



1 ADJUSTMENT POTENTIOMETERS (from page 1)		
Designation	Rating	Part No.
Accel. Time	100K Ω -2W	X-310372
Minimum Speed	250 Ω -2W	X-310367
Maximum Speed	50K Ω -2W	X-310369
I-R Comp.	5K Ω -2W	X-310371
2 Jog Speed	1K Ω -2W	X-310370
Current Limit	10K Ω -2W	X-310368

- 1 Listed potentiometers have nylon shafts.
- 2 Used only when drive is modified with "Jog at Independently Set Speed" feature.

MAINTENANCE — Periodic inspection of the apparatus is recommended (monthly intervals are suggested initially, to be changed if indicated by experience). Check for cleanliness, condition of wiring connections and insulation, evidence of over-heating, flashovers or short-circuits, and condition (welding or excessive wear) of contactor. The movable contact support should operate freely.

OTHER CONTROL STATIONS — Several heavy duty and oiltight heavy duty control stations are available for use in place of the standard duty control station. For example, drives modified for reversing operation require the use of a Speed-For-Rev-Stop control station of either the heavy duty or oiltight heavy duty construction. The renewal parts listing for any control station other than the standard duty control station (refer to right column for standard duty) should be requested from the factory. Furnish the complete catalog number and nameplate reading of the control station when requesting a renewal parts listing.


MOTORS — Any one of numerous DC Motors may be integrated with a controller and control station. The maintenance and repair of these motors will not be treated in this Renewal Parts List. Each motor will have packed with it, the motor manufacturer's Instruction and Repair manual.

These manuals will be applicable to a specific motor and will permit dealing in length and detail with the maintenance and repair of that motor.


ORDERING INFORMATION — Your order cannot be entered unless the following information is given: Part number, description of part and the catalog number and series letter of the controller. This renewal parts list applies also to these devices when used on control apparatus listed under other Bulletin Numbers.

STANDARD DUTY CONTROL STATION


Two Push Buttons With Potentiometer



Complete Control Station



Cover Assembly

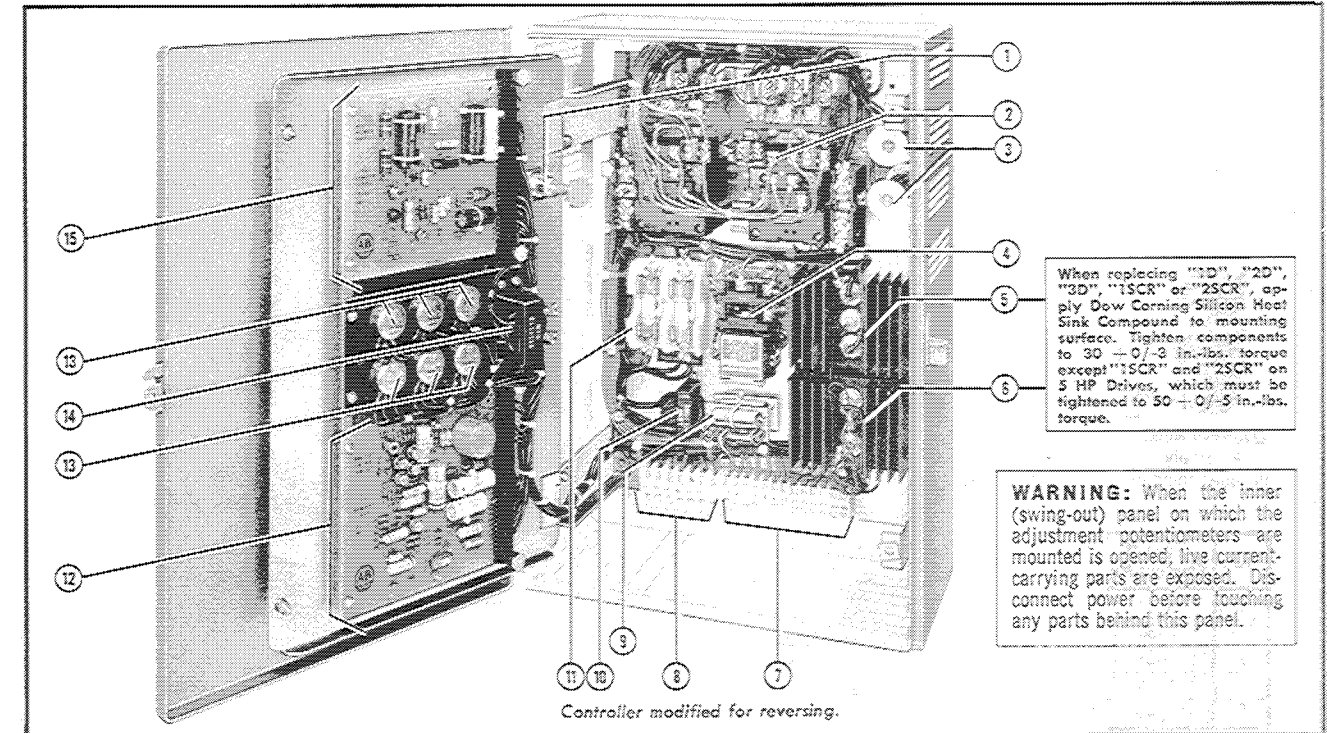


Base Assembly

Description of Part	Part No.
Complete Control Station Speed-Start-Stop	800S-2SXM7
Cover Assembly	X-457378
Base Assembly	X-400587
Potentiometer (1K Ω -2W)	X-310365

REGULATED SPEED DRIVES

1-1/2-2-3-5 HP • SERIES B CONSTRUCTION



ENGINEERING DATA—Sgl. Phase • Full Wave • 230V., 60 Hz

Base Speed R.P.M.	H.P. at Base Speed				
	1	1 1/2	2	3	5
	Torque lb.-ft.				
1150	4.6	6.9	9.2	13.8	23.0
1750	3.0	4.5	6.0	9.0	15.0
2500	2.1	3.2	4.2	6.3	10.5

OPERATION — These drives convert single phase AC current to DC power. Motor speed is set on the remote adjusting means and maintained constant independent of load.

REPAIRS — Instructions for removal and replacement of contactor parts are found on page 3. In general, all components should be carefully observed before removal and/or disassembly to help assure proper replacement. A trouble-shooting guide and control adjustment instructions are contained in publication, "Instructions 1313-800."

Item	Description of Part	Part No.	Item	Description of Part	Part No.
1	Overload Reset Button Assembly	Z-25043	6	Thyristor Heat Sink Assembly (1-1/2-2-3 HP) Heat Sink (only)	X-395016 B-37863
2	Non-Reversing Motor Contactor (1-1/2-2 HP)	X-395155		Thyristor "1SCR", "2SCR"	X-395431 ea.
	Non-Reversing Motor Contactor (3 HP)	X-395156		Transient Suppression Network	X-395018
	Non-Reversing Motor Contactor (5 HP)	X-395157	Thyristor Heat Sink Assembly (5 HP) Heat Sink (only)	X-395017 B-38304	
3	Reversing Motor Contactors (1-1/2-2 HP)	X-395149	Thyristor "1SCR", "2SCR"	X-403351 ea.	
	Reversing Motor Contactors (3 HP)	X-395150	Transient Suppression Network	X-395018	
	Reversing Motor Contactors (5 HP)	X-395151	7	Terminal Blocks (300V Max.)	1492-F1
4	Braking Resistor 10 Ω -100W (1-1/2-2 HP)	X-395247	8	Terminal Blocks (600V Max.)	1492-CA1
	Braking Resistor 3 Ω -100W (3 HP-2 req'd)	X-395246 ea.	9	Resistor-Capacitor Network (non-reversing)	X-382700
	Braking Resistor 1 Ω -100W (5 HP-4 req'd)	X-395245 ea.		Resistor-Capacitor Network (reversing)	X-382510
5	Anti-Plugging Relay (used w/reversing)	X-395180	10	Line Reactor Assembly (1L)	X-357455
	Rectifier Heat Sink Assembly (1-1/2-2 HP) Heat Sink (only)	X-394963 B-37861	11	Fuse Block 1P.-30A.-250V. (1-1/2-2 HP)	1491-N121
	Silicon Rectifier "1D"- "2D"- "3D"	X-301454 ea.		Fuse Block 2P.-30A.-250V. (3-5 HP)	1491-N122
Rectifier Heat Sink Assembly (3-5 HP) Heat Sink (only)	X-394964 B-37862	3 Fuse 20A. (1-1/2-2-3 HP)		X-331972 ea.	
6	Silicon Rectifier "1D"- "2D"	X-384739 ea.	3 Fuse 30A. (5 HP)	X-331974 ea.	
	Silicon Rectifier "3D"	X-300894	12	Firing Circuit Card Assembly	X-394277
	13	Adjustment Potentiometers	See Table Page 4		
14	Transformer	X-395144			
15	Power Supply Circuit Card Assembly	X-394274			

- 1 Refer page 2 for breakdown. 2 Refer page 3 for breakdown.
- 3 Do Not Substitute any fuse type or rating for fuses originally supplied.

MOTOR CONTACTOR(S) —

Stationary Contact Block Assembly

Contact Block Spacer (only)

Auxiliary Contact

Overload Relay Assembly (includes spindle)

Spindle X-233345

Heater Element

Operating Coil (includes spring)

Movable Contact Support Assembly

Yoke (only)

Armature (only)

Yoke and Armature Assembly

Coil Cover

Current Sensing Assembly (includes element)

Warning Plate H-25237

Screw M-2425 ea.

H.P.	Sensing Element Part No.
1	E-15519
1½	E-15520
2	E-15521
3	E-15522
5	E-15523

H.P.	Type N Element No.
1	N-27
1½	N-30
2	N-33
3	N-36
5	N-41

MOTOR CONTACTOR(S) — RENEWAL PARTS	
Description of Part	Part No.
Stationary Contact Block Assembly (includes normally open stationary contacts, normally closed contact set, spacer and cover)	X-456734
Contact Block Spacer (only)	F-20597
Contact Block Cover (only)	X-232230
Movable Contact Support Assembly (includes normally open movable contacts and springs)	X-354634
Movable Contact Support Assembly (less all contacts and springs)	F-24714
Yoke and Armature Assembly (includes retainers and spring)	Z-31837
Yoke (only)	X-225320
Armature (only)	X-225321
Operating Coil — 240V-60 Hz/220V-50 Hz	71A83
Coil Cover — w/Normally Open Interlock Contact (non-reversing drives)	Z-21133
Coil Cover — w/Normally Open - Normally Closed Interlock Contact (reversing drives)	Z-21134
Auxiliary Contact — Normally Open Contact (reversing drives only)	1495-F1
Auxiliary Contact — Normally Closed Late Break Contact	1495-H0
Bulletin 815 Manual Reset Overload Relay (includes spindle) (specify element no.)	815-BOV4
Current Sensing Assembly 1 H.P. (includes sensing element)	X-395138
Current Sensing Assembly 1½ H.P. (includes sensing element)	X-395139
Current Sensing Assembly 2 H.P. (includes sensing element)	X-395140
Current Sensing Assembly 3 H.P. (includes sensing element)	X-395141
Current Sensing Assembly 5 H.P. (includes sensing element)	X-395142
Single Pole Contact Set (normally open poles)	Z-34038
Single Pole Contact Set (normally closed pole (s))	Z-36706

Parts marked with a (▲) included in single pole contact sets.

INDIVIDUAL CONTACTS

Normally Open Poles

▲ Rear Stationary Contact Assembly Z-23423

▲ Front Stationary Contact Assembly Z-23422

▲ Movable Contact X-225866

▲ Movable Contact Spring B-28595

Normally Closed Pole(s)

▲ Movable Contact Guide Z-36709

▲ Rear Stationary Contact Assembly Z-36708

▲ Movable Contact Spring B-29567

▲ Front Stationary Contact Assembly Z-36707

▲ Movable Contact X-228788

REMOVING MAGNET ARMATURE

— Motor Contactor(s) — To remove the magnet armature from the movable contact support, insert screwdriver into slot as illustrated and lift screwdriver in the direction shown. At the same time push the magnet armature back as shown. It may be necessary to wiggle the armature before it can be removed because of the pressure applied by the retainer spring.

REPLACING OPERATING COIL—Motor Contactor(s)

— To replace the operating coil, first insert the magnet yoke into the operating coil as shown. After this has been done, insert both the operating coil and the magnet yoke as a unit into the coil cover. When replacing the coil cover into the switch unit, be sure the operating levers of both the auxiliary and interlock contacts rest on top of the movable contact support.

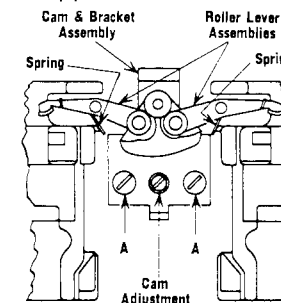
REPLACING NORMALLY CLOSED CONTACT SET — This replacement is best achieved by installing the parts in the following sequence: (1) movable contact guide (2) rear stationary contact (3) movable contact spring (4) movable contact and (5) front stationary contact. Refer to illustration on page 2.

REVERSING MOTOR CONTACTORS —

Mechanical Interlock Assembly Z-19264

REPLACING MECHANICAL INTERLOCK (Reversing) —

1. Remove the motor contactor from the enclosure or panel.
2. Remove both contact block front covers.
3. Remove both coil covers, coils and magnet yokes.
4. Remove both movable contact support assemblies.
5. Remove both roller lever assemblies. (See illustration). Use a small punch to "tap-out" these assemblies from back of the mounting plate.
6. Remove the cam and bracket assembly. (See illustration). This assembly is secured by screws "A". Insert the replacement cam and bracket assembly securing loosely with screws "A".



7. Insert the replacement roller lever assemblies into place and press firmly. **IMPORTANT:** Be sure the springs are in their proper position. (See illustration).
8. Replace both movable contact support assemblies, coils, magnet yokes and coil covers. Be sure both the auxiliary and interlock contact operating levers rest on top of the movable contact support.

ADJUSTING THE MECHANICAL INTERLOCK — With screws "A" loosened and the starter in the vertical position, hold the left hand contactor in the fully closed position by pressing upward on the bottom of the movable contact support. Turn the cam adjustment screw (see illustration) to a point where the right hand contactor has a very slight movement ($\frac{1}{32}'' \pm \frac{1}{64}''$) when alternately pressed upward and released so gravity returns the movable contact support to the full opened (down) position. Repeat this procedure holding the right hand contactor in the fully closed position and check the movement of the left hand contactor's movable contact support. Tighten screws "A" securely (10-20 inch pounds of torque).

As a final adjustment check, without power on the line terminals and with the motor disconnected from the starter, connect a flash light test lamp to the L1 terminal and L3 terminal. Operate the starter manually by pushing the center of the movable contact supports of both contactors up against the interlock at the same time. There should be no circuit through these contacts in any position of the movable contact supports, i.e., the test lamp should not light.

ANTI-PLUGGING RELAY (Reversing) —

Circuit Board Assembly X-395179

Cross Bar w/Contacts X-277418

Spacer (2 Req'd) F-14419 ea.

Contact Block w/Contacts X-159615

Insulation (2 Req'd) F-13988 ea.

Coil Washer M-3458

Operating Coil (180V. DC) 00D380

Tube E-11496

Bottom Plate X-123282

Plunger Spring B-15365

Plunger X-99977

Replace with concave side up.