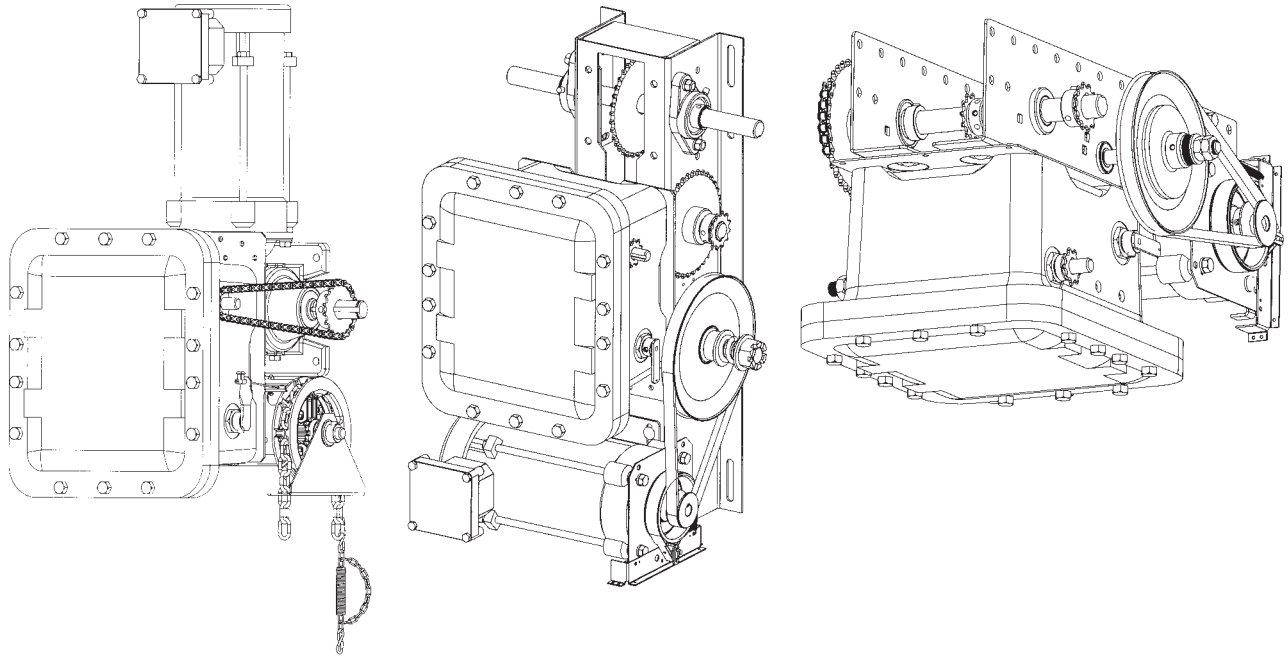


Addendum – Hazardous Locations

This addendum is to be used in conjunction with the Installation & Instruction Manual.



GH, MGH, MGT, MGSL, MSJ, OTH, OTBH, OSL
for Hazardous Locations with Nema 7/9 Control Enclosure
and Class I Group D / Class II Group F&G Electrical Motor

Hardwired Electrical Control (with contactor)

READ AND FOLLOW ALL INSTRUCTIONS.
SAVE THESE INSTRUCTIONS.
GIVE TO END-USER.

Serial # _____

Model # _____

Wiring Diagram # _____

Project #/Name _____

Door #/Name _____



For more information, please visit www.devancocanada.com or call toll free at 855-931-3334

TABLE OF CONTENTS

Installation Instructions.....	3
1 General Specifications and Dimensions.....	4
1.1 GH Dimensions with NEMA 7/9 Control Enclosure.....	4
1.2 MGH Dimensions with NEMA 7/9 Control Enclosure.....	5
1.3 MSJ Dimensions with NEMA 7/9 Control Enclosure.....	5
1.4 OTBH Dimensions with NEMA 7/9 Control Enclosure.....	6
2 Electrical Wiring.....	7
2.1 Low Voltage (Controls) and High Voltage (Power) Connections.....	8
3 Electrical Schematics.....	9
3.1 1 Phase Operator – Hardwired Wiring.....	9
3.2 3 Phase Operator – Hardwired Wiring.....	10
4 Mechanical Exploded Views and Replacement Components.....	11
4.1 GH Nema 7/9 Type.....	11
4.2 Nema 7/9 Control Enclosure - Hardwired.....	12
4.3 Replacement Motors, Transformers, Solenoids and Resets.....	13
Notes.....	15
Warranty.....	19

Installation Instructions

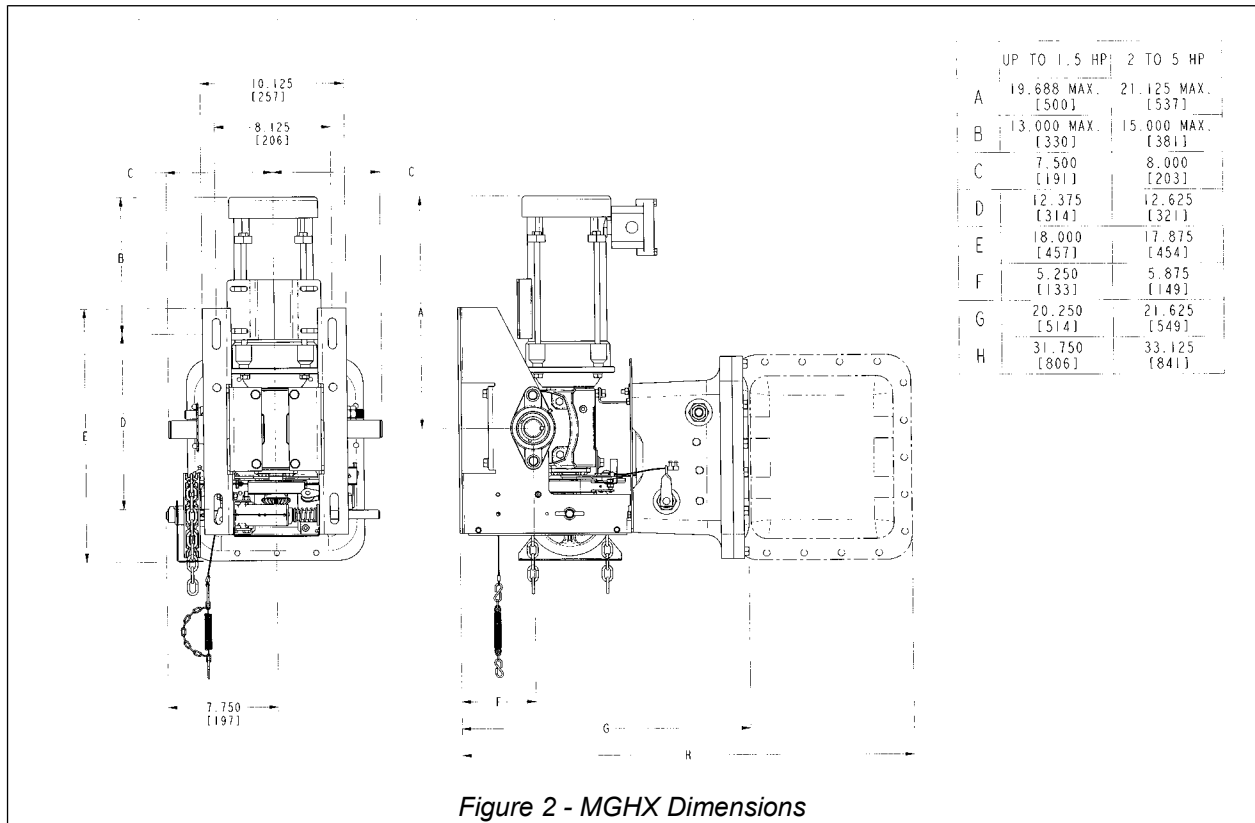
IMPORTANT INSTALLATION INSTRUCTIONS

WARNING

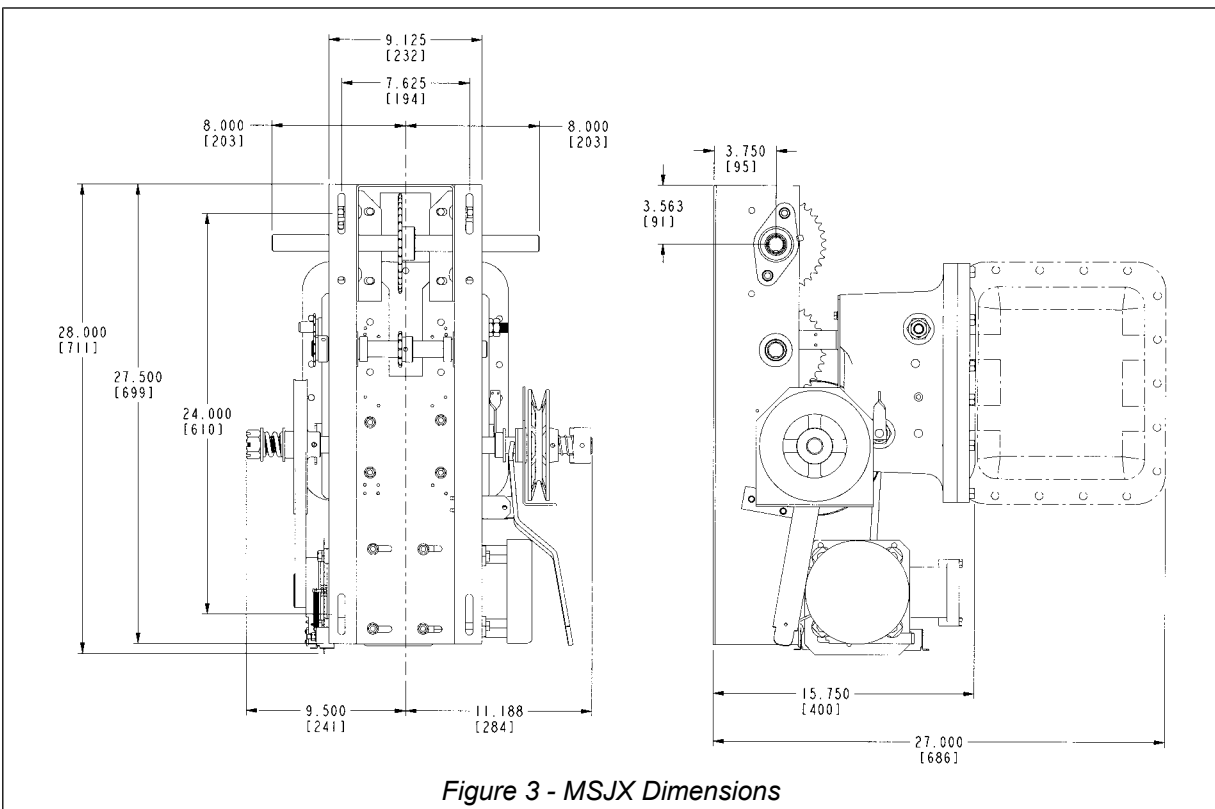
TO REDUCE THE RISK OF SEVERE INJURY OR DEATH TO PERSONS:

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2. Install only on a properly operating and balanced door. A door that is operating improperly could cause severe injury. Have qualified service personnel make repairs to cables, spring assemblies and other hardware before installing the operator.
3. Remove all pull ropes and remove, or make inoperative, all locks (unless mechanically and/or electrically interlocked to the power unit) that are connected to the door before installing the operator.
4. Installation of this door operator must be done by a qualified installer.
5. Verify that the operator is correct for type, size of door and frequency of use per the operator specifications.
6. Install the door operator at least 8 feet (2,4 m) or more above the floor if the operator has exposed moving parts.
7. Do not connect the door operator to the source of power until instructed to do so.
8. Locate the control station: (a) within sight of the door, (b) at a minimum height of 5 feet (1,5 m) so small children cannot reach it, and (c) away from all moving parts of the door.
9. Install the Entrapment Warning Placard next to the control station in a prominent location.
10. For products having a manual release, instruct the end user on the operation of the manual release.

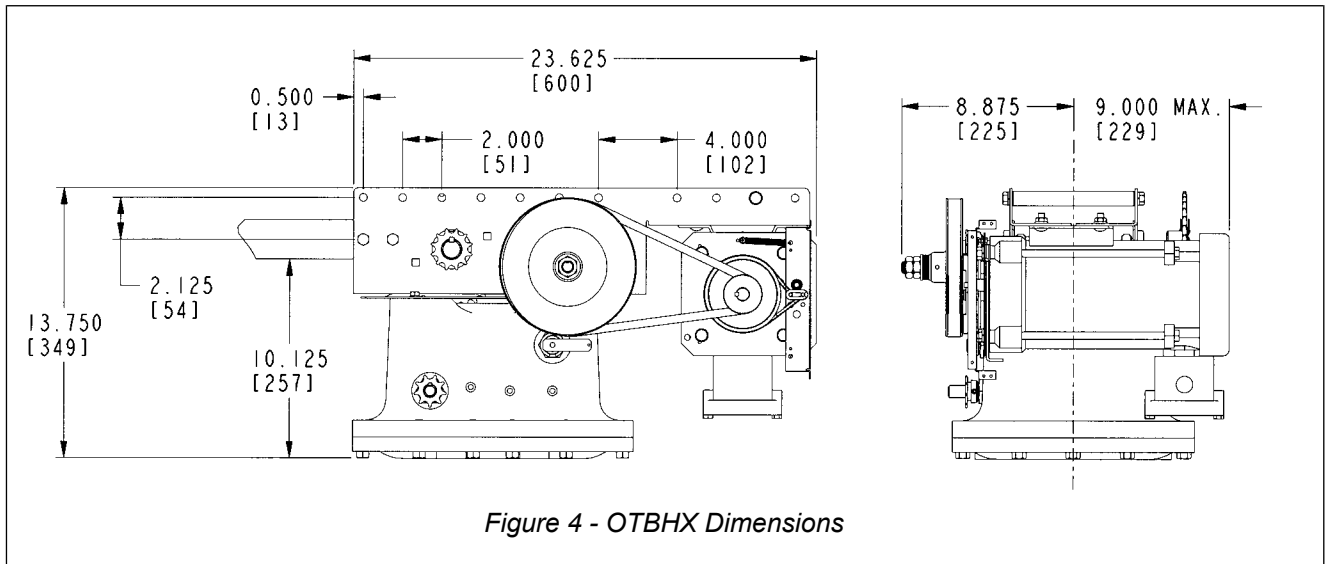
1.2 MGH Dimensions with NEMA 7/9 Control Enclosure



1.3 MSJ Dimensions with NEMA 7/9 Control Enclosure



1.4 OTBH Dimensions with NEMA 7/9 Control Enclosure



2 Electrical Wiring

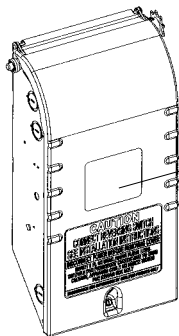
WARNING



To reduce risk of SEVERE INJURY or DEATH to persons:

- All electrical wiring should be done by a qualified professional and in accordance to local electrical codes.
- Always shut OFF the main power before performing any electrical intervention.
- Use proper wire gauge for incoming power line and for accessory connections.
- Install operator main circuit breaker next to operator for easy access for power shut-off.
- Use separate knockouts on operator control box for accessories and main power cables.
- Always separate low and high voltage wires.
- Operator should be properly grounded to the building ground and to the main power supply ground lug.
- Always use suitable and appropriate rating circuit breakers for operator protection.
- Compare available power supply voltage to voltage on operator name plate prior to electrical connection. Failure to connect appropriate power supply voltage may cause serious damage to the operator.

NOTICE

- THE OPERATOR MUST BE ADEQUATELY PROTECTED AGAINST OVERCURRENT AND SHORT-CIRCUIT.
- PLEASE REFER TO LOCAL ELECTRICAL CODE.
- PLEASE REFER TO NATIONAL ELECTRIC CODE (NFPA 70) ARTICLE 430 SECTION IV (430.51 / 430.52 / 430.53).
- PLEASE REFER TO CANADIAN ELECTRIC CODE (CSA 22.1) SECTIONS 28-200 / 28-206.



		TOLL FREE #			
		TEL: 1-800-361-2260			
		FAX: 1-888-626-0606			
		WWW.MANARAS.COM			
MODEL	<input type="text"/>		SER.#	<input type="text"/>	
HP	<input type="text"/>	VOLTS	<input type="text"/>	PH	<input type="text"/>
				AMPS	<input type="text"/>
CONTROL CIRCUIT	<input type="text"/>	60 Hertz		FT.LB/SEC	<input type="text"/>
DATE MFG.	<input type="text"/>		Fabriqué au Canada Made in Canada		
CAUTION DISCONNECT ELECTRIC POWER BEFORE ADJUSTING DOOR OR OPERATOR ATTENTION COUPEZ LE COURANT ELECTRIQUE AVANT DE METTRE AU POINT LA PORTE OU L'OPERATEUR					

FLA = Full Load Amp

Guideline to determine the branch-circuit rating of the protective device [A]:

Time Delay Fuse: $1,75 \times \text{FLA}$

Non-Time Delay Fuse: $3,0 \times \text{FLA}$

A fuse that does not exceed the next higher standard ampere rating shall be permitted.

Example: If **FLA = 3,8A**

- Time Delay Fuse: $1,75 \times 3,8\text{A} = 6,65\text{A} \rightarrow$ Standard fuse to use: 10A
- Non-Time Delay Fuse: $3,0 \times 3,8\text{A} = 11,4\text{A} \rightarrow$ Standard fuse to use: 15A

NOTICE

- The installer **MUST** test for proper connection and functionality of the operator and its accessories before leaving the job site.
- The installer should also perform a demonstration for the end-user.
- Use materials as per NEMA, NEC and appropriate local regulations guidelines and always follow manufacturers instructions for conduit preparation.

2.1 Low Voltage (Controls) and High Voltage (Power) Connections

1. Route the power line wires either from the right or from the left of the control box, as shown in Figure 5.
2. Route all low voltage control wires, as shown in Figure 5. **KEEP LOW VOLTAGE WIRES SEPARATE FROM LINE VOLTAGE WIRES.**
3. **USE COPPER CONDUCTORS ONLY.**

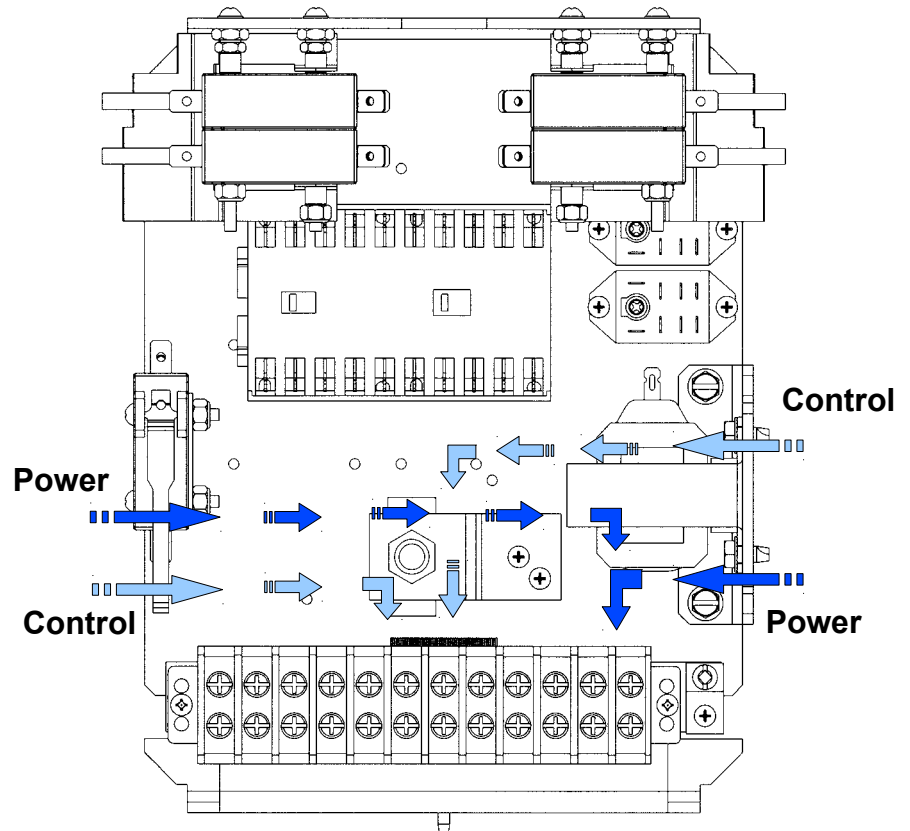


Figure 5 - Low Voltage (Controls) and High Voltage (Power) Connections

3 Electrical Schematics

3.1 1 Phase Operator – Hardwired Wiring

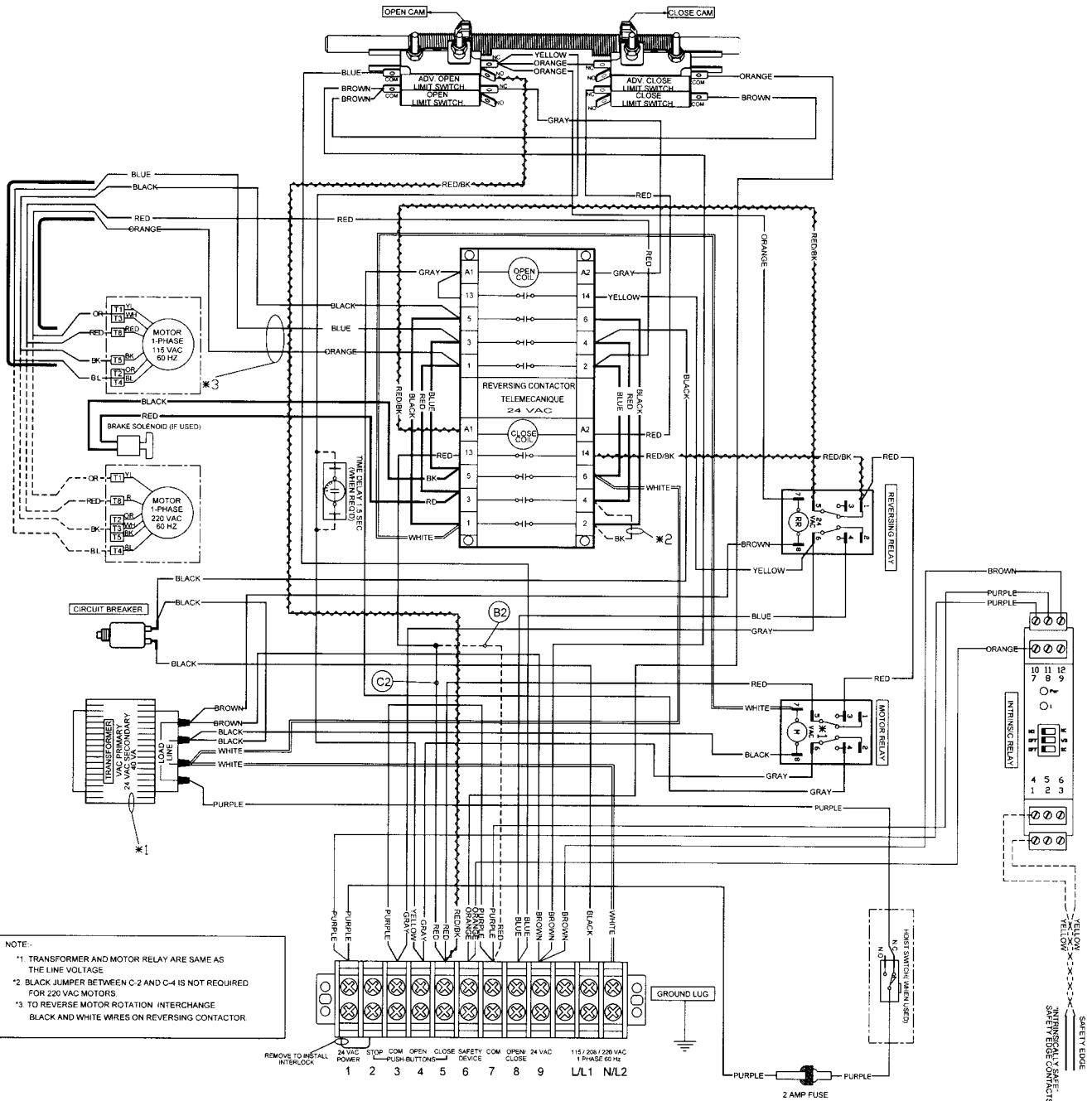


Figure 6 - EDWG11HWLC04408

3.2 3 Phase Operator – Hardwired Wiring

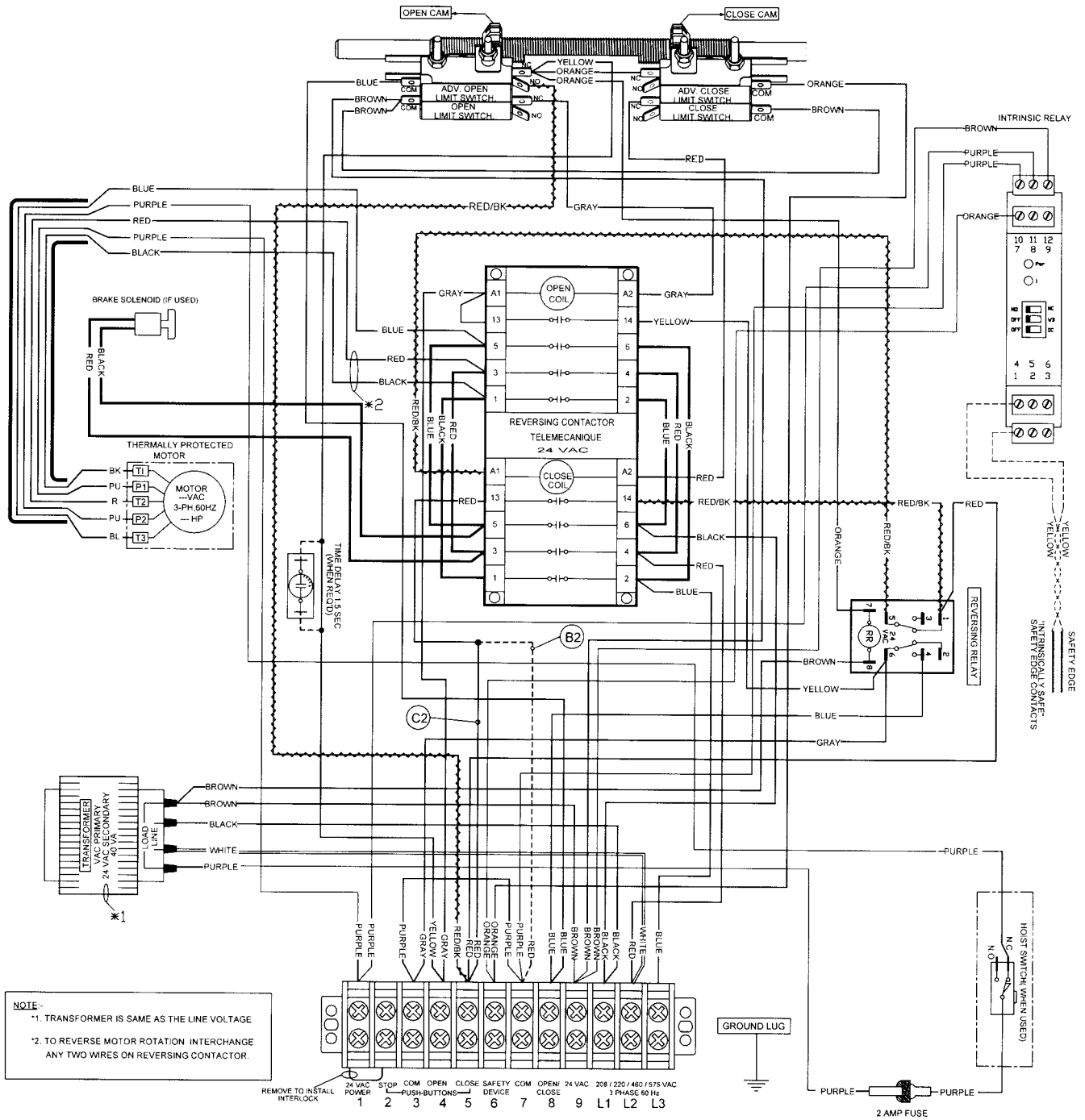


Figure 7 - EDWG13HWLC04408

4 Mechanical Exploded Views and Replacement Components

4.1 GH Nema 7/9 Type

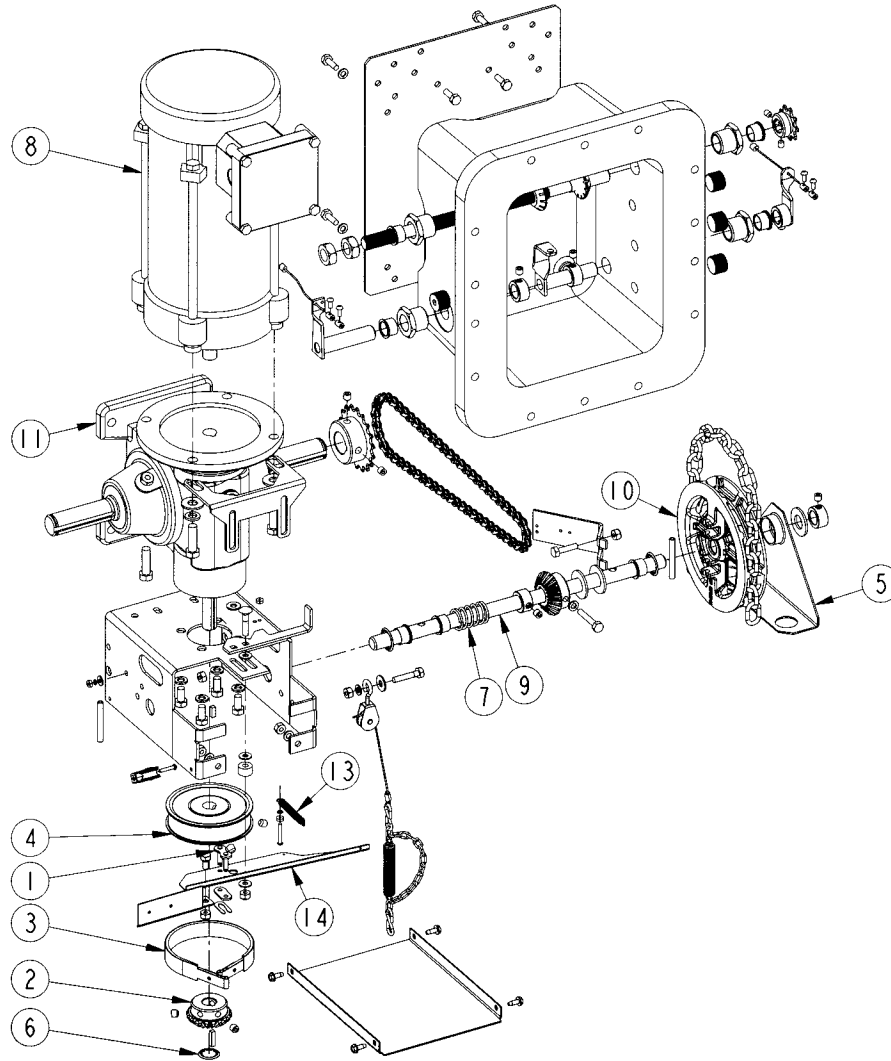


Figure 8 - GHX Mechanical Exploded View

Table 2 - GHX Replacement Components

No	Qty	Description	Manaras-Opera Part #	No	Qty	Description	Manaras-Opera Part #
1	1	#50 CONNECTING LINK 50-1	LINK011	9	1	OGH HOIST SHAFT	SHAFT115
2	2	BEVEL GEAR GH MGH 5/8 20TH	GEAR001	10	1	OPERA POCKETWHEEL	POCKETWHEEL005
3	1	BRAKE BAND ASSEMBLY HEAVY DUTY	BRAKEPART019	11	1	REDUCER DSM 70 44:1 FR56C	REDUCER012
4	1	BRAKE DRUM	DRUM005			REDUCER DSM 55 45:1 FR56C	REDUCER025
5	1	CHAIN GUIDE OPERA	GUIDE014	12	2	SINGLE SWIVEL PULLEY 1.0	PULLEY016
6	1	EXTERNAL 5/8 RETAINING RING	CLIP024	13	1	TROLLEY ARM DISCONNec SPRING	SPRING026
7	1	MJ DISCONNECT HOIST SPRING	SPRING012	14	1	XPROOF BRAKE RELEASE LEVER	LEVER058
8	1	MOTOR	SEE Table 5				

4.2 Nema 7/9 Control Enclosure - Hardwired

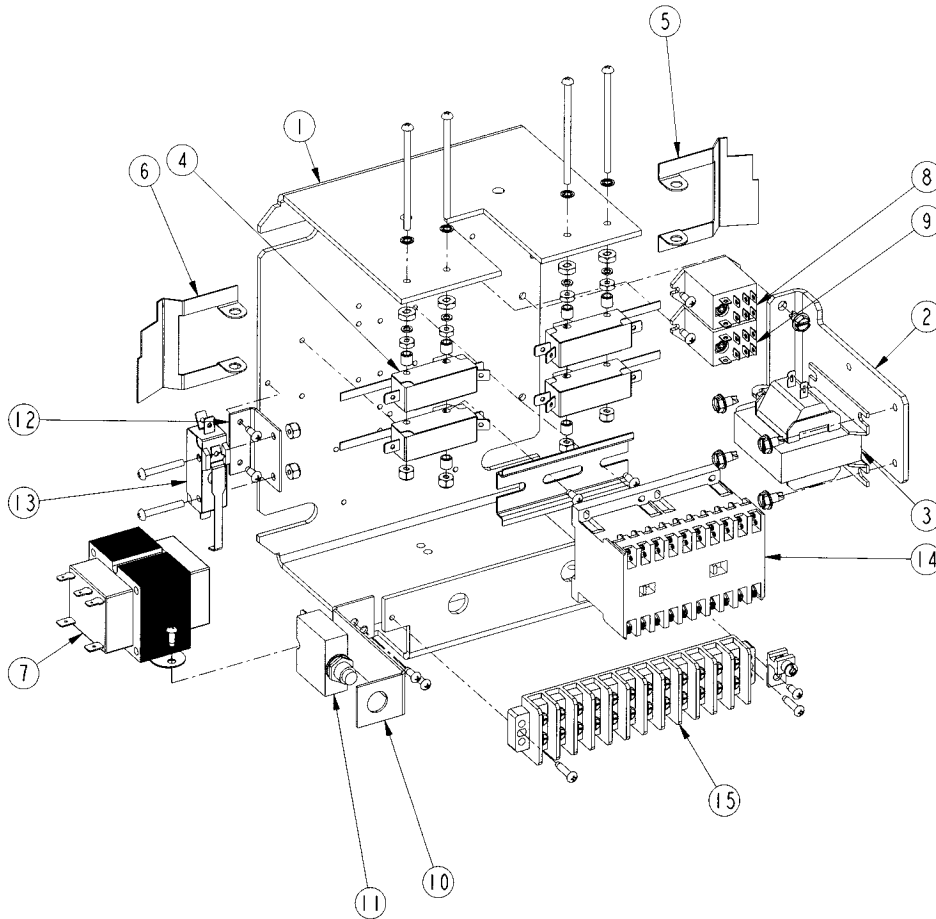


Figure 9 - Nema 7/9 Control Enclosure Hardwired

Table 3 - Control Enclosure Replacement Components (CBOX015)

No	Qty	Description	Manaras-Opera Part #
1	1	XPL INSIDE PLATE	BRACKET067
2	1	XP/WP CBOX SOLENOID SUPPORT	BRACKET187
3	1	SOLENOID	SEE Table 4 OR Table 5
4	1	SNAP ACT. SW.SPDT-LEVER FLAT	LIMIT025
5	1	LIMIT LEVER RIGHT	LEVER078
6	1	LIMIT LEVER LEFT	LEVER077
7	1	TRANSFO TO 24V	SEE Table 4 OR Table 5
8	1	DPDT 24V RELAY	RELAY024
9	1	DPDT RELAY	SEE Table 4 OR Table 5
10	1	TOGGLE SWITCH AND RESET SUPPORT BRACKET	BRACKET097
11	1	RESET	SEE Table 4 OR Table 5
12	1	XP DISCONNECT SWITH SUPPORT	BRACKET195
13	1	SNAP ACT. SW.SPDT-LEVER END BEND	LIMIT025B
14	1	TELEM. REVERS. CONT. 24V	CONTACTOR044
15	1	TERMINAL STRIP 12 POSITIONS	TSTRIP001

4.3 Replacement Motors, Transformers, Solenoids and Resets

Table 4 - MSJX, OTHX, OTBHX, OSLX Replacement Motors, Transformers, Solenoids and Resets
According to Voltage/Phase and HP

V-PH	HP	Transfo.	Solenoid	Description	NEMA 7/9 - Manaras-Opera Part #
120V - 1PH	1/2HP	TRANSF143	SOLENOID001	MOTOR 1/2HP - 120V/230V - 1PH	MOTOR005
				1PH - RESET	RESET007 (10 AMPS)
	3/4HP			MOTOR 3/4HP - 120V/230V - 1PH	MOTOR013
				1PH - RESET	RESET010 (13 AMPS)
	1HP			MOTOR 1HP - 120V/230V - 1PH	MOTOR019
				1PH - RESET	RESET014 (17 AMPS)
230V - 1PH	1/2HP	TRANSF143	SOLENOID002	MOTOR 1/2HP - 120V/230V - 1PH	MOTOR005
				1PH - RESET	RESET002 (5 AMPS)
	3/4HP			MOTOR 3/4HP - 120V/230V - 1PH	MOTOR013
				1PH - RESET	RESET004 (7 AMPS)
	1HP			MOTOR 1HP - 120V/230V - 1PH	MOTOR019
				1PH - RESET	RESET006 (9 AMPS)
208V - 3PH	1/2HP	TRANSF037	SOLENOID003	MOTOR 1/2HP - 208V/460V - 3PH	MOTOR030
	3/4HP			MOTOR 3/4HP - 208V/460V - 3PH	MOTOR036
	1HP			MOTOR 1HP - 208V/460V - 3PH	MOTOR041
460V - 3PH	1/2HP	TRANSF088	SOLENOID003	MOTOR 1/2HP - 208V/460V - 3PH	MOTOR030
	3/4HP			MOTOR 3/4HP - 208V/460V - 3PH	MOTOR036
	1HP			MOTOR 1HP - 208V/460V - 3PH	MOTOR041
575V - 3PH	1/2HP	TRANSF142	SOLENOID004	MOTOR 1/2HP - 575V - 3PH	MOTOR345
	3/4HP			MOTOR 3/4HP - 575V - 3PH	MOTOR064
	1HP			MOTOR 1HP - 575V - 3PH	MOTOR069A

Table 5 - GHX, MGHX, MGTX, MGSLX Replacement Motors, Transformers, Solenoids and Resets According to Voltage/Phase and HP

V-PH	HP	Transfo.	Solenoid	Description	NEMA 7/9 - Manaras-Opera Part #
120V - 1PH	1/2HP	TRANSF143	SOLENOID001	MOTOR 1/2HP - 120V/230V - 1PH	MOTOR005
				1PH - RESET	RESET007 (10 AMPS)
	3/4HP			MOTOR 3/4HP - 120V/230V - 1PH	MOTOR013
				1PH - RESET	RESET010 (13 AMPS)
	1HP			MOTOR 1HP - 120V/230V - 1PH	MOTOR019
				1PH - RESET	RESET014 (17 AMPS)
	1-1/2HP			MOTOR 1.5HP - 120V/230V - 1PH	MOTOR023
				1PH - RESET	RESET016 (20 AMPS)
230V - 1PH	1/2HP	TRANSF143	SOLENOID002	MOTOR 1/2HP - 120V/230V - 1PH	MOTOR005
				1PH - RESET	RESET002 (5 AMPS)
	3/4HP			MOTOR 3/4HP - 120V/230V - 1PH	MOTOR013
				1PH - RESET	RESET004 (7 AMPS)
	1HP			MOTOR 1HP - 120V/230V - 1PH	MOTOR019
				1PH - RESET	RESET006 (9 AMPS)
	1-1/2HP			MOTOR 1.5HP - 120V/230V - 1PH	MOTOR023
				1PH - RESET	RESET007 (10 AMPS)
208V - 3PH	1/2HP	TRANSF037	SOLENOID003	MOTOR 1/2HP - 208V/460V - 3PH	MOTOR183
				MOTOR 3/4HP - 208V/460V - 3PH	MOTOR036
	1HP			MOTOR 1HP - 208V/460V - 3PH	MOTOR041
				MOTOR 1.5HP - 208V/460V - 3PH	MOTOR150
	2HP			MOTOR 2HP - 208V/460V - 3PH	MOTOR149
				MOTOR 3HP - 208V/460V - 3PH	MOTOR364
	3HP			MOTOR 3HP - 208V/460V - 3PH	MOTOR364
				5HP	MOTOR 5HP - 208V/460V - 3PH
460V - 3PH	1/2HP	TRANSF088	SOLENOID003	MOTOR 1/2HP - 208V/460V - 3PH	MOTOR183
				MOTOR 3/4HP - 208V/460V - 3PH	MOTOR036
	1HP			MOTOR 1HP - 208V/460V - 3PH	MOTOR041
				MOTOR 1.5HP - 208V/460V - 3PH	MOTOR150
	2HP			MOTOR 2HP - 208V/460V - 3PH	MOTOR149
				MOTOR 3HP - 208V/460V - 3PH	MOTOR364
	3HP			MOTOR 3HP - 208V/460V - 3PH	MOTOR364
				5HP	MOTOR 5HP - 208V/460V - 3PH
575V - 3PH	1/2HP	TRANSF142	SOLENOID004	MOTOR 1/2HP - 575V - 3PH	MOTOR058
				MOTOR 3/4HP - 575V - 3PH	MOTOR060
	1HP			MOTOR 1HP - 575V - 3PH	MOTOR069
				MOTOR 1.5HP - 575V - 3PH	MOTOR430
	2HP			MOTOR 2HP - 575V - 3PH	MOTOR433
				MOTOR 3HP - 575V - 3PH	MOTOR077
	3HP			MOTOR 3HP - 575V - 3PH	MOTOR077
				5HP	MOTOR 5HP - 575V - 3PH

Notes

Notes

Notes

Warranty

Manaras-Opera warrants its operators to be free from defects in material and workmanship under normal and proper use for a period of two years from date of invoice, unless otherwise stated. Mechanical, electrical and electronic accessories are warranted for one year from date of invoice, unless otherwise stated. Wearing parts such as clutch pads, v-belts, and brake bands are excluded from warranty.

Manaras-Opera's only obligation shall be to repair or replace defective equipment which does not conform to the warranty. Manaras-Opera shall not be liable for any injury, loss or damage, direct or consequential, arising out of the inability to use the equipment. Before using, Buyer and/or the ultimate User shall determine the suitability of the product for its intended use, and User assumes all risks and liability in connection therewith. The foregoing may not be changed except by an Agreement signed by an authorized representative of Manaras-Opera.

The articles that are replaced pursuant to the terms of this warranty shall be retained by Manaras-Opera, and the User is responsible for any freight costs relating to repair or replacement.

The foregoing warranty is exclusive and in lieu of all other warranties of quality, whether written, oral or implied (including any other warranty of merchantability or fitness for purpose).

The following are exclusions from warranty:

- If usage, product modification, adaptation or installation are not in accordance with our installation and operating instructions.
- If the product has been opened, dismantled or returned with clear evidence of abuse or other damage.
- If our written specifications are not properly applied by the Buyer when selecting the equipment.
- If our written instructions for installation and wiring of the electrical connections have not been followed.
- If our equipment has been used to perform functions other than the functions it was designed to handle.
- If Manaras-Opera equipment is used with electrical accessories (switches, relays, etc.) that have not been previously approved in writing by the Manaras-Opera Engineering Department.
- If electrical accessories and other components have been used in disregard of the basic wiring diagram for which they were designed.

All costs related to installation and reinstallation of the Manaras-Opera equipment covered by this warranty are not the responsibility of Manaras-Opera. Manaras-Opera will not be responsible for any consequential damages following installation procedures performed by the Buyer or the User. If the Buyer resells any Manaras-Opera products to another Buyer or User, it shall include all of the terms and provisions of this warranty in such resale. Manaras-Opera's responsibility to any such Third Party shall be no greater than Manaras-Opera's responsibility under the warranty to the original Buyer.

Returns

No returns will be accepted without prior written authorization by Manaras-Opera. All returns must be accompanied by a Return Authorization Number issued by Manaras-Opera, and all unauthorized returns will be refused. The return shipment is to be freight prepaid by the Buyer, and under no circumstances shall the Buyer deduct the value of the returned merchandise from any remittance due. A restocking fee of 15% of the Manaras-Opera sale price will be charged for all returns not covered under warranty.

***HOW TO ORDER
REPAIR PARTS***

DEVANCO CANADA

19192 HAY ROAD, UNIT Q
SUMMERSTOWN, ON K0C 2E0

TOLL FREE: 855-931-3334

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PLEASE SUPPLY THE
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- ✓ PART NUMBER
- ✓ DESCRIPTION
- ✓ MODEL NUMBER