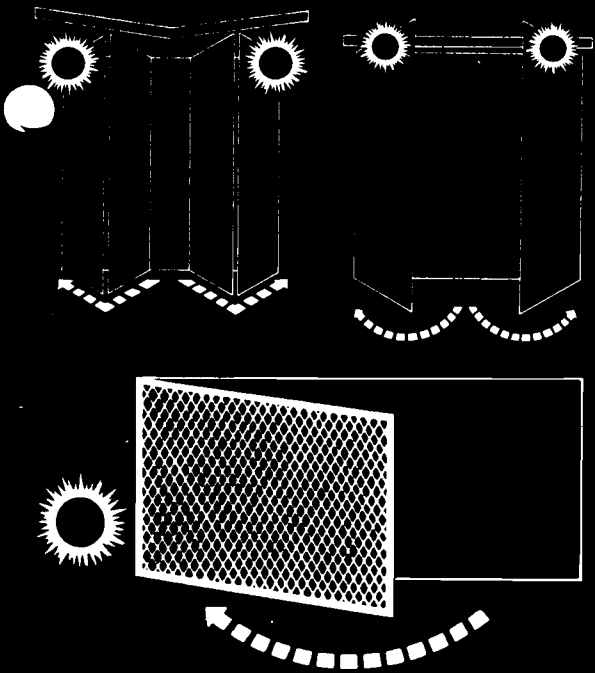




C R O W N
I N D U S T R I A L
O P E R A T O R S

*Read
This*



GENERAL OPERATOR WIRING AND CONTROL INFORMATION

Aut-o-doR

**1500 SLIDE-FOLD
1501 SWING
1510 SWING-GATE
OPERATORS
HEAVY DUTY & EXTRA HEAVY DUTY**

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Crown Industrial Operators
(formerly manufactured by Richards-Wilcox)



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G-995-R1

CONTENTS

SECTION	PAGE
1 INTRODUCTION AND GENERAL NOTES	3
2 OPERATOR & REVERSING STARTER WIRING	
208/230/460 Volts - 60 Hz - 3 Phase - Single	4
230 Volts - 60 Hz - 1 Phase - Single	5
115 Volts - 60 Hz - 1 Phase - Single	6
208/230/460 Volts - 60 Hz - 3 Phase - Pair	7
230 Volts - 60 Hz - 1 Phase - Pair	8
115 Volts - 60 Hz - 1 Phase - Pair	9
3 CONTROL WIRING	
"Open" - "Close" Pushbutton - Single	10
"Open" - "Stop" - "Close" Pushbutton - Single	11
Momentary Impulse - Timer Control - Single	12
Momentary Impulse - Sequence Relay Control - Single	13
"Open" - "Close" Pushbutton - Pair	14
"Open" - "Stop" - "Close" Pushbutton - Pair	15
Momentary Impulse - Timer Control - Pair	16
Momentary Impulse - Sequence Relay Control - Pair	17
WARRANTY	20

NOTE: We reserve the right to modify or change, without prior notice, any statements or information contained herein. If exact dimensions or specifications are required by the customer certified prints will be furnished without charge upon request to Crown Industrial Operators. This manual covers standard catalogued operators only and does not cover special non-standard equipment.

INTRODUCTION

The Crown Industrial Operators No. 1500 Slide-Fold Door, 1501 Swing Door, and 1510 Swing Gate Operators are supplied with flexible conduit attached to operator assembly. The controls, including the reversing starter, are separate items and are to be site wired.

The purpose of this booklet is to provide wiring diagrams and instructions for the most popular of the control systems. It is to be used in connection with the installation manual (G-993-R2 or G-994-R1) supplied with each operator.

GENERAL NOTES

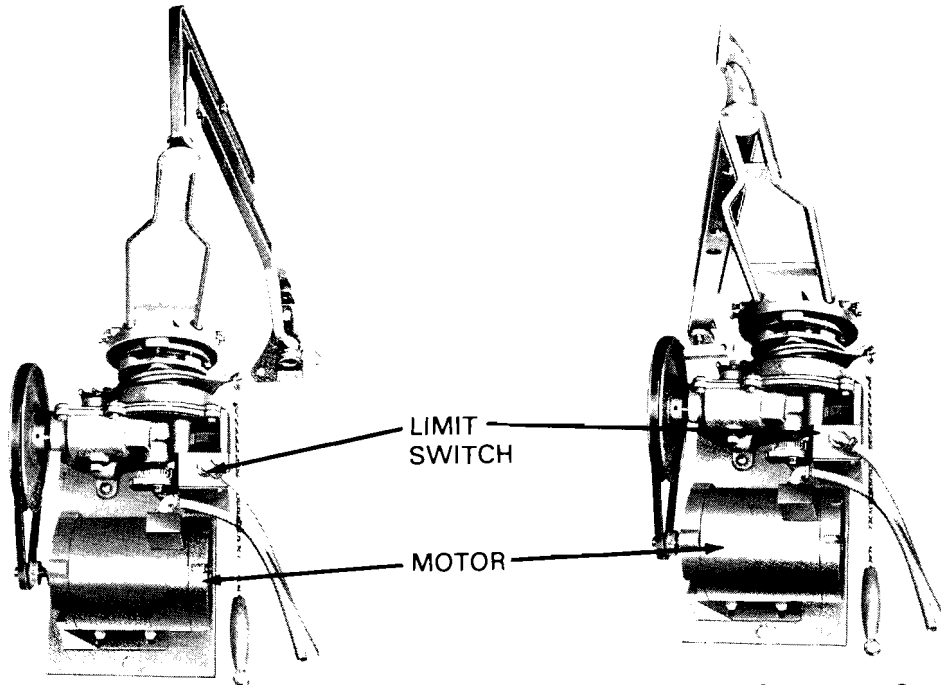
Wiring diagrams have been prepared to illustrate conditions with the door or gate in the fully closed position. On the "Operator and Reversing Starter Wiring" pages 4 through 9, solid lines have been used to denote factory wiring and dotted lines, site wiring. On the diagrams of "Control Wiring," pages 10 through 17, heavy weight lines have been used to show site wiring and lighter weight lines to denote factory wiring. On the "Control Wiring" diagrams, control circuit transformers have been shown. Control circuit transforms are not provided with operators intended for use of 115 volt power supplies where control circuit power connections are to be made directly across the line. See general installation instruction manual (G-993-R2 or G-994-R1) for establishing proper direction of gate travel.

WARNING

The operator is tested at the factory for a specified voltage and is marked as such. Check to insure that your power source is the same as shown on the packing list from the packing list envelope.

WARNING

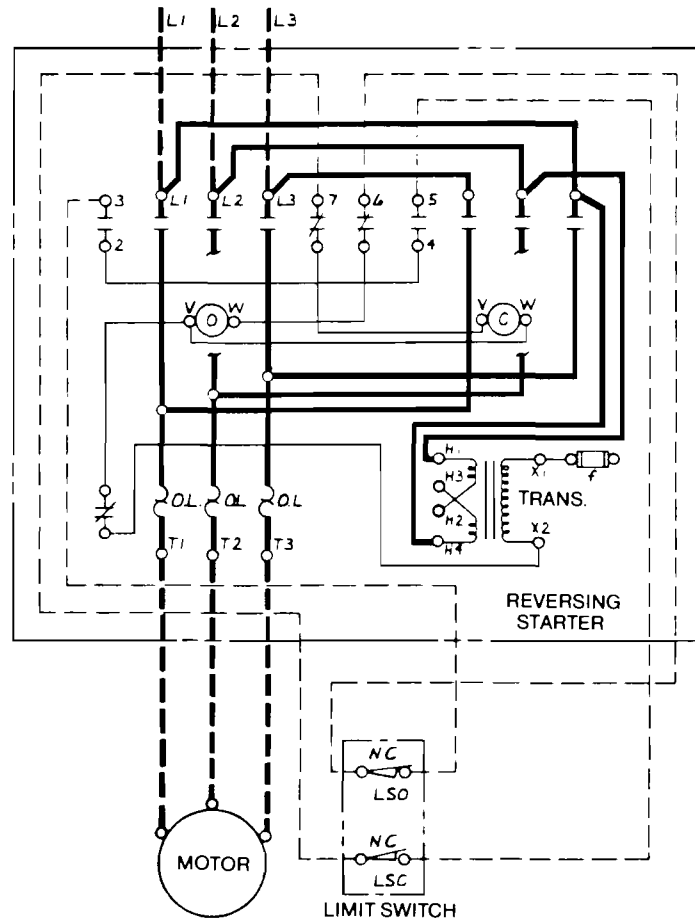
BE SURE ALL POWER IS ALWAYS OFF WHILE WIRING OR SERVICING OPERATOR. UPON APPLYING POWER, SOME ELECTRICAL OPERATOR CONTROL CIRCUITS CAN CAUSE IMMEDIATE OPERATION. INSURE THAT THE PATH OF THE DOOR OR GATE IS FREE FROM OBSTRUCTIONS AND PERSONNEL BEFORE TURNING POWER ON.



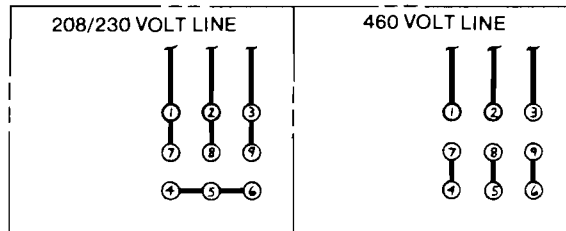
1500 Std. Duty Slide-Fold Door Operator

1501 Std. Duty Swing Door Operator
1510 Std. Duty Swing Gate Operator

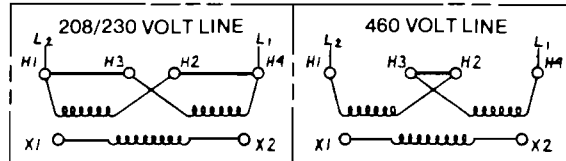
208/230-460 VOLTS THREE PHASE



MOTOR CONNECTIONS



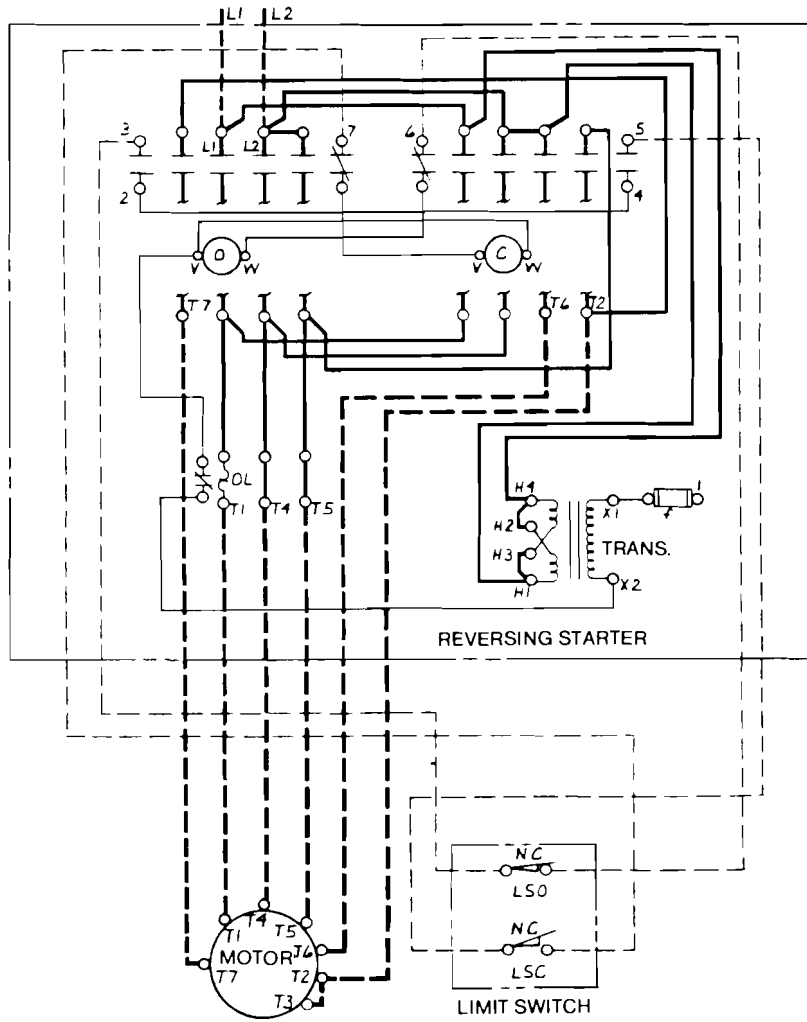
TRANSFORMER CONNECTIONS



OPERATOR AND REVERSING STARTER WIRING
FOR 208/230/460 Volts-60 Hertz-3 Phase
POWER SUPPLIES
SINGLE OPERATION

WIRING CODE
Solid Lines — Factory Wiring
Dotted Lines — Site Wiring

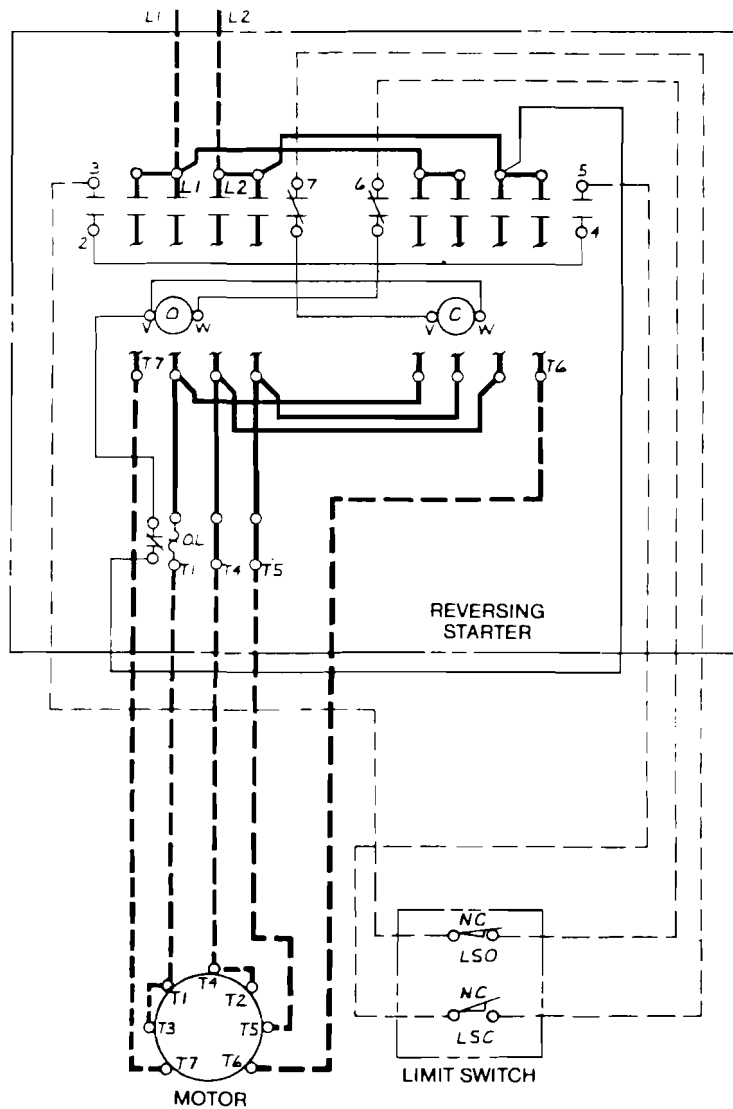
230 VOLTS SINGLE PHASE



OPERATOR AND REVERSING STARTER WIRING
 FOR 230 Volts-60 Hertz-1 Phase
 POWER SUPPLIES
 SINGLE OPERATION

WIRING CODE
 Solid Lines — Factory Wiring
 Dotted Lines — Site Wiring

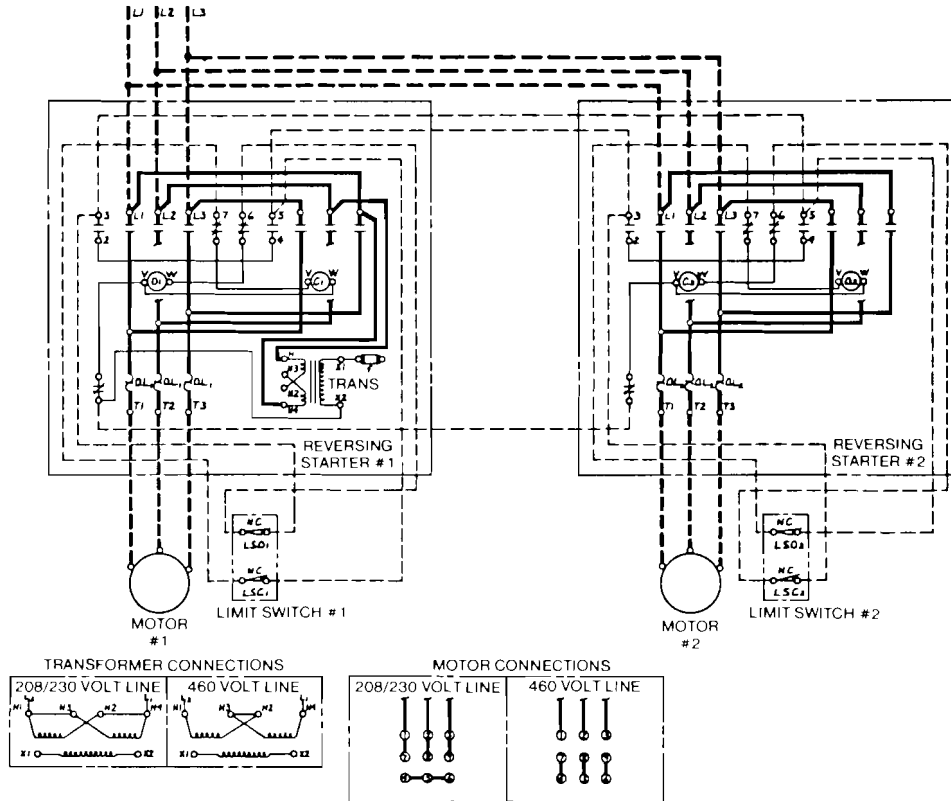
115 VOLTS SINGLE PHASE



OPERATOR AND REVERSING STARTER WIRING
FOR 115 Volts-60 Hertz-1 Phase
POWER SUPPLIES
SINGLE OPERATION

WIRING CODE
Solid Lines — Factory Wiring
Dotted Lines — Site Wiring

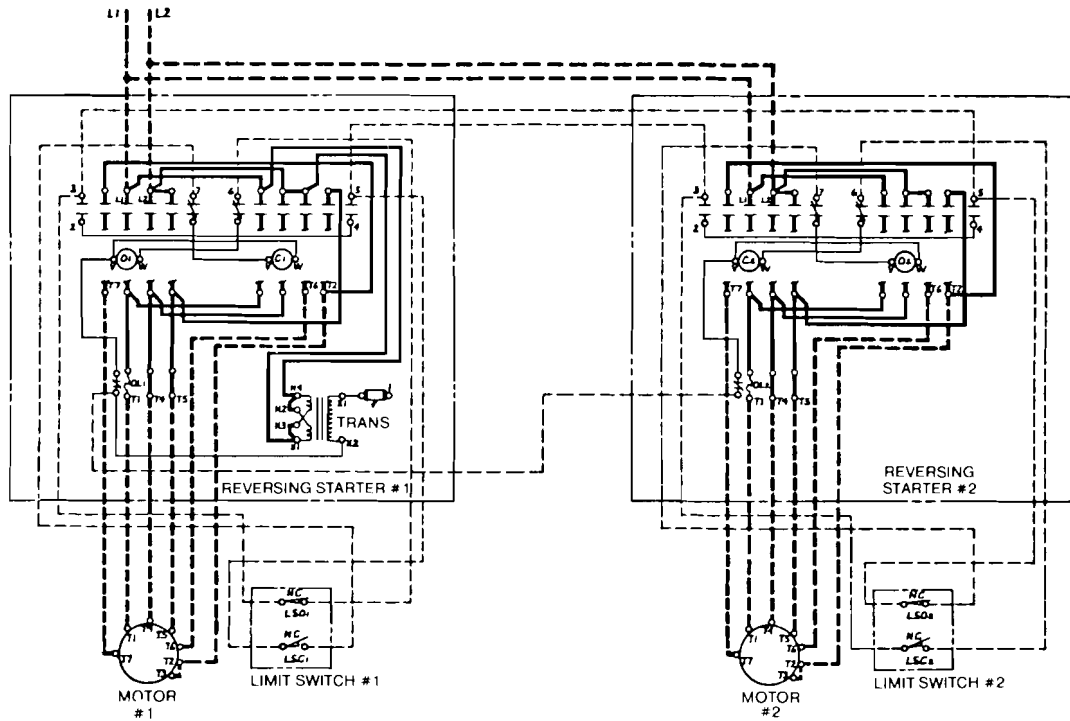
208/230 - 460 VOLTS THREE PHASE



OPERATOR AND REVERSING STARTER WIRING
FOR 208/230/460 Volts-60 Hertz-3 Phase
POWER SUPPLIES
PAIR OPERATION

WIRING CODE
Solid Lines — Factory Wiring
Dotted Lines — Site Wiring

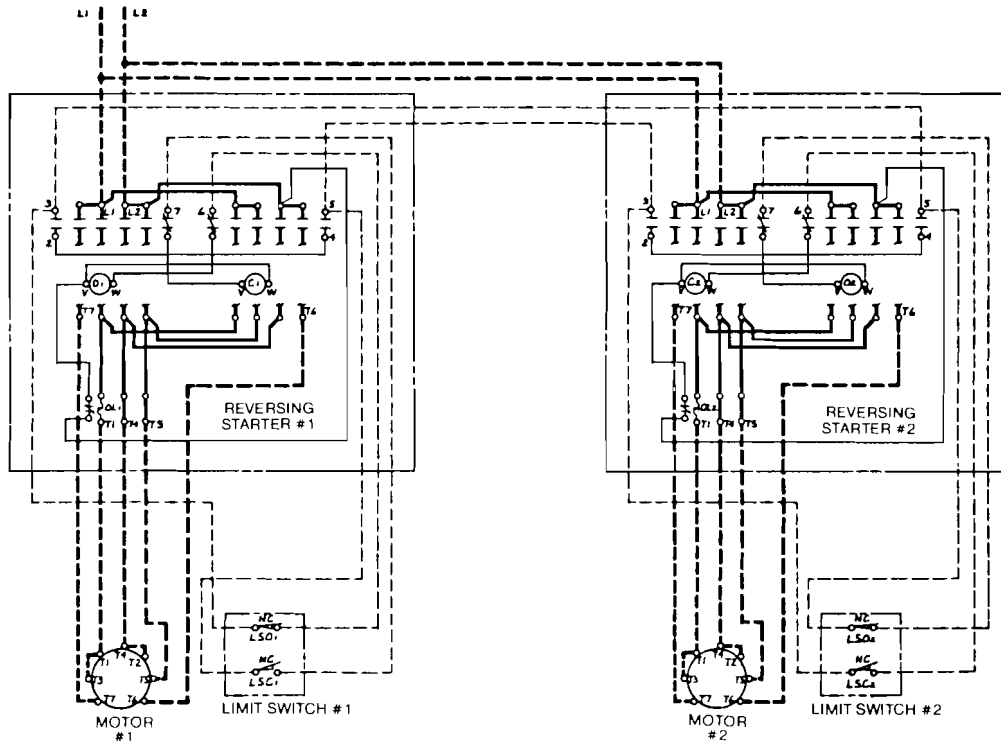
230 VOLTS SINGLE PHASE



OPERATOR AND REVERSING STARTER WIRING
FOR 230 Volts-60 Hertz-1 Phase
POWER SUPPLIES
PAIR OPERATION

WIRING CODE
Solid Lines — Factory Wiring
Dotted Lines — Site Wiring

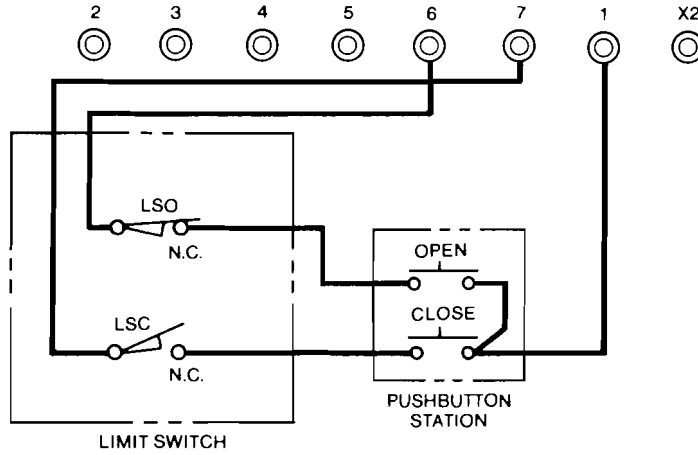
115 VOLTS SINGLE PHASE



OPERATOR AND REVERSING STARTER WIRING
FOR 115 Volts-60 Hertz-1 Phase
POWER SUPPLIES
PAIR OPERATION

WIRING CODE
Solid Lines — Factory Wiring
Dotted Lines — Site Wiring

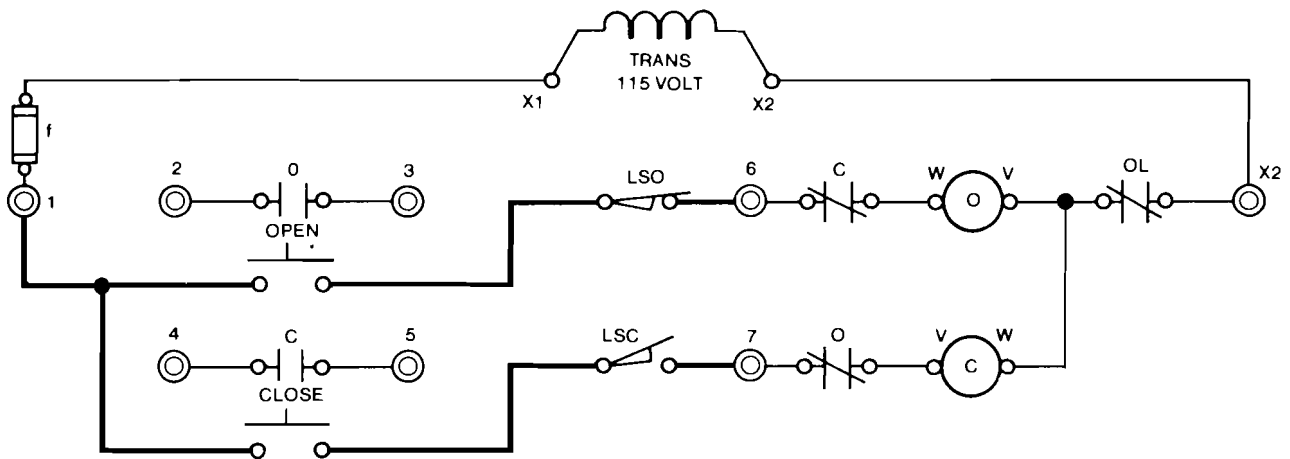
REVERSING STARTER TERMINALS



NOTE:

On 115 volt power source terminal #1 is L1 and terminal #X2 is L2.

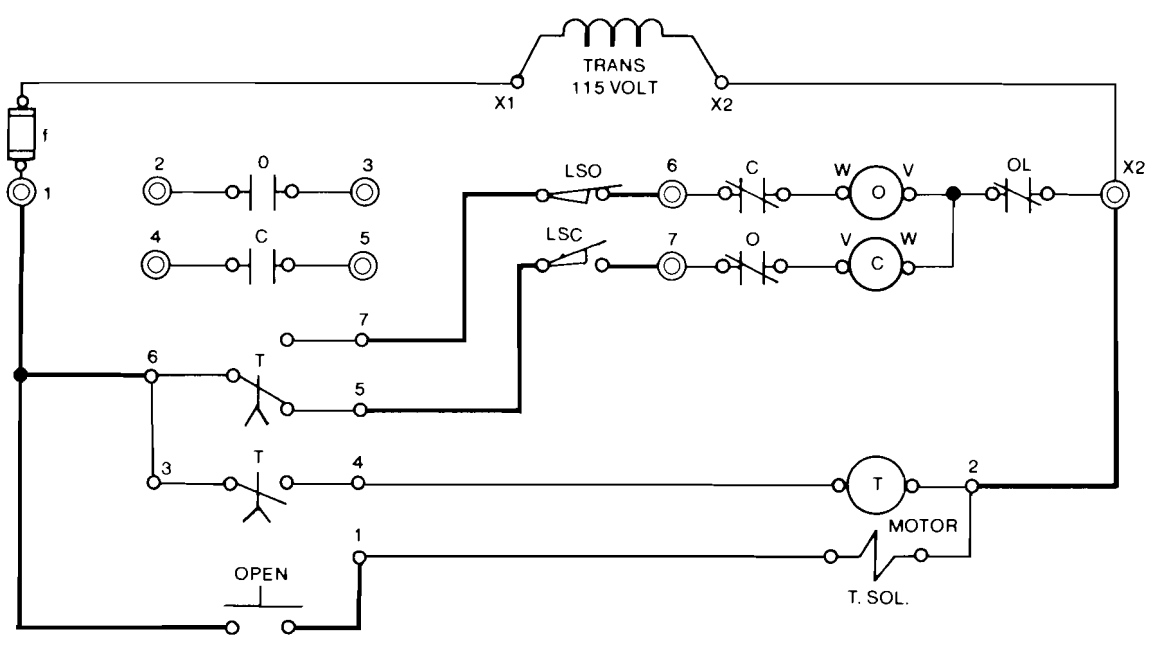
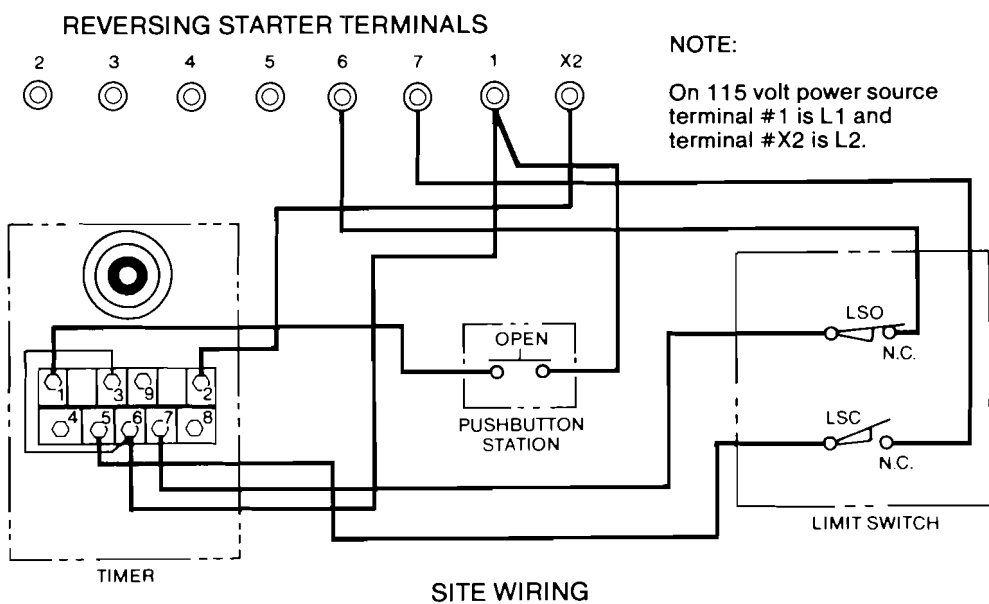
SITE WIRING



CONTROL WIRING
SINGLE OPERATION

WIRING DIAGRAMS FOR "OPEN"- "CLOSE" PUSHBUTTON
CONTROL OF OPERATOR
CIO CLASS "A" WIRING CIRCUIT

WIRING CODE
Heavy Lines — Site Wiring
Lighter Lines — Factory Wiring

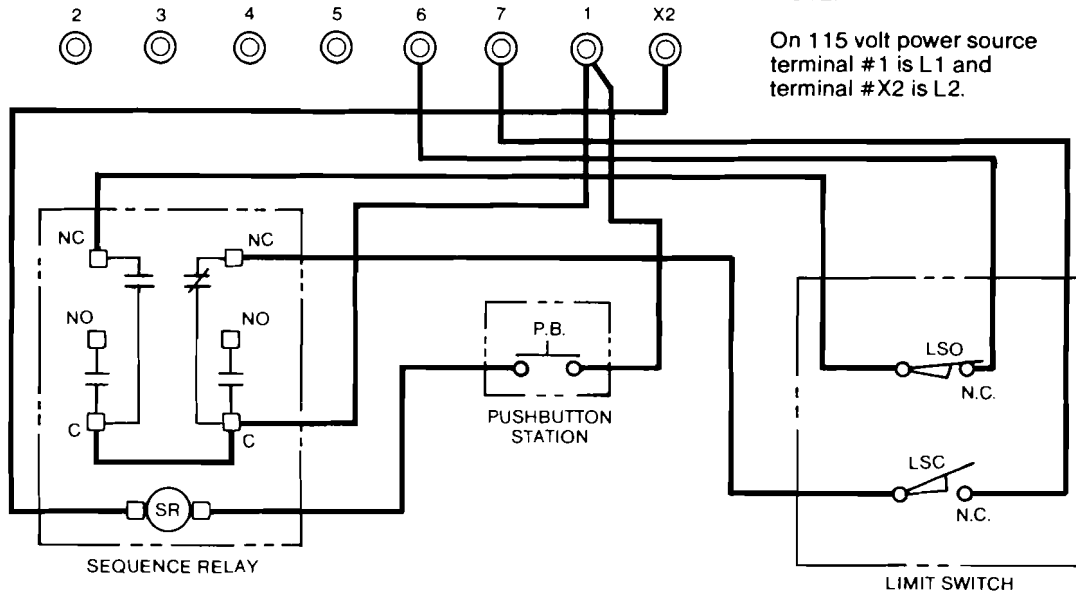


WIRING DIAGRAMS FOR MOMENTARY IMPULSE - TIMER
CONTROL OF OPERATOR
C10 CLASS "C" WIRING CIRCUIT

WIRING CODE
Heavy Lines — Site Wiring
Lighter Lines — Factory Wiring

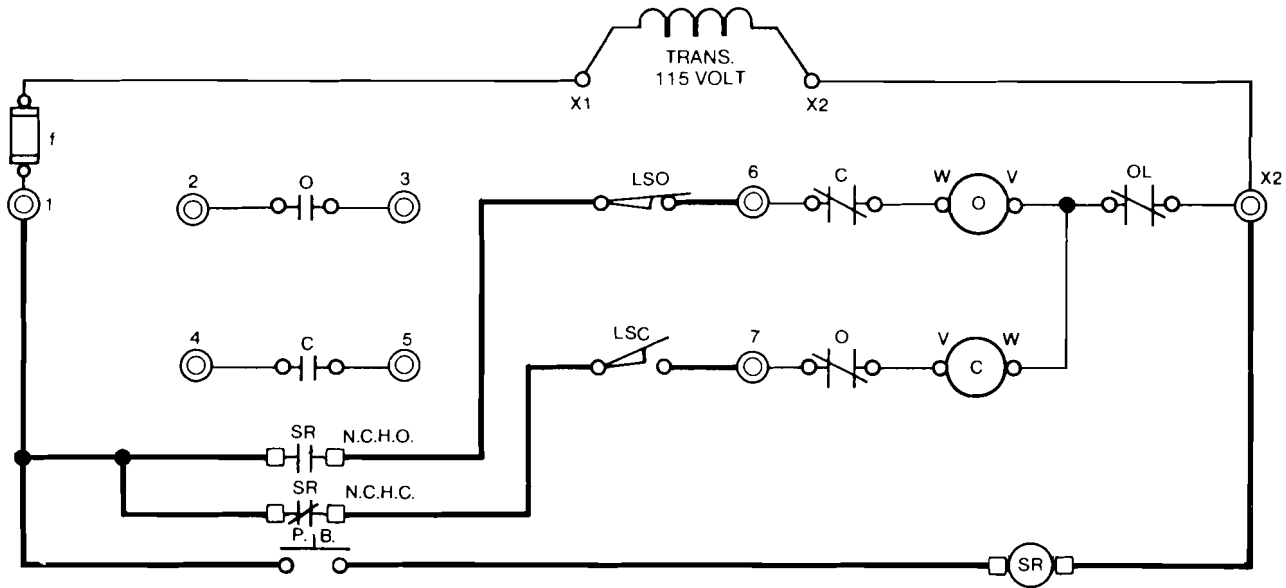
Additional single impulse devices may be applied to this control circuit by wiring their control contacts in parallel with the pushbutton contact shown.

REVERSING STARTER TERMINALS



NOTE:
On 115 volt power source terminal #1 is L1 and terminal #X2 is L2.

SITE WIRING



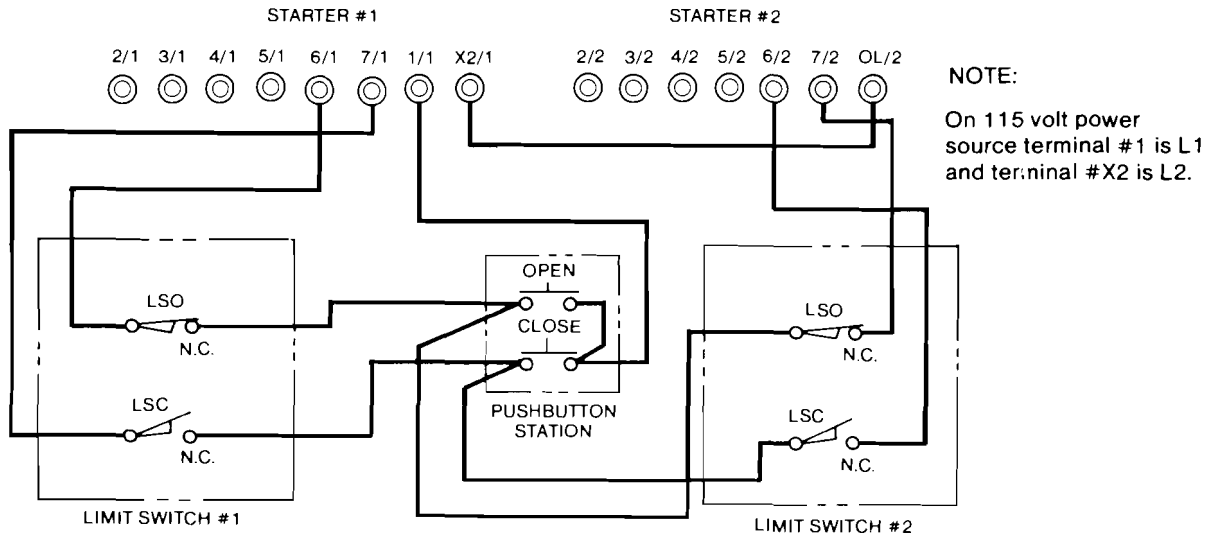
CONTROL WIRING
SINGLE OPERATION

WIRING DIAGRAMS FOR MOMENTARY IMPULSE - SEQUENCE RELAY
CONTROL OF OPERATOR
CIO CLASS "D" WIRING CIRCUIT

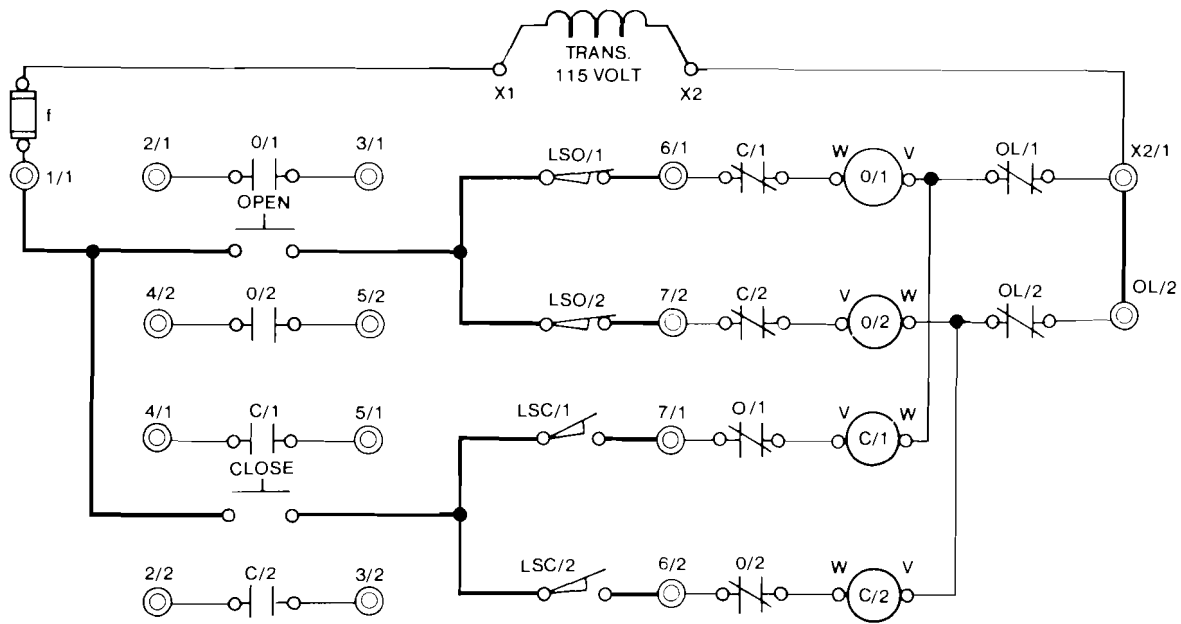
WIRING CODE
Heavy Lines — Site Wiring
Lighter Lines — Factory Wiring

Additional single impulse devices may be applied to this control circuit by wiring their control contacts in parallel with the pushbutton contact shown.

REVERSING STARTER TERMINALS



SITE WIRING



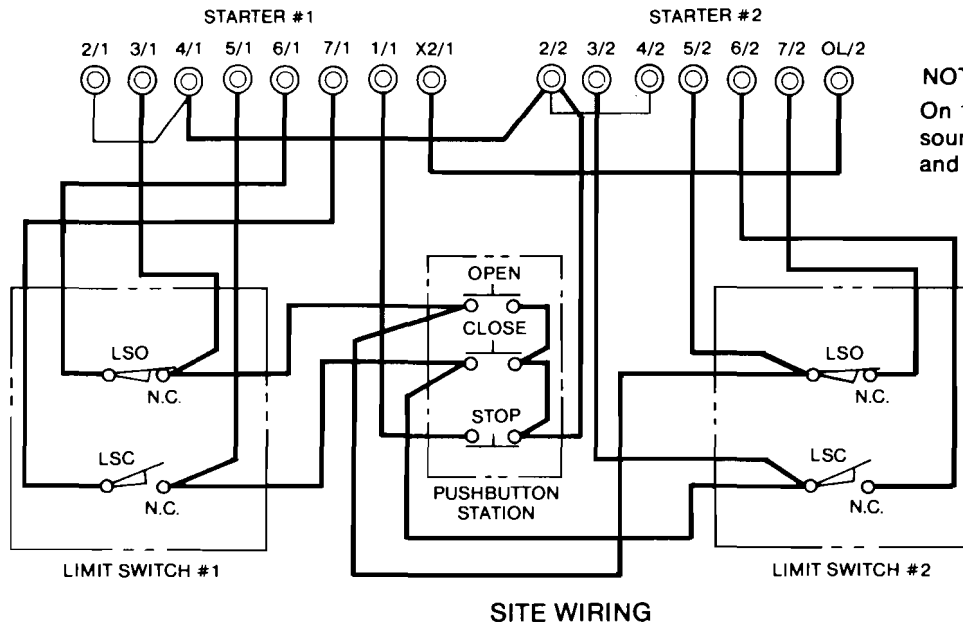
CONTROL WIRING PAIR OPERATION

WIRING DIAGRAMS FOR "OPEN"-"CLOSE" PUSHBUTTON
CONTROL OF OPERATOR
C/O CLASS "A" WIRING CIRCUIT

WIRING CODE
Solid Lines — Factory Wiring
Lighter Lines — Site Wiring

Additional control stations may be applied to this control circuit by wiring them in parallel with the pushbutton station shown.

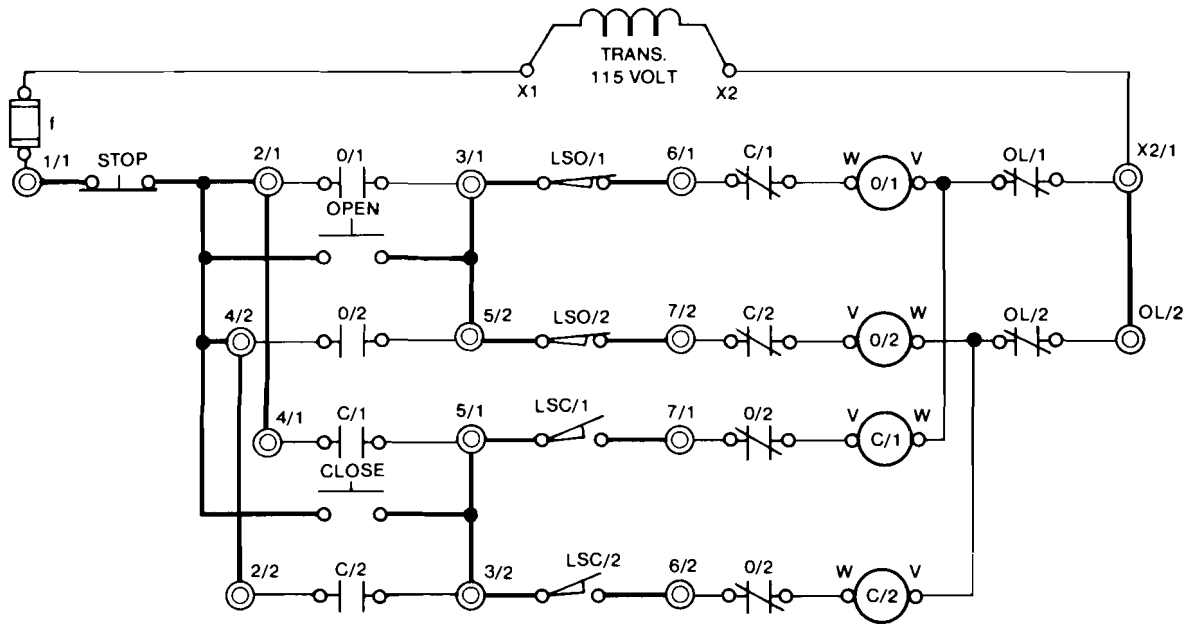
REVERSING STARTER TERMINALS



NOTE:

On 115 volt power source terminal #1 is L1 and terminal #X2 is L2.

SITE WIRING



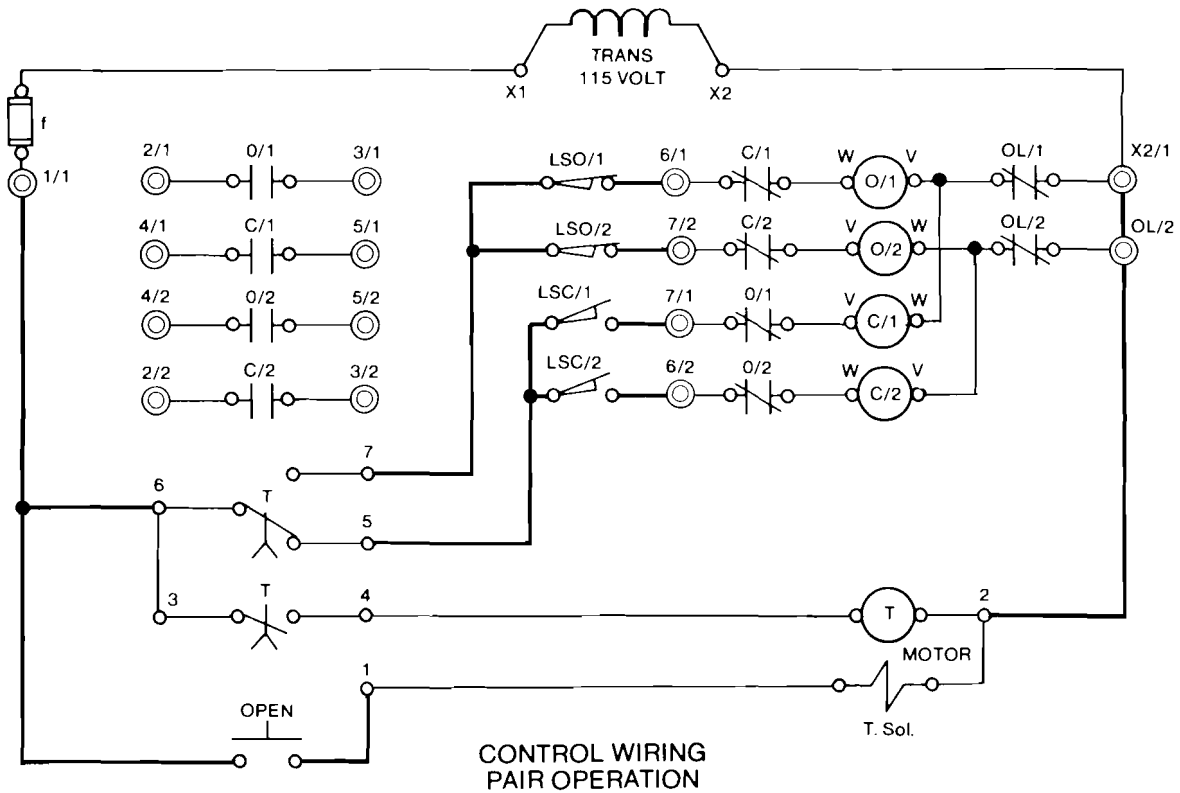
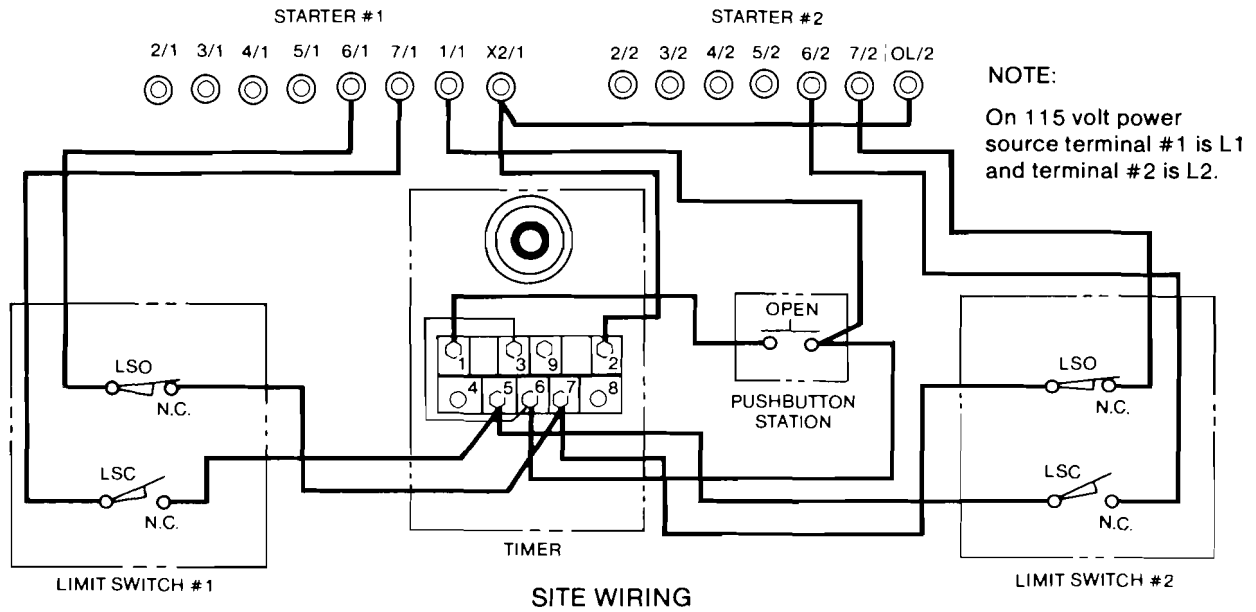
CONTROL WIRING PAIR OPERATION

WIRING DIAGRAMS FOR "OPEN"- "CLOSE"- "STOP" PUSHBUTTON CONTROL OF OPERATOR CIO CLASS "B" WIRING CIRCUIT

WIRING CODE
Solid Lines — Factory Wiring
Lighter Lines — Site Wiring

Additional control stations may be applied to this control circuit by wiring the "Stop" contacts of all stations in series with the "Stop" pushbutton shown. Wire "Open" and "Close" contacts in parallel with "Open" and "Close" pushbutton shown. Note that all "Stop" contacts must be wired in series in the wire from terminal number 1 prior to supplying "Open" or "Close" contacts.

REVERSING STARTER TERMINALS

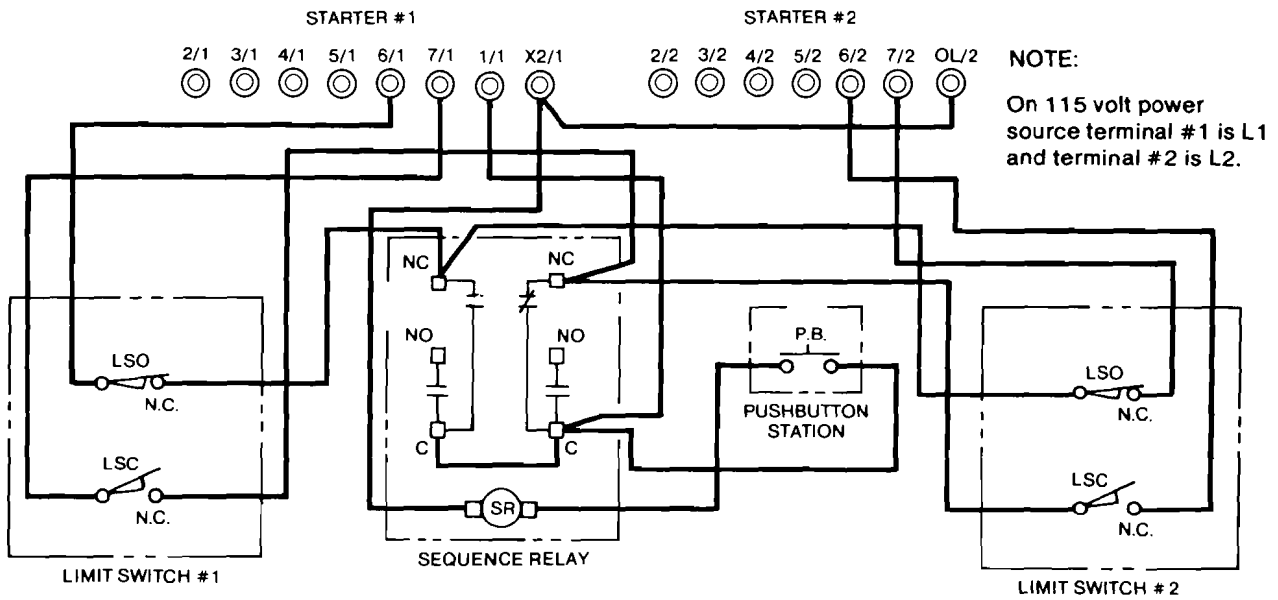


WIRING DIAGRAMS FOR MOMENTARY IMPULSE - TIMER
CONTROL OF OPERATOR
C/O CLASS "C" WIRING CIRCUIT

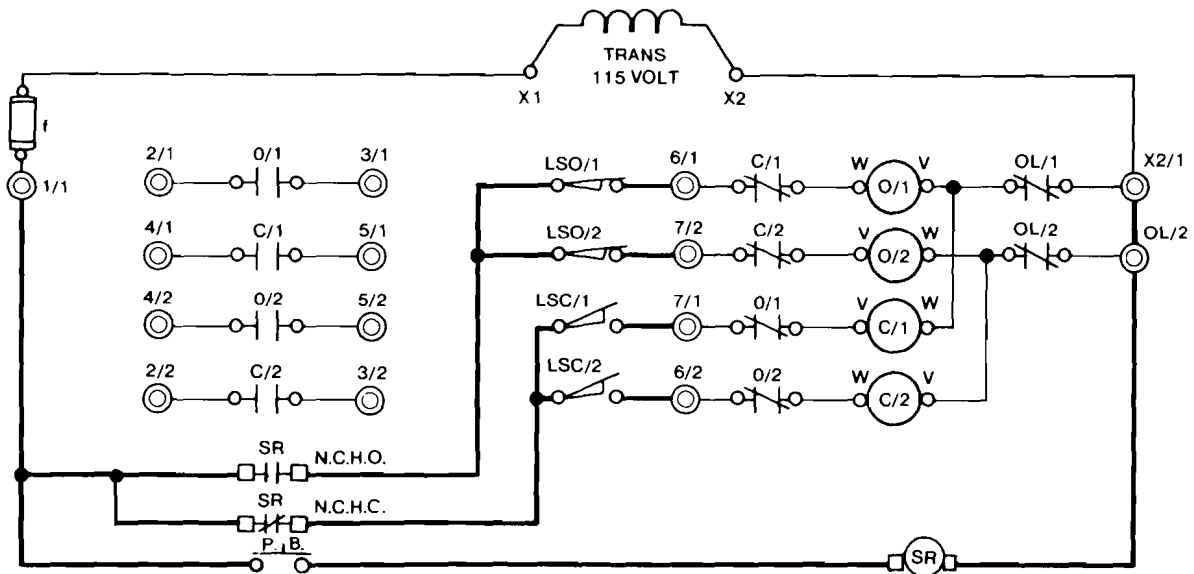
WIRING CODE
Solid Lines — Factory Wiring
Lighter Lines — Site Wiring

Additional single impulse devices may be applied to this control circuit by wiring their control contacts in parallel with the pushbutton contact shown.

REVERSING STARTER TERMINALS



SITE WIRING



CONTROL WIRING PAIR OPERATION

WIRING DIAGRAMS FOR MOMENTARY IMPULSE-SEQUENCE RELAY
CONTROL OF OPERATOR
C10 CLASS "D" WIRING CIRCUIT

WIRING CODE
Solid Lines — Factory Wiring
Lighter Lines — Site Wiring

Additional single impulse devices may be applied to this control circuit by wiring their control contacts in parallel with the pushbutton contact shown.

NOTES

NOTES

MAINTENANCE INFORMATION

(To Be Filled Out By User)

Operator Serial Number 15- _____ H.P. _____

Supplied on CIO Order Number _____

Power Supply _____ Volts _____ Hz _____ Phase _____

Installed At: _____ Date: _____

Notes: _____

GUARANTEE

If, within a period of one year from date of shipment, any part of a CIO Electric "Aut-o-doR" Operator is found defective due to poor materials or workmanship, new parts will be furnished free of charge F.O.B. manufacturer's plant, providing the equipment has been given normal and proper usage, lubrication, and maintenance and is still the property of the original purchaser and/or part of the original installation. THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND THE MANUFACTURER MAKES NO IMPLIED WARRANTY OF MERCHANTABILITY BEYOND THE EXPRESS TERMS HEREOF. MANUFACTURER'S LIABILITY FOR DAMAGES, INCLUDING CONSEQUENTIAL DAMAGES, RESULTING FROM ANY SUCH DEFECTIVE PRODUCT IS STRICTLY LIMITED TO THE DELIVERY OF NEW PARTS, AS SET FORTH ABOVE.



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