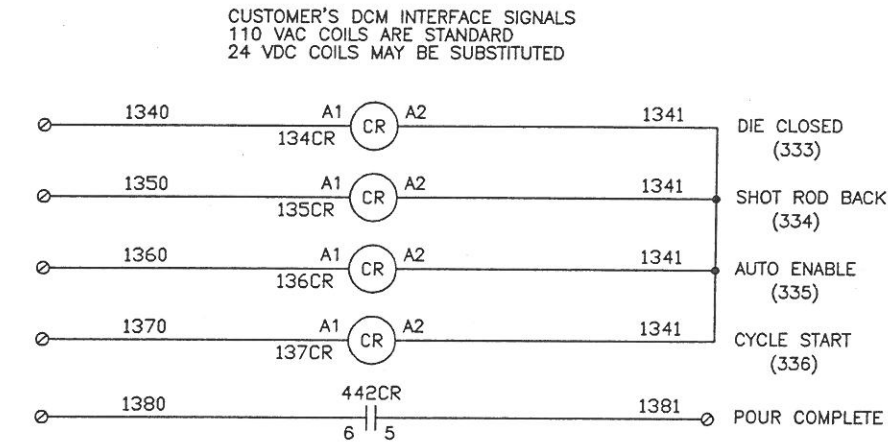
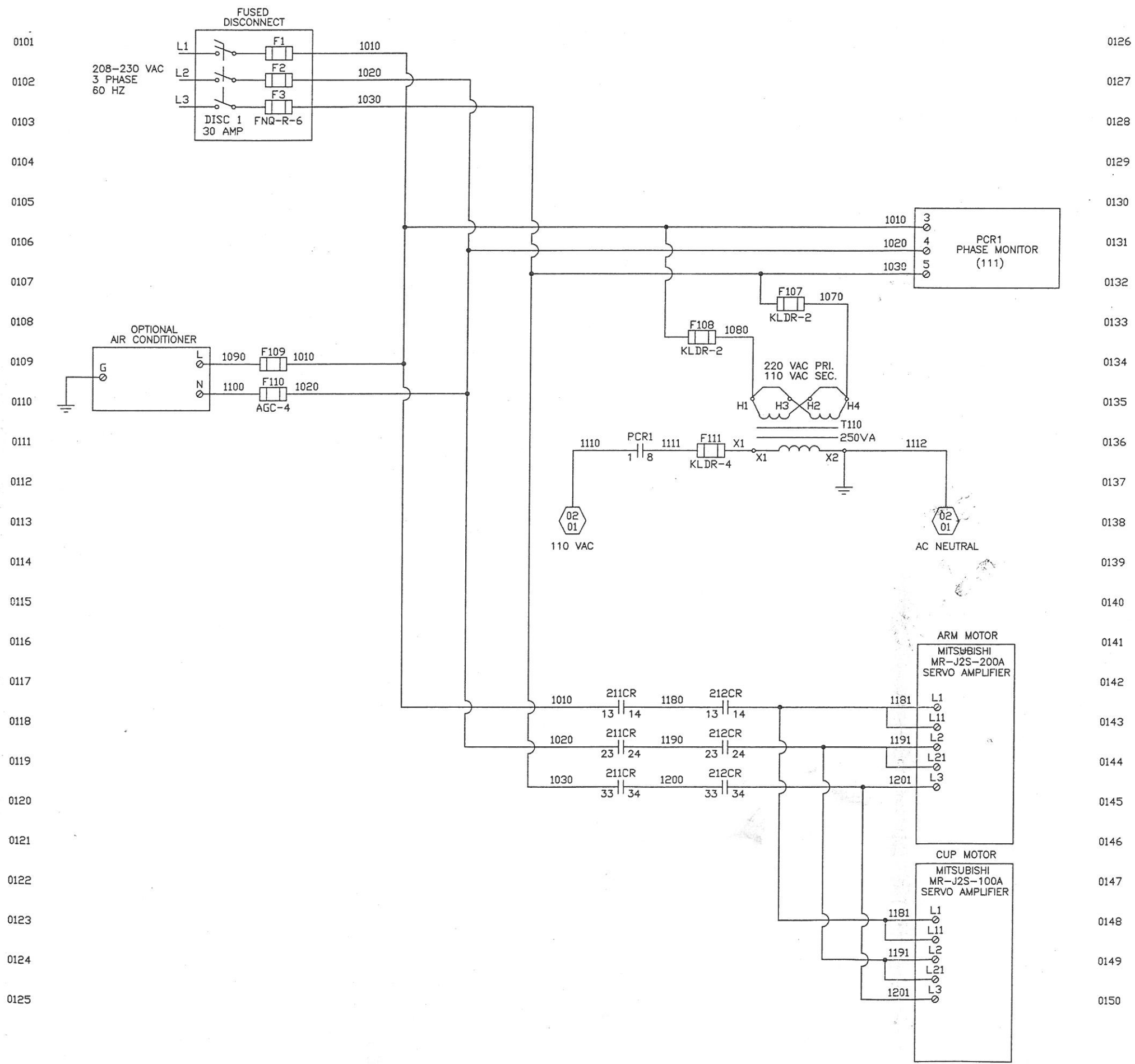


REVISIONS				
Rev	Zone	Description	Date	By
H	C4	Redrawn: Added safety circuit	4/26/06	GSG



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DRAWING

AutoCAD DRAWING
TRACING NOT TO BE
UP DATED MANUALLY

TOLERANCES—UNLESS
OTHERWISE SPECIFIED

ANGULAR ± 0° 30'

METRIC ENGLISH

X ±.5MM X ±.02

XX ±.10MM XX ±.01

XXX ±.01MM XXX ±.005

XXXX ±.0002

ADVANCE PRODUCTS CORPORATION
PRODUCTS FOR THE DIE CASTING INDUSTRY
2527 M-63 BENTON HARBOR, MI 49022

DRAWING TITLE:
ELECTRICAL SCHEMATIC FOR LADLER MODELS
SL650/SL1200/SL1500/SL2000/SL3000/SL4000
208 VAC, 110 VAC, CUSTOMER INTERFACE

CUSTOMER:
ADVANCE PRODUCTS

CAD CONTRACTOR:
AutoCAD Release
Computer File No.

DATE:
4/10/06

DRAWN BY:
GSG

CHECKED BY:

SCALE:

DRAWING NUMBER:
9889

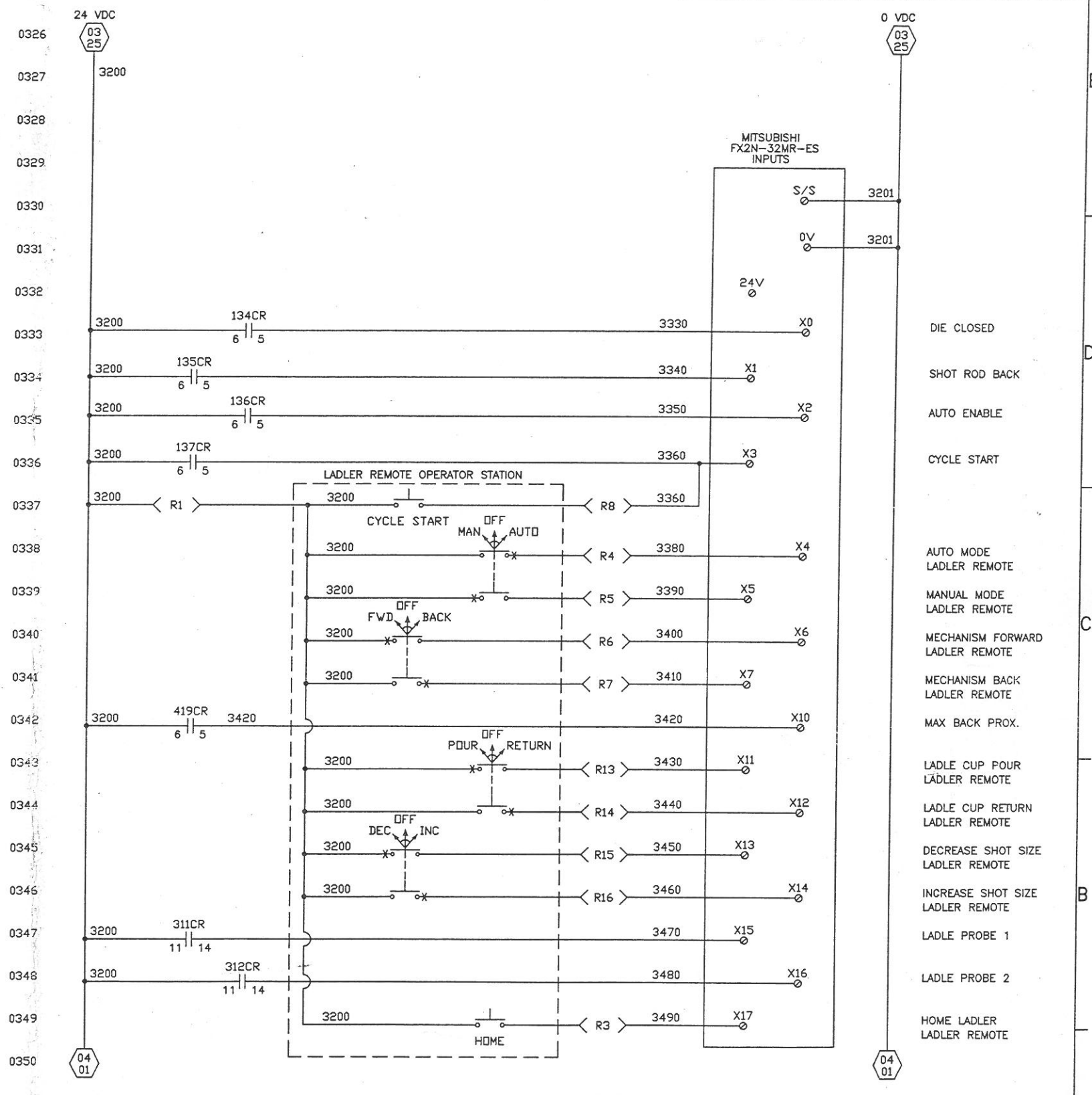
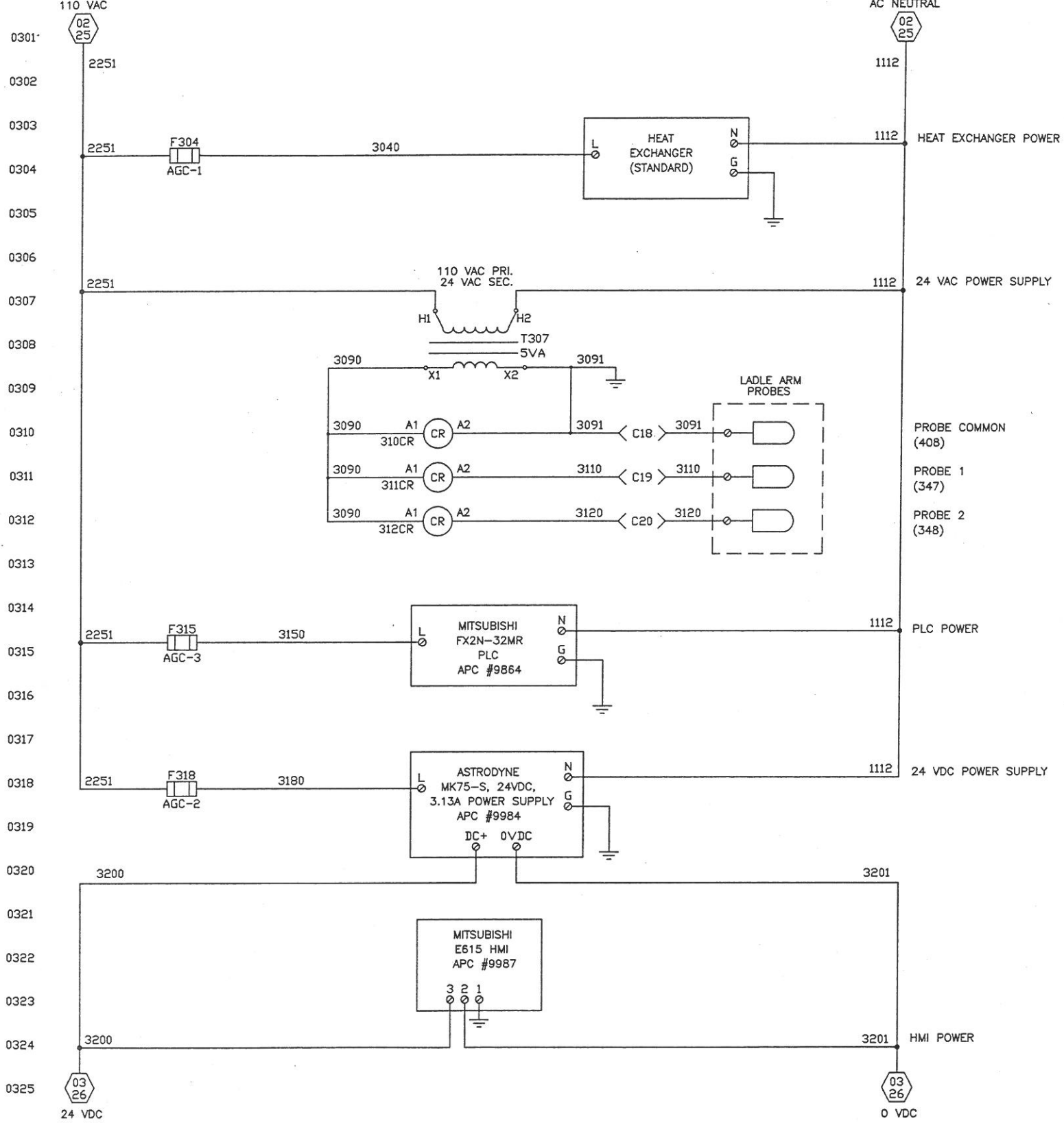
SHEET OF
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ADVANCE.

REVISIONS			
Rev	Zone	Description	By
H		Redrawn; Added safety circuit	GSG



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AutoCAD DRAWING TRACING NOT TO BE UP DATED MANUALLY

TOLERANCES-UNLESS OTHERWISE SPECIFIED

ANGULAR ± 0° 30'
METRIC
X ± .5MM
XX ± .10MM
XXX ± .01MM

ENGLISH

X ± .02
XX ± .01
XXX ± .005
XXXX ± .0002

CAD CONTRACTOR: DATE: 3-22-06

AutoCAD Release Computer File No. D

ADVANCE PRODUCTS CORPORATION

PRODUCTS FOR THE DIE CASTING INDUSTRY

2527 M-63 BENTON HARBOR, MI 49022

DRAWING TITLE: ELECTRICAL SCHEMATIC FOR LADLER MODELS SL650/SL1200/SL1500/SL2000/SL3000/SL4000 120 VAC, 24 VAC & 24 VDC, PLC INPUTS

CUSTOMER: ADVANCE PRODUCTS

DRAWN BY: GSG

CHECKED BY:

SCALE:

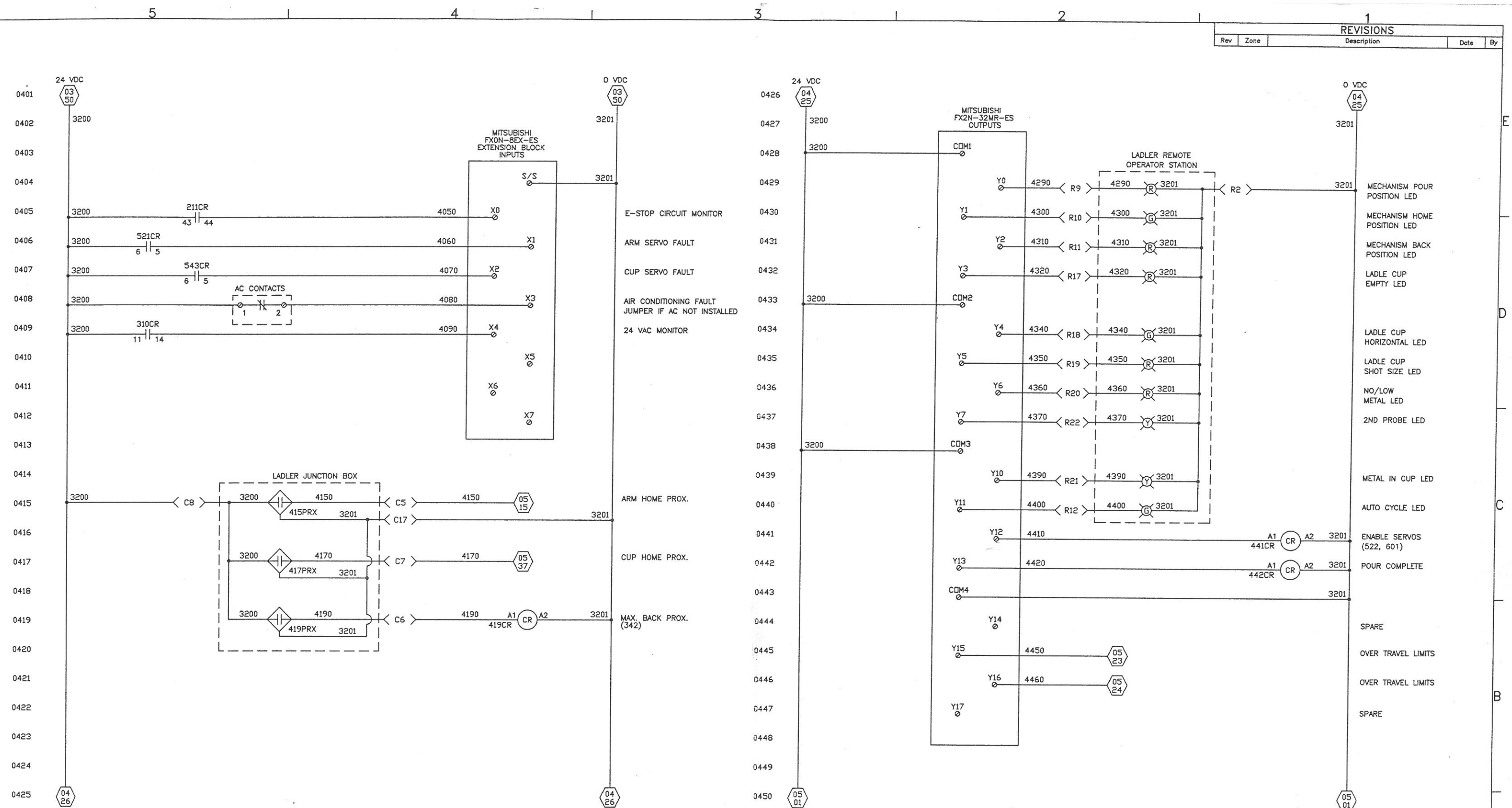
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SHEET OF: 3 11

REV. H

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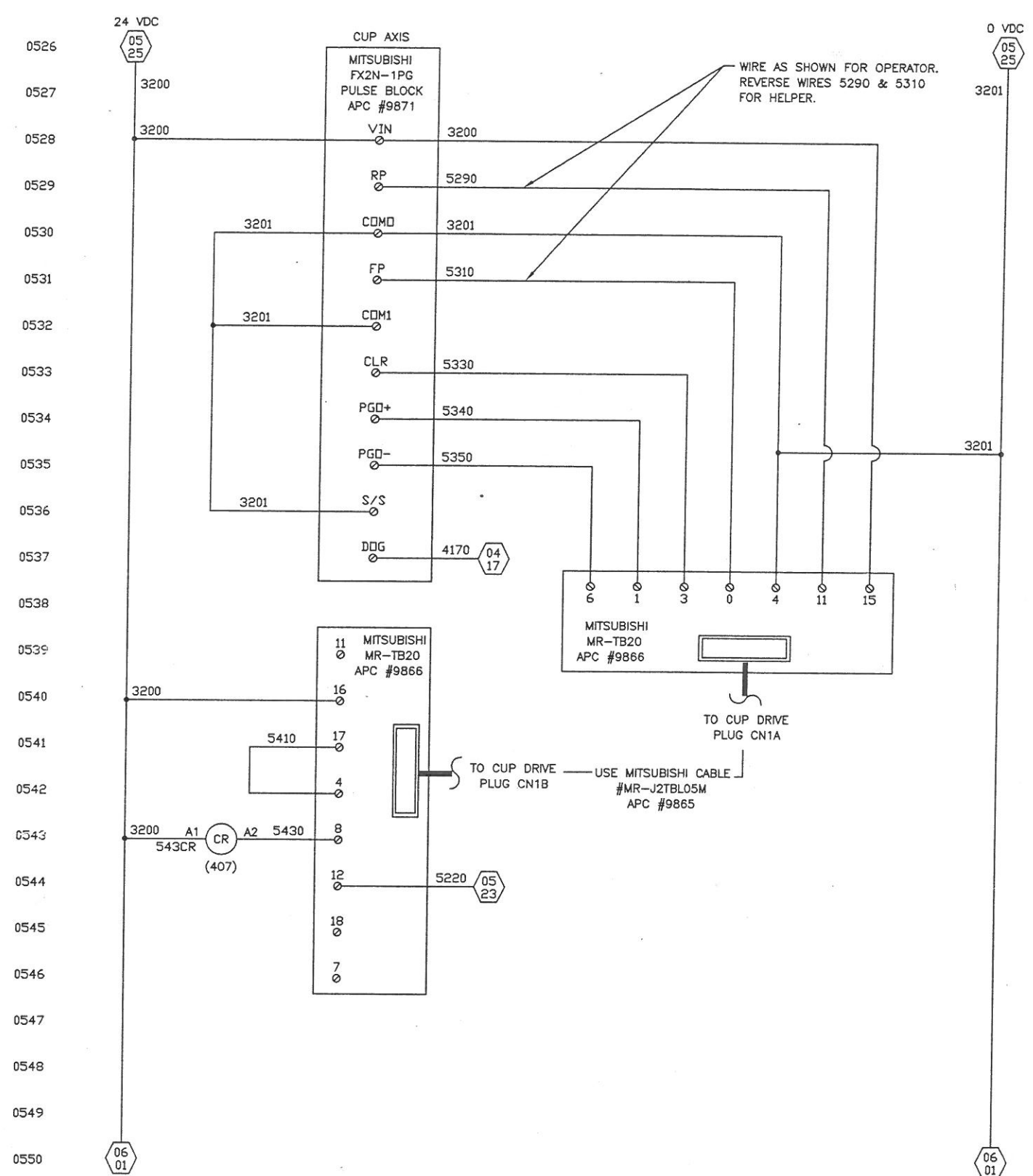
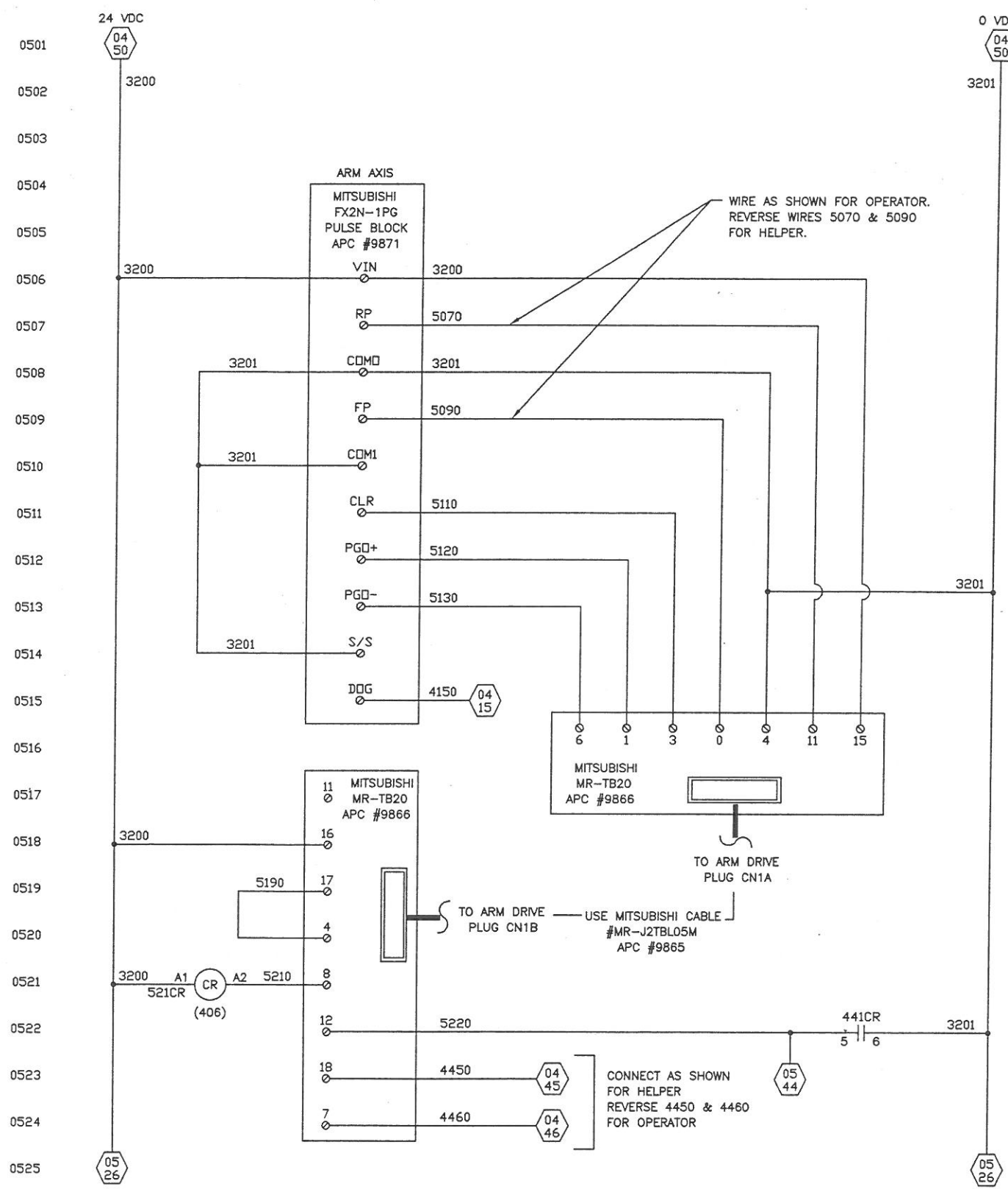
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AutoCAD DRAWING TRACING NOT TO BE UP DATED MANUALLY	DRAWING TITLE: ELECTRICAL SCHEMATIC FOR LADLER MODELS SL650/SL1200/SL1500/SL2000/SL3000/SL4000 24 VDC PLC INPUTS AND OUTPUTS			
TOLERANCES-UNLESS OTHERWISE SPECIFIED ANGULAR ± 0° 30'	CUSTOMER: ADVANCE PRODUCTS			
METRIC X ±.5MM XX ±.10MM XXX ±.01MM	DATE: 3-22-06	DRAWN BY: GSG	CHECKED BY:	SCALE:
ENGLISH X ±.02 XX ±.01 XXX ±.005 XXXX ±.0002	AutoCAD Release	DRAWING NUMBER: 9889	SHEET OF 4 11	REV. H
CAD CONTRACTOR:	Computer File No.	D		

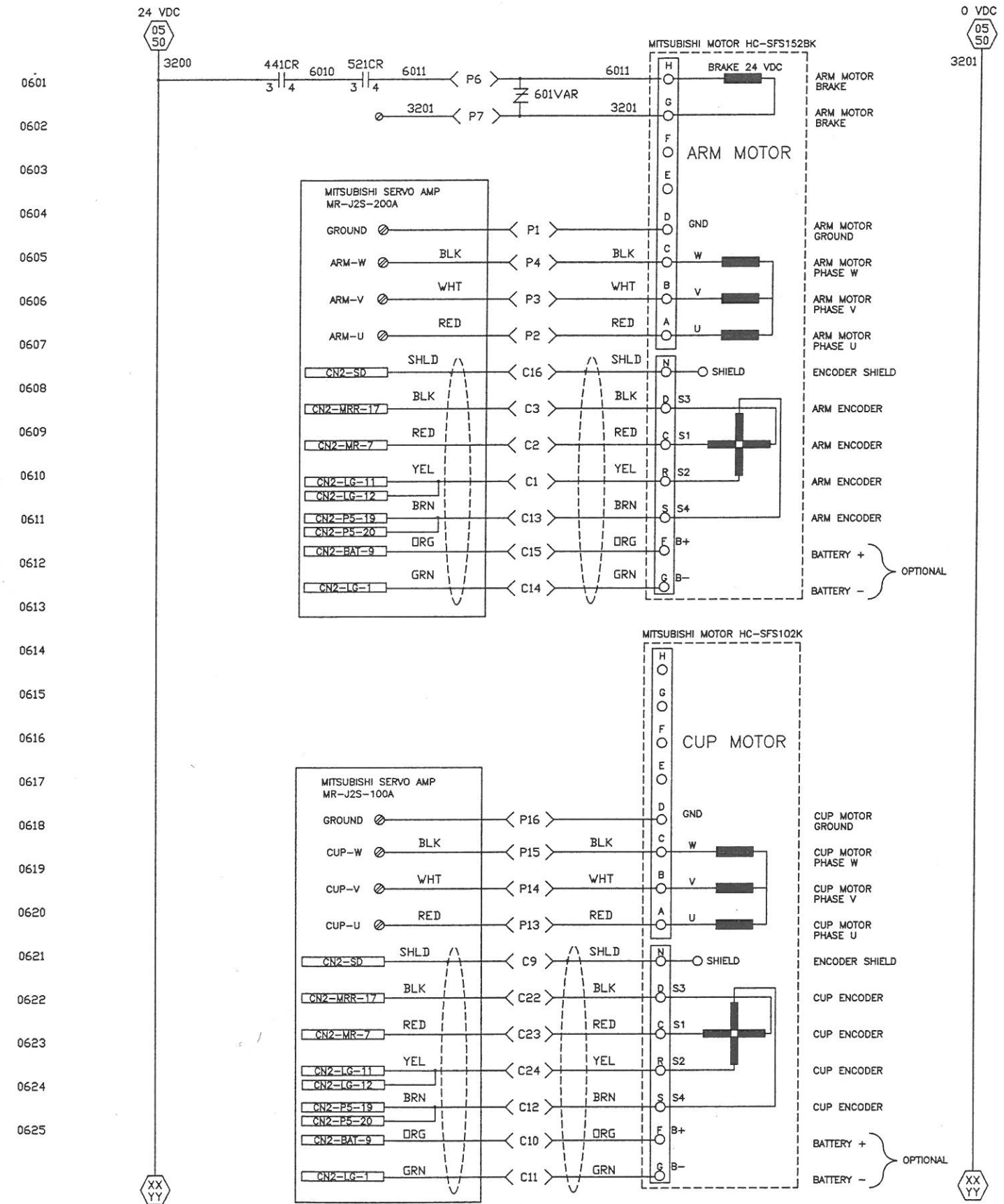


REVISIONS			
Rev	Zone	Description	By

DO NOT SCALE DRAWING		AutoCAD DRAWING		TRACING NOT TO BE UP DATED MANUALLY	
TOLERANCES-UNLESS OTHERWISE SPECIFIED		ANGULAR ± 0° 30'		METRIC	
X ± .5MM	X ± .02	X ± .01		X ± .005	
X ± .10MM	X ± .01	X ± .005		X ± .002	
X ± .01MM	X ± .005	X ± .002		X ± .001	
CAD CONTRACTOR:		DATE:		DRAWN BY:	
AutoCAD Release		3-22-06		GSG	
Computer File No.		DRAWING NUMBER:		SHEET OF REV.	
D		9889		5 11 H	

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LADLE CABLE CONNECTIONS

	(POWER)					
	PIN #	WIRE #	FUNCTION	PIN #	WIRE #	FUNCTION
	<P1>	GND	GROUND/SHIELD *	<P9>	*	SPARE
	<P2>	RED	ARM PHASE U	<P10>	*	SPARE
	<P3>	WHT	ARM PHASE V	<P11>	*	SPARE
	<P4>	BLK	ARM PHASE W	<P12>	*	SPARE #
	<P5>	*	SPARE	<P13>	RED	CUP PHASE U
	<P6>	6011	BRAKE	<P14>	WHT	CUP PHASE V
	<P7>	3201	BRAKE	<P15>	BLK	CUP PHASE W
	<P8>	*	SPARE	<P16>	GND	GROUND/SHIELD *
	(REMOTE)					
	PIN #	WIRE #	FUNCTION	PIN #	WIRE #	FUNCTION
	<R1>	3200	+24VDC	<R13>	3430	CUP POUR
	<R2>	3201	DC COMMON	<R14>	3440	CUP RETURN
	<R3>	3490	HOME	<R15>	3450	SHOT SIZE INCREASE
	<R4>	3390	MODE 'AUTO'	<R16>	3460	SHOT SIZE DECREASE
	<R5>	3380	MODE 'MANUAL'	<R17>	4320	CUP EMPTY LED
	<R6>	3400	ARM FORWARD	<R18>	4340	CUP HORIZONTAL LED
	<R7>	3410	ARM BACK	<R19>	4350	CUP SHOT SIZE LED
	<R8>	3360	AUTO CYCLE START	<R20>	4360	LOW/NO METAL LED
	<R9>	4290	POUR POSITION LED	<R21>	4390	METAL IN CUP LED
	<R10>	4300	HOME POSITION LED	<R22>	4370	2ND PROBE LED
	<R11>	4310	BACK POSITION LED	<R23>	NA	SPARE
	<R12>	4400	AUTO CYCLE LED	<R24>	NA	SPARE
	(CONTROL)					
	PIN #	WIRE #	FUNCTION	PIN #	WIRE #	FUNCTION
	<C1>	YEL	ARM ENCODER	<C13>	BRN	ARM ENCODER
	<C2>	RED	ARM ENCODER	<C14>	GRN	ARM BATTERY -
	<C3>	BLK	ARM ENCODER	<C15>	ORG	ARM BATTERY +
	<C4>	*	SPARE	<C16>	SHIELD	SHIELD(ARM)
	<C5>	4150	ARM HOME PROX.	<C17>	3201	VDC COMMON
	<C6>	4190	MAX BACK PROX.	<C18>	3091	METAL PROBE COMMON
	<C7>	4170	CUP HOME PROX.	<C19>	3110	METAL PROBE 1
	<C8>	3200	+24 VDC	<C20>	3120	METAL PROBE 2
	<C9>	SHIELD	SHIELD(CUP)	<C21>	*	SPARE
	<C10>	ORG	CUP BATTERY +	<C22>	BLK	CUP ENCODER
	<C11>	GRN	CUP BATTERY -	<C23>	RED	CUP ENCODER
	<C12>	BRN	CUP ENCODER	<C24>	YEL	CUP ENCODER

* CONNECTED FOR USE WITH SINGLE LATCH CABLES ONLY

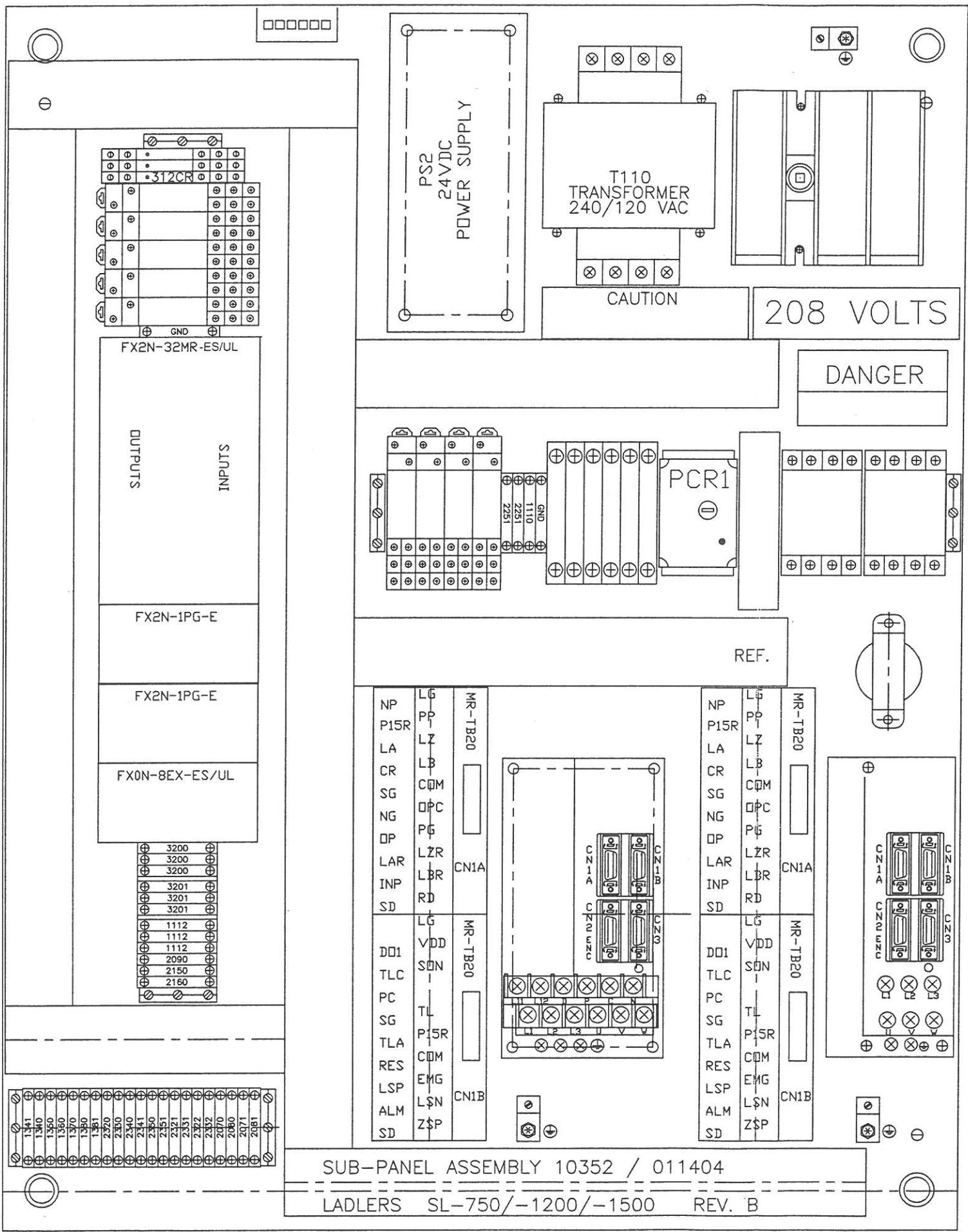
OPTIONAL

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AutoCAD DRAWING	PRODUCTS FOR THE DIE CASTING INDUSTRY	
TRACING NOT TO BE UP DATED MANUALLY	2527 M-63 BENTON HARBOR, MI 49022	
TOLERANCES—UNLESS OTHERWISE SPECIFIED	DRAWING TITLE	
ANGULAR ± 0° 30'	ELECTRICAL SCHEMATIC FOR LADLER MODELS	
METRIC	SL650/SL1200/SL1500/SL2000/SL3000/SL4000	
X ±.5MM	SERVO MOTOR/SERVO DRIVE CONNECTIONS	
XX ±.10MM	CUSTOMER:	
XXX ±.01MM	ADVANCE PRODUCTS	
XXXX ±.0002	DATE: 3-22-06	
CAD CONTRACTOR:	DRAWN BY: GSG	CHECKED BY:
AutoCAD Release	SHEET 6 OF 11	
Computer File No.	DRAWING NUMBER: 9889	REV. H

REVISIONS				
Rev	Zone	Description	Date	By
H		Redrawn; Added safety circuit	4/26/06	GSG

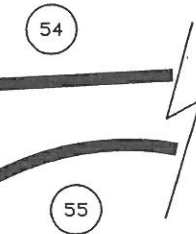
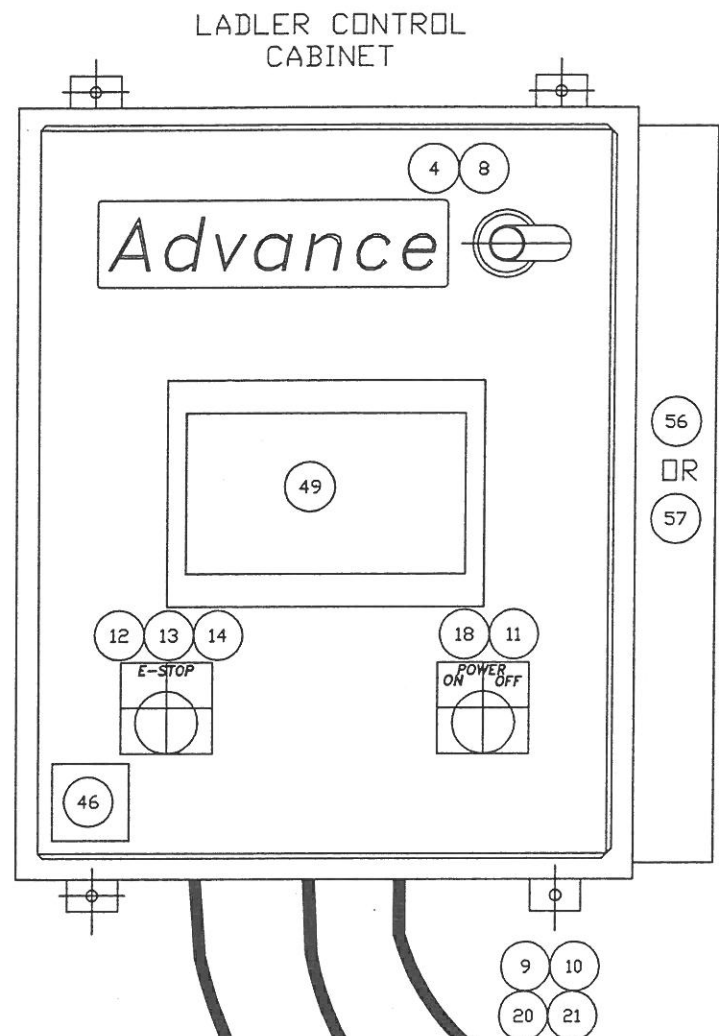


- NOTES:
- 1.) SUB-PANEL IS RITTAL PART No. E-30P24.
 - 2.) DEVICES (OR COMPONENTS) SHOWN ON THE DRAWING ARE FOR REFERENCE ONLY.
 - 3.) FOR FINAL DEVICE (OR COMPONENT) REQUIREMENTS, REFER TO CURRENT BILL-OF-MATERIAL.

REF.
REF.

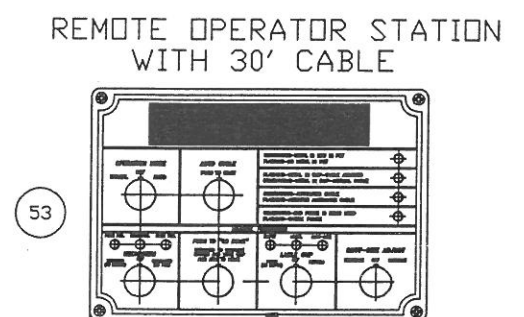
DO NOT SCALE DRAWING		ADVANCE PRODUCTS CORPORATION	
AutoCAD DRAWING TRACING NOT TO BE UP DATED MANUALLY		PRODUCTS FOR THE DIE CASTING INDUSTRY	
TOLERANCES-UNLESS OTHERWISE SPECIFIED		2527 M-63 BENTON HARBOR, MI 49022	
ANGULAR ± 0° 30'		DRAWING TITLE:	
METRIC: X ± .5MM X ± .10MM X ± .01MM		ELECTRICAL SCHEMATIC FOR LADLER MODELS SL650/SL1200/SL1500/SL2000/SL3000/SL4000	
ENGLISH: X ± .02 X ± .01 X ± .005 X ± .0002		MAIN ELECTRICAL ENCLOSURE PANEL LAYOUT	
CAD CONTRACTOR:		CUSTOMER:	
AutoCAD Release		ADVANCE PRODUCTS	
Computer File No.		DATE: 3-22-06	
		DRAWN BY: GSG	
		CHECKED BY:	
		SCALE:	
D		DRAWING NUMBER: 9889	
		SHEET OF 8 11	
		REV. H	

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POWER CABLE TO LADLER MECHANISM - 30' LONG

CONTROL CABLE TO LADLER MECHANISM - 30' LONG



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ANGULAR ± 0° 30'		METRIC		ENGLISH	
X ±.5MM		X ±.02		X ±.01	
XX ±.10MM		XX ±.005		XXX ±.002	
XXX ±.01MM		XXX ±.002		XXXX ±.002	
C/D CONTRACTOR: —		DATE: 5-19-06		DRAWN BY: GSG	
AutoCAD Release 2002		CHECKED BY: GSG		SCALE: N/A	
Computer File No. —		D		DRAWING NUMBER: 9889	
				SHEET 9 OF 11	
				REV. H	

REVISIONS				
Rev	Zone	Description	Date	By



ADVANCE PRODUCTS CORPORATION
PRODUCTS FOR THE DIE CASTING INDUSTRY
2527 M-63 BENTON HARBOR, MI 49022

DRAWING TITLE:
ELECTRICAL SCHEMATIC FOR LADLER MODELS
SL650/SL1200/SL3000/SL4000
CONTROL CABINET LAYOUT

CUSTOMER:
ADVANCE PRODUCTS

DATE: 5-19-06

DRAWN BY: GSG

CHECKED BY: GSG

SCALE: N/A

D

DRAWING NUMBER: 9889

SHEET 9 OF 11

REV. H

REVISIONS				
Rev	Zone	Description	Date	By
H		Redrawn; Added safety circuit	4/26/06	GSG

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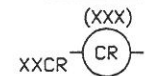
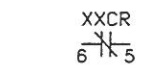
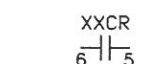
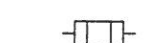
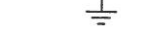
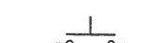
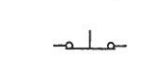
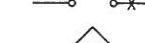
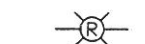
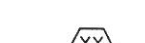
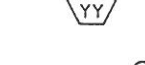
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	DRAWING TITLE: ELECTRICAL SCHEMATIC FOR LADLER MODELS SL650/SL1200/SL1500/SL2000/SL3000/SL4000 ELECTRICAL STOCKLIST			
	CUSTOMER: ADVANCE PRODUCTS			
	CAD CONTRACTOR:			
AutoCAD Release Computer File No.	DATE: 5-16-06	DRAWN BY: GSG	CHECKED BY:	SCALE:
D	DRAWING NUMBER: 9889	SHEET 10	OF 11	REV. H

REVISIONS				
Rev	Zone	Description	Date	By
H		Redrawn; added safety circuit	4/26/06	GSG

LEGEND

SYMBOL

DESCRIPTION

	CONTROL RELAY COIL. XXCR INDICATES THE LINE NUMBER WHERE THE COIL IS LOCATED. (XXX) LOCATED EITHER ABOVE COIL SYMBOL OR CONTAINED IN LINE COMMENTS INDICATES LINE NUMBERS WHERE THE CONTACTS ARE LOCATED.
	CONTROL RELAY NORMALLY CLOSED CONTACTS. XXCR INDICATES THE LINE NUMBER WHERE THE COIL IS LOCATED. 5 & 6 ARE RELAY TERMINAL NUMBERS.
	CONTROL RELAY NORMALLY OPEN CONTACTS. XXCR INDICATES THE LINE NUMBER WHERE THE COIL IS LOCATED. 5 & 6 ARE RELAY TERMINAL NUMBERS.
	FUSE
	VARISTOR (VARIABLE RESISTOR)
	GROUND
	WIRE TERMINAL
	CABLE CONNECTOR PIN NUMBER. CXX INDICATES CONTROL CABLE, PXX INDICATES POWER CABLE, RXX INDICATES REMOTE CABLE.
	NORMALLY OPEN PUSHBUTTON
	NORMALLY CLOSED PUSHBUTTON
	3 POSITION SELECTOR SWITCH. X INDICATES CIRCUIT THAT IS ACTIVATED WHEN SWITCH IS IN SHOWN POSTION.
	PROXIMITY SENSOR
	INDICATOR LIGHT. "R" INDICATES COLOR - RED IN THIS CASE.
	LINE REFERENCE. INDICATES THAT THE WIRE CONTINUES AT THE INDICATED REFERENCE LINE.
	JUMPER
	LINE CROSSES WITH NO TERMINATION
	LINE TERMINATION
	TRANSFORMER

DEVICES SHOWN WITHIN DASHED BOX ARE PHYSICALLY LOCATED OUTSIDE OF THE CONTROL CABINET.

NUMBERING

WIRES ARE NUMBERED BY THE LINE NUMBER OF ORIGIN. FOR EXAMPLE, WIRES ORIGINATING ON LINE 101 WILL BE NUMBERED SEQUENTIALLY FROM LEFT TO RIGHT AS FOLLOWS: 1010, 1011, 1012, 1013. THE FIRST NUMBER OF THE FOUR DIGITS, INDICATES SCHEMATIC PAGE NUMBER. SIMILARLY, DEVICES ARE NUMBERED BY THEIR SCHEMATIC LINE NUMBER (SEE CR FOR EXAMPLE)

WIRE COLOR CODE (Wires not contained in multi-conductor cables)

BLACK	HIGH VOLTAGE - 208 VAC OR HIGHER
RED	110 VAC CONTROL VOLTAGE
YELLOW	24 VAC CONTROL VOLTAGE
BLUE	24 VDC CONTROL VOLTAGE
WHITE	AC NEUTRAL
GREEN	GROUND

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TOLERANCES—UNLESS OTHERWISE SPECIFIED ANGULAR ± 0° 30' METRIC ENGLISH X ±.5MM X ±.02 XX ±.10MM XX ±.01 XXX ±.01MM XXX ±.005 XXXX ±.0002	DRAWING TITLE ELECTRICAL SCHEMATIC FOR LADLER MODELS SL650/SL1200/SL1500/SL2000/SL3000/SL4000 LEGEND	
CAD CONTRACTOR:	DATE: 3-22-06	CHECKED BY: GSG
AutoCAD Release Computer File No.	DRAWING NUMBER: 9889	SHEET OF 11 11