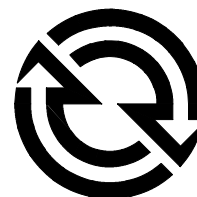


Service Parts

SPECTRUM[®]

DETROIT DIESEL



Generator Sets

Models:

20-200DSJ/DSEJ

See Group 701: Literature, inside this manual for
part numbers of engine and accessory parts catalogs

See MP-6009 Parts Catalog Industrial Controllers
for controller parts



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Introduction

This manual lists service replacement parts for 20–200 kW generator sets.

At the time of print this manual applied to the generator set specification (spec) numbers listed in the Specification Number Index. On occasion this manual may apply to specs not listed in the Specification Number Index.

Information in this publication represents data available at the time of print. The manufacturer of Spectrum® products reserves the right to change this publication and the products represented without notice and without any obligation or liability whatsoever.

This manual includes the following main sections:

Table of Contents. Lists the sections of the manual.

Introduction (and other information sections). Contains introductory material about part numbers, illustrations, and hardware.

Index. Lists the generator set specs and groups.

Group Parts Lists. List the part numbers of parts in the groups.

Kit Sections. List modules and accessories and their parts.

Appendices. Include Abbreviations, Common Hardware Application Guidelines, General Torque Specifications, Common Hardware Identification, and Common Hardware List.

xin:004:002

Numbering System Significance

This manual uses the following numbering systems:

Specification Number. A six-digit number with a PA-prefix. The Specification Number Index does not show the prefix. Spec numbers break down into groups.

Group Number. A unique number representing a parts group needed to assemble a generator set function. For example, Group 101 is the Air Intake group.

Variation or Module Number. A group might have several variations. Each variation performs the same function with different parts lists. For example, a 50 Hz generator alternator and 60 Hz generator alternator both perform the same function, however, with different parts. Each difference requires a group variation or module number.

Part Number. The part number identifies an individual assembly, subassembly, component, or accessory kit.

xin:004:003

Illustrations

Illustrations (or exploded-view drawings) best representing the widest range of variations accompany most groups in this manual. Illustrations do not depict all details and may not show all parts. Do not use illustrations for assembly or disassembly instructions.

xin:004:004

How to Find Part Numbers

Use the following steps to locate a service replacement part.

1. Locate the generator set nameplate to **identify the generator set spec number**.
2. Locate a second generator set nameplate listing accessories to **identify installed modules**. On some models the accessory nameplate is mounted inside the generator junction box.
3. **Turn to the Specification Number Index.** The first column lists the generator set spec numbers. The headings identify the groups of parts that make up the generator set.
4. **Identify the group** most likely to include the service part number.
5. **Find the group variation number** at the intersection of the spec number row and the group column. Note the variation number.
6. **Page forward to locate the group** identified in step 4 or find the appropriate page in the Table of Contents.
7. **Find the part on the illustration** and note the item number of the part or **find the part description in the parts list**.
8. Select the **part number that corresponds to your group variation**. The first column lists the illustration item number. Find the variation identified in the Specification Number Index or the module number found on the generator set nameplate in the appropriate column on the right side of the parts list table. Find the quantity used at the intersection of the item number row and the variation column. A blank space at the intersection means the variation/module does not use that part number.

xin:004:005

Hardware References

Many common hardware items do not appear in parts manuals or will appear as common hardware entries. A common hardware entry lists the size of the hardware. For example, an item that appears as “Hardware, 3/8-16” in the text means that the piece is 3/8-16 size. Obtain common hardware locally or, if contacting the factory, use the Common Hardware List in the appendix to identify the common hardware part number and specifications. See Common Hardware Application Guidelines in the appendix for mating hardware instructions.

Some hardware items require a specific size or some other characteristic. In that case, use the part number listed in the text.

When replacing hardware, do not substitute inferior grade hardware. Replacement hardware grade should be equal to or better than the grade of the manufacturer’s original hardware. Use the Common Hardware List in the appendix to identify the common hardware hardness.

xin:004:006

Specification Number Index

Group Title and Number	Air Intake	Fuel System	Cooling System	Engine	Nameplates and Decals	Oil Pressure Switch	Skid and Plant Mounting	Temperature Switch	Exhaust System	Recommended Spare Parts	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	103	104	105	107	108	109	110	116	119	201	301	701
Spec No.	Variation Number												

20DSEJ													
189039	*	—	*	92	59	—	*	—	—	27	*	†	70
189040	*	—	*	93	59	—	*	—	—	27	*	†	70
20DSJ													
189041	*	—	*	99	59	—	*	—	—	14	*	†	71
30DSEJ													
189146	*	—	*	92	59	—	*	—	—	27	*	†	72
189147	*	—	*	93	59	—	*	—	—	27	*	†	72
30DSJ													
189148	*	—	*	99	59	—	*	—	—	14	*	†	73
40DSEJ													
189241	*	—	*	92	59	—	*	—	—	27	*	†	74
189242	*	—	*	93	59	—	*	—	—	27	*	†	74
40DSJ													
189243	*	—	*	99	59	—	*	—	—	14	*	†	75
50DSEJ													
189341	*	—	*	94	59	—	*	—	—	28	*	†	76
189342	*	—	*	95	59	—	*	—	—	28	*	†	76
50DSJ													
189343	*	—	*	100	59	—	*	—	—	16	*	†	77
60DSEJ													
189441	*	—	*	94	59	—	*	—	—	28	*	†	78
189442	*	—	*	95	59	—	*	—	—	28	*	†	78
189443	*	—	*	96	59	—	*	—	—	28	*	†	78
189444	*	—	*	97	59	—	*	—	—	28	*	†	78
60DSJ													
189445	*	—	*	100	59	—	*	—	—	16	*	†	79
189446	*	—	*	100	59	—	*	—	—	16	*	†	79
80DSEJ													
189554	*	—	*	73	60	—	*	—	—	—	*	†	80
189555	*	—	*	74	60	—	*	—	—	—	*	†	80
80DSJ													
189556	*	—	*	89	60	—	*	—	—	16	*	†	81

* Configured group. Refer to the generator set nameplate for the module number. Turn to the respective group on the following pages for parts breakdowns.

† Configured group. Refer to the generator set nameplate for the module number. See controller parts catalog MP-6009 for controller parts lists.

— Not applicable.

Specification Number Index

Group Title and Number	Air Intake	Fuel System	Cooling System	Engine	Nameplates and Decals	Oil Pressure Switch	Skid and Plant Mounting	Temperature Switch	Exhaust System	Recommended Spare Parts	Generator and Mounting	Controller and Mounting	Literature
Group No.	101	103	104	105	107	108	109	110	116	119	201	301	701
Spec No.	Variation Number												

100DSEJ													
189663	*	—	*	75	60	—	*	—	—	—	*	†	82
189664	*	—	*	76	60	—	*	—	—	—	*	†	82
100DSJ													
189665	*	—	*	90	60	—	*	—	—	16	*	†	83
135DSEJ													
189742	*	—	*	45	60	—	*	—	—	19	*	†	84
189743	*	—	*	59	60	—	*	—	—	19	*	†	84
189744	*	—	*	46	60	—	*	—	—	19	*	†	84
189745	*	—	*	60	60	—	*	—	—	19	*	†	84
150DSEJ													
189861	*	—	*	48	60	—	*	—	—	19	*	†	85
189862	*	—	*	50	60	—	*	—	—	19	*	†	85
189863	*	—	*	61	60	—	*	—	—	19	*	†	85
189864	*	—	*	63	60	—	*	—	—	19	*	†	85
189865	*	—	*	49	60	—	*	—	—	19	*	†	85
189866	*	—	*	51	60	—	*	—	—	23	*	†	85
189867	*	—	*	62	60	—	*	—	—	19	*	†	85
189868	*	—	*	64	60	—	*	—	—	23	*	†	85
180DSEJ													
189976	*	—	*	52	61	—	*	—	—	21	*	†	86
189977	*	—	*	65	61	—	*	—	—	21	*	†	86
189978	*	—	*	53	61	—	*	—	—	21	*	†	86
189979	*	—	*	66	61	—	*	—	—	21	*	†	86
200DSEJ													
189981	*	—	*	115	61	—	*	—	—	—	*	†	88
189983	*	—	*	123	GR2	—	*	—	—	—	*	†	88

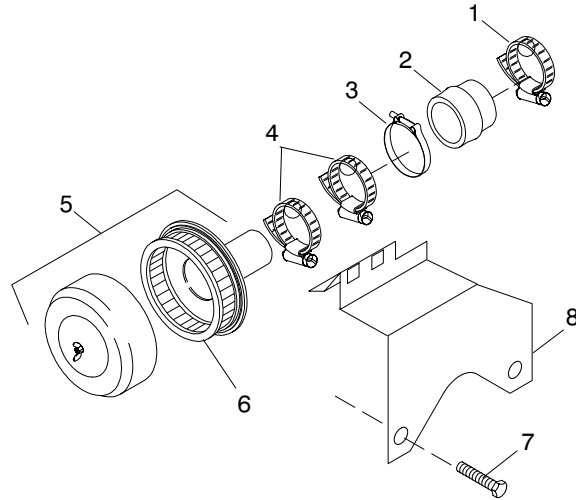
* Configured group. Refer to the generator set nameplate for the module number. Turn to the respective group on the following pages for parts breakdowns.

† Configured group. Refer to the generator set nameplate for the module number. See controller parts catalog MP-6009 for controller parts lists.

— Not applicable.

Group 101: Air Intake

20-100DSEJ/DSJ

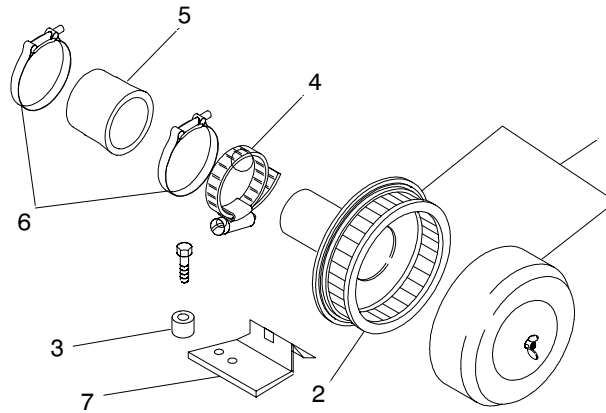


See Kit list for heavy-duty air cleaner kits.

Item	Part Number	Description	Quantity			
			352361	352490	352566	352568
1	X-426-1	Clamp, hose, 3 3/4	1	1		
2	352335	Hose, reducer, 4 ID x 3 ID	1			
2	X-507-1	Hose, 3 x 2.25		1		1
2	328006	Hose, reducer, molded, 2.25 in. ID			1	
3	274545	Clamp, hose (band)	1			
3	X-426-1	Clamp, hose, 3 3/4		2	2	2
4	X-426-5	Clamp, hose, 4 1/2	1			
5	A-273699	Cleaner assembly, air		1		1
5	A-273700	Cleaner assembly, air	1			
5	A-253104	Cleaner assembly, air			1	
6	253107	Element		1	1	1
6	253108	Element	1			
7	X-6051-2	Screw, hex, M10-150 x .8	2			
8	352336	Bracket, air cleaner	1			

Group 101: Air Intake

135-180DSEJ



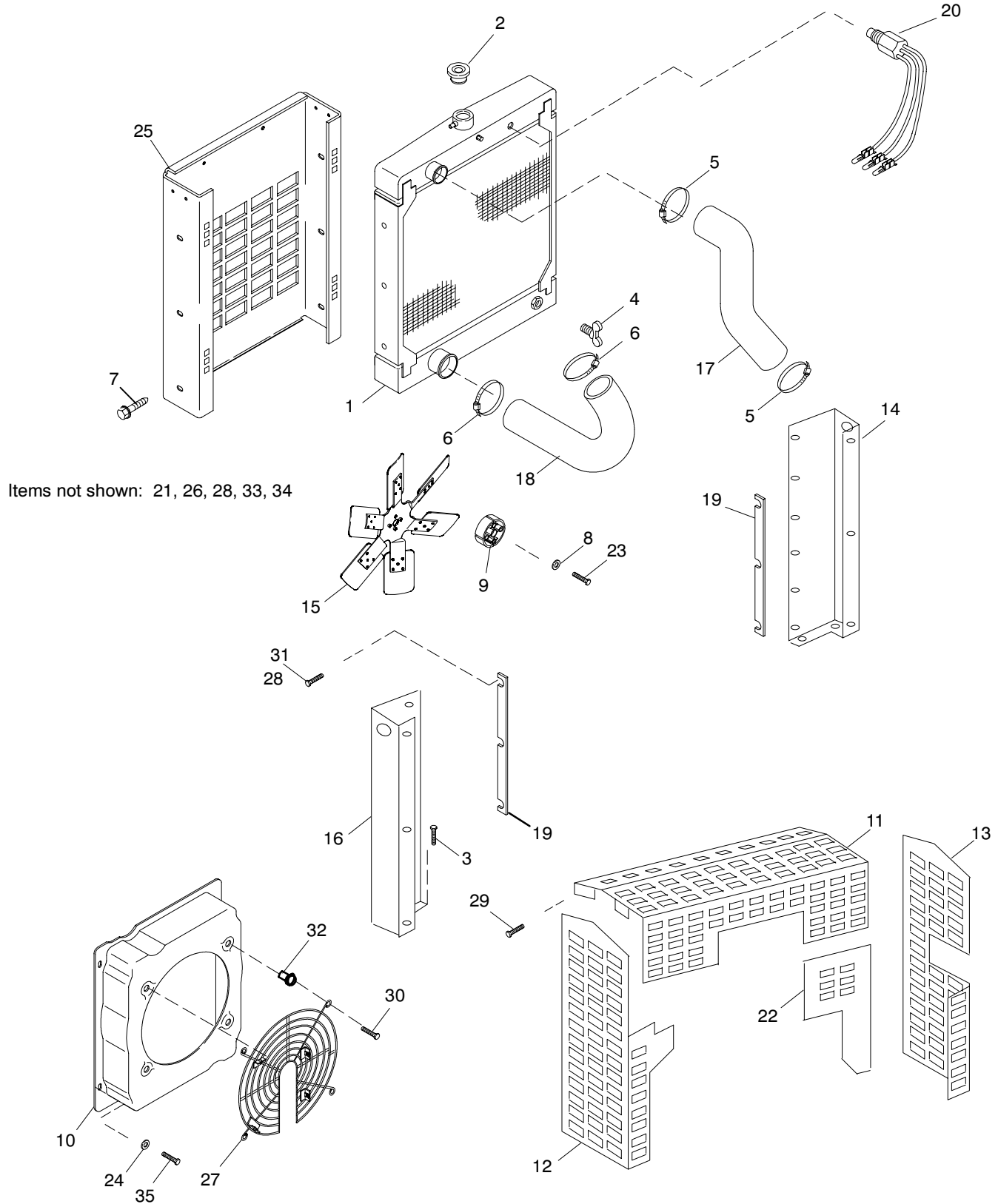
See Kit list for heavy-duty air cleaner kits.

5828_101

Item	Part Number	Description	Quantity				
			Variation/Kit Number				
			13	336684	336808	336686	GM11459-MA1
1	A-273700	Air cleaner assembly	1	1			
1	254004	Air cleaner assembly			1	1	
1	343219	Air cleaner, industrial					1
2	253108	Element, air filter	1	1			
2	254477	Element, air filter			1	1	
3	X-400-132	Spacer	2	2			
3	X-400-210	Spacer					2
4	X-426-5	Clamp, hose	1	1			
5	X-6350-1	Hose	1	1			
5	336227	Hose, intake			1		
5	336226	Hose, intake				1	
5	343429	Hose, hump, straight, 5 in. OD					1
5	GM11458	Hose, reducer insert					1
6	274545	Clamp, hose	2	2			
6	272960	Clamp, hose (air cleaner end)			1	1	
6	324555	Clamp, hose (turbo end)			1	1	
6	254013	Clamp, hose 6.25/6.56 in.					1
6	291562	Clamp, hose 5.25/5.56 in.					1
7	336611	Bracket, air cleaner	1	1			
7	336224	Bracket, air cleaner			1		
7	274665	Bracket, air cleaner				1	
7	GM11452	Bracket, air cleaner					1
7	GM11970	Shield, heat (not shown)					1
8	254012	Band, mounting (not shown)			2	2	
8	343218	Band, mounting (not shown)					1
9	X-101-13	Nut, lock (not shown)			4	4	4
10	254010	Cap, rain (not shown)			1	1	

Group 104: Cooling System

20-100DSEJ/DSJ



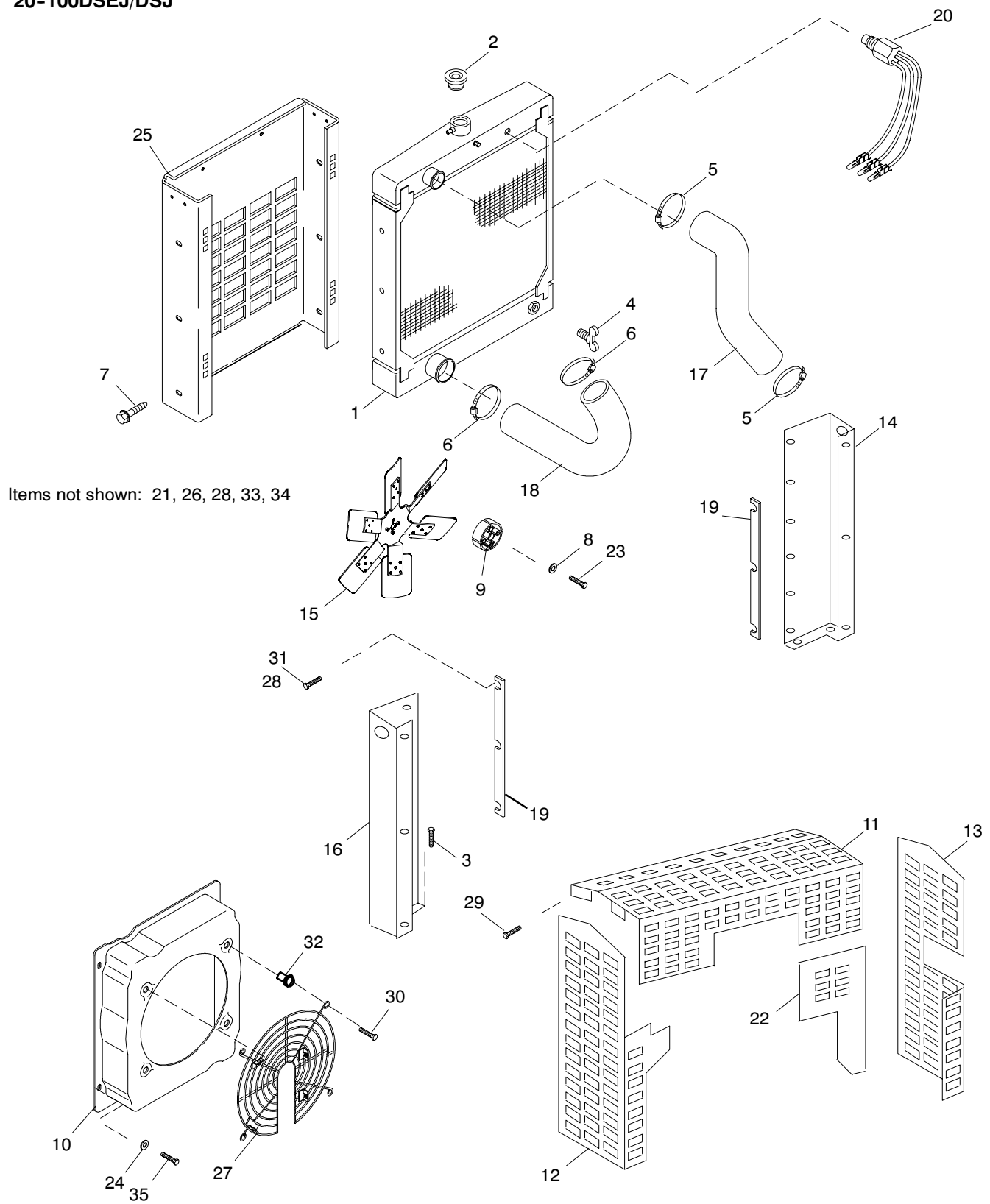
Group 104: Cooling System

Item	Part Number	Description	Quantity						
			Module Number						
			360792	360811	360788	360780	360797	360807	360784
1	A-276522	Radiator assembly (Includes Item 2)		1			1		
1	A-276526	Radiator assembly (Includes Item 2)							
1	A-352191	Radiator assembly (Includes Item 2)	1 Cap=GM26183						
1	A-352521	Radiator assembly (Includes Item 2)			1				
1	A-360352	Radiator assembly (Includes Item 2)				1			1
1	A-273412	Radiator assembly (Includes Item 2)						1	
2	224358	Cap, radiator, 7 psi (48 kPa), 3.65"	+	1	1	1	1		1
2	347715	Cap, radiator, 9 psi (62 kPa)						1	
3	*	Bolt, 3/8-16	6	6	6	6			6
4	X-256-3	Valve, drain, 1/4 NPT	1	1	1	1	1	1	1
5	250081	Clamp, hose		2					
5	X-426-6	Clamp, hose	2		2	2			2
5	X-426-4	Clamp, hose					1	1	
5	X-426-6	Clamp, hose					1	1	
6	250081	Clamp, hose		2					
6	X-426-16	Clamp, hose				2			2
6	X-426-4	Clamp, hose, 1 7/8-3 5/32					1	1	
6	X-426-6	Clamp, hose, 1 7/8-3 5/32					1	1	
7	*	Hardware, 1/4-20	8	8	8	8			8
8	X-801-4	Washer, 21/64 x 23/32 x 1/8			4	4	4	4	4
8	X-801-3	Washer 13/32 x 13/16 x 3/64	4	4					
9	222932	Spacer, fan			1	1	1	1	1
9	222959	Spacer, fan		1					
9	352194	Spacer, fan	1						
10	324039	Shroud, fan			1	1	1	1	1
10	324076	Shroud, fan	1	1					
11	222955	Guard, fan (top)					1	1	
11	222980	Guard, fan (top)		1					
11	352382	Guard, fan (top)	1						
11	352546	Guard, fan (top)			1	1			1
12	222956	Guard, fan (left)					1	1	
12	222982	Guard, fan (left)		1					
12	352381	Guard, fan (left)	1						
12	352545	Guard, fan (left)			1	1			1
13	222957	Guard, fan (right)					1	1	
13	222981	Guard, fan (right)		1					
13	352380	Guard, fan (right)	1						
13	352544	Guard, fan (right)			1	1			1
13	352379	Guard, fan (right, top)	1						
14	222947	Support, radiator (right)		1					
14	352331	Support, radiator (right)	1						
14	352525	Support, radiator (right)			1	1			1
14	222927	Support, radiator (right)					1	1	
15	324045	Fan				1	1		
15	222978	Fan	1	1					
15	324046	Fan			1			1	1
16	222948	Support, radiator (left)		1					
16	352332	Support, radiator (left)	1						
16	352526	Support, radiator (left)			1	1			1
16	222928	Support, radiator (left)					1	1	
17	273417	Hose, upper radiator					1	1	
17	273462	Hose, upper radiator		1					
17	352192 352102	Hose, upper radiator	1						
17	352522	Hose, upper radiator			1	1			1
18	273418	Hose, lower radiator					1	1	
18	273463	Hose, lower radiator		1					
18	352193	Hose, lower radiator	1						
18	352523	Hose, lower radiator			1	1			1
19	273911	Spacer, radiator support			4	4	4	4	4
19	324229	Spacer, radiator support	2	2					

* Common hardware; procure locally.

Group 104: Cooling System, continued

20-100DSEJ/DSJ

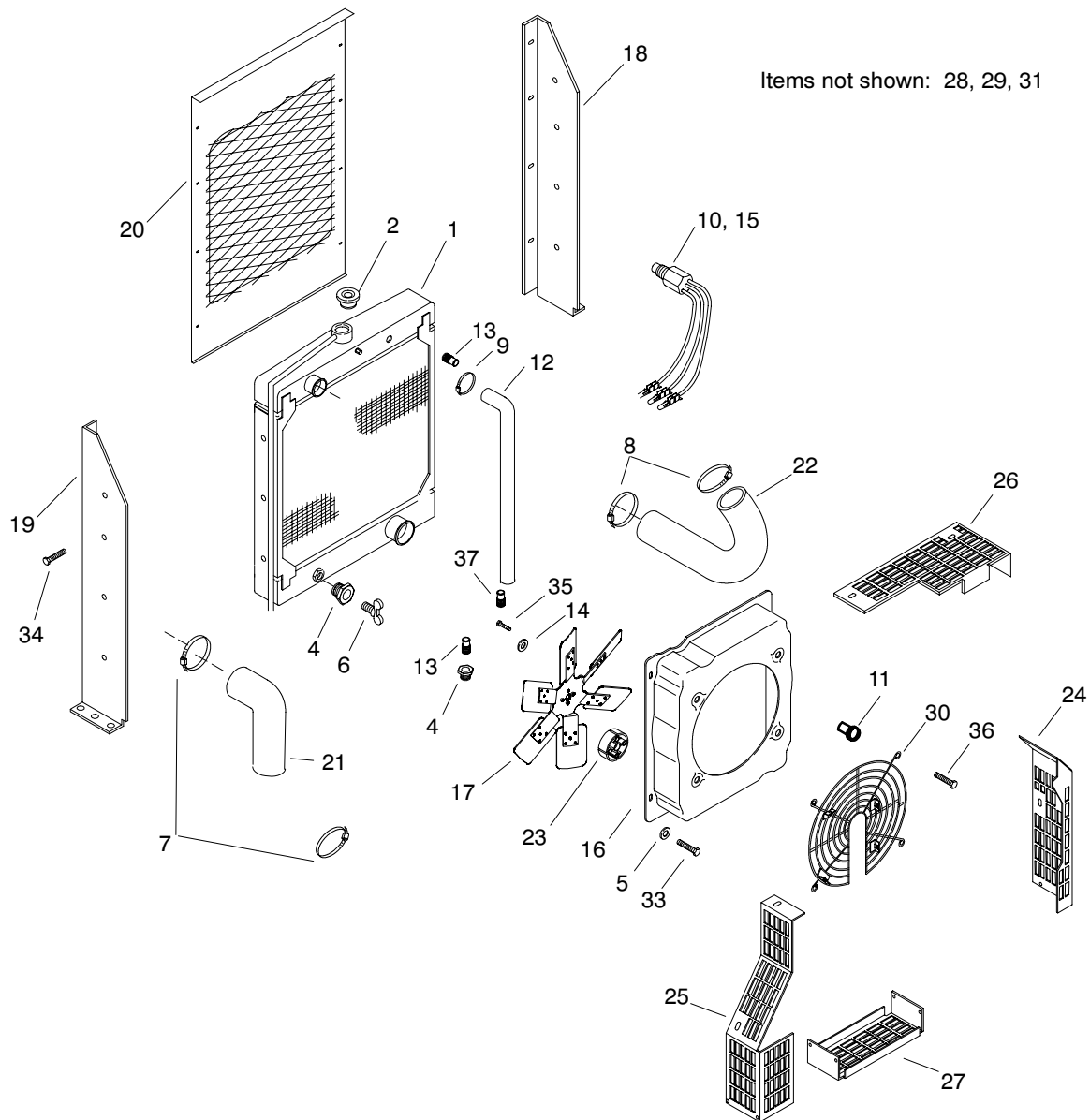


Group 104: Cooling System, continued

Item	Part Number	Description	Quantity						
			Module Number						
			360792	360811	360788	360780	360797	360807	360784
20	254832	Coolant level sensor	1	1	1	1	1	1	1
21	X-6003-8	Conduit, plastic (not shown)	1	1	1	1	1	1	1
22	336215	Plate, cover		1					
22	352995	Plate, cover			1	1			1
23	X-6238-17	Screw, 3/8-16 x 2 1/4		4					
23	X-6051-24	Screw, M10-1 1/2 x 2 3/4	4						
23	X-6050-9	Screw, HHC, M8-1 1/4 x 2 3/16			4	4			4
23	X-125-27	Screw, 5/16-18 x 2 3/4					4	4	
24	X-25-73	Washer, plain	4	4	4	4	4	4	4
25	222929	Guard, radiator					1	1	
25	222945	Guard, radiator		1					
25	352330	Guard, radiator	1						
25	352551	Guard, radiator			1	1			1
26	336072	Guard, belt, bottom (not shown)					1	1	
26	336063	Guard, belt, bottom (not shown)		1					
26	352383	Guard, belt, bottom (not shown)	1						
26	352547	Guard, belt, bottom (not shown)			1	1			1
26	X-6216-1	Screw, #10-24 x 1/2	6						
27	222958	Guard, wire fan					1	1	
27	222979	Guard, wire fan		1					
27	352378	Guard, wire fan	1						
27	352550	Guard, wire fan			1	1			1
28	222983	Bracket, belt guard					1	1	
28	336023	Bracket, belt guard		1					
28	352384	Bracket, belt guard	1						
29	X-6216-1	Screw, hex head					7	7	
29	X-6216-1	Screw, hex head		11					
29	X-6216-1	Screw, hex head			13	13			13
29	X-6216-1	Screw, hex head	12						
30	X-125-23	Screw, 5/16-18 x 0.62, gr. 5			4	4	4	4	4
30	X-125-31	Screw, 5/16-18 x 0.88, gr. 5	4	4					
31	X-125-3	Screw, 5/16-18 x 3/4, gr. 5			6	6	6	6	6
31	X-6238-10	Screw, 3/8-16 X .75	2						
32	X-6365-1	Insert, threaded, 5/16-18		4	4	4	4	4	4
33	352548	Bracket, mounting RH			1	1			1
34	352549	Bracket, mounting bottom			1	1			1
35	X-465-2	Screw, HC	4	4	4	4	4	4	4

Group 104: Cooling System, continued

135-200DSEJ/DSJ



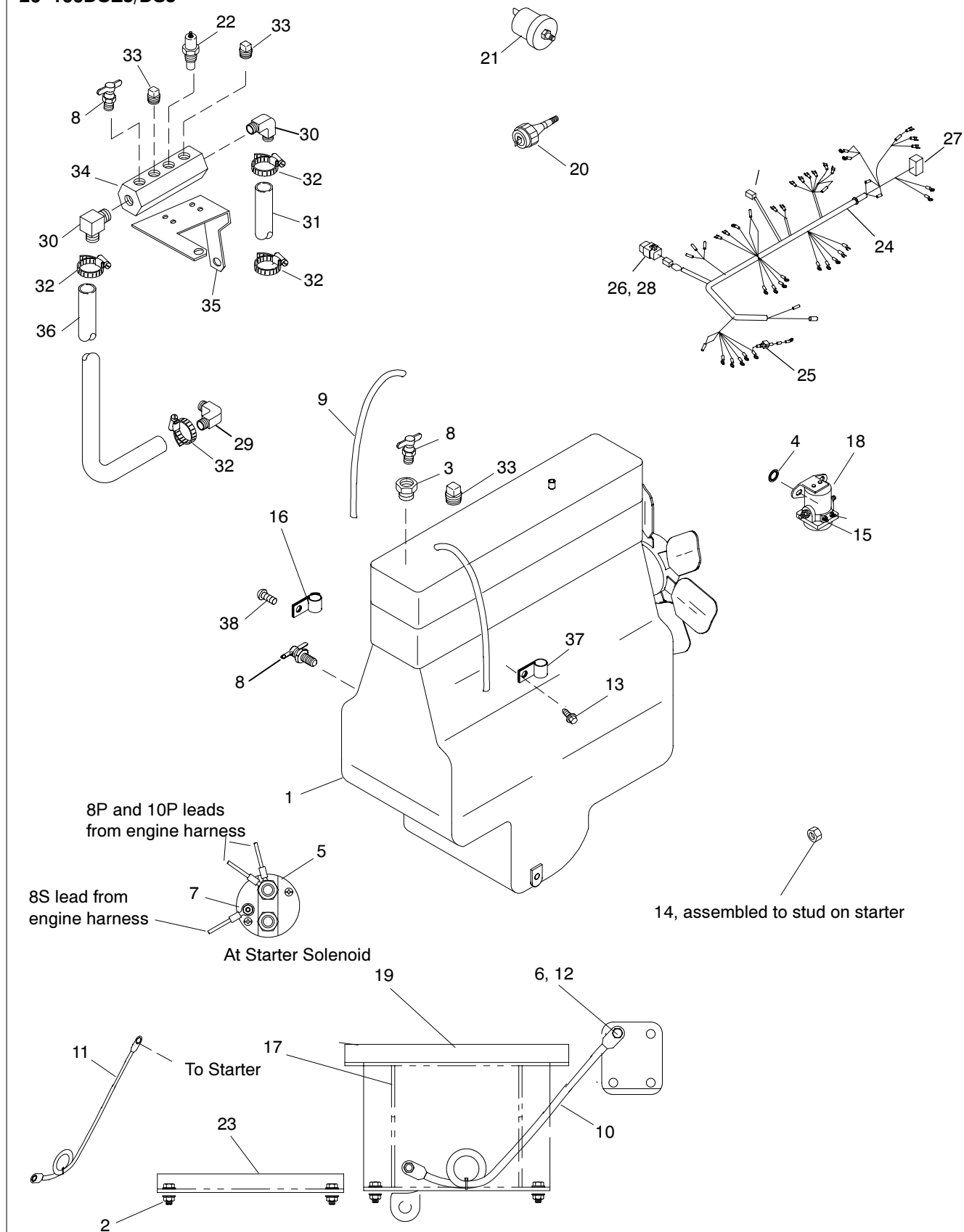
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Group 104: Cooling System, continued

Item	Part Number	Description	Quantity										
			Variation/Kit Number										
			15	16	17	18	19	40	336683	336804	336805	336815	GM11460-MA1
1	A-336663	Radiator assembly	1	1	1	1			1	1	1		
1	A-336856	Radiator assembly										1	
1	GM10988	Radiator assembly					1	1					1
2	352327	Cap, radiator GM26184	1	1	1	1			1	1	1		
2	347715	Cap, radiator					1	1				1	1
4	X-202-47	Bushing, reducer	1	2	1	2	2	1	1	1	2	2	2
5	X-25-75	Washer, plain	4	4	4	4			4	4	4		
5	X-25-73	Washer, plain					8	8				8	8
6	X-256-3	Valve, drain, 1/4	1	1	1	1	1	1	1	1	1	1	1
7	X-426-2	Clamp, hose, 1 7/8-3 5/32	2	2	2	2	2	2	2	2	2	2	2
8	X-426-6	Clamp, hose, 1-9/16 x 2	2	2	2	2	2	2	2	2	2	2	2
9	X-426-9	Clamp, hose	2	2	2	2	2	2	2	2	2	2	2
10	X-6003-8	Conduit, convoluted	1	1	1	1	1	1	1	1	1	1	1
11	X-6365-1	Insert, threaded	4	4	4	4	4	6	4	4	4	4	6
12	X-6359-1	Hose, coolant	1	1	1	1	1		1	1	1	1	1
13	X-652-3	Fitting, hose	2	2	2	2	2	2	2	2	2	2	2
14	X-801-3	Washer, hardened	6	6	6	6	6	6	6	6	6	6	6
15	365289	Sensor, low fluid	1	1	1	1	1	1	1	1	1	1	1
16	276400	Shroud, fan	1	1	1	1			1	1	1		
16	222953	Shroud, fan					1	1				1	1
17	324319	Fan, blower	1	1	1	1			1	1	1		
17	273437	Fan, pusher					1	1				1	1
18	327380	Support, radiator (right)	1		1				1	1			
18	336078	Support, radiator (right)		1		1	1	1			1	1	1
18	360186	Support, radiator (right)						1					
19	327381	Support, radiator (left)	1		1				1	1			
19	336079	Support, radiator (left)		1		1	1	1			1	1	1
19	360187	Support, radiator (left)						1					
20	327379	Guard, radiator	1		1				1	1			
20	336086	Guard, radiator					1	1				1	1
20	336080	Guard, radiator		1		1					1		
20	360188	Guard, radiator						1					
21	336664	Hose, upper radiator	1		1		1	1	1	1	1	1	1
21	336877	Hose, upper radiator		1		1							
22	336878	Hose, lower radiator	1	1	1	1	1	1	1	1	1	1	1
23	336668	Spacer, fan	1		1				1	1			
23	336879	Spacer, fan		1		1	1	1			1	1	1
24	336669	Guard, belt (RS)	1		1				1	1			
24	336881	Guard, belt (RS)		1		1	1	1			1	1	1
25	336670	Guard, belt (LS)	1						1				
25	336882	Guard, belt (LS)		1									
25	336784	Guard, belt (LS)			1					1			
25	336883	Guard, belt (LS)				1	1	1			1	1	1
26	336671	Guard, belt (top)	1		1				1	1			
26	336884	Guard, belt (top)		1		1	1	1			1	1	1
27	336672	Guard, belt (bottom)	1		1				1	1			
27	336885	Guard, belt (bottom)		1		1	1	1			1	1	1
		Guard, belt											
28	336781	(bottom front, not shown)	1	1	1	1	1	1	1	1	1	1	1
		Bracket, mounting											
29	336783	(top, not shown)	1	1	1	1	1	1	1	1	1	1	1
30	336887	Guard, wire fan	1	1	1	1			1	1	1		
30	336888	Guard, wire fan					1	1				1	1
		Bracket											
31	352181	(left mounting, not shown)	1	1	1	1	1	1	1	1	1	1	1
33	X-125-3	Screw, HC	4	4	4	4	4	4	4	4	4	4	4
34	X-125-23	Screw, HC	8	8	8	8	8	8	8	8	8	8	8
35	X-6238-18	Screw, HC	6	6	6	6	6	6	6	6	6	6	6
36	X-125-31	Screw, HC	4	4	4	4	4	4	4	4	4	4	4
37	X-582-32	Connector, hose	1		1			1	1	1	1	1	1

Group 105: Engine

20-100DSEJ/DSJ

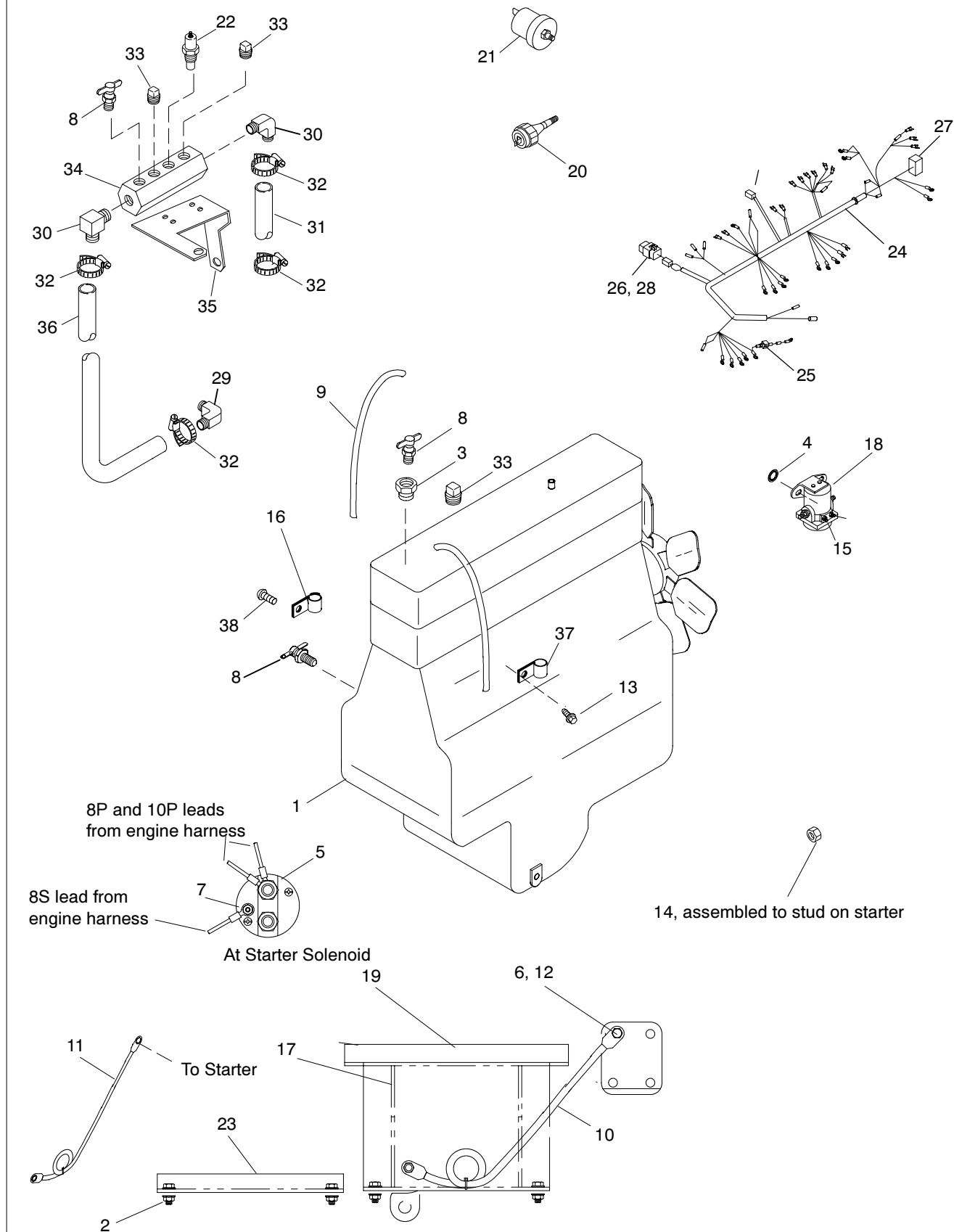


Group 105: Engine

Item	Part Number	Description	Quantity														
			Variation Number														
			73	74	75	76	89	90	92	93	94	95	96	97	99	100	101
1	A-352183	Engine assembly, John Deere	1														
1	A-352185	Engine assembly, John Deere		1													
1	A-352187	Engine assembly, John Deere			1												
1	A-352189	Engine assembly, John Deere				1											
1	A-336405	Engine assembly, John Deere CD6059T					1										
1	A-336406	Engine assembly, John Deere CD6059T						1									
1	A-352184	Engine assembly, John Deere							1								
1	A-352186	Engine assembly, John Deere								1							
1	A-352188	Engine assembly, John Deere									1						
1	A-352190	Engine assembly, John Deere										1					
1	A-352538	Engine assembly, John Deere											1				
1	A-352539	Engine assembly, John Deere												1			
1	A-336403	Engine assembly, CD4039D													1		
1	A-336404	Engine assembly, CD4039TF														1	
1	A-336559	Engine assembly, John Deere															1
2	X-101-4	Nut, hex elastic stop, 5/16-24	2	4	2	4	2	2	2	2	2	2	2	2	2	2	2
3	X-202-12	Bushing, reducing, 1/4 x 1/2 in. NPT	1	1	1	1	1	1									
4	X-22-12	Washer, lock, .262 ID x .743 in. OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	X-22-4	Washer, lock, .521 ID x .884 in. OD	1	1	1	1	1	1									
6	X-22-4	Washer, lock, .521 ID x .884 in. OD	1	1	1	1									1	1	1
6	X-22-26	Washer, lock, .521 ID x 1.24 in. OD					1	1	1	1	1	1	1	1			
7	X-22-9	Washer, lock, .20 ID x .373 in. OD	1	1	1	1	1	1									
8	X-256-3	Valve, drain, 1/4 in. NPT	1	1	1	1	2	2							1	1	1
8	X-256-5	Valve, drain							1	1	1	1	1	1	1	1	1
9	X-373-13	Hose, molded, .75 in. ID	1	1	1	1											
10	X-545-111	Lead, battery cable, no. 2, 34 in.	1		1												
10	X-545-97	Lead, battery cable, no. 2, 20 in.		1		1	1	1	1	1	1	1	1	1	1	1	1
11	X-545-132	Lead, battery cable, no. 2, 60 in.	1	1	1	1											
11	X-545-101	Lead, battery cable, no. 2, 24 in.					1	1									
11	X-545-100	Lead, battery cable, no. 2, 50 in.							1		1		1				
11	X-545-99	Lead, battery cable, no. 2, 50 in.								1		1		1	1	1	1
11	X-545-71	Lead, battery cable, 16 in. (not shown)		1		1											
11	280133	Lead, battery cable, 8.5 in. (not shown)								1		1		1			
12	X-6052-1	Screw, hex head machine	1	1	1	1			2	2	2		2	2			
12	X-129-15	Screw, hex head machine					1	1									
12	X-125-23	Screw, hex head machine													1	1	1
12	X-6051-3	Screw, hex head machine							1	1	1	1	1	1			
13	X-6052-7	Screw, hex head machine	2	2	2	2				1	1	1	1	1			
13	X-6052-1	Screw, hex head machine							1	1	1	1	1	1			
13	X-125-23	Screw, hex head machine													1	1	1
14	X-6053-4	Nut, hex, M12-1.75	1	1	1	1											
14	X-6053-11	Nut, spiralock, M10-1.38							1	1	1	1	1	1	1	1	1
15	X-6214-2	Cap	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	X-672-3	Clamp, insulating	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
17	274200	Bolt, 5/16-24 x 10.75 in.	2	4	2	4											
17	360491	Bolt, angle					2	2	2		2		2		2	2	2
17	254673	Bolt, 5/16-24 x 5.5 in.								2		2		2			
18	291891	Solenoid	1		1		1	1	1		1		1		1	1	1
18	268371	Relay		1		1				1		1		1			
19	324725	Clamp, battery	1	2	1	2			1		1		1				
19	324033	Clamp, battery					1	1							1	1	1
19	352537	Clamp, battery								1		1		1			
20	328309	Switch assembly, pressure	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	343473	Sender, oil pressure	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Group 105: Engine, continued

20-100DSEJ/DSJ

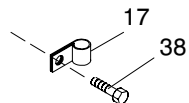
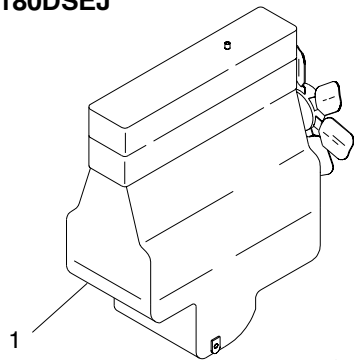


Group 105: Engine, continued

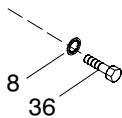
Item	Part Number	Description	Quantity														
			Variation Number														
			73	74	75	76	89	90	92	93	94	95	96	97	99	100	101
22	352337	Switch, sensor	1	1	1	1			1	1	1	1	1	1			
22	352505	Switch, sensor					1	1							1	1	1
23	352344	Rack, battery, 12 V	1	1	1	1											
23	352345	Rack, battery, 24 V		1		1											
23	324017	Rack, battery					1	1							1	1	1
23	352535	Rack, battery, 12 V							1		1		1				
23	352537	Rack, battery, 24 V								1							
23	360422	Rack, battery, 24 V										1					
23	360423	Rack, battery, 24 V												1			
24	352350	Wiring harness, engine, 80/100 kW	1	1	1	1											
24	352506	Wiring harness, engine, 20/60 kW JD					1	1									
24	352542	Wiring harness, engine, 20/60 kW JD							1	1	1	1	1	1			
24	352703	Wiring harness													1	1	
24	360756	Wiring harness															1
25	233959	Diode, 6 A	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
26	292800	Connector, cable	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	292879	Terminal, socket, female, 20-24 AWG	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
28	295145	Connector, 24-position	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	X-391-15	Fitting, hose connector, 90 deg.													1	1	
30	X-391-21	Fitting, hose connector, 90 deg.													2	2	
31	X-422-6	Fuel line, flexible													1	1	
32	X-426-10	Clamp, hose, .5/1 in.													2	2	
33	X-75-28	Plug, pipe 1/2 in.													2	2	
34	273659	Manifold, water temperature switch													1	1	
35	275529	Bracket, mounting													1	1	
36	276574	Hose, molded													1	1	
37	X-672-31	Clamp, insulating							1	1	1	1	1	1	1	1	1
38	X-129-15	Screw, hex head machine					1	1									
38	X-6051-3	Screw, hex head machine							1	1	1	1	1	1			
38	X-125-23	Screw, hex head machine													1	1	1

Group 105: Engine, continued

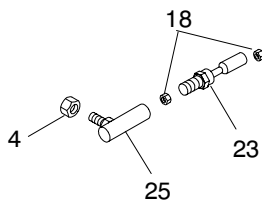
135-180DSEJ



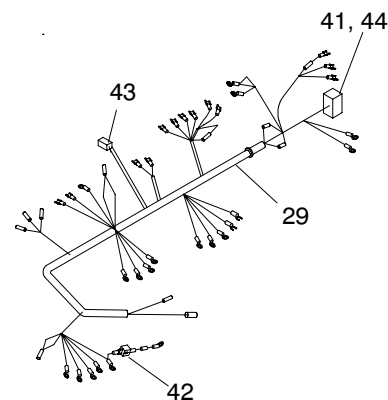
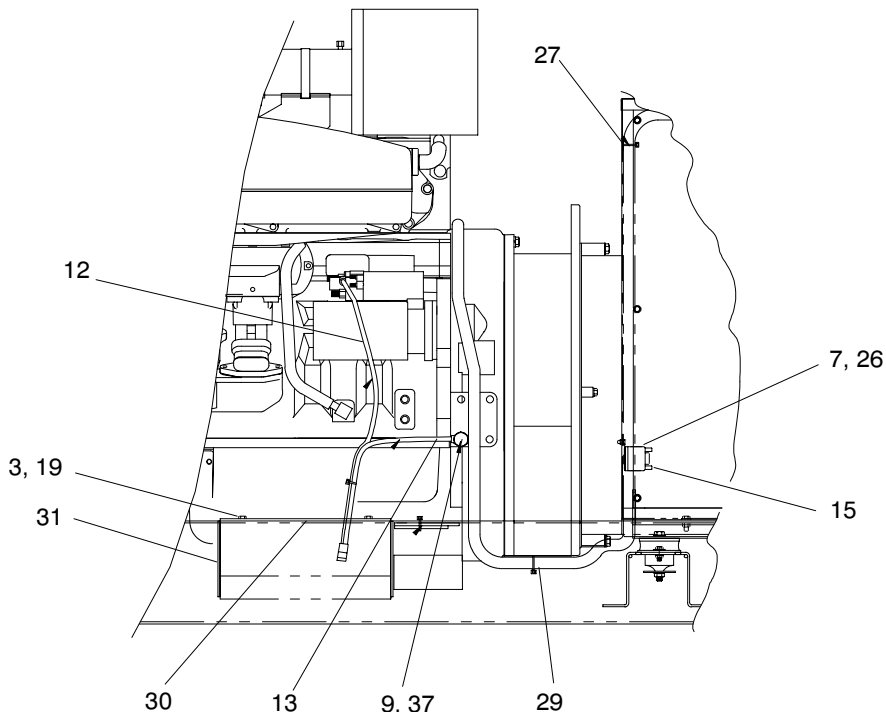
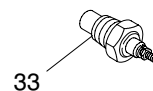
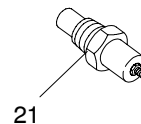
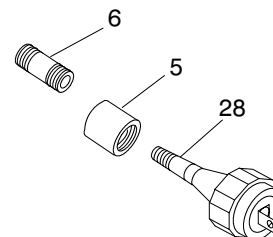
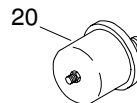
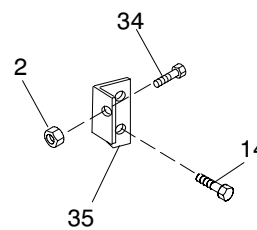
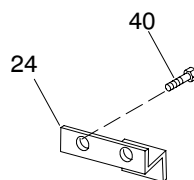
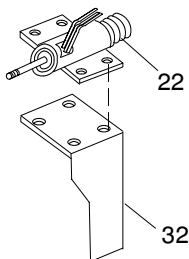
Breather Hose Mounting



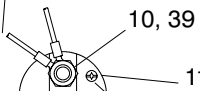
Ground Leads
(near fuel filter)



Item 16 not shown.



Leads 10P and 8P
from engine harness



Lead 8S from
engine harness

End View of Starter Solenoid

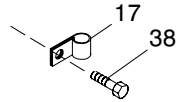
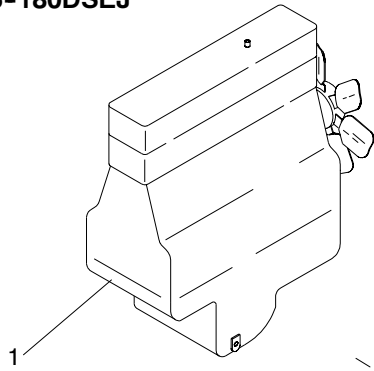
5828_105

Group 105: Engine, continued

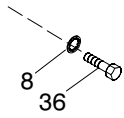
Item	Part Number	Description	Quantity								
			Variation Number								
			45	46	47	48	49	50	51	52	53
1	A-336644	Engine assembly (6081TF)	1								
1	A-336787	Engine assembly (6081TF)		1							
1	A-336790	Engine assembly (6081TF)			1						
1	A-336645	Engine assembly (6081AF)				1					
1	A-336788	Engine assembly (6081AF)					1				
1	A-336791	Engine assembly (6081AF)						1			
1	A-336792	Engine assembly (6081AF)							1		
1	A-336646	Engine assembly (6081AF)								1	
1	A-336789	Engine assembly (6081AF)									1
2	X-101-16	Nut, elastic stop, 5/16-18	1	1	1	1	1	1	1	1	1
3	X-101-4	Nut	2	2	2	2	2	2	2	2	2
4	X-101-7	Nut, lock	1	1	1	1	1	1	1	1	1
5	X-216-24	Coupling, pipe, 1/8 x 1 3/16	1	1	1	1	1	1	1	1	1
6	X-217-6	Nipple, pipe, 1/8 x 3/4	1	1	1	1	1	1	1	1	1
7	X-22-12	Washer, shakeproof	2	2	2	2	2	2	2	2	2
8	X-22-15	Washer, lock			1			1	1	1	1
8	X-22-26	Washer, lock, 1/2	2	2		2	2				
9	X-22-30	Washer, shakeproof			1			1	1	1	1
10	X-22-4	Washer, lock, shakeproof	1	1	1	1	1	1	1	1	1
11	X-22-9	Washer, lock, no. 10	1	1	1	1	1	1	1	1	1
12	X-545-12	Cable, battery, 36 in.	1	1	1	1	1	1	1	1	1
13	X-545-60	Cable, battery	1	1		1	1				
13	X-545-122	Cable, battery			1			1	1	1	1
14	X-6049-2	Screw, HC, M6 x 1 x 16	2	2	2	2	2	2	2	2	2
15	X-6214-2	Cap, plastic	1	1	1	1	1	1	1	1	1
16	X-672-3	Clamp, insulating (not shown)				1					1
17	X-672-32	Clamp, insulated	1	1	1	1	1	1	1	1	1
18	X-81-9	Nut, hex	2	2	2	2	2	2	2	2	2
19	254674	Bolt, angle	2	2	2	2	2	2	2	2	2
20	343473	Sender, oil pressure	1	1	1	1	1	1	1	1	1
21	268298	Sender, water temperature	1	1	1	1	1	1	1	1	1
22	273716	Solenoid, fuel shutoff	1	1	1	1	1	1	1	1	1
23	273731	Joint, ball	1	1	1	1	1	1	1	1	1
24	275546	Bracket, throttle	1	1	1						
24	336779	Bracket, throttle				1	1	1	1	1	1
25	276570	Joint, ball	1	1	1	1	1	1	1	1	1
26	291891	Solenoid, starter	1	1	1	1	1	1	1	1	1
27	298776	Base, tie wrap	1	1	1	1	1	1	1	1	1
28	328309	Switch assembly, oil pressure	1	1	1	1	1	1	1	1	1
29	336609	Harness, wiring	1	1		1	1				
29	336610	Harness, wiring			1			1	1	1	1
30	336673	Clamp, battery	1	1		1	1	1	1	1	1
31	352401	Rack, battery	1	1	1	1	1	1	1	1	1
32	336776	Bracket, solenoid mounting	1	1	1						
32	336777	Bracket, solenoid mounting				1	1	1	1	1	1
33	336923	Switch, high temperature shutdown	1	1	1	1	1	1	1	1	1
34	336851	Screw, special				1	1	1	1	1	1
35	336780	Bracket, throttle				1	1	1	1	1	1
36	X-6024-2	Screw, HC								1	1
37	X-6021-3	Screw, HC								1	1
38	X-6238-10	Screw, HC								1	1
39	X-6351-4	Nut, hex, M12 x 1.75								1	1
40	X-125-3	Screw, HC								1	1
41	295145	Connector, 24-position	1	1	1	1	1	1	1	1	1
42	233959	Diode, 6 A, 100 V	1	1	1	1	1	1	1	1	1
43	254986	Plug	1	1	1	1	1	1	1	1	1
44	292800	Connector, cable	1	1	1	1	1	1	1	1	1

Group 105: Engine, continued

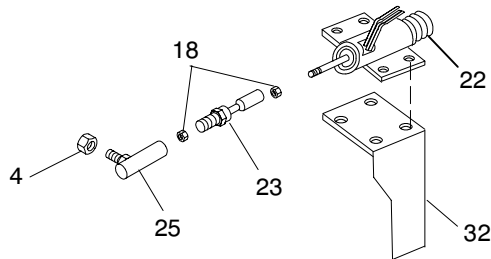
135-180DSEJ



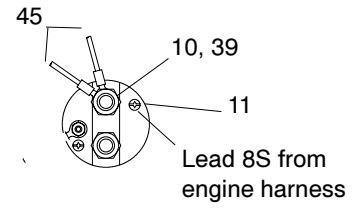
Breather Hose Mounting



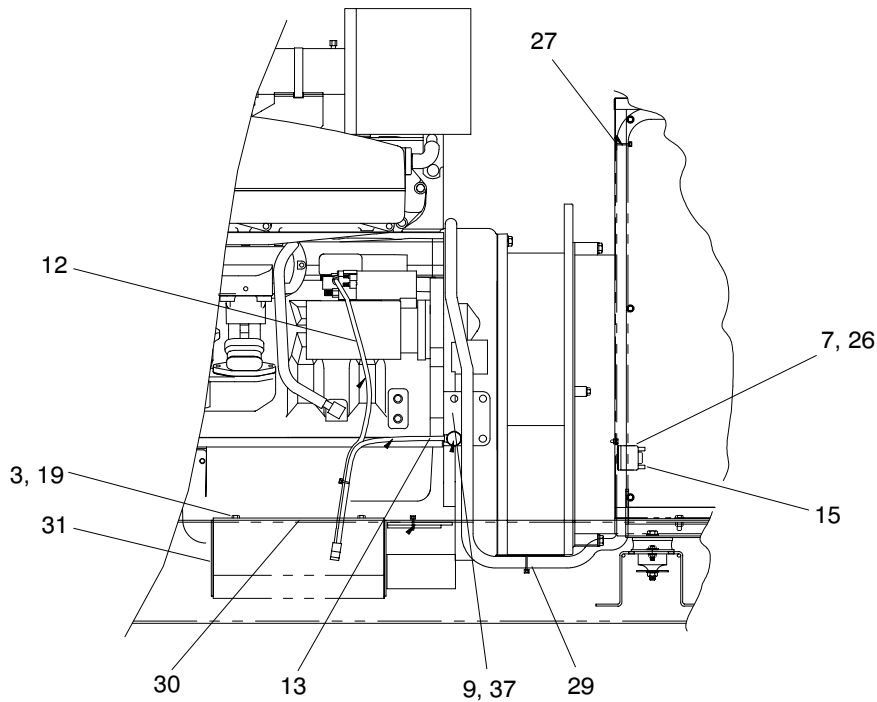
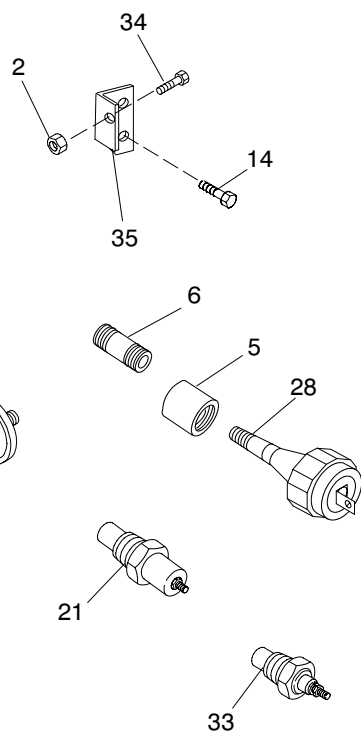
Ground Leads
(near fuel filter)



Item 16 not shown.



End View of Starter Solenoid



5828_105

Group 105: Engine, continued

Item	Part Number	Description	Quantity												
			Variation Number												
			59	60	61	62	63	64	65	66	108	109	110	115	123
1	A-336897	Engine assembly (6081TF)	1												
1	A-336901	Engine assembly (6081TF)		1											
1	A-336898	Engine assembly (6081AF)			1										
1	A-336902	Engine assembly (6081AF)				1									
1	A-336899	Engine assembly (6081AF)					1								
1	A-336903	Engine assembly (6081AF)						1							
1	A-336900	Engine assembly (6081AF)							1						
1	A-336904	Engine assembly (6081AF)								1					
1	A-336644	Engine assembly (6081TF)									1				
1	A-336645	Engine assembly (6081AF)										1			
1	A-336646	Engine assembly (6081AF)											1		
1	GM10961	Engine assembly (6081AF)												1	
1	GM15318	Engine assembly (6081AF)													1
2	X-101-16	Nut, elastic stop, 5/16-18			1	1	1	1	1	1		1	1	1	1
3	X-101-4	Nut	3	3	3	3	3	3	3	2	2	2	2	3	3
4	X-101-7	Nut, lock	1	1	1	1	1	1	1	1	1	1	1	1	1
5	X-216-24	Coupling, pipe, 1/8 x 1 3/16	1	1	1	1	1	1	1	1	1	1	1	1	1
6	X-217-6	Nipple, pipe, 1/8 x 3/4	1	1	1	1	1	1	1	1	1	1	1	1	1
7	X-22-12	Washer, shakeproof	2	2	2	2	2	2	2	2	2	2	2	2	2
8	X-22-15	Washer, lock					1	1	1	1			1	1	1
8	X-22-26	Washer, lock, 1/2	2	2	2	2					2	2	2		
9	X-22-30	Washer, shakeproof					2	2	2	2			1	1	1
10	X-22-4	Washer, lock, shakeproof	1	1	1	1	1	1	1	1		1	1	1	1
11	X-22-9	Washer, lock, no. 10	1	1	1	1	1	1	1	1		1	1	1	1
12	X-545-12	Cable, battery, 36 in.	1	1	1	1	1	1	1	1	1	1	1	1	1
13	X-545-60	Cable, battery	1	1	1	1					1	1			
13	X-545-122	Cable, battery					1	1	1	1			1	1	1
14	X-6049-2	Screw, HC, M6 x 1 x 16	2	2	2	2	2	2	2	2	2	2	2	2	2
15	X-6214-2	Cap, plastic	1	1	1	1	1	1	1	1	1	1	1	1	1
16	X-672-3	Clamp, insulating (not shown)													
17	X-672-32	Clamp, insulated	1	1	1	1	1	1	1	1	1	1	1	1	1
18	X-81-9	Nut, hex	2	2	2	2	2	2	2	2	2	2	2	2	2
19	274200	Bolt, angle			1	1	1	1	1	1				1	1
19	254674	Bolt, angle	2	2	2	2	2	2	2	2	2	2	2	2	2
20	343473	Sender, oil pressure	1	1	1	1	1	1	1	1	1	1	1	1	1
21	268298	Sender, water temperature	1	1	1	1	1	1	1	1	1	1	1	1	1
22	227262	Solenoid, fuel shutoff	1	1	1	1	1	1	1	1	1			1	1
22	273716	Solenoid, fuel shutoff									1	1	1		
23	273731	Joint, ball	1	1	1	1	1	1	1	1	1	1	1	1	1
24	275546	Bracket, throttle	1	1							1				
24	336779	Bracket, throttle			1	1	1	1	1	1		1	1	1	1
26	280133	Cable, jumper			1	1	1	1	1	1				1	1
25	276570	Joint, ball	1	1	1	1	1	1	1	1	1	1	1	1	1
26	268371	Solenoid, starter	1	1	1	1	1	1	1	1				1	1
26	291891	Solenoid, starter									1	1	1		
27	298776	Base, tie wrap	1	1	1	1	1	1	1	1	1	1	1	1	1
28	328309	Switch assembly, oil pressure	1	1	1	1	1	1	1	1	1	1	1	1	1
29	336609	Harness, wiring	1	1	1	1									
29	336610	Harness, wiring					1	1	1	1	1	1	1	1	1
29	X-284-23	Grommet (not shown)									1	1	1		
29	X-672-13	Clamp, insulating (not shown)									1	1	1		
30	336198	Clamp, battery	1	1	1	1	1	1	1	1	1	1	1	1	1
30	336673	Clamp, battery									1	1	1		
31	354402	Rack, battery	1		1	1	1	1	1	1				1	1
31	354401	Rack, battery									1	1	1		
31	336073	Rack, battery												1	1
32	336776	Bracket, solenoid mounting	1	1							1	1	1		
32	336777	Bracket, solenoid mounting			1	1	1	1	1	1		1	1	1	1
33	336923	Switch, high temperature shutdown	1	1	1	1	1	1	1	1	1	1	1	1	1
34	336851	Screw, special			1	1	1	1	1	1		1	1	1	1
35	336780	Bracket, throttle			1	1	1	1	1	1		1	1	1	1
36	X-6024-2	Screw, HC								1	1	1	1	1	1
37	X-6021-3	Screw, HC								1	1	1	1	1	1
38	X-6238-10	Screw, HC								1	1	1	1	1	1
39	X-6351-4	Nut, hex, M12 x 1.75								1	1	1	1	1	1
40	X-125-3	Screw, HC								1	1	1	1	1	1
41	295145	Connector, 24-position	1	1	1	1	1	1	1	1	1	1	1	1	1
42	233959	Diode, 6 A, 100 V	1	1	1	1	1	1	1	1	1	1	1	1	1
43	254986	Plug	1	1	1	1	1	1	1	1	1	1	1	1	1
44	292800	Connector, cable	1	1	1	1	1	1	1	1	1	1	1	1	1
45	GM11941	Harness, J.D. 24 V starter	1	1	1	1	1	1	1	1	1	1	1	1	1

Notes

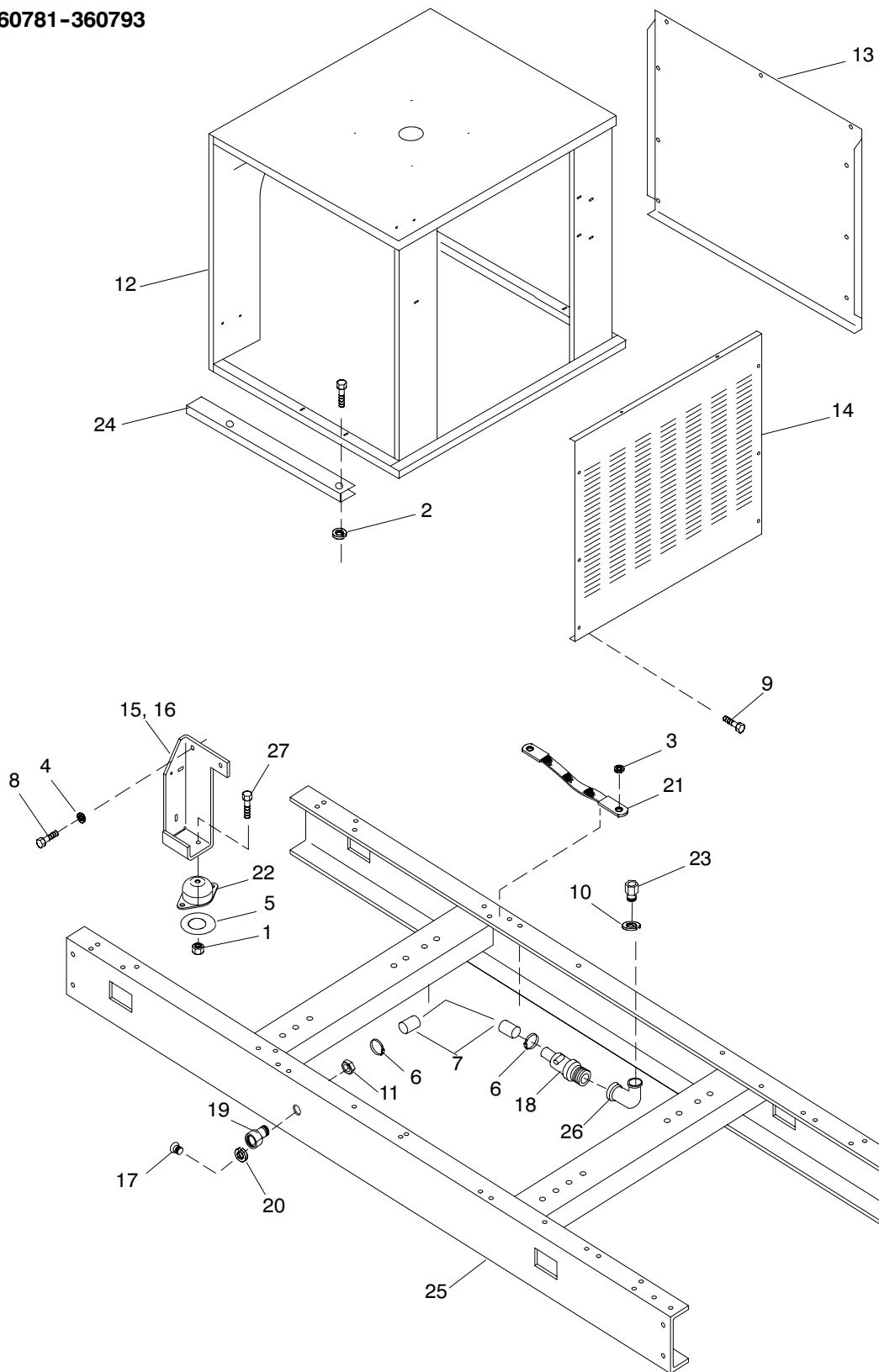
Group 107: Nameplate and Decals

Item	Part Number	Description	Quantity			
			Variation Number			
			59	60	61	GR2
1	X-6301-1	Decal	3	3	1	
2	X-6301-3	Decal, Spectrum		1	3	2
3	X-6302-1	Decal, Spectrum		1	3	2
4	238402	Decal, positive terminal	1	1	1	1
5	249808	Decal, warning rotating parts	1	1	1	1
6	249809	Decal, warning hot engine	1	1	1	1
7	249810	Decal, warning	1	1	1	1
8	257437	Decal, warning unbalanced weight	1	1	1	
9	257438	Decal, warning hazardous voltage/moving rotor	3	3	2	3
10	257441	Decal, warning unbalanced weight	3	3	1	2
11	258815	Decal, warning backfeed	1	1	1	1
12	259365	Decal, backfeed	1	1	1	
13	273780	Decal, warning	1	1	1	
14	324069	Nameplate	1	1	1	1
15	GM13776	Decal, generator connection				1

Group 109: Skid and Plant Mounting

20-100DSEJ/DSJ

Modules 360781-360793



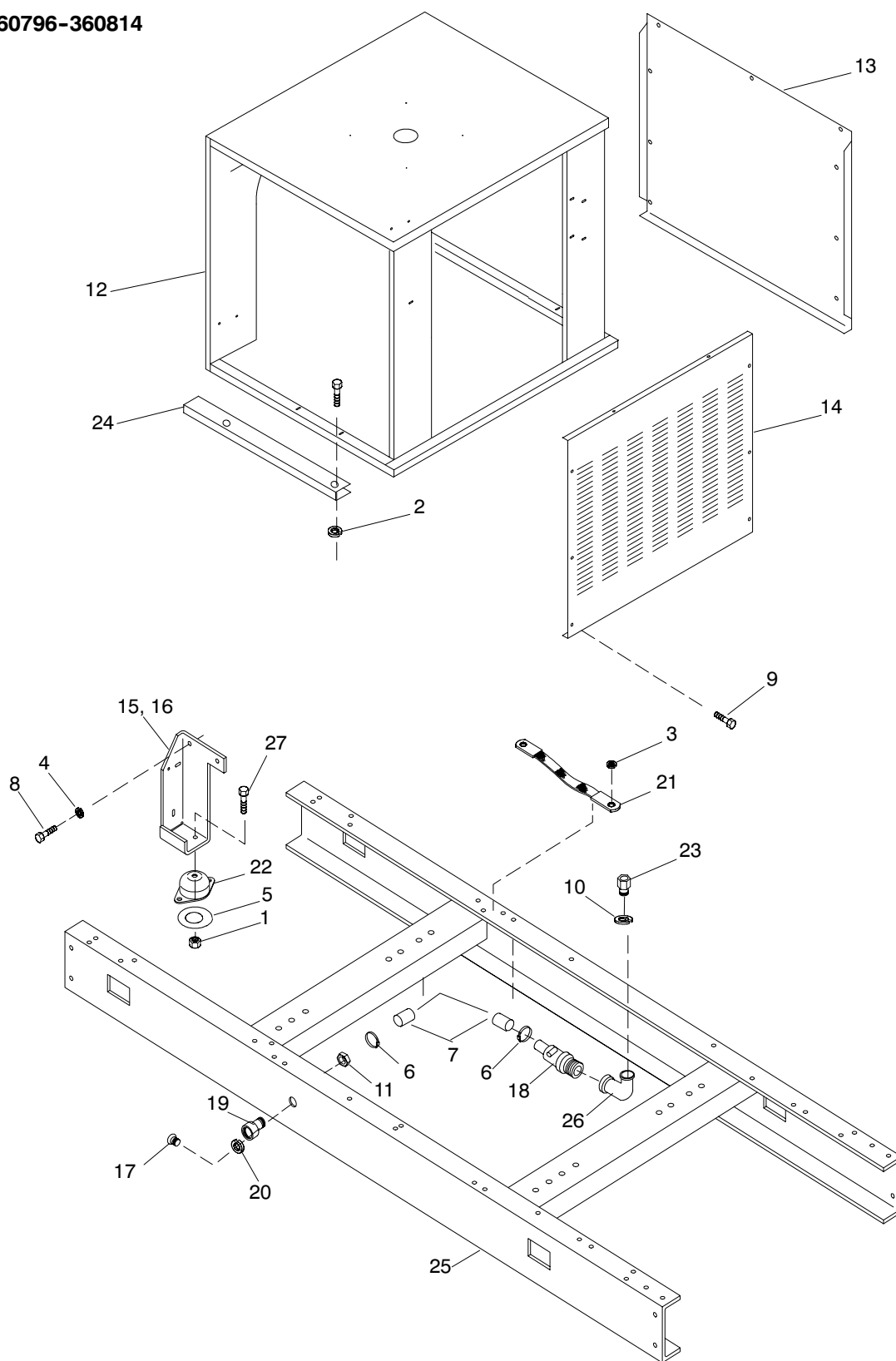
Group 109: Skid and Plant Mounting

Item	Part Number	Description	Quantity				
			Module Number				
			360781	360785	360789	360790	360793
1	X-101-23	Nut, hex elastic stop, 1/2-13	2	2	2	2	
1	X-101-15	Nut, hex elastic stop, 5/8-11					2
2	X-22-14	Washer, lock, .391 ID x .975 in. OD	4	4	2	2	4
3	X-22-16	Washer, lock, .326 ID x .883 in. OD	4	4	4	4	4
4	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	2	2	2	2	2
5	X-25-140	Washer, plain, .531 ID x 2 in. OD	2	2	2	2	
5	X-25-112	Washer, plain					2
6	X-426-10	Clamp, hose, .5/1 in.	2	2	2	2	2
7	X-577-8	Hose, rubber, straight, .62 in. ID	1	1	1	1	
7	X-577-47	Hose, rubber, straight, .62 in. ID					1
7	X-577-9	Hose, rubber, straight, .62 in. ID					
7	X-577-38	Hose, rubber, straight, .62 in. ID					
8	X-6069-7	Screw, hex head machine	4	4	4	4	4
9	X-6216-1	Screw, Phillips hex crimp	12	12	12	12	12
10	X-6278-7	Washer, nylon, .75 ID x 1.063 in. OD	1	1	1	1	1
11	X-80-1	Nut, hex jam, 1 1/4	1	1	1	1	1
12	222823	Box, junction	1	1			
12	222824	Box, junction			1	1	1
13	222833-SD	Cover, side	1	1			
13	222835-SD	Cover, side			1	1	1
14	222834-SD	Cover, rear	1	1			
14	222836-SD	Cover, rear			1	1	1
15	222940	Support, engine (RS)	1	1	1	1	
15	352343	Support, engine (RS)					1
15	222989	Support, engine (RS)					
16	222941	Support, engine (LS)	1	1	1	1	
16	352357	Support, engine (LS)					1
16	222990	Support, engine (LS)					
17	241062	Plug, drain	1	1	1	1	1
18	272701	Valve, oil drain	1	1	1	1	1
19	273729	Adapter, hose	1	1	1	1	1
20	276552	Washer, nylon, .878 ID x 1.132 in. OD	1	1	1	1	1
21	290418	Strap, ground	1	1	1	1	1
22	324073	Vibromount	2	2	2	2	
22	324389	Vibromount					2
22	336022	Vibromount					
23	352360	Adapter, bushing	1	1	1	1	1
24	352625	Support, junction box	2	2			
24	352343	Bracket, junction box mounting					2
25	352524	Skid	1				
25	360424	Skid		1			
25	352540	Skid			1		
25	360425	Skid				1	
25	352329	Skid					1
25	222926	Skid					
25	336530	Skid					
25	352502	Skid					
26	X-211-1	Fitting, elbow, street, 1/2 in.					1
27	X-6021-12	Screw, hex head machine					1
27	X-129-23	Screw, hex head machine	1	1	1	1	

Group 109: Skid and Plant Mounting, continued

20-100DSEJ/DSJ

Modules 360796-360814

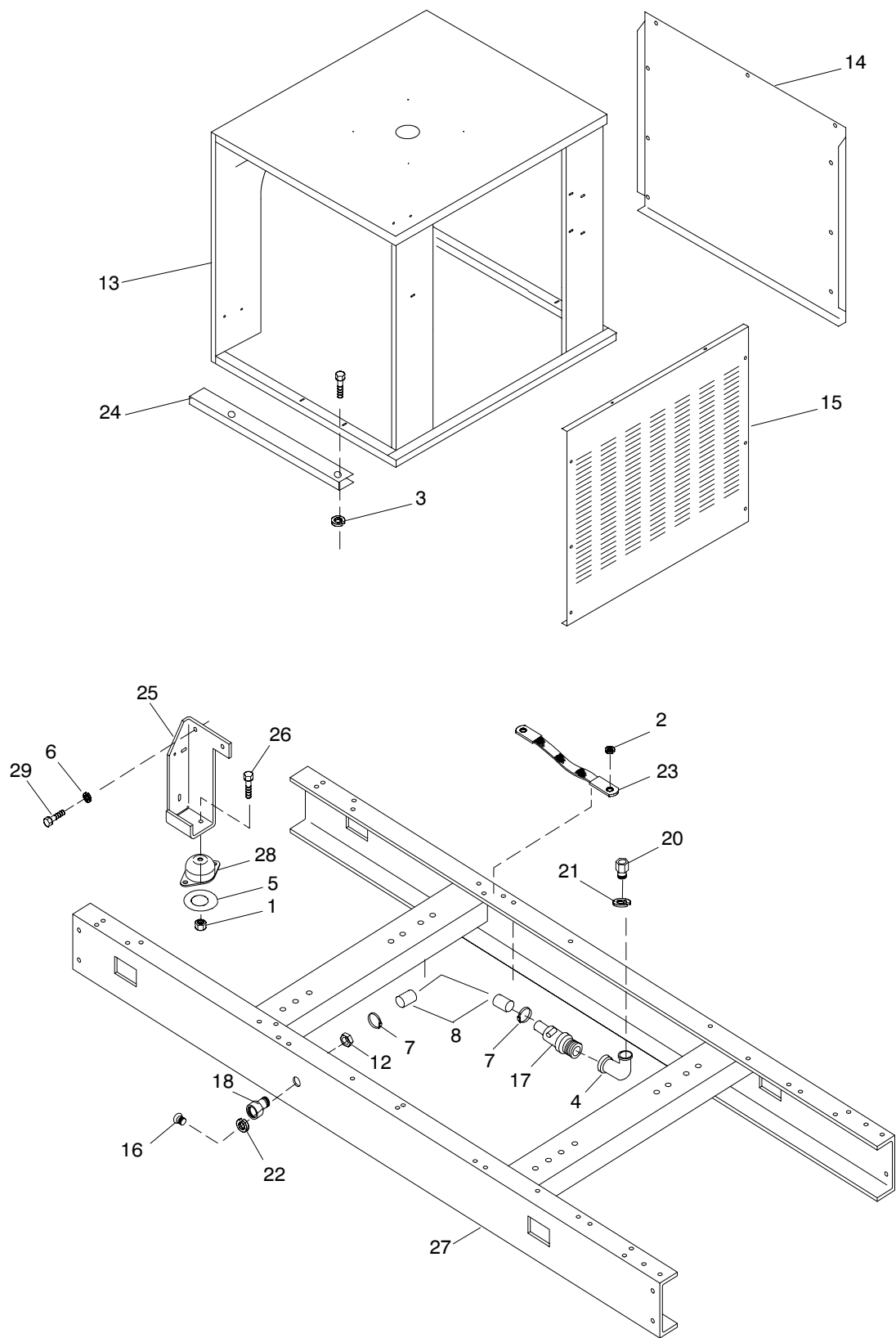


Group 109: Skid and Plant Mounting, continued

Item	Part Number	Description	Quantity				
			Module Number				
			360796	360798	360809	360812	360814
1	X-101-23	Nut, hex elastic stop, 1/2-13		2	2		
1	X-101-15	Nut, hex elastic stop, 5/8-11	2			2	2
2	X-22-14	Washer, lock, .391 ID x .975 in. OD	4	2	2	2	2
3	X-22-16	Washer, lock, .326 ID x .883 in. OD	4	4	4	4	4
4	X-22-26	Washer, lock, .521 ID x 1.24 in. OD	2	2	2	2	2
5	X-25-140	Washer, plain, .531 ID x 2 in. OD		2	2		
5	X-25-112	Washer, plain	2			2	2
6	X-426-10	Clamp, hose, .5/1 in.	2	2	2	2	2
7	X-577-8	Hose, rubber, straight, .62 in. ID					
7	X-577-47	Hose, rubber, straight, .62 in. ID	1				
7	X-577-9	Hose, rubber, straight, .62 in. ID		1	1		
7	X-577-38	Hose, rubber, straight, .62 in. ID				1	1
8	X-6069-7	Screw, hex head machine	4				
9	X-6216-1	Screw, Phillips hex crimp	12	12	12	12	12
10	X-6278-7	Washer, nylon, .75 ID x 1.063 in. OD	1				
11	X-80-1	Nut, hex jam, 1 1/4	1	1	1	1	1
12	222823	Box, junction		1			
12	222824	Box, junction	1		1	1	1
13	222833-SD	Cover, side		1			
13	222835-SD	Cover, side	1		1	1	1
14	222834-SD	Cover, rear		1			
14	222836-SD	Cover, rear	1		1	1	1
15	222940	Support, engine (RS)		1	1		
15	352343	Support, engine (RS)	1				
15	222989	Support, engine (RS)				1	1
16	222941	Support, engine (LS)		1	1		
16	352357	Support, engine (LS)	1				
16	222990	Support, engine (LS)				1	1
17	241062	Plug, drain	1	1	1	1	1
18	272701	Valve, oil drain	1	1	1	1	1
19	273729	Adapter, hose	1	1	1	1	1
20	276552	Washer, nylon, .878 ID x 1.132 in. OD	1	1	1	1	1
21	290418	Strap, ground	1	1	1	1	1
22	324073	Vibromount		2	2		
22	324389	Vibromount				2	
22	336022	Vibromount	2				2
23	352360	Adapter, bushing	1			1	1
24	352625	Support, junction box					
24	352343	Bracket, junction box mounting	2				
25	352524	Skid					
25	360424	Skid					
25	352540	Skid					
25	360425	Skid					
25	352329	Skid	1				
25	222926	Skid		1			
25	336530	Skid			1		
25	352502	Skid				1	1
26	X-211-1	Fitting, elbow, street, 1/2 in.	1			1	1
27	X-6021-12	Screw, hex head machine	1			1	1
27	X-129-23	Screw, hex head machine		1	1		

Group 109: Skid and Plant Mounting, continued

135-180DSEJ



5613109A

HF-255000

Group 109: Skid and Plant Mounting, continued

Item	Part Number	Description	Quantity						
			Variation/Kit Number						
			20	21	22	40	41	50	MA1S
1	X-101-15	Nut, elastic stop, 5/8-11	2	2	2	2	2	2	2
2	X-22-16	Washer, lock, 5/16	4	4	4	4	4	4	4
3	X-22-14	Washer, 3/8		4	4	4	4		4
4	X-211-1	Elbow, street, 1/2	1	1	1	1	1	1	1
5	X-25-112	Washer, plain	2	2	2	2	2	2	2
6	X-22-30	Washer, 5/8	1	1	1	1	1	1	1
7	X-426-3	Clamp, hose		2	2	2	2		2
7	X-426-10	Clamp, hose	2					2	
8	X-577-28	Hose, 0.625 in. x 17 in.	1					1	
8	X-577-24	Hose, 0.625 in. x 21 in.		1		1			1
8	X-577-18	Hose, 0.625 in. x 25 in.			1		1		
12	X-80-1	Nut, hex	1	1	1	1	1	1	1
13	222825	Box, junction	1						
13	222844	Box, junction		1	1	1	1		1
14	222835	Cover, side	2						
14	336001	Cover, side		2	2	2	2		2
15	222838	Cover, rear	1						
15	336004	Cover, rear		1	1	1	1		1
16	241062	Plug, drain	1	1	1	1	1	1	1
17	272701	Valve, oil drain	1	1	1	1	1	1	1
20	273857	Adapter, oil drain	1	1	1	1	1	1	1
21	273918	O-ring	1	1	1	1	1	1	1
22	276552	Washer, nylon	1	1	1	1	1	1	1
23	290418	Strap, ground	1	1	1	1	1	1	1
24	336085	Bracket, junction box		2	2	2	2		2
25	336666	Bracket, engine mounting	2					2	
25	336811	Bracket, engine mounting		2	2	2	2		2
26	X-6021-12	Screw, HC	2	2	2	2	2	2	2
27	336667	Skid	1					1	
27	336810	Skid		1		1			
27	336895	Skid			1		1		1
27	360184	Skid						1	
28	336813	Vibromount	2	2	2	2	2	2	2
29	X-6021-6	Screw, HC	8	8	8	8	8	8	8

Modular Spec Cross-Reference Table

Some modular generator specs listed in the specification number index require a skid and mounting kit. Refer to the generator set nameplate to identify the skid and mounting kit number installed on your generator set. Use the following table to identify the equivalent variation number. The kit's parts list matches the parts list for the equivalent variation number.

Skid and Mounting Kit Number	Equivalent Variation Number
336685	20
336816	21
352410	40
GM11478-MA1S	MA1S

Notes

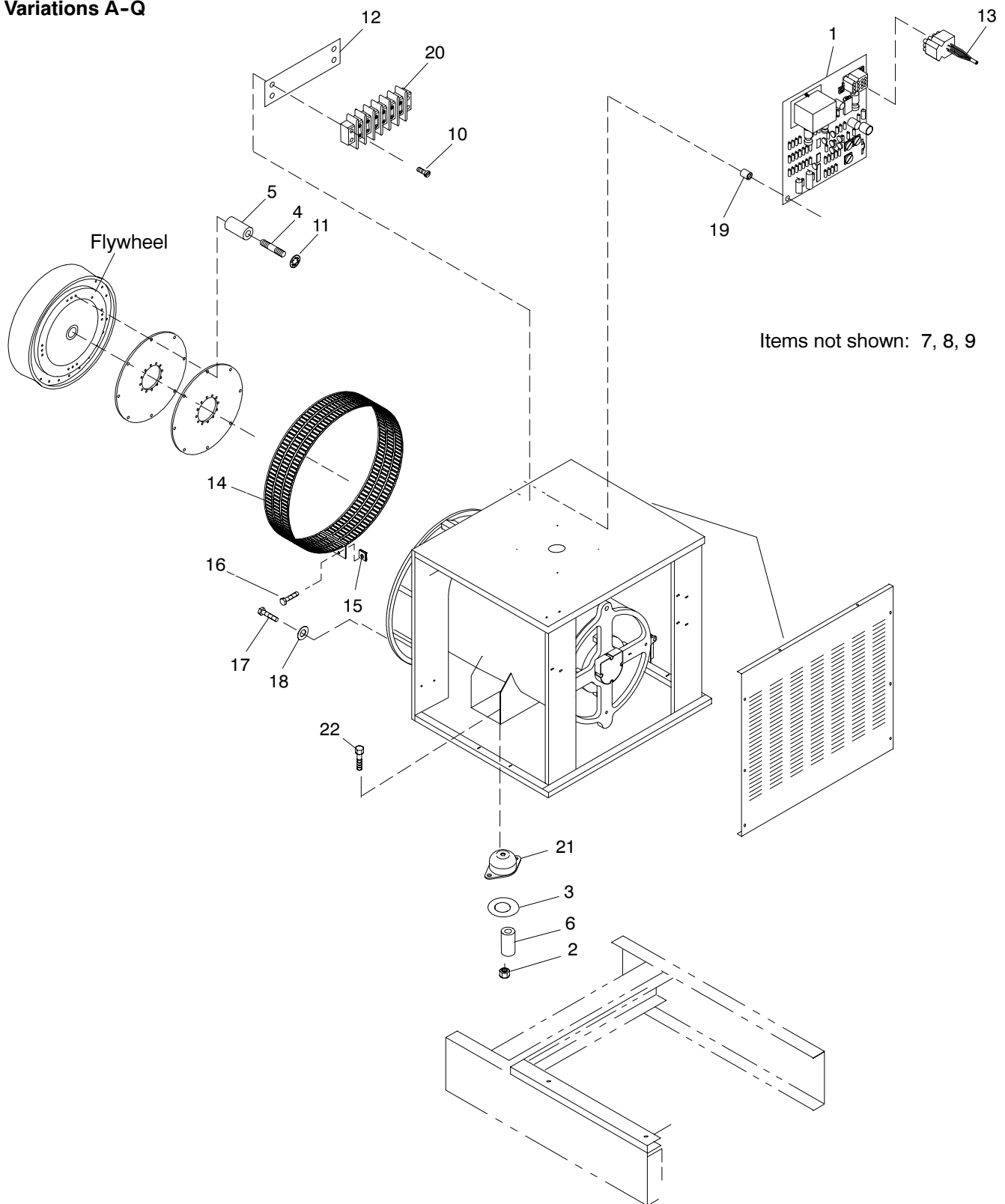
Group 119: Recommended Spare Parts

Item	Part Number	Description	Quantity						
			Variation Number						
			14	16	19	21	23	27	28
1	223640	Belt Set	1	1					
1	224263	Belt Set	1						
2	253107	Element, air cleaner	4					4	4
3	223953	Filter, fuel			4	4	4		
3	224299	Filter, fuel	4						
4	223965	Fuel injection nozzle			6		6		
4	224171	Fuel injection nozzle		4					
4	224299	Fuel injection nozzle	4						
5	223762	Gasket			1	1	1		
5	255126	Gasket	1						
6	273417	Hose, radiator, upper, 1.5 in. ID		1					
6	352522	Hose, radiator, upper, 1.75 in. ID							1
7	273418	Hose, radiator, lower, 1.88 in. ID		1					
7	352523	Hose, radiator, lower, 2 in. ID							1
8	A-257099	LED circuit board	1		1	1	1	1	1
9	223673	Filter, oil			10	10	10		
9	223604	Filter, oil	10						
10	B-292902	Photo board	1		1	1	1	1	1
11	A-336415	PC board, controller (main)		1					1
12	A-336432	PC board, controller (indicator)		1					1
13	A-233999	Split activator				1			
13	B-258545	Split activator	1					1	1
13	B-258549	Split activator			1		1		
14	223595	Thermostat	1						
14	223676	Thermostat			1	1	1		
15	C-255670	Voltage regulator	1		1	1	1	1	1

Group 201: Generator and Mounting

20-100DSEJ/DSJ

Variations A-Q



HX-273000

Group 201: Generator and Mounting

Item	Part Number	Description	Quantity																
			Variation Number																
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	C-255670	PCB assembly, FRIL voltage/Hz reg.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	X-101-23	Nut, hex elastic stop, 1/2-13	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	X-25-103	Washer, plain, .531 ID x 2.75 in. OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	X-25-140	Washer, plain, .531 ID x 2 in. OD													2	2	2	2	2
4	X-352-63	Stud, 3/8-16 x 4 in.	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
5	X-400-132	Spacer, .406 ID x .625 OD x 2.531 in	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
6	X-400-154	Spacer, .527 ID x .625 OD x 2.3 in.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	X-750-14	Marker, wire	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	X-750-15	Marker, wire	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	X-750-16	Marker, wire	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	X-51-11	Screw, cross recess round head machine	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11	X-801-3	Washer, hardened, .406 ID x .812 in. OD	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
12	255080	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	255481	Wiring harness	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	257179	Guard, generator fan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	257046	Guard, generator fan													1	1	1	1	1
15	257442	Clip, speed	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	X-67-125	Screw, hex washer, thread-forming	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	X-6051-4	Screw, hex head machine	6	6	6	6	6	6							6	6	6	6	6
17	270158	Screw, cylinder head, 3/8-16 x 1 1/2							6	6	6	6	6	6					
17	270956	Screw, cylinder head, 3/8-16 x 1 1/4																	
18	X-801-3	Washer, hardened, .406 ID x .812 in. OD	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
19	360459	Standoff, circuit board	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
20	295314	Terminal block	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	324391	Vibromount	2	2	2	2			2	2	2	2							
21	336024	Vibromount					2	2					2	2					
21	324074	Vibromount													2	2	2	2	
21	324075	Vibromount																	2
22	X-127-27	Screw, hex head	2	2	2	2	2	2	2	2	2	2	2	2					
22	X-129-23	Screw, hex head													2	2	2	2	2
23	A-276686	Alternator assembly	1						1										
23	A-276688	Alternator assembly		1						1									
23	A-276687	Alternator assembly			1						1								
23	A-276689	Alternator assembly				1						1							
23	A-336833	Alternator assembly					1						1						
23	A-336834	Alternator assembly						1						1					
23	B-257730	Alternator assembly													1				
23	B-257848	Alternator assembly														1			
23	B-257722	Alternator assembly															1		
23	B-257735	Alternator assembly																1	
23	B-257723	Alternator assembly																	1
23	A-257845	Alternator assembly																	
23	B-257724	Alternator assembly																	
23	B-257736	Alternator assembly																	
23	A-257841	Alternator assembly																	
23	A-257842	Alternator assembly																	

Modular Number Cross-Reference Table

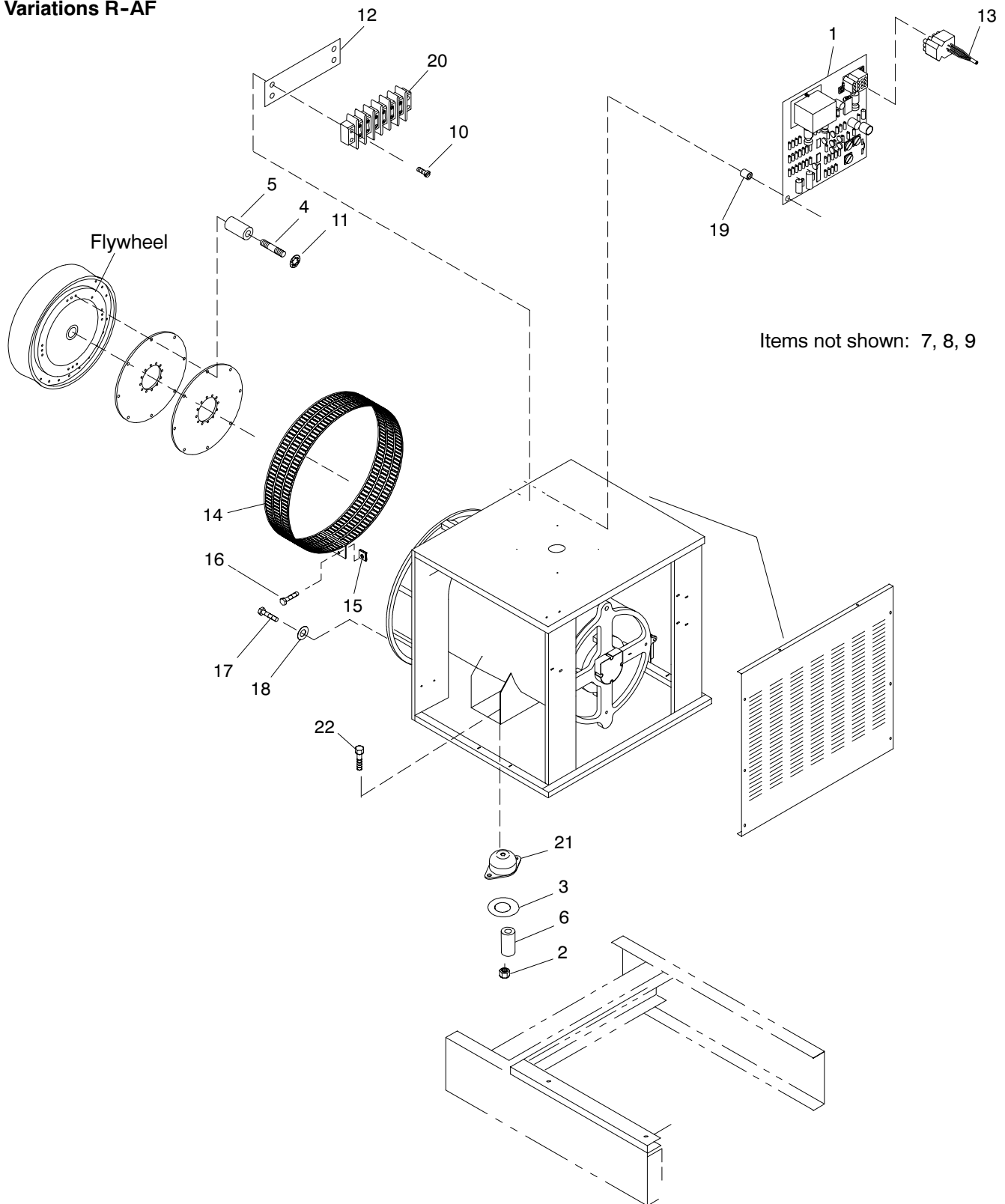
Use the following table to identify the applicable module number.

Module Number to Key Cross-Reference					
Module Number	Key	Module Number	Key	Module Number	Key
352364	A	352499	L	352953	W
352365	B	352573	M	352954	X
352366	C	352574	N	352955	Y
352367	D	352575	O	352956	Z
352368	E	352576	P	352957	AA
352369	F	352577	Q	352958	AB
352494	G	352578	R	352959	AC
352495	H	352579	S	352960	AD
352496	I	352580	T	352961	AE
352497	J	352581	U	352962	AF
352498	K	352582	V		

Group 201: Generator and Mounting, continued

20-100DSEJ/DSJ

Variations R-AF



HX-273000

Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity														
			Variation Number														
			R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	C-255670	PCB assembly, FRII voltage/Hz reg.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	X-101-23	Nut, hex elastic stop, 1/2-13	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	X-25-103	Washer, plain, .531 ID x 2.75 in. OD															
3	X-25-140	Washer, plain, .531 ID x 2 in. OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	X-352-63	Stud, 3/8-16 x 4 in.	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
5	X-400-132	Spacer, .406 ID x .625 OD x 2.531 in	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
6	X-400-154	Spacer, .527 ID x .625 OD x 2.3 in.															
7	X-750-14	Marker, wire	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	X-750-15	Marker, wire	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	X-750-16	Marker, wire	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	X-51-11	Screw, cross recess round head machine	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11	X-801-3	Washer, hardened, .406 ID x .812 in. OD	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
12	255080	Marker, strip	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	255481	Wiring harness	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	257179	Guard, generator fan															
14	257046	Guard, generator fan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	257442	Clip, speed	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	X-67-125	Screw, hex washer, thread-forming	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	X-6051-4	Screw, hex head machine	6	6	6	6	6										
17	270158	Screw, cylinder head 3/8-16 x 1 1/2						6	6	6	6	6	6	6	6	6	6
17	270956	Screw, cylinder head 3/8-16 x 1 1/4						6	6	6	6	6	6	6	6	6	6
18	X-801-3	Washer, hardened, .406 ID x .812 in. OD	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
19	360459	Standoff, circuit board	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
20	295314	Terminal block	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	324391	Vibromount															
21	336024	Vibromount															
21	324074	Vibromount						2	2	2	2						
21	324075	Vibromount	2	2	2	2	2					2	2	2	2	2	2
22	X-127-27	Screw, hex head															
22	X-129-23	Screw, hex head	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23	A-276686	Alternator assembly															
23	A-276688	Alternator assembly															
23	A-276687	Alternator assembly															
23	A-276689	Alternator assembly															
23	A-336833	Alternator assembly															
23	A-336834	Alternator assembly															
23	B-257730	Alternator assembly						1									
23	B-257848	Alternator assembly							1								
23	B-257722	Alternator assembly								1							
23	B-257735	Alternator assembly									1						
23	B-257723	Alternator assembly										1					
23	A-257845	Alternator assembly	1										1				
23	B-257724	Alternator assembly		1										1			
23	B-257736	Alternator assembly			1										1		
23	A-257841	Alternator assembly				1										1	
23	A-257842	Alternator assembly					1										1

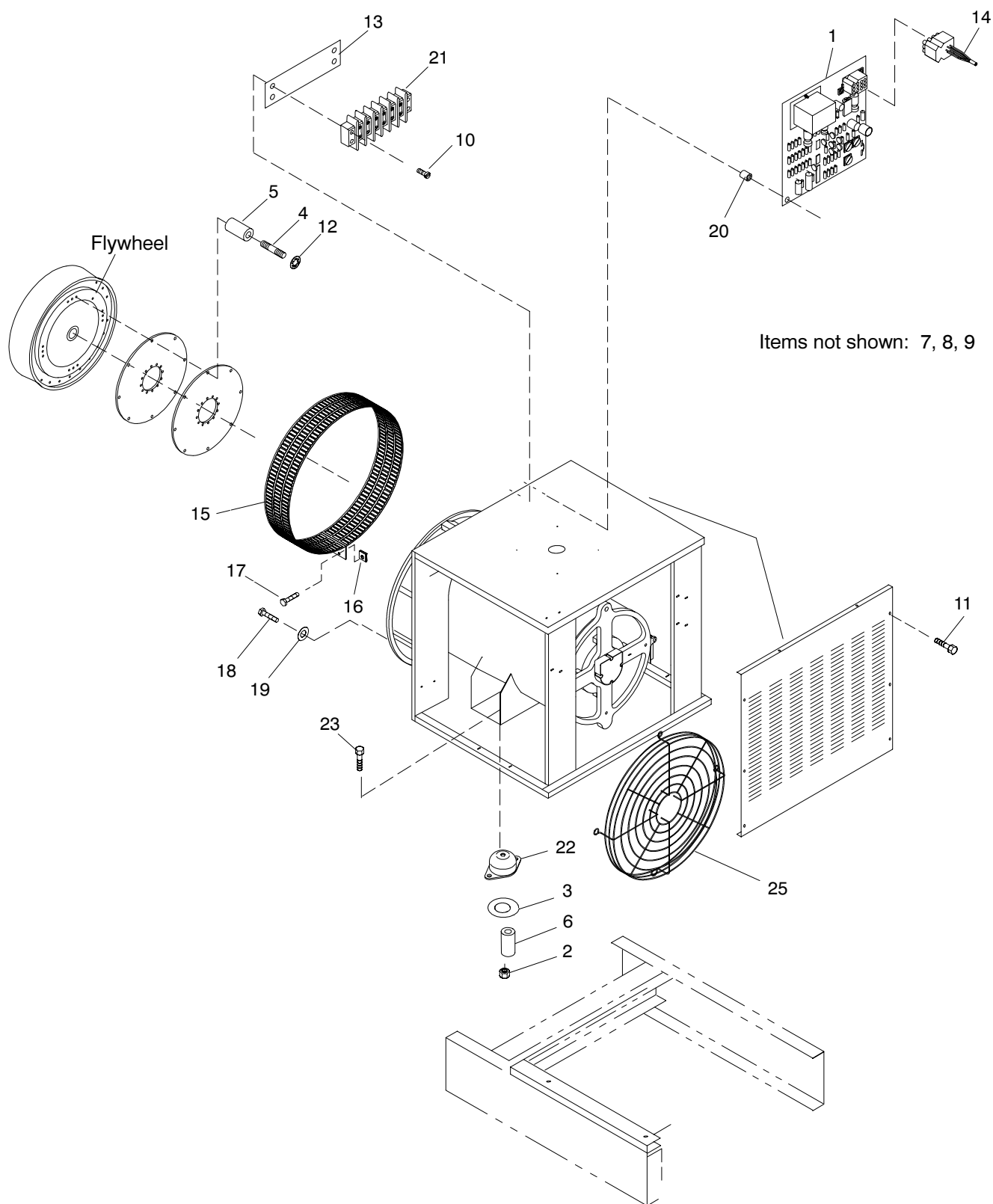
Modular Number Cross-Reference Table

Use the following table to identify the applicable module number.

Module Number to Key Cross-Reference					
Module Number	Key	Module Number	Key	Module Number	Key
352364	A	352499	L	352953	W
352365	B	352573	M	352954	X
352366	C	352574	N	352955	Y
352367	D	352575	O	352956	Z
352368	E	352576	P	352957	AA
352369	F	352577	Q	352958	AB
352494	G	352578	R	352959	AC
352495	H	352579	S	352960	AD
352496	I	352580	T	352961	AE
352497	J	352581	U	352962	AF
352498	K	352582	V		

Group 201: Generator and Mounting, continued

135-180DSEJ



HX-273000

Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity							
			Module Number						MA1	MA2
			336817	336818	352385	352386	352387	352388		
1	C-255670	PCB, voltage regulator	1	1						
1	A-354653	PCB, voltage regulator			1	1	1	1	1	1
2	X-101-23	Nut, elastic stop, 1/2-13	2	2	2	2	2	2		
2	X-101-15	Nut, elastic stop							2	2
3	X-22-14	Washer, shakeproof	2							
3	X-25-103	Washer, .531 x 2.75 x .125	2		2	2	2	2	2	2
4	X-352-63	Stud	8	8						
4	X-129-54	Screw			8	8	8	8	8	8
5	X-400-132	Spacer	8	8						
6	X-400-197	Spacer	2	2	2	2	2	2		
6	X-400-182	Spacer							2	2
7	X-750-14	Tag lead-L1 (not shown)	1	1	1	1	1	1	1	1
8	X-750-15	Tag lead-L2 (not shown)	1	1	1	1	1	1	1	1
9	X-750-16	Tag lead-L3 (not shown)	1	1	1	1	1	1	1	1
10	X-51-11	Screw, RHM, 8-32 x 3	2	2	2	2	2	2	2	2
11	X-6216-1	Screw	12	12	12	12	12	12	12	12
12	X-801-3	Washer, hardened	8	8						
12	290945	Washer, hardened			8	8	8	8	8	8
13	255080	Marker, strip	1	1	1	1	1	1	1	1
14	255481	Harness, wiring	1	1						
14	354118	Harness, wiring			1	1	1	1	1	1
15	257179	Guard, generator fan	1	1						
15	347268	Guard, generator fan			2	2	2	2	2	2
16	257442	Clip, speed	2	2	4	4	4	4	4	4
17	X-67-125	Screw, self-tapping	2	2	4	4	4	4	4	4
18	270158	Screw, hardened	6	6						
18	X-6024-3	Screw			8	8	8	8	8	8
19	X-801-3	Washer, hardened	6	6						
19	X-801-6	Washer, hardened			8	8	8	8	8	8
20	360459	Standoff, circuit board	4	4	4	4	4	4	4	4
21	295314	Block, terminal	1	1	1	1	1	1	1	1
22	324392	Vibromount	2	2						
22	324393	Vibromount			2	2	2	2		
22	279864	Vibromount							2	2
23	X-129-30	Screw	2	2	2	2	2	2		
23	#	Hardware, 5/8-11							2	2
24	A-276684	Alternator assembly	1							
24	A-276685	Alternator assembly		1						
24	A-347208	Alternator assembly			1					
24	A-347212	Alternator assembly				1				
24	A-347209	Alternator assembly					1			
24	A-347213	Alternator assembly						1		
24	A-347211	Alternator assembly							1	
24	A-347215	Alternator assembly								1
25	274598	Guard, generator				1				

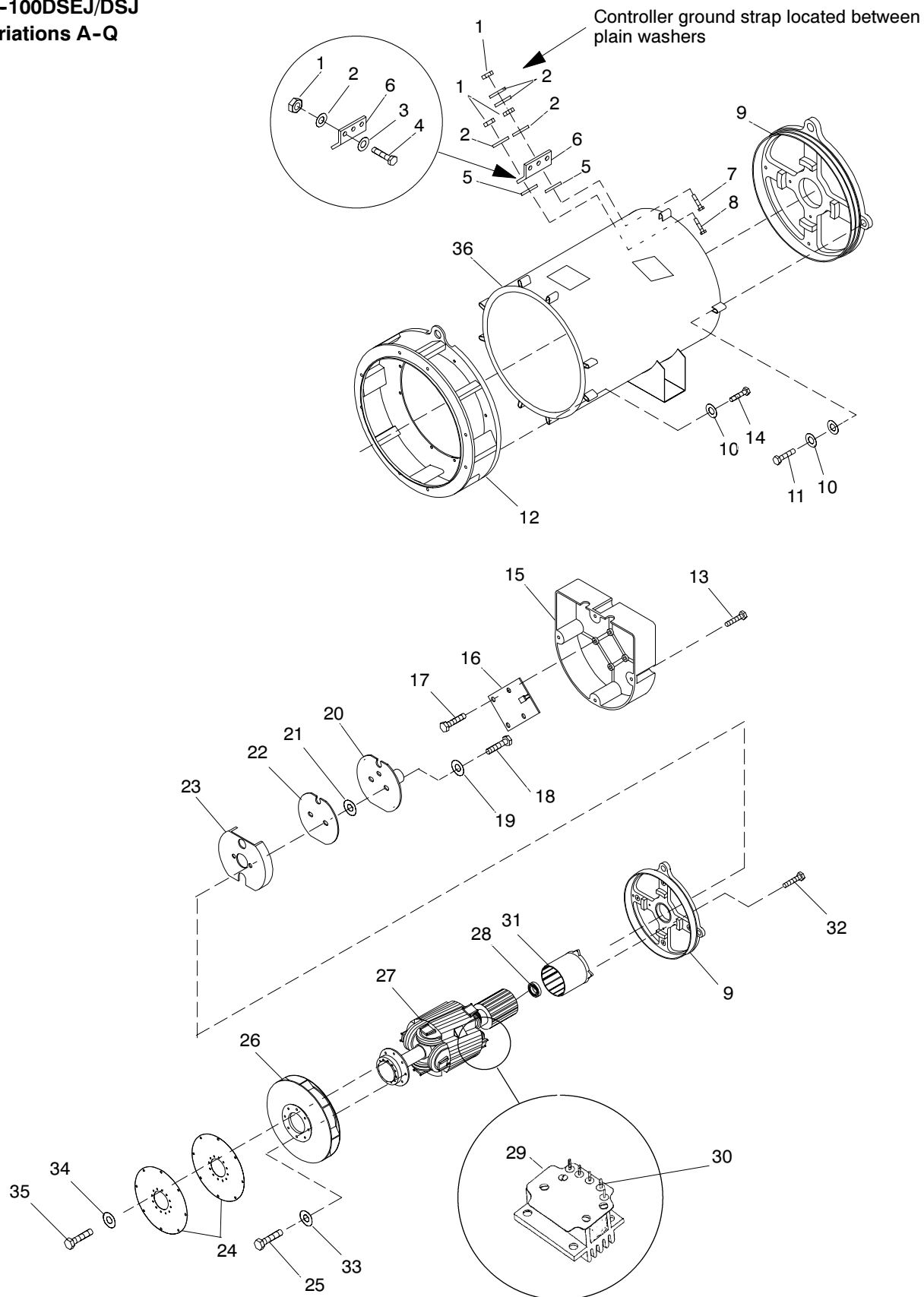
Modular Spec Cross-Reference Table

Some modular generator specs listed in the specification number index require an alternator kit. Refer to the generator set nameplate to identify the alternator kit number installed on your generator set. Use the following table to identify the equivalent variation number. The kit's parts list matches the parts list for the equivalent variation number.

Alternator Kit Number	Equivalent Variation Number
GM11892-MA1	MA1
GM11892-MA2	MA2

Group 201: Generator and Mounting, continued

20-100DSEJ/DSJ
Variations A-Q



Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity																
			Variation Number																
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	*	Nut, 5/16-18	6	6	6	6	6	6	6	6	6	6	6	6					
1	*	Nut, 1/4-20													6	6	6	6	6
2	*	Washer, 5/16	7	7	7	7	7	7	7	7	7	7	7	7					
2	*	Washer, 1/4													7	7	7	7	7
3	*	Washer, 5/16	3	3	3	3	3	3	3	3	3	3	3	3					
3	*	Washer, 1/4													3	3	3	3	3
4	X-125-24	Screw, hex head machine	3	3	3	3	3	3	3	3	3	3	3	3					
4	X-465-8	Screw, hex head machine													3	3	3	3	3
5	X-22-45	Washer, lock, .338 ID x .884 in. OD	2	2	2	2	2	2	2	2	2	2	2	2					
5	X-22-44	Washer, lock, .262 ID x .743 in. OD													2	2	2	2	2
6	257985	Lead-LO	1	1	1	1	1	1	1	1	1	1	1	1					
6	257986	Lead-LO													1	1	1	1	1
7	X-791-7	Screw, hex head machine	1	1	1	1	1	1	1	1	1	1	1	1					
7	X-791-5	Screw, hex head machine													1	1	1	1	1
8	X-125-31	Screw, hex head machine	1	1	1	1	1	1	1	1	1	1	1	1					
8	X-465-16	Screw, hex head machine													1	1	1	1	1
9	257983	End bracket	1	1	1	1	1	1	1	1	1	1	1	1					
9	257984	End bracket													1	1	1	1	1
10	X-25-93	Washer, plain, .406 ID x .75 in. OD	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	X-6238-9	Screw, hex head machine	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
12	257175	Adapter, generator SAE # 3	1	1	1	1	1	1	1	1	1	1	1	1					
12	257019	Adapter, generator (26 029 02)													1	1	1	1	1
13	X-67-133	Screw, hex washer, thread-forming	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
14	X-6238-6	Screw, hex head machine	1	1	1	1	1	1	1	1	1	1	1	1	1	6	6	6	6
14	X-6238-9	Screw, hex head machine	5	5	5	5	5	5	5	5	5	5	5	5					
15	257258	Cover, FR LED circuit board	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	A-257099	PCB assembly, LED, FRII	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	X-6071-1	Screw, Phillips pan head, thread-forming	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
18	X-117-5	Screw, hex head machine	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19	X-22-9	Washer, lock, .20 ID x .373 in. OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
20	B-292902	PCB assembly, photo receiver	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	243321	Washer, insulating, .195 ID x .5 in OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
22	257850	Insulator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	257077	Actuator, magnetic cup	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	257103	Lamination, armature drive	3	3	3	3	3	3	3	3	3	3	3	3					
24	257015	Lamination, armature drive													2	2	2	2	2
25	X-6238-11	Screw, hex head machine	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
26	257173	Fan, generator	1	1	1	1	1	1	1	1	1	1	1	1					
26	347697	Fan, generator													1	1	1	1	1

* Common hardware; procure locally.

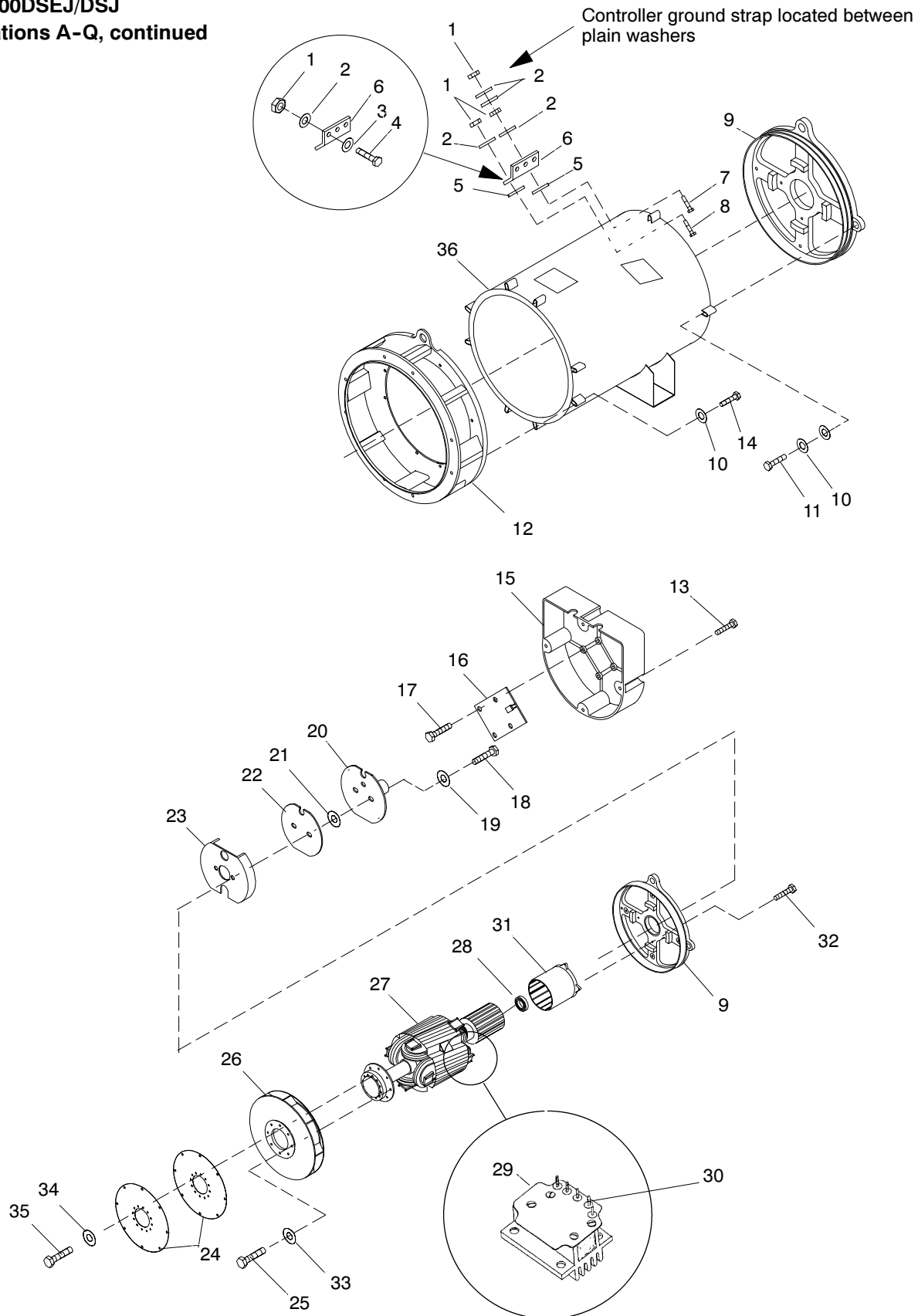
Modular Number Cross-Reference Table

Use the following table to identify the applicable module number.

Module Number to Key Cross-Reference					
Module Number	Key	Module Number	Key	Module Number	Key
352364	A	352499	L	352953	W
352365	B	352573	M	352954	X
352366	C	352574	N	352955	Y
352367	D	352575	O	352956	Z
352368	E	352576	P	352957	AA
352369	F	352577	Q	352958	AB
352494	G	352578	R	352959	AC
352495	H	352579	S	352960	AD
352496	I	352580	T	352961	AE
352497	J	352581	U	352962	AF
352498	K	352582	V		

Group 201: Generator and Mounting, continued

20-100DSEJ/DSJ
Variations A-Q, continued



Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity																
			Variation Number																
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
27	A-276664	Rotor assembly	1	1					1	1									
27	A-276665	Rotor assembly			1	1					1	1							
27	A-343443	Rotor assembly					1	1					1	1					
27	A-258980	Rotor assembly													1	1			
27	A-258979	Rotor assembly															1	1	
27	A-258977	Rotor assembly																	1
27	A-258978	Rotor assembly																	
27	A-258975	Rotor assembly																	
28	X-758-6	Bearing, ball	1	1	1	1	1	1	1	1	1	1	1	1					
28	X-758-2	Bearing, ball													1	1	1	1	1
29	B-258549	Heatsink	1	1	1	1	1	1	1	1	1	1	1	1					
29	B-258545	Heatsink													1	1	1	1	1
30	X-101-24	Nut, hex elastic stop, 6-32	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
31	276657	Exciter field assembly	1	1	1	1	1	1	1	1	1	1	1	1					
31	257080	Exciter field assembly													1	1	1	1	
31	257081	Exciter field assembly																	1
32	X-125-34	Screw, hex head machine	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
33	X-25-93	Washer, plain, .406 ID x .75 in. OD	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
34	X-801-3	Washer, hardened, .406 ID x .812 in. OD	12	12	12	12	12	12	12	12	12	12	12	12	8	8	8	8	8
35	270956	Screw, cylinder head 3/8-16 x 1 1/4	12	12	12	12	12	12	12	12	12	12	12	12	8	8	8	8	8
36	257687	Stator assembly	1						1										
36	257690	Stator assembly		1						1									
36	257688	Stator assembly			1						1								
36	257691	Stator assembly				1						1							
36	343092	Stator assembly					1						1						
36	343094	Stator assembly						1						1					
36	257765	Stator assembly													1				
36	257770	Stator assembly														1			
36	257766	Stator assembly															1		
36	257771	Stator assembly																1	
36	257767	Stator assembly																	1
36	257772	Stator assembly																	
36	257768	Stator assembly																	
36	257773	Stator assembly																	
36	257769	Stator assembly																	
36	257774	Stator assembly																	

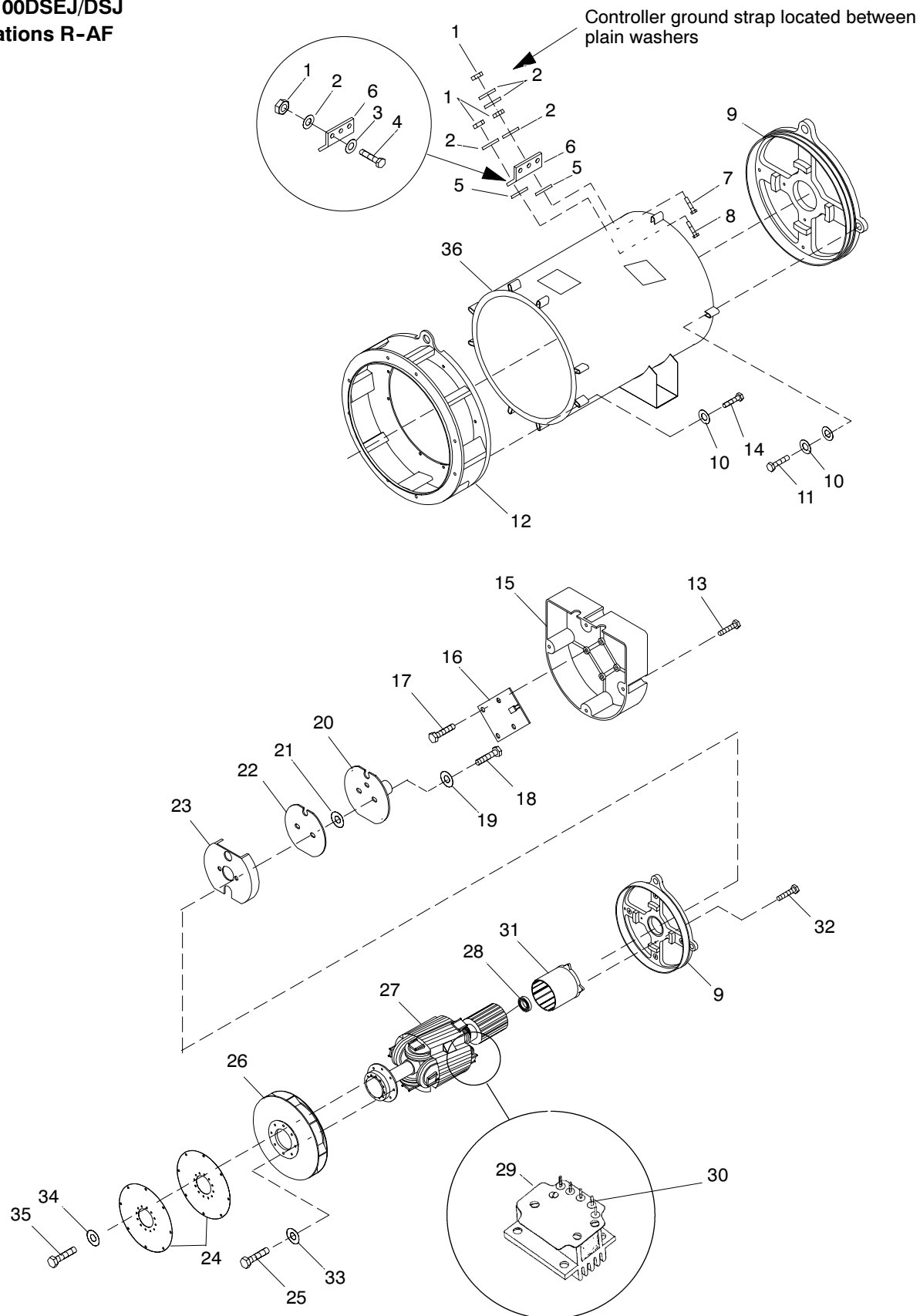
Modular Number Cross-Reference Table

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Module Number	Key	Module Number	Key	Module Number	Key
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352367	D	352575	O	352956	Z
352368	E	352576	P	352957	AA
352369	F	352577	Q	352958	AB
352494	G	352578	R	352959	AC
352495	H	352579	S	352960	AD
352496	I	352580	T	352961	AE
352497	J	352581	U	352962	AF
352498	K	352582	V		

Group 201: Generator and Mounting, continued

20-100DSEJ/DSJ
Variations R-AF



Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity															
			Variation Number															
			R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	
1	*	Nut, 5/16-18																
1	*	Nut, 1/4-20	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
2	*	Washer, 5/16																
2	*	Washer, 1/4	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
3	*	Washer, 5/16																
3	*	Washer, 1/4	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
4	X-125-24	Screw, hex head machine																
4	X-465-8	Screw, hex head machine	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
5	X-22-45	Washer, lock, .338 ID x .884 in. OD																
5	X-22-44	Washer, lock, .262 ID x .743 in. OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
6	257985	Lead-LO																
6	257986	Lead-LO	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
7	X-791-7	Screw, hex head machine																
7	X-791-5	Screw, hex head machine	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
8	X-125-31	Screw, hex head machine																
8	X-465-16	Screw, hex head machine	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
9	257983	End bracket																
9	257984	End bracket	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10	X-25-93	Washer, plain, .406 ID x .75 in. OD	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
11	X-6238-9	Screw, hex head machine	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
12	257175	Adapter, generator SAE # 3																
12	257019	Adapter, generator (26 029 02)	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
13	X-67-133	Screw, hex washer, thread-forming	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
14	X-6238-6	Screw, hex head machine	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
14	X-6238-9	Screw, hex head machine																
15	257258	Cover, FR LED circuit board	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
16	A-257099	PCB assembly, LED, FRII	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
17	X-6071-1	Screw, Phillips pan head, thread-forming	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
18	X-117-5	Screw, hex head machine	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
19	X-22-9	Washer, lock, .20 ID x .373 in. OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
20	B-292902	PCB assembly, photo receiver	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
21	243321	Washer, insulating, .195 ID x .5 in OD	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
22	257850	Insulator	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
23	257077	Actuator, magnetic cup	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
24	257103	Lamination, armature drive																
24	257015	Lamination, armature drive	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
25	X-6238-11	Screw, hex head machine	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
26	257173	Fan, generator																
26	347697	Fan, generator	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

* Common hardware; procure locally.

Modular Number Cross-Reference Table

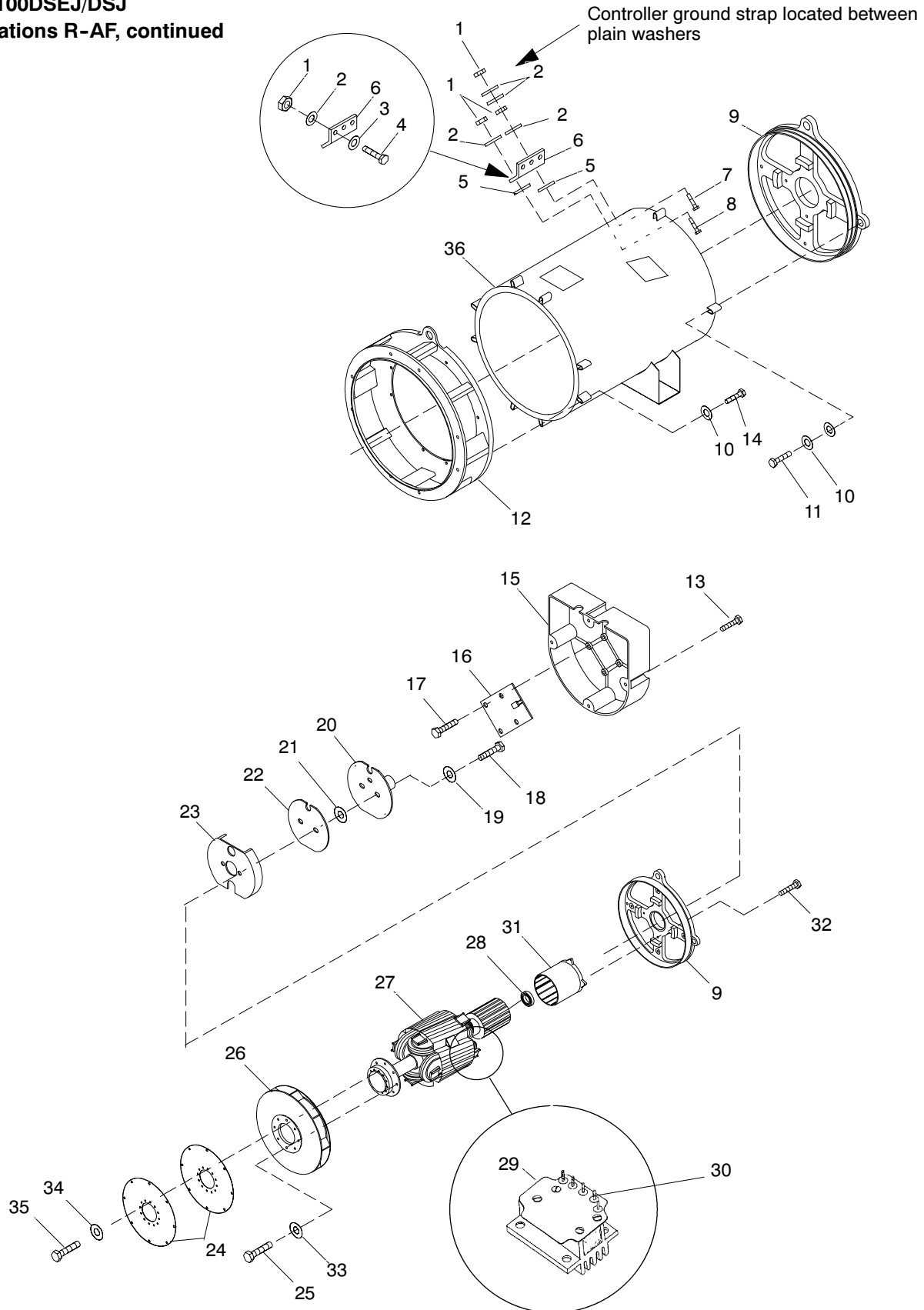
Use the following table to identify the applicable module number.

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352366	C	352574	N	352955	Y
352367	D	352575	O	352956	Z
352368	E	352576	P	352957	AA
352369	F	352577	Q	352958	AB
352494	G	352578	R	352959	AC
352495	H	352579	S	352960	AD
352496	I	352580	T	352961	AE
352497	J	352581	U	352962	AF
352498	K	352582	V		

Group 201: Generator and Mounting, continued

20-100DSEJ/DSJ

Variations R-AF, continued



Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity														
			Variation Number														
			R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
27	A-276664	Rotor assembly															
27	A-276665	Rotor assembly															
27	A-343443	Rotor assembly															
27	A-258980	Rotor assembly						1	1								
27	A-258979	Rotor assembly								1	1						
27	A-258977	Rotor assembly		1	1							1		1	1		
27	A-258978	Rotor assembly	1										1				
27	A-258975	Rotor assembly				1	1									1	1
28	X-758-6	Bearing, ball															
28	X-758-2	Bearing, ball	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	B-258549	Heatsink															
29	B-258545	Heatsink	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	X-101-24	Nut, hex elastic stop, 6-32	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
31	276657	Exciter field assembly															
	257080	Exciter field assembly						1	1	1	1						
	257081	Exciter field assembly	1	1	1	1	1					1	1	1	1	1	1
32	X-125-34	Screw, hex head machine	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
33	X-25-93	Washer, plain, .406 ID x .75 in. OD	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
34	X-801-3	Washer, hardened, .406 ID x .812 in. OD	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
35	270956	Screw, cylinder head 3/8-16 x 1 1/4	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
36	257687	Stator assembly															
36	257690	Stator assembly															
36	257688	Stator assembly															
36	257691	Stator assembly															
36	343092	Stator assembly															
36	343094	Stator assembly															
36	257765	Stator assembly						1									
36	257770	Stator assembly							1								
36	257766	Stator assembly								1							
36	257771	Stator assembly									1						
36	257767	Stator assembly										1					
36	257772	Stator assembly	1										1				
36	257768	Stator assembly		1										1			
36	257773	Stator assembly			1										1		
36	257769	Stator assembly				1										1	
36	257774	Stator assembly					1										1

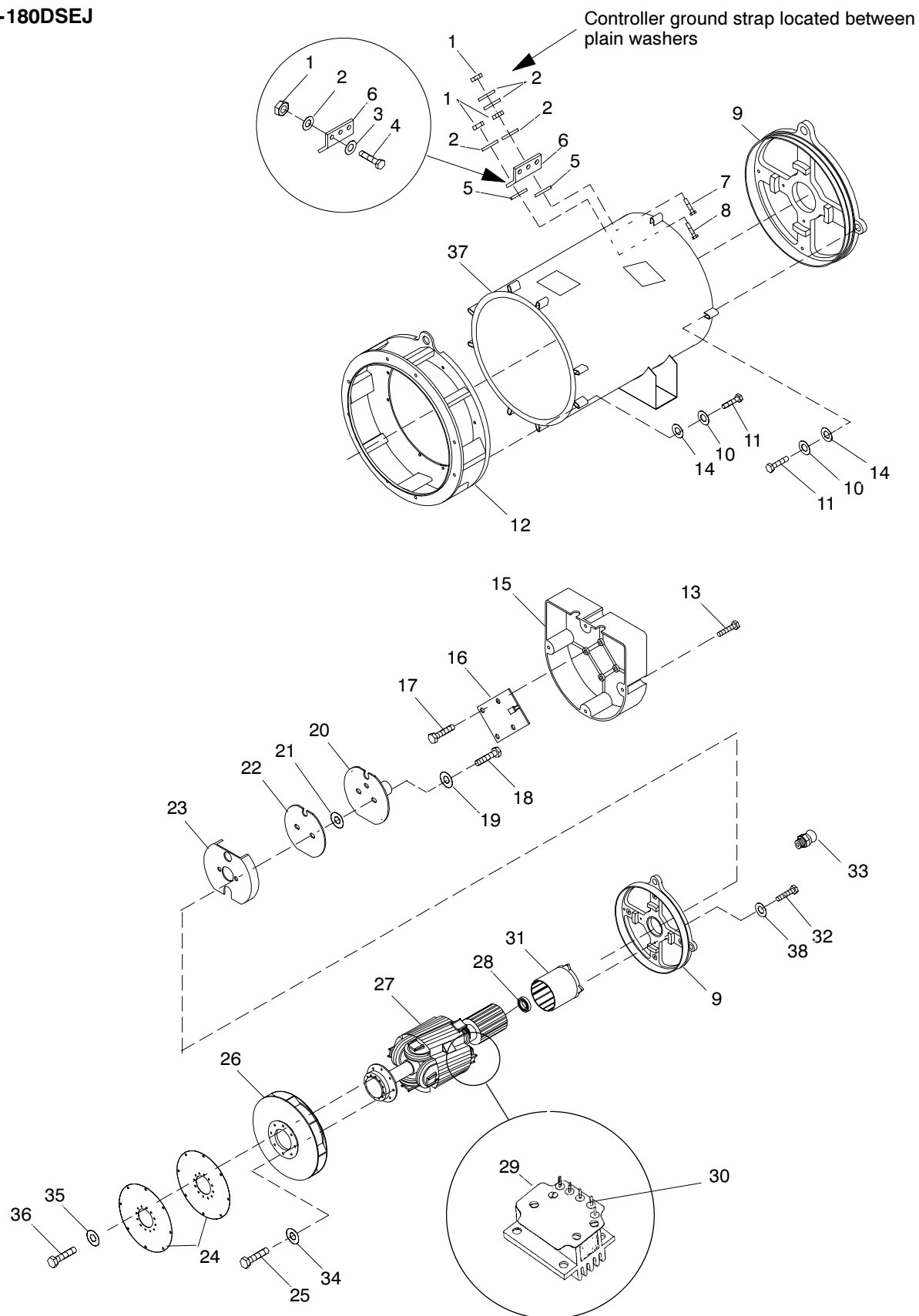
Modular Number Cross-Reference Table

Use the following table to identify the applicable module number.

Module Number to Key Cross-Reference					
Module Number	Key	Module Number	Key	Module Number	Key
352364	A	352499	L	352953	W
352365	B	352573	M	352954	X
352366	C	352574	N	352955	Y
352367	D	352575	O	352956	Z
352368	E	352576	P	352957	AA
352369	F	352577	Q	352958	AB
352494	G	352578	R	352959	AC
352495	H	352579	S	352960	AD
352496	I	352580	T	352961	AE
352497	J	352581	U	352962	AF
352498	K	352582	V		

Group 201: Generator and Mounting, continued

135-180DSEJ



Group 201: Generator and Mounting, continued

Item	Part Number	Description	Quantity							
			Module Number							
			336817	336818	352385	352386	352387	352388	MA1	MA2
1	*	Nut, 5/16-18	6	6						
1	*	Nut, 3/8-16			6	6	6	6	6	6
2	X-6086-17	Washer, spring	5	5						
2	X-25-139	Washer, plain	5	5						
3	X-25-138	Washer, plain								
4	X-125-24	Screw	3	3						
4	X-6238-5	Screw			3	3	3	3	3	3
5	X-22-45	Washer, lock, 5/16	2	2						
5	X-22-46	Washer, lock			2	2	2	2	2	2
6	257985	Connector, lead	1	1						
6	257978	Connector, lead			1	1	1	1		1
6	257979	Connector, lead							1	
7	X-791-7	Screw	1	1						
7	X-791-6	Screw			1	1	1	1	1	1
8	X-125-5	Screw	1	1						
8	X-6238-11	Screw			1	1	1	1	1	1
9	257983	End bracket	1	1						
9	347236	End bracket			1	1	1	1	1	1
10	X-25-93	Washer, plain	4	4						
10	290945	Washer, hardened			4	4	4	4	4	4
11	X-6238-9	Screw	4							
11	273737	Screw		4	4	4	4	4	4	4
11	X-129-25	Screw			12	12	12	12	12	12
11	273738	Screw			4	4	4	4	4	4
11	X-6238-6	Screw	1	1						
11	X-6238-9	Screw	5	5						
12	257175	Adapter, generator	1	1						
12	347240	Adapter, generator			1	1	1	1	1	1
13	X-67-133	Screw, self tapping	4	4	4	4	4	4	4	4
14	257951	Washer, special			12	12	12	12	12	12
15	257258	Cover, circuit board	1	1	1	1	1	1	1	1
16	A-257099	LED board	1	1	1	1	1	1	1	1
17	X-6071-1	Screw, thread forming, no.	4	4	4	4	4	4	4	4
18	X-117-5	Screw, HH, 10-24 x 5	2	2	2	2	2	2	2	2
19	X-22-9	Washer, lock, no. 10, int.	2	2	2	2	2	2	2	2
20	257850	tooth	1	1	1	1	1	1	1	1
21	243321	Washer, insulating	2	2	2	2	2	2	2	2
22	B-292902	Photo board	1	1	1	1	1	1	1	1
23	257077	Actuator, magnetic	1	1	1	1	1	1	1	1
24	257103	Disc, armature drive	3	3						
24	257581	Disc, armature drive			4	4	4	4	4	4
25	X-6238-11	Screw	4	4	8	8	8	8	8	8
26	257173	Fan, generator	1	1						
26	257855	Fan, generator			1	1	1	1	1	1
27	A-276666	Rotor assembly	1	1						
27	A-347186	Rotor assembly			1	1			1	1
27	A-347187	Rotor assembly					1	1		
27	A-347189	Rotor assembly							1	1
28	X-758-6	Ball bearing	1	1						
28	X-758-9	Ball bearing			1	1	1	1	1	1
29	B-258549	Split activator	1	1						
29	A-354299	Split activator			1	1	1	1	1	1
30	X-283-7	Terminal, ring, no. 6	4	4						
30	X-431-25	Terminal			4	4	4	4	4	4
30	X-101-24	Nut, elastic stop, 1/2-13	5	5						
31	276657	Field exciter assembly	1	1						
31	347707	Field exciter assembly			1	1	1	1	1	1
32	X-6238-1	Screw	4	4	4	4	4	4	4	4
33	347119	Fitting, grease			1	1	1	1	1	1
34	X-25-93	Washer, plain	10	10	8	8	8	8	8	8
34	290945	Washer, hardened			8	8	8	8	8	8
35	X-801-3	Washer, hardened	12	12	12	12	12	12	12	12
36	270956	Screw, hex head	12	12	12	12	12	12	12	12
37	257689	Stator assembly	1							
37	257692	Stator assembly		1						
37	347202	Stator assembly				1			1	1
37	347197	Stator assembly					1			
37	347203	Stator assembly						1		
37	347196	Stator assembly			1					
37	347199	Stator assembly							1	
37	347205	Stator assembly								1
38	X-801-3	Washer, hardened			1	1	1	1	1	1

* Common hardware; procure locally.

Group 701: Literature

Item	Part Number	Description	Quantity								
			Variation Number								
			70	71	72	73	74	75	76	77	78
1	MP-5750	Operation Manual, 20–2000 kW	1	1	1	1	1	1	1	1	1
1	MP-5750-CS	Operation Manual, 20–2000 kW Chinese	1	1	1	1	1	1	1	1	1
1	MP-5750-CT	Operation Manual, 20–2000 kW Chinese	1	1	1	1	1	1	1	1	1
1	MP-5750-F	Operation Manual, 20–2000 kW French	1	1	1	1	1	1	1	1	1
1	MP-5750-S	Operation Manual, 20–2000 kW Spanish	1	1	1	1	1	1	1	1	1
2	TP-5824	Operation Manual, John Deere 6081 Engine									
3	TP-5430	Operation Manual, John Deere 4039/6059		1		1		1		1	
3	TP-5430-A	Operation Manual, John Deere 4039/6059		1		1		1		1	
3	TP-5430-F	Operation Manual, John Deere 4039/6059 French		1		1		1		1	
3	TP-5430-G	Operation Manual, John Deere 4039/6059 German		1		1		1		1	
3	TP-5430-I	Operation Manual, John Deere 4039/6059 Italian		1		1		1		1	
3	TP-5430-S	Operation Manual, John Deere 4039/6059 Spanish		1		1		1		1	
4	TP-5853	Operation Manual, John Deere 4045/6068	1		1		1		1		1
5	MP-5829	Operation Manual, Digital Controller	1	1	1	1	1	1	1	1	1
6	TP-5889	Operation Manual, Engine Service Schedule	1	1	1	1	1	1	1	1	1
7	PP-6009	Parts Catalog, Controllers									
8	MP-6116	Parts Catalog, Accessories 20–200 kW diesel	1	1	1	1	1	1	1	1	1
9	TP-5826	Parts Catalog, John Deere Engine									
10	MP-5408	Parts Catalog, 20–180DSJ/DSEJ	1	1	1	1	1	1	1	1	1
11	TP-5434	Parts Catalog, John Deere 4039	1	1	1	1	1	1	1	1	1
12	TP-5386	Parts Catalog, John Deere 6059T/TL									
13	TP-5854	Service Manual John Deere 4045/6068	1		1		1		1		1
14	TP-5419	Service Manual John Deere 4039/6059		1		1		1		1	
14	TP-5419-F	Service Manual John Deere 4039/6059 Spanish		1		1		1		1	
14	TP-5419-S	Service Manual John Deere 4039/6059 Spanish		1		1		1		1	
15	TP-5825	Service Manual, John Deere 6081 Engine									
16	MP-5700	Standby Installation Manual	1	1	1	1	1	1	1	1	1
17	MP-5353	Service Manual, 20–300 kW industrial	1	1	1	1	1	1	1	1	1
18	MP-5374	Warranty, 1-yr. Limited, Industrial	1	1	1	1	1	1	1	1	1
19	MP-5718	Wiring Diagrams, 20–180DSJ/DSEJ	1	1	1	1	1	1	1	1	1

Group 701: Literature, continued

Item	Part Number	Description	Quantity								
			Variation Number								
			79	80	81	82	83	84	85	86	88
1	MP-5750	Operation Manual, 20–2000 kW	1	1	1	1	1	1	1	1	1
1	MP-5750-CS	Operation Manual, 20–2000 kW Chinese	1	1	1	1	1	1	1	1	1
1	MP-5750-CT	Operation Manual, 20–2000 kW Chinese	1	1	1	1	1	1	1	1	1
1	MP-5750-F	Operation Manual, 20–2000 kW French	1	1	1	1	1	1	1	1	1
1	MP-5750-S	Operation Manual, 20–2000 kW Spanish	1	1	1	1	1	1	1	1	1
2	TP-5824	Operation Manual, John Deere 6081 Engine						1	1	1	1
3	TP-5430	Operation Manual, John Deere 4039/6059	1		1		1				
3	TP-5430-A	Operation Manual, John Deere 4039/6059	1		1		1				
3	TP-5430-F	Operation Manual, John Deere 4039/6059 French	1		1		1				
3	TP-5430-G	Operation Manual, John Deere 4039/6059 German	1		1		1				
3	TP-5430-I	Operation Manual, John Deere 4039/6059 Italian	1		1		1				
3	TP-5430-S	Operation Manual, John Deere 4039/6059 Spanish	1		1		1				
4	TP-5853	Operation Manual, John Deere 4045/6068		1		1					
5	MP-5829	Operation Manual, Digital Controller	1	1	1	1	1	1	1	1	1
6	TP-5889	Operation Manual, Engine Service Schedule	1	1	1	1	1	1	1	1	1
7	MP-6009	Parts Catalog, Controllers						1	1	1	1
8	MP-6116	Parts Catalog, Accessories 20–200 kW diesel	1	1	1	1	1	1	1	1	1
9	TP-5826	Parts Catalog, John Deere Engine						1	1	1	1
10	MP-5408	Parts Catalog, 20–180DSJ/DSEJ	1	1	1	1	1	1	1	1	1
11	TP-5434	Parts Catalog, John Deere 4039	1								
12	TP-5386	Parts Catalog, John Deere 6059T/TL		1	1	1	1				
13	TP-5854	Service Manual John Deere 4045/6068		1		1					
14	TP-5419	Service Manual John Deere 4039/6059	1		1		1				
14	TP-5419-F	Service Manual John Deere 4039/6059 Spanish	1		1		1				
14	TP-5419-S	Service Manual John Deere 4039/6059 Spanish	1		1		1				
15	TP-5825	Service Manual, John Deere 6081 Engine						1	1	1	1
16	MP-5700	Standby Installation Manual	1	1	1	1	1	1	1	1	1
17	MP-5353	Service Manual, 20–300 kW industrial	1	1	1	1	1	1	1	1	1
18	MP-5374	Warranty, 1-yr. Limited, Industrial	1	1	1	1	1				
19	MP-5718	Wiring Diagrams, 20–200DSJ/DSEJ	1	1	1	1	1	1	1	1	1

This section lists the part numbers of modules/kits not listed in the Group Parts Lists. Refer to the generator set nameplate or the list below to identify

the module/kit number installed on your generator set. See the sections following this page for the parts list of the module/kit.

	20DSJ	20DSEJ	30DSJ	30DSEJ	40DSJ	40DSEJ	50DSJ	50DSEJ	60DSJ	60DSEJ
Basic Controllers										
Standard	333135	333135	333135	333135	333135	333135	333135	333135	333135	333135
With gauges	333195	333195	333195	333195	333195	333195	333195	333195	333195	333195
With gauges and meters	360837	360837	333136	333136	333142	333142	360844	360844	333146	333146
With gauges and meters, 600 V	333150	333150	333150	333150	333156	333156	333156	333156	333162	333162
Manual Controllers										
Standard meterbox	360838	360838	325149	325149	325149	325159	333156	333156	333162	333162
Standard meterbox, 600 V	325150	325150	325150	325150	325150	325160	325160	325170	325170	325170
7-light, 16-light Microprocessor, and Digital Controllers										
See Parts Catalog MP-6009 for 7-light, 16-Light, and Digital controller parts lists.										
Cooling Systems										
Cooling, city water 12 V	336203	352606	336203	352606	336203	352606	336203	352606	336203	352606
Cooling, city water 24 V	NA	360388	NA	360388	NA	360388	NA	360388	NA	360388
Cooling, radiator (See Group 104: Cooling System for parts list.)										
Cooling, remote radiator	274702	352607	274702	352607	274702	352607	274702	352607	274702	352607
Duct flange, radiator	324205	324205	324205	324205	324205	324205	324205	324205	324205	324205
Heater, block 110/120 V, 1800 W	336180	352585	336180	352585	336180	352585	336180	352585	336180	352585
Heater, block 190/240 V, 2000 W	336181	352586	336181	352586	336181	352586	336181	352586	336181	352586
Air Cleaners, optional										
Heavy-duty	360407	352583	360407	352583	360407	352583	360408	352584	360408	352584
Optional Kits										
See Parts Catalog MP-6116 for parts lists.										
Paint and Miscellaneous Parts										
Paint	All models use 221331 Spray Can, 221332 Gallon									

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	80DSJ	80DSEJ	100DSJ	100DSEJ	135DSEJ	150DSEJ	180DSEJ	200DSEJ
Basic Controllers								
Standard	333135	333135	333135	333135	333135	333135	333135	NA
With gauges	333195	333195	333195	333195	333195	333195	333195	NA
With gauges and meters	333146	333146	333172	333172	333174	333174	333190	NA
With gauges and meters (4S9)	333170	333170	333170	333170	NA	NA	NA	NA
With gauges and meters, 600 V	333178	333178	333178	333178	333184	333184	333184	NA
Manual Controllers								
Standard meterbox	325179	325179	NA	NA	325200	325200	325218	NA
Standard meterbox, (4S9)	NA	NA	325185	325185	NA	NA	NA	NA
Standard meterbox, (4S11)	NA	NA	325190	325190	NA	NA	NA	NA
Standard meterbox, 600 V	325180	325180	325180	325180	325202	325202	325202	NA
7-light,16-light Microprocessor, and Digital Controllers								
See Parts Catalog MP-6009 for 7-light, 16-Light, and Digital controller parts lists								
Cooling Systems								
Cooling, city water 12 V	336204	352437	336204	352437	336681	336912	336913	336913
Cooling, city water 24 V	NA	360389	NA	360389	360390	360391	360392	360392
Cooling, radiator (See Group 104: Cooling System for parts list.)								
Cooling, remote radiator	274704	352438	274704	352438	336682	336911	336911	336911
Duct flange, radiator	324302	324302	324302	324302	326214	326214	222997	222997
Heater, block 110/120 V, 1800 W	352487	352372	352487	352372	336918	336918/920	336920	336920
Heater, block 190/240 V, 2000 W	352488	352373	352488	352373	336919	336919/921	336921	336921
Air Cleaners, optional								
Heavy-duty	336220	352342	336220	352342	336684	336684	336808	NA
Optional Kits								
See Parts Catalog MP-6116 for parts lists.								
Paint and Miscellaneous Parts								
Paint	All models use 221331 Spray Can, 221332 Gallon							

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Basic Controller Kits

Basic Controller Kit Parts							
Qty.	Description	Common Kit	Kit Number/Unique Parts				
			333135	333136	333142	333146	333150
1	Controller assembly*		A-336597	A-336616	A-336617	A-336619	A-336615
2	Screw, HC 10-24 x 5/8	X-117-5					
4	Washer, lock 5/16	X-22-16					
2	Washer, shakeproof	X-22-24					
2	Washer, lock shakeproof	X-22-9					
2	Screw, RHM	X-49-35					
4	Screw, hex head	X-6216-1					
1	Decal, Spectrum	347326					
4	Screw, drill hex	X-794-1					
1	Sensor, ferromagnetic	241623					
1	Harness, wiring			255040	255040	255040	
1	Clamp, insulator	X-672-15					
1	Cover, controller		336601	336602	336602	336602	336602
3	Bracket, sensor mounting	257070					
3	Transformer			259360	259414	255860	259793
1	Bracket, CT mounting			276417	276417	276417	276417

Basic Controller Kit Parts							
Qty.	Description	Common Kit Parts	Kit Number/Unique Parts				
			333156	333162	333170	333172	333174
1	Controller assembly*		A-336618	A-336620	A-336621	A-336628	A-336625
2	Screw, HC 10-24 x 5/8	X-117-5					
4	Washer, lock 5/16	X-22-16					
2	Washer, shakeproof	X-22-24					
2	Washer, lock shakeproof	X-22-9					
2	Screw, RHM	X-49-35					
4	Screw, hex head	X-6216-1					
1	Clamp, insulator	X-672-15					
4	Screw, drill hex	X-794-1					
1	Sensor, ferromagnetic	241623					
1	Decal, Spectrum	347326					
3	Bracket, sensor mounting	257070					
1	Harness, wiring		255040	255040	255040	255040	255040
3	Transformer		259360	259359	253503	273257	253610
1	Bracket, CT mounting		276417	276417	276417	299966	299966
1	Cover, controller	336602					

Basic Controller Kit Parts						
Qty.	Description	Common Kit Parts	Kit Number/Unique Parts			
			333178	333184	333190	333192
1	Controller assembly*		A-336622	A-336623	A-336626	A-336627
2	Screw, HC 10-24 x 5/8	X-117-5				
4	Washer, lock 5/16	X-22-16				
2	Washer, shakeproof	X-22-24				
2	Washer, lock shakeproof	X-22-9				
2	Screw, RHM	X-49-35				
4	Screw, hex head	X-6216-1				
1	Decal, Spectrum	347326				
1	Clamp, insulator	X-672-15				
4	Screw, drill hex	X-794-1				
1	Sensor, ferromagnetic	241623				
3	Bracket, sensor mounting	257070				
1	Cover, controller	336602				
1	Harness, wiring		255040	354119	354119	354119
3	Transformer		259360	259414	272691	279272
1	Bracket, CT mounting		276417	276417	325382	325382

*See Controller Assembly section for parts list.

Basic Controller Kits, continued

Basic Controller Kit Parts				
Qty.	Description	Common Kit Parts	Kit Number/Unique Parts	
			333195	360837
1	Controller assembly*		A-336652	A-352563
2	Screw, HC 10-24 x 5/8	X-117-5		
4	Washer, lock 5/16	X-22-16		
2	Washer, shakeproof	X-22-24		
2	Washer, lock shakeproof	X-22-9		
2	Screw, RHM	X-49-35		
4	Screw, hex head	X-6216-1		
1	Decal, Spectrum	347326		
1	Clamp, insulator	X-672-15		
4	Screw, drill hex	X-794-1		
1	Sensor, ferromagnetic	241623		
3	Bracket, sensor mounting	257070		
1	Cover, controller		336601	336602
1	Harness, wiring		255040	255040
3	Transformer			253274
1	Bracket, CT mounting	276417		

*See Controller Assembly section for parts list.

Basic Controller Assemblies

Qty.	Description	Common Parts	Basic Controller Assembly Number/Unique Parts					
			A-336597	A-336615	A-336616	A-336617	A-336618	A-336619
1	Potentiometer assembly	A-255041						
1	Main circuit board	E-254717						
2	Washer, lock	X-22-50						
4	Washer, lock #6	X-22-6						
1	Grommet	X-284-31						
2	Screw, RHM 6-32 x 3/8	X-49-2						
10	Screw, RHM 6-32 x 1/4	X-49-25						
2	Screw, pan head	X-49-39						
4	Screw, RHM 10-24 x 3/4			X-50-3	X-50-3	X-50-3	X-50-3	X-50-3
1	Screw, RHM 10-24 x1	X-50-70						
2	Screw, RHM	X-51-53						
2	Plug, cap	X-519-1						
1	Strap, ground	X-6046-2						
1	Jumper			X-6048-2	X-6048-2	X-6048-2	X-6048-2	X-6048-2
2	Nut, hex	X-6234-6						
2	Screw, thread forming			X-67-127	X-67-127	X-67-127	X-67-127	X-67-127
1	Sleeve	X-696-5						
2	Nut, hex		X-71-2		X-71-2	X-71-2	X-71-2	X-71-2
1	Tab, identification		201620-152	201620-86	201620-152	201620-152	201620-152	201620-152
1	Fuse, 10-amp	223316						
1	Holder, fuse	238426						
1	Meter, hour	238736						
1	Terminal	238898						
1	Block, terminal	246115						
1	Voltmeter			253329	253329	253329	253329	253329
1	Relay	259391						
1	Lamp	269373						
1	Voltmeter, AC			282815	282814	282814	282815	282814
1	Gauge, oil pressure			282897	282897	282897	282897	282897
1	Gauge, water temperature			282898	282898	282898	282898	282898
1	Ammeter, AC			282934	295337	295338	295337	282950
1	Fuse, 15-amp	283645						
1	Switch, toggle	287812						
5	Spacer, circuit board	287948						
3	Fuse, 1.5-amp			291207	291207	291207	291207	291207
2	Lamp			291740	291740	291740	291740	291740
1	Resistor			292352			292352	
1	Switch, selector			292374	292374	292374	292374	292374
1	Bumper	292834						
1	Strip, terminal			292940	292940	292940	292940	292940
1	Meter, frequency			295069	295069	295069	295069	295069
1	Box, controller		336604	336603	336603	336603	336603	336603
1	Strip, marker		336606	336605	336605	336605	336605	336605
1	Holder, fuse		336634	336635	336635	336635	336635	336635
1	Strip, marker			336636	336636	336636	336636	336636
1	Harness, wiring		336642	336637	336637	336637	336637	336637

Basic Controller Assemblies, continued

Qty.	Description	Common Parts	Basic Controller Assembly Number/Unique Parts					
			A-336620	A-336621	A-336622	A-336623	A-336624	A-336625
1	Potentiometer assembly	A-255041						
1	Main circuit board	E-254717						
2	Washer, lock	X-22-50						
4	Washer, lock #6	X-22-6						
1	Grommet	X-284-31						
2	Screw, RHM 6-32 x 3/8	X-49-2						
10	Screw, RHM 6-32 x 1/4	X-49-25						
2	Screw, pan head	X-49-39						
4	Screw, RHM 10-24 x 3/4	X-50-3						
1	Screw, RHM 10-24 x 1	X-50-70						
2	Screw, RHM	X-51-53						
2	Plug, cap	X-519-1						
1	Strap, ground	X-6046-2						
1	Jumper	X-6048-2						
2	Nut, hex	X-6234-6						
2	Screw, thread forming	X-67-127						
1	Sleeve	X-696-5						
2	Nut, hex	X-71-2						
1	Tab, identification	201620-152						
1	Fuse, 10-amp	223316						
1	Holder, fuse	238426						
1	Meter, hour	238736						
1	Terminal	238898						
1	Block, terminal	246115						
1	Voltmeter	253329						
1	Relay	259391						
1	Lamp	269373						
1	Voltmeter, AC		282815	282814	282815	282815	282815	282814
1	Gauge, oil pressure	282897						
1	Gauge, water temperature	282898						
1	Ammeter, AC		295338	282954	282950	282954	282955	295339
1	Fuse, 15-amp	283645						
1	Switch, toggle	287812						
5	Spacer, circuit board	287948						
3	Fuse, 1.5-amp	291207						
2	Lamp	291740						
1	Resistor		292352			292352	292352	
1	Switch, selector	292374						
1	Bumper	292834						
1	Strip, terminal	292940						
1	Meter, frequency	295069						
1	Box, controller	336603						
1	Strip, marker	336605						
1	Holder, fuse	336635						
1	Strip, marker	336636						
1	Harness, wiring	336637						

Basic Controller Assemblies, continued

Qty.	Description	Common Parts	Basic Controller Assembly Number/Unique Parts					
			A-336626	A-336627	A-336628	A-336652	A-352563	A-360319
1	Potentiometer assembly	A-255041						
1	Main circuit board	F-254717						
2	Washer, lock	X-22-50						
4	Washer, lock #6	X-22-6						
1	Grommet	X-284-31						
2	Screw, RHM 6-32 x 3/8		X-49-2	X-49-2	X-49-2		X-49-2	X-49-2
10	Screw, RHM 6-32 x 1/4	X-49-25						
2	Screw, pan head	X-49-39						
4	Screw, RHM 10-24 x 3/4		X-50-3	X-50-3	X-50-3		X-50-3	X-50-3
1	Screw, RHM 10-24 x 3					X-50-13		
1	Screw, RHM 10-24 x 1	X-50-70						
2	Screw, RHM	X-51-53						
2	Plug, cap	X-519-1						
1	Strap, ground	X-6046-2						
1	Jumper		X-6048-2	X-6048-2	X-6048-2		X-6048-2	X-6048-2
2	Nut, hex	X-6234-6						
2	Screw, thread forming	X-67-127						
1	Sleeve	X-696-5						
2	Nut, hex	X-71-2						
1	Tab, identification	201620-152						
1	Fuse, 10-amp	223316						
1	Holder, fuse	238426						
1	Meter, hour	238736						
1	Terminal	238898						
1	Block, terminal	246115						
1	Voltmeter	253329						
1	Ammeter						253609	253341
1	Relay	259391						
1	Lamp	269373						
1	Voltmeter, AC		282814	282815	282814			
1	Gauge, oil pressure	282897						
1	Gauge, water temperature	282898	295340	282955	282955		282934	282934
1	Ammeter, AC							
1	Fuse, 15-amp	283645						
1	Switch, toggle	287812						
5	Spacer, circuit board	287948						
3	Fuse, 1.5-amp		291207	291207	291207		291207	291207
2	Lamp		291740	291740	291740		291740	291740
1	Resistor			292352				
1	Switch, selector		292374	292374	292374		292374	292374
1	Bumper	292834						
1	Strip, terminal		292940	292940	292940		292940	292940
1	Meter, frequency		295069	295069	295069		295069	295069
1	Box, controller		336603	336603	336603	336653	336603	336603
1	Strip, marker		336605	336605	336605	336606	336605	336605
1	Holder, fuse		336635	336635	336635	336634	336635	336635
1	Strip, marker		336636	336636	336636		336636	336636
1	Harness, wiring		336637	336637	336637	336642	336637	336637

Manual Controller Kits

Manual Controller Kit Parts							
Qty.	Description	Common	Kit Number/Unique Parts				
			325149	325159	325160	325165	325170
1	Controller assembly*		A-324108	A-324109	A-324110	A-324111	A-324112
4	Washer, lock, 5/16	X-22-16					
1	Terminal	X-283-8					
1	Conduit, convoluted		N/A	N/A	X-6003-17	N/A	X-6003-17
1	Screw, drill hex	X-794-1					
1	Harness, wiring	255040					
3	Transformer, current		259360	259414	259792	255860	259359
1	Bracket, CT mounting	276417					
1	Switch assembly, water level	336656					

Manual Controller Kit Parts, Continued							
Qty.	Description	Common	Kit Number/Unique Parts				
			325179	325180	325185	325190	325200
1	Controller assembly*		A-324111	A-324114	A-324113	A-324120	A-324117
4	Washer, lock, 5/16	X-22-16					
1	Terminal	X-283-8					
1	Conduit, convoluted		N/A	X-6003-17	N/A	N/A	N/A
1	Screw, drill hex	X-794-1					
1	Harness, wiring	255040					
3	Transformer, current		255860	259360	253503	273257	253610
1	Bracket, CT mounting		276417	276417	276417	299966	299966
1	Switch assembly, water level	336656					

Manual Controller Kit Parts, Continued							
Qty.	Description	Common	Kit Number/Unique Parts				
			325202	325218	325220	360838	360845
1	Controller assembly*		A-324115	A-324118	A-324119	A-360913	A-360914
4	Washer, lock, 5/16	X-22-16					
1	Terminal	X-283-8					
1	Conduit, convoluted		X-6003-17	N/A	X-6003-17	X-6003-8	X-6003-8
1	Screw, drill hex	X-794-1					
1	Harness, wiring	255040					
3	Transformer, current		259414	272691	279272	253274	253502
1	Bracket, CT mounting		276417	325382	325382	276417	276417
1	Switch assembly, water level	336656					

*See Controller Assembly section for parts list.

N/A Not Applicable

Manual Controller Assemblies

Qty.	Description	Common Parts	Manual Controller Assembly Number/Unique Parts						
			A-324108	A-324109	A-325110	A-324111	A-324112	A-324113	A-324114
1	Potentiometer assembly	A-255041							
1	Overspeed circuit board	A-249812							
1	Main	F-239563							
1	Washer, shakeproof #10	X-22-13							
4	Washer, lock #6	X-22-6							
1	Grommet	X-284-31							
1	Plug, button	X-301-34							
2	Terminal	X-431-25							
2	Terminal	X-431-29							
2	Screw, RHM 6-32 x 3/8	X-49-2							
18	Screw, RHM 6-32 x 1/4	X-49-25							
2	Screw, pan head	X-49-39							
4	Screw, RHM 10-24 x 3/4	X-50-3							
1	Screw, RHM 10-24 x 1	X-50-7							
2	Screw, RHM 8-32 x 3/8	X-51-12							
2	Screw, RHM	X-51-53							
1	Strap, ground	X-6046-2							
1	Jumper	X-6048-2							
10	Screw, PHC	X-6216-1							
2	Screw, thread forming	X-67-127							
1	Sleeve	X-696-5							
1	Tab, identification	201620-86							
1	Fuse, 10-amp	223316							
1	Holder, fuse	238426							
1	Meter, hour	238736							
1	Terminal	238898							
1	Block, terminal	246115							
1	Switch, rocker	249406							
1	Voltmeter	253329							
2	Lamp, meter scale	253332							
2	Lamp	255126							
1	Lamp	269373							
1	Plate, hinge	273376							
1	Harness, controller	274710							
1	Voltmeter, AC		282814	282814	282815	282814	282815	282814	282815
1	Gauge, oil pressure	282897							
1	Gauge, water temperature	282898							
1	Ammeter		295337	282338	295337	282950	295338	282954	282950
2	Socket, lamp	284990							
8	Spacer, circuit board	287948							
3	Fuse, 1.5-amp	291207							
1	Decal	292347							
1	Resistor		N/A	N/A	292352	N/A	292352	N/A	292352
1	Decal	292361							
1	Switch, selector		292373	292373	292374	292373	292374	292373	292374
1	Holder, fuse	292821							
1	Marker, strip	292823							
1	Bumper	292834							
1	Meter, frequency	295069							
1	Transformer, controller	295281							
1	Cover, controller	325003							
1	Decal, selector switch		N/A	N/A	325072	N/A	325072	N/A	325072
1	Box, controller	324140							

N/A Not Applicable

Manual Controller Assemblies, continued

Qty.	Description	Common Parts	Manual Controller Assembly Number/Unique Parts						
			A-324115	A-324117	A-324118	A-324119	A-324120	A-360913	A-360914
1	Potentiometer Assembly	A-255041							
1	Overspeed circuit board	A-249812							
1	Main circuit board	F-239563							
1	Washer, Shakeproof #10	X-22-13							
4	Washer, Lock #6	X-22-6							
1	Grommet	X-284-31							
1	Plug, Button	X-301-34							
2	Terminal	X-431-25							
2	Terminal	X-431-29							
2	Screw, RHM 6-32 x 3/8	X-49-2							
18	Screw, RHM 6-32 x 1/4	X-49-25							
2	Screw, Pan Head	X-49-39							
4	Screw, RHM 10-24 x 3/4	X-50-3							
1	Screw, RHM 10-24 x 1	X-50-7							
2	Screw, RHM 8-32 x 3/8	X-51-12							
2	Screw, RHM	X-51-53							
1	Strap, Ground	X-6046-2							
1	Jumper	X-6048-2							
10	Screw, PHC	X-6216-1							
2	Screw, Thread Forming	X-67-127							
1	Sleeve	X-696-5							
1	Tab, identification	201620-86							
1	Fuse, 10-amp	223316							
1	Holder, Fuse	238426							
1	Meter, Hour	238736							
1	Terminal	238898							
1	Block, Terminal	246115							
1	Switch, Rocker	249406							
1	Voltmeter	253329							
2	Lamp, Meter Scale	253332							
2	Lamp	255126							
1	Lamp	269373							
1	Plate, Hinge	273376							
1	Harness, Controller	274710							
1	Voltmeter, AC		282815	282814	292814	282815	282814	282814	282814
1	Gauge, Oil Pressure	282897							
1	Gauge, Water Temperature	282898							
1	Ammeter		282954	298339	295340	282955	282955	253609	253341
2	Socket, Lamp	284990							
8	Spacer, circuit board	287948							
3	Fuse, 1.5-amp	291207							
1	Decal	292347							
1	Resistor		292352	N/A	N/A	292352	N/A	N/A	N/A
1	Decal	292361							
1	Switch, Selector		292374	292373	292373	292374	292373	292373	292373
1	Holder, Fuse	292821							
1	Marker, Strip	292823							
1	Bumper	292834							
1	Meter, Frequency	295069							
1	Transformer, Controller	295281							
1	Cover, Controller	325003							
1	Decal, Selector Switch		325072	N/A	325072	325072	N/A	N/A	N/A
1	Box, Controller	324140							

N/A Not Applicable

Cooling System Kits

Qty.	Description	Kit/Part No.
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Cooling, City Water

336203

1	Elbow, 1 1/2 NPT street	A-27
1	Bushing, reducer	X-202-45
1	Nipple, pipe, 3/8 x 1 1/2	X-204-8
2	Nipple, pipe, 1/2 x 1 3/16	X-209-2
2	Elbow, street 1/2	X-211-1
1	Coupling, pipe, 3/8 x 1 3/16	X-216-23
2	Valve, drain, 3/8	X-256-1
1	Clamp, hose, 1/2	X-309-14
1	Valve, solenoid	X-350-7
1	Line, flex. fuel, 5/16 x 36 in.	X-386-36
2	Clamp, hose, 1 9/16	X-426-6
3	Adapter	X-570-17
1	Adapter, hose	X-570-19
1	Hose, radiator	X-6014-53
1	Hose, radiator	X-6014-59
2	Clamp, insulating	X-672-10
23	Screw, 1/4-14 x 3/4	X-794-1
4	Elbow, 90°	151771
1	Nipple, pipe, 1 1/2	155040
1	Bushing, reducer	160212
2	Bushing, reducer, 1/2 x 1	168848
2	Clamp, hose	249888
1	Cap, pressure (7 psi)	258037
1	Hose, 1 7/8 ID	273418
1	Guard, belt (left)	274643
1	Guard, belt (right)	274644
1	Tank, expansion	274645
1	Bracket, expansion	274647
2	Decal, water drain	280561
1	Exchanger, heat	326160
1	Regulator, water	290176
2	Plate, heat exchanger mounting	326166
2	Bracket, heat exchanger	326124

Qty.	Description	Kit/Part No.
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Cooling, City Water

336204

1	Bushing, reducer	X-202-45
1	Nipple, pipe, 3/8 x 1 1/2	X-204-8
1	Pipe	X-205-11
2	Nipple, pipe, 1/2 x 1 3/16	X-209-2
2	Elbow, street, 1/2	X-211-1
2	Coupling, pipe, 1 1/2	X-216-21
1	Coupling, pipe, 3/8 x 1 3/16	X-216-23
2	Valve, drain, 3/8	X-256-1
1	Clamp, hose, 1/2	X-309-14
1	Valve, solenoid	X-350-7
1	Line, flex. fuel, 5/16 x 36 in.	X-386-36
2	Adapter	X-570-17
1	Hose, radiator	X-6014-47
2	Clamp, insulating	X-672-10
14	Screw, 1/4-14 x 3/4	X-794-1
5	Elbow, 90°	151771
6	Nipple, pipe, 1 1/2	155040
6	Bushing, reducer	160212
2	Bushing, reducer, 1/2 x 1	168848
1	Gasket, thermostat	224012
2	Clamp, hose	249888
4	Clamp, hose	250081
1	Cap, pressure (7 psi)	258037
1	Hose, lower radiator	273463
1	Guard, belt (left)	274652
1	Guard, belt (right)	274653
1	Tank, expansion	274645
1	Bracket, expansion	274655
1	Hose, upper radiator	274789
1	Bracket, tank mounting	276576
2	Decal, water drain	280561
1	Exchanger, heat	326160
1	Regulator, water	290176
2	Plate, heat exchanger mounting	326166
2	Bracket, heat exchanger	326124
1	Guard, belt	336209

Cooling System Kits, continued

Qty.	Description	Kit/Part No.
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Cooling, City Water

336681

2	Bushing, reducer	X-202-40
2	Bushing, reducer	X-202-41
1	Nipple, pipe, 3/8 x 1 1/2	X-204-8
2	Nipple, pipe, 1/2 x 1 3/16	X-209-2
2	Elbow, street, 1/2	X-211-1
1	Elbow, street, 2 1/2	X-211-9
3	Elbow, pipe, 2	X-215-6
1	Coupling, pipe, 3/8 x 1 3/16	X-216-23
2	Nipple, pipe, 2 x 2 1/2	X-219-8
1	Nipple, pipe, 2 x 2	X-219-9
2	Valve, drain, 3/8	X-256-1
1	Valve, drain	X-256-6
1	Clamp, hose, 1/2	X-309-14
1	Valve, solenoid	X-350-7
1	Line, flex fuel, 5/16 x 36 in.	X-386-36
2	Clamp, hose	X-426-2
1	Adapter, hose	X-570-1
1	Hose, radiator	X-6014-10
1	Hose, radiator	X-6014-79
3	Nipple, combination	X-6268-2
2	Clamp, insulating	X-672-10
4	Clamp, hose	249887
1	Cap, pressure (7 psi)	258037
1	Tank, expansion	274645
1	Regulator, water	290176
1	Exchanger, heat	324309
2	Bracket, heat exchanger	324700
2	Support, surge tank	324714
1	Bracket, mounting	324715
2	Bracket, support	326291
1	Hose, upper	336680
1	Bracket, mounting	336793
1	Guard, belt (right)	336794
1	Guard, belt (left)	336795
1	Guard, belt (top)	336797
1	Guard, belt (bottom)	336798
1	Guard, belt (front)	336799
1	Bracket	352181

Qty.	Description	Kit/Part No.
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Cooling, City Water

336912

2	Bushing, reducer	X-202-40
2	Bushing, reducer	X-202-41
1	Nipple, pipe, 3/8 x 1 1/2	X-204-8
2	Nipple, pipe, 1/2 x 1 3/16	X-209-2
2	Elbow, street, 1/2	X-211-1
1	Elbow, street, 2 1/2	X-211-9
3	Elbow, pipe, 2	X-215-6
1	Coupling, pipe, 3/8 x 1 3/16	X-216-23
2	Nipple, pipe, 2 x 2 1/2	X-219-8
1	Nipple, pipe, 2 x 2	X-219-9
2	Valve, drain, 3/8	X-256-1
1	Valve, drain	X-256-5
1	Clamp, hose, 1/2	X-309-14
1	Valve, solenoid	X-350-7
1	Line, flex. fuel, 5/16 x 36 in.	X-386-36
2	Clamp, hose	X-426-2
1	Adapter, hose	X-570-1
1	Hose, radiator	X-6014-10
1	Hose, radiator	X-6014-79
3	Nipple, combination	X-6268-2
2	Clamp, insulating	X-672-10
4	Clamp, hose	249887
1	Cap, pressure (7 psi)	258037
1	Tank, expansion	274645
1	Regulator, water	290176
1	Exchanger, heat	324309
2	Bracket, heat exchanger	324700
2	Support, surge tank	324714
1	Bracket, mounting	324715
2	Bracket, support	326291
1	Hose, upper	336680
1	Bracket, mounting	336783
1	Guard, belt (right)	336794
1	Guard, belt (left)	336796
1	Guard, belt (top)	336797
1	Guard, belt (bottom)	336798
1	Guard, belt (front)	336799
1	Bracket	352181

Cooling System Kits, continued

Qty.	Description	Kit/Part No.	Qty.	Description	Kit/Part No.
Cooling, City Water			Cooling, City Water		
1	Elbow, street, 1 1/2	A-27	1	Bushing, reducer	X-202-45
1	Elbow	SA-472	1	Nipple, pipe	X-204-8
1	Bushing, reducer	X-202-28	2	Nipple	X-209-2
1	Bushing, reducer	X-202-40	2	Elbow, street	X-211-1
1	Nipple, pipe, 3/8 x 1 1/2	X-204-8	1	Coupling, pipe	X-216-23
1	Elbow, street, 2 1/2	X-211-9	2	Valve, drain	X-256-1
3	Elbow, pipe, 2	X-215-6	1	Terminal	X-283-11
1	Coupling, pipe, 3/8 x 1 3/16	X-216-23	1	Clamp, hose	X-309-14
2	Nipple, pipe, 2 x 2 1/2	X-219-8	1	Valve, solenoid	X-350-7
1	Nipple, pipe, 2 x 2	X-219-9	1	Line, flex fuel	X-386-36
2	Valve, drain, 3/8	X-256-1	2	Clamp, hose, 1 9/16	X-426-6
1	Valve, drain	X-256-5	1	Terminal	X-431-37
1	Clamp, hose, 1/2	X-309-14	2	Adapter	X-570-17
1	Valve, solenoid	X-350-8	1	Adapter	X-570-8
1	Line, flex. fuel, 5/16 x 36 in.	X-386-36	1	Hose, molded	X-6014-24
2	Clamp, hose	X-426-2	1	Hose, radiator	X-6014-47
1	Adapter, hose	X-570-1	28	Screw, hex	X-6216-1
1	Hose, radiator	X-6014-79	2	Clamp	X-672-10
3	Nipple, combination	X-6268-2	4	Elbow, 90°	151771
2	Clamp, insulating	X-672-10	4	Nipple, pipe	155040
1	Nipple, pipe, 1 1/2	155040	1	Bushing, reducer	160212
4	Clamp, hose	249887	2	Bushing, reducer	168848
1	Sensor, low fluid	254832	1	Decal, warning	249810
1	Cap, pressure (7 psi)	258037	2	Clamp, hose	249887
1	Tank, expansion	274645	2	Clamp, hose	249888
1	Regulator, water	289477	1	Cap, pressure	258037
1	Exchanger, heat	324309	1	Tank, expansion	274645
1	Bracket, mounting	324715	1	Adapter, hose	285685
2	Bracket, support	326291	1	Regulator, water	290176
1	Hose, upper	336680	1	Exchanger, heat	326160
1	Bracket, mounting	336783	1	Support, top	326290
1	Guard, belt (right)	336794	2	Bracket, support	326291
1	Guard, belt (left)	336796	1	Hose, radiator (upper)	352192
1	Guard, belt (top)	336797	1	Guard, belt (RH)	352432
1	Guard, belt (bottom)	336798	1	Guard, belt (LH)	352433
1	Guard, belt (front)	336799	1	Guard, belt (top)	352434
2	Support, surge tank	336916	1	Guard, belt (bottom)	352435
1	Bracket	352181	1	Guard, belt (front)	352436
			2	Bracket, mounting	352439
			2	Support, surge tank	352440

Cooling System Kits, continued

Qty.	Description	Kit/Part No.
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Cooling, City Water

352606

1	Bushing, reducer	X-202-45
1	Nipple, pipe	X-204-8
2	Nipple	X-209-2
2	Elbow, street	X-211-1
1	Coupling, pipe	X-216-23
2	Valve, drain	X-256-1
1	Terminal	X-283-11
1	Clamp, hose	X-309-14
1	Valve, solenoid	X-350-7
1	Line, flex fuel	X-386-36
2	Clamp, hose, 1 9/16	X-426-6
1	Terminal	X-431-37
2	Adapter	X-570-17
1	Adapter	X-570-8
1	Hose, molded	X-6014-24
1	Hose, radiator	X-6014-47
28	Screw, hex	X-6216-1
2	Clamp	X-672-10
4	Elbow, 90°	151771
4	Nipple, pipe	155040
1	Bushing, reducer	160212
2	Bushing, reducer	168848
1	Decal, warning	249810
2	Clamp, hose	249887
2	Clamp, hose	249888
1	Cap, pressure	258037
1	Tank, expansion	274645
1	Adapter, hose	285685
1	Regulator, water	290176
1	Exchanger, heat	326160
1	Support, top	326290
2	Bracket, support	326291
1	Hose, radiator (upper)	352192
1	Guard, belt (RH)	352432
1	Guard, belt (LH)	352433
1	Guard, belt (top)	352434
1	Guard, belt (front)	352436
2	Bracket, mounting	352439
2	Support, surge tank	352440
1	Guard, belt (bottom)	352671

Qty.	Description	Kit/Part No.
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Cooling, City Water

360388

1	Bushing, reducer	X-202-45
1	Nipple, pipe	X-204-8
2	Nipple	X-209-2
2	Elbow, street	X-211-1
1	Coupling, pipe	X-216-23
2	Valve, drain	X-256-1
1	Terminal	X-283-11
1	Clamp, hose	X-309-14
1	Valve, solenoid	X-350-10
1	Line, flex fuel	X-386-36
2	Clamp, hose, 1 9/16	X-426-6
1	Terminal	X-431-37
2	Adapter	X-570-17
1	Adapter	X-570-8
1	Hose, molded	X-6014-24
1	Hose, radiator	X-6014-47
28	Screw, hex	X-6216-1
2	Clamp	X-672-10
4	Elbow, 90°	151771
4	Nipple, pipe	155040
1	Bushing, reducer	160212
2	Bushing, reducer	168848
1	Decal, warning	249810
2	Clamp, hose	249887
2	Clamp, hose	249888
1	Cap, pressure	258037
1	Tank, expansion	274645
1	Adapter, hose	285685
1	Regulator, water	290176
1	Exchanger, heat	326160
1	Support, top	326290
2	Bracket, support	326291
1	Hose, radiator (upper)	352192
1	Guard, belt (RH)	352432
1	Guard, belt (LH)	352433
1	Guard, belt (top)	352434
1	Guard, belt (front)	352436
2	Bracket, mounting	352439
2	Support, surge tank	352440
1	Guard, belt (bottom)	352671

Cooling System Kits, continued

Qty.	Description	Kit/Part No.	Qty.	Description	Kit/Part No.
Cooling, City Water 360389			Cooling, City Water 360390		
1	Bushing, reducer	X-202-45	2	Bushing, reducer	X-202-40
1	Nipple, pipe	X-204-8	2	Bushing, reducer	X-202-41
2	Nipple	X-209-2	1	Nipple, pipe, 3/8 x 1 1/2	X-204-8
2	Elbow, street	X-211-1	2	Nipple, pipe, 1/2 x 1 3/16	X-209-2
1	Coupling, pipe	X-216-23	2	Elbow, street, 1/2	X-211-1
2	Valve, drain	X-256-1	1	Elbow, street, 2 1/2	X-211-9
1	Terminal	X-283-11	3	Elbow, pipe, 2	X-215-6
1	Clamp, hose	X-309-14	1	Coupling, pipe, 3/8 x 1 3/16	X-216-23
1	Valve, solenoid	X-350-10	2	Nipple, pipe, 2 x 2 1/2	X-219-8
1	Line, flex fuel	X-386-36	1	Nipple, pipe, 2 x 2	X-219-9
2	Clamp, hose, 1 9/16	X-426-6	2	Valve, 3/8, drain	X-256-1
1	Terminal	X-431-37	1	Valve, drain	X-256-5
2	Adapter	X-570-17	1	Clamp, hose, 1/2	X-309-14
1	Adapter	X-570-8	1	Valve, solenoid	X-350-10
1	Hose, molded	X-6014-24	1	Line, flex. fuel, 5/16 x 36 in.	X-386-36
1	Hose, radiator	X-6014-47	2	Clamp, hose	X-426-2
28	Screw, hex	X-6216-1	1	Adapter, hose	X-570-1
2	Clamp	X-672-10	1	Hose, radiator	X-6014-10
4	Elbow, 90°	151771	1	Hose, radiator	X-6014-79
4	Nipple, pipe	155040	3	Nipple, combination	X-6268-2
1	Bushing, reducer	160212	2	Clamp, insulating	X-672-10
2	Bushing, reducer	168848	4	Clamp, hose	249887
1	Decal, warning	249810	1	Cap, pressure (7 psi)	258037
2	Clamp, hose	249887	1	Tank, expansion	274645
2	Clamp, hose	249888	1	Regulator, water	290176
1	Cap, pressure	258037	1	Exchanger, heat	324309
1	Tank, expansion	274645	2	Bracket, heat exchanger	324700
1	Adapter, hose	285685	2	Support, surge tank	324714
1	Regulator, water	290176	1	Bracket, mounting	324715
1	Exchanger, heat	326160	2	Bracket, support	326291
1	Support, top	326290	1	Hose, upper	336680
2	Bracket, support	326291	1	Bracket, mounting	336793
1	Hose, radiator (upper)	352192	1	Guard, belt (right)	336794
1	Guard, belt (RH)	352432	1	Guard, belt (left)	336795
1	Guard, belt (LH)	352433	1	Guard, belt (top)	336797
1	Guard, belt (top)	352434	1	Guard, belt (bottom)	336798
1	Guard, belt (bottom)	352435	1	Guard, belt (front)	336799
1	Guard, belt (front)	352436	1	Bracket	352181
2	Bracket, mounting	352439			
2	Support, surge tank	352440			

Cooling System Kits, continued

Qty.	Description	Kit/Part No.
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Cooling, City Water

360391

2	Bushing, reducer	X-202-40
2	Bushing, reducer	X-202-41
1	Nipple, pipe, 3/8 x 1 1/2	X-204-8
2	Nipple, pipe, 1/2 x 1 3/16	X-209-2
2	Elbow, street, 1/2	X-211-1
1	Elbow, street, 2 1/2	X-211-9
3	Elbow, pipe, 2	X-215-6
1	Coupling, pipe, 3/8 x 1 3/16	X-216-23
2	Nipple, pipe, 2 x 2 1/2	X-219-8
1	Nipple, pipe, 2 x 2	X-219-9
2	Valve, 3/8, drain	X-256-1
1	Valve, drain	X-256-5
1	Clamp, hose, 1/2	X-309-14
1	Valve, solenoid	X-350-10
1	Line, flex. fuel, 5/16 x 36 in.	X-386-36
2	Clamp, hose	X-426-2
1	Adapter, hose	X-570-1
1	Hose, radiator	X-6014-10
1	Hose, radiator	X-6014-79
3	Nipple, combination	X-6268-2
2	Clamp, insulating	X-672-10
4	Clamp, hose	249887
1	Cap, pressure (7 psi)	258037
1	Tank, expansion	274645
1	Regulator, water	290176
1	Exchanger, heat	324309
2	Bracket, heat exchanger	324700
2	Support, surge tank	324714
1	Bracket, mounting	324715
2	Bracket, support	326291
1	Hose, upper	336680
1	Bracket, mounting	336783
1	Guard, belt (right)	336794
1	Guard, belt (left)	336796
1	Guard, belt (top)	336797
1	Guard, belt (bottom)	336798
1	Guard, belt (front)	336799
1	Bracket	352181

Qty.	Description	Kit/Part No.
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Cooling, City Water

360392

1	Elbow, street, 1 1/2	A-27
1	Elbow	SA-472
1	Bushing, reducer	X-202-28
1	Bushing, reducer	X-202-40
1	Nipple, pipe, 3/8 x 1 1/2	X-204-8
1	Elbow, street, 2 1/2	X-211-9
3	Elbow, pipe, 2	X-215-6
1	Coupling, pipe, 3/8 x 1 3/16	X-216-23
2	Nipple, pipe, 2 x 2 1/2	X-219-8
1	Nipple, pipe, 2 x 2	X-219-9
2	Valve, 3/8, drain	X-256-1
1	Valve, drain	X-256-5
1	Clamp, hose, 1/2	X-309-14
1	Valve, solenoid	X-350-11
1	Line, flex. fuel, 5/16 x 36 in.	X-386-36
2	Clamp, hose	X-426-2
1	Adapter, hose	X-570-1
1	Hose, radiator	X-6014-79
3	Nipple, combination	X-6268-2
2	Clamp, insulating	X-672-10
1	Nipple, pipe, 1 1/2	155040
4	Clamp, hose	249887
1	Sensor, low fluid	254832
1	Cap, pressure (7 psi)	258037
1	Tank, expansion	274645
1	Regulator, water	289477
1	Exchanger, heat	324309
1	Bracket, mounting	324715
2	Bracket, support	326291
1	Hose, upper	336680
1	Bracket, mounting	336783
1	Guard, belt (right)	336794
1	Guard, belt (left)	336796
1	Guard, belt (top)	336797
1	Guard, belt (bottom)	336798
1	Guard, belt (front)	336799
2	Support, surge tank	336916
1	Bracket	352181

Cooling System Kits, continued

Qty.	Description	Kit/Part No.	Qty.	Description	Kit/Part No.
Cooling, Remote Radiator 274702			Cooling, Remote Radiator 352607		
2	Clamp, hose, 1 3/8	X-426-4	2	Clamp, hose, 1 9/16	X-426-6
2	Clamp, hose, 1 9/16	X-426-6	1	Hose, molded	X-6014-24
1	Hose, 1 1/2 ID (upper)	273417	18	Screw, hex	X-6216-1
1	Hose, 1 7/8 ID (lower)	273418	2	Clamp, hose	249887
1	Guard, belt (left)	274643	1	Hose, radiator (upper)	352192
1	Guard, belt (right)	274644	1	Guard, belt (right)	352432
1	Bracket, expansion	274647	1	Guard, belt (left)	352433
1	Guard, belt (center)	274669	1	Guard, belt (top)	352434
Cooling, Remote Radiator 274704			1	Guard, belt (front)	352436
4	Clamp, hose, 3 ID	250081	1	Guard, belt (bottom)	352671
1	Hose, upper radiator	273462	Radiator Duct Flange 222997		
1	Hose, lower radiator	273463	2	Frame, air duct	324518
1	Guard, belt (left)	274652	2	Frame, air duct	324519
1	Guard, belt (right)	274653	Duct Flange, radiator 324205		
1	Guard, belt (center)	274654	2	Frame, air duct	324200
1	Bracket, expansion tank	274655	2	Frame, air duct	324201
Cooling, Remote Radiator 336682			Duct Flange, radiator 324302		
1	Valve, drain	X-256-5	2	Frame, air duct	324300
2	Clamp, hose	X-426-2	2	Frame, air duct	324708
2	Clamp, hose	250081	Radiator Duct Flange 326214		
1	Hose, upper radiator	336664	2	Frame, air duct	326212
1	Hose, lower radiator	336665	2	Frame, air duct	326213
1	Bracket, mounting	336783	Heater, Block 336180		
1	Guard, belt (right)	336794	1	Tee, pipe, 1/4	A-110
1	Guard, belt (left)	336795	1	Bushing, 1 7/16 x 3/4 reducer	X-202-1
1	Guard, belt (top)	336797	1	Nipple, pipe, 1/4 x 1 1/2	X-220-6
1	Guard, belt (bottom)	336798	1	Hose, 5/8 ID x 1 1/2	X-312-35
1	Guard, belt (front)	336799	1	Hose	X-312-51
1	Bracket	352181	4	Clamp, hose, 1 in.	X-426-10
Cooling, Remote Radiator 336911			1	Connector, adapter	X-582-22
1	Valve, drain	X-256-5	1	Connector, adapter	X-391-34
2	Clamp, hose	X-426-2	1	Bracket, block heater mounting	326219
2	Clamp, hose	250081	1	Heater, block	326228
1	Hose, upper radiator	336664	Heater, Block 336181		
1	Hose, lower radiator	336665	1	Tee, pipe, 1/4	A-110
1	Bracket, mounting	336783	1	Bushing, 1 7/16 x 3/4 reducer	X-202-1
1	Guard, belt (right)	336794	1	Nipple, pipe, 1/4 x 1 1/2	X-220-6
1	Guard, belt (left)	336796	1	Hose, 5/8 ID x 1 1/2	X-312-35
1	Guard, belt (top)	336797	1	Hose	X-312-51
1	Guard, belt (bottom)	336798	4	Clamp, hose, 1 in.	X-426-10
1	Guard, belt (front)	336799	1	Connector, adapter	X-582-22
1	Bracket	352181	1	Connector, adapter	X-391-34
Cooling, Remote Radiator 352438			1	Bracket, block heater mounting	326219
2	Clamp, hose, 1 9/16	X-426-6	1	Heater, block	326229
1	Hose, molded	X-6014-24			
18	Screw, hex	X-6216-1			
2	Clamp, hose	249887			
1	Hose, radiator (upper)	352192			
1	Guard, belt (RH)	352432			
1	Guard, belt (LH)	352433			
1	Guard, belt (top)	352434			
1	Guard, belt (bottom)	352435			
1	Guard, belt (front)	352436			

Cooling System Kits, continued

Qty.	Description	Kit/Part No.
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Heater, Block, 110/120 VAC (1800 W)

336918

1	Elbow, NPTF, 3/4	SA-472
1	Elbow, street, 1/2	X-211-1
1	Hose, 5/8 ID x 36	X-312-13
1	Hose, .62 ID	X-312-47
4	Clamp, hose, 1 in.	X-426-10
1	Connector, hose	X-582-1
1	Connector, hose	X-582-3
1	Bushing, reducer	153659
1	Adapter	273692
1	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Heater, block	326234

Heater, Block, 190/240 VAC (2000 W)

336919

1	Elbow, NPTF, 3/4	SA-472
1	Elbow, street, 1/2	X-211-1
1	Hose, 5/8 ID x 36	X-312-13
1	Hose, .62 ID	X-312-47
4	Clamp, hose, 1 in.	X-426-10
1	Connector, hose	X-582-1
1	Connector, hose	X-582-3
1	Bushing, reducer	153659
1	Adapter	273692
1	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Heater, block	326235

Heater, Block, 110/120 VAC (1800 W)

336920

1	Elbow, NPTF, 3/4	SA-472
1	Elbow, street, 1/2	X-211-1
2	Hose	X-312-36
4	Clamp, hose, 1 in.	X-426-10
1	Connector, hose	X-582-1
1	Connector, hose	X-582-3
1	Bushing, reducer	153659
1	Adapter	273692
1	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Heater, block	326234

Heater, Block, 190/240 VAC (2000 W)

336921

1	Elbow, NPTF, 3/4	SA-472
1	Elbow, street, 1/2	X-211-1
2	Hose	X-312-36
4	Clamp, hose, 1 in.	X-426-10
1	Connector, hose	X-582-1
1	Connector, hose	X-582-3
1	Bushing, reducer	153659
1	Adapter	273692
1	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Heater, block	326235

Qty.	Description	Kit/Part No.
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Heater, block

352372

1	Tee, pipe	X-203-13
1	Nipple	X-209-2
1	Hose	X-312-34
1	Hose, rubber	X-312-37
4	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
1	Screw, hex head cap	X-6052-1
1	Clamp, insulating	X-672-3
1	Plug, pipe, 1/2 in.	X-75-28
2	Adapter, water temperature sender	273692
2	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Heater, block	326228

Heater, Block

352373

1	Tee, pipe	X-203-13
1	Nipple	X-209-2
1	Hose	X-312-34
1	Hose, rubber	X-312-37
4	Clamp, hose	X-426-10
2	Connector, hose	X-582-1
1	Screw, hex head cap	X-6052-1
1	Clamp, insulating	X-672-3
1	Plug, pipe	X-75-28
2	Adapter, water temperature sender	273692
2	Plug	273692
2	O-ring	273693
1	Tag, hang	279047
1	Bracket, block heater mounting	326219
1	Heater, block	326229

Cooling System Kits, continued

Qty.	Description	Kit/Part No.	Qty.	Description	Kit/Part No.
Heater, Block 352487			Heater, Block 352586		
1	Tee, pipe	A-110	1	Tee, pipe	X-203-13
1	Elbow	SA-472	1	Nipple	X-209-2
1	Bushing, reducer	X-202-1	1	Hose	X-312-16
1	Tee, pipe	X-203-6	1	Hose, rubber	X-312-37
1	Nipple, pipe	X-206-6	4	Clamp, hose	X-426-10
1	Pipe	X-220-14	2	Connector, hose	X-582-1
1	Hose	X-312-13	1	Screw, hex head cap	X-6052-1
1	Hose	X-312-15	1	Clamp, insulating	X-672-3
4	Clamp, hose	X-426-10	1	Plug, pipe	X-75-28
1	Connector, hose	X-582-22	2	Adapter, water temperature sender	273692
1	Connector, hose	X-582-3	2	Plug	273692
1	Tag, hang	279047	2	O-ring	273693
1	Bracket, block heater mounting	326219	1	Tag, hang	279047
1	Heater, block	326228	1	Bracket, block heater mounting	326219
Heater, Block 352488			1	Heater, block	326229
1	Tee, pipe	A-110			
1	Elbow	SA-472			
1	Bushing, reducer	X-202-1			
1	Tee, pipe	X-203-6			
1	Nipple, pipe	X-206-6			
1	Pipe	X-220-14			
1	Hose	X-312-13			
1	Hose	X-312-15			
4	Clamp, hose	X-426-10			
1	Connector, hose	X-582-22			
1	Connector, hose	X-582-3			
1	Tag, hang	279047			
1	Bracket, block heater mounting	326219			
1	Heater, block	326229			
Heater, Block 352585					
1	Tee, pipe	X-203-13			
1	Nipple	X-209-2			
1	Hose	X-312-16			
1	Hose, rubber	X-312-37			
4	Clamp, hose	X-426-10			
2	Connector, hose	X-582-1			
1	Screw, hex head cap	X-6052-1			
1	Clamp, insulating	X-672-3			
1	Plug, pipe, 1/2 in.	X-75-28			
2	Adapter, water temperature sender	273692			
2	O-ring	273693			
1	Tag, hang	279047			
1	Bracket, block heater mounting	326219			
1	Heater, block	326228			

Air Cleaner Kits, Heavy Duty

Qty.	Description	Kit/Part No.
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Air Cleaner, Heavy Duty		336220
1	Cleaner assembly, air	A-274721
1	Element, air cleaner	274726
1	Cap	253664
2	Mount, air cleaner	279380
1	Clamp, hose	324342
1	Hose, air intake	336224
1	Clamp, hose	336229
1	Bracket, air cleaner	336231

Air Cleaner, Heavy Duty		352342
1	Cleaner assembly, air	A-324360
1	Element air cleaner	324417
1	Screw, hex head cap	X-6051-2
1	Screw, hex head cap	X-6052-1
1	Cap, rain	254006
1	Clamp, hose	274824
2	Bracket, air cleaner mounting	290956
1	Clamp, hose	343049
1	Bracket, mounting	352338
1	Hose, molded	352339
1	Bracket, mounting	352341

Air Cleaner, Heavy Duty		352583
1	Cleaner assembly, air	A-274721
1	Element, air cleaner	274726
2	Screw, hex head cap	X-6051-2
1	Screw, hex head cap	X-6052-1
1	Cap	253664
1	Bracket, mounting	275529
2	Mount, air cleaner	279380
1	Clamp, hose	336229
1	Bracket, mounting heavy-duty air cleaner	352533
1	Hose, molded heavy-duty air cleaner	352543

Air Cleaner, Heavy Duty		352584
1	Cleaner assembly, air	A-274721
1	Element, air cleaner	274726
2	Screw, hex head cap	X-6051-2
1	Screw, hex head cap	X-6052-1
1	Cap	253664
2	Mount, air cleaner	279380
1	Clamp, hose	324342
1	Hose, air intake	336224
1	Clamp, hose	336229
1	Bracket, mounting heavy-duty air cleaner	352534

Air Cleaner, Heavy Duty		360407
1	Cleaner assembly, air	A-274721
1	Element, air cleaner	274726
1	Cap	253664
1	Bracket, air cleaner	275528
2	Mount, air cleaner	279380
1	Clamp, hose, 3.75/4.06 in.	291537
1	Hose, air intake, molded, 2.25 in. ID	336223
1	Clamp, hose, 2.63/2.94 in.	336228

Qty.	Description	Kit/Part No.
------	-------------	--------------

Air Cleaner, Heavy Duty		360408
1	Cleaner assembly, air	A-274721
1	Element, air cleaner	274726
1	Cap	253664
1	Bracket, air cleaner	274728
2	Mount, air cleaner	279380
1	Clamp, hose, 3.43/3.75 in.	324342
1	Hose, air intake, molded, 3 in. ID	336224
1	Clamp, hose, 3.88/4.19 in.	336229

Appendix A Abbreviations

The following list contains abbreviations that may appear in this publication.

A, amp	ampere	CG	center of gravity	F	Fahrenheit, female
ABDC	after bottom dead center	CID	cubic inch displacement	fglass.	fiberglass
AC	alternating current	CL	centerline	FHM	flat head machine (screw)
A/D	analog to digital	cm	centimeter	fl. oz.	fluid ounce
ADC	analog to digital converter	cmm	cubic meters per minute	flex.	flexible
adj.	adjust, adjustment	CMOS	complementary metal oxide substrate (semiconductor)	freq.	frequency
ADV	advertising dimensional drawing			FS	full scale
AHWT	anticipatory high water temperature	cogen.	cogeneration	ft.	foot, feet
AISI	American Iron and Steel Institute	COM	communications (port)	ft. lbs.	foot pounds (torque)
ALOP	anticipatory low oil pressure	conn.	connection	ft./min.	feet per minute
alt.	alternator	cont.	continued	g	gram
Al	aluminum	CPVC	chlorinated polyvinyl chloride	ga.	gauge (meters, wire size)
ANSI	American National Standards Institute (formerly American Standards Association, ASA)	crit.	critical	gal.	gallon
		CRT	cathode ray tube	gen.	generator
AO	anticipatory only	CSA	Canadian Standards Association	genset	generator set
API	American Petroleum Institute	CT	current transformer	GFI	ground fault interrupter
approx.	approximate, approximately	Cu	copper	gnd.	ground
AR	as required, as requested	cu. in.	cubic inch	gov.	governor
AS	as supplied, as stated, as suggested	cw.	clockwise	gph	gallons per hour
ASE	American Society of Engineers	CWC	city water-cooled	gpm	gallons per minute
ASME	American Society of Mechanical Engineers	cyl.	cylinder	gr.	grade, gross
assy.	assembly	D/A	digital to analog	gr. wt.	gross weight
ASTM	American Society for Testing Materials	DAC	digital to analog converter	H x W x D	height by width by depth
ATDC	after top dead center	dB	decibel	HC	hex cap
ATS	automatic transfer switch	dBA	decibel (A weighted)	HCHT	high cylinder head temperature
auto.	automatic	DC	direct current	HD	heavy duty
aux.	auxiliary	DCR	direct current resistance	HET	high exhaust temperature
A/V	audio/visual	deg., °	degree	hex	hexagon
avg.	average	dept.	department	Hg	mercury (element)
AVR	automatic voltage regulator	dia.	diameter	HH	hex head
AWG	American Wire Gauge	DI/EO	dual inlet/end outlet	HHC	hex head cap
AWM	appliance wiring material	DIN	Deutsches Institut fur Normung e. V. (also Deutsche Industrie Normenausschuss)	HP	horsepower
bat.	battery			hr.	hour
BBDC	before bottom dead center	DIP	dual inline package	HS	heat shrink
BC	battery charger, battery charging	DPDT	double-pole, double-throw	hsg.	housing
BCA	battery charging alternator	DPST	double-pole, single-throw	HVAC	heating, ventilation, and air conditioning
BCI	Battery Council International	DS	disconnect switch	HWT	high water temperature
BDC	before dead center	DVR	digital voltage regulator	Hz	hertz (cycles per second)
BHP	brake horsepower	E, emer.	emergency (power source)	IC	integrated circuit
blk.	black (paint color), block (engine)	EDI	electronic data interchange	ID	inside diameter, identification
blk. htr.	block heater	EFR	emergency frequency relay	IEC	International Electrotechnical Commission
BMEP	brake mean effective pressure	e.g.	for example (<i>exempli gratia</i>)	IEEE	Institute of Electrical and Electronics Engineers
bps	bits per second	EG	electronic governor	IMS	improved motor starting
br.	brass	EGSA	Electrical Generating Systems Association	in.	inch
BTDC	before top dead center	EIA	Electronic Industries Association	in. H ₂ O	inches of water
Btu	British thermal unit	EI/EO	end inlet/end outlet	in. Hg	inches of mercury
Btu/min.	British thermal units per minute	EMI	electromagnetic interference	in. lbs.	inch pounds
C	Celsius, centigrade	emiss.	emission	Inc.	incorporated
cal.	calorie	eng.	engine	ind.	industrial
CARB	California Air Resources Board	EPA	Environmental Protection Agency	int.	internal
CB	circuit breaker	EPS	emergency power system	int./ext.	internal/external
cc	cubic centimeter	ER	emergency relay	I/O	input/output
CCA	cold cranking amps	ES	engineering special, engineered special	IP	iron pipe
ccw.	counterclockwise	ESD	electrostatic discharge	ISO	International Organization for Standardization
CEC	Canadian Electrical Code	est.	estimated	J	joule
cfh	cubic feet per hour	E-Stop	emergency stop	JIS	Japanese Industry Standard
cfm	cubic feet per minute	etc.	et cetera (and so forth)	k	kilo (1000)
		exh.	exhaust	K	kelvin
		ext.	external	kA	kiloampere
				KB	kilobyte (2 ¹⁰ bytes)
				kg	kilogram

kg/cm ²	kilograms per square centimeter	mW	milliwatt	rnd.	round
kgm	kilogram-meter	μF	microfarad	ROM	read only memory
kg/m ³	kilograms per cubic meter	N, norm.	normal (power source)	rot.	rotate, rotating
kHz	kilohertz	NA	not available, not applicable	rpm	revolutions per minute
kJ	kilojoule	nat. gas	natural gas	RS	right side
km	kilometer	NBS	National Bureau of Standards	RTV	room temperature vulcanization
kOhm, kΩ	kilo-ohm	NC	normally closed	SAE	Society of Automotive Engineers
kPa	kilopascal	NEC	National Electrical Code	scfm	standard cubic feet per minute
kph	kilometers per hour	NEMA	National Electrical Manufacturers Association	SCR	silicon controlled rectifier
kV	kilovolt	NFPA	National Fire Protection Association	s, sec.	second
kVA	kilovolt ampere	Nm	newton meter	SI	<i>Système international d'unités</i> , International System of Units
kVAR	kilovolt ampere reactive	NO	normally open	SI/EO	side in/end out
kW	kilowatt	no., nos.	number, numbers	sil.	silencer
kWh	kilowatt-hour	NPS	National Pipe, Straight	SN	serial number
kWm	kilowatt mechanical	NPSC	National Pipe, Straight-coupling	SPDT	single-pole, double-throw
L	liter	NPT	National Standard taper pipe thread per general use	SPST	single-pole, single-throw
LAN	local area network	NPTF	National Pipe, Taper-Fine	spec, specs	specification(s)
L x W x H	length by width by height	NR	not required, normal relay	sq.	square
lb.	pound	ns	nanosecond	sq. cm	square centimeter
lbm/ft ³	pounds mass per cubic feet	O/C	overcrank	sq. in.	square inch
LCB	line circuit breaker	OD	outside diameter	SS	stainless steel
LCD	liquid crystal display	OEM	original equipment manufacturer	std.	standard
ld. shd.	load shed	O/F	overfrequency	stl.	steel
LED	light emitting diode	opt.	option, optional	tach.	tachometer
Lph	liters per hour	O/S	oversize, overspeed	TD	time delay
Lpm	liters per minute	OSHA	Occupational Safety and Health Administration	TDC	top dead center
LOP	low oil pressure	O/V	overvoltage	TDEC	time delay engine cooldown
LP	liquefied petroleum	oz.	ounce	TDEN	time delay emergency to normal
LPG	liquefied petroleum gas	p., pp.	page, pages	TDES	time delay engine start
LS	left side	PA	packed accessory	TDNE	time delay normal to emergency
L _{wa}	sound power level, A weighted	PC	personal computer	TDOE	time delay off to emergency
LWL	low water level	PCB	printed circuit board	TDON	time delay off to normal
LWT	low water temperature	pF	picofarad	temp.	temperature
m	meter, milli (1/1000)	PF	power factor	term.	terminal
M	mega (10 ⁶ when used with SI units), male	ph.	phase	TIF	telephone influence factor
m ³	cubic meter	PHC	Phillips head crimplite (screw)	TIR	total indicator reading
m ³ /min.	cubic meters per minute	PHH	Phillips hex head (screw)	tol.	tolerance
mA	milliampere	PHM	pan head machine (screw)	turbo.	turbocharger
man.	manual	PLC	programmable logic control	typ.	typical (same in multiple locations)
max.	maximum	PMG	permanent magnet generator	U/F	underfrequency
MB	megabyte (2 ²⁰ bytes)	pot	potentiometer, potential	UHF	ultrahigh frequency
MCM	one thousand circular mils	ppm	parts per million	UL	Underwriter's Laboratories, Inc.
meggar	megohmmeter	PROM	programmable read only memory	UNC	unified coarse thread (was NC)
MHz	megahertz	psi	pounds per square inch	UNF	unified fine thread (was NF)
mi.	mile	pt.	pint	univ.	universal
mil	one one-thousandth of an inch	PTC	positive temperature coefficient	U/S	undersize, underspeed
min.	minimum, minute	PTO	power takeoff	UV	ultraviolet
misc.	miscellaneous	PVC	polyvinyl chloride	U/V	undervoltage
MJ	megajoule	qt.	quart	V	volt
mJ	millijoule	qty.	quantity	VAC	volts alternating current
mm	millimeter	R	replacement (emergency) power source	VAR	voltampere reactive
mOhm, mΩ	milliohm	rad.	radiator, radius	VDC	volts direct current
MOhm, MΩ	megohm	RAM	random access memory	VFD	vacuum fluorescent display
MOV	metal oxide varistor	RDO	relay driver output	VGA	video graphics adapter
MPa	megapascal	ref.	reference	VHF	very high frequency
mpg	miles per gallon	rem.	remote	W	watt
mph	miles per hour	RFI	radio frequency interference	WCR	withstand and closing rating
MS	military standard	RH	round head	w/	with
m/sec.	meters per second	RHM	round head machine (screw)	w/o	without
MTBF	mean time between failure	rly.	relay	wt.	weight
MTBO	mean time between overhauls	rms	root mean square	xfrm	transformer
mtg.	mounting				
MW	megawatt				

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 Figure 1 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 Appendix C, General Torque Specifications, and other torque specifications in the service literature.

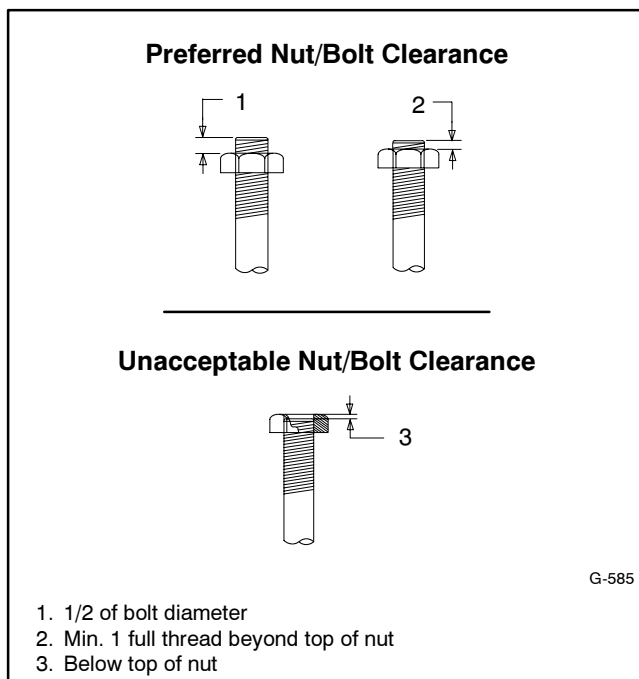


Figure 1 Acceptable Bolt Lengths

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 Figure 2.

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 Figure 2, which depicts the preceding hardware configuration possibilities.

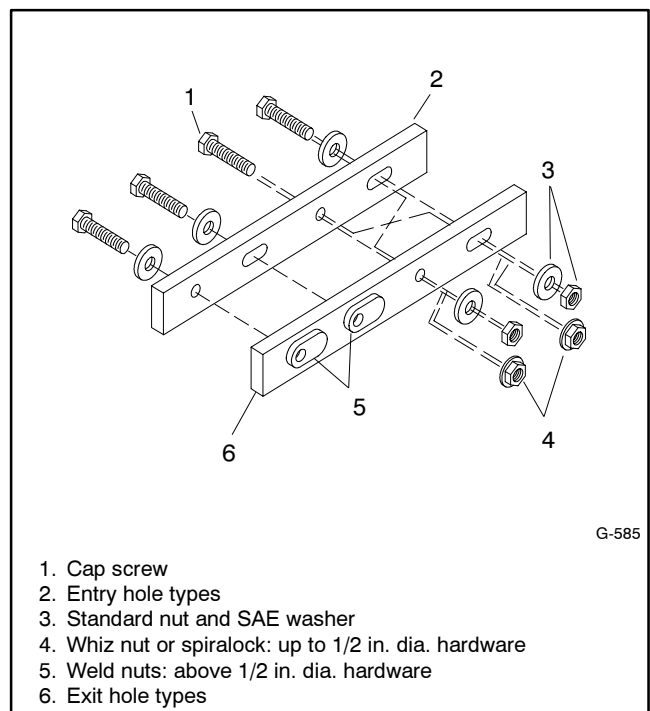


Figure 2 Acceptable Hardware Combinations

Appendix C General Torque Specifications

Use the following torque specifications when service literature instructions give no specific torque values. The charts list values for new plated, zinc phosphate, or

oiled threads. Increase values by 15% for nonplated threads. All torque values are +0%/-10%.

American Standard Fasteners Torque Specifications					
Size	Torque Measurement	Assembled into Cast Iron or Steel			Assembled into Aluminum Grade 2 or 5
		Grade 2	Grade 5	Grade 8	
8-32	Nm (in. lb.)	1.8 (16)	2.3 (20)	—	1.8 (16)
10-24	Nm (in. lb.)	2.9 (26)	3.6 (32)	—	2.9 (26)
10-32	Nm (in. lb.)	2.9 (26)	3.6 (32)	—	2.9 (26)
1/4-20	Nm (in. lb.)	6.8 (60)	10.8 (96)	14.9 (132)	6.8 (60)
1/4-28	Nm (in. lb.)	8.1 (72)	12.2 (108)	16.3 (144)	8.1 (72)
5/16-18	Nm (in. lb.)	13.6 (120)	21.7 (192)	29.8 (264)	13.6 (120)
5/16-24	Nm (in. lb.)	14.9 (132)	23.1 (204)	32.5 (288)	14.9 (132)
3/8-16	Nm (ft. lb.)	24.0 (18)	38.0 (28)	53.0 (39)	24.0 (18)
3/8-24	Nm (ft. lb.)	27.0 (20)	42.0 (31)	60.0 (44)	27.0 (20)
7/16-14	Nm (ft. lb.)	39.0 (29)	60.0 (44)	85.0 (63)	—
7/16-20	Nm (ft. lb.)	43.0 (32)	68.0 (50)	95.0 (70)	—
1/2-13	Nm (ft. lb.)	60.0 (44)	92.0 (68)	130.0 (96)	—
1/2-20	Nm (ft. lb.)	66.0 (49)	103.0 (76)	146.0 (108)	—
9/16-12	Nm (ft. lb.)	81.0 (60)	133.0 (98)	187.0 (138)	—
9/16-18	Nm (ft. lb.)	91.0 (67)	148.0 (109)	209.0 (154)	—
5/8-11	Nm (ft. lb.)	113.0 (83)	183.0 (135)	259.0 (191)	—
5/8-18	Nm (ft. lb.)	128.0 (94)	208.0 (153)	293.0 (216)	—
3/4-10	Nm (ft. lb.)	199.0 (147)	325.0 (240)	458.0 (338)	—
3/4-16	Nm (ft. lb.)	222.0 (164)	363.0 (268)	513.0 (378)	—
1-8	Nm (ft. lb.)	259.0 (191)	721.0 (532)	1109.0 (818)	—
1-12	Nm (ft. lb.)	283.0 (209)	789.0 (582)	1214.0 (895)	—

Metric Fasteners Torque Specifications, Measured in Nm (ft. lb.)				
Size (mm)	Assembled into Cast Iron or Steel			Assembled into Aluminum Grade 5.8 or 8.8
	Grade 5.8	Grade 8.8	Grade 10.9	
M6 x 1.00	5.6 (4)	9.9 (7)	14.0 (10)	5.6 (4)
M8 x 1.25	13.6 (10)	25.0 (18)	35.0 (26)	13.6 (10)
M8 x 1.00	21.0 (16)	25.0 (18)	35.0 (26)	21.0 (16)
M10 x 1.50	27.0 (20)	49.0 (35)	68.0 (50)	27.0 (20)
M10 x 1.25	39.0 (29)	49.0 (35)	68.0 (50)	39.0 (29)
M12 x 1.75	47.0 (35)	83.0 (61)	117.0 (86)	—
M12 x 1.50	65.0 (48)	88.0 (65)	125.0 (92)	—
M14 x 2.00	74.0 (55)	132.0 (97)	185.0 (136)	—
M14 x 1.50	100.0 (74)	140.0 (103)	192.0 (142)	—
M16 x 2.00	115.0 (85)	200.0 (148)	285.0 (210)	—
M16 x 1.50	141.0 (104)	210.0 (155)	295.0 (218)	—
M18 x 2.50	155.0 (114)	275.0 (203)	390.0 (288)	—
M18 x 1.50	196.0 (145)	305.0 (225)	425.0 (315)	—

Appendix D Common Hardware Identification

Screw/Bolts/Studs	
Head Styles	
Hex Head or Machine Head	
Hex Head or Machine Head with Washer	
Flat Head (FHM)	
Round Head (RHM)	
Pan Head	
Hex Socket Head Cap or Allen™ Head Cap	
Hex Socket Head or Allen™ Head Shoulder Bolt	
Sheet Metal Screw	
Stud	
Drive Styles	
Hex	
Hex and Slotted	
Phillips®	
Slotted	
Hex Socket	

Nuts	
Nut Styles	
Hex Head	
Lock or Elastic	
Square	
Cap or Acorn	
Wing	
Washers	
Washer Styles	
Plain	
Split Lock or Spring	
Spring or Wave	
External Tooth Lock	
Internal Tooth Lock	
Internal-External Tooth Lock	

Hardness Grades	
American Standard	
Grade 2	 
Grade 5	 
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

Allen™ head screw is a trademark of Holo-Krome Co.

Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

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

1/4-20 x 1
 — Length In Inches (Screws and Bolts)
 — Threads Per Inch
 — Major Thread Diameter In Fractional Inches Or Screw Number Size

Metric (Screws, Bolts, Studs, and Nuts)

M8-1.25 x 20
 — Length In Millimeters (Screws and Bolts)
 — Distance Between Threads In Millimeters
 — Major Thread Diameter In Millimeters

Plain Washers

9/32 x 5/8 x 1/16
 — Thickness
 — External Dimension
 — Internal Dimension

Lock Washers

5/8
 — Internal Dimension

Appendix E Common Hardware List

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

American Standard

Part No. Dimensions Hex Head Bolts (Grade 5)

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

Part No. Dimensions Hex Head Bolts, cont.

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
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

Part No. Dimensions Type

Hex Nuts

X-6009-1	1-8	Standard
X-6210-3	6-32	Whiz
X-6210-4	8-32	Whiz
X-6210-5	10-24	Whiz
X-6210-1	10-32	Whiz
X-6210-2	1/4-20	Spiralock
X-6210-6	1/4-28	Spiralock
X-6210-7	5/16-18	Spiralock
X-6210-8	5/16-24	Spiralock
X-6210-9	3/8-16	Spiralock
X-6210-10	3/8-24	Spiralock
X-6210-11	7/16-14	Spiralock
X-6210-12	1/2-13	Spiralock
X-6210-15	7/16-20	Spiralock
X-6210-14		Spiralock
X-85-3	5/8-11	Standard
X-88-12	3/4-10	Standard
X-89-2	1/2-20	Standard

Washers

Part No.	ID	OD	Thick.	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

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions	Type
Hex Head Bolts (partial thread)		Hex Head Bolts (full thread)		Hex Nuts		
M931-06040-60	M6-1.00 x 40	M933-04006-60	M4-0.70 x 6	M934-03-50	M3-0.50	Standard
M931-06055-60	M6-1.00 x 55					
M931-06060-60	M6-1.00 x 60	M933-05050-60	M5-0.80 x 50	M934-04-50	M4-0.70	Standard
M931-06070-60	M6-1.00 x 70					
M931-06075-60	M6-1.00 x 75	M933-06010-60	M6-1.00 x 10	M934-05-50	M5-0.80	Standard
M931-06090-60	M6-1.00 x 90	M933-06014-60	M6-1.00 x 14	M982-05-80	M5-0.80	Elastic Stop
		M933-06016-60	M6-1.00 x 16			
M931-08035-60	M8-1.25 x 35	M933-06020-60	M6-1.00 x 20	M6923-06-80	M6-1.00	Spiralock
M931-08040-60	M8-1.25 x 40	M933-06025-60	M6-1.00 x 25	M934-06-64	M6-1.00	Std. (green)
M931-08040-82	M8-1.25 x 40*	M933-06040-60	M6-1.00 x 40	M982-06-80	M6-1.00	Elastic Stop
M931-08045-60	M8-1.25 x 45	M933-06050-60	M6-1.00 x 50			
M931-08050-60	M8-1.25 x 50			M6923-08-80	M8-1.25	Spiralock
M931-08055-82	M8-1.25 x 55*	M933-08016-60	M8-1.25 x 16	M934-08-60	M8-1.25	Standard
M931-08060-60	M8-1.25 x 60	M933-08020-60	M8-1.25 x 20	M982-08-80	M8-1.25	Elastic Stop
M931-08070-60	M8-1.25 x 70	M933-08025-60	M8-1.25 x 25			
M931-08070-82	M8-1.25 x 70*	M933-08030-60	M8-1.25 x 30	M6923-10-80	M10-1.50	Spiralock
M931-08075-60	M8-1.25 x 75			M982-10-80	M10-1.50	Elastic Stop
M931-08080-60	M8-1.25 x 80	M933-10012-60	M10-1.50 x 12			
M931-08090-60	M8-1.25 x 90	M961-10020-60	M10-1.25 x 20	M6923-12-80	M12-1.75	Spiralock
M931-08095-60	M8-1.25 x 95	M933-10020-60	M10-1.50 x 20	M982-12-80	M12-1.75	Elastic Stop
M931-08100-60	M8-1.25 x 100	M933-10025-60	M10-1.50 x 25			
		M933-10030-60	M10-1.50 x 30	M982-14-80	M14-2.00	Elastic Stop
M931-10040-60	M10-1.50 x 40	M933-10030-82	M10-1.50 x 30*	M6923-16-80	M16-2.00	Spiralock
M931-10045-60	M10-1.50 x 45	M961-10035-60	M10-1.25 x 35	M982-16-80	M16-2.00	Elastic Stop
M931-10050-60	M10-1.50 x 50	M933-10035-60	M10-1.50 x 35			
M931-10055-60	M10-1.50 x 55			M982-18-80	M18-2.50	Elastic Stop
M931-10060-60	M10-1.50 x 60	M933-12016-60	M12-1.75 x 16			
M931-10065-60	M10-1.50 x 65	M933-12020-60	M12-1.75 x 20	M934-20-80	M20-2.50	Standard
M931-10070-60	M10-1.50 x 70	M933-12025-60	M12-1.75 x 25	M982-20-80	M20-2.50	Elastic Stop
M931-10080-60	M10-1.50 x 80	M933-12025-82	M12-1.75 x 25*			
M931-10090-60	M10-1.50 x 90	M933-12030-60	M12-1.75 x 30	M934-22-80	M22-2.50	Standard
M931-10100-60	M10-1.50 x 100	M933-12040-60	M12-1.75 x 40	M982-22-80	M22-2.50	Elastic Stop
		M933-12040-82	M12-1.75 x 40*			
M931-12045-60	M12-1.75 x 45			M934-24-80	M24-3.00	Standard
M931-12050-60	M12-1.75 x 50	M961-14025-60	M14-1.50 x 25	M982-24-80	M24-3.00	Elastic Stop
M931-12055-60	M12-1.75 x 55	M933-14025-60	M14-2.00 x 25			
M931-12060-60	M12-1.75 x 60					
M931-12065-60	M12-1.75 x 65	M961-16025-60	M16-1.50 x 25			
M931-12080-60	M12-1.75 x 80	M933-16025-60	M16-2.00 x 25			
M931-12090-60	M12-1.75 x 90	M933-16030-82	M16-2.00 x 30*			
M931-12100-60	M12-1.75 x 100	M933-16035-60	M16-2.00 x 35			
M931-12110-60	M12-1.75 x 110	M933-16040-60	M16-2.00 x 40			
		M933-16050-60	M16-2.00 x 50			
M931-16090-60	M16-2.00 x 90	M933-16050-82	M16-2.00 x 50*			
		M933-16060-60	M16-2.00 x 60			
M931-20065-60	M20-2.50 x 65					
M931-20120-60	M20-2.50 x 120	M933-18050-60	M18-2.50 x 50			
M931-20160-60	M20-2.50 x 160	M933-18060-60	M18-2.50 x 60			
M931-22090-60	M22-2.50 x 90					
M931-22120-60	M22-2.50 x 120					
M931-22160-60	M22-2.50 x 160					
M931-24090-60	M24-3.00 x 90					
M931-24120-60	M24-3.00 x 120					
M931-24160-60	M24-3.00 x 160					

* This metric hex bolt's hardness is grade 10.9.

SPECTRUM[®]

DETROIT DIESEL



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