



475 T. Elmer Cox Drive
Greeneville, TN 37743
Phone No. 423-638-2211
Engineering Department Phone No. 423-638-2215
FAX # 423-638-8805

OPERATION MANUAL

FOR A

GENERAL MORGANTM ACTUATOR

Control Panel Part No: GSD1-30-176-A

Serial No's: 14T0217 & 14T0218

GRAPHIC PACKAGING INT'L, INC
MIDDLETOWN, OHIO
Purchase Order 4504519377
CVN Vooner S.O. # 9076-2612

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GENERAL MORGAN™ (FORMERLY SRA2000) ACTUATOR FIXED/VARIABLE SPEED

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PREFACE

It is our desire and intent to supply the best equipment available. We have selected the highest quality components and fully tested this equipment before shipment. Customer modification or replacement of any component will negate the warranty.

Please study this manual in detail before initiating installation. We have attempted to anticipate questions and to answer them in this manual. CVN Vooner Paper Machinery™ equipment is quite easy to install, and with proper planning, it may be installed during a clothing change.

Please call CVN Vooner Paper Machinery™ immediately with any questions regarding any aspect of the installation or if our equipment seems to be functioning improperly. Valuable time can be saved if we are called at the first discovery of an apparent problem.

CVN Vooner Paper Machinery™

CUSTOMER SERVICE TELEPHONE NO.: (423) 638-2211

ENGINEERING DEPARTMENT TELEPHONE NO.: (423) 638-2215

FAX NO.: (423) 638-8805

IMPORTANT MAINTENANCE INFORMATION

The CVN Vooner Paper Machinery's Shower Actuator is designed to operate in an oil bath. The **SHOWER DRIVER IS SHIPPED DRY, AND WILL NEED LUBRICATION DURING ITS LIFE. THREE QUARTS OF OIL WILL NEED TO BE ADDED. THESE ARE SUPPLIED WITH THE ACTUATOR.**

There is **NO** internal service, which can be performed on this unit while it is on the paper machine. CVN VOONER will provide inspection and service, if the actuator is returned, freight prepaid, to our facility.

INSTALLATION INFORMATION

- 1. The actuator and the shower should be in the fully retracted position before attaching the actuator to the shower. If the actuator has been tested, be sure it is fully retracted before proceeding with installation.**
2. The actuator and shower centerlines must be parallel during operation. Misalignment may result in premature failure of the actuator.
3. Please remember the actuator is slow moving – often less than 1" per minute stroke rate (the actual stroke rate is shown on the title page of this manual). It is easy to forget the shower is moving and attach the water supply line in a manner that will interfere with the free motion of the shower. This greatly increases the cyclical loading on the actuator and increases wear on load bearings and internal mechanical components. The actuator is heavy duty and will operate under adverse conditions for extended periods. However, stoppage and the resulting damage may be avoided if the complete travel of the actuator and shower are free of interference.

START-UP/ TROUBLE-SHOOTING GUIDE

Should you experience start-up problems, verify that the wiring is properly connected, as this is the most common start-up problem. Then proceed to check the start-up procedure as described below and in Electrical Information and Wiring Schematics Section.

SYSTEM FAILS TO RESPOND TO START SIGNAL:

1. Verify that all wiring is properly connected.
2. Check motor controller and line fuse (CF) inside control panel.
3. Verify correct voltage source is connected to the proper terminals.(See Electrical Information Section)
4. Verify the power source is switched on.
5. Push the "START" button.

SYSTEM STOPS:

1. Ensure that path of shower is not blocked. The actuator will stop if something restricts shower travel or its flexible feed-water line.

NOTE: If the path has been blocked, unit will stall or stop moving. Push the STOP button; locate the blockage and remove. If you can't remove the obstruction, reverse the shower driver to allow removal. See Electrical Information Section for procedure on reversing the actuator.

SYSTEM SHUTS DOWN AFTER A SHORT TIME:

1. The fuse may be blown in the control panel. This has occurred on very rare occasions when the wiring conduit is not properly sealed. Moisture in the conduit can cause a very minor short circuit, which will eventually blow fuses in the panel. This problem must be corrected quickly.

If you still have a dead system, PLEASE CALL **CVN Vooner Paper Machinery™** for assistance:

Customer Service Telephone No. **(423)-638-2211**
Engineering Dept. Telephone No. **(423)-638-2215**

SETTING SYSTEM UP
(BY A QUALIFIED TECHNICIAN)

A QUALIFIED TECHNICIAN MUST PERFORM SYSTEM SET UP. THE SAFETY DOOR SWITCH INTERLOCK WILL HAVE TO BE OVERRIDDEN BEFORE THE SYSTEM CAN BE SET UP.

BEFORE ADJUSTING THE ACTUATOR CONTROLS, TURN OFF THE POWER TO THE SYSTEM

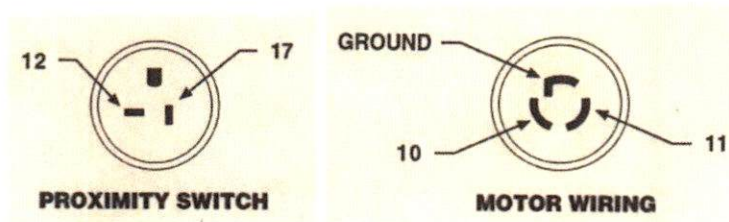
First, set the time on relays **TR1** & **TR2** (in the control panel) to a value greater than the time calculated on the previous page. The timed relay has .6 to 60 minutes. Both timer relays should be set to seconds. Set the range for **TR2** from 0 to 10, and **TR1** from 0 to 5. We recommend the time setting for **TR2** be set to 1.15 times greater than the time calculated in step "F" on the previous page. For **TR1** the setting can be 1 minute.

The motor and gearing has been selected to provide a wide range of speed adjustment. Turning the speed controller up to the 100% setting runs the driver at its fastest rate. To stop the driver from running you have to push the stop button.

ELECTRICAL INFORMATION

CONNECTIONS

- A. Two leads come out of the Shower Driver. The motor lead contains 3 wires. The other lead is from the proximity switch, and contains 2 wires. The proximity switch is located inside the driver body and used with the motion detection circuit. These wires have different plugs and are labeled with the cards below.



The ground wire should attach to the terminal strip marked **PE**. See Terminal Board Layout drawing for more specific information.

NOTE: THE FOLLOWING WIRE GAUGES ARE RECOMMENDED TO ENSURE PROPER MOTOR OPERATIONS:

UP TO 50 FT. FROM PANEL TO ACTUATOR - 14 GAUGE
50 FT. AND UP - 12 GAUGE

- B. The circuit diagram at the back of this manual illustrates how the input and output connections are to be made -- a verbal description follows.
1. Terminals **L1** and **L2** are for the power supply. The panel is designed to use 120 VAC, 60-cycle power.
 2. Terminals **12** and **13** are used to ensure that the shower system shuts off when the paper machine shuts down. These terminals should be connected to a set on Normally Open contacts (closed when the paper machine is running) on the paper machine drive motor. If this is not to be used, a jumper should be clipped to these terminals.
 3. Terminals **7** and **8** are for use with a shower pumping system and connect to the starter for the motor, which drives the pump. These contacts should only be used if you wish the pump to be turned on and off with the shower actuator controls.
 4. Should you wish to use a solenoid to control the water supply, it will be necessary to add a jumper wire from terminal **13** to terminal **7**. The solenoid will then connect across terminals **L2** and **8**. It is not necessary to use both the pump interrupt and solenoid valve methods for controlling the water supply to the shower.

ELECTRICAL INFORMATION

CONNECTIONS (cont.)

5. Terminals **3** and **4** are for a remote stop connection and **5** and **12** are for a remote start. These terminals are provided as a convenience, should you wish to connect to a central control console or a mill computer. If you do not want to use a remote stop, terminals **3** and **4** must have a jumper.
 6. Terminal **L1A** is wired to the **Door Switch Interlock** and then through one (1) thermal circuit breaker **CB**.
- C. Please continue reading this manual through the start-up section before you push the start button and attempt to operate the system.

START-UP OF SYSTEM

1. Inspect proposed travel of shower to be Certain that there are NO OBSTRUCTIONS.

The Flexible Water Feed Hose should be checked carefully to ensure that it will clear surrounding paper machine components—with high pressure water supplied to the shower, this hose becomes VERY stiff and any interference will cause high loading on the driver.

2. Turn the driver speed control to "0" position.
3. If the paper machine is not running, a jumper wire must be placed across terminals **12** and **13**, or the shower system will not start. (Be sure to remove jumper after system is checked out.
4. With the driver running, slowly turn speed control knob toward the 100% setting. Motion should be observed at shower. NOTE: THE DRIVER IS DESIGNED TO MOVE SLOWLY, SO MOTION IS DIFFICULT TO DETECT. The blue pulse light should flash as the driver passes the proximity switch, and indication the unit is running.
5. Proceed to the section entitled, Setting System Up—Timing for Complete Coverage.
6. Refer to the Trouble Shooting section should the system fail to respond as described.

Should you experience start-up problems, please verify that the wiring is properly connected, as this is the most common start-up problem. Then proceed to check list the start-up procedure above.

The panel was tested AFTER assembly, and our experience has proven that THE PANEL IS NOT A SOURCE OF START-UP DIFFICULTY.

If you still have a dead system, PLEASE CALL **CVN Vooner Paper Machinery™** for assistance:

Engineering Department telephone: (423) 638-2215

Customer Service telephone: (432-638-2211)

TROUBLE SHOOTING GUIDE

SYSTEM FAILS TO RESPOND TO START SIGNAL:

1. Verify that all wiring is properly connected.
2. Check motor controller and line fuses inside the control panel.
3. Make sure that the thermal circuit breaker has not been tripped.
4. Check to see that the motor controller on/off switch is switched on.
5. Turn speed control into mid range.
6. Check machine interlock circuit to ensure that a Normally Open set of contacts is used, i.e., closed when paper machine is running. If this feature is not used or paper machine is not running, a jumper should be attached between terminals **12** and **13**.
7. Panels with remote start/stop feature: verify that the remote stop is connected or a jumper is connected between terminals **3** and **4**.
8. Verify the settings on timer relays are set to the proper range; (refer to SETTING SYSTEM UP—TIMING for Complete Coverage section for instructions on setting timer relays **TR1** and **TR2**).
9. Check all terminal screws for tightness.

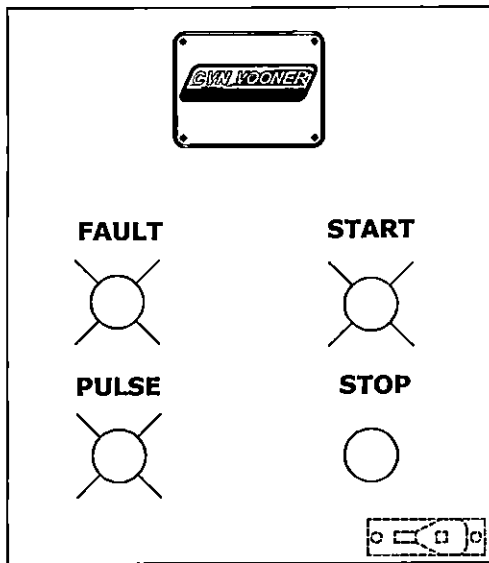
SYSTEM SHUTS DOWN AFTER A SHORT TIME:

1. Ensure that the path of shower is not blocked. The actuator will stop if something restricts travel of the shower or its flexible feed line.

NOTE: If path has been blocked, damage to the internal mechanism may have resulted. Ship the unit to CVN Vooner™ for service before start up is attempted.

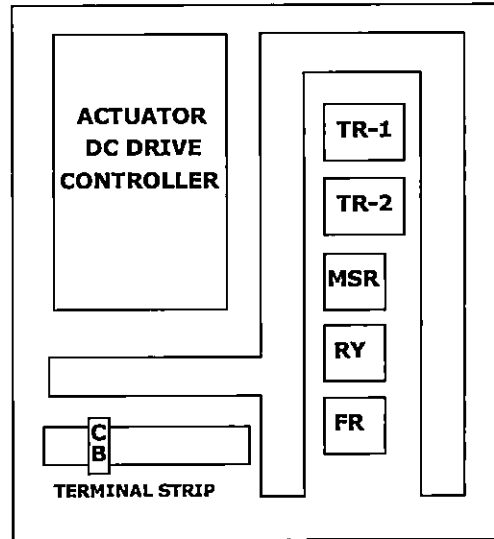
2. The fuse may be blown in the motor controller. This has occurred on very rare occasions, when the wiring conduit is not properly sealed. Moisture in the conduit can cause a very minor short circuit, which will eventually blow fuses in the motor controller. This problem could also result if the waterproof connectors are not pushed together properly or are submerged in a puddle of water. This problem must be corrected quickly or the motor controller will be damaged.

The Setting on the timer relay(s) may be set too low. This condition is easily identified, because the system will immediately restart and run until the timer relay times out and shuts the system down again. (Refer to SETTING SYSTEM UP—Timing)



DOOR LAYOUT

DOOR SWITCH INTERLOCK



PANEL LAYOUT

EXTERNAL CONNECTIONS

INPUT SIGNAL - 4-20 MA

POWER INPUT - 120 VOLTS

REMOTE STOP

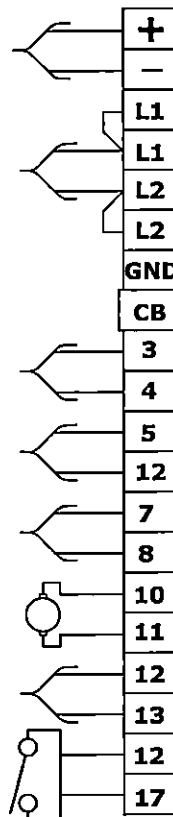
REMOTE START

FELT PROTECTION CONTACTS

ACTUATOR MOTOR


POSITION DRIVE

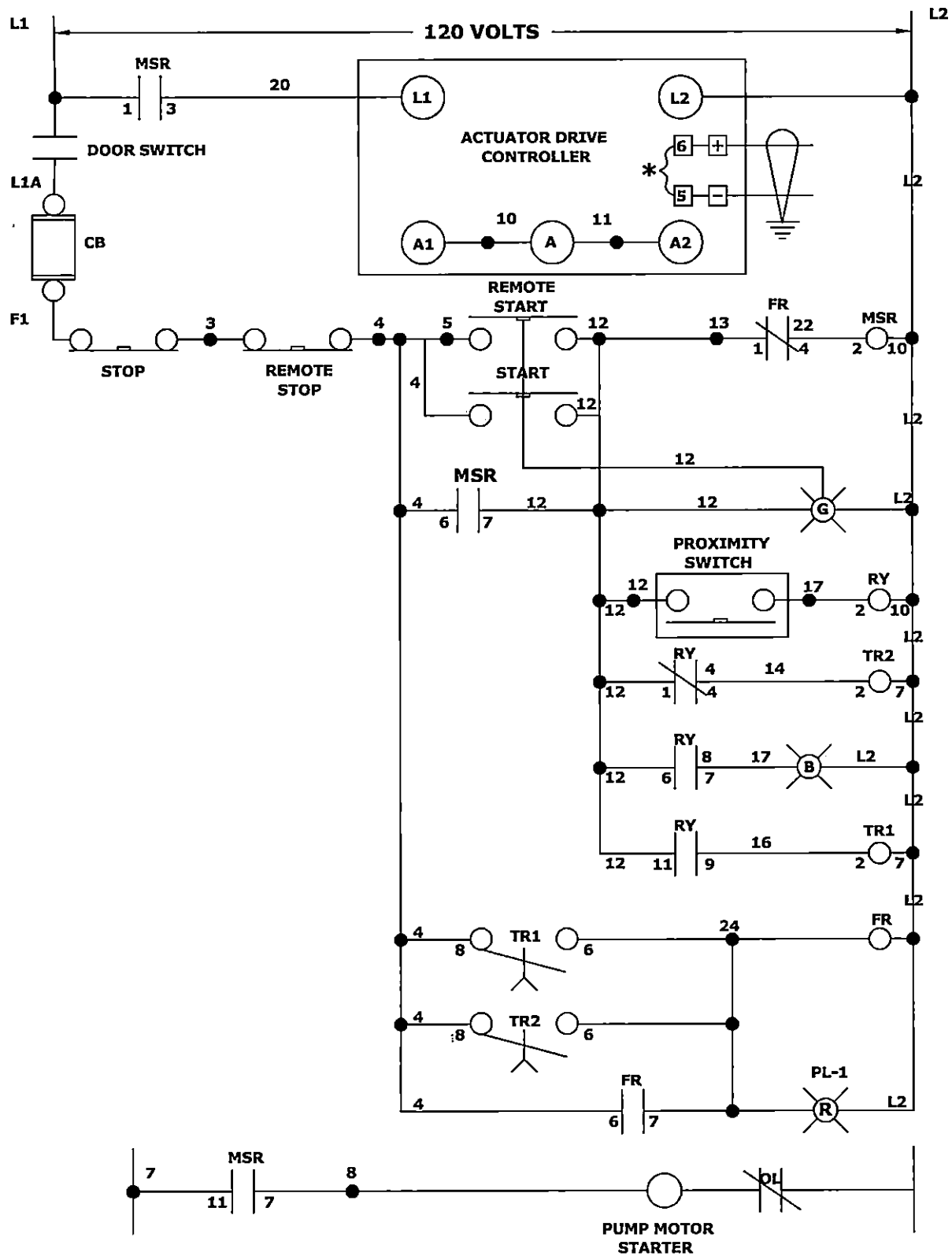
PROXIMITY SWITCH



TERMINAL STRIP

ENCLOSURE 20" H X 18" W X 8" D, FIBERGLASS, GRAY

DRAWN	DATE 12/13/04	THIS DRAWING IS THE PROPERTY OF CVN VOONER PAPER MACHINERY, GREENEVILLE, TN USA 37743, AND CONTAINS PROPRIETARY INFORMATION. WRITTEN PERMISSION TO USE OR DISCLOSE ANY INFORMATION HEREIN MUST BE OBTAINED FROM CVN VOONER.	
CHECKED	DATE		
REVISED DFR	DATE 09/22/06		
SCALE NTS	REV B		
CAD DWG LOCATION: M:\DRAWINGS\CNTPNLS\CNTPNLS 2006\ CAD DWG # 176-1 REV B		TITLE PANEL LAYOUT-120 VOLT POWER GENERAL MORGAN™ ACTUATOR (FORMERLY SRA2000 ACTUATOR) W/ REMOTE START & STOP	
475 T. ELMER COX DR. GREENEVILLE, TENNESSEE 37743 ENG. DEPT. PH. 423.638.2215 FAX 423.638.8805			DWG No. GSD1-30-176-1



DRAWN	DATE
CHECKED	DATE
REVISED	DATE
DFR	09/22/06
SCALE	REV
NTS	B
CAD DWG LOCATION:	
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CAD DWG # 176-2 REV B	

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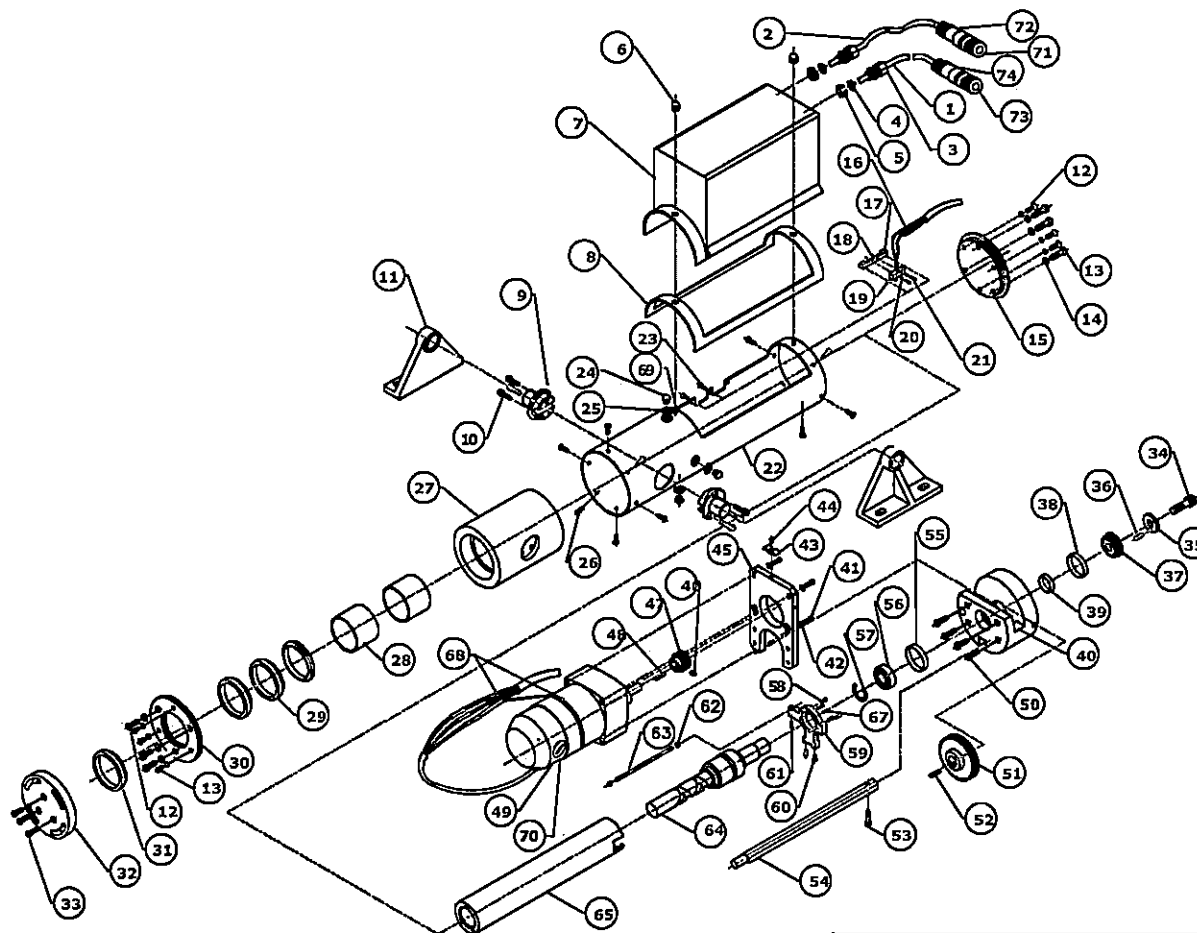



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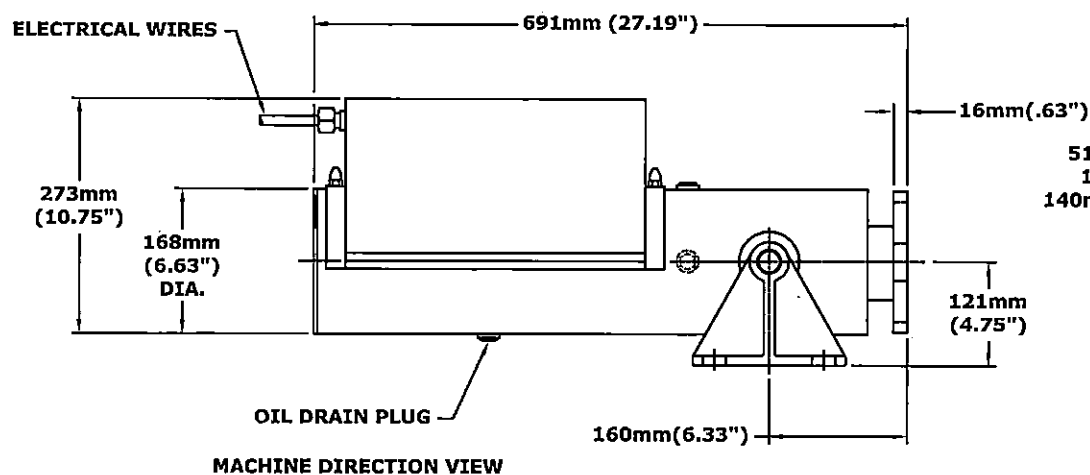
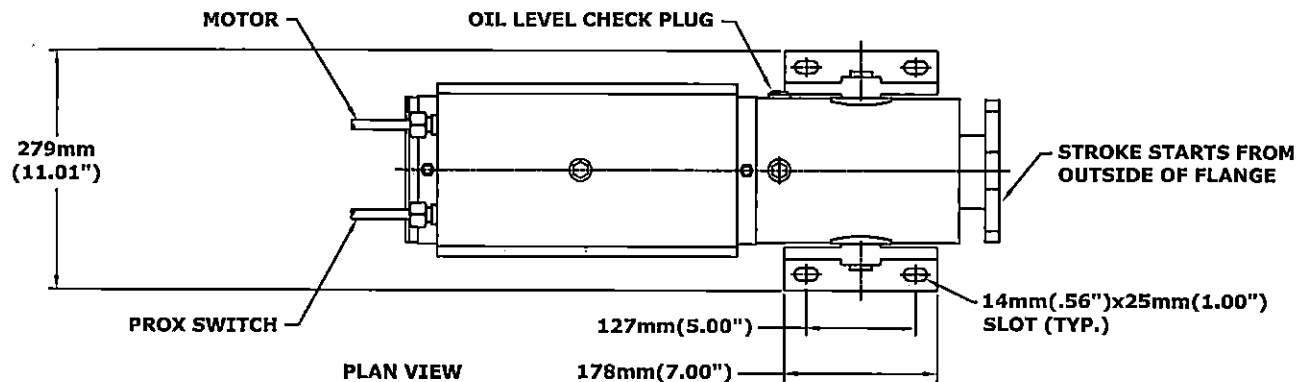
**PANEL LAYOUT-120 VOLT POWER
GENERAL MORGAN™ ACTUATOR
(FORMERLY SRA2000 ACTUATOR)
W/ REMOTE START & STOP**

475 T. ELMER COX DR. GREENEVILLE, TENNESSEE 37743
ENG. DEPT. PH. 423.638.2215 FAX 423.638.8805

DWG No. **GSD1-30-176-2**

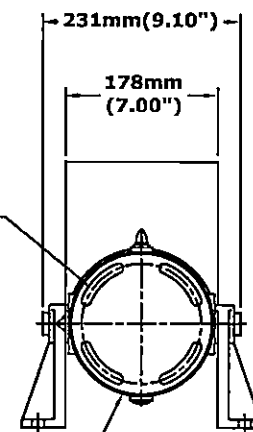


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CHECKED	DATE		
REVISED DFR	DATE 03/01/05		
SCALE NTS	REV A		
CAD DWG LOCATION: M:\DRAWINGS\MANUAL DWGS/ CAD DWG # GENERAL MORGAN ISO		TITLE GENERAL MORGAN ACTUATOR ISOMETRIC ASSEMBLY	
475 T. ELMER COX DR. GREENEVILLE, TENNESSEE 37743 ENG. DEPT. PH. 423.638.2215 FAX 423.638.8805		DWG No. GENERAL MORGAN ISO	



51mm (2") LG SLOTS FOR
10mm (.38") BOLTS ON
140mm (Ø5.50") BOLT CIRCLE

SLOTTED FLANGE
165mm (6.50") DIA.



ACTUATOR INFORMATION

STROKE LENGTH:

STROKE RATE:

RATIO:

MACHINE SPEED:

LOOP LENGTH:

ACTUATOR WEIGHT: 62 kg (137 lbs)

SHIPPING WEIGHT: 75 kg (165 lbs)

NOTES:

- DO NOT SCALE PRINT
1. ACTUATOR SHOWN IN RETRACTED POSITION.

ORIG DWG BY DFR DATE 06/09/05

CHECKED DATE

REVISED DATE

SCALE NTS REV

CAD DWG LOCATION:
M:\DRAWINGS\MARKET
CAD DWG # SP-02

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TITLE

GENERAL MORGAN™ ACTUATOR



1612 INDUSTRIAL RD. GREENEVILLE, TENNESSEE 37745
ENG. DEPT. PH. 423.638.2215 FAX 423.638.8805

DWG No. SP-02

CVN VOONER
SPARE PARTS PRICE LIST
FOR GENERAL MORGAN™ ACTUATOR

ITEM NO.	DESCRIPTION	PART NO.	UNIT LIST PRICE
SPARE PARTS:			
1	Wire SJ Cord 16/2 - 8ft. Required	GRM722	\$ 0.61 per inch
2	Wire SJ Cord 16/2 - 8ft. Required	GRM721	\$ 0.61 per inch
3	Hubbell Wire Conn. SS - 2 Required	GSD1-23-31	\$93.78
4	O-Ring - 2 Required	GSD1-23-25	\$4.24
5	Locknut - 2 Required	GS86S0500-01	\$1.21
6	Dome Nut - 2 Required, M8x1.25	GS111C0315-01	\$2.42
7	Actuator Cover	GSRA2-14-42	\$671.55
8	Gasket (for Cover)	GSRA2-14-49	\$51.43
9	Pivot - 2 Required	GSRA2-14-47	\$65.95
10	Screws - Soc. Hd. M6x25 - 6 Required	GS63C0236-17	\$1.82
11	Trunnion - 2 Required	GSD1-1S	\$105.88
12	Screw Pan HD M6x10 - 3 Required	GS66C0236-05	\$1.21
13	Screw Soc Hd M6x20 - 3 Required	GS63C0236-09	\$1.21
14	Sealing Ring, 1/4" -27 Required	GS40E0250-16	\$0.91
15	End Plate	GSRA2-12-5	\$230.21
16	Butt Connector - 5 Required	GSD1-23-40	\$3.03
17	Proximity Bracket New	GSRA2-14-44	\$46.29
18	Hex Nut Steel M4 - 2 Required	GS62S0158-08	\$9.99
19	Proximity Switch	GSD1-26-229	\$336.60
20	Washer Flat, M4 - 4 Required	GS20S0158-07	\$0.91
21	Screw Pan Hd Stl - 2 Required	GS66S0158-08	\$0.91
22	Casing	GSRA2-14-41	\$577.78
23	Screw FL HD Slot, M4x10FH - 6 Required	GS54C0158-01	\$0.91
24	Oil Plug - 3 Required	GSRA2-14-52	\$12.71
25	Fiber Washer - 3 Required	GSRA2-14-L	\$0.91
26	Screw Pan Hd., M6x16 - 9 Required	GS66C0236-11	\$0.91
27	Ft. Bearing Hsng. New	GSRA2-14-11	\$671.55
28	Glacier Bearing - 2 Required	GS12X3346-08	\$155.98
29	Dry Rod Seal Set	GS40Q3346-04	\$89.54
30	Retaining Plate	GSRA2-12-12	\$310.97
31	Rod Wiper	GS78P3346-02	\$17.85
32	Coupling Flange Slotted	GSD1-2S	\$149.44
33	Screws - Soc. Hd., M8x25 - 3 Required	GS63S0315-12	\$0.91
34	Socket Head Screw, M8x25 - 1 Required	GS63S0315-23	\$4.24
35	Washer	GSRA2-10-6	\$5.45
36	Pin, Spring (for Spacer), M3x12	GS14S0118-04	\$1.21
37	Bearing, Tapered Roll	GS38S1000-04	\$30.25
38	Cup	GS38S1000-05	\$15.43
39	Spacer	GSRA2-10-8	\$6.05
40	Gear Housing	GSRA2-14-7	\$484.00
41	Hex Hd Screw 1/4"-28 - 4 Required	GS61S0250-11	\$0.91
42	Washer Steel Flat - 4 Required	GS20S0250-03	\$0.91
43	Cable Clamp	GSD1-23-26	\$1.22
44	Screw Pan HD Stl, M4x8	GS66S0158-13	\$0.91

**CVN SYSTEMS
SPARE PARTS PRICE LIST
FOR GENERAL MORGAN™ ACTUATOR**

ITEM NO.	DESCRIPTION	PART NO.	UNIT LIST PRICE
SPARE PARTS CONTINUED:			
45	Motor Mounting Plate	GSRA2-15-31	\$111.02
46	Set Screw, M6x10	GS64S0236-04	\$0.91
47	Pinion, Gear	GSRA2-10-32	\$79.86
48	Key, Woodruff - 316 Square	GS95S0187-03	\$4.24
49	Gear Motor (130VDC, 300:1)	GSD1-17-69	\$907.50
49	Gear Motor (130VDC, 180:1)	GSD1-17-73	\$877.25
49	Gear Motor (180VDC, 300:1)	GSD1-17-70	\$650.38
50	Socket Head Screw, M6x25 - 4 Required	GS63S0236-10	\$1.21
51	Gear	GSRA2-10-4	\$195.12
52	Key DIN 6885A 8x 7x40mm	GSRA2-10-9	\$1.82
53	Screw Soc Shdr. M8x20	GS112S0315-01	\$4.84
54	Anti-Rotation Bar	GSRA2-14-71	\$101.04
55	Bearing, Tapered Roll	GS38S1181-06	\$45.38
56	Cup	GS38S1181-07	\$81.68
57	Circlip Int. (Retaining Ring)	GS34S3071-02	\$5.45
58	Socket Hd. Cap Screw, M4x16 SH - 4 Required	GS63S0158-08	\$0.91
59	Anti-Rotation Plate	GSRA2-14-3	\$99.22
60	Cam Follower - 2 Required	GS37S0625-02	\$26.62
61	Screw Soc Hd., M4x10	GS64S0158-05	\$0.91
62	Hex Nut - 2 Required	GS62S0250-18	\$0.91
63	Rod	GSRA2-14-59	\$9.08
64	Ball Rev. Assy. - 3"	GSKN0297-2/J	\$2,541.00
64	Ball Rev. Assy. - 5"	GSKN0297-2/G	\$2,541.00
64	Ball Rev. Assy. - 6"	GSKN0297-2/E	\$2,541.00
64	Ball Rev. Assy. - 8"	GSKN0297-2/F	\$2,541.00
64	Ball Rev. Assy. - 9"	GSKN0297-2/D	\$2,541.00
64	Ball Rev. Assy. -10"	GSKN0297-2/B	\$2,541.00
64	Ball Rev. Assy. -12"	GSKN0297-2/A	\$2,541.00
65	Ram	GSRA2-12-21S	\$1,603.25
66	Gear Lube - 3 Required	GRM801	\$7.57
67	Roll Pin M4x24, 2 Required	GS14S0156-06	\$2.12
68	Screw Soc HD M6x20	GS63C0236-09	\$1.21
69	Screw M6x10 - 3 Required	GS66C0236-05	\$1.21
70	Wire Tie Panduit - 7 Required	GSD1-23-18	\$0.91
71	Stud Cover 2 Required	GSRA2-14-50	\$4.84
72	Motor Brush & Spring Set (Leeson) - 2/ea. Re	GSD1-17-76	\$39.63
73	Hubbell Wire Conn. #15W33 (Female - for Prox. Switch)	GSD1-23-33	\$45.68
74	Hubbell Wire Conn. #14W33 (Male - for Prox. Switch)	GSD1-23-34	\$31.46
75	Hubbell Wire Conn. #24W47 (Female - for Motor)	GSD1-23-36	\$45.68
76	Hubbell Wire Conn. #25W47 (Male - for Motor)	GSD1-23-35	\$31.46

**CVN SYSTEMS
SPARE PARTS PRICE LIST
FOR GENERAL MORGAN™ ACTUATOR**

ITEM NO.	DESCRIPTION	PART NO.	UNIT LIST PRICE
ELECTRICAL COMPONENTS:			
	Standard Control Panel	GSD1-30-176	\$3,974.85
	Motor Controller, KBE-PCSI (DPM 5130-E, 110 V AC Input)	GSD1-17-75	\$870.30
	Timer, Omron H3BA-8, (100 VAC, 120V) (TR1,TR2 = TIMER & BASE)	GSD1-26-79	\$193.60
	Timer Base	GSD1-26-18	\$14.83
	Relay - Potter Brumley KUP-14A15-120	GSD1-26-5	\$48.71
	Relay Base	GSD1-26-6	\$21.78
	Pilot Light (Red)	GSD1-26-34	\$145.51
	Pilot Light (Blue)	GSD1-26-67	\$132.50
	Fuse (NON3)	GSD1-26-20	\$3.63
	Contact Block "Start"	GSD1-26-36	\$26.32
	Contact Block "Stop"	GSD1-26-38	\$26.62
SHOWER DRIVERS:			
	SPARE GENERAL MORGAN™ (FIXED SPEED)		\$8,974
	SPARE GENERAL MORGAN™		\$8,660
	REBUILT GENERAL MORGAN™ (w/return of old unit)		\$5,185
COMPONENT SPARE PARTS:			
	Trunnions (4 Required)	GSD1-1S	\$105.88
	Split Bearing, 2" Pipe	G3SD1-5-57	\$708.13
	Split Bearing, 3" Pipe	G3SD1-5-59	\$708.13
	Split Bearing, 4" Pipe	G3SD1-5-65	\$708.13
	Split Bearing, 6" Pipe	G3SD1-5-63	\$1,392.33
	Standard Adapter Flange	G3SD1-2-111	\$589.05

NOTE: Prices are subject to change without further notice.

P:\BOOKREAL\SPARE PARTS\GENERAL MORGAN 13