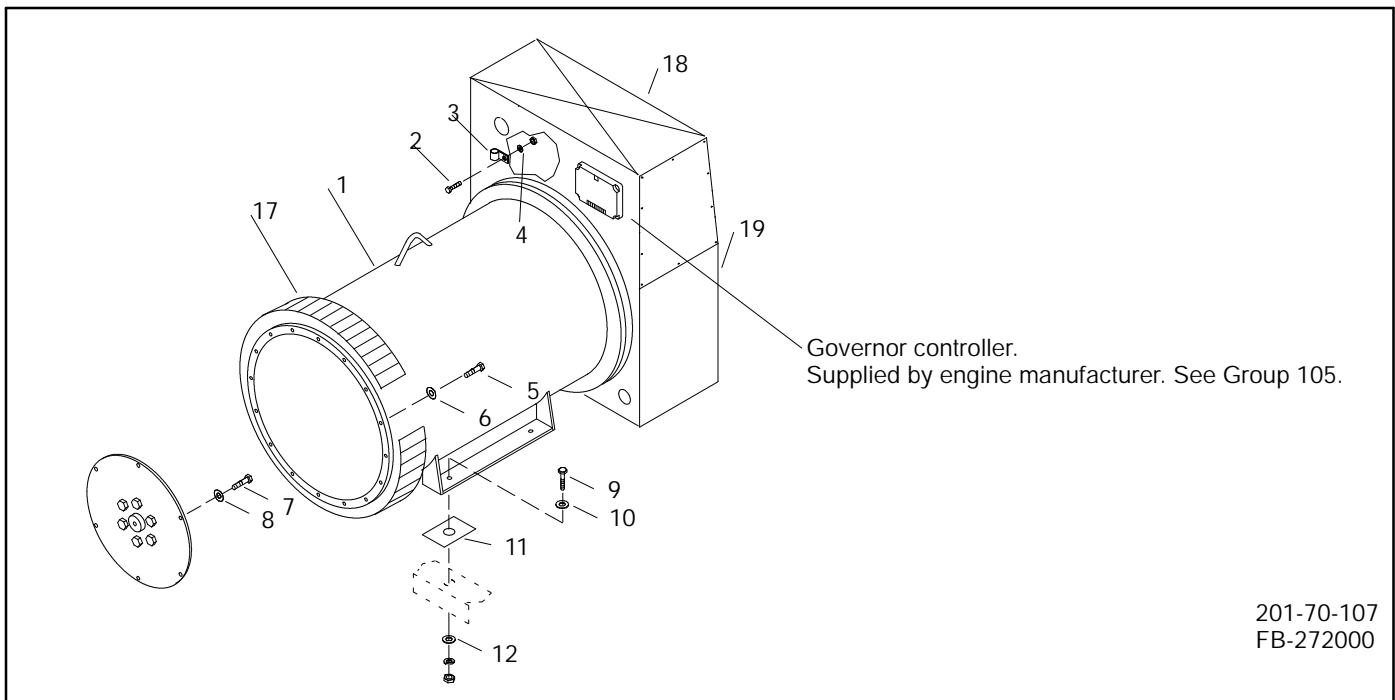
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Item	Part Number	Description	Quantity												
			Variation/Kit Number												
			358	359	360	361	362	367	368	369	370	376	378	380	
1	A-328658	Alternator Assembly*	1						1						
1	A-328107	Alternator Assembly*		1											
1	A-328108	Alternator Assembly*			1										
1	A-328122	Alternator Assembly*				1									
1	A-328132	Alternator Assembly*					1								
1	A-328133	Alternator Assembly*							1						
1	A-328134	Alternator Assembly*								1					
1	A-328123	Alternator Assembly*									1				
1	A-328113	Alternator Assembly*										1			
1	A-328114	Alternator Assembly*											1		
1	A-328125	Alternator Assembly*												1	
2	X-50-15	Screw, 10-24 x 1/2	1	1	1	1	1	1	1	1	1	1	1	1	
3	X-672-13	Clamp, Insulated	1	1	1	1	1	1	1	1	1	1	1	1	
4	X-19-1	Washer, Split Lock, 10	1	1	1	1	1	1	1	1	1	1	1	1	
5	X-129-20	Screw, Ref., 1/2-13 x 1 3/4	16	16	16	16	16	16	16	16	16	16	16	16	
6	290945	Washer, Hardened, 17/32 x 1 1/16	16	16	16	16	16	16	16	16	16	16	16	16	
7	X-6021-13	Screw, H.C.	6						6	6	6	6	6	6	
7	X-6021-14	Screw, H.C.		6	6	6	6	6							
8	X-801-5	Washer, Hardened, 21/32 x 1 1/16 x 3/32	6	6	6	6	6	6	6	6	6	6	6	6	
9	#	Hardware, 3/4-10													
10	X-801-8	Washer, Plain	4	4	4	4	4	4	4	4	4	4	4	4	
11	290743	Shim, 16 Gauge	6	6	6	6	6	6	6	6	6	6	6	6	
11	290744	Shim, 7 Gauge	12	12	12	12	12	12	12	12	12	12	12	12	
11	291191	Shim, .010	4	4	4	4	4	4	4	4	4	4	4	4	
12	X-6011-1	Washer, Beveled, 13/16 dia.	4	4	4	4	4	4	4	4	4	4	4	4	
13	X-400-172	Spacer, .640 ID x .531 L													
14	274324	Support, Generator													
15	X-6011-1	Washer, Beveled 13/16 dia.													
16	#	Hardware, 3/4-10													
17	328903	Screen	6						6	6	6	6	6	6	
17	328904	Screen		6	6	6	6	6							
18	328897	Cover, Top Back	6						6	6	6	6	6	6	
18	328898	Cover, Top Back		6	6	6	6	6							
19	328900	Cover, Louvered	6						6	6	6	6	6	6	
19	328901	Cover, Louvered		6	6	6	6	6							

* Alternator assembly includes parts not shown on the illustration. See page 39.

Common Hardware; Procure Locally.

Group 201: Generator and Mounting



201-70-107
FB-272000

Item	Part Number	Description	Quantity													
			Variation/Kit Number													
			382	385	386	388	390	392	393	394	395	396	397			
1	A-328126	Alternator Assembly*	1													
1	A-328137	Alternator Assembly*		1												
1	A-328115	Alternator Assembly*			1											
1	A-328146	Alternator Assembly*				1										
1	A-328147	Alternator Assembly*						1								
1	A-328112	Alternator Assembly*							1							
1	A-328124	Alternator Assembly*								1						
1	A-328135	Alternator Assembly*									1					
1	A-328136	Alternator Assembly*										1				
1	A-328144	Alternator Assembly*											1			
1	A-328145	Alternator Assembly*														1
2	X-50-15	Screw, 10-24 x 1/2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	X-672-13	Clamp, Insulated	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	X-19-1	Washer, Split Lock, 10	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	X-129-20	Screw, Ref., 1/2-13 x 1 3/4	16	16	16	16	16	16	16	16	16	16	16	16	16	16
6	290945	Washer, Hardened, 17/32 x 1 1/16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
7	X-6021-13	Screw, H.C.	6	6	6	6	6	6	6	6				6	6	
7	X-6021-14	Screw, H.C.														
8	X-801-5	Washer, Hardened, 21/32 x 1 1/16 x 3/32	6	6	6	6	6	6	6	6	6	6	6	6	6	6
9	#	Hardware, 3/4-10														
10	X-801-8	Washer, Plain	4	4	4	4	4	4	4	4	4	4	4	4	4	4
11	290743	Shim, 16 Gauge	6	6	6	6	6	6	6	6	6	6	6	6	6	6
11	290744	Shim, 7 Gauge	12	12	12	12	12	12	12	12	12	12	12	12	12	12
11	291191	Shim, .010	4	4	4	4	4	4	4	4	4	4	4	4	4	4
12	X-6011-1	Washer, Beveled, 13/16 dia.	4	4	4	4	4	4	4	4	4	4	4	4	4	4
13	X-400-172	Spacer, .640 ID x .531 L										6	6			
14	274324	Support, Generator														
15	X-6011-1	Washer, Beveled 13/16 dia.														
16	#	Hardware, 3/4-10														
17	328903	Screen														
17	328904	Screen	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	328897	Cover, Top Back														
18	328898	Cover, Top Back	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	328900	Cover, Louvered														
19	328901	Cover, Louvered	1	1	1	1	1	1	1	1	1	1	1	1	1	1

* Alternator assembly includes parts not shown on the illustration. See page 39.

Common Hardware; Procure Locally.

Group 201: Generator and Mounting

Alternator Assembly Components

Part Description	Part Number	
	430 and 570 Frame Series (350-900 kW)	740 Frame Series (1000-2000 kW)
Exciter Rectifier Assembly (includes diodes and surge suppressor)	347071	347070
Diode, Standard Polarity	279772	279773
Diode, Reversing Polarity	279774	279775
Surge Suppressor	279776	279777
Capacitor	347160	347160
Fuse, 5 Amp	279778	249778
Fuse Cap	279779	279779

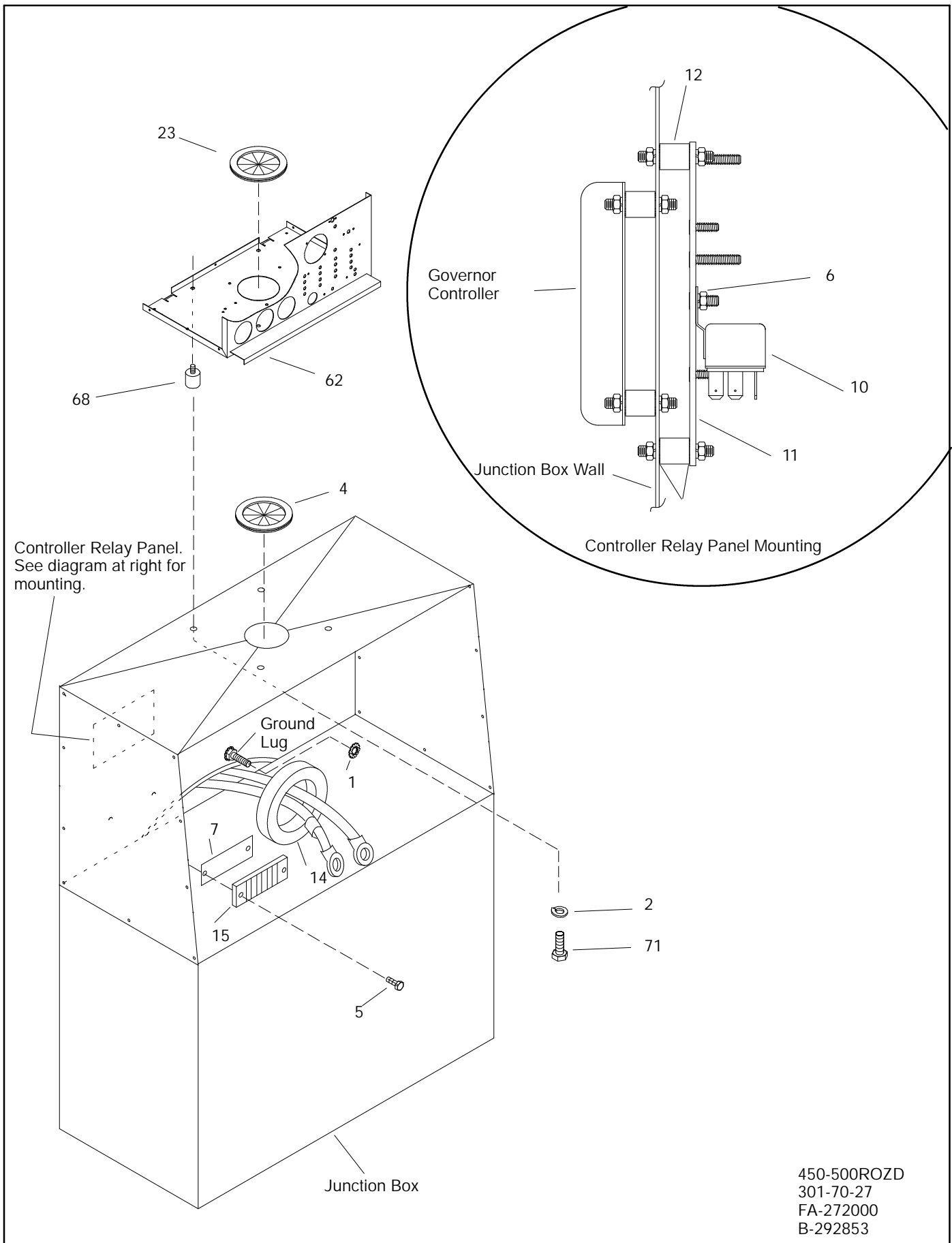
Some modular generator specs listed in the specification number index require a generator kit. Refer to the generator set nameplate to identify the kit number installed on your generator set. The parts list of the kit is identical to a variation shown in this group. Use the following table to identify the equivalent variation number.

Modular Spec Cross-Reference Table

Alternator Kit (Model)	Equivalent Variation Number
347499 (5M4036)	359
347500 (5M4038)	360
347501 (5M4044)	351
347502 (5M4168)	361
347503 (5M4280)	362
347575 (7M4046)	367
347576 (7M4282)	368
347577 (7M4284)	369
347578 (7M4170)	370
354007 (7M4046)	358
354008 (7M4048)	392
354009 (7M4050)	376
354010 (7M4172)	393
354011 (7M4174)	380
354012 (7M4286)	394
354013 (724288)	395
354019 (7M4052)	378
354021 (7M4176)	382
354022 (7M4290)	385
354027 (7M4054)	386
354210 (7M4364)	396
354211 (7M4368)	388
354212 (7M4370)	390
354213 (7M4366)	397

Common Hardware; Procure Locally.

Group 301: Controller and Mounting



Group 301: Controller and Mounting

Item	Part Number	Description	Quantity							
			Variation/Kit Number							
			29	30	31	41	49	55	60	61
1	X-22-14	Washer, Shakeproof 3/8	1	1	1	1	1	1	1	1
2	X-22-16	Washer, Lock 5/16	4	4	4	4	4	4	4	4
3	X-22-20	Washer, Ext. Tooth Lock 8	8	8	8	8	8	8	8	8
4	X-284-25	Grommet	1	1	1	1	1	1	1	1
5	X-51-11	Screw, 8/32 x 3/4	2	2	2	2	2	2	2	2
6	X-6210-1	Nut, Whiz Lock	1	1	1	1	1	1	1	1
7	255080	Marker, Strip	1	1	1	1	1	1	1	1
8	258453	Harness, Wiring CT	1	1	1	1	1	1	1	1
9	258455	Harness, Wiring AC	1		1	1		1	1	1
9	274964	Harness, Wiring AC		1	1		1	1		1
10	272684	Relay	2	2	2	2	2	2	2	2
11	274796	Panel, Relay	1	1	1	1	1	1	1	1
12	282829	Mount, Vibro	1	1	1	1	1	1	1	1
13	291288	Pickup, Speed (on flywheel housing, not shown)	1	1	1	1	1	1	1	1
14	291548	Transformer, Current	3	3			3			3
14	297675	Transformer, Current			3			3		
14	297676	Transformer, Current				3			3	
14	258990	Transformer, Stepdown	3	3	3	3	3	3	3	3
15	295314	Block, Terminal	1	1	1	1	1	1	1	1
16	See Chart Below	Controller Assembly	1	1	1	1	1	1	1	1
17	See Chart Below	Controller Includes*								
18	See Chart Below	*Circuit Board, Main	1	1	1	1	1	1	1	1
19	X-22-20	*Washer, Shakeproof	1	1	1	1	1	1	1	1
20	X-22-50	*Washer, Lock	2	2	2	2	2	2	2	2
21	X-22-6	*Washer, Lock #6	4	4	4	4	4	4	4	4
22	X-22-7	*Washer, Lock #8	3	3	3	3	3	3	3	3
23	X-284-31	*Grommet	1	1	1	1	1	1	1	1
24	X-301-34	*Plug, Button	1	1	1	1	1	1	1	1
25	X-468-3	*Tie, Cable Nylon	5	5	5	5	5	5	5	5
26	X-49-2	*Screw, r.h.m. 6-32 x 3	2	2	2	2	2	2	2	2
27	X-49-25	*Screw, r.h.m. 6-32 x 1	18	18	18	18	18	18	18	18
28	X-49-39	*Screw, Pan Head 6-32 x .50	2	2	2	2	2	2	2	2
29	X-50-3	*Screw, r.h.m. 10-24 x .75	5	5	5	5	5	5	5	5
30	X-50-70	*Screw, r.h.m. 10-24 x 1	1	1	1	1	1	1	1	1
31	X-51-53	*Screw, r.h.m. 8-32 x .625	2	2	2	2	2	2	2	2
32	X-519-1	*Plug, Cap 1/8 Inch	2	2	2	2	2	2	2	2
33	X-6046-2	*Strap, Ground	1	1	1	1	1	1	1	1
34	X-6048-2	*Jumper, Terminal Block	1	1	1	1	1	1	1	1
35	X-6216-1	*Screw, Hex Crimptite	10	10	10	10	10	10	10	10
36	X-6234-6	*Nut, Hex	2	2	2	2	2	2	2	2
37	X-67-127	*Screw, Thread Forming	2	2	2	2	2	2	2	2
38	X-696-5	*Sleeve	1	1	1	1	1	1	1	1
39	X-71-2	*Nut, Hex	2	2	2	2	2	2	2	2
40	X-712-9	*Spacer	4	4	4	4	4	4	4	4
41	X-72-4	*Nut, Hex.	4	4	4	4	4	4	4	4
42	201620-86	*Tab, Identification	1	1	1	1	1	1	1	1
43	238736	*Meter, Hour	1	1	1	1	1	1	1	1
44	238898	*Terminal	1	1	1	1	1	1	1	1
45	241617	*Connector, 6 Position	1	1	1	1	1	1	1	1
46	246115	*Block, Terminal	1	1	1	1	1	1	1	1
47	255224	*Voltmeter	1	1	1	1	1	1	1	1
48	268297	*Resistor, 24 Volt	2	2	2	2	2	2	2	2

Serial Number Contingent Controller Assemblies

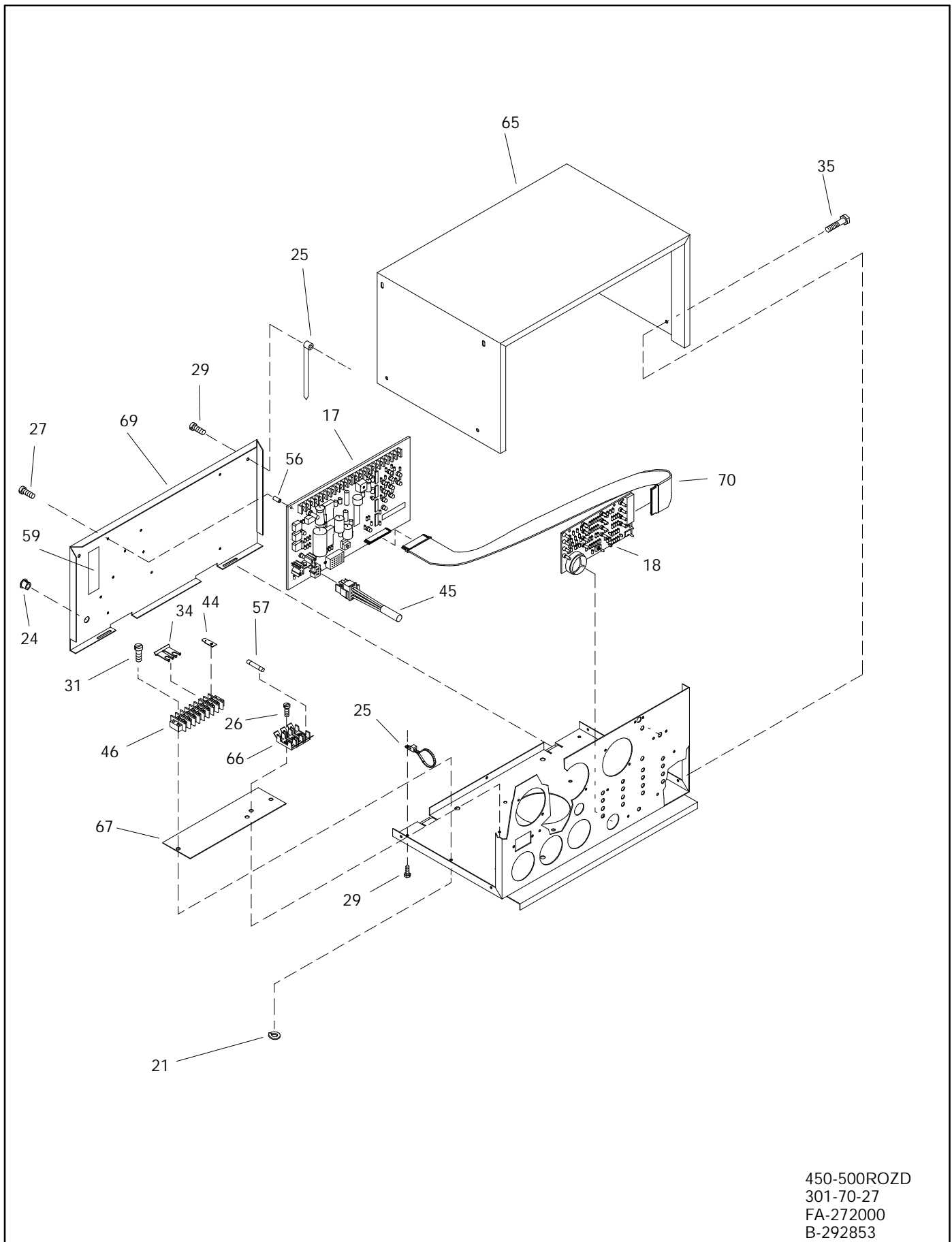
Variations	Controller Assembly Part Number	
	Before Serial Number 363369	Serial Numbers 363369 And After
29, 30, 41	B-292855	B-292855
31	A-273848	A-273848
49, 60, 61	B-292855	A-328939
55	A-328073	A-328949

Serial Number Contingent Controller Parts

Part Description	Part Number	
	Before Serial Number 363369	Serial Numbers 363369 And After
Main Circuit Board	G-292806	A-336415
Indicator Board	B-292357	A-336432
Controller Ribbon Cable	292836	336428

Common Hardware; Procure Locally

Group 301: Controller and Mounting



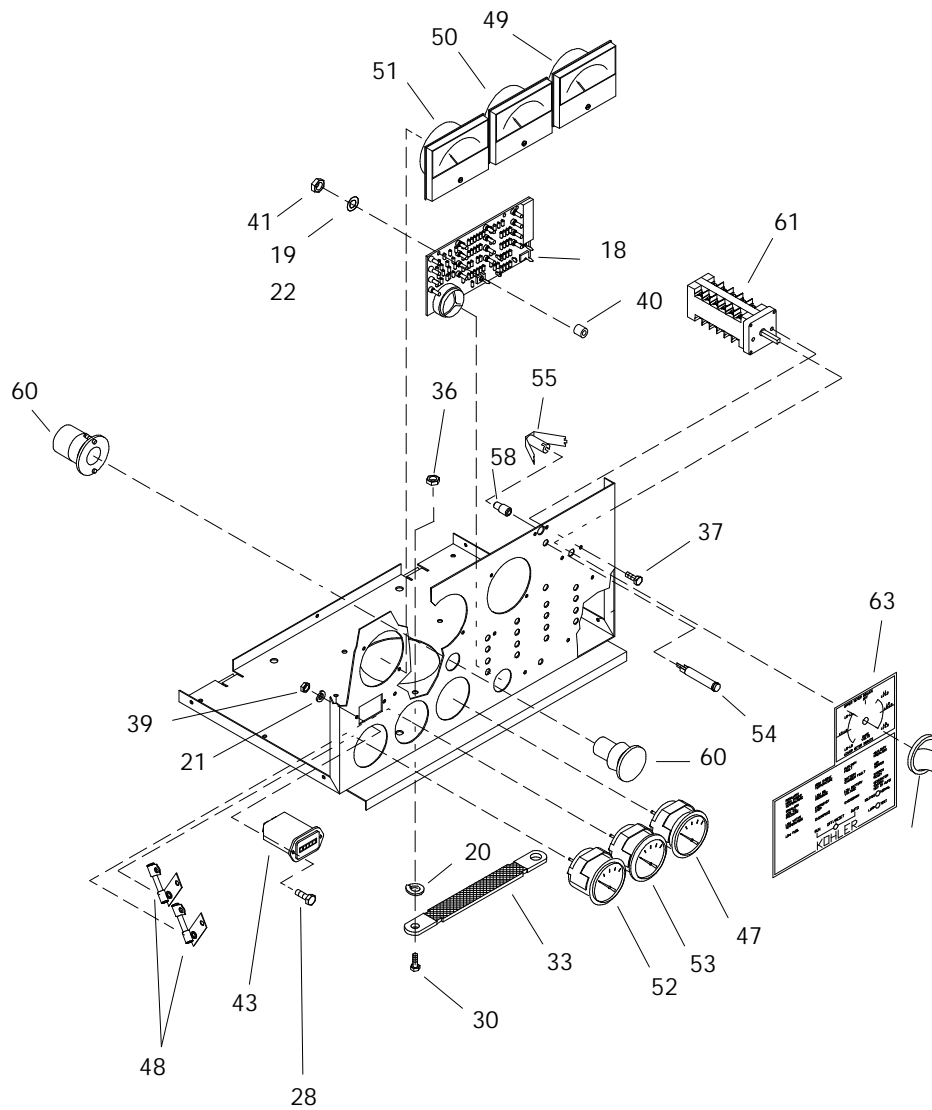
450-500ROZD
301-70-27
FA-272000
B-292853

Group 301: Controller and Mounting

Item	Part Number	Description	Quantity							
			Variation/Kit Number							
			29	30	31	41	49	55	60	61
1	X-22-14	Washer, Shakeproof 3/8	1	1	1	1	1	1	1	1
2	X-22-16	Washer, Lock 5/16	4	4	4	4	4	4	4	4
3	X-22-20	Washer, Ext. Tooth Lock 8	8	8	8	8	8	8	8	8
4	X-284-25	Grommet	1	1	1	1	1	1	1	1
5	X-51-11	Screw, 8/32 x 3/4	2	2	2	2	2	2	2	2
6	X-6210-1	Nut, Whiz Lock	1	1	1	1	1	1	1	1
7	255080	Marker, Strip	1	1	1	1	1	1	1	1
8	258453	Harness, Wiring CT	1	1	1	1	1	1	1	1
9	258455	Harness, Wiring AC	1		1	1		1	1	1
9	274964	Harness, Wiring AC		1			1			
10	272684	Relay	2	2	2	2	2	2	2	2
11	274796	Panel, Relay	1	1	1	1	1	1	1	1
12	282829	Mount, Vibro	1	1	1	1	1	1	1	1
13	291288	Pickup, Speed (on flywheel housing, not shown)	1	1	1	1	1	1	1	1
14	291548	Transformer, Current	3	3			3			3
14	297675	Transformer, Current			3			3		
14	297676	Transformer, Current				3			3	
14	258990	Transformer, Stepdown	3	3	3	3	3	3	3	3
15	295314	Block, Terminal	1	1	1	1	1	1	1	1
16	See Chart	Controller Assembly	1	1	1	1	1	1	1	1
17	See Chart	Controller Includes*	1	1	1	1	1	1	1	1
18	See Chart	*Circuit Board, Main	1	1	1	1	1	1	1	1
19	X-22-20	*Circuit Board, Indicator	1	1	1	1	1	1	1	1
19	X-22-20	*Washer, Shakeproof	1	1	1	1	1	1	1	1
20	X-22-50	*Washer, Lock	2	2	2	2	2	2	2	2
21	X-22-6	*Washer, Lock #6	4	4	4	4	4	4	4	4
22	X-22-7	*Washer, Lock #8	3	3	3	3	3	3	3	3
23	X-284-31	*Grommet	1	1	1	1	1	1	1	1
24	X-301-34	*Plug, Button	1	1	1	1	1	1	1	1
25	X-468-3	*Tie, Cable Nylon	5	5	5	5	5	5	5	5
26	X-49-2	*Screw, r.h.m. 6-32 x 3	2	2	2	2	2	2	2	2
27	X-49-25	*Screw, r.h.m. 6-32 x 1	18	18	18	18	18	18	18	18
28	X-49-39	*Screw, Pan Head 6-32 x .50	2	2	2	2	2	2	2	2
29	X-50-3	*Screw, r.h.m. 10-24 x .75	5	5	5	5	5	5	5	5
30	X-50-70	*Screw, r.h.m. 10-24 x 1	1	1	1	1	1	1	1	1
31	X-51-53	*Screw, r.h.m. 8-32 x .625	2	2	2	2	2	2	2	2
32	X-519-1	*Plug, Cap 1/8 Inch	2	2	2	2	2	2	2	2
33	X-6046-2	*Strap, Ground	1	1	1	1	1	1	1	1
34	X-6048-2	*Jumper, Terminal Block	1	1	1	1	1	1	1	1
35	X-6216-1	*Screw, Hex CrimpTite	10	10	10	10	10	10	10	10
36	X-6234-6	*Nut, Hex	2	2	2	2	2	2	2	2
37	X-67-127	*Screw, Thread Forming	2	2	2	2	2	2	2	2
38	X-696-5	*Sleeve	1	1	1	1	1	1	1	1
39	X-71-2	*Nut, Hex	2	2	2	2	2	2	2	2
40	X-712-9	*Spacer	4	4	4	4	4	4	4	4
41	X-72-4	*Nut, Hex.	4	4	4	4	4	4	4	4
42	201620-86	*Tab, Identification	1	1	1	1	1	1	1	1
43	238736	*Meter, Hour	1	1	1	1	1	1	1	1
44	238898	*Terminal	1	1	1	1	1	1	1	1
45	241617	*Connector, 6 Position	1	1	1	1	1	1	1	1
46	246115	*Block, Terminal	1	1	1	1	1	1	1	1
47	255224	*Voltmeter	1	1	1	1	1	1	1	1
48	268297	*Resistor, 24 Volt	2	2	2	2	2	2	2	2
49	282813	*Ammeter, AC	1	1		1	1		1	1
49	273852	*Ammeter, AC			1			1		
50	282816	*Voltmeter, AC	1	1	1	1	1	1	1	1
51	282818	*Meter, Frequency	1	1	1	1	1	1	1	1
52	282897	*Gauge, Oil Pressure	1	1	1	1	1	1	1	1
53	282898	*Gauge, Water Temperature	1	1	1	1	1	1	1	1
54	283420	*Bulb	2	2	2	2	2	2	2	2
55	284990	*Socket, Lamp	2	2	2	2	2	2	2	2
56	287948	*Spacer, Circuit Board	9	9	9	9	9	9	9	9
57	291207	*Fuse, 1.5 Amp	3	3	3	3	3	3	3	3
58	291740	*Lamp	2	2	2	2	2	2	2	2
		Parts list continues								

Common Hardware; Procure Locally

Group 301: Controller and Mounting



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301-70-27
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B-292853

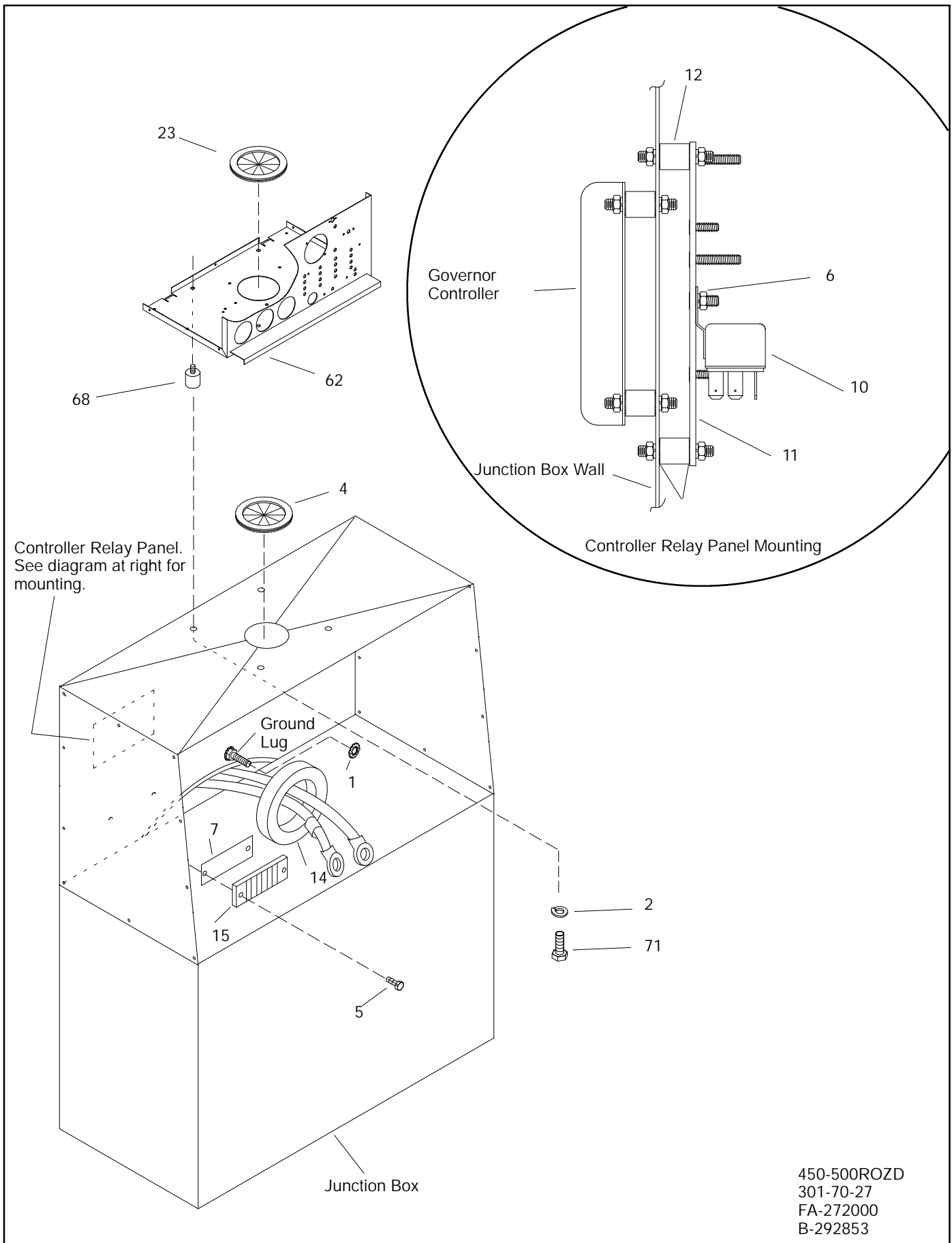
Group 301: Controller and Mounting

Item	Part Number	Description	Quantity							
			Variation/Kit Number							
			29	30	31	41	49	55	60	61
59	292347	*Decal	1	1	1	1	1	1	1	1
60	292364	*Switch, Pushbutton	1	1	1	1	1	1	1	1
61	292374	*Switch, Selector	1	1	1	1	1	1	1	1
62	292375	*Box, Controller	1	1	1	1	1	1	1	1
63	292383	*Nameplate	1	1	1	1	1	1	1	1
64	292467	*Decal, Emergency Stop	1	1	1	1	1	1	1	1
65	292818	*Cover, Controller	1	1	1	1	1	1	1	1
66	292821	*Holder, Fuse	1	1	1	1	1	1	1	1
67	292823	*Marker, Strip	1	1	1	1	1	1	1	1
68	292834	*Bumper	4	4	4	4	4	4	4	4
69	292908	*Plate, Hinged Back	1	1	1	1	1	1	1	1
70	See Chart Below	*Cable Assembly	1	1	1	1	1	1	1	1
71	X-125-23	Screw, Ref., 5/15-18 x 3 1/2	1	1	1	1	1	1	1	1

Serial Number Contingent Controller Parts

Part Description	Part Number	
	Before Serial Number 363369	Serial Numbers 363369 And After
Main Circuit Board	G-292806	A-336415
Indicator Board	B-292357	A-336432
Controller Ribbon Cable	292836	336428

Group 301: Controller and Mounting

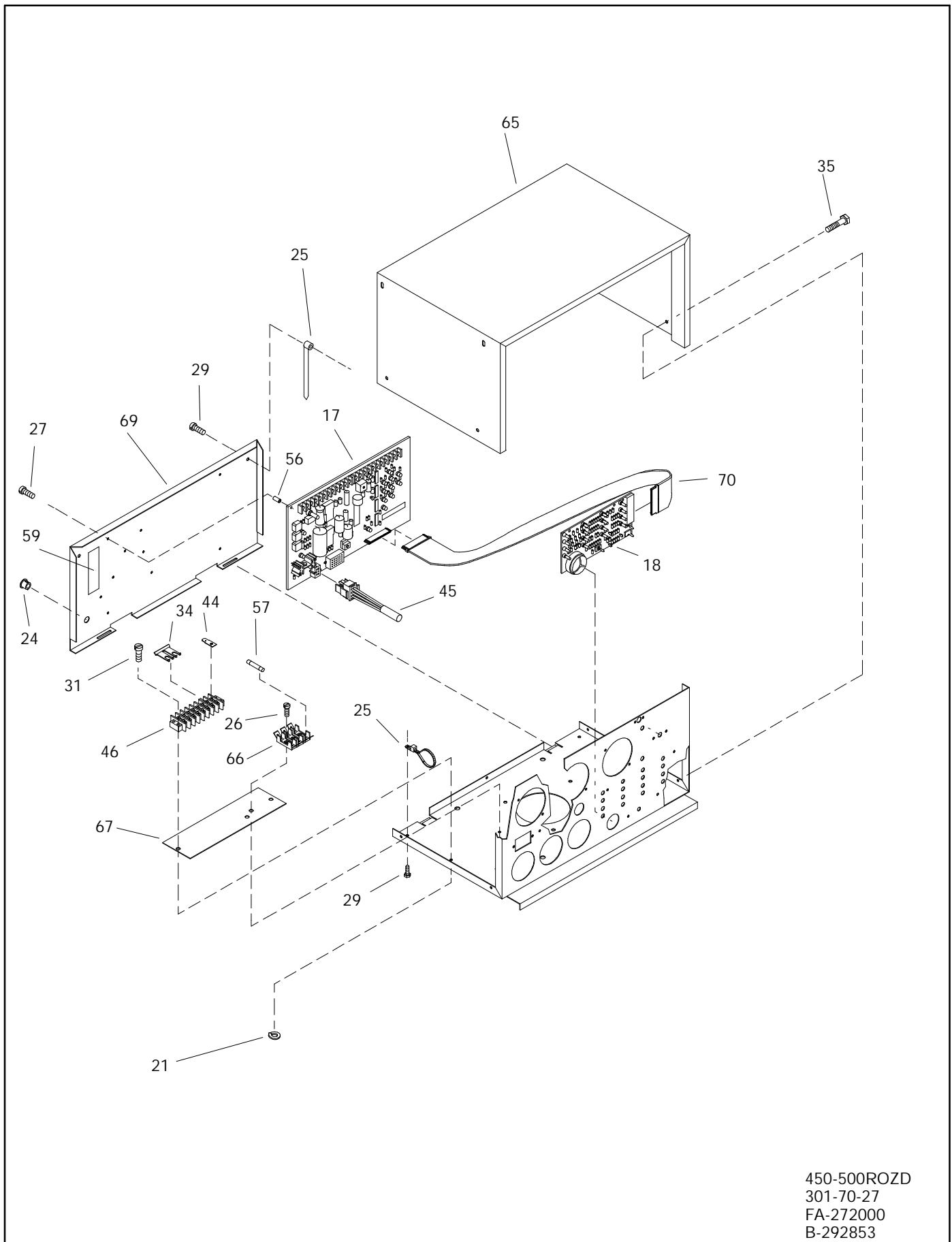


Group 301: Controller and Mounting

Item	Part Number	Description	Quantity										
			Variation/Kit Number										
			122	131	132	136	140	142	144	146	148		
1	X-22-14	Washer, Shakeproof 3/8	1	1	1	1	1	1	1	1	1	1	1
2	X-22-16	Washer, Lock 5/16	4	4	4	4	4	4	4	4	4	4	4
3	X-22-20	Washer, Ext. Tooth Lock 8	8	8	8	8	8	8	8	8	8	8	8
4	X-284-25	Grommet	1	1	1	1	1	1	1	1	1	1	1
5	X-51-11	Screw, 8/32 x 3/4	2	2	2	2	2	2	2	2	2	2	2
6	X-6210-1	Nut, Whiz Lock	1	1	1	1	1	1	1	1	1	1	1
7	255080	Marker, Strip	1	1	1	1	1	1	1	1	1	1	1
8	258453	Harness, Wiring CT	1	1	1	1	1	1	1	1		1	1
8	347563	Harness, Wiring CT										1	1
9	274964	Harness, Wiring AC	1	1	1	1	1	1	1	1	1		
9	347562	Harness, Wiring AC										1	1
9	347564	Harness, Wiring AC										1	1
10	272684	Relay	2	2	2	2	2	2	2	2	2	2	2
11	274796	Panel, Relay	1	1	1	1	1	1	1	1	1	1	1
12	282829	Mount, Vibro	1	1	1	1	1	1	1	1	1	1	1
13	291288	Pickup, Speed (on flywheel housing, not shown)	1	1	1	1	1	1	1	1	1	1	1
14	291548	Transformer, Current	3					3					
14	297675	Transformer, Current				3	3						
14	291547	Transformer, Current			3						3		
14	297676	Transformer, Current		3									
14	248874	Transformer, Current										3	
14	233951	Transformer, Current											3
14	258990	Transformer, Stepdown (600 V generator)		3	3				3				
14	276578	Transformer, Stepdown (380 V generator)				3							
14	287684	Transformer, Stepdown	3				3			3			
14	X-6131-55	Transformer, Stepdown										3	3
15	295314	Block, Terminal	1	1	1	1	1	1	1	1	1	1	1
15	295314	Block, Terminal	1	1	1	1	1	1	1	1	1	1	1
16	See Chart	Controller Assembly Controller Includes*	1	1	1	1	1	1	1	1	1	1	1
17	See Chart	*Circuit Board, Main	1	1	1	1	1	1	1	1	1	1	1
18	See Chart	*Circuit Board, Indicator	1	1	1	1	1	1	1	1	1	1	1
19	X-22-20	*Washer, Shakeproof	1	1	1	1	1	1	1	1	1	1	1
20	X-22-50	*Washer, Lock	2	2	2	2	2	2	2	2	2	2	2
21	X-22-6	*Washer, Lock #6	4	4	4	4	4	4	4	4	4	4	4
22	X-22-7	*Washer, Lock #8	3	3	3	3	3	3	3	3	3	3	3
23	X-284-31	*Grommet	1	1	1	1	1	1	1	1	1	1	1
24	X-301-34	*Plug, Button	1	1	1	1	1	1	1	1	1	1	1
25	X-468-3	*Tie, Cable Nylon	5	5	5	5	5	5	5	5	5	5	5
26	X-49-2	*Screw, r.h.m. 6-32 x 3	2	2	2	2	2	2	2	2	2	2	2
27	X-49-25	*Screw, r.h.m. 6-32 x 1	18	18	18	18	18	18	18	18	18	18	18
28	X-49-39	*Screw, Pan Head 6-32 x .50	2	2	2	2	2	2	2	2	2	2	2
29	X-50-3	*Screw, r.h.m. 10-24 x .75	5	5	5	5	5	5	5	5	5	5	5
30	X-50-70	*Screw, r.h.m. 10-24 x 1	1	1	1	1	1	1	1	1	1	1	1
31	X-51-53	*Screw, r.h.m. 8-32 x .625	2	2	2	2	2	2	2	2	2	2	2
32	X-519-1	*Plug, Cap 1/8 inch	2	2	2	2	2	2	2	2	2	2	2
33	X-6046-2	*Strap, Ground	1	1	1	1	1	1	1	1	1	1	1
34	X-6048-2	*Jumper, Terminal Block	1	1	1	1	1	1	1	1	1	1	1
35	X-6216-1	*Screw, Hex Crimptite	10	10	10	10	10	10	10	10	10	10	10
36	X-6234-6	*Nut, Hex	2	2	2	2	2	2	2	2	2	2	2
37	X-67-127	*Screw, Thread Forming	2	2	2	2	2	2	2	2	2	2	2
38	X-696-5	*Sleeve	1	1	1	1	1	1	1	1	1	1	1
39	X-71-2	*Nut, Hex	2	2	2	2	2	2	2	2	2	2	2
40	X-712-9	*Spacer	4	4	4	4	4	4	4	4	4	4	4
41	X-72-4	*Nut, Hex.	4	4	4	4	4	4	4	4	4	4	4
42	201620-86	*Tab, Identification	1	1	1	1	1	1	1	1	1	1	1
43	238736	*Meter, Hour	1	1	1	1	1	1	1	1	1	1	1
44	238898	*Terminal	1	1	1	1	1	1	1	1	1	1	1
45	241617	*Connector, 6 Position	1	1	1	1	1	1	1	1	1	1	1
46	246115	*Block, Terminal	1	1	1	1	1	1	1	1	1	1	1
47	255224	*Voltmeter	1	1	1	1	1	1	1	1	1	1	1
48	268297	*Resistor, 24 Volt	2	2	2	2	2	2	2	2	2	2	2

Common Hardware; Procure Locally

Group 301: Controller and Mounting



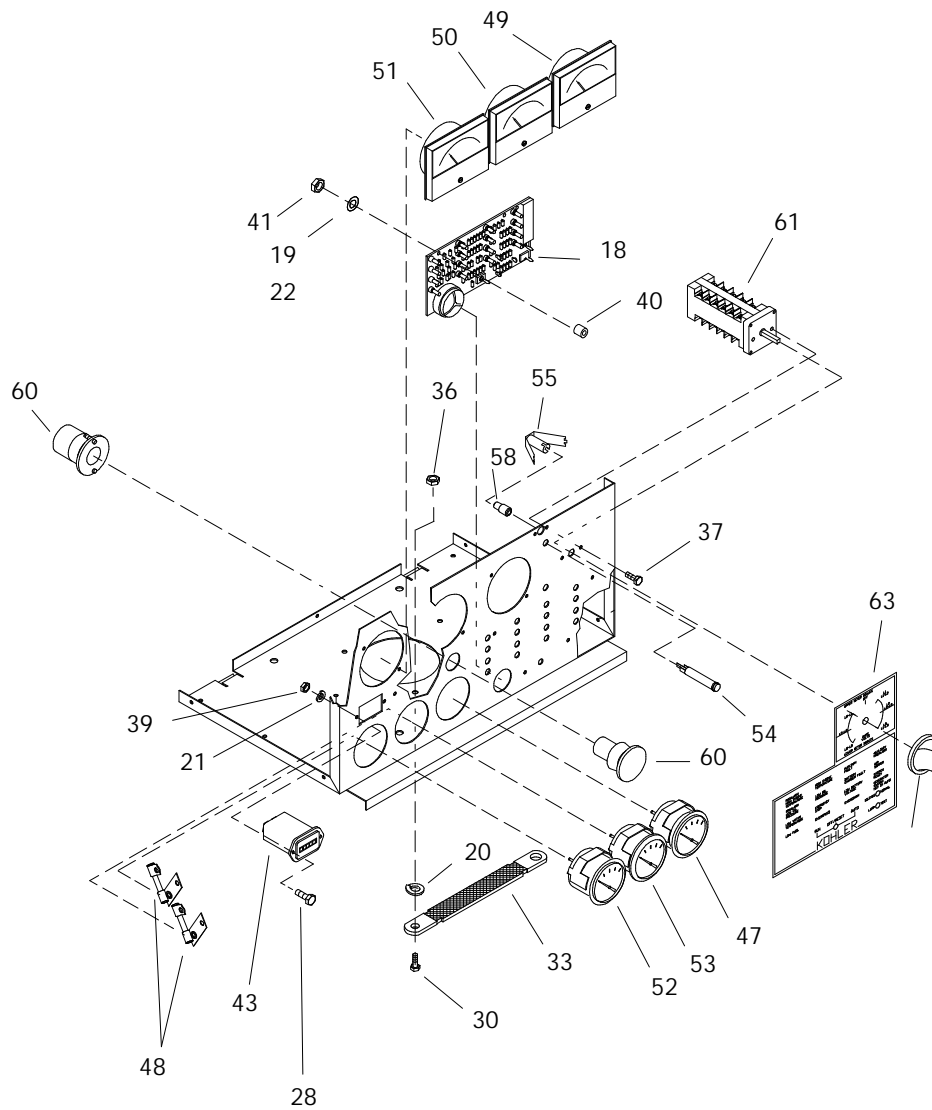
450-500ROZD
301-70-27
FA-272000
B-292853

Group 301: Controller and Mounting

Item	Part Number	Description	Quantity										
			Variation/Kit Number										
			122	131	132	136	140	142	144	146	148		
1	X-22-14	Washer, Shakeproof 3/8	1	1	1	1	1	1	1	1	1	1	1
2	X-22-16	Washer, Lock 5/16	4	4	4	4	4	4	4	4	4	4	4
3	X-22-20	Washer, Ext. Tooth Lock 8	8	8	8	8	8	8	8	8	8	8	8
4	X-284-25	Grommet	1	1	1	1	1	1	1	1	1	1	1
5	X-51-11	Screw, 8/32 x 3/4	2	2	2	2	2	2	2	2	2	2	2
6	X-6210-1	Nut, Whiz Lock	1	1	1	1	1	1	1	1	1	1	1
7	255080	Marker, Strip	1	1	1	1	1	1	1	1	1	1	1
8	258453	Harness, Wiring CT	1	1	1	1	1	1	1	1		1	1
8	347563	Harness, Wiring CT										1	1
9	274964	Harness, Wiring AC	1	1	1	1	1	1	1	1	1		
9	347562	Harness, Wiring AC										1	1
9	347564	Harness, Wiring AC										1	1
10	272684	Relay	2	2	2	2	2	2	2	2	2	2	2
11	274796	Panel, Relay	1	1	1	1	1	1	1	1	1	1	1
12	282829	Mount, Vibro	1	1	1	1	1	1	1	1	1	1	1
13	291288	Pickup, Speed (on flywheel housing, not shown)	1	1	1	1	1	1	1	1	1	1	1
14	291548	Transformer, Current	3					3					
14	297675	Transformer, Current				3	3						
14	291547	Transformer, Current			3						3		
14	297676	Transformer, Current		3									
14	248874	Transformer, Current										3	
14	233951	Transformer, Current											3
14	258990	Transformer, Stepdown (600 V generator)		3	3			3					
14	276578	Transformer, Stepdown (380 V generator)				3							
14	287684	Transformer, Stepdown	3				3			3			
14	X-6131-55	Transformer, Stepdown										3	3
15	295314	Block, Terminal	1	1	1	1	1	1	1	1	1	1	1
16	A-328939	Controller Assembly	1	1									
16	A-328947	Controller Assembly			1								
16	A-328945	Controller Assembly				1							
16	A-328949	Controller Assembly					1						
16	A-328950	Controller Assembly						1					
16	A-347509	Controller Assembly							1				
16	A-347571	Controller Assembly									1		
16	A-354253	Controller Assembly											1
17	A-336415	Controller Includes*	1	1	1	1	1	1	1	1	1	1	1
18	A-336432	*Circuit Board, Main	1	1	1	1	1	1	1	1	1	1	1
19	X-22-20	*Washer, Shakeproof	1	1	1	1	1	1	1	1	1	1	1
20	X-22-50	*Washer, Lock	2	2	2	2	2	2	2	2	2	2	2
21	X-22-6	*Washer, Lock #6	4	4	4	4	4	4	4	4	4	4	4
22	X-22-7	*Washer, Lock #8	3	3	3	3	3	3	3	3	3	3	3
23	X-284-31	*Grommet	1	1	1	1	1	1	1	1	1	1	1
24	X-301-34	*Plug, Button	1	1	1	1	1	1	1	1	1	1	1
25	X-468-3	*Tie, Cable Nylon	5	5	5	5	5	5	5	5	5	5	5
26	X-49-2	*Screw, r.h.m. 6-32 x 3	2	2	2	2	2	2	2	2	2	2	2
27	X-49-25	*Screw, r.h.m. 6-32 x 1	18	18	18	18	18	18	18	18	18	18	18
28	X-49-39	*Screw, Pan Head 6-32 x .50	2	2	2	2	2	2	2	2	2	2	2
29	X-50-3	*Screw, r.h.m. 10-24 x .75	5	5	5	5	5	5	5	5	5	5	5
30	X-50-70	*Screw, r.h.m. 10-24 x 1	1	1	1	1	1	1	1	1	1	1	1
31	X-51-53	*Screw, r.h.m. 8-32 x .625	2	2	2	2	2	2	2	2	2	2	2
32	X-519-1	*Plug, Cap 1/8 inch	2	2	2	2	2	2	2	2	2	2	2
33	X-6046-2	*Strap, Ground	1	1	1	1	1	1	1	1	1	1	1
34	X-6048-2	*Jumper, Terminal Block	1	1	1	1	1	1	1	1	1	1	1
35	X-6216-1	*Screw, Hex Crimptite	10	10	10	10	10	10	10	10	10	10	10
36	X-6234-6	*Nut, Hex	2	2	2	2	2	2	2	2	2	2	2
37	X-67-127	*Screw, Thread Forming	2	2	2	2	2	2	2	2	2	2	2
38	X-696-5	*Sleeve	1	1	1	1	1	1	1	1	1	1	1
39	X-71-2	*Nut, Hex	2	2	2	2	2	2	2	2	2	2	2
40	X-712-9	*Spacer	4	4	4	4	4	4	4	4	4	4	4
41	X-72-4	*Nut, Hex.	4	4	4	4	4	4	4	4	4	4	4
42	201620-86	*Tab, Identification	1	1	1	1	1	1	1	1	1	1	1
43	238736	*Meter, Hour	1	1	1	1	1	1	1	1	1	1	1
44	238898	*Terminal	1	1	1	1	1	1	1	1	1	1	1
45	241617	*Connector, 6 Position	1	1	1	1	1	1	1	1	1	1	1
46	246115	*Block, Terminal	1	1	1	1	1	1	1	1	1	1	1
47	255224	*Voltmeter	1	1	1	1	1	1	1	1	1	1	1
48	268297	*Resistor, 24 Volt	2	2	2	2	2	2	2	2	2	2	2
		Parts list continues											

Common Hardware; Procure Locally

Group 301: Controller and Mounting



450-500ROZD
301-70-27
FA-272000
B-292853

Group 301: Controller and Mounting

Item	Part Number	Description	Quantity								
			Variation/Kit Number								
			122	131	132	136	140	142	144	146	148
47	255224	*Voltmeter	1	1	1	1	1	1	1	1	1
48	268297	*Resistor, 24 Volt	2	2	2	2	2	2	2	2	2
49	282813	*Ammeter, AC	1	1				1			
49	282812	*Ammeter, AC			1						
49	273852	*Ammeter, AC				1	1				
49	347834	*Ammeter, AC							1		
49	282808	*Ammeter, AC								1	
49	282809	*Ammeter, AC									1
50	282816	*Voltmeter, AC	1	1		1	1		1		
50	282817	*Voltmeter, AC			1				1		
50	354245	*Voltmeter, AC								1	1
51	282818	*Meter, Frequency	1	1	1	1	1	1	1	1	1
52	282897	*Gauge, Oil Pressure	1	1	1	1					
52	328072	*Gauge, Oil Pressure					1	1	1	1	1
53	282898	*Gauge, Water Temperature	1	1	1	1	1	1	1	1	1
54	283420	*Bulb	2	2	2	2	2	2	2	2	2
55	284990	*Socket, Lamp	2	2	2	2	2	2	2	2	2
56	287948	*Spacer, Circuit Board	9	9	9	9	9	9	9	9	9
57	291207	*Fuse, 1.5 Amp	3	3	3	3	3	3	3	3	3
58	291740	*Lamp	2	2	2	2	2	2	2	2	2
59	292347	*Decal	1	1	1	1	1	1	1	1	1
60	292364	*Switch, Pushbutton	1	1	1	1	1	1	1	1	1
61	292374	*Switch, Selector	1	1	1	1	1	1	1	1	1
62	292375	*Box, Controller	1	1	1	1	1	1	1	1	1
63	292383	*Nameplate	1	1	1	1	1	1	1	1	1
64	292467	*Decal, Emergency Stop	1	1	1	1	1	1	1	1	1
65	292818	*Cover, Controller	1	1	1	1	1	1	1	1	1
66	292821	*Holder, Fuse	1	1	1	1	1	1	1	1	1
67	292823	*Marker, Strip	1	1	1	1	1	1	1	1	1
68	292834	*Bumper	4	4	4	4	4	4	4	4	4
69	292908	*Plate, Hinged Back	1	1	1	1	1	1	1	1	1
70	336428	*Cable Assembly	1	1	1	1	1	1	1	1	1
71	X-125-23	Screw, Ref., 5/15-18 x 3 1/2	1	1	1	1	1	1	1	1	1
	X-6129-8	Block, Fuse 1 Pole, 30 Amp.								1	1
	X-6129-9	Safety Puller and Fuse Holder								1	1
	X-6134-9	Fuse, 6 Amp, 250 V								1	1

Group 701: Literature

Item	Part Number	Description	Quantity										
			Variation/Kit Number										
			12	32	46	54	55	61	70	71	83	84	
1	TP-5700	Standby Installation Instructions	1	1	1	1	1	1	1	1	1	1	1
2	TP-5611	Operation Manual, DDC Engine	1	1	1	1	1	1	1	1	1	1	1
2	TP-5750	Operation Manual, 20-2000 kW Generator	1	1	1	1	1	1	1	1	1	1	1
2	TP-5578	Operation Manual, MagnaMax alternator	1	1	1	1	1	1	1	1	1	1	1
3	TP-5278	Operation Manual, PM100 Voltage Regulator	1			1	1						
3	TP-5579	Operation Manual, DVR 2000 Regulator		1	1				1	1	1	1	1
4	TP-5384	Service Manual, DDC 149 Series	1	1	1	1	1	1	1				1
4	TP-5615	Service Manual, DDC 12V-71 Series									1		
4	TP-5583	Service Manual, Generator Set	1	1	1	1	1	1	1	1	1	1	1
5	TP-5602	Parts Catalog, 900-1600 kW Generator	1	1	1	1	1	1	1	1	1	1	1
5	TP-5707	Parts Catalog, Accessories	1	1	1	1	1	1	1	1	1	1	1
5	TP-5644	Parts Catalog, DDC (900/1000 kW)	1	1						1			
5	TP-5643	Parts Catalog, DDC (1200 kW)			1	1							
5	TP-5703	Parts Catalog, DDC (1500/1600 kW)					1	1					1
5	TP-5680	Parts Catalog, DDC (900/1000 kW)									1		
6	TP-5722	Wiring Diagrams		1	1				1		1		1

Kit List

Modular generator sets listed in the Specification Number Index require a controller and cooling kit. Refer to the generator set nameplate or the list below to identify the kit

number installed on your generator set. See Figure 2 for an example of a generator set nameplate.

	900ROZD	1000ROZD	1200ROZD	1250ROZD	1500ROZD	1600ROZD
CONTROLLER KITS						
6/7-Light						
Standard Meterbox	328175	328179	328084	328084	328084	328084
	293935	293904	293904		293946	293946
Standard Meterbox, 380 V	328196	328200	328084	328084	328084	354333
	293945	293946	293946		293946	293946
Standard Meterbox, 600 V	328183	328183	328183	328089	328089	328089
	293923	293923	293923		293924	293924
Standard Meterbox, 4160 V			354248	354248	347664	347664
Oversized Meterbox	328177	328181	328086	328086	328086	328086
	293937	293905	293905		293955	293955
Oversized Meterbox, 380 V	328198	328202	328086	328086	328086	354335
	293954	293955	293955		293955	293955
Oversized Meterbox, 600 V	328185	328185	328185	328091	328091	328091
	293932	293932	293932		293933	293933
Oversized Meterbox, 4160 V			354250	354250	347666	347666
16-Light						
Standard Meterbox	328174	328178	328083	328083	328083	328083
	293934	293913	293913		293942	293942
Standard Meterbox, 380 V	328195	328199	328083	328083	328083	354332
	293941	293942	293942		293942	293942
Standard Meterbox, 600 V	328182	328182	328182	328088	328088	328088
	293918	293918	293918		293919	293919
Standard Meterbox, 4160 V			354247	354247	347663	347663
Oversized Meterbox	328176	328180	328085	328085	328085	328085
	293936	293903	293903		293950	293950
Oversized Meterbox, 380 V	328197	328201	328085	328085	328085	354334
	293949	293950	293950		293950	293950
Oversized Meterbox, 600 V	328184	328184	328184	328090	328090	328090
	293927	293927	293927		293928	293928
Oversized Meterbox, 4160 V			354249	354249	347665	347665
Meterbox for Switchgear	328153	328153	328153	328153	328153	328153
	273940	273940	273940		273940	273940
Meterbox for Switchgear, 600 V	328087	328087	328087		328087	328087
	273939	273939	273939		273939	273939
Meterbox for Switchgear, 4160 V			354252	354252	354264	354264

Kit List

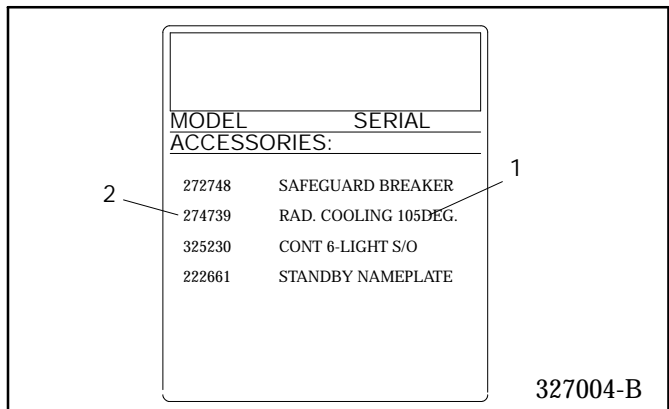
	900ROZD	1000ROZD	1200ROZD	1250ROZD	1500ROZD	1600ROZD
COOLING SYSTEM KITS						
Block Heater, 190-208-210/240-380/480 volt	279930 328648	279930 328648	279931 328036	328036	279932 328037	279932 328037
Block Heater Isolation Valve			347881	347881	347881	347881
Radiator, Duct Flange	274233 328227	274233 328277	299873 328277	328277	299873 328033	299873 328033
Radiator, Unit Mounted	274937 328239	274938 328239	299878 328282	354209	299877 328281	299877 328281
	354171	354171	354209		354215	354215
City Water Cooling	328705 354199 328706	354199 328706				
Remote Radiator Setup	328694 354200 328723	354200 328723	328765 354293 328766	354293	328767 354214	328767 354214
Remote Radiator Flex Kit			PA-354280	PA-354280		
Radiator Core Guard	328727	328727	N/A		N/A	N/A
AIR INTAKE KITS						
Heavy-duty Air Cleaner	354201	354201	354266	354266	354220	354220

OPTIONAL KITS

See Parts Catalog TP-5707 Parts Catalog Accessory (Diesel) for parts lists of optional kits (kits other than controllers and cooling).

PAINT AND MISCELLANEOUS PARTS

Generator Paint, Kohler Cream Beige (Spray Can)	221338
Generator Paint, Kohler Cream Beige (Gallon Can)	221337



1. Kit Description
2. Factory-installed Kit Number

Figure 2. Generator Accessory Nameplate

6- and 7-Light Controller Kits

6- and 7-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Numbers/Unique Parts				
			293904	293905	293923	293924	293932
			328179	328181	328183	328185	328185
1	Controller Assembly*		A-292460	A-273804	A-274924	A-274925	A-274932
1	Controller Assembly*		A-347012**	A-347046**	A-347020**	A-347021**	A-347054**
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring	258453					
2	Relay	272684					
1	Panel, Relay	274796					
1	Harness, Wiring	274964					
4	Mount, Vibro	282829					
3	Transformer		287684	287684	258990	258990	258990
1	Speed Pickup	291288					
3	Transformer, Current		291548	291548	291547	291548	291547
1	Block, Terminal	295314					

6- and 7-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Numbers/Unique Parts				
			293933	293935	293937	293945	293946
			328175	328177	328196	328200	328200
1	Controller Assembly*		A-274933	A-292460	A-273804	A-292460	A-273849
1	Controller Assembly*		A-347055**	A-347012**	A-347046**	A-347012**	A-347018**
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring	258453					
2	Relay	272684					
1	Panel, Relay	274796					
1	Harness, Wiring		274964	258455	258455	274964	274964
4	Mount, Vibro	282829					
3	Transformer		258990	287684	287684	276578	276578
1	Speed Pickup	291288					
3	Transformer, Current		291548	291548	291548	291548	297675
1	Block, Terminal	295314					

6- and 7-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Numbers/Unique Parts				
			293954	293955	328084	328086	328089
			328198	328202	328084	328086	328089
1	Controller Assembly*		A-273803	A-273851	A-328075	A-328079	A-328076
1	Controller Assembly*		A-347044**	A-347055**	A-347022**	A-347056**	A-347023**
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring	258453					
2	Relay	272684					
1	Panel, Relay	274796					274964
1	Harness, Wiring		274964	274964	274964	274964	
4	Mount, Vibro	282829					
3	Transformer		276578	276578	276578	276578	258990
1	Speed Pickup	291288					
3	Transformer, Current		291548	297675	297675	297675	291548
1	Block, Terminal	295314					

* See Controller Assembly section for parts list.

** This controller assembly used in kit effective with generator set serial number greater than or equal to 363369.

6- and 7-Light Controller Kits

6- and 7-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Numbers/Unique Parts				
			328091	354248	354250	354333	354335
1	Controller Assembly*		A-328080	A-354253	A-354256	A-347525	A-347533
1	Controller Assembly*		A-347057**				
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring CT		258453	347563	347563	258453	258453
2	Relay	272684					
1	Panel, Relay	274796					
1	Harness, Wiring AC		274964	347564	347564	274964	274964
1	Harness, Wiring AC			347562	347562		
4	Mount, Vibro	282829					
3	Transformer		258990	X-6121-55	X-6121-55	287684	287684
1	Speed Pickup	291288					
3	Transformer, Current		291548	233951	233951	297676	297676
1	Block, Terminal	295314					
1	Block, Fuse			X-6129-8	X-6129-8		
1	Block, Fuse			X-6129-9	X-6129-9		
1	Fuse			X-6134-9	X-6134-9		

6- and 7-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Numbers/Unique Parts				
			347664	347666			
1	Controller Assembly*		A-347527	A-347535			
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring CT		347563				
2	Relay	272684					
1	Panel, Relay	274796					
1	Harness, Wiring AC	347562					
1	Harness, Wiring AC	347564					
4	Mount, Vibro	282829					
3	Transformer	X-6121-55					
1	Speed Pickup	291288					
3	Transformer, Current	248874					
1	Block, Terminal	295314					
1	Block, Fuse	X-6129-8					
1	Block, Fuse	X-6129-9					
1	Fuse	X-6134-9					

* See Controller Assembly section for parts list.

** This controller assembly used in kit effective with generator set serial number greater than or equal to 363369.

6-Light Controller Assemblies

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts				
			A-273804	A-273849	A-273851	A-274924	A-274925
1	Resistor, 24 volt	268297					
1	6-light Circuit Board	B-292381					
1	Main Circuit Board	G-292806					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter dcale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	292908	273785	292908	292908
1	Voltmeter, AC		282816	282816	282816	282817	282817
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282813	273852	273852	282812	282813
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	292818	273838	292818	292818
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	292375	273813	292375	292375
1	Switch, pushbutton	292364					

6-Light Controller Assemblies

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts				
			A-274932	A-274933	A-292460	A-328075	A-328079
1	Resistor, 24 volt	268297					
1	6-light Circuit Board	B-292381					
1	Main Circuit Board	G-292806					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	273785	292908	292908	273785
1	Voltmeter, AC		282817	282817	282816	282816	282816
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282812	282813	282813	273852	273852
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	273838	292818	292818	273838
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	273813	292375	292375	273813
1	Switch, Pushbutton	292364					

6-Light Controller Assemblies

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts				
			A-328080				
1	Resistor, 24 volt	268297					
1	6-light Circuit Board	B-292381					
1	Main Circuit Board	G-292806					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785				
1	Voltmeter, AC		282817				
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282813				
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838				
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813				
1	Switch, Pushbutton	292364					

7-Light Controller Assemblies

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts				
			A-347046	A-347018	A-347052	A-347020	A-347021
1	Resistor, 24 volt	268297					
1	Indicator Circuit Board	A-336430					
1	Main Circuit Board	A-336415					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	292908	273785	292908	292908
1	Voltmeter, AC		282816	282816	282816	282817	282817
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282813	273852	273852	282812	282813
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	292818	273838	292818	292818
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	292375	273813	292375	292375
1	Switch, Pushbutton	292364					

7-Light Controller Assemblies

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts				
			A-347054	A-347055	A-347012	A-347022	A-347056
1	Resistor, 24 volt	268297					
1	Indicator Circuit Board	A-336430					
1	Main Circuit Board	A-336415					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	273785	292908	292908	273785
1	Voltmeter, AC		282817	282817	282816	282816	282816
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282812	282813	282813	273852	273852
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	273838	292818	292818	273838
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	273813	292375	292375	273813
1	Switch, Pushbutton	292364					

7-Light Controller Assemblies

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts				
			A-347057	A-347525	A-347257	A-347533	A-347535
1	Resistor, 24 volt	268297					
1	Indicator Circuit Board	A-336430					
1	Main Circuit Board	A-336415					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	292908	292908	273785	273785
1	Voltmeter, AC		282817	282816	354245	282816	354245
1	Gauge, Oil Pressure		282897	328072	328072	328072	328072
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282813	347834	282808	347834	282808
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	292818	292818	273838	273838
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	292375	292374	273813	273813
1	Switch, Pushbutton	292364					

7-Light Controller Assemblies

Qty.	Description	Common Parts	Controller Assembly Number/Unique Parts				
						A-354254	A-354256
1	Resistor, 24 volt	268297					
1	Indicator Circuit Board	A-336430					
1	Main Circuit Board	A-336415					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge					292908	273785
1	Voltmeter, AC					354245	354245
1	Gauge, Oil Pressure					328072	328072
1	Gauge, Water Temperature	282898					
1	Ammeter, AC					282807	282807
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller					292818	273838
1	Nameplate	292385					
1	Box, Silkscreened Controller					292375	273813
1	Switch, Pushbutton	292364					

16-Light Controller Kits

16-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			293903 328180	293913 328178	293918 328182	293919	293927 328184
1	Controller Assembly*		A-273832	B-292855	A-274919	A-274920	A-274927
1	Controller Assembly*		A-328974**	A-328939**	A-328947**	A-328948**	A-328982**
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring	258453					
2	Relay	272684					
1	Panel, relay	274796					
1	Harness, Wiring	274964					
4	Mount, Vibro		282829	282829	282829	259919	282829
3	Transformer		287684	287684	258990	258990	258990
1	Speed Pickup	291288					
3	Transformer, Current		291548	291548	291547	291548	291547
1	Block, Terminal	295314					

16-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			293928	293934 328174	293936 328176	293941 328195	293942 328199
1	Controller Assembly*		A-274928	B-292855	A-273832	B-292855	A-273848
1	Controller Assembly*		A-328983**	A-328939**	A-328974**	A-328939**	A-328945**
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring	258453					
2	Relay	272684					
1	Panel, Relay	274796					
1	Harness, Wiring		274964	258455	258455	274964	274964
4	Mount, Vibro		259919	282829	282829	282829	282829
3	Transformer		258990	287684	287684	276578	276578
1	Speed Pickup	291288					
3	Transformer, Current		291548	291548	291548	291548	297675
1	Block, Terminal	295314					

16-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			293949 328197	293950 328201	328083	328085	328088
1	Controller Assembly*		A-273832	A-273850	A-328073	A-328077	A-328074
1	Controller Assembly*		A-328974**	A-328980**	A-328949**	A-328984**	A-328950**
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring	258453					
2	Relay	272684					
1	Panel, Relay	274796					
1	Harness, Wiring	274964					
4	Mount, Vibro	282829					
3	Transformer		276578	276578	276578	276578	258990
1	Speed Pickup	291288					
3	Transformer, Current		291548	297675	297675	297675	291548
1	Block, Terminal	295314					

* See Controller Assembly section for parts list.

** This controller assembly used in kit effective with generator set serial number greater than or equal to 363369.

16-Light Controller Kits

16-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			328090	354247	354249	354332	354334
1	Controller Assembly*		A-328078	A-354253	A-354255	A-347509	A-347517
1	Controller Assembly*		A-328985**				
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring CT		258453	347563	347563	258453	258453
2	Relay	272684					
1	Panel, Relay	274796					
1	Harness, Wiring AC		274964	347564	347564	274964	274964
1	Harness, Wiring AC			347562	347562		
4	Mount, Vibro	259919					
3	Transformer		258990	X-6121-55	X-6121-55	287684	287684
1	Speed Pickup	291288					
3	Transformer, Current		291548	233951	233951	297676	297676
1	Block, Terminal	295314					
1	Block, Fuse			X-6129-8	X-6129-8		
1	Block, Fuse			X-6129-9	X-6129-9		
1	Fuse			X-6134-9	X-6134-9		

16-LIGHT MICROPROCESSOR CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			347663	347665			
1	Controller Assembly*		A-347511	A-347519			
1	Grommet	X-284-25					
1	Marker, Strip	255080					
1	Harness, Wiring CT						
2	Relay	272684					
1	Panel, Relay	274796					
1	Harness, Wiring AC	347562					
1	Harness, Wiring AC	347564					
4	Mount, Vibro	259919					
3	Transformer	X-6121-55					
1	Speed Pickup	291288					
3	Transformer, current	248874					
1	Block, Terminal	295314					
1	Block, Fuse	X-6129-8					
1	Block, Fuse	X-6129-9					
1	Fuse	X-6134-9					

* See Controller Assembly section for parts list.

** This controller assembly used in kit effective with generator set serial number greater than or equal to 363369.

16-Light Controller Assemblies

Qty.	Description	Common Parts	16-Light Controller Assembly Number/Unique Parts				
			A-273832	A-273848	A-273850	A-274919	A-274920
1	Resistor, 24 volt	268297					
1	16-light Circuit Board	B-292356					
1	Main Circuit Board	G-292806					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, meter scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	292908	273785	292908	292908
1	Voltmeter, AC		282816	282816	282816	282817	282817
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282813	273852	273852	282812	282813
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	292818	273838	292818	292818
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	292375	273813	292375	292375
1	Switch, pushbutton	292364					

16-Light Controller Assemblies

Qty.	Description	Common Parts	16-Light Controller Assembly Number/Unique Parts				
			A-274927	A-274928	B-292855	A-328073	A-328074
1	Resistor, 24 volt	268297					
1	16-light Circuit Board	B-292357					
1	Main Circuit Board	G-292806					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, meter scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	273785	292908	292908	292908
1	Voltmeter, AC		282817	282817	282816	282816	282817
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282813	282813	282813	273852	282813
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	273838	292818	292818	292818
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	273813	292375	292375	292375
1	Switch, pushbutton	292364					

16-Light Controller Assemblies

Qty.	Description	Common Parts	16-Light Controller Assembly Number/Unique Parts				
			A-328077	A-328078			
1	Resistor, 24 volt	268297					
1	16-light Circuit Board	B-292357					
1	Main Circuit Board	G-292806					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, meter scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	273785			
1	Voltmeter, AC		282816	282817			
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		273852	282813			
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	273838			
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	273813			
1	Switch, pushbutton	292364					

16-Light Controller Assemblies

Qty.	Description	Common Parts	16-Light Controller Assembly Number/Unique Parts				
			A-328974	A-328945	A-328980	A-328947	A-328948
1	Resistor, 24 volt	268297					
1	16-light Circuit Board	A-336432					
1	Main Circuit Board	A-336415					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Dcale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	292908	273785	292908	292908
1	Voltmeter, AC		282816	282816	282816	282817	282817
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282813	273852	273852	282812	282813
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	292818	273838	292818	292818
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	292375	273813	292375	292375
1	Switch, Pushbutton	292364					

16-Light Controller Assemblies

Qty.	Description	Common Parts	16-Light Controller Assembly Number/Unique Parts				
			A-328982	A-328983	A-328939	A-328949	A-328950
1	Resistor, 24 volt	268297					
1	16-light Circuit Board	A-336432					
1	Main Circuit Board	A-336415					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	273785	292908	292908	292908
1	Voltmeter, AC		282817	282817	282816	282816	282817
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		282813	282813	282813	273852	282813
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	273838	292818	292818	292818
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	273813	292375	292375	292375
1	Switch, Pushbutton	292364					

16-Light Controller Assemblies

Qty.	Description	Common Parts	16-Light Controller Assembly Number/Unique Parts				
			A-328984	A-328985	A-354253	A-354255	
1	Resistor, 24 volt	268297					
1	16-light Circuit Board	A-336432					
1	Main Circuit Board	A-336415					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge		273785	273785	292908	273785	
1	Voltmeter, AC		282816	282817	354245	354245	
1	Gauge, Oil Pressure		282897	282897	328072	328072	
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		273852	282813	282807	282807	
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		273838	273838	292818	273838	
1	Nameplate	292385					
1	Box, Silkscreened Controller		273813	273813	292375	273813	
1	Switch, Pushbutton	292364					

16-Light Controller Assemblies

Qty.	Description	Common Parts	16-Light Controller Assembly Number/Unique Parts				
			A-347509	A-347511	A-347517	A-347519	
1	Resistor, 24 volt	268297					
1	16-light Circuit Board	A-336432					
1	Main Circuit Board	A-336415					
1	Washer, Shakeproof E.T.	X-22-20					
2	Washer, Lock	X-22-50					
4	Washer, Lock #6	X-22-6					
3	Washer, Lock #8	X-22-7					
8	Washer, Plain	X-25-73					
1	Grommet	X-284-31					
1	Plug, Button	X-301-29					
1	Plug, Button	X-301-34					
2	Screw, r.h.m. 6-32 x 3/8	X-49-2					
18	Screw, r.h.m. 6-32 x 1/4	X-49-25					
2	Screw, Pan Head	X-49-39					
4	Screw, r.h.m. 10-24 x 3/4	X-50-3					
1	Screw, Pan Head Machine	X-50-70					
2	Screw, r.h.m.	X-51-53					
1	Strap, Ground	X-6046-2					
1	Jumper	X-6048-2					
12	Screw, Phil Hex Crimptite	X-6216-1					
2	Nut, Hex.	X-6234-6					
2	Screw, Thread Forming	X-67-127					
1	Sleeve	X-696-5					
4	Spacer	X-712-9					
1	Tab, Ident.	201620-86					
1	Meter, Hour	238736					
1	Terminal	238898					
1	Connector, Plug 6 Position	241617					
1	Block, Terminal	246115					
1	Voltmeter	255224					
3	Bulb	283420					
2	Lamp, Meter Scale	291740					
4	Bumper	255443					
1	Plate, Hinge		292908	292908	273785	273785	
1	Voltmeter, AC		282816	354245	282816	354245	
1	Gauge, Oil Pressure		328072	328072	328072	328072	
1	Gauge, Water Temperature	282898					
1	Ammeter, AC		347834	282808	347834	282808	
3	Socket, Lamp	284990					
8	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
1	Decal	292347					
1	Resistor	292352					
1	Decal, Emergency Stop	292467					
1	Switch, Selector	292374					
1	Holder, Fuse	292821					
1	Marker, Strip	292823					
1	Bumper	292834					
1	Harness, Cable	292836					
1	Meter, Frequency	282818					
1	Cover, Controller		292818	292818	273838	273838	
1	Nameplate	292385					
1	Box, Silkscreened Controller		292375	292375	273813	273813	
1	Switch, Pushbutton	292364					

Meterbox for Switchgear Kits

METERBOX FOR PARALLELING							
Qty.	Description	Common	Kit Number/Unique Parts				
			273939	273940	328087	328153	
1	Controller Assembly*		A-273762	A-276281	A-328082	A-276281	
1	Switch Assembly, limit	263438					
2	Relay	272684					
1	Grommet		N/A	X-284-25	X-284-25	X-284-25	
1	Marker, Strip		N/A	255080	255080	255080	
1	Panel, Relay		N/A	274796	274796	274796	
4	Mount, Vibro		N/A	282829	282829	282829	
1	Block, Terminal (6-terminal)		N/A	295314	295314	295314	

* See Controller Assembly section for parts list.

Qty.	Description	Common Parts	Controller Assembly Number/ Unique Parts		
			A-273762	A-276281	A-328082
1	Potentiometer Assembly		A-255041	N/A	N/A
1	Strap, Ground	X-6046-2			
1	Switch, Speed	X-6122-1			
1	Meter, Hour	238736			
1	Voltmeter	255224			
1	Box, Controller	263153			
1	Panel	263154			
1	Resistor, 24 volt	268297			
1	Harness, Wiring (24-pin)	273764			
1	Strip, Marker	273781			
1	Harness, Wiring (4-lead)	273983			
1	Harness, Wiring (shielded)	273984			
1	Gauge, Oil Pressure		282897	282897	328072
1	Gauge, Water Temperature	282898			
6	Strip, Terminal (9-terminal)	283060			
3	Bulb	283420			
3	Socket, Lamp	284990			
1	Decal		292361	N/A	N/A
1	Switch, Pushbutton	292364			
1	Decal, Emergency Stop	292467			
1	Cover, Controller	292818			
4	Bumper	292834			

N/A Not Applicable

Manual Paralleling Controller Kits

MANUAL PARALLELING CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			328875	328876	328877	328878	328879
1	Controller Assembly*		A-328454	A-328471	A-328485	A-328454	A-328471
6	Screw, H.C. 10-24 x 5/8	X-117-5					
1	Washer, Lock 3/8	X-22-14				N/A	N/A
4	Washer, Lock 5/16	X-22-16				N/A	N/A
8	Washer, Shakeproof	X-22-20				N/A	N/A
1	Grommet	X-284-25				N/A	N/A
2	Screw, r.h.m. 8/32	X-51-11				N/A	N/A
3	Clamp	X-672-10					
1	Clamp, Insulator	X-672-15				N/A	N/A
1	Marker, Strip	255080				N/A	N/A
2	Relay	272684				N/A	N/A
1	Panel, Relay	274796					
4	Mount, Vibro	282829				N/A	N/A
1	Module, Single Phase	328784					
1	Pickup, Speed	291288				N/A	N/A
1	Block, Terminal	295314				N/A	N/A
1	Harness, Wiring	328905					
3	Transformer, Current		291548	291548	291547	291548	291548

MANUAL PARALLELING CONTROLLER KIT PARTS							
Qty.	Description	Common	Kit Number/Unique Parts				
			328880				
1	Controller Assembly*		A-328485				
6	Screw, H.C. 10-24 x 5/8	X-117-5					
3	Clamp	X-672-10					
1	Module, Single Phase	328784					
1	Harness, Wiring	328905					
3	Transformer, Current	291547					

Manual Paralleling Controller Assemblies

Qty.	Description	Common Parts	Manual Paralleling Controller Assembly Number/Unique Parts				
			A-328454	A-328485	A-328471		
1	Indicator Circuit Board	A-336432					
1	Main Circuit Board	A-336415					
1	Grommet	X-284-31					
4	Terminal	X-431-25					
1	Strap, Ground	X-6046-2					
2	Resistor	X-472-6					
1	Jumper	X-6048-2					
1	Relay, Reverse Power	X-6115-10					
1	Relay, Synch Power	X-6120-17					
2	Knob, Potentiometer	X-6136-35					
4	Spacer	X-712-9					
1	Ring, Lock	151511					
3	Diode, 6 Amp, 100 Volt In-line	233959					
1	Meter, Hour	238736					
1	Terminal	238898					
2	Socket, Screw Clear	243645					
2	Bulb	243987					
1	Block, Terminal	246115					
1	Switch, Toggle	249689					
1	Resistor, 24 Volt	268297					
1	Voltmeter	255224					
1	Lamp	264513					
1	Potentiometer	273767					
1	Wattmeter	274339					
1	Transducer, Watt		328571				
1	Ammeter, AC		282813	282812	282813		
1	Voltmeter, AC		282816	282817	282816		
1	Meter, Frequency	282818					
1	Gauge, Oil Pressure	282897					
1	Gauge, Water Temperature	282898					
3	Lamp	283420					
1	Fuse, 15 Amp	283645					
4	Fuse, 1 Amp	284205					
3	Socket, Lamp	284990					
9	Spacer, Circuit Board	287948					
3	Fuse, 1.5 Amp	291207					
2	Relay	291309					
2	Lamp	291740					
1	Decal	292347					
1	Switch, Pushbutton	292364					
1	Switch, Selector	292374					
1	Nameplate	292383					
1	Decal, Emergency Stop	292467					
3	Holder, Fuse	292821					
2	Socket, Relay	295034					
2	Block, Terminal	295266					
1	Lamp, Socket	295325					
1	Lens	295328					
2	Cover, Terminal Strip	295925					
1	Box, Controller	328488					
1	Cover, Controller	328489					
1	Transducer, Watt	328550					
1	Panel, Hinge	328491					
4	Mount, Controller	328644					
4	Mount, Controller	328645					
1	Harness, Wiring	328772					
1	Switch, Pushbutton	328773					
4	Transformer		328674	328676	328975		
1	Switch, Toggle	328789					
1	Nameplate, Engraved	328790					
1	Cable, Ribbon	336579					
2	Bracket, Transformer	342176					
1	Strip, Marker	342177					
1	Strip, Marker	342178					
1	Strip, Marker	342179					

Cooling System Kits

Qty.	Description	Part No.
Block Heater 279930		
1	Elbow, 45°, 1	X-274-10
1	Elbow, Street 3/8	X-274-6
4	Clamp, Hose .69-1.25 ID	X-426-12
9	Tie, Cable	X-468-1
1	Connector, Hose, 3/4 ID 3/8 NPT	X-582-11
2	Connector, Hose, 3/4 ID 1 NPT	X-582-15
1	Connector, Hose, 3/4 ID 3/4 NPT	X-582-8
1	Track, Mounting, 2.00"	X-6008-2
2	Washer, Beveled, .44	X-6011-4
1	Hose, .75 x 46 L	X-691-15
1	Hose, .75 x 103 L	X-691-32
2	Screw, Drill, 8-18	X-794-2
1	Bushing, Reducing, 1/2 x 3/4	153659
1	Thermostat, Block Heater	279813
1	Pump, Circulating Heater	279933
1	Pump Includes *	
1	*Element, Block Heater	224371
1	*Pump	328148
1	*Contactor	328217
1	*Transformer	328218
1	*Box, Control	347276
1	Harness, Block Heater	279956
1	Socket Assembly	291273
1	Relay	291309

Block Heater 279931		
4	Clamp, Hose, .69-1.25 ID	X-426-12
9	Tie, Cable	X-468-1
2	Connector, Hose, 3/4 ID 1 NPT	X-582-15
2	Connector, Hose, 3/4 ID 3/4 NPT	X-582-8
1	Track, Mounting, 2.00"	X-6008-2
2	Washer, Beveled, .44	X-6011-4
1	Hose .75 x 55 L	X-691-21
1	Hose .75 x 103 L	X-691-32
2	Screw, Drill, 8-18	X-794-2
1	Elbow, 1"	151385
1	Bushing, Reducing, 1/2 x 3/4	153659
1	Adapter, Plate	274881
1	Gasket	274882
1	Thermostat, Block Heater	279813
1	Pump, Circulating Heater	279933
1	Pump Includes *	
1	*Element, Block Heater	224371
1	*Pump	328148
1	*Contactor	328217
1	*Transformer	328218
1	*Box, Control	347276
1	Harness, Block Heater	279956
1	Socket Assembly	291273
1	Relay	291309

Qty.	Description	Part No.
Block Heater 279932		
1	Bushing, Reducer, 3/4 x 1 1/4 NPT	X-202-18
1	Elbow, 45°, 1	X-274-10
4	Clamp, Hose, .69-1.25 ID	X-426-12
9	Tie, Cable	X-468-1
2	Connector, Hose, 3/4 ID 1 NPT	X-582-15
2	Connector, Hose, 3/4 ID 3/4 NPT	X-582-8
1	Track, Mounting, 2.00"	X-6008-2
2	Washer, Beveled, .44	X-6011-4
1	Hose, .75 x 65 L	X-691-19
1	Hose, .75 x 109 L	X-691-33
2	Screw, Drill, 8-18	X-794-2
1	Bushing, Reducing, 1/2 x 3/4	153659
1	Adapter, Plate	274881
1	Gasket	274882
1	Thermostat, Block Heater	279813
1	Pump, Circulating Heater	279933
1	Pump Includes *	
1	*Element, Block Heater	224371
1	*Pump	328148
1	*Contactor	328217
1	*Transformer	328218
1	*Box, Control	347276
1	Harness, Block Heater	279956
1	Socket Assembly	291273
1	Relay	291309

Block Heater 328648		
1	Elbow, 45°, 1	X-274-10
1	Elbow	X-274-2
4	Clamp, Hose .69-1.25 ID	X-426-12
1	Connector, Nonmetallic	X-567-1
2	Connector, Hose, 3/4 ID 1 NPT	X-582-15
1	Connector, Hose, 3/4 ID 3/4 NPT	X-582-8
1	Track, Mounting, 2.00"	X-6008-2
2	Washer, Beveled, .44	X-6011-4
1	Hose	X-691-34
1	Hose	X-691-36
2	Screw, Drill, 8-18	X-794-2
1	Bushing, Reducing, 1/2 x 3/4	153659
1	Thermostat, Block Heater	279813
1	Pump, Circulating Heater	279933
1	Pump Includes *	
1	*Element, Block Heater	224371
1	*Pump	328148
1	*Contactor	328217
1	*Transformer	328218
1	*Box, Control	347276
1	Harness, Block Heater	279956
1	Socket Assembly	291273
1	Relay	291309

Cooling System Kits, Continued

Qty.	Description	Part No.
Block Heater 328037		
1	Bushing, Reducer, 3/4 x 1 1/4 NPT	X-202-18
1	Tee, Black Iron 3/8	X-203-15
1	Nipple, Pipe 3/8	X-204-9
2	Nipple, Pipe	X-206-9
1	Cross Pipe	X-207-5
1	Elbow, Pipe 3/4	X-215-2
1	Elbow, 45°, 1	X-274-10
1	Elbow, 90 Deg.	X-391-23
6	Clamp, Hose, .69-1.25 ID	X-426-12
2	Connector, Hose	X-582-11
2	Connector, Hose, 3/4 ID 1 NPT	X-582-15
1	Connector, Hose, 3/4 ID 3/4 NPT	X-582-8
1	Track, Mounting, 2.00"	X-6008-2
1	Hose	X-691-25
1	Hose	X-691-34
1	Hose	X-691-35
2	Screw, Drill, 8-18	X-794-2
1	Bushing, Reducing, 1/2 x 3/4	153659
1	Adapter, Plate	274881
1	Gasket	274882
1	Thermostat, Block Heater	279813
1	Pump, Circulating Heater	279933
1	Pump Includes *	
1	*Element, Block Heater	224371
1	*Pump	328148
1	*Contactor	328217
1	*Transformer	328218
1	*Box, Control	347276
1	Harness, Block Heater	279956
1	Socket Assembly	291273
1	Relay	291309

Qty.	Description	Part No.
Block Heater 328036		
1	Bushing, Reducer, 3/4 x 1 1/4 NPT	X-202-18
1	Tee, Black Iron 3/8	X-203-15
1	Nipple, Pipe 3/8	X-204-9
2	Nipple, Pipe	X-206-9
1	Cross Pipe	X-207-5
6	Clamp, Hose, .69-1.25 ID	X-426-12
2	Connector, Hose	X-582-11
2	Connector, Hose, 3/4 ID 1 NPT	X-582-15
1	Connector, Hose, 3/4 ID 3/4 NPT	X-582-8
1	Track, Mounting, 2.00"	X-6008-2
2	Washer, Beveled, .44	X-6011-4
1	Hose, .75 x 65 L	X-691-19
1	Hose	X-691-25
1	Hose	X-691-35
2	Screw, Drill, 8-18	X-794-2
1	Elbow	151385
1	Bushing, Reducing, 1/2 x 3/4	153659
1	Adapter, Plate	274881
1	Gasket	274882
1	Thermostat, Block Heater	279813
1	Harness, Block Heater	279956
1	Pump, Circulating Heater	279933
1	Pump Includes *	
1	*Element, Block Heater	224371
1	*Pump	328148
1	*Contactor	328217
1	*Transformer	328218
1	*Box, Control	347276
1	Socket Assembly	291273
1	Relay	291309
Block Heater Isolation Valve 347881		
2	Bushing, Reducer, 3/4	X-202-1
4	Nipple, Pipe	X-206-9
2	Union, Pipe	X-277-7
2	Valve	255632

Cooling System Kits, Continued

Qty.	Description	Part No.
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Duct Flange, Radiator **274233**

8	Rivet, Alumin./steel Pop, 3/16 x 1/4	X-781-11
10	Screw, Drill, 1/4-14 x 3/4	X-794-1
2	Frame, Air Duct (sides)	274303
2	Frame, Air Duct (top/bottom)	274304

Duct Flange, Radiator **279536**

8	Rivet, Alumin./steel Pop	X-781-10
2	Frame, Air Duct	279534
2	Frame, Air Duct	279535

Duct Flange, Radiator **299873**

8	Rivet, Alumin./steel Pop	X-781-10
2	Frame, Air Duct	299872
2	Frame, Air Duct	299874

Duct Flange, Radiator **328033**

12	Rivet, Alumin./steel Pop	X-781-10
2	Frame, Air Duct	328031
1	Frame, Air Duct	328279
1	Frame, Air Duct	328280
2	Bracket, Air Duct	328032

Duct Flange, Radiator **328277**

8	Rivet, Alumin./steel Pop	X-781-10
2	Frame, Air Duct	328224
2	Frame, Air Duct	328226
2	Bracket, Air Duct	328225

Radiator Cooling **274965**

(See Group 104, Variation 10 For Parts List)

Qty.	Description	Part No.
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Radiator Cooling **274937**

1	Radiator Assembly	A-272883
4	Nut, Elastic Stop, 1/4-20	X-101-8
6	Screw, HC 1/2-13 x 5.0	X-129-50
1	Bushing, Reducer, 3/8 x 1/2 NPT	X-202-28
1	Valve, Drain, 3/8 NPTF	X-256-1
2	Line, Flex. Fuel, 1/2 x .781 55.0 L	X-422-27
4	Clamp, Hose, .56-1.06 ID	X-426-3
2	Clamp, Hose, 1.31-2.25 ID	X-426-4
1	Tie, Cable	X-468-2
4	Tie, Cable	X-468-7
2	Adapter, Hose, 1/2 ID 3/8 NPT	X-582-4
2	Adapter, Hose, 1/2 ID 1/2 NPT	X-582-5
4	Hose, Radiator, 3.50 x 5.0	X-6006-3
4	Washer, Beveled, .68	X-6011-3
1	Hose, 1.50 x 76.00"	X-6014-33
2	Hose, Radiator, 4.50 x 5.00"	X-6014-34
12	Screw, Phil Hex Crim, 10-24 x .50	X-6216-1
2	Plug, Pipe, 1	X-75-22
1	Adapter, 1 1/2 ID 1 1/2 NPT	X-751-4
2	Screw, Drill Hex., 1/4-14	X-794-1
1	Guard, Belt	272629
1	Guard, Belt	272630
1	Guard, Belt	272659
1	Guard, Belt	272679
1	Fan	272956
1	Switch Assembly, Level	273469
1	Tube, Inlet (mtl), 4.68 OD	274265
1	Gasket, Inlet	274300
1	Tube, Radiator (stl), 4.50 ID	274390
1	Belt	274440
4	Clamp, Hose, 5.81-6.12 ID	274443
2	Tube, Radiator Upper, 3.50 ID	274445
1	Bracket, Belt Guard	274825
1	Bracket, Belt Guard	274826
2	Brace, Radiator	279539
2	Support, Radiator	279542
2	Support, Radiator	279543
6	Washer, Hardened, 17/32 x 1 1/16	290945
8	Clamp, Hose, 3.75-4.06 ID	291537

Cooling System Kits, Continued

Qty.	Description	Part No.
Radiator Cooling		
		274938
1	Radiator Assembly	A-272884
4	Nut, Elastic Stop, 1/4-20	X-101-8
6	Screw, HC 1/2-13 x 5.0	X-129-50
1	Bushing, Reducer, 3/8 x 1/2 NPT	X-202-28
1	Valve, Drain, 3/8 NPTF	X-256-1
2	Line, Flex. Fuel, 1/2 x .781 55.0 L	X-422-27
4	Clamp, Hose, .56-1.06 ID	X-426-3
2	Clamp, Hose, 1.31-2.25 ID	X-426-4
1	Tie, Cable	X-468-2
2	Adapter, Hose, 1/2 ID 3/8 NPT	X-582-4
2	Adapter, Hose, 1/2 ID 1/2 NPT	X-582-5
4	Hose, Radiator, 3.50 x 5.0"	X-6006-3
4	Washer, Beveled, .68	X-6011-3
1	Hose, 1.50 x 76.00"	X-6014-33
2	Hose, Radiator, 4.50 x 5.00"	X-6014-34
32	Screw, Phil Hex Crim, 10-24 x .50	X-6216-1
2	Plug, Pipe, 1	X-75-22
1	Adapter, 1 1/2 ID 1 1/2 NPT	X-751-4
4	Screw, Drill Hex., 1/4-14	X-794-1
1	Guard, Belt	272630
1	Fan	272969
1	Switch Assembly, Level	273469
1	Guard, Fan	274246
1	Guard, Fan	274247
1	Guard, Belt	274254
1	Guard, Belt	274255
1	Guard, Belt	274256
1	Tube, Inlet (mtl), 4.68 OD	274265
1	Gasket, Inlet	274300
1	Belt	274385
1	Tube, Radiator (stl), 4.50 ID	274390
4	Clamp, Hose, 5.81-6.12 ID	274443
2	Tube, Radiator Upper, 3.50 ID	274445
1	Brace, Belt Guard	274666
2	Brace, Radiator	279539
2	Support, Radiator	279542
2	Support, Radiator	279543
6	Washer, Hardened, 17/32 x 1 1/16	290945
8	Clamp, Hose, 3.75-4.06 ID	291537

Qty.	Description	Part No.
Radiator Cooling		
		279672
1	Radiator Assembly	A-279537
2	Nut, Lock, 3/8-16	X-101-13
2	Bushing, Reducer, 3/8 x 1/2 NPT	X-202-28
1	Nipple, Pipe, 1 1/2 x 4	X-205-7
1	Elbow, 45°, 1 1/2 NPT	X-225-3
2	Washer, Plain, .438 ID, 1.000 OD	X-25-1
2	Valve, Drain, 3/8 NPTF	X-256-1
4	Clamp, Hose, 4.06-5.00 ID	X-426-7
4	Washer, Beveled, .68	X-6011-3
1	Hose, Radiator, 4.50 x 5.00"	X-6014-34
4	Hose, 3.50 x 5.00"	X-6014-41
1	Hose, Radiator, 4.50 x 10.00"	X-6014-51
4	Hose, 2 x 8"	X-6014-8
2	Clamp, Insulated, 2.12 ID	X-672-18
3	Clamp, Insulated, .44 ID	X-672-7
1	Plug, Pipe, 1/4 NPTF	X-75-41
1	Plug, Pipe, 3/4	X-75-6
1	Clip, Conduit	X-752-1
8	Clamp, Hose, 2.25-2.56 ID	249887
1	Switch Assembly, Level	273469
1	Tube, Inlet (mtl), 4.68 OD	274265
1	Gasket, Inlet	274300
4	Clamp, Hose, 4/81-5/12 ID	274443
8	Clamp, Hose, 3.68-4.00 ID	274824
4	Support, Radiator	274894
2	Pipe, 3.5 ID	274897
1	Bushing, Idler	274903
1	Pulley, Idler	274904
1	Bushing, Pulley	274905
1	Pulley	274906
1	Pipe, Rad. Outlet	274907
1	Guard, Belt	274908
1	Guard, Belt	274911
2	Bracket, Mounting	274913
1	Belt, Poly-v	274915
1	Guard, Belt	279485
1	Support, Radiator	279491
1	Support, Radiator	279492
2	Bracket, Radiator	279494
1	Support, Radiator	279495
1	Support, Radiator	279496
12	Shim	279497
12	Shim	279498
2	Bracket, Mounting	279499
1	Gasket, Pressure Sensitive	279557
1	Cover, Pressure Sensitive	279558
2	Bracket, Radiator Support	279568
1	Pipe, Intercooler Return	279570
1	Pipe, Intercooler Support	279571
1	Guard, Belt (left)	279572
1	Brace, Upper Rad. Hose	279582
1	Brace, Upper Rad. Support	279583
1	Guard, Belt	279662
2	Decal, Caution	279748
2	Clamp, Hose, 4.00-4.31 ID	291590

Cooling System Kits, Continued

Qty.	Description	Part No.
	Radiator Cooling	299878
	See Group 104, Variation 28 For Parts List.	
	Radiator Cooling	299877
	See Group 104, Variation 27 For Parts List.	
	Radiator Cooling	328239
	See Group 104, Variation 31 For Parts List.	
	Radiator Cooling	328281
	See Group 104, Variation 30 For Parts List.	
	Radiator Cooling	328282
	See Group 104, Variation 29 For Parts List.	
	Radiator Cooling	354171
	See Group 104, Variation 39 For Parts List.	
	Radiator Cooling	354209
	See Group 104, Variation 47 For Parts List.	
	Radiator Cooling	354215
	See Group 104, Variation 48 For Parts List.	

Qty.	Description	Part No.
	Cooling, City Water	328705
4	Elbow, Street 1 1/2	A-27
2	Bushing, Reducer	X-202-19
4	Bushing, Reducer	X-202-20
1	Bushing, Reducer	X-202-32
4	Bushing, Reducer	X-202-45
2	Tee, Pipe	X-203-23
1	Tee, Pipe	X-203-24
1	Tee, Pipe	X-203-25
3	Pipe	X-205-11
2	Pipe	X-205-16
1	Nipple, Pipe	X-205-22
1	Nipple, Pipe 1 1/2 x 4	X-205-7
2	Elbow, Street 4	X-211-13
2	Elbow, Pipe 1	X-215-15
3	Elbow, Pipe 4	X-215-8
1	Nipple, Pipe 1 x 3	X-218-22
2	Valve, Drain, 3/8 NPT	X-256-1
1	Valve, Drain	X-256-5
2	Union, Straight	X-277-9
2	Valve, Solenoid	X-350-9
1	Hose	X-386-96
4	Elbow, Hose	X-391-30
7	Clamp, Hose	X-426-9
1	Pipe	X-458-1
1	Nipple, Pipe	X-549-11
1	Nipple, Pipe	X-549-12
3	Pipe	X-549-6
3	Adapter, Hose	X-570-23
8	Washer, Beveled	X-6011-3
1	Hose, Radiator	X-6014-61
2	Hose, Radiator	X-6014-80
2	Hose, Radiator	X-6014-81
2	Nipple, Combination	X-6268-4
2	Hose, Rubber	X-651-27
1	Hose	X-651-33
2	Fitting, Hose	X-652-1
2	Clamp, Isulated	X-672-7
1	Bushing, Reducer 1/2	168848
2	Adapter, Hose	272930
1	Switch Assembly, Level	273469
4	Clamp, Hose	274545
2	Clamp, Hose	279669
2	Heat Exchanger	291418
4	Clamp, Hose	291542
2	Bracket, Heat Exchanger	296955
1	Skid	328688
1	Guard, Pulley	328696
1	Guard, Lower Pulley	328697
2	Support, Surge Tank	328698
1	Bracket, Pulley Guard	328699
1	Regulator, Water	328700
2	Gasket, Companion Flange	328701
2	Flange, Companion	328702
2	Brace, Surge Tank Support	328703
1	Panel, Front	328704
1	Tank, Surge	328707

Cooling System Kits, Continued

Qty.	Description	Part No.	Qty.	Description	Part No.
Cooling, City Water			Cooling, City Water		
		328706			354199
4	Elbow, Street 1 1/2	A-27	4	Elbow, Street 1 1/2	A-27
2	Bushing, Reducer	X-202-19	1	Bushing, Reducer 3/4	X-202-1
4	Bushing, Reducer	X-202-20	2	Bushing, Reducer	X-202-19
1	Bushing, Reducer	X-202-32	4	Bushing, Reducer	X-202-20
4	Bushing, Reducer	X-202-45	1	Bushing, Reducer	X-202-32
2	Tee, Pipe	X-203-23	4	Bushing, Reducer	X-202-45
1	Tee, Pipe	X-203-24	2	Tee, Pipe	X-203-23
1	Tee, Pipe	X-203-25	1	Tee, Pipe	X-203-24
3	Pipe	X-205-11	1	Tee, Pipe	X-203-25
2	Pipe	X-205-16	3	Pipe	X-205-11
1	Nipple, Pipe	X-205-22	2	Pipe	X-205-16
1	Nipple, Pipe 1 1/2 x 4	X-205-7	1	Nipple, Pipe	X-205-22
2	Elbow, Street 4	X-211-13	2	Nipple, Pipe 1 1/2 x 4	X-205-7
2	Elbow, Pipe 1	X-215-15	1	Nipple, Pipe 3/4	X-206-2
3	Elbow, Pipe 4	X-215-8	2	Elbow, Street 4	X-211-13
1	Nipple, Pipe 1 x 3	X-218-22	1	Elbow, Pipe 1	X-215-15
2	Valve, Drain, 3/8 NPT	X-256-1	3	Elbow, Pipe 4	X-215-8
1	Valve, Drain	X-256-5	2	Valve, Drain, 3/8 NPT	X-256-1
2	Union, Straight	X-277-9	1	Valve, Drain	X-256-5
2	Valve, Solenoid	X-350-9	2	Union, Straight	X-277-9
1	Hose	X-386-96	2	Valve, Solenoid	X-350-9
4	Elbow, Hose	X-391-30	1	Hose	X-386-96
7	Clamp, Hose	X-426-9	4	Elbow, Hose	X-391-30
1	Pipe	X-458-1	7	Clamp, Hose	X-426-9
1	Nipple, Pipe	X-549-11	1	Pipe	X-458-1
1	Nipple, Pipe	X-549-12	1	Nipple, Pipe	X-549-11
3	Pipe	X-549-6	1	Nipple, Pipe	X-549-12
3	Adapter, Hose	X-570-23	3	Pipe	X-549-6
8	Washer, Beveled	X-6011-3	3	Adapter, Hose	X-570-23
1	Hose, Radiator	X-6014-61	8	Washer, Beveled	X-6011-3
2	Hose, Radiator	X-6014-80	1	Hose, Radiator	X-6014-61
2	Hose, Radiator	X-6014-81	2	Hose, Radiator	X-6014-80
2	Nipple, Combination	X-6268-4	2	Hose, Radiator	X-6014-81
2	Hose, Rubber	X-651-27	2	Nipple, Combination	X-6268-4
1	Hose	X-651-33	2	Hose, Rubber	X-651-27
2	Fitting, Hose	X-652-1	1	Hose	X-651-33
2	Clamp, Isulated	X-672-7	2	Fitting, Hose	X-652-1
1	Bushing, Reducer 1/2	168848	2	Clamp, Isulated	X-672-7
2	Adapter, Hose	272930	1	Bushing, Reducer 1/2	168848
1	Switch Assembly, Level	273469	2	Adapter, Hose	272930
4	Clamp, Hose	274545	1	Sensor, Low Fluid	254832
2	Clamp, Hose	279669	4	Clamp, Hose	274545
2	Heat Exchanger	291418	2	Clamp, Hose	279669
4	Clamp, Hose	291542	2	Heat Exchanger	291418
2	Bracket, Heat Exchanger	296955	4	Clamp, Hose	291542
1	Skid	328689	2	Bracket, Heat Exchanger	296955
1	Guard, Pulley	328696	1	Guard, Pulley	328696
1	Guard, Lower Pulley	328697	1	Guard, Lower Pulley	328697
2	Support, Surge Tank	328698	2	Support, Surge Tank	328698
1	Bracket, Pulley Guard	328699	1	Bracket, Pulley Guard	328699
1	Regulator, Water	328700	1	Regulator, Water	328700
2	Gasket, Companion Flange	328701	2	Gasket, Companion Flange	328701
2	Flange, Companion	328702	2	Flange, Companion	328702
2	Brace, Surge Tank Support	328703	2	Brace, Surge Tank Support	328703
1	Panel, Front	328704	1	Panel, Front	328704
1	Tank, Surge	328707	1	Tank, Surge	328707

Cooling System Kits, Continued

Qty.	Description	Part No.
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Cooling, Remote Radiator **328694**

2	Hose, Radiator	X-507-6
1	Hose, Radiator	X-6014-80
2	Clamp, Hose	274545
4	Clamp, Hose	291542
1	Guard, Pulley	328696
1	Guard, Lower Pulley	328697
1	Bracket, Pulley Guard	328699
1	Skid	328709

Cooling, Remote Radiator **328723**

2	Hose, Radiator	X-507-6
1	Hose, Radiator	X-6014-80
2	Clamp, Hose	274545
4	Clamp, Hose	291542
1	Guard, Pulley	328696
1	Guard, Lower Pulley	328697
1	Bracket, Pulley Guard	328699
1	Skid	328710

Cooling, Remote Radiator **328765**

2	Hose, 2" x 18"	X-6014-3
2	Hose, Radiator	X-6014-43
1	Hose, Radiator	X-6014-51
4	Clamp, Hose	249887
1	Tube, Inlet	274265
1	Gasket, Inlet	274300
2	Clamp, Hose	274443
4	Clamp, Hose	274824
1	Tube, Lower Radiator	328274
1	Guard, Pulley	328732
1	Guard, Pulley	328733
1	Guard, Front	328734
1	Skid	328736

Cooling, Remote Radiator **328766**

2	Hose, 2" x 18"	X-6014-3
2	Hose, Radiator	X-6014-43
1	Hose, Radiator	X-6014-51
4	Clamp, Hose	249887
1	Tube, Inlet	274265
1	Gasket, Inlet	274300
2	Clamp, Hose	274443
4	Clamp, Hose	274824
1	Tube, Lower Radiator	328274
1	Guard, Pulley	328732
1	Guard, Pulley	328733
1	Guard, Front	328734
1	Skid	328737

Qty.	Description	Part No.
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Cooling, Remote Radiator **328767**

2	Hose, 2" x 18"	X-6014-3
2	Hose, Radiator	X-6014-43
1	Hose, Radiator	X-6014-51
4	Clamp, Hose	249887
1	Tube, Inlet	274265
1	Gasket, Inlet	274300
2	Clamp, Hose	274443
4	Clamp, Hose	274824
1	Tube, Lower Radiator	328274
1	Guard, Pulley	328732
1	Guard, Pulley	328733
1	Guard, Front	328734
1	Skid	328735

Cooling, Remote Radiator **354200**

2	Hose, Radiator	X-507-6
1	Hose, Radiator	X-6014-80
2	Clamp, Hose	274545
4	Clamp, Hose	291542
1	Guard, Pulley	328696
1	Guard, Lower Pulley	328697
1	Bracket, Pulley Guard	328699

Cooling, Remote Radiator **354214**

2	Hose, 2" x 18"	X-281-31
1	Hose, Radiator	X-6014-51
1	Clamp	X-722-3
2	Clamp, U	X-722-5
4	Clamp, Hose	249887
1	Tube, Inlet	274265
1	Gasket, Inlet	274300
2	Clamp, Hose	324555
1	Guard, Pulley	328732
1	Guard, Pulley	328733
1	Guard, Front	328734
2	Gasket, Outlet	354043
1	Tube, Outlet	354273
1	Tube, Intercooler Return	354274
1	Tube, Intercooler Return	354275
1	Tube, Inlet	354276
1	Bracket, Inlet Tube	354277
1	Bracket, Intercooler Tube	354278

Cooling System Kits, Continued

Qty.	Description	Part No.
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Cooling, Remote Radiator 354293

2	Hose, 2" x 18"	X-281-31
1	Hose, Radiator	X-6014-51
1	Clamp	X-722-3
2	Clamp, U	X-722-5
4	Clamp, Hose	249887
1	Tube, Inlet	274265
1	Gasket, Inlet	274300
2	Clamp, Hose	324555
1	Guard, Pulley	328732
1	Guard, Pulley	328733
1	Guard, Front	328734
2	Gasket, Outlet	354043
1	Tube, Outlet	354273
1	Tube, Intercooler Return	354274
1	Tube, Inlet	354276
1	Bracket, Inlet Tube	354277
1	Bracket, Intercooler Tube	354278
1	Tube, Intercooler Return	354279

Radiator Core Guard 328727

4	Guard, Radiator Core	328726
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Remote Radiator Flex Kit PA-354280

2	Adapter, Flexible 3" ID	354281
2	Adapter, Flexible 5" ID	354282

Heavy-Duty Air Cleaner Kit 354201

4	Cleaner Assembly, Air	A-328582
4	Element, Air Cleaner	328583
2	Clamp, Hose	254344
2	Clamp, Hose	272960
2	Hose, Hump	274430
4	Clamp	280998
4	Precleaner Assembly, Air	328240
1	Bracket, Air Cleaner	328497
1	Bracket, Air Cleaner	328498
8	Mount, Air Cleaner	328499
2	Reducer, Hose Insert	328609
2	Hose, 45 Degree Elbow	328610
1	Bracket, Air Cleaner	328611
1	Bracket, Air Cleaner	328612

Qty.	Description	Part No.
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Heavy-Duty Air Cleaner Kit 354220

4	Cleaner Assembly, Air	A-279714
4	Element, Air Cleaner	279738
4	Element, Air Cleaner	279739
4	Cap, Pipe	X-268-7
2	Tube, Steel	X-522-64
2	Tube, Metal	274819
2	Tube, Metal	274820
4	Bracket	279288
8	Bracket, Air Cleaner	279715
4	Hose, Hump	279720
4	Cap, Rain	279722
4	Clamp, Hose	279743
2	Bracket, Air Cleaner	279781
1	Bracket, Air Cleaner	279782
1	Bracket, Air Cleaner	279783
1	Bracket, Air Cleaner	279784
1	Bracket, Air Cleaner	279785
12	Clamp	280998
4	Clamp, Hose	291504
2	Hose, Hump	291560
2	Hose, 90 Degree Elbow	291567
2	Hose, 90 Degree Elbow	291678

Heavy-Duty Air Cleaner Kit 354226

4	Cleaner Assembly, Air	A-279713
4	Element, Air Cleaner	279736
4	Element, Air Cleaner	279737
4	Cap, Pipe	X-268-7
2	Tube, Steel	X-522-64
4	Clamp, Hose	254344
4	Cap, Rain	272674
4	Clamp, Hose	272960
2	Hose, 90 Degree Elbow	274240
2	Hose, Hump	274430
2	Tube Assembly	274663
2	Tube Assembly	274664
1	Bracket	279288
4	Hose, Hump	279744
1	Bracket, Air Cleaner	279765
1	Bracket, Air Cleaner	279766
1	Bracket, Air Cleaner	279767
1	Bracket, Air Cleaner	279768
2	Bracket, Air Cleaner	279781
12	Clamp	280998
8	Bracket, Air Cleaner	291666
2	Hose, 90 Degree Elbow	291678

Appendix A. Glossary of Abbreviations

Abbreviations are used throughout this manual. Normally in the text they will appear in complete form with the abbreviation following in parenthesis the first time they are used. After that they will appear in the abbreviated form. The commonly used abbreviations are shown below.

AC	alternating current	gph	gallons per hour	N.C.	normally closed
AISI	American Iron and Steel Institute	gpm	gallons per minute	NEC	National Electrical Code
Amp	ampere	gr.	grade	NEMA	National Electrical Manufacturers Association
Amps	amperes	grd.	ground	NFPA	National Fire Protection Association
ANSI	American National Standard Institute	HCHT	high cylinder head temperature	Nm	Newton meter, Newton meters
API	American Petroleum Institute	HET	high exhaust (or engine) temperature	no., nos	number, numbers
approx.	approximate, approximately	Hg	mercury (element)	NPT	National Standard taper pipe thread per general use
A/R	as required, as requested	H ₂ O	water	N/R	not required
A/S	as supplied, as stated, as suggested	HP	horsepower	OC	overcrank
ASA	American Standards Association	hr, hrs	hour	OD	outside diameter
ASME	American Society of Mechanical Engineers	Hz	hertz (cycles per second)	OEM	original equipment manufacturer
assy.	assembly	ID	inside diameter	OS	overspeed, oversize
ASTM	American Society for Testing Materials	IEEE	Institute of Electrical and Electronic Engineers	O/S	oversize
ATDC	after top dead center	in.	inch(es)	OSHA	Occupational Safety and Health Act
aux.	auxiliary	inc.	incorporated	OV	overvoltage
AWG	American Wire Gauge	in. lbs.	inch pounds	oz.	ounce, ounces
AWM	appliance wiring material	int.	internal	PF	power factor
BBDC	before bottom dead center	int.-ext.	internal-external	PMG	permanent magnet generator
BDC	before dead center	ISO	International Standards Organization	pot.	potentiometer
BHP	brake horsepower	J	joule, joules	ppm	parts per million
bmep	brake mean effective pressure	JIS	Japanese Industry Standard	psi	pounds per square inch
Btu	British thermal unit	kg	kilogram, kilograms	pt., pts.	pint, pints
°C	Celsius degree	kg/cm ²	kilograms per square centimeter	PVC	polyvinyl chloride
cc	cubic centimeter	kgm	kilogram meter(s)	qt., qts.	quart, quarts
CCA	cold cranking Amps.	kJ	kilojoules (btu cal)	qty.	quantity
CEC	Canadian Electrical Code	km	kilometer, kilometers	ref.	reference
cfh	cubic feet per hour	kPa	kiloPascal, kiloPascals	RFI	radio frequency interference
cfm	cubic feet per minute	kph	kilometers per hour	r.h.m.	round-head machine (screw)
CID	cubic inch displacement	kV	kilovolt	rms	root mean square
cm	centimeter, centimeters	kVA	kilovolt amperes	RPM	revolutions per inch
cmm	cubic meters per minute	kW	kilowatt, kilowatts	RTV	room temperature vulcanization
co.	company	kWH	kilowatt hour	SAE	Society of Automotive Engineers
cont'd.	continued	L	liter, liters	SCR	silicon-controlled rectifier
CSA	Canadian Standards Association	LxWxH	length x width x height	sec.	second, seconds
CT	current transformer	LED(s)	light emitting diode	spec.	specs, specification
cu. in.	cubic inch, cubic inches	lb., lbs.	pound, pounds	sq.	square
cyl.	cylinder	L/hr.	liter per hour, liters per hour	sq. cm	square centimeters
dB	decibel	L/min.	liter(s) per minutes	sq. in.	square inch, square inches
dBA	decibels (A weighted)	LOP	low oil pressure	tach	tachometer
DC	direct current	LP	liquefied petroleum	TDC	top dead center
DCR	direct current resistance	m	meter, meters	tech. pub.	technical publications
deg.	degree	m ³	cubic meter, cubic meters	temp.	temperature
dept.	department	max.	maximum	TIF	telephone influence factor
dia.	diameter	MCM	one thousand circular mils.	TP, TPs	technical publications
e.g.	example given	megger	megohmmeter	turbo	turbocharger
EIA	Electronic Industries Association	MHz	megahertz	UHF	ultrahigh frequency
EMI	electromagnetic interference	mi.	mile, miles	UNC	Unified coarse thread (was NC)
EPA	Environmental Protection Agency	mil	one one-thousandth of an inch	UNF	Unified fine thread (was NF)
etc.	et cetera (and so forth)	min.	minimum	UL	Underwriter's Laboratories, Inc.
ext.	external	mJ	millijoule, millijoules	U/S	undersize
°F	Fahrenheit degree	MJ	mega joule, mega joules	U.S.A.	United States of America
fl. oz.	fluid ounce, fluid ounces	mm	millimeter, millimeters	v	volt, volts
FM	frequency modulation	m ³ /min	cubic meters per minute	vac	volts alternating current
ft.	foot, feet	MPa	megaPascal	vdc	volts direct current
ft. lbs.	foot pound, foot pounds	mW	milliwatt, milliwatts	VHF	very high frequency
ga.	gauge	MW	megawatt, megawatts	W	watt, watts
gal./ gals.	gallon, gallons	N/A	not available or not applicable		
		NBS	National Bureau of Standards		

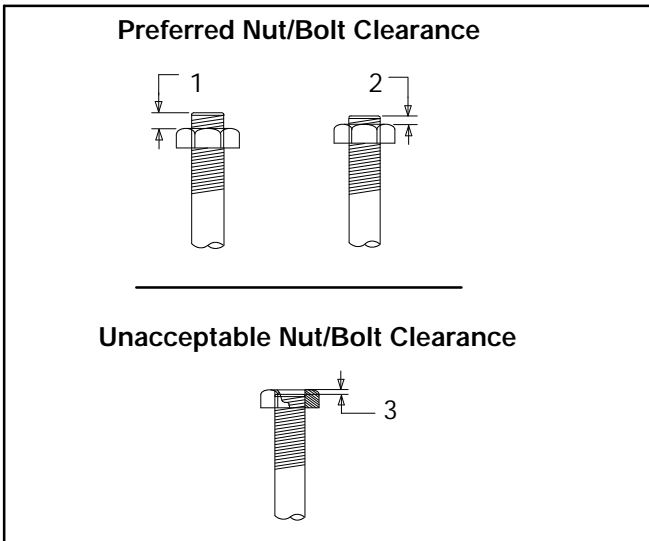
Appendix B. Common Hardware Application Guidelines

Use the information below and on the following pages to identify proper fastening techniques when no specific reference for reassembly is made.

Bolt/Screw Length: When bolt/screw length is not given, use NO TAG as a guide. As a general rule, a minimum length of one thread beyond the nut and a maximum length of 1/2 the bolt/screw diameter beyond the nut is the preferred method.

Washers and Nuts: Use split lock washers as a bolt locking device where specified. Use SAE flat washers with whiz nuts, spirallock nuts, or standard nuts and preloading (torque) of the bolt in all other applications.

See General Torque Specifications and other torque specifications in the service literature.



1. 1/2 of Bolt Diameter
2. Min. 1 Full Thread Beyond Top of Nut
3. Below Top of Nut

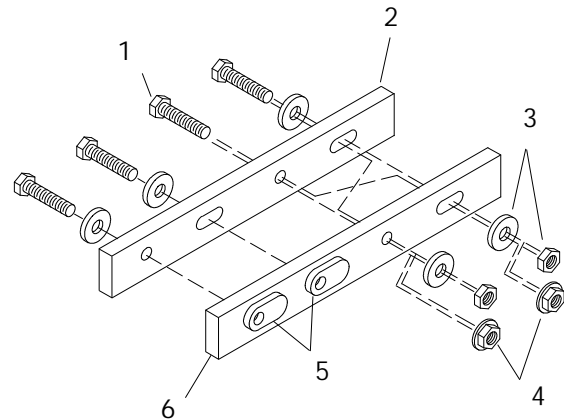
Figure 3. Acceptable Bolt Lengths

Steps for common hardware application:

1. Determine entry hole type: round or slotted.
2. Determine exit hole type: fixed female thread (weld nut), round, or slotted.

For round and slotted exit holes, determine if hardware is greater than 1/2 inch in diameter, or 1/2 inch in diameter or less. Hardware that is *greater than 1/2 inch* in diameter takes a standard nut and SAE washer. Hardware *1/2 inch or less* in diameter can take a properly torqued whiz nut or spirallock nut. See the diagram below.

3. Follow these SAE washer rules after determining exit hole type:
 - a. Always use a washer between hardware and a slot.
 - b. Always use a washer under a nut (see 2 above for exception).
 - c. Use a washer under a bolt when the female thread is fixed (weld nut).
4. Refer to the diagram below, which depicts the preceding hardware configuration possibilities.



1. Cap screw
2. Entry hole types
3. Standard nut and SAE washer
4. Whiz nut or spirallock: up to 1/2" dia. hardware
5. Weld nuts: above 1/2" dia. hardware
6. Exit hole types

Figure 4. Acceptable Hardware Combinations

Appendix C. General Torque Specifications

SAE Fasteners

Use the following specifications for SAE fasteners when no torque values are given elsewhere in this or the service manual for a specified bolt.

The values given are based on new plated threads. Increase values by 20% if nonplated threads are used.

Size	Torque Measurement	Assembled into Cast Iron or Steel			Assembled into Aluminum
		Grade 2	Grade 5	Grade 8	Grade 2 or 5
8-32	in. lbs. (Nm)	16 (1.8)	20 (2.3)	–	16 (1.8)
10-24	in. lbs. (Nm)	26 (2.9)	32 (3.6)	–	26 (2.9)
10-32	in. lbs. (Nm)	26 (2.9)	32 (3.6)	–	26 (2.9)
1/4-20	in. lbs. (Nm)	60 (6.8)	96 (10.8)	132 (14.9)	60 (6.8)
1/4-28	in. lbs. (Nm)	72 (8.1)	108 (12.2)	144 (16.3)	72 (8.1)
5/16-18	in. lbs. (Nm)	120 (13.6)	192 (21.7)	264 (29.8)	120 (13.6)
5/16-24	in. lbs. (Nm)	132 (14.9)	204 (23.1)	288 (32.5)	132 (14.9)
3/8-16	in. lbs. (Nm)	18 (24)	28 (38)	39 (53)	18 (24)
3/8-24	ft. lbs. (Nm)	20 (27)	31 (42)	44 (60)	20 (27)
7/16-14	ft. lbs. (Nm)	29 (39)	44 (60)	63 (85)	
7/16-20	ft. lbs. (Nm)	32 (43)	50 (68)	70 (95)	
1/2-13	ft. lbs. (Nm)	44 (60)	68 (92)	96 (130)	
1/2-20	ft. lbs. (Nm)	49 (66)	76 (103)	108 (146)	
9/16-12	ft. lbs. (Nm)	60 (81)	98 (133)	138 (187)	
9/16-18	ft. lbs. (Nm)	67 (91)	109 (148)	154 (209)	
5/8-11	ft. lbs. (Nm)	83 (113)	135 (183)	191 (259)	
5/8-18	ft. lbs. (Nm)	94 (128)	153 (208)	216 (293)	
3/4-10	ft. lbs. (Nm)	147 (199)	240 (325)	338 (458)	
3/4-16	ft. lbs. (Nm)	164 (222)	268 (363)	378 (513)	
1-8	ft. lbs. (Nm)	191 (259)	532 (721)	818 (1109)	
1-12	ft. lbs. (Nm)	209 (283)	582 (789)	895 (1214)	





















Metric Fasteners















Use the following specifications for metric fasteners when no torque values are given elsewhere in this manual for a specified bolt. These values are based on new plated threads.

Increase values by 20% if nonplated threads are used. Screws threaded into aluminum must have two diameters of threads engaged and may require 30% or more reduction in the torque.

Size (mm)	Torque ft-lb (Nm)			
	5.8	6.8	10.9	Fasteners Assembled Into Aluminum
6 x 1.00	5 (7)	6 (9)	9 (12)	5 (7)
8 x 1.25	14 (19)	14 (20)	20 (37)	14 (19)
8 x 1.00	16 (21)	17 (24)	23 (31)	16 (21)
10 x 1.50	25 (35)	27 (37)	38 (51)	25 (35)
10 x 1.25	29 (39)	34 (46)	45 (61)	29 (39)
12 x 1.75	42 (57)	45 (61)	65 (89)	
12 x 1.50	48 (65)	55 (75)	78 (106)	
14 x 2.00	64 (86)	69 (94)	101 (137)	
14 x 1.50	74 (100)	81 (110)	116 (157)	
16 x 2.00	98 (133)	104 (141)	150 (204)	
16 x 1.50	104 (141)	116 (157)	168 (228)	
18 x 2.50	133 (181)	145 (196)	208 (283)	
18 x 1.50	145 (196)	156 (212)	226 (306)	

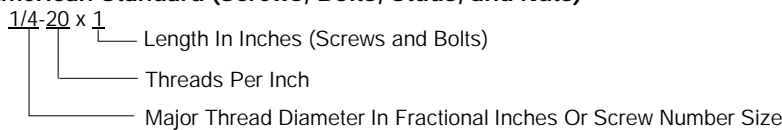
Appendix D. Common Hardware Identification

Screws/Bolts/Studs Head Styles	
Hex. Head or Machine Head	 
Hex. Head or Machine Head with Washer	
Flat Head (f.h.m.)	
Round Head (r.h.m.)	
Pan Head	
Socket Head Cap or Allen Head Cap	
Socket Head or Allen Head Shoulder Bolt	
Sheet Metal Screw	
Stud	
Drive Styles	
Hex.	
Hex. and Slotted	
Phillips	
Slotted	
Hex. Socket	
Hardness Grade	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9	
Metric	
Number stamped on hardware; 5.8 shown	

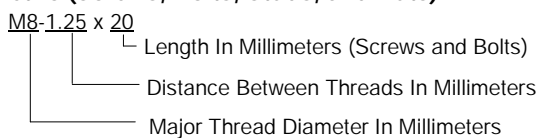
Nuts Nut Styles	
Hex. Head	
Lock Nut or Nylock Nut	
Square Nut	
Cap Nut or Acorn Nut	
Wing Nut	
Nut Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Metric	
Number stamped on hardware	
Washers	
Washer Styles	
Plain	
Split Lock or Spring	
Spring or Wave	
External Tooth Lock	
Internal Tooth Lock	
Internal-External Tooth Lock	

Sample Dimensions

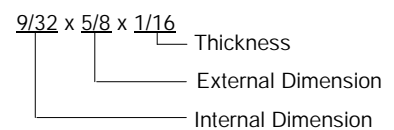
American Standard (Screws, Bolts, Studs, and Nuts)



Metric (Screws, Bolts, Studs, and Nuts)



Plain Washers



Lock Washers



Appendix E. Common Hardware List

The Common Hardware List gives part numbers and dimensions for common hardware items.

HEX BOLTS (GRADE 5)

Part No.	Dimensions
X-465-17	1/4-20 x .38
X-465-6	1/4-20 x .50
X-465-2	1/4-20 x .62
X-465-16	1/4-20 x .75
X-465-18	1/4-20 x .88
X-465-7	1/4-20 x 1.00
X-465-8	1/4-20 x 1.25
X-465-9	1/4-20 x 1.50
X-465-10	1/4-20 x 1.75
X-465-11	1/4-20 x 2.00
X-465-12	1/4-20 x 2.25
X-465-14	1/4-20 x 2.75
X-465-21	1/4-20 x 5.00
X-465-25	1/4-28 x .38
X-465-20	1/4-28 x 1.00
X-125-33	5/16-18 x .50
X-125-23	5/16-18 x .62
X-125-3	5/16-18 x .75
X-125-31	5/16-18 x .88
X-125-5	5/16-18 x 1.00
X-125-24	5/16-18 x 1.25
X-125-34	5/16-18 x 1.50
X-125-25	5/16-18 x 1.75
X-125-26	5/16-18 x 2.00
230578	5/16-18 x 2.25
X-125-29	5/16-18 x 2.50
X-125-27	5/16-18 x 2.75
X-125-28	5/16-18 x 3.00
X-125-22	5/16-18 x 4.50
X-125-32	5/16-18 x 5.00
X-125-35	5/16-18 x 5.50
X-125-36	5/16-18 x 6.00
X-125-40	5/16-18 x 6.50
X-125-43	5/16-24 x 1.75
X-125-44	5/16-24 x 2.50
X-125-30	5/16-24 x .75
X-125-39	5/16-24 x 2.00
X-125-38	5/16-24 x 2.75
X-6238-2	3/8-16 x .62
X-6238-10	3/8-16 x .75
X-6238-3	3/8-16 x .88
X-6238-11	3/8-16 x 1.00
X-6238-4	3/8-16 x 1.25
X-6238-5	3/8-16 x 1.50
X-6238-1	3/8-16 x 1.75
X-6238-6	3/8-16 x 2.00
X-6238-17	3/8-16 x 2.25
X-6238-7	3/8-16 x 2.50
X-6238-8	3/8-16 x 2.75
X-6238-9	3/8-16 x 3.00
X-6238-19	3/8-16 x 3.25
X-6238-12	3/8-16 x 3.50
X-6238-20	3/8-16 x 3.75
X-6238-13	3/8-16 x 4.50
X-6238-18	3/8-16 x 5.50
X-6238-25	3/8-16 x 6.50
X-6238-14	3/8-24 x .75
X-6238-16	3/8-24 x 1.25
X-6238-21	3/8-24 x 4.00
X-6238-22	3/8-24 x 4.50
X-6024-5	7/16-14 x .75
X-6024-2	7/16-14 x 1.00
X-6024-8	7/16-14 x 1.25
X-6024-3	7/16-14 x 1.50
X-6024-4	7/16-14 x 2.00
X-6024-11	7/16-14 x 2.75
X-6024-12	7/16-14 x 6.50
X-129-15	1/2-13 x .75

HEX BOLTS (GRADE 5), continued

Part No.	Dimensions
X-129-17	1/2-13 x 1.00
X-129-18	1/2-13 x 1.25
X-129-19	1/2-13 x 1.50
X-129-20	1/2-13 x 1.75
X-129-21	1/2-13 x 2.00
X-129-22	1/2-13 x 2.25
X-129-23	1/2-13 x 2.50
X-129-24	1/2-13 x 2.75
X-129-25	1/2-13 x 3.00
X-129-27	1/2-13 x 3.50
X-129-29	1/2-13 x 4.00
X-129-30	1/2-13 x 4.50
X-463-9	1/2-13 x 5.50
X-129-44	1/2-13 x 6.00
X-129-51	1/2-20 x .75
X-129-45	1/2-20 x 1.25
X-129-52	1/2-20 x 1.50
X-6021-3	5/8-11 x 1.00
X-6021-4	5/8-11 x 1.25
X-6021-2	5/8-11 x 1.50
X-6021-1	5/8-11 x 1.75
273049	5/8-11 x 2.00
X-6021-5	5/8-11 x 2.25
X-6021-6	5/8-11 x 2.50
X-6021-7	5/8-11 x 2.75
X-6021-12	5/8-11 x 3.75
X-6021-11	5/8-11 x 4.50
X-6021-10	5/8-11 x 6.00
X-6021-9	5/8-18 x 2.50
X-6239-1	3/4-10 x 1.00
X-6239-8	3/4-10 x 1.25
X-6239-2	3/4-10 x 1.50
X-6239-3	3/4-10 x 2.00
X-6239-4	3/4-10 x 2.50
X-6239-5	3/4-10 x 3.00
X-6239-6	3/4-10 x 3.50
X-792-1	1-8 x 2.25
X-792-5	1-8 x 3.00
X-792-8	1-8 x 5.00

NUTS

Part No.	Dimensions	Type
X-6009-1	1-8	Std. Nut
X-6210-3	6-32	Whiz Nut
X-6210-4	8-32	Whiz Nut
X-6210-5	10-24	Whiz Nut
X-6210-1	10-32	Whiz Nut
X-6210-2	1/4-20	Spirallock Nut
X-6210-6	1/4-28	Spirallock Nut
X-6210-7	5/16-18	Spirallock Nut
X-6210-8	5/16-24	Spirallock Nut
X-6210-9	3/8-16	Spirallock Nut
X-6210-10	3/8-24	Spirallock Nut
X-6210-11	7/16-14	Spirallock Nut
X-6210-12	1/2-13	Spirallock Nut
X-6210-15	7/16-20	Spirallock Nut
X-6210-14		Spirallock Nut
X-85-3	5/8-11	Std. Nut
X-88-12	3/4-10	Std. Nut
X-89-2	1/2-20	Std. Nut

WASHERS

Part No.	ID	OD	Thickness	Bolt/ Screw
X-25-46	.125	.250	.022	#4
X-25-9	.156	.375	.049	#6
X-25-48	.188	.438	.049	#8
X-25-36	.219	.500	.049	#10
X-25-40	.281	.625	.065	1/4
X-25-85	.344	.687	.065	5/16
X-25-37	.406	.812	.065	3/8
X-25-34	.469	.922	.065	7/16
X-25-26	.531	1.062	.095	1/2
X-25-15	.656	1.312	.095	5/8
X-25-29	.812	1.469	.134	3/4
X-25-127	1.062	2.000	.134	1

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