

Service Parts



Industrial Generator Set Controllers

Models:

20-2000 kW

Controllers:

Basic

Microprocessor, Microprocessor-Plus

Digital, Digital 550

Paralleling Engine Gauge Box

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Section 1 Introduction

This manual lists service replacement parts for generator set controller groups and controller kits.

1.1 Identifying the Controller Group Parts

The controller group contains the controller assembly, controller mounting hardware, sensors, transformers, wiring harnesses, and other related parts. Follow the steps below to identify controller group service part numbers.

1. Locate the generator set nameplate to **identify the generator set specification (spec) number**.

or

Locate the generator set nameplate listing accessories to **identify an optional installed controller kit number**. On some models this nameplate is mounted inside the generator junction box. See Figure 1 for an example of the nameplate.

2. **Turn to Chart 1—Controller Group Data** in Section 2. The first column lists generator set spec numbers and installed controller kit numbers. See Figure 2 below for an example.

3. **Locate in the first column** of Chart 1 the generator set spec number or the installed controller kit number found in step 1.
4. Read across Chart 1 and **locate in the last column the catalog section number** that lists controller group parts. See Figure 2.

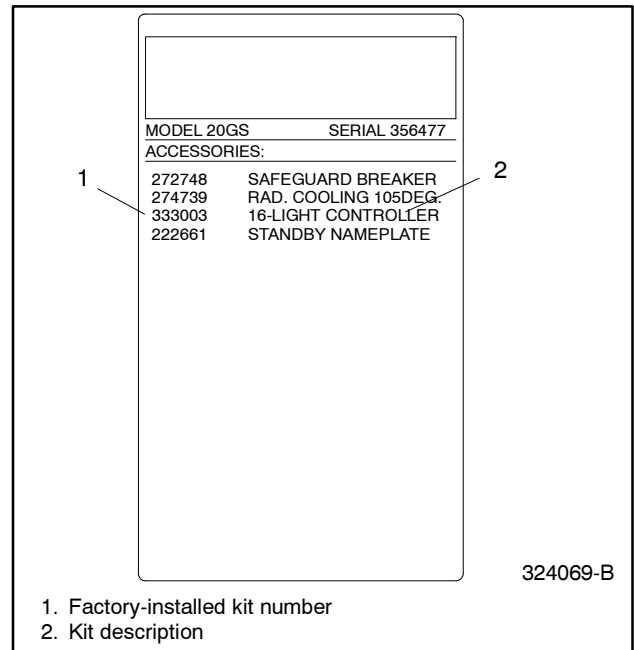


Figure 1 Generator Accessory Nameplate

Chart 1: Controller Group Data							
Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
325146	20/30	600	A-325781	7-Light	Standard	12	2
325147	20/30	600	A-325747	16-Light	Oversized	12	2
325148	20/30	600	A-325817	7-Light	Oversized	12	2
333003	20	Std.	A-325710	16-Light	Standard	12	2
333004	20	Std.	A-325780	7-Light	Standard	12	2
333005	20	Std.	A-325746	16-Light	Oversized	12	2

1. Spec or kit number
2. Controller assembly part number
3. Controller type
4. Section Number

Figure 2 Data Chart Example

5. Turn to Chart 3—Controller Ammeter in section 8 for **ammeter part numbers**. See Figure 4.

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
A-325613	282956
A-325710	282934
A-325711	282934
A-325712	295337

1. Controller assembly part number

2. Ammeter part number

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Figure 4 Ammeter Chart Example

1.2 Identifying the Controller Assembly Service Part Numbers

The controller assembly includes control circuitry, connection terminals, and other related parts. Follow the steps below to identify controller assembly service part numbers.

1. Complete steps 1–3 of section 1.1, **Identifying the Controller Group Parts** to identify the controller group parts.
2. Read across Chart 1 in Section 2 and **locate the controller assembly part number and controller type**. See Figure 2.
3. Find the page number of the controller type in the Table of Contents and turn to that page to locate the controller type.
4. **Use the drawing and itemized text** to locate the part and its part number.

Section 2 Controller Group Data

This chart lists specification (spec) number and controller kit data. The chart is sorted by Controller Kit/spec number.

Chart 1: Controller Group Data							
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
193001	20	Standard	A-325710	16-Light	Standard	12	3
193003	20	Standard	A-325710	16-Light	Standard	12	3
193005	20	600	A-325711	16-Light	Standard	12	3
193007	30	Standard	A-325712	16-Light	Standard	12	3
193009	30	Standard	A-325712	16-Light	Standard	12	3
193011	30	600	A-325711	16-Light	Standard	12	3
193013	30	Standard	A-325712	16-Light	Standard	12	3
193015	30	Standard	A-325712	16-Light	Standard	12	3
193017	30	600	A-325711	16-Light	Standard	12	3
193021	35	Standard	A-325714	16-Light	Standard	12	3
193023	35	Standard	A-325714	16-Light	Standard	12	3
193025	35	600	A-325711	16-Light	Standard	12	3
193027	45	Standard	A-325714	16-Light	Standard	12	3
193029	45	Standard	A-325714	16-Light	Standard	12	3
193031	45	600	A-325715	16-Light	Standard	12	3
193033	50	Standard	A-325716	16-Light	Standard	12	3
193034	50	Standard	A-325716	16-Light	Standard	12	3
193035	50	600	A-325715	16-Light	Standard	12	3
193039	60	Standard	A-325716	16-Light	Standard	12	3
193040	60	Standard	A-325716	16-Light	Standard	12	3
193041	60	600	A-325717	16-Light	Standard	12	3
193045	70	Standard	A-325716	16-Light	Standard	12	3
193046	70	Standard	A-325716	16-Light	Standard	12	3
193047	70	600	A-325720	16-Light	Standard	12	3
193051	80	Standard	A-325716	16-Light	Standard	12	3
193052	80	Standard	A-325719	16-Light	Standard	12	3
193053	80	600	A-325720	16-Light	Standard	12	3
193057	100	Standard	A-325719	16-Light	Standard	12	3
193058	100	Standard	A-325741	16-Light	Standard	12	3
193059	100	600	A-325720	16-Light	Standard	12	3
193063	35	Standard	A-325714	16-Light	Standard	12	3
193064	35	Standard	A-325714	16-Light	Standard	12	3
193065	35	600	A-325711	16-Light	Standard	12	3
193066	45	Standard	A-325714	16-Light	Standard	12	3
193067	45	Standard	A-325714	16-Light	Standard	12	3
193068	45	600	A-325715	16-Light	Standard	12	3
193069	20	Standard	A-325710	16-Light	Standard	12	3
193071	20	Standard	A-325710	16-Light	Standard	12	3
193073	20	600	A-325711	16-Light	Standard	12	3
193079	30	Standard	A-325712	16-Light	Standard	12	3
193080	30	Standard	A-325712	16-Light	Standard	12	3
193081	30	600	A-325711	16-Light	Standard	12	3
193085	20	Standard	A-325710	16-Light	Standard	12	3
193087	20	Standard	A-325710	16-Light	Standard	12	3
193089	20	600	A-325711	16-Light	Standard	12	3
194001	135	Standard	A-325850	16-Light	Standard	12	3
194002	135	600	A-325851	16-Light	Standard	12	3
194011	150	Standard	A-325850	16-Light	Standard	12	3
194012	150	600	A-325851	16-Light	Standard	12	3
194013	150	Standard	A-325863	16-Light	Standard	12	3
194014	150	600	A-325864	16-Light	Standard	12	3
194021	180	Standard	A-325863	16-Light	Standard	12	3
194022	180	600	A-325864	16-Light	Standard	12	3
194023	180	Standard	A-325863	16-Light	Standard	12	3
194024	180	600	A-325864	16-Light	Standard	12	3

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data							
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
194033	150	Standard	A-325850	16-Light	Standard	12	3
194034	150	600	A-325851	16-Light	Standard	12	3
194039	180	Standard	A-325863	16-Light	Standard	12	3
194040	180	600	A-325864	16-Light	Standard	12	3
194041	180	Standard	A-325863	16-Light	Standard	12	3
194042	180	600	A-325864	16-Light	Standard	12	3
194052	135	Standard	A-325850	16-Light	Standard	12	3
194061	150	Standard	A-325850	16-Light	Standard	12	3
194072	180	Standard	A-325863	16-Light	Standard	12	3
194074	180	600	A-325864	16-Light	Standard	12	3
194200	200	Standard	A-325724	16-Light	Standard	24	3
194201	200	600	A-325727	16-Light	Standard	24	3
194202	200	Standard	A-325724	16-Light	Standard	24	3
194203	200	600	A-325727	16-Light	Standard	24	3
194210	230	Standard	A-325726	16-Light	Standard	24	3
194211	230	600	A-325727	16-Light	Standard	24	3
194212	230	Standard	A-325726	16-Light	Standard	24	3
194213	230	600	A-325727	16-Light	Standard	24	3
194220	250	Standard	A-325726	16-Light	Standard	24	3
194221	250	600	A-325727	16-Light	Standard	24	3
194222	250	Standard	A-325726	16-Light	Standard	24	3
194223	250	600	A-325727	16-Light	Standard	24	3
194230	275	Standard	A-350137	16-Light	Standard	24	3
194231	275	600	A-325727	16-Light	Standard	24	3
194232	275	Standard	A-350137	16-Light	Standard	24	3
194233	275	600	A-325727	16-Light	Standard	24	3
194240	200	Standard	A-325724	16-Light	Standard	24	3
194241	200	600	A-325727	16-Light	Standard	24	3
194242	200	Standard	A-325724	16-Light	Standard	24	3
194243	200	600	A-325727	16-Light	Standard	24	3
194250	230	Standard	A-325726	16-Light	Standard	24	3
194251	230	600	A-325727	16-Light	Standard	24	3
194252	230	Standard	A-325726	16-Light	Standard	24	3
194253	230	600	A-325727	16-Light	Standard	24	3
194260	250	Standard	A-325726	16-Light	Standard	24	3
194261	250	600	A-325727	16-Light	Standard	24	3
194262	250	Standard	A-325726	16-Light	Standard	24	3
194263	250	600	A-325727	16-Light	Standard	24	3
194270	275	Standard	A-350137	16-Light	Standard	24	3
194271	275	600	A-325727	16-Light	Standard	24	3
194272	275	Standard	A-350137	16-Light	Standard	24	3
194273	275	600	A-325727	16-Light	Standard	24	3
194285	200	Standard	A-325724	16-Light	Standard	24	3
194287	200	Standard	A-325724	16-Light	Standard	24	3
194295	230	Standard	A-325726	16-Light	Standard	24	3
194297	230	Standard	A-325726	16-Light	Standard	24	3
194303	250	Standard	A-325726	16-Light	Standard	24	3
194309	275	600	A-325727	16-Light	Standard	24	3
194324	230	Standard	A-350232	16-Light	Standard	24	3
194325	230	600	A-350240	16-Light	Standard	24	3
194329	230	Standard	A-350232	16-Light	Standard	24	3
194340	250	Standard	A-350236	16-Light	Standard	24	3
194341	250	600	A-350240	16-Light	Standard	24	3
194342	250	Standard	A-350236	16-Light	Standard	24	3
194343	250	600	A-350240	16-Light	Standard	24	3
194346	250	Standard	A-350236	16-Light	Standard	24	3
194347	250	Standard	A-350236	16-Light	Standard	24	3
194356	275	Standard	A-350236	16-Light	Standard	24	3
194357	275	600	A-350240	16-Light	Standard	24	3

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data

Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
194361	275	Standard	A-350236	16-Light	Standard	24	3
194369	300	Standard	A-350236	16-Light	Standard	24	3
194370	300	600	A-350240	16-Light	Standard	24	3
194372	300	Standard	A-350236	16-Light	Standard	24	3
194382	350	Standard	A-350292	16-Light	Standard	24	4
194383	350	Standard	A-350292	16-Light	Standard	24	4
194384	350	Standard	A-350292	16-Light	Standard	24	4
194385	350	380	A-350292	16-Light	Standard	24	4
194386	350	380	A-350292	16-Light	Standard	24	4
194387	350	600	A-350300	16-Light	Standard	24	4
194388	350	600	A-350300	16-Light	Standard	24	4
194394	350	Standard	A-350292	16-Light	Standard	24	4
194395	350	Standard	A-350292	16-Light	Standard	24	4
194396	350	Standard	A-350292	16-Light	Standard	24	4
325141	20/30	Standard	A-325712	16-Light	Standard	12	3
325142	20/30	Standard	A-325782	7-Light	Standard	12	3
325143	20/30	600	A-325711	16-Light	Standard	12	3
325144	20/30	Standard	A-325818	7-Light	Oversized	12	3
325145	20/30	Standard	A-325748	16-Light	Oversized	12	3
325146	20/30	600	A-325781	7-Light	Standard	12	3
325147	20/30	600	A-325747	16-Light	Oversized	12	3
325148	20/30	600	A-325817	7-Light	Oversized	12	3
325151	40	Standard	A-325714	16-Light	Standard	12	3
325152	40	Standard	A-325783	7-Light	Standard	12	3
325153	40/50	600	A-325715	16-Light	Standard	12	3
325154	40	Standard	A-325819	7-Light	Oversized	12	3
325155	40	Standard	A-325749	16-Light	Oversized	12	3
325156	40/50	600	A-325784	7-Light	Standard	12	3
325157	40/50	600	A-325750	16-Light	Oversized	12	3
325158	40/50	600	A-325820	7-Light	Oversized	12	3
325161	50/60	Standard	A-325716	16-Light	Standard	12	3
325162	50/60	Standard	A-325785	7-Light	Standard	12	3
325163	50/60	Standard	A-325751	16-Light	Oversized	12	3
325164	50/60	Standard	A-325821	7-Light	Oversized	12	3
325166	60	600	A-325786	7-Light	Standard	12	3
325167	60	600	A-325717	16-Light	Standard	12	3
325168	60	600	A-325822	7-Light	Oversized	12	3
325169	60	600	A-325752	16-Light	Oversized	12	3
325171	60/80	Standard	A-325716	16-Light	Standard	12	3
325172	60/80	Standard	A-325785	7-Light	Standard	12	3
325173	80/125	600	A-325720	16-Light	Standard	12	3
325175	60/80	Standard	A-325751	16-Light	Oversized	12	3
325176	80/125	600	A-325788	7-Light	Standard	12	3
325177	80/125	600	A-325754	16-Light	Oversized	12	3
325178	80/125	600	A-325824	7-Light	Oversized	12	3
325181	80/100	Standard	A-325719	16-Light	Standard	12	3
325182	80/100	Standard	A-325787	7-Light	Standard	12	3
325183	80/100	Standard	A-325753	16-Light	Oversized	12	3
325184	80/100	Standard	A-325823	7-Light	Oversized	12	3
325186	100/125	Standard	A-325810	7-Light	Standard	12	3
325187	100/125	Standard	A-325741	16-Light	Standard	12	3
325188	100	Standard	A-325845	7-Light	Oversized	12	3
325189	100/125	Standard	A-325775	16-Light	Oversized	12	3
325191	135/150	Standard	A-325737	16-Light	Standard	12	3
325192	135/150	Standard	A-325806	7-Light	Standard	12	3
325194	135	Standard	A-325841	7-Light	Oversized	12	3
325195	135/150	600	A-325721	16-Light	Standard	12	3
325196	135/150	600	A-325790	7-Light	Standard	12	3
325197	135/150	Standard	A-325771	16-Light	Oversized	12	3

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data							
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
325198	135/150	600	A-325827	7-Light	Oversized	12	3
325201	135/150	600	A-325755	16-Light	Oversized	12	3
325203	150-180	Standard	A-325738	16-Light	Standard	12	3
325205	180	600	A-325739	16-Light	Standard	12	3
325207	180	Standard	A-325772	16-Light	Oversized	12	3
325209	180	600	A-325773	16-Light	Oversized	12	3
325210	150-180	Standard	A-325807	7-Light	Standard	12	3
325211	200	Standard	A-325724	16-Light	Standard	24	3
325212	180	Standard	A-325842	7-Light	Oversized	12	3
325214	180	600	A-325808	7-Light	Standard	12	3
325215	200	Standard	A-325758	16-Light	Oversized	24	3
325216	180	600	A-325843	7-Light	Oversized	12	3
325219	200	Standard	GM10488-3	Engine Gauge	NA	24	3
325222	200	Standard	A-325793	7-Light	Standard	24	3
325223	200-300	600	A-325727	16-Light	Standard	24	3
325224	200	Standard	A-325828	7-Light	Oversized	24	3
325227	200-300	600	A-325761	16-Light	Oversized	24	3
325234	200-300	600	A-325796	7-Light	Standard	24	3
325236	200-300	600	A-325831	7-Light	Oversized	24	3
325422	400	Standard	A-325730	16-Light	Standard	24	4
325423	400	Standard	A-325799	7-Light	Standard	24	4
325424	400	Standard	A-325764	16-Light	Oversized	24	4
325425	400	Standard	A-325834	7-Light	Oversized	24	4
325426	350/400	all	GM10488-5	Engine Gauge	NA	24	4
325431	400	600	A-325731	16-Light	Standard	24	4
325432	400	600	A-325800	7-Light	Standard	24	4
325433	400	600	A-325765	16-Light	Oversized	24	4
325434	400	600	A-325835	7-Light	Oversized	24	4
325439	400	380	A-325730	16-Light	Standard	24	4
325440	400	380	A-325799	7-Light	Standard	24	4
325441	400	380	A-325764	16-Light	Oversized	24	4
325442	400	380	A-325834	7-Light	Oversized	24	4
325476	350/400	Standard	A-325728	16-Light	Standard	24	4
325477	350/400	Standard	A-325797	7-Light	Standard	24	4
325478	350/400	Standard	A-325762	16-Light	Oversized	24	4
325479	350/400	Standard	A-325832	7-Light	Oversized	24	4
325480	350	600	A-325729	16-Light	Standard	24	4
325481	350	600	A-325798	7-Light	Standard	24	4
325482	350	600	A-325763	16-Light	Oversized	24	4
325483	350	600	A-325833	7-Light	Oversized	24	4
325484	350	380	A-325728	16-Light	Standard	24	4
325485	350	380	A-325797	7-Light	Standard	24	4
325486	350	380	A-325762	16-Light	Oversized	24	4
325487	350	380	A-325832	7-Light	Oversized	24	4
325714	60/80	Standard	A-325821	7-Light	Oversized	12	3
325964	135/150	Standard	A-325850	16-Light	Standard	24	3
325965	135/150	600	A-325851	16-Light	Standard	24	3
325966	135/150	Standard	A-325853	16-Light	Oversized	24	3
325967	135/150	600	A-325854	16-Light	Oversized	24	3
325968	135/150	Standard	A-325856	7-Light	Standard	24	3
325969	135/150	600	A-325857	7-Light	Standard	24	3
325970	135/150	Standard	A-325859	7-Light	Oversized	24	3
325971	135/150	600	A-325854	7-Light	Oversized	24	3
325972	150-180	Standard	A-325863	16-Light	Standard	24	3
325973	180	600	A-325864	16-Light	Standard	24	3
325974	180	Standard	A-325865	16-Light	Oversized	24	3
325975	180	600	A-325866	16-Light	Oversized	24	3
325976	150-180	Standard	A-325863	7-Light	Standard	24	3
325977	180	600	A-325868	7-Light	Standard	24	3

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data							
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
325978	150/180	Standard	A-325869	7-Light	Oversized	24	3
325979	180	600	A-325870	7-Light	Oversized	24	3
333003	20	Standard	A-325710	16-Light	Standard	12	3
333004	20	Standard	A-325780	7-Light	Standard	12	3
333005	20	Standard	A-325746	16-Light	Oversized	12	3
333006	20	Standard	A-325816	7-Light	Oversized	12	3
333134	20	Standard	364454-6	Basic w/gauges and meter	NA	12	3
333135	170	Standard	A-336597	Basic	NA	12	3
333136	20-35	Standard	364454-9	Basic w/gauges and meter	NA	12	3
333142	40-45	Standard	364454-11	Basic w/gauges and meter	NA	12	3
333146	60	Standard	364454-14	Basic w/gauges and meter	NA	12	3
333150	20	Standard	364454-7	Basic w/gauges and meter	NA	12	3
333162	50/60	600	364454-12	Basic w/gauges and meter	NA	12	3
333170	70-100	Standard	364454-16	Basic w/gauges and meter	NA	12	3
333172	100	Standard	364454-18	Basic w/gauges and meter	NA	12	3
333174	135/150	Standard	364454-20	Basic w/gauges and meter	NA	12	3
333178	70-115	600	364454-15	Basic w/gauges and meter	NA	12	3
333184	135/150	600	364454-17	Basic w/gauges and meter	NA	12	3
333190	170	Standard	364454-21	Basic w/gauges and meter	NA	12	3
333192	170	600	364454-19	Basic w/gauges and meter	NA	12	3
333195	170	Standard	364455-1	Basic w/gauges	NA	12	3
343267	200	Standard	A-325724	16-Light	Standard	24	3
343268	230/250	Standard	A-325726	16-Light	Standard	24	3
343270	230-275	600	A-325727	16-Light	Standard	24	3
343273	200	Standard	A-325793	7-Light	Standard	24	3
343274	230/250	Standard	A-325795	7-Light	Standard	24	3
343276	230-275	600	A-325796	7-Light	Standard	24	3
343277	200	Standard	A-325758	16-Light	Oversized	24	3
343278	230/250	Standard	A-325760	16-Light	Oversized	24	3
343280	230-275	600	A-325761	16-Light	Oversized	24	3
343281	200	Standard	A-325828	7-Light	Oversized	24	3
343282	230/250	Standard	A-325830	7-Light	Oversized	24	3
343284	230-275	600	A-325831	7-Light	Oversized	24	3
343293	275	Standard	A-350137	16-Light	Standard	24	3
343294	275	Standard	A-350138	7-Light	Standard	24	3
343295	275	Standard	A-350139	16-Light	Oversized	24	3
343296	275	Standard	A-350140	7-Light	Oversized	24	3
343792	350/400	all	GM10488-9	Engine Gauge	NA	24	4
350046	30/40/50	Standard	A-350092	Digital	NA	12	3
350047	40	Standard	A-350092	Digital	NA	12	3
350051	30	600	A-350092	Digital	NA	12	3
350051	20/30/60	Standard	A-350092	Digital	NA	12	3
350052	60/80	Standard	A-350092	Digital	NA	12	3
350053	80/100	Standard	A-350092	Digital	NA	12	3
350054	100	Standard	A-350092	Digital	NA	12	3
350055	135/150	Standard	A-350092	Digital	NA	12	3
350057	60/80/100/135/15	Standard	A-350092	Digital	NA	24	3

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data							
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
350058	70-125	600	A-350092	Digital	NA	12	3
350059	135/150	600	A-350092	Digital	NA	12	3
350061	135/150	600	A-350124	Digital	NA	24	3
350063	150-180	Standard	A-350092	Digital	NA	12	3
350064	150-180	Standard	A-350124	Digital	NA	24	3
350065	180	600	A-350092	Digital	NA	12	3
350067	180	600	A-350124	Digital	NA	24	3
350068	200	Standard	A-350124	Digital	NA	24	3
350072	200-300	600	A-350124	Digital	NA	24	3
350074	400	Standard	A-350093	Digital	NA	24	4
350076	400	600	A-350093	Digital	NA	24	4
350078	400	380	A-350093	Digital	NA	24	4
350094	350/400	Standard	A-350093	Digital	NA	24	4
350095	350	600	A-350093	Digital	NA	24	4
350096	350	380	A-350093	Digital	NA	24	4
350134	230/250	Standard	A-350124	Digital	NA	24	3
350135	230-275	600	A-350124	Digital	NA	24	3
350136	275	Standard	A-350124	Digital	NA	24	3
350141	200	Standard	A-350124	Digital	NA	24	3
350219	230	Standard	A-350232	16-Light	Standard	24	3
350220	230	Standard	A-350233	7-Light	Standard	24	3
350221	230	Standard	A-350234	16-Light	Oversized	24	3
350222	230	Standard	A-350235	7-Light	Oversized	24	3
350223	250-300	Standard	A-350236	16-Light	Standard	24	3
350224	250-300	Standard	A-350237	7-Light	Standard	24	3
350225	250-300	Standard	A-350238	16-Light	Oversized	24	3
350226	250-300	Standard	A-350239	7-Light	Oversized	24	3
350227	230-300	600	A-350240	16-Light	Standard	24	3
350228	230-300	600	A-350241	7-Light	Standard	24	3
350229	230-300	600	A-350242	16-Light	Oversized	24	3
350230	230-300	600	A-350243	7-Light	Oversized	24	3
350231	230	Standard	A-350244	Digital	NA	24	3
350277	350/400	Standard	A-350292	16-Light	Standard	24	4
350278	350/400	Standard	A-350293	7-Light	Standard	24	4
350279	350/400	Standard	A-350294	16-Light	Oversized	24	4
350280	350/400	Standard	A-350295	7-Light	Oversized	24	4
350281	350	380	A-350292	16-Light	Standard	24	4
350282	350	380	A-350293	7-Light	Standard	24	4
350283	350	380	A-350294	16-Light	Oversized	24	4
350284	350	380	A-350295	7-Light	Oversized	24	4
350285	350	600	A-350300	16-Light	Standard	24	4
350286	350	600	A-350301	7-Light	Standard	24	4
350287	350	600	A-350302	16-Light	Oversized	24	4
350288	350	600	A-350303	7-Light	Oversized	24	4
350289	350/400	Standard	A-350304	Digital	NA	24	4
350290	350	380	A-350304	Digital	NA	24	4
350291	350	600	A-350304	Digital	NA	24	4
350309	250-300	Standard	A-350244	Digital	NA	24	3
350310	230-300	600	A-350244	Digital	NA	24	3
350313	1000/1250/1500	Std. and 380	A-350344	16-Light	Standard	24	5
350314	1000/1250/1500	Std. and 380	A-350345	7-Light	Standard	24	5
350315	1000/1250/1500	Std. and 380	A-350346	16-Light	Oversized	24	5
350316	1000/1250/1500	Std. and 380	A-350347	7-Light	Oversized	24	5
350317	1000/1250/1500	Std. and 380	A-350304	Digital	NA	24	5
350318	1250/2000	all	GM10488-10	Engine Gauge	NA	24	5
350319	1750/2000	Std. and 380	A-350349	16-Light	Standard	24	5
350320	1750/2000	Std. and 380	A-350350	7-Light	Standard	24	5
350321	1750/2000	Std. and 380	A-350351	16-Light	Oversized	24	5
350322	1750/2000	Std. and 380	A-350352	7-Light	Oversized	24	5

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data

Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
350323	1750/2000	Std. and 380	A-350304	Digital	NA	24	5
350324	1000/1250/1500	600	A-350353	16-Light	Standard	24	5
350325	1000/1250/1500	600	A-350354	7-Light	Standard	24	5
350326	1000/1250/1500	600	A-350355	16-Light	Oversized	24	5
350327	1000/1250/1500	600	A-350356	7-Light	Oversized	24	5
350328	1000/1250/1500	600	A-350304	Digital	NA	24	5
350329	1750/2000	600	A-350357	16-Light	Standard	24	5
350330	1750/2000	600	A-350358	7-Light	Standard	24	5
350331	1750/2000	600	A-350359	16-Light	Oversized	24	5
350332	1750/2000	600	A-350360	7-Light	Oversized	24	5
350333	1750/2000	600	A-350304	Digital	NA	24	5
350334	1250	4160	A-350361	16-Light	Standard	24	5
350335	1250	4160	A-350362	7-Light	Standard	24	5
350336	1250	4160	A-350363	16-Light	Oversized	24	5
350337	1250	4160	A-350370	7-Light	Oversized	24	5
350338	1250	4160	A-350304	Digital	NA	24	5
350339	1500/2000	4160	A-350364	16-Light	Standard	24	5
350340	1500/2000	4160	A-350365	7-Light	Standard	24	5
350341	1500/2000	4160	A-350366	16-Light	Oversized	24	5
350342	1500/2000	4160	A-350367	7-Light	Oversized	24	5
350343	1500/1750	4160	A-350304	Digital	NA	24	5
350441	400	Standard	A-361876	16-Light	Standard	24	4
350442	400	Standard	A-361877	7-Light	Standard	24	4
350443	400	Standard	A-361878	16-Light	Oversized	24	4
350444	400	Standard	A-361879	7-Light	Oversized	24	4
350445	400	Standard	A-350304	Digital	NA	24	4
350450	400	380	A-361876	16-Light	Standard	24	4
350451	400	380	A-361877	7-Light	Standard	24	4
350452	400	380	A-361878	16-Light	Oversized	24	4
350453	400	380	A-361879	7-Light	Oversized	24	4
350454	400	380	A-350304	Digital	NA	24	4
350459	400	600	A-361896	16-Light	Standard	24	4
350460	400	600	A-361897	7-Light	Standard	24	4
350461	400	600	A-361898	16-Light	Oversized	24	4
350462	400	600	A-361899	7-Light	Oversized	24	4
350463	400	600	A-350304	Digital	NA	24	4
360832	20/30	all	GM10488-2	Engine Gauge	NA	12	3
360833	20	Standard	A-360915	16-Light	Standard	12	3
360834	20	Standard	A-360916	7-Light	Standard	12	3
360835	20	Standard	A-360917	16-Light	Oversized	12	3
360836	20	Standard	A-360918	7-Light	Oversized	12	3
360837	20	Standard	364454-8	Basic w/gauges and meter	NA	12	3
360839	20	Standard	A-350092	Digital	NA	12	3
360840	50	Standard	A-360920	16-Light	Standard	12	3
360841	50	Standard	A-360921	7-Light	Standard	12	3
360842	50	Standard	A-360922	16-Light	Oversized	12	3
360843	50	Standard	A-360923	7-Light	Oversized	12	3
360844	50	Standard	364454-13	Basic w/gauges and meter	NA	12	3
360846	50	Standard	A-350092	Digital	NA	12	3
360847	20	Standard	A-360925	16-Light	Standard	24	3
360848	20	Standard	A-360926	7-Light	Standard	24	3
360849	20	Standard	A-360927	16-Light	Oversized	24	3
360850	20	Standard	A-360928	7-Light	Oversized	24	3
360851	20	Standard	A-350124	Digital	NA	24	3
360852	30	Standard	A-325713	16-Light	Standard	24	3
360853	30	Standard	A-360930	7-Light	Standard	24	3
360854	30	Standard	A-360931	16-Light	Oversized	24	3

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data							
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
360855	30	Standard	A-360932	7-Light	Oversized	24	3
360856	30/40/50	Standard	A-350124	Digital	NA	24	3
360857	40	Standard	A-360933	16-Light	Standard	24	3
360858	40	Standard	A-360934	7-Light	Standard	24	3
360859	40	Standard	A-360935	16-Light	Oversized	24	3
360860	40	Standard	A-360936	7-Light	Oversized	24	3
360861	40	Standard	A-350124	Digital	NA	24	3
360862	50	Standard	A-360937	16-Light	Standard	24	3
360863	50	Standard	A-360938	7-Light	Standard	24	3
360864	50	Standard	A-360939	16-Light	Oversized	24	3
360865	50	Standard	A-360940	7-Light	Oversized	24	3
360866	50	Standard	A-350124	Digital	NA	24	3
360867	60/80	Standard	A-325718	16-Light	Standard	24	3
360868	60/80	Standard	A-360942	7-Light	Standard	24	3
360869	60/80	Standard	A-360943	16-Light	Oversized	24	3
360870	60/80	Standard	A-360944	7-Light	Oversized	24	3
360871	80/100	Standard	A-350124	Digital	NA	24	3
360872	20/30	600	A-360953	16-Light	Standard	24	3
360873	20/30	600	A-360954	7-Light	Standard	24	3
360874	20/30	600	A-360955	16-Light	Oversized	24	3
360875	20/30	600	A-360956	7-Light	Oversized	24	3
360876	20/30/60	Standard	A-350124	Digital	NA	24	3
360877	40/50	600	A-360957	16-Light	Standard	24	3
360878	40/50	600	A-360958	7-Light	Standard	24	3
360879	40/50	600	A-360959	16-Light	Oversized	24	3
360880	40/50	600	A-360960	7-Light	Oversized	24	3
360881	60	600	A-324254	16-Light	Standard	24	3
360882	60	600	A-360962	7-Light	Standard	24	3
360883	60	600	A-360963	16-Light	Oversized	24	3
360884	60	600	A-360964	7-Light	Oversized	24	3
360889	80/100	Standard	A-350126	16-Light	Standard	24	3
360890	80/100	Standard	A-360946	7-Light	Standard	24	3
360891	80/100	Standard	A-325985	16-Light	Oversized	24	3
360892	80/100	Standard	A-360948	7-Light	Oversized	24	3
360893	80/100	Standard	A-350124	Digital	NA	24	3
360894	100	Standard	A-360949	16-Light	Standard	24	3
360895	100	Standard	A-325815	7-Light	Standard	24	3
360896	100	Standard	A-325756	16-Light	Oversized	24	3
360897	100	Standard	A-325869	7-Light	Oversized	24	3
360898	80/100	Standard	A-350124	Digital	NA	24	3
360899	70-115	600	A-325849	16-Light	Standard	24	3
360900	70-115	600	A-325855	7-Light	Standard	24	3
360901	70-115	600	A-325852	16-Light	Oversized	24	3
360902	70-115	600	A-325858	7-Light	Oversized	24	3
361866	450-500	Standard	A-361876	16-Light	Standard	24	5
361867	450-500	Standard	A-361877	7-Light	Standard	24	5
361868	450-500	Standard	A-361878	16-Light	Oversized	24	5
361869	450-500	Standard	A-361879	7-Light	Oversized	24	5
361870	450-500	Standard	A-350304	Digital	NA	24	5
361886	450-500	600	A-361896	16-Light	Standard	24	5
361887	450-500	600	A-361877	7-Light	Standard	24	5
361888	450-500	600	A-361898	16-Light	Oversized	24	5
361889	450-500	600	A-361899	7-Light	Oversized	24	5
361890	450-500	600	A-350304	Digital	NA	24	5
361906	450-500	380	A-361876	16-Light	Standard	24	5
361907	450-500	380	A-361877	7-Light	Standard	24	5
361908	450-500	380	A-365634	16-Light	Oversized	24	5
361909	450-500	380	A-365635	7-Light	Oversized	24	5
361910	450-500	380	A-350304	Digital	NA	24	5

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data

Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
364502-MA19	200	Standard	GM10840-11	16-Light	Standard	24	3
364502-MA20	200	Standard	GM10840-12	7-Light	Standard	24	3
364502-MA23	200	600	GM10840-13	16-Light	Standard	24	3
364502-MA24	200	600	GM10840-14	7-Light	Standard	24	3
364502-MA25S	60	Standard	GM10840-179	16-Light	Standard	12	3
364502-MA27S	60	600	GM10840-183	16-Light	Standard	12	3
364502-MA29S	30/35	Standard	GM10840-173	16-Light	Standard	12	3
364502-MA31S	30-50	600	GM10840-181	16-Light	Standard	12	3
364502-MA33S	35/45	Standard	GM10840-175	16-Light	Standard	12	3
364502-MA35S	50	Standard	GM10840-177	16-Light	Standard	12	3
364502-MA43S	85	Standard	GM10840-185	16-Light	Standard	12	3
364502-MA44S	50	600	GM10840-187	16-Light	Standard	12	3
364502-MA45S	105	Standard	GM10840-186	16-Light	Standard	12	3
364502-MA46S	20/30	Standard	GM10840-176	16-Light	Standard	12	3
364502-MA47S	125-180	Standard	GM10840-188	16-Light	Standard	12	3
364502-MA48S	150-180	Standard	GM10840-189	16-Light	Standard	24	3
364502-MA49S	200-230	Standard	GM10840-190	16-Light	Standard	24	3
364502-MA50S	20/30	600	GM10840-191	16-Light	Standard	12	3
364502-MA51S	20-40	Standard	GM10840-175	16-Light	Standard	12	3
364502-MA54S	150/180	600	GM10840-192	16-Light	Standard	12	3
364502-MA55S	150-180	600	GM10840-193	16-Light	Standard	24	3
364502-MA56S	125	600	GM10840-194	16-Light	Standard	12	3
364502-MA57S	125	Standard	GM10840-186	16-Light	Standard	12	3
364502-MA58S	100/125	Standard	GM10840-186	16-Light	Standard	12	3
364502-MA59S	200-230	600	GM10840-195	16-Light	Standard	24	3
364502-MA60S	50/60	Standard	GM10840-196	16-Light	Standard	24	3
364502-MA61S	50	600	GM10840-197	16-Light	Standard	24	3
364502-MA62S	60/80	Standard	GM10840-198	16-Light	Standard	24	3
364502-MA63S	60	600	GM10840-199	16-Light	Standard	24	3
364502-MA64S	80/100	Standard	GM10840-200	16-Light	Standard	24	3
364502-MA65S	80/100	600	GM10840-201	16-Light	Standard	24	3
364502-MA66S	125	Standard	GM10840-202	16-Light	Standard	24	3
364502-MA67S	125	600	GM10840-203	16-Light	Standard	24	3
364502-MA68S	50	Standard	GM10840-177	16-Light	Standard	12	3
364502-MA69S	50	600	GM10840-181	16-Light	Standard	12	3
364502-MA70S	50	Standard	GM10840-177	16-Light	Standard	12	3
364502-MA71S	50	Standard	GM10840-196	16-Light	Standard	24	3
364502-MA72S	60	Standard	GM10840-179	16-Light	Standard	12	3
364502-MA73S	60	Standard	GM10840-198	16-Light	Standard	24	3
364502-MA74S	80	Standard	GM10840-185	16-Light	Standard	12	3
364502-MA75S	80	Standard	GM10840-200	16-Light	Standard	24	3
364502-MA76S	100	Standard	GM10840-202	16-Light	Standard	24	3
364504-MA10S	60	600	364454-27	Basic w/gauges and meter	NA	12	3
364504-MA11S	30/35	Standard	364454-22	Basic w/gauges and meter	NA	12	3
364504-MA12S	30-60	Standard	364454-26	Basic w/gauges and meter	NA	12	3
364504-MA13S	35/45	600	364454-23	Basic w/gauges and meter	NA	12	3
364504-MA14S	50	Standard	364454-24	Basic w/gauges and meter	NA	12	3
364504-MA19S	90	Standard	364454-28	Basic w/gauges and meter	NA	12	3
364504-MA20S	100	600	364454-30	Basic w/gauges and meter	NA	12	3
364504-MA21S	105	Standard	364454-29	Basic w/gauges and meter	NA	12	3
364504-MA22S	20/30	Standard	364454-22	Basic w/gauges and meter	NA	12	3

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data							
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
364504-MA23S	20/30	600	364454-31	Basic w/gauges and meter	NA	12	3
364504-MA24S	20-40	Standard	364454-23	Basic w/gauges and meter	NA	12	3
364504-MA25S	125	600	364454-32	Basic w/gauges and meter	NA	12	3
364504-MA26S	125	Standard	364454-29	Basic w/gauges and meter	NA	12	3
364504-MA27S	125	Standard	364454-29	Basic w/gauges and meter	NA	12	3
364504-MA28S	150/180	Standard	364454-33	Basic w/gauges and meter	NA	12	3
364504-MA29S	150/180	600	364454-34	Basic w/gauges and meter	NA	12	3
364504-MA30S	50	Standard	364454-24	Basic w/gauges and meter	NA	12	3
364504-MA31S	50	600	364454-26	Basic w/gauges and meter	NA	12	3
364504-MA32S	50	Standard	364454-24	Basic w/gauges and meter	NA	12	3
364504-MA33S	60	Standard	364454-25	Basic w/gauges and meter	NA	12	3
364504-MA34S	80	Standard	364454-28	Basic w/gauges and meter	NA	12	3
364504-MA9S	60	Standard	364454-25	Basic w/gauges and meter	NA	12	3
364505-MA1S	20-180	Standard	A-336597	Basic	NA	12	3
364505-MA3S	20-180	Standard	364455-3	Basic w/gauges	NA	12	3
364505-MA3S	20-180	Standard	364455-3	Basic w/gauges	NA	12	3
364505-MA4S	20-180	Standard	A-336597	Basic	NA	12	3
364506-MA11	200	600	A-350124	Digital	NA	24	3
364506-MA12S	60	Standard	A-350092	Digital	NA	12	3
364506-MA13S	60	600	A-350092	Digital	NA	12	3
364506-MA14S	30-50	all	A-350092	Digital	NA	12	3
364506-MA15S	35/45	all	A-350092	Digital	NA	12	3
364506-MA16S	35/50	Standard	A-350092	Digital	NA	12	3
364506-MA22S	85	Standard	A-350092	Digital	NA	12	3
364506-MA4S	40	Standard	A-350092	Digital	NA	12	3
364506-MA9	200	Standard	A-350124	Digital	NA	24	3
365056	600-900	Standard	A-365066	16-Light	Standard	24	5
365057	600-900	Standard	A-365067	7-Light	Standard	24	5
365058	600-900	Standard	A-365068	16-Light	Oversized	24	5
365059	600-900	Standard	A-365069	7-Light	Oversized	24	5
365060	600-900	Standard	A-350304	Digital	NA	24	5
365076	600-750	380	A-365066	16-Light	Standard	24	5
365077	600-750	380	A-365067	7-Light	Standard	24	5
365078	600-750	380	A-365068	16-Light	Oversized	24	5
365079	600-750	380	A-365069	7-Light	Oversized	24	5
365080	600-750	380	A-350304	Digital	NA	24	5
365096	600-800	600	A-365106	16-Light	Standard	24	5
365097	600-800	600	A-365107	7-Light	Standard	24	5
365098	600-800	600	A-365108	16-Light	Oversized	24	5
365099	600-800	600	A-365109	7-Light	Oversized	24	5
365100	600-800	600	A-350304	Digital	NA	24	5
365136	800-900	Std. and 380	A-365126	16-Light	Standard	24	5
365137	800-900	Std. and 380	A-365127	7-Light	Standard	24	5
365138	800-900	Std. and 380	A-365128	16-Light	Oversized	24	5
365139	800-900	Std. and 380	A-365129	7-Light	Oversized	24	5
365140	800-900	Std. and 380	A-350304	Digital	NA	24	5
365156	900	600	A-365166	16-Light	Standard	24	5

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data

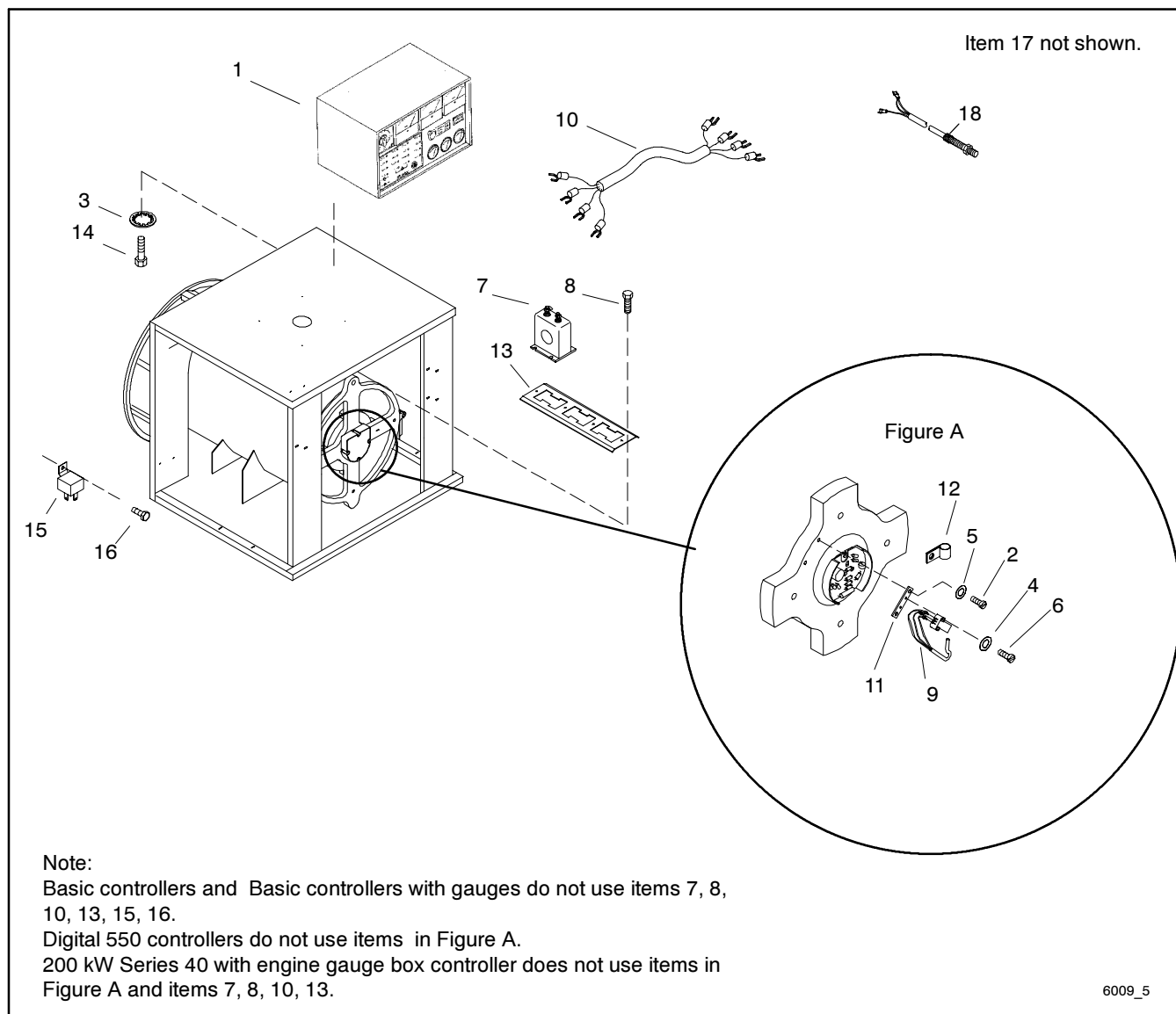
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
365157	900	600	A-365167	7-Light	Standard	24	5
365158	900	600	A-365168	16-Light	Oversized	24	5
365159	900	600	A-365169	7-Light	Oversized	24	5
365160	900	600	A-350304	Digital	NA	24	5
365176	900-1000	Standard	A-365126	16-Light	Standard	24	5
365177	900-1000	Standard	A-365127	7-Light	Standard	24	5
365178	900-1000	Standard	A-365128	16-Light	Oversized	24	5
365179	900-1000	Standard	A-365129	7-Light	Oversized	24	5
365180	900-1000	Standard	A-350304	Digital	NA	24	5
GM10492-MA2	200	Standard	GM10488-1	Engine Gauge	NA	24	3
GM11413-MA1	900-1000	all	GM10488-7	Engine Gauge	NA	24	5
GM11414-MA10	900	380	GM10840-7	16-Light	Standard	24	5
GM11414-MA11	900	380	GM10840-8	7-Light	Standard	24	5
GM11414-MA12	900	380	A-350093	Digital	NA	24	5
GM11414-MA16	1000	Standard	GM10840-9	16-Light	Standard	24	5
GM11414-MA17	1000	Standard	GM10840-10	7-Light	Standard	24	5
GM11414-MA18	1000	Standard	A-350093	Digital	NA	24	5
GM11414-MA22	1000	600	A-325745	16-Light	Standard	24	5
GM11414-MA23	1000	600	A-325814	7-Light	Standard	24	5
GM11414-MA24	1000	600	A-350093	Digital	NA	24	5
GM11414-MA28	900	600	GM10840-5	16-Light	Standard	24	5
GM11414-MA29	900	600	GM10840-6	7-Light	Standard	24	5
GM11414-MA30	900	600	A-350093	Digital	NA	24	5
GM11414-MA34	900	Standard	GM10840-9	16-Light	Standard	24	5
GM11414-MA35	900	Standard	GM10840-10	7-Light	Standard	24	5
GM11414-MA36	900	Standard	A-350093	Digital	NA	24	5
GM11414-MA4	900-1000	Standard	GM10840-7	16-Light	Standard	24	5
GM11414-MA40	600	Standard	GM10840-15	16-Light	Standard	24	5
GM11414-MA41	600	Standard	GM10840-16	7-Light	Standard	24	5
GM11414-MA42	600	380	A-350093	Digital	NA	24	5
GM11414-MA46	600	600	GM10840-170	16-Light	Standard	24	5
GM11414-MA47	600	600	GM10840-171	7-Light	Standard	24	5
GM11414-MA48	600	600	A-350093	Digital	NA	24	5
GM11414-MA5	900-1000	Standard	GM10840-8	7-Light	Standard	24	5
GM11414-MA6	900-1000	Standard	A-350093	Digital	NA	24	5
GM11690-MA2	200	Standard	GM10488-3	Engine Gauge	NA	24	3
GM14340-MA1S	135/150	600	A-325851	16-Light	Standard	24	3
GM14340-MA2S	180	600	A-325864	16-Light	Standard	24	3
GM14340-MA3S	200-275	600	A-325727	16-Light	Standard	24	3
GM14340-MA4S	135/150	Standard	A-325850	16-Light	Standard	24	3
GM14340-MA5S	180	Standard	A-325863	16-Light	Standard	24	3
GM14340-MA6S	200	Standard	A-325724	16-Light	Standard	24	3
GM14340-MA7S	230/250	Standard	A-325726	16-Light	Standard	24	3
GM14340-MA8S	275	Standard	A-350137	16-Light	Standard	24	3
GM16993-MA10S	1750-2000	600	GM10193-4	Digital 550	NA	24	5
GM16993-MA12S	450-500	Standard	GM10193-4	Digital 550	NA	24	5
GM16993-MA13S	400-500	380	GM10193-4	Digital 550	NA	24	5
GM16993-MA14S	450-500	600	GM10193-4	Digital 550	NA	24	5
GM16993-MA16S	400	600	GM10193-4	Digital 550	NA	24	5
GM16993-MA17S	400	Standard	GM10193-4	Digital 550	NA	24	5
GM16993-MA1S	600-800	600	GM10193-4	Digital 550	NA	24	5
GM16993-MA2S	500-800	Std. and 380	GM10193-4	Digital 550	NA	24	5
GM16993-MA3S	800-900	600	GM10193-4	Digital 550	NA	24	5
GM16993-MA4S	800-1000	Std. and 380	GM10193-4	Digital 550	NA	24	5
GM16993-MA5S	500-900	Std. and 380	GM10193-4	Digital 550	NA	24	5
GM16993-MA6S	1000-1500	600	GM10193-4	Digital 550	NA	24	5
GM16993-MA7S	600-900	Standard	GM10193-4	Digital 550	NA	24	5
GM16993-MA8S	1000-1500	Std. and 380	GM10193-4	Digital 550	NA	24	5
GM16993-MA9S	1750-2000	Std. and 380	GM10193-4	Digital 550	NA	24	5

Section 2 Controller Group Data, continued

Chart 1: Controller Group Data							
Controller Kit/Spec Number	Generator Set kW	Volts (AC)	Controller Assembly Part Number	Controller Type	Controller Box Size	Battery Volts (DC)	Catalog Section
GM17126-MA1S	230	Standard	GM10193-4	Digital 550	NA	24	3
GM17126-MA2S	230-300	600	GM10193-4	Digital 550	NA	24	3
GM17126-MA3S	250-300	Standard	GM10193-4	Digital 550	NA	24	3
GM17126-MA4S	200-275	600	GM10193-4	Digital 550	NA	24	3
GM17126-MA5S	200-250	Standard	GM10193-4	Digital 550	NA	24	3
GM17126-MA6S	275	Standard	GM10193-4	Digital 550	NA	24	3
GM17127-MA1S	350/400	Standard	GM10193-4	Digital 550	NA	24	4
GM17127-MA2S	350	380	GM10193-4	Digital 550	NA	24	4
GM17127-MA3S	350	600	GM10193-4	Digital 550	NA	24	4
GM17127-MA4S	350/400	Standard	GM10193-4	Digital 550	NA	24	4
GM17127-MA5S	350/400	380	GM10193-4	Digital 550	NA	24	4
GM17127-MA6S	350/400	600	GM10193-4	Digital 550	NA	24	4
GM17425-MA10S	20-40/70-115	Std./600	GM10193-3	Digital 550	NA	12	3
GM17425-MA11S	30/70-115	Std./600	GM10193-4	Digital 550	NA	24	3
GM17425-MA12S	35-45	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA13S	40-45/135-150	Std./600	GM10193-3	Digital 550	NA	12	3
GM17425-MA14S	40/135-150	Std./600	GM10193-4	Digital 550	NA	24	3
GM17425-MA15S	50	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA16S	50-60/150-180	Std./600	GM10193-3	Digital 550	NA	12	3
GM17425-MA17S	170-180	600	GM10193-3	Digital 550	NA	12	3
GM17425-MA18S	50	Standard	GM10193-4	Digital 550	NA	24	3
GM17425-MA19S	50-60/1150-180	Std./600	GM10193-4	Digital 550	NA	24	3
GM17425-MA1S	20-30	600	GM10193-3	Digital 550	NA	12	3
GM17425-MA20S	180	600	GM10193-4	Digital 550	NA	24	3
GM17425-MA21S	60	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA22S	60-80	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA23S	60-80	Standard	GM10193-4	Digital 550	NA	24	3
GM17425-MA24S	70-80	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA25S	70-100	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA26S	70-80	Standard	GM10193-4	Digital 550	NA	24	3
GM17425-MA27S	70-100	Standard	GM10193-4	Digital 550	NA	24	3
GM17425-MA28S	100	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA29S	100-165	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA2S	20-30	600	GM10193-4	Digital 550	NA	24	3
GM17425-MA30S	100	Standard	GM10193-4	Digital 550	NA	24	3
GM17425-MA31S	100-115	Standard	GM10193-4	Digital 550	NA	24	3
GM17425-MA32S	135-170	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA33S	135-150	Standard	GM10193-4	Digital 550	NA	24	3
GM17425-MA34S	150-180	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA35S	150-180	Standard	GM10193-4	Digital 550	NA	24	3
GM17425-MA36S	20-30	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA3S	30-50	600	GM10193-3	Digital 550	NA	12	3
GM17425-MA41S	100	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA42S	125	600	GM10193-3	Digital 550	NA	12	3
GM17425-MA43S	50	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA44S	50	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA45S	50	600	GM10193-3	Digital 550	NA	12	3
GM17425-MA4S	40-50	600	GM10193-4	Digital 550	NA	24	3
GM17425-MA6S	20/60	Std./600	GM10193-3	Digital 550	NA	12	3
GM17425-MA7S	60	600	GM10193-4	Digital 550	NA	24	3
GM17425-MA8S	20	Standard	GM10193-3	Digital 550	NA	12	3
GM17425-MA9S	20	Standard	GM10193-4	Digital 550	NA	24	3
GM17688-MA1S	1500-2000	3300/4160	GM10193-4	Digital 550	NA	24	5
GM17688-MA2S	1250	3300/4160	GM10193-4	Digital 550	NA	24	5

Notes

Section 3 Controller Group Parts (20-300 kW)



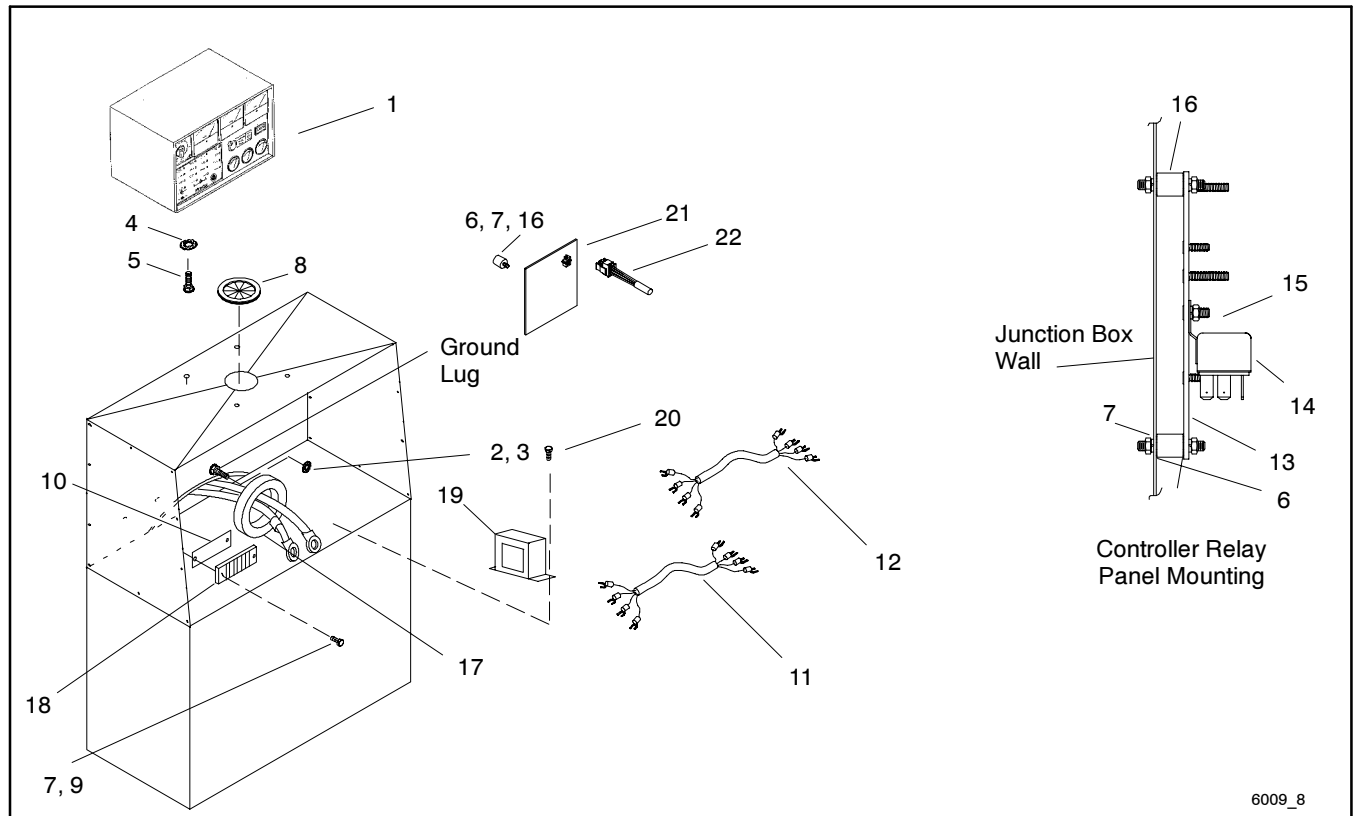
Section 3 Controller Group Parts (20-300 kW)

Controller Kit Parts			
Item	Qty.	Description	Part Number
1	1	Controller assembly	See Chart 1
2	2	Screw, hex head, 10-24 x 5/8 in.	X-117-5
3	4	Washer, lock, 5/16 in., internal/external tooth	X-22-16
4	2	Washer, lock, #4, internal tooth	X-22-24
5	2	Washer, lock, #10, internal tooth	X-22-9
6	2	Screw, round head slotted	X-49-35
7	3	Transformer	See Section 6
8	4	Screw, drill hex	X-794-1
9	1	Sensor, ferromagnetic	241623
10	1	Harness, CT wiring (20-300 kW)	354119
10	1	Harness, CT wiring (200-300 kW with Digital 550 controller)	GM11500
10	1	Harness, CT burden (200-300 kW with Digital 550 controller)	GM14074
11	1	Bracket, sensor mounting	257070
12	3	Clamp, insulator	X-672-15
13	1	Bracket, CT mounting (20-100 kW and 70-150 kW 600 volt)*	276417
13	1	Bracket, CT mounting (100 kW (4S11 or 4S13)-150 kW)*	299966
13	1	Bracket, CT mounting (150 kW John Deere-powered, 180-300 kW)*	325382
14	4	Screw, HC (5/16-18 x .62)	X-125-23
15	1	Relay (not used on DDC Series 60 gas)	272684
16	1	Screw, hex head, 10-24 x 5/8 (not used on DDC Series 60 gas)	X-117-5
17	1	Switch assembly, water level (not shown-engine gauge box controllers only)	336657
18	1	Pickup, magnetic (200 kW, Series 40 with engine gauge box)	225750
18	1	Harness, magnetic pickup (200 kW, Series 40 with engine gauge box)	GM10436

* Bracket mounts on the alternator.

† Bracket mounts on the junction box.

Section 4 Controller Group Parts (350/400 kW)



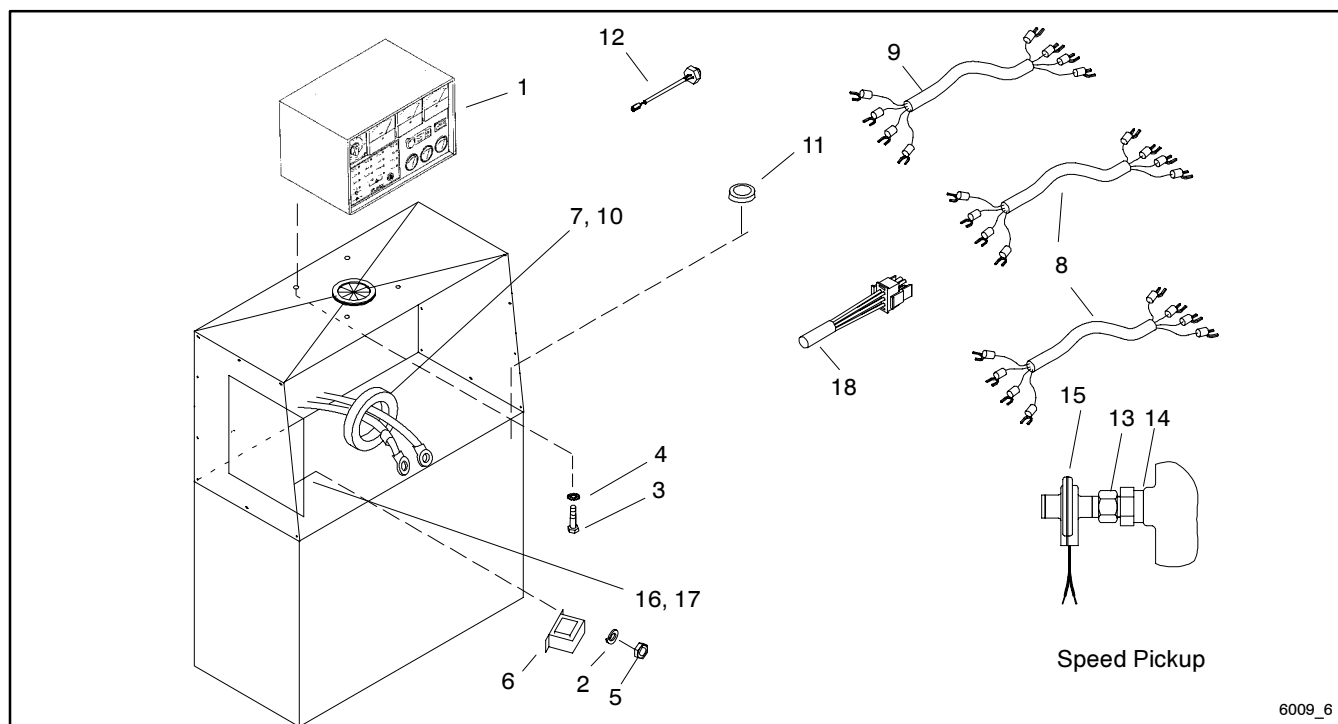
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Controller Kit Parts

Item	Qty.	Description	Part Number
1	1	Controller assembly	See Chart 1
2	6	Washer, lock, .391 ID x .975 in. OD	X-22-14
3	1	Nut, 3/8-16 in.	#
4	4	Washer, lock, .326 ID x .883 in. OD	X-22-16
5	4	Screw, hex head machine (5/16-18 x .62 in.)	X-125-23
6	8	Washer, lock, .172 ID x .373 in. OD	X-22-20
7	10	Nut, #8-32	#
8	1	Grommet, round	X-284-25
9	2	Screw, cross recess round head machine	X-51-11
10	1	Marker, strip	255080
11	1	Wiring harness, AC, Marathon Magna Max (CT harness)	258453
12	1	Wiring harness AC	258455
12	1	Wiring harness AC (380 and 600 V only)	274964
13	1	Panel, relay	274796
14	1	Relay	272684
15	1	Nut, #10-32	#
16	4	Vibromount	282829
17	3	Transformer, current	See Section 6
18	1	Terminal block	295314
19	1	Transformer, potential (380 V only)	276278
19	1	Transformer, potential (600 V only)	258990
20	1	Screw, hex washer head, drill (380 and 600 V only)	X-794-2
21	1	PCB assembly, CT burden resistor (Digital 550 controller)	GM13980
22	1	Harness, CT burden (Digital 550 controller)	GM14074

Common hardware; procure locally.

Section 5 Controller Group Parts (450-2000 kW)



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Controller Kit Parts

Item	Qty.	Description	Part Number
1	1	Controller assembly	See Chart 1
2	6	Washer, lock	X-18-1
2	12	Hardware, 3/8-16 in. (3300 and 4160 V only)	#
3	4	Screw, HC	X-125-33
4	4	Washer, lock, 5/16 in.	X-22-16
5	6	Nut, hex, 6-32 in., zinc	X-71-2
5	12	Hardware, 3/8-16 in. (3300 V and 4160 V only)	#
6	3	Transformer, potential*	See Section 6
7	3	Transformer, current*	See Section 6
8	1	AC harness (450-900 kW, 10-lead only)*	258455
8	1	AC harness (450-900 kW, 380 V and 600 V only)*	361900
8	1	AC harness (900-2000 kW, std. and 600 V only)*	361328
8	1	AC harness, primary (3300 and 4160 V only)*	GM11881
8	1	AC harness, secondary (3300 and 4160 V only)*	361542
9	1	CT harness*	361329
9	1	CT harness (Digital 550 controller)	GM11501
9	1	CT harness, 3300 and 4160 V (Digital 550 controller)	GM17687
10	3	Support, CT (between bus and CT, not shown)*	361506
10	1	Bracket, bottom (lead models, not shown)*	365620
10	1	Bracket, top (lead models, not shown)*	365621
11	1	Bushing, nylon, 1.968 ID*	X-634-23
12	1	Switch assembly, water level*	336657
13	1	Shaft, tach drive (600, 900-1000 kW Mitsubishi)*	GM10982
14	1	Coupling (600, 900-1000 kW Mitsubishi)*	GM10983
15	1	Pickup, speed (600, 900-1000 kW Mitsubishi)*	GM10984
16	1	Plate, PT mounting (3300 and 4160 V only)*	GM11714
17	4	Vibromount (3300 and 4160 V only)*	292834
18	1	Harness, CT burdon (Digital 550 controller)	GM14074

* Part does not apply to Engine Gauge Box controllers.

Common hardware; procure locally.

Section 6 Transformers

This chart lists controller transformer part numbers. The chart is sorted by kit/spec number.

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
193001	NA	259359
193003	NA	259359
193005	NA	259793
193007	NA	259360
193009	NA	259360
193011	NA	259793
193013	NA	259360
193015	NA	259360
193017	NA	259793
193021	NA	259414
193023	NA	259414
193025	NA	259793
193027	NA	259414
193029	NA	259414
193031	NA	259792
193033	NA	255860
193034	NA	255860
193035	NA	259792
193039	NA	255860
193040	NA	255860
193041	NA	259359
193045	NA	255860
193046	NA	255860
193047	NA	259360
193051	NA	255860
193052	NA	253503
193053	NA	259360
193057	NA	253503
193058	NA	253503
193059	NA	259360
193063	NA	259414
193064	NA	259414
193065	NA	259793
193066	NA	259414
193067	NA	259414
193068	NA	259792
193069	NA	259359
193071	NA	259359
193073	NA	259793
193079	NA	259360
193080	NA	259360
193081	NA	259793
193085	NA	259359
193087	NA	259359
193089	NA	259793
194001	NA	253610
194002	NA	259414
194011	NA	253610
194012	NA	259414
194013	NA	272691
194014	NA	279272
194021	NA	272691
194022	NA	279272
194023	NA	272691
194024	NA	279272
194033	NA	253610

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
194034	NA	259414
194039	NA	272691
194040	NA	279272
194041	NA	272691
194042	NA	279272
194052	NA	253610
194061	NA	253610
194072	NA	272691
194074	NA	272691
194200	NA	272691
194201	NA	279273
194202	NA	272691
194203	NA	279273
194210	NA	273258
194211	NA	279273
194212	NA	273258
194213	NA	279273
194220	NA	273258
194221	NA	279273
194222	NA	273258
194223	NA	279273
194230	NA	343297
194231	NA	279273
194232	NA	343297
194233	NA	279273
194240	NA	272691
194241	NA	279273
194242	NA	272691
194243	NA	279273
194250	NA	273258
194251	NA	279273
194252	NA	273258
194253	NA	279273
194260	NA	273258
194261	NA	279273
194262	NA	273258
194263	NA	279273
194270	NA	343297
194271	NA	279273
194272	NA	343297
194273	NA	279273
194285	NA	272691
194287	NA	272691
194295	NA	273258
194297	NA	273258
194303	NA	273258
194309	NA	343297
194382	NA	291547
194383	NA	291547
194384	NA	291547
194385	NA	354689
194386	NA	354689
194387	NA	354688
194388	NA	354688
194394	NA	291547
194395	NA	291547

Section 6 Transformers, continued

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
194396	NA	291547
325141	NA	259360
325142	NA	259360
325143	NA	259793
325144	NA	259360
325145	NA	259360
325146	NA	259793
325147	NA	259793
325148	NA	259793
325151	NA	259414
325152	NA	259414
325153	NA	259792
325154	NA	259414
325155	NA	259414
325156	NA	259792
325157	NA	259792
325158	NA	259792
325166	NA	259359
325167	NA	259359
325168	NA	259359
325169	NA	259359
325171	NA	255860
325172	NA	255860
325173	NA	259360
325174	NA	255860
325175	NA	255860
325176	NA	259360
325177	NA	259360
325178	NA	259360
325181	NA	253503
325182	NA	253503
325183	NA	253503
325184	NA	253503
325186	NA	273257
325187	NA	273257
325188	NA	273257
325189	NA	273257
325191	NA	253610
325192	NA	253610
325194	NA	253610
325195	NA	259414
325196	NA	259414
325197	NA	253610
325198	NA	259414
325201	NA	259414
325203	NA	272691
325205	NA	279272
325207	NA	272691
325209	NA	279272
325210	NA	272691
325211	NA	272691
325212	NA	272691
325214	NA	279272
325215	NA	272691
325216	NA	279272
325219	NA	NA
325222	NA	272691
325223	NA	279273
325224	NA	272691
325227	NA	279273

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
325234	NA	279273
325236	NA	279273
325422	NA	291548
325423	NA	291548
325424	NA	291548
325425	NA	291548
325431	NA	354689
325432	NA	354689
325433	NA	354689
325434	NA	354689
325439	NA	291546
325440	NA	291546
325441	NA	291546
325442	NA	291546
325476	NA	291547
325477	NA	291547
325478	NA	291547
325479	NA	291547
325480	NA	354688
325481	NA	354688
325482	NA	354688
325483	NA	354688
325484	NA	354689
325485	NA	354689
325486	NA	354689
325487	NA	354689
325714	NA	255860
325964	NA	259414
325965	NA	259414
325966	NA	253610
325967	NA	259414
325968	NA	253610
325969	NA	272691
325970	NA	253610
325971	NA	259414
325972	NA	272691
325973	NA	279272
325974	NA	272691
325975	NA	279272
325976	NA	272691
325977	NA	279272
325978	NA	272691
325979	NA	279272
333003	NA	259359
333004	NA	259359
333005	NA	259359
333006	NA	259359
333134	NA	259359
333135	NA	NA
333136	NA	259360
333142	NA	259414
333150	NA	259793
333174	NA	253610
333184	NA	259414
333195	NA	NA
343267	NA	272691
343268	NA	273258
343270	NA	279273
343273	NA	272691
343274	NA	273258

Section 6 Transformers, continued

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
343276	NA	279273
343277	NA	272691
343278	NA	273258
343280	NA	279273
343281	NA	272691
343282	NA	273258
343284	NA	279273
343293	NA	343297
343294	NA	343297
343295	NA	343297
343296	NA	343297
350046	NA	259360
350047	NA	259414
350049	NA	259359
350051	NA	259359
350052	NA	255860
350053	NA	253503
350054	NA	273257
350055	NA	253610
350057	NA	253610
350058	NA	259360
350059	NA	259414
350061	NA	259414
350063	NA	272691
350064	NA	272691
350065	NA	279272
350067	NA	279272
350068	NA	272691
350072	NA	279273
350074	NA	291548
350076	NA	354689
350078	NA	291546
350094	NA	291547
350095	NA	354688
350096	NA	354689
350134	NA	273258
350135	NA	279273
350136	NA	343297
350141	NA	272691
350219	NA	273258
350220	NA	273258
350221	NA	273258
350222	NA	273258
350223	NA	343297
350224	NA	343297
350225	NA	343297
350226	NA	343297
350227	NA	279273
350228	NA	279273
350229	NA	279273
350230	NA	343297
350231	NA	273258
350277	NA	291547
350278	NA	291547
350279	NA	291547
350280	NA	291547
350281	NA	354689
350282	NA	354689
350283	NA	354689
350284	NA	354689

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
350285	NA	354688
350286	NA	354688
350287	NA	354688
350288	NA	354688
350289	NA	291547
350290	NA	354689
350291	NA	354688
350309	NA	343297
350310	NA	279273
350313	276578	297675
350314	276578	297675
350315	276578	297675
350316	276578	297675
350317	276578	297675
350318	NA	NA
350319	276578	297676
350320	276578	297676
350321	276578	297676
350322	276578	297676
350323	276578	297676
350324	258990	291548
350325	258990	291548
350326	258990	291548
350327	258990	291548
350328	258990	291548
350329	258990	297675
350330	258990	297675
350331	258990	297675
350332	258990	297675
350333	258990	297675
350334	X-6121-55	GM11914
350335	X-6121-55	GM11914
350336	X-6121-55	GM11914
350337	X-6121-55	GM11914
350338	X-6121-55	GM11914
350339	X-6121-55	GM11915
350340	X-6121-55	GM11915
350341	X-6121-55	GM11915
350342	X-6121-55	GM11915
350343	X-6121-55	GM11915
350441	NA	291548
350442	NA	291548
350443	NA	291548
350444	NA	291548
350445	NA	291548
350450	NA	291546
350451	NA	291546
350452	NA	291546
350453	NA	291546
350454	NA	291546
350459	NA	354689
350460	NA	354689
350461	NA	354689
350462	NA	354689
350463	NA	354689
360833	NA	253274
360834	NA	253274
360835	NA	253274
360836	NA	253274
360837	NA	253274

Section 6 Transformers, continued

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
360839	NA	252590
360841	NA	253502
360842	NA	253502
360843	NA	253502
360846	NA	253502
360847	NA	253274
360848	NA	253274
360849	NA	253274
360850	NA	253274
360851	NA	253274
360852	NA	259360
360853	NA	259360
360854	NA	259360
360855	NA	259360
360856	NA	259360
360857	NA	259414
360858	NA	259414
360859	NA	259414
360860	NA	259414
360861	NA	259414
360862	NA	253502
360863	NA	253502
360864	NA	253502
360865	NA	253502
360866	NA	253502
360867	NA	255860
360868	NA	255860
360869	NA	255860
360870	NA	255860
360871	NA	255860
360872	NA	259793
360873	NA	259793
360874	NA	259793
360875	NA	259793
360876	NA	259359
360877	NA	259792
360878	NA	259792
360879	NA	259792
360880	NA	259414
360881	NA	259359
360882	NA	259359
360883	NA	259359
360884	NA	259359
360889	NA	253503
360890	NA	253503
360891	NA	255040
360892	NA	253503
360893	NA	253503
360894	NA	273257
360895	NA	273257
360896	NA	273257
360897	NA	273527
360898	NA	273257
360899	NA	259360
360900	NA	259360
360901	NA	259360
360902	NA	259360
361866	NA	291548
361867	NA	291548
361868	NA	291548

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
361869	NA	291548
361870	NA	291548
361886	258990	354686
361887	258990	354686
361888	258990	354686
361889	258990	354686
361890	258990	354686
361906	276578	291546
361907	276578	291546
361908	276578	291546
361909	276578	291546
361910	276578	291546
364502-MA19	NA	273258
364502-MA20	NA	273258
364502-MA23	NA	279273
364502-MA24	NA	279273
364502-MA25S	NA	255860
364502-MA27S	NA	259359
364502-MA29S	NA	259360
364502-MA31S	NA	259792
364502-MA33S	NA	259414
364502-MA35S	NA	253502
364502-MA43S	NA	253503
364502-MA44S	NA	259360
364502-MA45S	NA	273257
364502-MA46S	NA	259360
364502-MA47S	NA	GM11472
364502-MA48S	NA	GM11472
364502-MA49S	NA	273258
364502-MA50S	NA	259793
364502-MA51S	NA	259414
364502-MA54S	NA	253502
364502-MA55S	NA	253502
364502-MA56S	NA	259414
364502-MA57S	NA	273257
364502-MA58S	NA	273257
364502-MA59S	NA	279273
364502-MA60S	NA	253502
364502-MA61S	NA	259792
364502-MA62S	NA	255860
364502-MA63S	NA	259359
364502-MA64S	NA	253503
364502-MA65S	NA	259360
364502-MA66S	NA	273257
364502-MA67S	NA	259414
364502-MA68S	NA	253502
364502-MA69S	NA	259792
364502-MA70S	NA	253502
364502-MA71S	NA	253502
364502-MA72S	NA	255860
364502-MA73S	NA	255860
364502-MA74S	NA	253503
364502-MA75S	NA	253503
364502-MA76S	NA	273257
364504-MA10S	NA	259359
364504-MA11S	NA	259360
364504-MA12S	NA	259792
364504-MA13S	NA	259414
364504-MA14S	NA	253502
364504-MA19S	NA	253503

Section 6 Transformers, continued

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
364504-MA20S	NA	259360
364504-MA21S	NA	273257
364504-MA22S	NA	253503
364504-MA22S	NA	259360
364504-MA23S	NA	259793
364504-MA24S	NA	259414
364504-MA25S	NA	259414
364504-MA26S	NA	273257
364504-MA27S	NA	273257
364504-MA28S	NA	GM11472
364504-MA29S	NA	253502
364504-MA30S	NA	253502
364504-MA31S	NA	259792
364504-MA32S	NA	253502
364504-MA33S	NA	255860
364504-MA34S	NA	253503
364504-MA4S	NA	259414
364504-MA9S	NA	255860
364506-MA11	NA	279273
364506-MA12S	NA	255860
364506-MA13S	NA	259359
364506-MA14S	NA	259360
364506-MA15S	NA	259792
364506-MA16S	NA	253502
364506-MA4S	NA	259414
364506-MA9	NA	273258
365056	NA	297675
365057	NA	297675
365058	NA	297675
365059	NA	297675
365060	NA	297675
365076	276578	291547
365077	276578	291547
365078	276578	291547
365079	276578	291547
365080	276578	291547
365096	258990	291546
365097	258990	291546
365098	258990	291546
365099	258990	291546
365100	258990	291546
365136	276578	291548
365137	276578	291548
365138	276578	291548
365139	276578	291548
365140	276578	291548
365156	258990	291547
365157	258990	291547
365158	258990	291547
365159	258990	291547
365160	258990	291547
365176	276578	291548
365177	276578	291548
365178	276578	291548
365179	276578	291548
365180	276578	291548
GM11413-MA1	NA	NA
GM11414-MA10	276578	291548
GM11414-MA11	276578	291548
GM11414-MA12	276578	291548

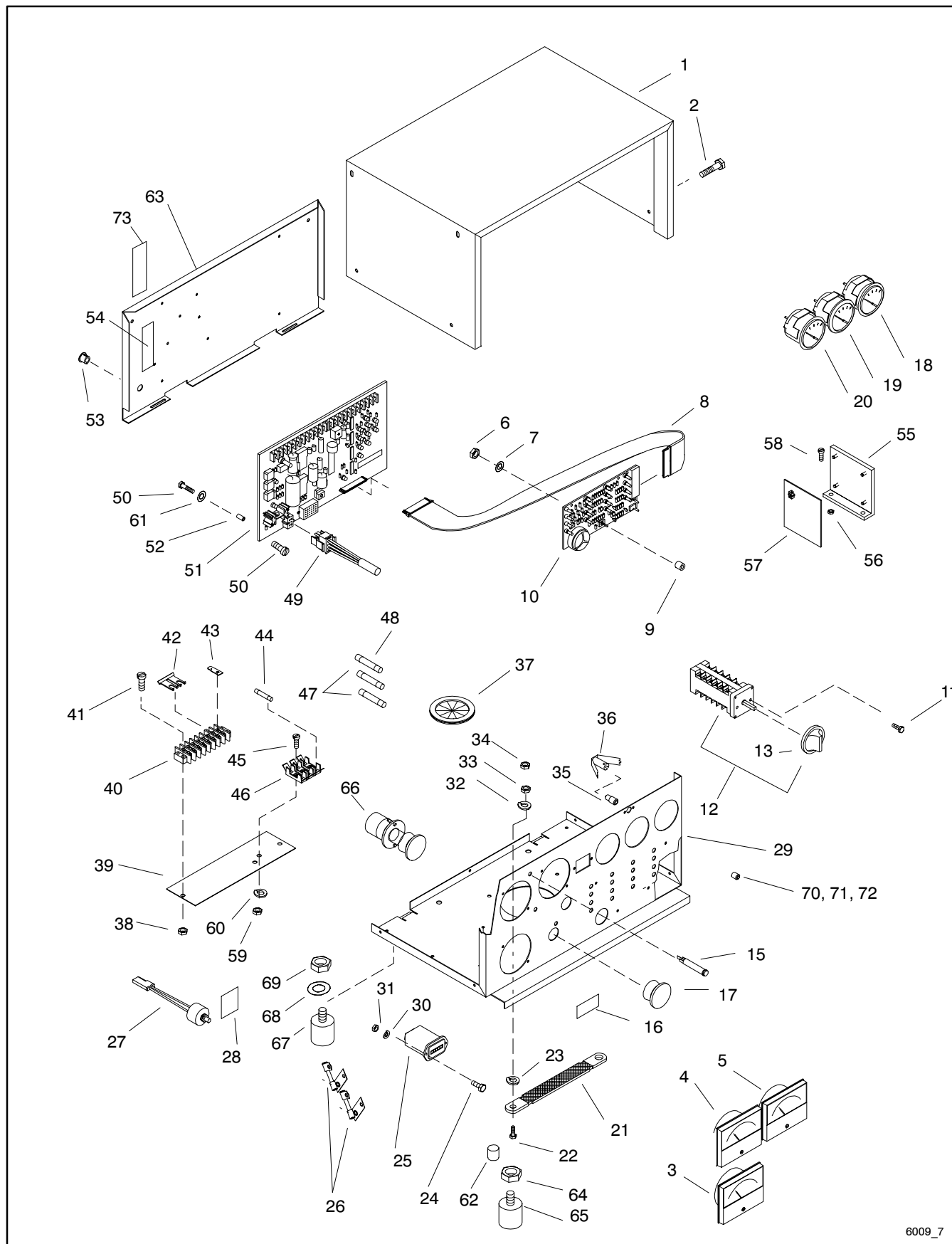
Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
GM11414-MA16	276578	297975
GM11414-MA17	276578	297975
GM11414-MA18	276578	297975
GM11414-MA22	258990	291548
GM11414-MA23	258990	291548
GM11414-MA24	258990	291548
GM11414-MA28	258990	291547
GM11414-MA29	258990	291547
GM11414-MA30	258990	291547
GM11414-MA34	NA	297675
GM11414-MA35	NA	297675
GM11414-MA36	NA	297675
GM11414-MA4	276578	291548
GM11414-MA40	276578	291547
GM11414-MA41	276578	291547
GM11414-MA42	276578	291547
GM11414-MA46	258990	291546
GM11414-MA47	258990	291546
GM11414-MA48	258990	291546
GM11414-MA5	276578	291548
GM11414-MA6	276578	291548
GM14340-MA1S	NA	259414
GM14340-MA2S	NA	279272
GM14340-MA3S	NA	279273
GM14340-MA4S	NA	253610
GM14340-MA5S	NA	272691
GM14340-MA6S	NA	272961
GM14340-MA7S	NA	273258
GM14340-MA8S	NA	343297
GM16993-MA10S	258990	GM16267
GM16993-MA12S	NA	GM16266
GM16993-MA13S	276578	GM16263
GM16993-MA14S	258990	GM16260
GM16993-MA16S	258990	GM16269
GM16993-MA17S	258455	GM16265
GM16993-MA1S	258990	GM16263
GM16993-MA2S	276578	GM16265
GM16993-MA3S	258990	GM16265
GM16993-MA4S	276578	GM16266
GM16993-MA5S	276578	GM16266
GM16993-MA6S	258990	GM16266
GM16993-MA7S	NA	GM16267
GM16993-MA8S	276578	GM16267
GM16993-MA9S	276578	GM16268
GM17126-MA1S	NA	GM16262
GM17126-MA2S	NA	GM16256
GM17126-MA3S	NA	GM16264
GM17126-MA4S	NA	GM16256
GM17126-MA5S	NA	GM16262
GM17126-MA6S	NA	GM16264
GM17127-MA1S	NA	GM16265
GM17127-MA2S	276578	GM16260
GM17127-MA3S	258990	GM16269
GM17127-MA4S	NA	GM16266
GM17127-MA5S	276578	GM16263
GM17127-MA6S	258990	GM16260
GM17425-MA10S	NA	GM16251
GM17425-MA11S	NA	GM16251
GM17425-MA12S	NA	GM16252
GM17425-MA13S	NA	GM16252

Section 6 Transformers, continued

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
GM17425-MA14S	NA	GM16252
GM17425-MA15S	NA	GM16254
GM17425-MA16S	NA	GM16254
GM17425-MA17S	NA	GM16253
GM17425-MA18S	NA	GM16254
GM17425-MA19S	NA	GM16254
GM17425-MA1S	NA	GM16247
GM17425-MA20S	NA	GM16253
GM17425-MA21S	NA	GM16255
GM17425-MA22S	NA	GM16255
GM17425-MA23S	NA	GM16255
GM17425-MA24S	NA	GM16257
GM17425-MA25S	NA	GM16257
GM17425-MA26S	NA	GM16257
GM17425-MA27S	NA	GM16257
GM17425-MA28S	NA	GM16258
GM17425-MA29S	NA	GM16258

Chart 2: Controller Transformers		
Kit/Spec Number	Part Number	
	Potential Transformer	Current Transformer
GM17425-MA2S	NA	GM16247
GM17425-MA30S	NA	GM16258
GM17425-MA31S	NA	GM16258
GM17425-MA32S	NA	GM16259
GM17425-MA33S	NA	GM16259
GM17425-MA34S	NA	GM24898
GM17425-MA35S	NA	GM24898
GM17425-MA36S	NA	GM16247
GM17425-MA3S	NA	GM16248
GM17425-MA41S	NA	GM16258
GM17425-MA42S	NA	GM16252
GM17425-MA43S	NA	GM16254
GM17425-MA44S	NA	GM16254
GM17425-MA45S	NA	GM16248
GM17425-MA4S	NA	GM16248
GM17425-MA6S	NA	GM16249
GM17425-MA7S	NA	GM16249
GM17425-MA8S	NA	GM16250
GM17425-MA9S	NA	GM16250
GM17688-MA1S	X-6121-55	GM17250
GM17688-MA2S	X-6121-55	GM17249

Section 7 Microprocessor Controller Assembly



6009_7

Item	Qty.	Description	Part Number
1	1	Cover, controller (standard meterbox)	325003
1	1	Cover, controller (oversized meterbox)	325007
2	10	Screw, #10-24 x 0.50, crimpite	X-6216-1
3	1	Meter, frequency	295069
4	1	Voltmeter, AC, 0-300 scale	282814
4	1	Voltmeter, AC, 0-900 scale	282815
4	1	Voltmeter, AC, 0-5000 scale	350143
5	1	Ammeter, AC (See Section 8)	—
6	4	Nut, hex, 8-32, zinc plated	X-72-4
7	3	Washer, lock, #8 int. tooth	X-22-7
7	1	Washer, lock, #8 ext. tooth	X-22-20
8	1	Cable Assembly*	292836
8	1	Cable Assembly	336428
9	4	Spacer	X-712-9
10	1	PCB Assy., indicator (6-light)*	B-292381
10	1	PCB Assy., indicator (7-light)	A-336430
10	1	PCB Assy., indicator (16-light)*	B-292357
10	1	PCB Assy., indicator (16-light)	A-336432
11	2	Screw, thread-forming	X-67-127
12	1	Selector Switch	292373
12	1	Selector Switch (600 V only)	292374
13	1	Knob, selector switch	296291
15	2	Lamp	291740
16	1	Decal, emergency stop	292467
17	1	Plug, button	X-301-29
18	1	Gauge, DC voltmeter (12 V)	253329
18	1	Gauge, DC voltmeter (24 V)	255224
19	1	Gauge, water temp. (100-250° scale)	292898
19	1	Gauge, water temp. (100-280° scale)	226716
20	1	Gauge, oil pressure (0-100 psi scale)	282897
20	1	Gauge, oil pressure (0-150 psi scale)	328072
20	1	Gauge, oil pressure (0-200 psi scale)	365623
21	1	Strap, ground	X-6046-2
22	1	Screw, p.h.m.	X-50-70
23	1	Washer, #10 int./ext. tooth	X-22-50
24	2	Screw, p.h.m., 6-32 x 0.50	X-49-39
25	1	Hourmeter	238736
26	2	Adapter, oil and water (24 V only)	268297
27	1	Potentiometer Assembly, voltage adj.	A-255041
28	1	Decal, voltage adjustment	292361
29	1	Box, controller (standard meterbox)	350174
29	1	Box, controller (oversized meterbox)	350175
30	2	Washer, lock, #6 int. star	X-22-6
31	2	Nut, hex, 6-32 zinc	X-71-2
32	1	Washer, #10 int./ext. tooth	X-22-50
33	1	Nut, hex	X-6234-6

Item	Qty.	Description	Part Number
34	1	Nut, hex	X-6234-6
35	†	Lamp, 12 V	255126
35	†	Lamp, 24 V	283420
36	†	Socket, lamp	284990
37	1	Grommet	X-284-31
38	2	Nut, #8-32	#
39	1	Marker, strip	292823
40	1	Block, terminal	246116
41	2	Screw, r.h.m.	X-51-53
42	1	Jumper, terminal block	X-6048-2
43	1	Terminal	238898
44	3	Fuse, 1.5 A, 250 V	291207
45	2	Screw, p.h.m., 6-32 x .375	X-49-2
46	1	Holder, fuse	292821
47	2	Fuse, 3 A	243273
48	1	Fuse, 15 A	283645
49	1	Connector Plug, 6 position	241617
50	18	Screw, p.h.m., 6-32 x .50	X-49-25
51	1	PCB Assembly, main controller*	G-292806
51	1	PCB Assembly, main controller	A-336415
52	9	Spacer	287948
53	1	Plug, button	X-301-34
54	1	Decal, fuse amps	292347
55	1	Bracket, PCB mounting	343480
56	2	Nut, #8-32	#
57	1	PCB Assembly, DDEC pulse	c-354647
58	2	Screw, p.h.m., 8-32 x .375	X-51-12
59	2	Nut, #6-32	#
60	2	Washer, lock #6 int. star	X-22-6
61	9	Washer, #6	#
62	2	Plug, cap, 1/8-inch	X-519-1
63	1	Plate, hinge (standard meterbox)	292908
63	1	Plate, hinge (oversized meterbox)	273785
64	4	Nut, 5/16-18	#
65	4	Bumper	292834
66	1	Switch, pushbutton	292364
67	4	Bumper (oversized meterbox)	255443
68	8	Washer, plain	X-25-73
69	8	Nut, 1/4-20	#
70	12	Lens, red (qty. 7 on 7-light controller)	253241
71	1	Lens, green (16-light only)	253242
72	3	Lens, yellow (16-light only)	255931
73	1	Decal, danger high voltage	294520

† Standard meterbox uses a quantity of 2.
oversized meterbox uses a quantity of 3.

* Use this part number on generator sets with serial numbers before 363369.

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Section 8 Ammeters

This chart lists controller ammeter part numbers. The chart is sorted by Controller Assembly.

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
364454-1	282934
364454-2	282934
364454-22	295337
364454-23	295338
364454-24	253341
364454-25	282950
364454-26	295337
364454-27	295338
364454-28	282954
364454-29	282955
364454-3	295337
364454-30	282950
364454-31	282934
364454-32	282954
364454-33	295340
364454-34	282955
364454-4	295338
364454-5	295337
A-324254	295338
A-325613	282956
A-325710	282934
A-325711	282934
A-325712	295337
A-325713	295337
A-325714	295338
A-325715	295337
A-325716	282950
A-325717	295338
A-325718	282950
A-325719	282954
A-325720	282950
A-325721	282954
A-325722	282955
A-325723	282955
A-325724	295340
A-325725	282955
A-325726	282956
A-325727	295340
A-325728	282957
A-325729	282956
A-325730	958282
A-325731	282957
A-325732	282959
A-325733	282958
A-325734	282960
A-325735	282957
A-325736	282956
A-325737	295339
A-325738	295340
A-325739	282955
A-325740	299967
A-325741	282955
A-325742	282959
A-325743	282960

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
A-325744	299967
A-325745	282960
A-325746	282934
A-325747	282934
A-325748	295337
A-325749	295338
A-325750	295337
A-325751	282950
A-325752	295338
A-325753	282954
A-325754	282950
A-325755	282955
A-325756	282955
A-325757	282955
A-325758	295340
A-325759	282955
A-325760	282956
A-325761	295340
A-325762	282957
A-325763	282956
A-325764	282958
A-325765	282957
A-325766	282959
A-325767	282958
A-325768	282960
A-325769	282957
A-325770	282956
A-325771	295339
A-325772	295340
A-325773	282955
A-325774	299967
A-325775	282955
A-325776	282959
A-325777	282960
A-325778	299967
A-325779	282960
A-325780	282934
A-325781	282934
A-325782	295337
A-325783	295338
A-325784	295337
A-325785	282950
A-325786	295338
A-325787	282954
A-325788	282950
A-325789	282950
A-325790	282954
A-325792	282955
A-325793	295340
A-325794	282955
A-325795	282956
A-325796	295340
A-325797	282957
A-325798	282956

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
A-325799	282958
A-325800	282957
A-325801	282959
A-325802	282958
A-325803	282960
A-325804	282957
A-325805	282956
A-325806	295339
A-325807	295340
A-325808	282955
A-325809	299967
A-325810	282955
A-325811	282959
A-325812	282960
A-325813	299967
A-325814	282960
A-325815	282955
A-325816	282934
A-325817	282934
A-325818	295337
A-325819	295338
A-325820	295337
A-325821	282950
A-325822	295338
A-325823	282954
A-325824	282950
A-325825	282954
A-325826	282955
A-325827	282955
A-325828	295340
A-325829	282950
A-325830	282956
A-325831	295340
A-325832	282957
A-325833	282956
A-325834	282958
A-325835	282957
A-325836	282959
A-325837	282958
A-325838	282960
A-325839	282957
A-325840	282956
A-325841	295339
A-325842	295340
A-325843	282955
A-325844	299967
A-325845	282955
A-325846	282959
A-325847	282960
A-325848	299967
A-325849	282950
A-325850	295339
A-325851	282954
A-325852	282950

Section 8 Ammeters, continued

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
A-325853	295339
A-325854	282954
A-325855	282954
A-325856	295339
A-325857	282954
A-325858	282950
A-325859	295339
A-325860	282954
A-325863	295340
A-325864	282955
A-325865	295340
A-325866	282955
A-325867	295340
A-325868	282955
A-325869	295340
A-325870	282955
A-325878	299967
A-325879	325467
A-325880	299967
A-325881	295340
A-325886	299667
A-325887	325467
A-325888	299967
A-325889	295340
A-325894	299967
A-325895	325467
A-325896	299967
A-325897	295340
A-325902	299967
A-325903	325467
A-325904	299967
A-325905	295340
A-325951	282960
A-325985	282954
A-325997	282956
A-325998	282956
A-325999	282956
A-336598	282934
A-336615	282934
A-350126	282954
A-350127	295339
A-350137	343299
A-350138	343299
A-350139	343299
A-350140	343299
A-350150	295339
A-350151	295339
A-350152	295339
A-350153	295339
A-350232	282956
A-350233	282956
A-350234	282956
A-350235	282956
A-350236	343299
A-350237	343299
A-350238	343299
A-350239	343299
A-350240	295340
A-350241	295340
A-350242	295340

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
A-350243	295340
A-350292	282957
A-350293	282957
A-350294	282957
A-350295	282957
A-350300	282956
A-350301	282956
A-350302	282956
A-350303	282956
A-350344	299967
A-350345	299967
A-350346	299967
A-350347	299967
A-350349	325467
A-350350	325467
A-350351	325467
A-350352	325467
A-350353	282960
A-350354	282960
A-350355	282960
A-350356	282960
A-350357	299967
A-350358	299967
A-350359	299967
A-350360	299967
A-350361	295339
A-350362	295339
A-350363	295339
A-350364	295340
A-350365	295340
A-350366	295340
A-350367	295340
A-350370	295339
A-360621	253341
A-360915	253609
A-360916	253609
A-360917	253609
A-360918	253609
A-360920	253341
A-360922	253341
A-360923	253341
A-360925	253609
A-360926	253609
A-360927	253609
A-360928	253609
A-360930	295337
A-360931	295337
A-360932	295337
A-360933	295338
A-360934	295338
A-360935	295338
A-360936	295338
A-360937	253341
A-360938	253341
A-360939	253341
A-360940	253341
A-360942	282950
A-360943	282950
A-360946	282954
A-360949	282955

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
A-360953	282934
A-360954	282934
A-360955	282934
A-360956	282934
A-360957	295337
A-360958	294337
A-360959	295337
A-360960	295337
A-360962	295338
A-360963	295338
A-361876	282958
A-361877	282958
A-361878	282958
A-361879	282958
A-361896	282957
A-361897	282957
A-361898	282957
A-361899	282957
A-365066	282959
A-365067	282959
A-365068	282959
A-365069	282959
A-365106	282958
A-365107	282958
A-365108	282958
A-365109	282958
A-365126	282960
A-365127	282960
A-365128	282960
A-365129	282960
A-365166	282959
A-365167	282959
A-365168	282959
A-365169	282959
A-365632	282958
A-365633	282958
A-365634	282958
A-365635	282958
A-365640	282957
A-365641	282957
A-365642	282957
A-365643	282957
GM10840-10	299967
GM10840-11	282956
GM10840-12	282956
GM10840-13	295340
GM10840-14	295340
GM10840-15	282959
GM10840-16	282959
GM10840-170	282958
GM10840-171	282958
GM10840-175	295338
GM10840-177	253341
GM10840-179	282950
GM10840-179	282950
GM10840-181	295337
GM10840-183	295338
GM10840-185	282954
GM10840-186	282955
GM10840-187	282950

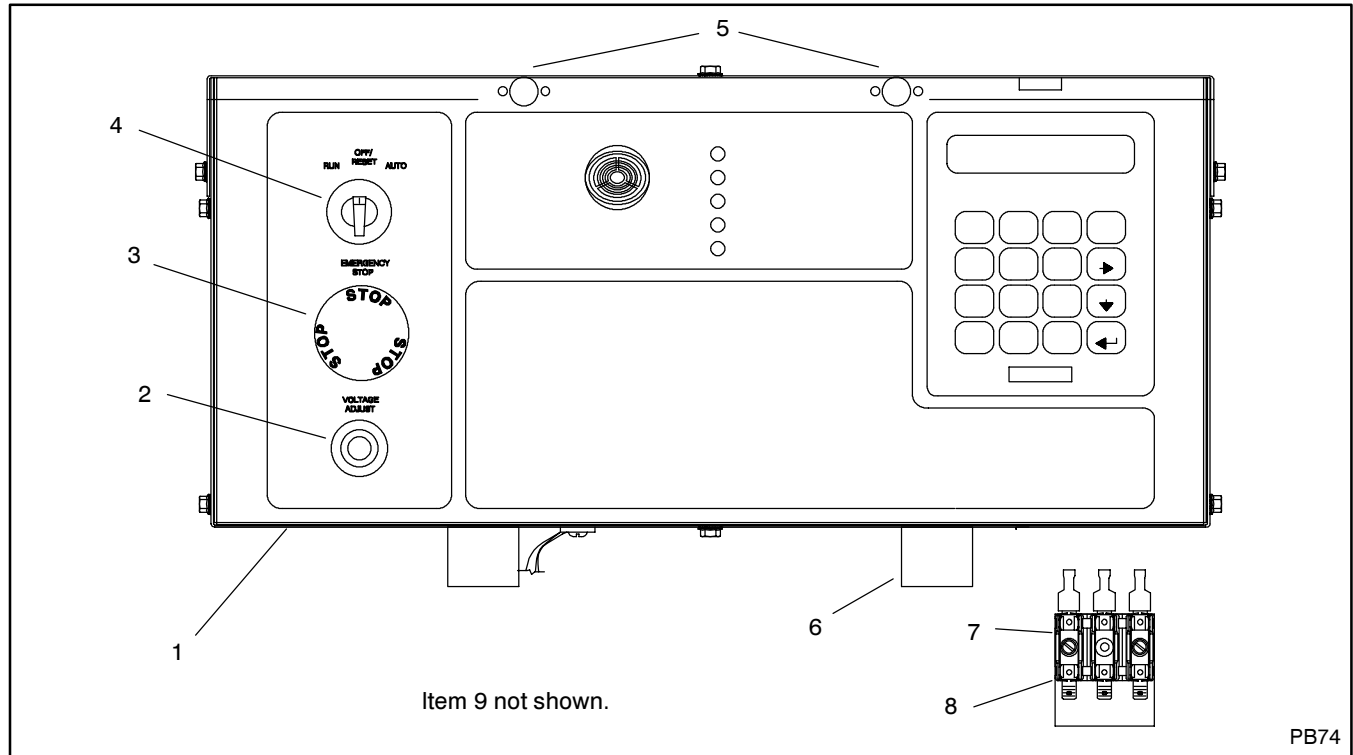
Section 8 Ammeters, continued

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
GM10840-188	295340
GM10840-189	295340
GM10840-190	282956
GM10840-191	282934

Chart 3: Ammeters	
Part Number	
Controller Assembly	Item 5, Ammeter
GM10840-192	282955
GM10840-193	282955
GM10840-194	282954
GM10840-195	295340
GM10840-196	253341
GM10840-197	295337
GM10840-198	282950
GM10840-199	295338
GM10840-200	282954
GM10840-201	282950
GM10840-202	282955
GM10840-203	282954
GM10840-5	282959
GM10840-6	282959
GM10840-7	282960
GM10840-8	282960
GM10840-9	299967

Notes

Section 9 Digital Controller Assembly

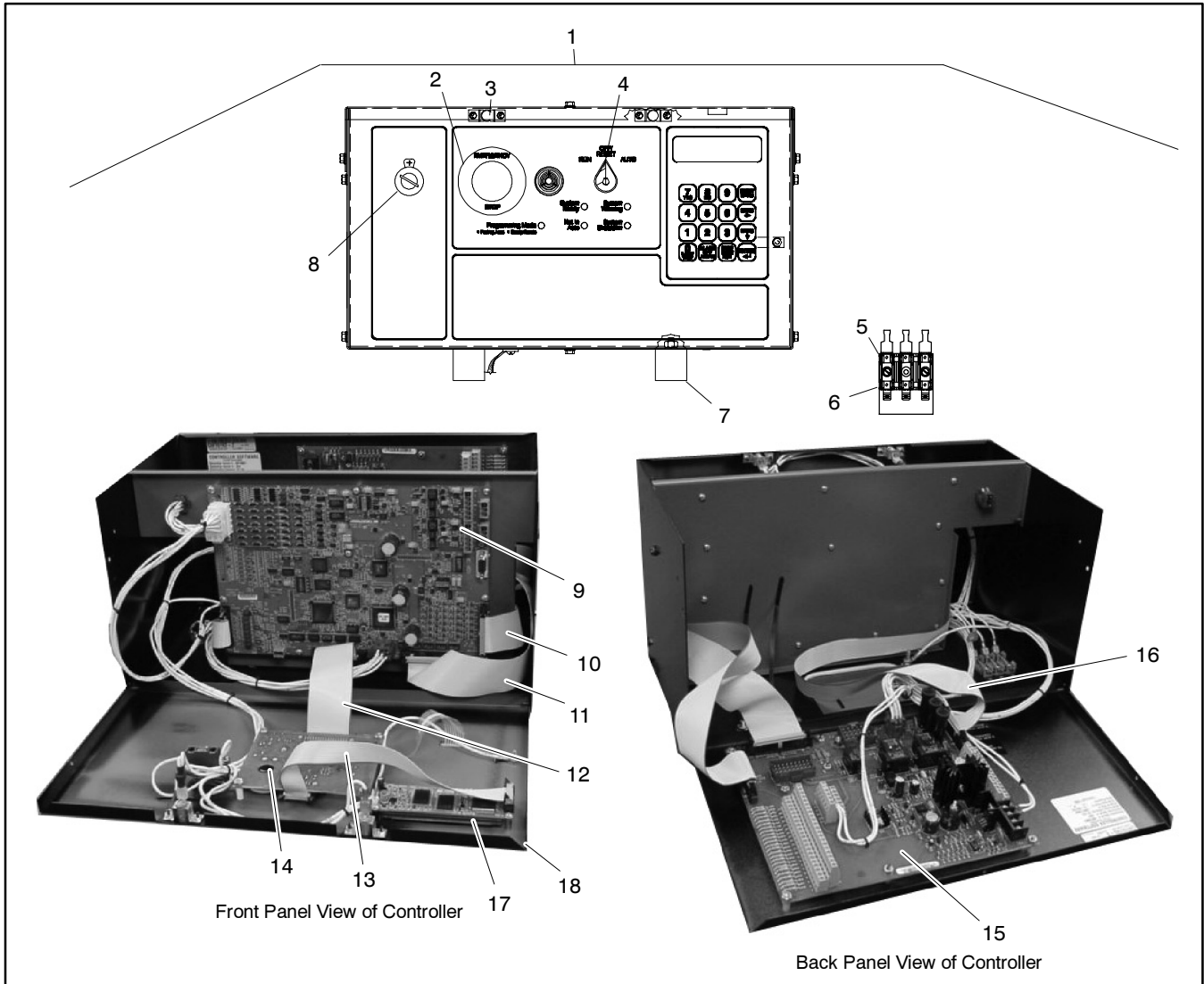


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Controller Part Numbers

Item	Description	Part Number				
		20-180 kW, 12V	350-2000 kW, 24V	20-300 kW, 24V	230-300 kW, 24V	350-2000 kW, 24V
1	Controller assembly	A-350092	A-350093	A-350124	A-350244	A-350304
2	Potentiometer, voltage adjustment	A-328774	—	A-328774	A-328774	—
2	Knob, potentiometer	X-6136-39	—	X-6136-39	X-6136-39	—
2	Plug, button	—	X-301-23	—	—	X-301-23
3	Switch, emergency stop	292364	292364	292364	292364	292364
4	Switch, selector	347969	347969	347969	347969	347969
5	Lamp, panel (2)	255126	283420	283420	283420	283420
6	Bumper (4)	292834	292834	292834	292834	292834
7	Holder, fuse	292821	292821	292821	292821	292821
8	Fuse, 1.5 A, 250 A (3)	291207	291207	291207	291207	291207
9	PCB assembly, DDEC pulse	—	—	—	B-354647	B-354647

Section 10 Digital 550 Controller Assembly

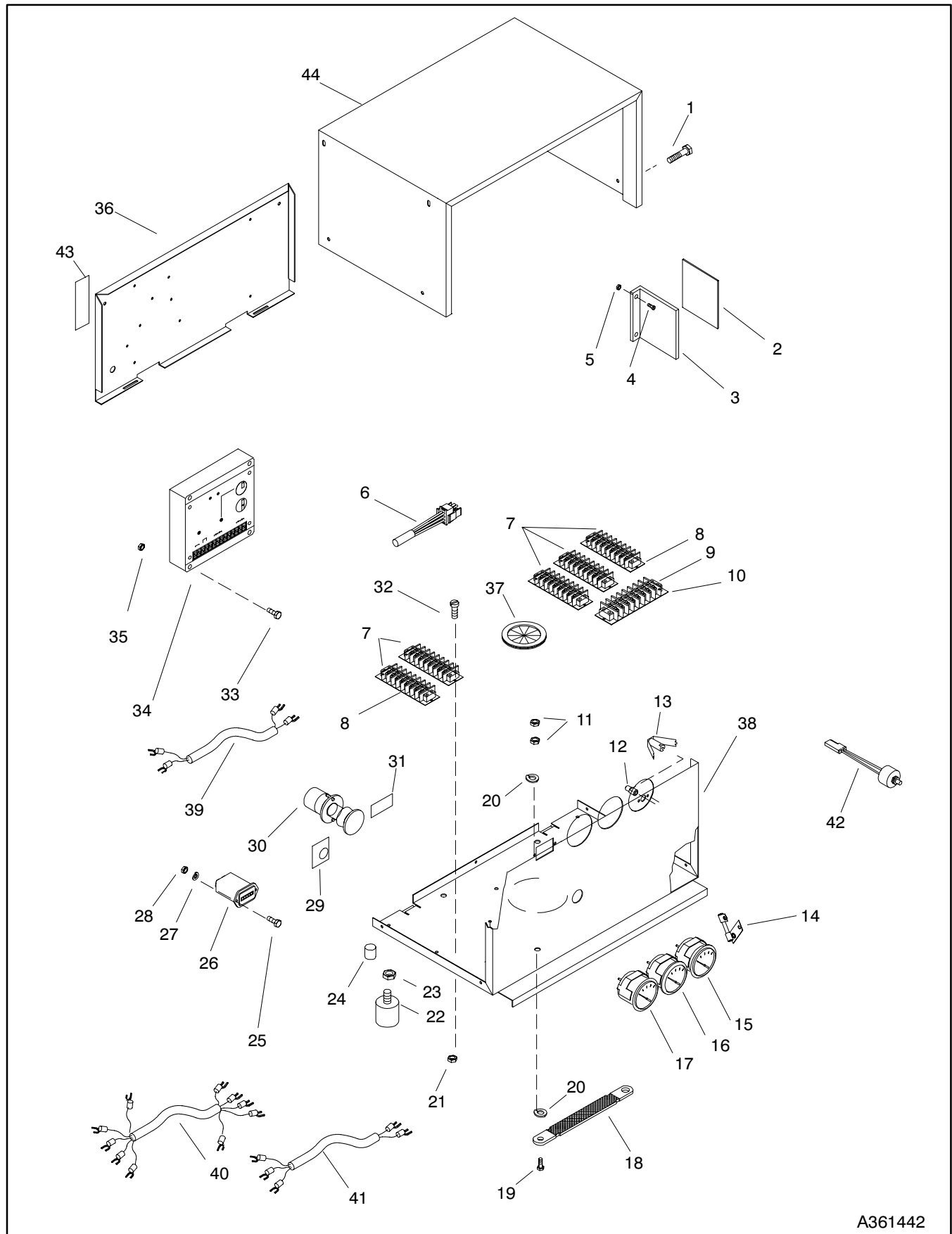


Controller Part Numbers

Item	Description	Part Number			
		Controller Without Keyswitch		Controller With Keyswitch	
		12 V	24 V	12 V	24 V
1	Service Kit (Includes 12 V controller assembly, (2) 283420, and literature)	GM20722-1S	GM20722-1S	GM20722-2S	GM20722-2S
2	Switch, emergency stop pushbutton	292364	292634	292634	292634
3	Lamp, panel (2)	225126	283420	225126	283420
4	PCB assembly, display board	A-365485	A-365485	A-365485	A-365485
4	Knob, rotary switch	GM10125	GM10125	GM10125	GM10125
5	Holder, fuse	292821	292821	292821	292821
6	Fuse, 1.5 A, 250 V (3)	291207	291207	291207	291207
7	Bumper (4)	292834	292834	292834	292834
8	Switch, key	-	-	GM17397	GM17397
9	Circuit board, main logic	NA	NA	NA	NA
10	Cable, ribbon, 34-position (P17 on main logic to P5 on interconnection)	GM10120	GM10120	GM10120	GM10120
11	Cable, ribbon, 40-position (P16 on main logic to P4 on interconnection)	GM10119	GM10119	GM10119	GM10119
12	Cable, ribbon, 34-position (display board to P14 on main logic board)	GM10123	GM10123	GM10123	GM10123
13	Cable, ribbon, 16-position (CN1 on display panel to display board)	GM10124	GM10124	GM10124	GM10124
14	Circuit board, display (board with alarm horn)	A-365485	A-365485	GM17398	GM17398
15	Circuit board, interconnection	B-365487	B-365487	B-365487	B-365487
16	Cable, ribbon, 24-position (P12 on main logic to P2 on interconnection)	GM10118	GM10118	GM10118	GM10118
17	Panel, display (kit-service only)	GM13616	GM13616	GM13616	GM13616
18	Front panel assembly (replace entire front panel to replace keypad)	GM28610-1S	GM28610-1S	GM28610-2S	GM28610-2S

NA Not available. If the main logic board needs replacement, replace the entire controller.

Section 11 Paralleling Engine Gauge Box Assembly



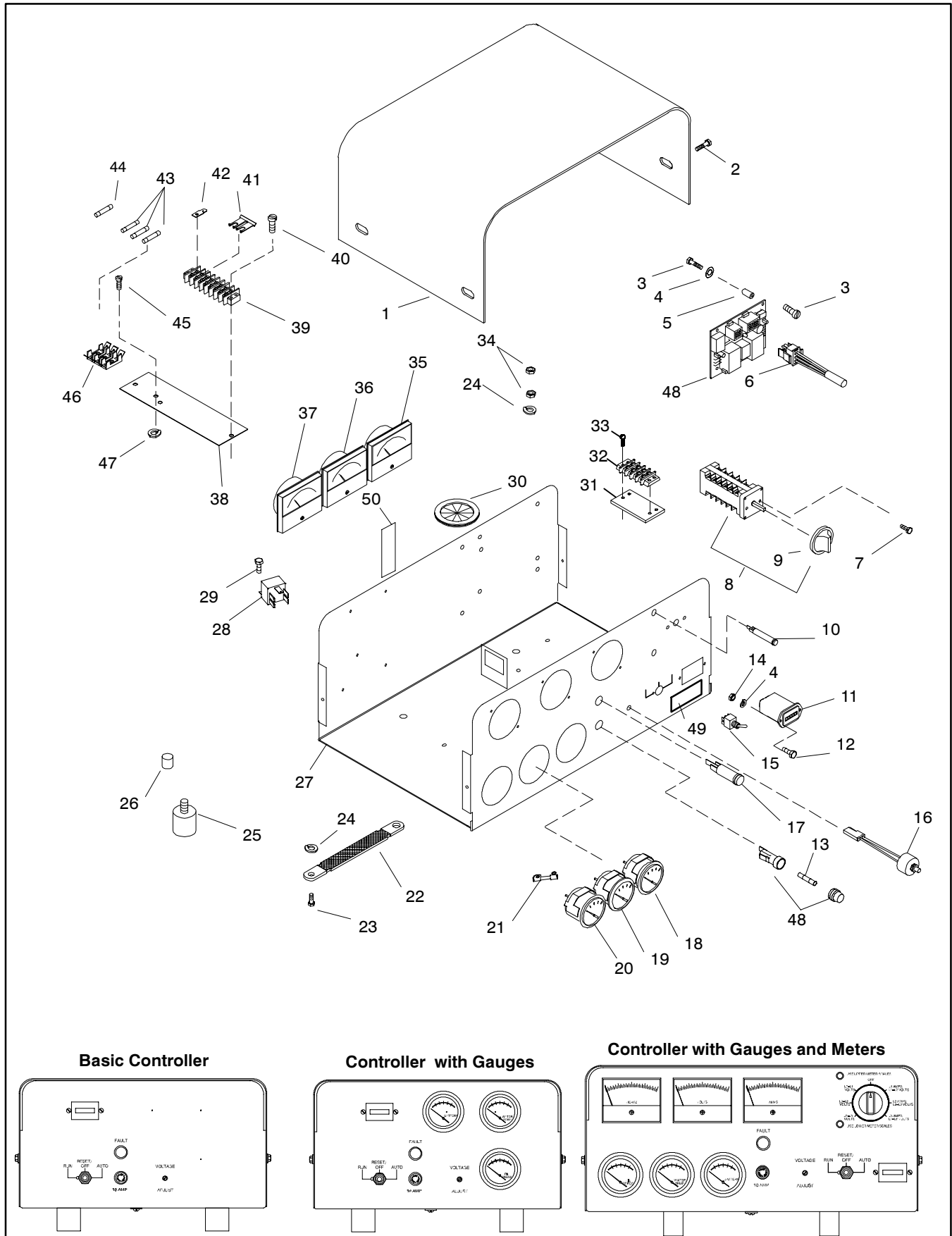
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Section 11 Paralleling Engine Gauge Box Assembly

Item	Qty.	Description	Part Number
1	10	Screw, #10-24 x 0.50 crimpite	X-6216-1
2	1	PCB assembly, DDEC pulse	B-354647
3	1	Bracket, PCB mounting	343480
4	2	Screw, PHM, 8-32 x .375	X-51-12
5	2	Nut, #6-32	#
6	1	Harness, wiring (J1)	273764
7	5	Strip, terminal	283060
8	5	Marker, strip	273781
9	1	Block, terminal	246114
10	1	Marker, strip	354483
11	2	Nut, hex	X-6234-6
12	2	Bulb	283420
13	2	Socket, lamp	284990
14	2	Resistor, 24 V	268297
15	1	Voltmeter	255224
16	1	Gauge, water temperature	282898
17	1	Gauge, oil pressure (0-150 psi scale)	328072
17	1	Gauge, oil pressure (0-100 psi scale)	282897
18	1	Strap, ground	X-6046-2
19	1	Screw, PHM	X-50-70
20	2	Washer, #10, internal/external tooth	X-22-50
21	12	Nut, #8-32	#
22	4	Bumper	292834
23	4	Nut, 5/16-18	#
24	2	Plug, cap, 1/8-inch	X-519-1
25	2	Screw, PHM, 6-32 x 0.50	X-49-39
26	1	Hourmeter	238736
27	2	Washer, lock, #6 internal star	X-22-6
28	2	Nut, hex. 6-32 zinc	X-71-2
29	1	Decal, voltage adjustment	292361
30	1	Switch, pushbutton	292364
31	1	Decal, emergency stop	292467
32	12	Screw, RHM	X-51-53
33	4	Screw, RHM, 1/4-20 x 1/2	X-73-1
34	1	Switch, speed (pickup sensing)	X-6122-1
34	1	Switch, speed (ECM sensing)	X-6122-2
35	4	Nut, 1/4-20	#
36	1	Plate, hinge	263154
37	1	Grommet	X-284-31
38	1	Box, controller	325004
39	1	Harness, wiring (pickup signal harness)	273984
39	1	Harness, wiring (ECM signal harness)	365011
40	1	Harness, wiring (load share harness)	273983
41	1	Harness, wiring (pickup)	276524
42	1	Potentiometer assembly	A-255041
43	1	Decal, danger high voltage	294520
44	1	Cover, controller	325003

Common hardware; procure locally.

Section 12 Basic Controller Assembly



Section 12 Basic Controller Assembly

Item	Qty.	Description	Part Number
1	1	Cover, controller (controller with gauges and meters)	336606
1	1	Cover, controller (basic and controller with gauges)	336601
2	4	Screw, Phillips hex crimpite	X-6216-1
3	10	Screw, slotted pan head machine	X-49-25
4	9	Washer, lock, .146 ID x .285 in. OD	X-22-6
5	5	Spacer	287948
6	1	Wiring harness (controller with gauges and meters)	336637
6	1	Wiring harness (basic and controller with gauges)	336642
7	2	Screw, slotted panhead, thread-cutting	X-67-127
8	1	Switch, cam	292374
9	1	Knob, selector	296291
10	2	Lamp, 125 V, .33 W	291740
11	1	Meter, run time, 10000 hour	238736
12	2	Screw, slotted pan head machine	X-49-39
13	1	Fuse, 10 A, 250 V	223316
14	2	Nut, hex machine screw, 6-32	X-71-2
15	1	Switch, toggle, 2 pole	287812
16	1	Potentiometer assembly	A-255041
17	1	Lamp, 14 V, .33 W	269373
18	1	Voltmeter, 10-16 V, DC	253329
19	1	Gauge, engine temperature (100-240 scale)	282898
19	1	Gauge, engine temperature (125-300 scale)	364450
19	1	Gauge, engine temperature (100-280 scale)	226716
20	1	Gauge, oil pressure, 0-100 psi	282897
21	1	Resistor assembly	292352
22	1	Strap, ground	X-6046-2
22	1	Sleeve (not shown)	X-696-5
23	1	Screw, slotted pan head machine	X-50-70
24	2	Washer, lock, .20 ID x .595 in. OD	X-22-50
25	4	Vibromount	292834
26	4	Plug, cap 1/8	X-519-1
27	1	Box, silkscreened (controller with gauges and meters)	336603
27	1	Box, silkscreened (controller with gauges)	336653
27	1	Box, silkscreened (basic controller)	336604
28	1	Relay, 12 VDC, .20 A	259391
29	1	Screw, slotted pan head machine	X-50-13
30	1	Grommet, round	X-284-31
31	1	Strip, marker	336605
32	1	Strip, terminal	292940
33	2	Screw, slotted pan head machine	X-50-3
34	2	Nut, hex machine screw, 10-2	X-6234-6
35	1	Ammeter, AC (See Section 8)	—
36	1	Voltmeter, AC 0-300 scale	282814
36	1	Voltmeter, AC 0-900 scale	282815
37	1	Meter, frequency, 45-65 Hz, AC	295069
38	1	Strip, marker (6.69 in.)	336636
38	1	Strip, marker (4.25 in.)	336606
39	1	Block, terminal	246115
40	2	Screw, slotted round head machine	X-51-53
41	1	Jumper, terminal block	X-6048-2
42	4	Terminal, fast-on, male*	238898
43	3	Fuse, 1.5 A, 250 V (controller with gauges and meters)	291207
44	1	Fuse, 15 A, 250 V	283645
45	2	Screw, cross recess pan head machine	X-49-2
46	1	Fuse holder, 4-fuse (controller with gauges and meters)	336635
46	1	Fuse holder, 1-fuse (basic and controller with gauges)	336634
47	1	Fuse holder, .25 x 1.25 in.	238426
48	1	PCB assembly	F-254717
49	1	Decal	347326
50	1	Decal, danger high voltage	294520

* Controller with gauges and meters uses a quantity of 1 terminal.

Notes

Appendix A Abbreviations

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

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

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

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.

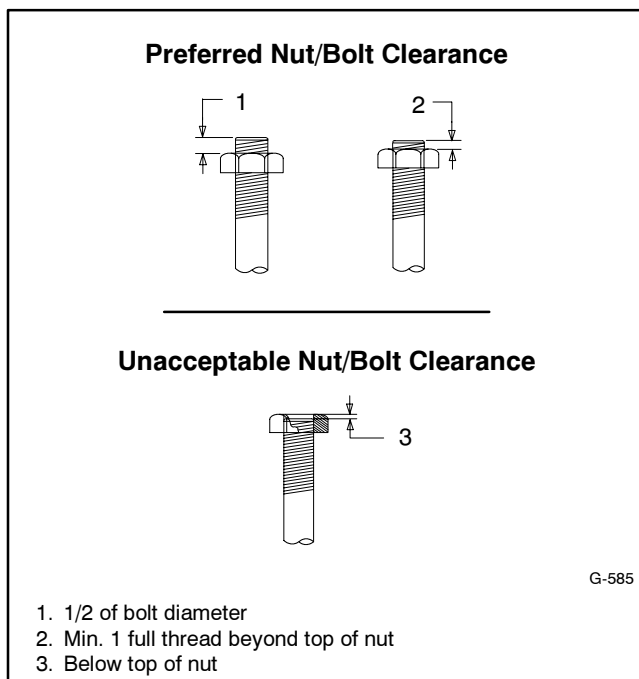


Figure 1 Acceptable Bolt Lengths

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.

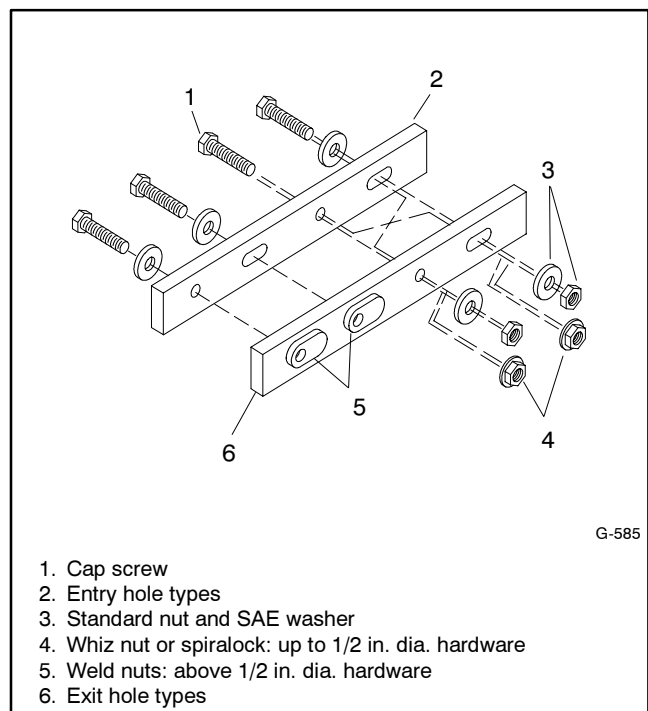


Figure 2 Acceptable Hardware Combinations

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	

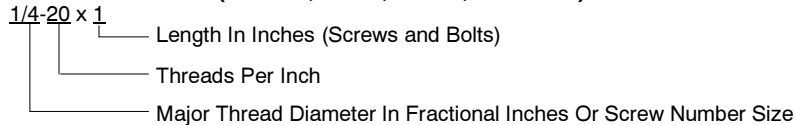
Hardness Grades	
American Standard	
Grade 2	
Grade 5	
Grade 8	
Grade 8/9 (Hex Socket Head)	
Metric	
Number stamped on hardware; 5.8 shown	

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

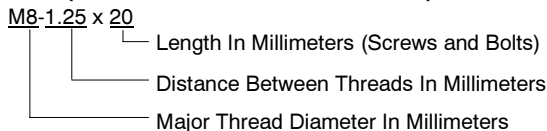
Phillips® screw is a registered trademark of Phillips Screw Company.

Sample Dimensions

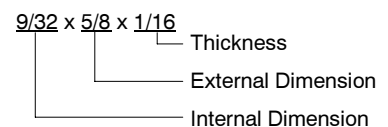
American Standard (Screws, Bolts, Studs, and Nuts)



Metric (Screws, Bolts, Studs, and Nuts)



Plain Washers



Lock Washers



Appendix E Common Hardware List

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

American Standard

Part No.	Dimensions	Part No.	Dimensions	Part No.	Dimensions	Type		
Hex Head Bolts (Grade 5)		Hex Head Bolts, cont.		Hex Nuts				
X-465-17	1/4-20 x .38	X-6238-14	3/8-24 x .75	X-6009-1	1-8	Standard		
X-465-6	1/4-20 x .50	X-6238-16	3/8-24 x 1.25					
X-465-2	1/4-20 x .62	X-6238-21	3/8-24 x 4.00	X-6210-3	6-32	Whiz		
X-465-16	1/4-20 x .75	X-6238-22	3/8-24 x 4.50	X-6210-4	8-32	Whiz		
X-465-18	1/4-20 x .88			X-6210-5	10-24	Whiz		
X-465-7	1/4-20 x 1.00	X-6024-5	7/16-14 x .75	X-6210-1	10-32	Whiz		
X-465-8	1/4-20 x 1.25	X-6024-2	7/16-14 x 1.00					
X-465-9	1/4-20 x 1.50	X-6024-8	7/16-14 x 1.25	X-6210-2	1/4-20	Spiralock		
X-465-10	1/4-20 x 1.75	X-6024-3	7/16-14 x 1.50	X-6210-6	1/4-28	Spiralock		
X-465-11	1/4-20 x 2.00	X-6024-4	7/16-14 x 2.00	X-6210-7	5/16-18	Spiralock		
X-465-12	1/4-20 x 2.25	X-6024-11	7/16-14 x 2.75	X-6210-8	5/16-24	Spiralock		
X-465-14	1/4-20 x 2.75	X-6024-12	7/16-14 x 6.50	X-6210-9	3/8-16	Spiralock		
X-465-21	1/4-20 x 5.00			X-6210-10	3/8-24	Spiralock		
X-465-25	1/4-28 x .38	X-129-15	1/2-13 x .75	X-6210-11	7/16-14	Spiralock		
X-465-20	1/4-28 x 1.00	X-129-17	1/2-13 x 1.00	X-6210-12	1/2-13	Spiralock		
		X-129-18	1/2-13 x 1.25	X-6210-15	7/16-20	Spiralock		
X-125-33	5/16-18 x .50	X-129-19	1/2-13 x 1.50	X-6210-14	1/2-20	Spiralock		
X-125-23	5/16-18 x .62	X-129-20	1/2-13 x 1.75					
X-125-3	5/16-18 x .75	X-129-21	1/2-13 x 2.00	X-85-3	5/8-11	Standard		
X-125-31	5/16-18 x .88	X-129-22	1/2-13 x 2.25	X-88-12	3/4-10	Standard		
X-125-5	5/16-18 x 1.00	X-129-23	1/2-13 x 2.50	X-89-2	1/2-20	Standard		
X-125-24	5/16-18 x 1.25	X-129-24	1/2-13 x 2.75					
X-125-34	5/16-18 x 1.50	X-129-25	1/2-13 x 3.00					
X-125-25	5/16-18 x 1.75	X-129-27	1/2-13 x 3.50					
X-125-26	5/16-18 x 2.00	X-129-29	1/2-13 x 4.00					
230578	5/16-18 x 2.25	X-129-30	1/2-13 x 4.50					
X-125-29	5/16-18 x 2.50	X-463-9	1/2-13 x 5.50					
X-125-27	5/16-18 x 2.75	X-129-44	1/2-13 x 6.00					
X-125-28	5/16-18 x 3.00							
X-125-22	5/16-18 x 4.50	X-129-51	1/2-20 x .75	X-25-46	.125	.250	.022	#4
X-125-32	5/16-18 x 5.00	X-129-45	1/2-20 x 1.25	X-25-9	.156	.375	.049	#6
X-125-35	5/16-18 x 5.50	X-129-52	1/2-20 x 1.50	X-25-48	.188	.438	.049	#8
X-125-36	5/16-18 x 6.00			X-25-36	.219	.500	.049	#10
X-125-40	5/16-18 x 6.50	X-6021-3	5/8-11 x 1.00	X-25-40	.281	.625	.065	1/4
		X-6021-4	5/8-11 x 1.25	X-25-85	.344	.687	.065	5/16
X-125-43	5/16-24 x 1.75	X-6021-2	5/8-11 x 1.50	X-25-37	.406	.812	.065	3/8
X-125-44	5/16-24 x 2.50	X-6021-1	5/8-11 x 1.75	X-25-34	.469	.922	.065	7/16
X-125-30	5/16-24 x .75	273049	5/8-11 x 2.00	X-25-26	.531	1.062	.095	1/2
X-125-39	5/16-24 x 2.00	X-6021-5	5/8-11 x 2.25	X-25-15	.656	1.312	.095	5/8
X-125-38	5/16-24 x 2.75	X-6021-6	5/8-11 x 2.50	X-25-29	.812	1.469	.134	3/4
		X-6021-7	5/8-11 x 2.75	X-25-127	1.062	2.000	.134	1
X-6238-2	3/8-16 x .62	X-6021-12	5/8-11 x 3.75					
X-6238-10	3/8-16 x .75	X-6021-11	5/8-11 x 4.50					
X-6238-3	3/8-16 x .88	X-6021-10	5/8-11 x 6.00					
X-6238-11	3/8-16 x 1.00							
X-6238-4	3/8-16 x 1.25	X-6021-9	5/8-18 x 2.50					
X-6238-5	3/8-16 x 1.50							
X-6238-1	3/8-16 x 1.75	X-6239-1	3/4-10 x 1.00					
X-6238-6	3/8-16 x 2.00	X-6239-8	3/4-10 x 1.25					
X-6238-17	3/8-16 x 2.25	X-6239-2	3/4-10 x 1.50					
X-6238-7	3/8-16 x 2.50	X-6239-3	3/4-10 x 2.00					
X-6238-8	3/8-16 x 2.75	X-6239-4	3/4-10 x 2.50					
X-6238-9	3/8-16 x 3.00	X-6239-5	3/4-10 x 3.00					
X-6238-19	3/8-16 x 3.25	X-6239-6	3/4-10 x 3.50					
X-6238-12	3/8-16 x 3.50							
X-6238-20	3/8-16 x 3.75	X-792-1	1-8 x 2.25					
X-6238-13	3/8-16 x 4.50	X-792-5	1-8 x 3.00					
X-6238-18	3/8-16 x 5.50	X-792-8	1-8 x 5.00					
X-6238-25	3/8-16 x 6.50							

Metric

Hex head bolts are hardness grade 8.8 unless noted.

Part No. Dimensions Hex Head Bolts (Partial Thread)

M931-05055-60	M5-0.80 x 55
M931-06040-60	M6-1.00 x 40
M931-06055-60	M6-1.00 x 55
M931-06060-60	M6-1.00 x 60
M931-06060-SS	M6-1.00 x 60
M931-06070-60	M6-1.00 x 70
M931-06070-SS	M6-1.00 x 70
M931-06075-60	M6-1.00 x 75
M931-06090-60	M6-1.00 x 90
M931-06145-60	M6-1.00 x 145
M931-06150-60	M6-1.00 x 150
M931-08035-60	M8-1.25 x 35
M931-08040-60	M8-1.25 x 40
M931-08040-82	M8-1.25 x 40*
M931-08045-60	M8-1.25 x 45
M931-08050-60	M8-1.25 x 50
M931-08055-60	M8-1.25 x 55
M931-08055-82	M8-1.25 x 55*
M931-08060-60	M8-1.25 x 60
M931-08070-60	M8-1.25 x 70
M931-08070-82	M8-1.25 x 70*
M931-08075-60	M8-1.25 x 75
M931-08080-60	M8-1.25 x 80
M931-08090-60	M8-1.25 x 90
M931-08095-60	M8-1.25 x 95
M931-08100-60	M8-1.25 x 100
M931-08110-60	M8-1.25 x 110
M931-08120-60	M8-1.25 x 120
M931-08130-60	M8-1.25 x 130
M931-08140-60	M8-1.25 x 140
M931-08150-60	M8-1.25 x 150
M931-10040-82	M10-1.25 x 40*
M931-10040-60	M10-1.50 x 40
M931-10045-60	M10-1.50 x 45
M931-10050-60	M10-1.50 x 50
M931-10050-82	M10-1.25 x 50
M931-10055-60	M10-1.50 x 55
M931-10060-60	M10-1.50 x 60
M931-10065-60	M10-1.50 x 65
M931-10070-60	M10-1.50 x 70
M931-10080-60	M10-1.50 x 80
M931-10080-82	M10-1.25 x 80
M931-10090-60	M10-1.50 x 90
M931-10090-82	M10-1.50 x 90*
M931-10100-60	M10-1.50 x 100
M931-10110-60	M10-1.50 x 110
M931-10120-60	M10-1.50 x 120
M931-10130-60	M10-1.50 x 130
M931-10140-60	M10-1.50 x 140
M931-10180-60	M10-1.50 x 180
M960-10330-60	M10-1.25 x 330
M931-12045-60	M12-1.75 x 45
M960-12050-60	M12-1.25 x 50
M960-12050-82	M12-1.25 x 50*
M931-12050-60	M12-1.75 x 50
M931-12050-82	M12-1.75 x 50
M931-12055-60	M12-1.75 x 55
M931-12060-60	M12-1.75 x 60
M931-12060-82	M12-1.75 x 60
M931-12065-60	M12-1.75 x 65
M931-12075-60	M12-1.75 x 75
M931-12080-60	M12-1.75 x 80
M931-12090-60	M12-1.75 x 90
M931-12100-60	M12-1.75 x 100
M931-12110-60	M12-1.75 x 110

Part No. Dimensions Hex Head Bolts (Partial Thread), continued

M960-16090-60	M16-1.50 x 90
M931-16090-60	M16-2.00 x 90
M931-16100-60	M16-2.00 x 100
M931-16120-60	M16-2.00 x 120
M931-16150-60	M16-2.00 x 150
M931-20065-60	M20-2.50 x 65
M931-20100-60	M20-2.50 x 100
M931-20120-60	M20-2.50 x 120
M931-20140-60	M20-2.50 x 140
M931-20160-60	M20-2.50 x 160
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

Hex Head Bolts (Full Thread)

M933-04006-60	M4-0.70 x 6
M933-05030-60	M5-0.80 x 30
M933-05035-60	M5-0.80 x 35
M933-05050-60	M5-0.80 x 50
M933-06010-60	M6-1.00 x 10
M933-06012-60	M6-1.00 x 12
M933-06014-60	M6-1.00 x 14
M933-06016-60	M6-1.00 x 16
M933-06020-60	M6-1.00 x 20
M933-06025-60	M6-1.00 x 25
M933-06040-60	M6-1.00 x 40
M933-06050-60	M6-1.00 x 50
M933-07025-60	M7-1.00 x 25
M933-08010-60	M8-1.25 x 10
M933-08012-60	M8-1.25 x 12
M933-08016-60	M8-1.25 x 16
M933-08020-60	M8-1.25 x 20
M933-08025-60	M8-1.25 x 25
M933-08030-60	M8-1.25 x 30
M933-08030-82	M8-1.25 x 30*
M933-10012-60	M10-1.50 x 12
M961-10020-60	M10-1.25 x 20
M933-10020-60	M10-1.50 x 20
M933-10025-60	M10-1.50 x 25
M961-10025-60	M10-1.25 x 25
M933-10025-82	M10-1.50 x 25
M961-10030-60	M10-1.25 x 30
M933-10030-60	M10-1.50 x 30
M933-10030-82	M10-1.50 x 30*
M961-10035-60	M10-1.25 x 35
M933-10035-60	M10-1.50 x 35
M933-10035-82	M10-1.50 x 35
M961-10040-60	M10-1.25 x 40
M933-12016-60	M12-1.75 x 16
M933-12020-60	M12-1.75 x 20
M961-12020-60F	M12-1.50 x 20
M933-12025-60	M12-1.75 x 25
M933-12025-82	M12-1.75 x 25*
M961-12030-60	M12-1.25 x 30
M961-12030-82F	M12-1.50 x 30
M933-12030-60	M12-1.75 x 30
M933-12035-60	M12-1.75 x 35
M961-12040-82	M12-1.25 x 40*
M933-12040-60	M12-1.75 x 40
M933-12040-82	M12-1.75 x 40*

Part No. Dimensions Hex Head Bolts (Full Thread), continued

M961-14025-60	M14-1.50 x 25
M933-14025-60	M14-2.00 x 25
M961-14050-82	M14-1.50 x 50
M961-16025-60	M16-1.50 x 25
M933-16025-60	M16-2.00 x 25
M961-16030-82	M16-1.50 x 30*
M933-16030-82	M16-2.00 x 30*
M933-16035-60	M16-2.00 x 35
M961-16040-60	M16-1.50 x 40
M933-16040-60	M16-2.00 x 40
M961-16045-82	M16-1.50 x 45
M933-16045-82	M16-2.00 x 45
M933-16050-60	M16-2.00 x 50
M933-16050-82	M16-2.00 x 50*
M933-16060-60	M16-2.00 x 60
M933-16070-60	M16-2.00 x 70
M933-18035-60	M18-2.50 x 35
M933-18050-60	M18-2.50 x 50
M933-18060-60	M18-2.50 x 60
M933-20050-60	M20-2.50 x 50
M933-20055-60	M20-2.50 x 55
M933-24060-60	M24-3.00 x 60
M933-24065-60	M24-3.00 x 65
M933-24070-60	M24-3.00 x 70

Pan Head Machine Screws

M7985A-03010-20	M3-0.50 x 10
M7985A-03012-20	M3-0.50 x 12
M7985A-04010-20	M4-0.70 x 10
M7985A-04016-20	M4-0.70 x 16
M7985A-04020-20	M4-0.70 x 20
M7985A-04050-20	M4-0.70 x 50
M7985A-04100-20	M4-0.70 x 100
M7985A-05010-20	M5-0.80 x 10
M7985A-05012-20	M5-0.80 x 12
M7985A-05016-20	M5-0.80 x 16
M7985A-05020-20	M5-0.80 x 20
M7985A-05025-20	M5-0.80 x 25
M7985A-05030-20	M5-0.80 x 30
M7985A-05080-20	M5-0.80 x 80
M7985A-05100-20	M5-0.80 x 100
M7985A-06100-20	M6-1.00 x 100

Flat Head Machine Screws

M965A-04012-SS	M4-0.70 x 12
M965A-05012-SS	M5-0.80 x 12
M965A-05016-20	M5-0.80 x 16
M965A-06012-20	M6-1.00 x 12

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

Metric, continued

Part No.	Dimensions	Type
Hex Nuts		
M934-03-50	M3-0.50	Standard
M934-04-50	M4-0.70	Standard
M934-05-50	M5-0.80	Standard
M982-05-60	M5-0.80	Elastic Stop
M934-06-60	M6-1.00	Standard
M934-06-64	M6-1.00	Std. (green)
M6923-06-80	M6-1.00	Spiralock
M982-06-80	M6-1.00	Elastic Stop
M934-08-60	M8-1.25	Standard
M6923-08-80	M8-1.25	Spiralock
M982-08-80	M8-1.25	Elastic Stop
M934-10-60	M10-1.50	Standard
M934-10-60F	M10-1.25	Standard
M6923-10-80	M10-1.50	Spiralock
M6923-10-62	M10-1.50	Spiralock†
M982-10-80	M10-1.50	Elastic Stop
M934-12-60	M12-1.75	Standard
M934-12-60F	M12-1.25	Standard
M6923-12-80	M12-1.75	Spiralock
M982-12-80	M12-1.75	Elastic Stop
M982-14-60	M14-2.00	Elastic Stop
M6923-16-80	M16-2.00	Spiralock
M982-16-80	M16-2.00	Elastic Stop
M934-18-80	M18-2.5	Standard
M982-18-60	M18-2.50	Elastic Stop
M934-20-80	M20-2.50	Standard
M982-20-80	M20-2.50	Elastic Stop
M934-22-60	M22-2.50	Standard
M934-24-80	M24-3.00	Standard
M982-24-60	M24-3.00	Elastic Stop
M934-30-80	M30-3.50	Standard

Washers

Part No.	ID	OD	Thick.	Bolt/ Screw
M125A-03-80	3.2	7.0	0.5	M3
M125A-04-80	4.3	9.0	0.8	M4
M125A-05-80	5.3	10.0	1.0	M5
M125A-06-80	6.4	12.0	1.6	M6
M125A-08-80	8.4	16.0	1.6	M8
M125A-10-80	10.5	20.0	2.0	M10
M125A-12-80	13.0	24.0	2.5	M12
M125A-14-80	15.0	28.0	2.5	M14
M125A-16-80	17.0	30.0	3.0	M16
M125A-18-80	19.0	34.0	3.0	M18
M125A-20-80	21.0	37.0	3.0	M20
M125A-24-80	25.0	44.0	4.0	M24

† This metric hex nut's hardness is grade 8.



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