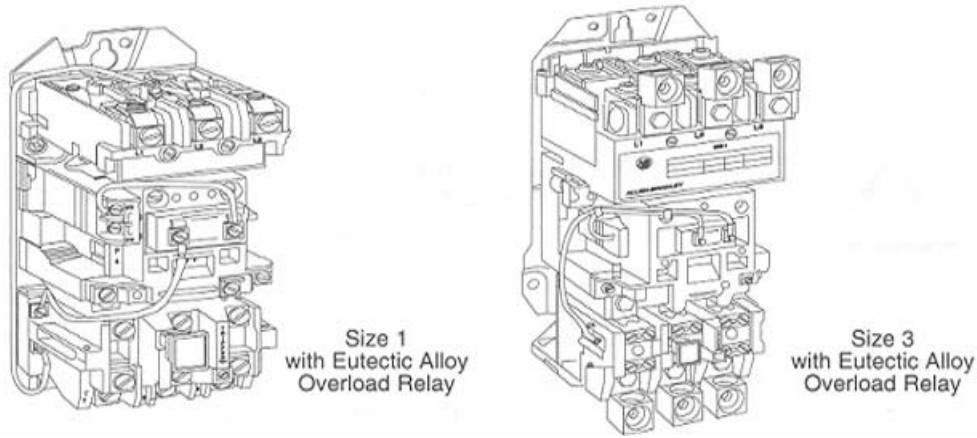


Bulletin 509 Single Phase Full Voltage NEMA Starters with Eutectic Alloy or SMP Solid-State Overload Relays Sizes 0 through 3 (all series)

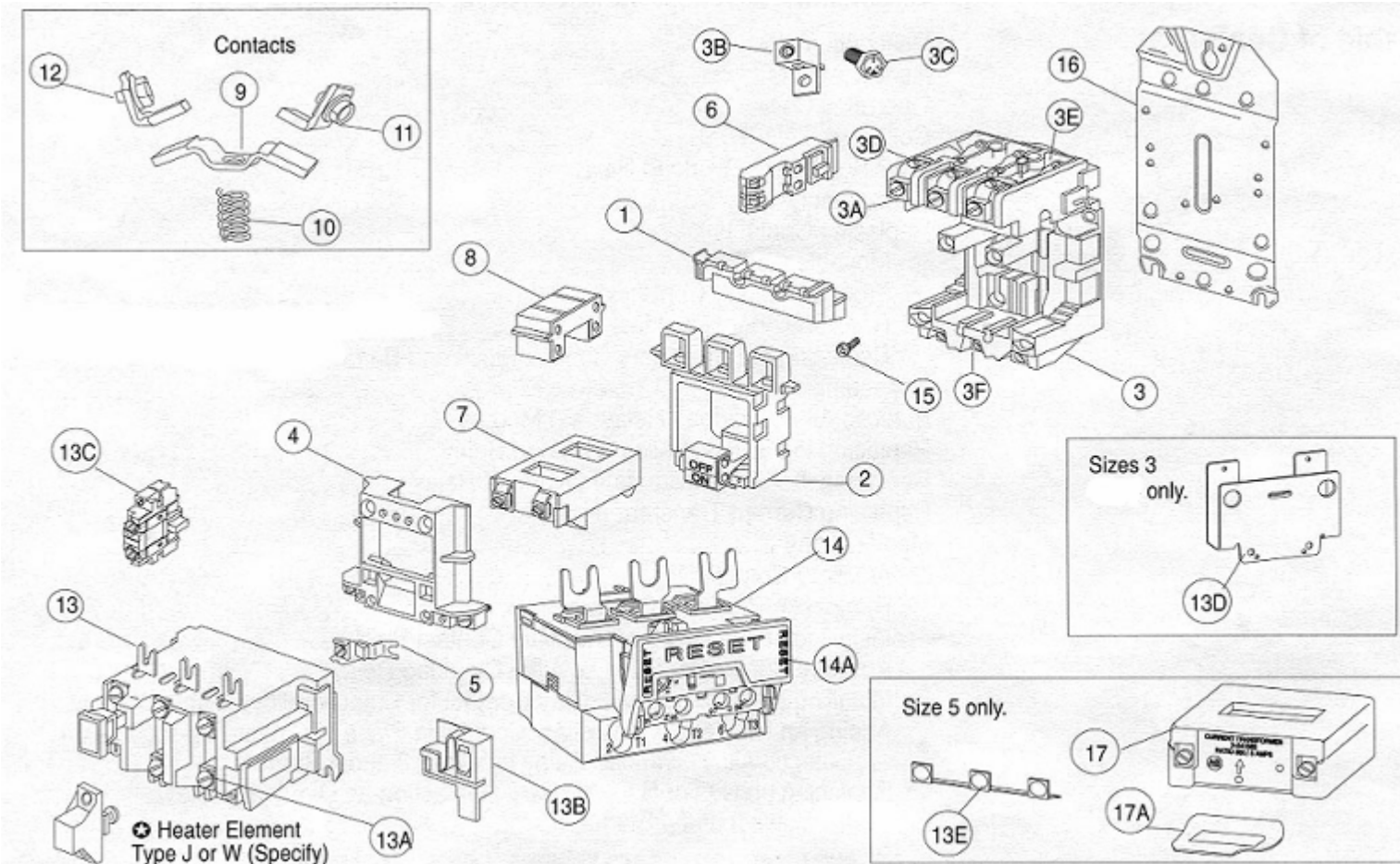


(single phase units similar to 3 phase units shown above)

Renewal Parts

Figure 1 is an exploded view of a 509 starter (single phase units similar to the 3 phase unit shown below). The 509 single phase starter consists of two switching poles and overload protection for one phase. Primary parts such as coils and contacts are similar in appearance for all sizes. Secondary parts such as mounting plates, overloads, etc. will vary in appearance. See page 2 for corresponding description of part and part numbers.

Figure 1



Renewal Parts

Bulletin 509, Single Phase Starters, Sizes 0 through 3 (all series)

Repair Parts for Figure 1

Item	Description of Renewal Part	Size 0	Size 1	Size 1P	Size 2	Size 3
		Part No.	Part No.	Part No.	Part No.	Part No.
1	Contact Block Cover	40410-499-01	40410-499-02		40420-499-01	40430-457-51
2	Movable Contact Support and Armature Assembly ①	40410-498-01 Series A 40410-498-03 Series B				40430-452-51
3	Stationary Contact Block and Base Assembly ①	40410-492-03	40410-492-04		40420-493-02	40430-462-51
3A	Saddle Clamp Assembly	X-225492			Does Not Apply	
3B	Lug	See Item 3A			X-316012	40430-461-51
3C	Bolt	See Item 3A			M-6289	M-6532
3D	Front Terminal without Contact	(See p. 5 for exploded view of Items 3D - 3F parts for nema size 3)				40430-022-02
3E	Rear Terminal without Contact					40430-024-02
3F	Front/Rear Terminal Screw					28168-107-26
4	Coil Cover	40410-496-01		40420-497-01	40430-454-51	
5	Tie Point Terminal	599-TP02				599-TP34
6	Auxiliary Contact Block	595-A (used as a hold-in contact)				
7	Operating Coil	See table on page 3				
8	Yoke (50-60 Hz)	40410-497-01		40410-497-02	40430-455-51	
9	Movable Contact	Order Single Pole Contact Set				
10	Contact Spring					
11	Front Stationary Contact					
12	Rear Stationary Contact					
9-12	Single Pole Contact Set (includes [1] each items 9-12)	40410-331-51	40410-331-52	40410-331-55	40420-322-51	40430-300-51
13	Overload Relay (includes Item 13B)	42185-804-01		40185-803-01	40185-804-01	40185-805-01
13A	Heater Element Screw	M-1552				
13B	Test Module	40185-499-01				40430-459-51
13C	Overload Relay Auxiliary Contact (included with item 13)	Not Available				595-A34 ③
13D	Overload Relay Mounting Plate	Does Not Apply				40430-045-02
14	Solid-State Overload Relay	See page 3				
14A	SMP/E1 Plus Reset Bar Only	40794-011-01 / 193-ERA				
15	Mtg. Screw w/Washer (3 req'd)	28169-100-26		28169-101-26	40430-460-51	
16	Mounting Plate for Contactor and Overload Relay ④	40410-124-02		40420-083-02	40430-044-02	

① Less Contacts, order Single Pole Contact Set as required. Two contact kits are required per device.

② Front and rear terminal assembly not available as a renewal part. Replace the complete stationary contact block and base assembly.

③ Auxiliary mounted on right-hand side of overload relay provides N.O. contact function., mounting on left-hand side provides N.C. contact function.

④ Sizes 0-3 overload relays are attached directly to the mounting plate. Size 3 overload relays require a separate mounting plate. See Item 13D for size 3 mounting plate.

Renewal Parts
 Bulletin 509, Single Phase, Sizes 0 through 3 (all series)

Operating Coils

Cat No. Coil Suffix Code	AC Volts	Hz	Coil Part Number			
			Size 0-1	Size 1P	Size 2	Size 3
XWJ	24	60	CB013	CB013	CC013	CD013
XD, XWD	115-120	60	CB236	CB236	CC236	CD236
	110	50				
XS, XWS	110-115	50	CB322	CB322	CC322	CD322
XH, XWH	200-208	60	CB249	CB249	CC249	CD249
XP, XWP	220-230	50	CB339	CB339	CC339	CD339
XA, XWA	230-240	60	CB254	CB254	CC254	CD254
XT, XWT	230-240	50	CB342	CB342	CC342	CD342
XF, XWF	277	60	CB260	CB260	CC260	CD260

Solid-State Overload Relay

(Single phase units similar to the 3 phase unit shown above)

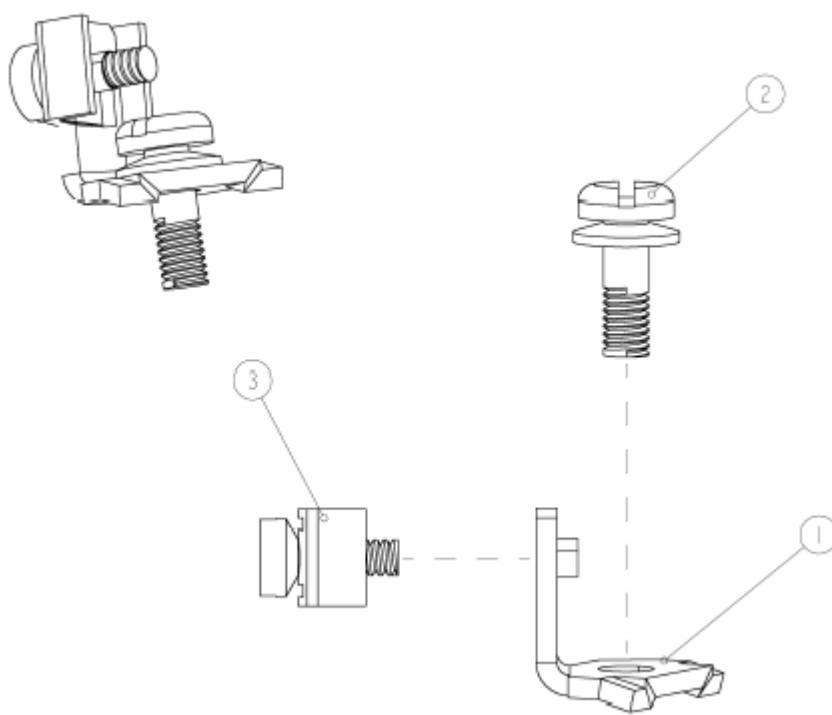


Order the replacement overload relay catalog number from the table below. For example, the Class 10 single phase overload relay for a 509-BOD-S1A would be ordered as catalog number 592-S1AA. The replacement overload part numbers are only for existing bulletin 509 single phase starters that were ordered with a eutectic or solid state single phase overload.

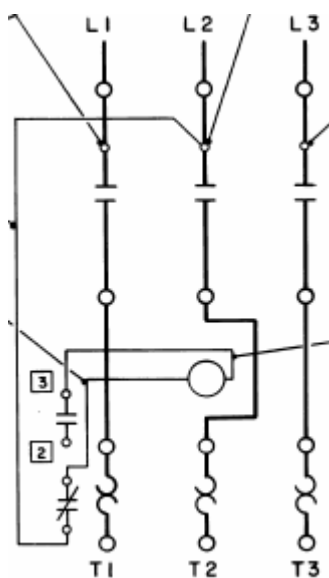
Catalog Number Suffix Code	Starter Size	Full Load Current Adjustment Range (A)	Manual Reset or Automatic Reset Class 10, 15, 20 or 30
			Catalog Number
-S1A	0, 1	2 to 7	592S-EEPC (1 to 5 amps) or 592S-EERC (3.2 to 16 amps)
-S1B	0, 1	5 to 15	592S-EERC
-S1C	1	12 to 38	592S-EETC
-S1B	2	5 to 15	592S-EERC
-S1F	2	14 to 45	592S-EETC
-S2A	0, 1	2 to 7	592S-EEPC (1 to 5 amps) or 592S-EERC (3.2 to 16 amps)
-S2B	0, 1	5 to 15	592S-EERC
-S2C	1	12 to 38	592S-EETC
-S2B	2	5 to 15	592S-EERC
-S2F	2	14 to 45	592S-EETC
-S4A	0, 1	2 to 7	592S-EEPC (1 to 5 amps) or 592S-EERC (3.2 to 16 amps)
-S4B	0, 1	5 to 15	592S-EERC
-S4C	1	12 to 38	592S-EETC
-S4B	2	5 to 15	592S-EERC
-S4F	2	14 to 45	592S-EETC
-S5A	0, 1	2 to 7	592S-EEPC (1 to 5 amps) or 592S-EERC (3.2 to 16 amps)
-S5B	0, 1	5 to 15	592S-EERC
-S5C	1	12 to 38	592S-EETC
-S5B	2	5 to 15	592S-EERC
-S5F	2	14 to 45	592S-EETC

Renewal Parts
 Bulletin 509, Single Phase, Sizes 0 through 3 (all series)

Renewal Parts for Control Circuit Terminals

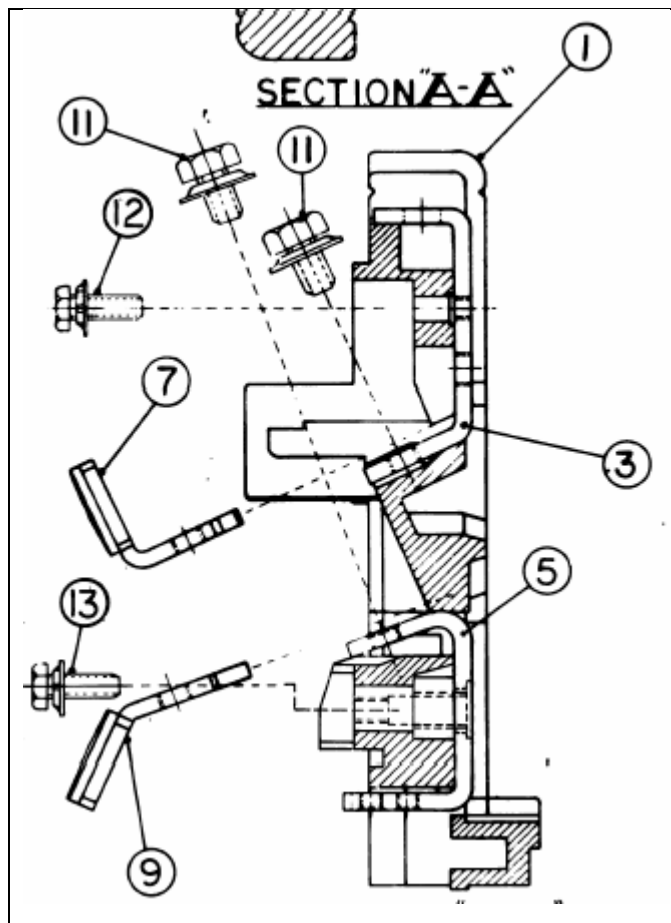


NEMA Size	Mounting Terminal (item 1)	Mounting Screw (Item 2)	Saddle Clamp Assembly (item 3)
0 - 2	40410-053-02	28158-072-26	28192-076-33
3	40430-047-02	M-6289	28192-076-33



Renewal Parts
 Bulletin 509, Single Phase, Sizes 0 through 3 (all series)

Renewal Parts for Arc Hood Assembly Components – For Nema Size 3



Renewal Parts for Nema Size 3 Starters		
Item #	Description	A-B Part Number ①
1	Arc Hood	Order Stationary Contact Block & Base Assembly (see p.2)
3	Front Terminal	
5	Rear Terminal	
7	Front Stationary Contact	Order Single Pole Contact Kit
9	Rear Stationary Contact	
11	Screw for Front/Rear Contact	28168-601-26 ②
12	Screw for Front Terminal	28168-107-26
13	Screw for Rear Terminal	28168-107-26

① Each part number listed below contains one piece.
 ② The screw for the front and rear stationary contacts is included in single pole contact kit part number(s) listed above.

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Rockwell Automation does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this document we use notes to make you aware of safety considerations:

ATTENTION



Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

Use only replacement parts and devices recommended by Rockwell Automation to maintain the integrity of the equipment. It is the user's responsibility to ensure that the renewal part number selected is properly matched to the model, series and revision level of the equipment being serviced.

ATTENTION



Servicing energized Industrial Control Equipment can be hazardous. Severe injury or death can result from electrical shock, burn, or unintended actuation of controlled equipment. Recommended practice is to disconnect and lockout control equipment from power sources, and release stored energy, if present.

Refer to **National Fire Protection Association Standard No. NFPA70E, Part 2 and (as applicable) OSHA rules for Control of Hazardous Energy Sources (Lockout/Tagout) and OSHA Electrical Safety Related Work Practices** for safety related work practices, including procedural requirements for lockout/tagout, and appropriate work practices, personnel qualifications and training requirements where it is not feasible to de-energize and lockout or tagout electric circuits and equipment before working on or near exposed circuit parts.

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