

# Appendix I

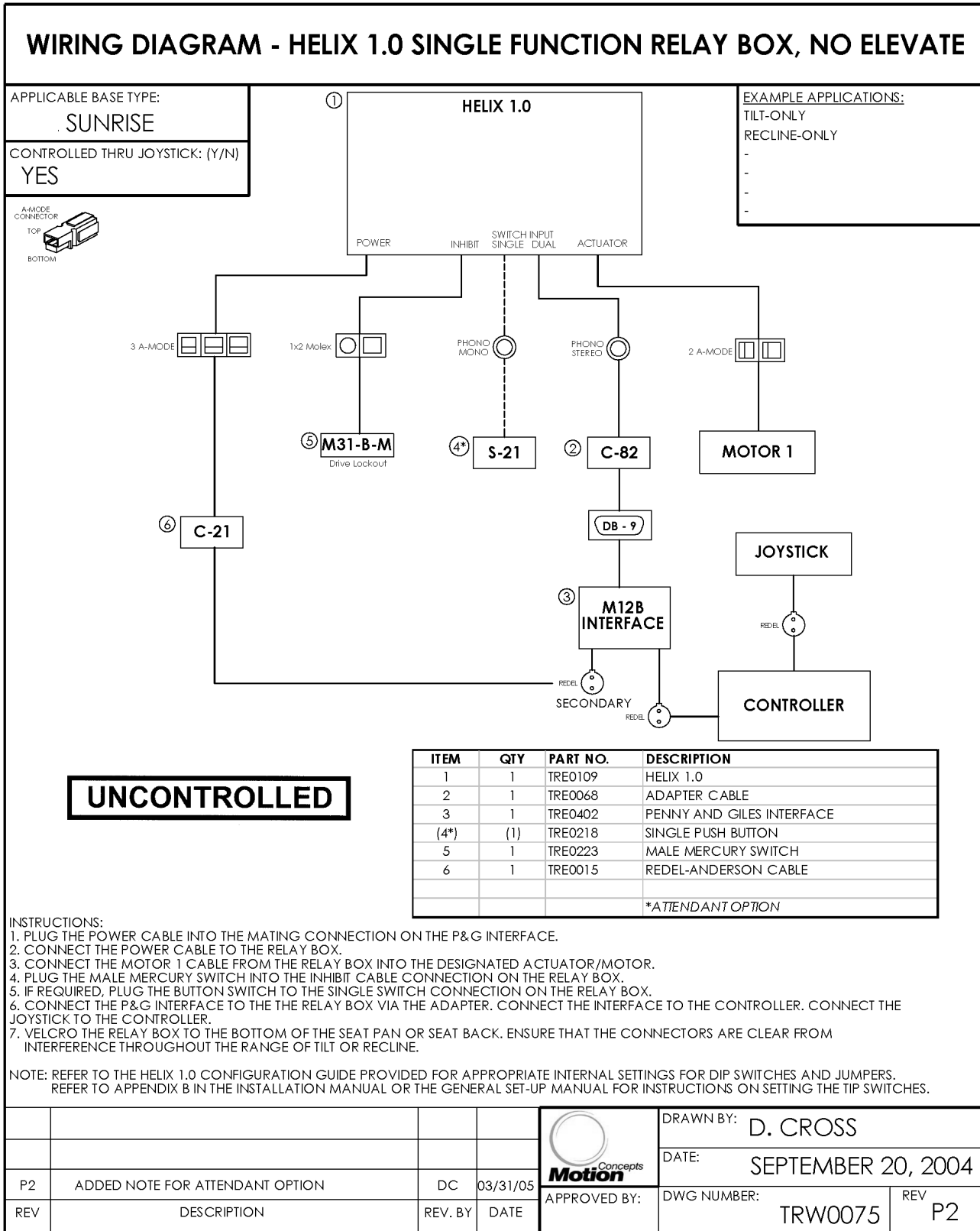
## **Sample Wiring Diagrams:**

- i) Single Function -Helix 1.0
- ii) Single Function (enhanced)- M17/27
- iii) Dual Function- Helix 2.0
- iv) Dual Function (enhanced)- M14/33
- v) Multi Function (4 motors)- Helix 5.0
- vi) Multi Function (5 motors)- Helix 5.5
- vii) M51B Hercules Power Booster- Invacare
- viii) M51B Hercules Power Booster- PG Electronics

# Appendix I. - Wiring Diagrams



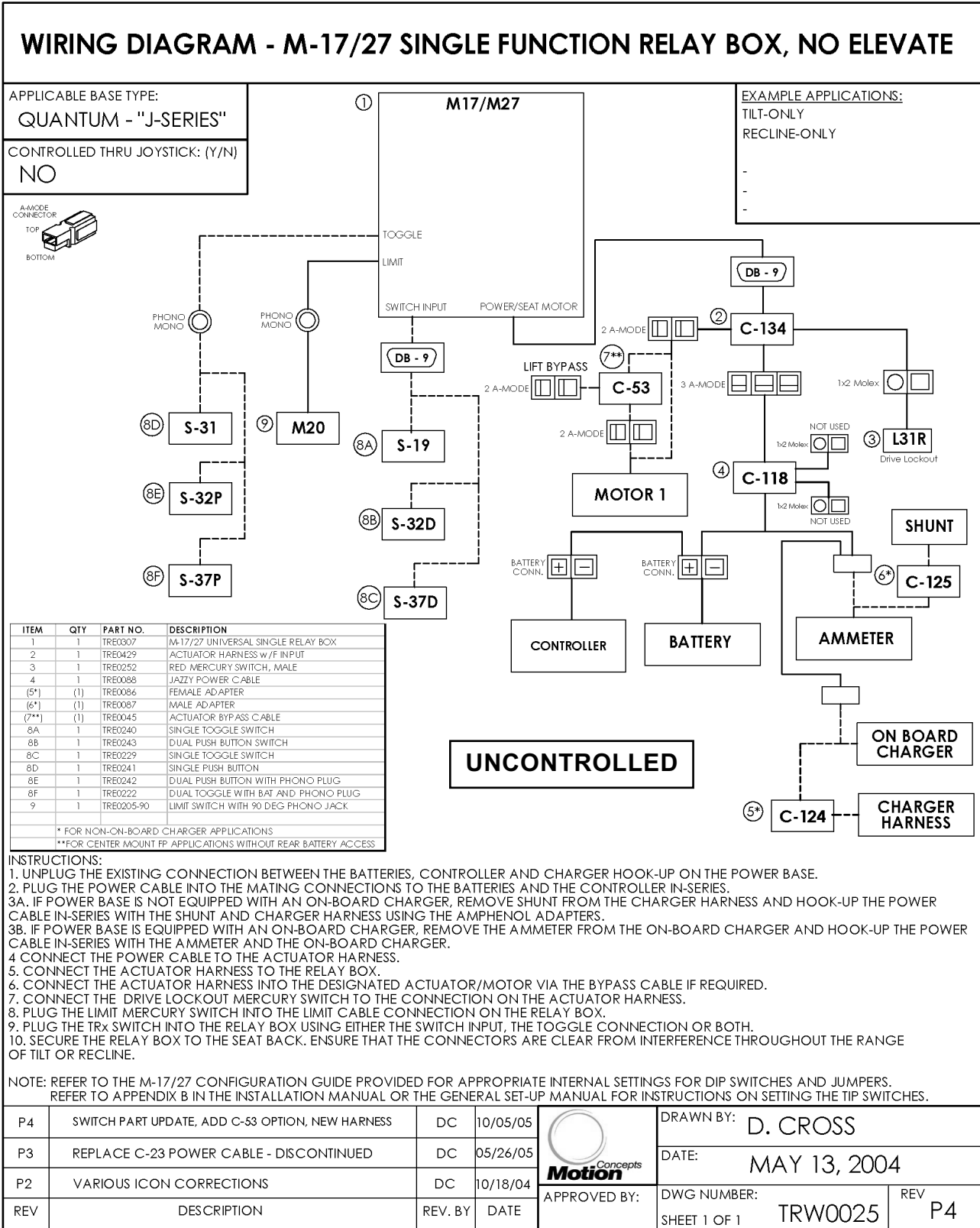
## i) Helix 1.0- Single Function for Quickie/Sunrise (thru Joystick)



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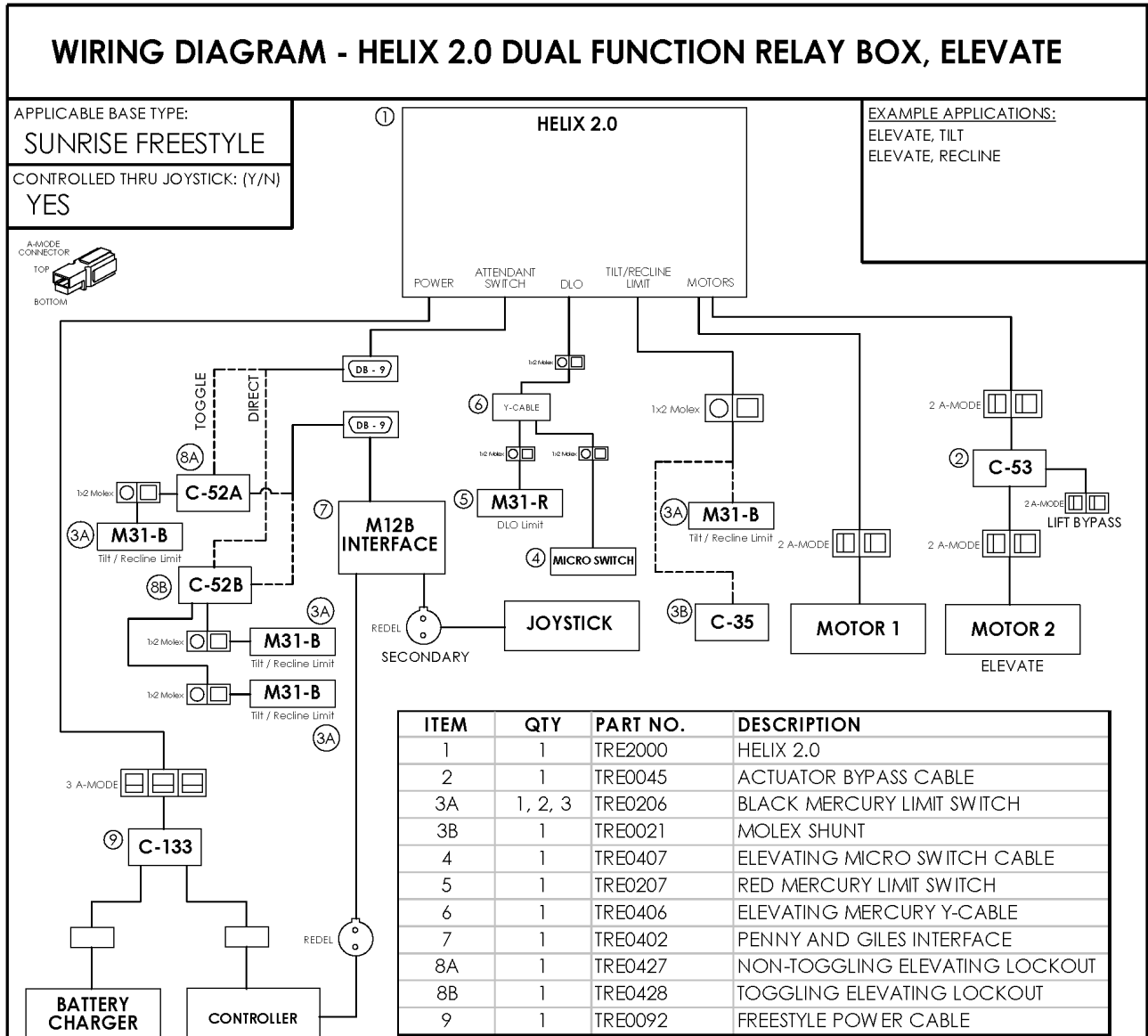
## ii) M17/27 Single Function for Pride "Jazzy Series" (No Joystick)



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## iii) Helix 2.0- Dual Function Quickie Freestyle (w/ Elevate, No Joystick)



- INSTRUCTIONS:**
1. PLUG THE POWER CABLE INTO THE MATING CONNECTION ON THE CONTROLLER.
  2. PLUG THE POWER CABLE INTO THE MATING CONNECTION ON THE CHARGER.
  3. CONNECT THE POWER CABLE TO THE RELAY BOX.
  4. CONNECT THE MOTOR 1 AND MOTOR 2 CABLES FROM THE RELAY BOX INTO THEIR DESIGNATED ACTUATORS/MOTORS. USE BYPASS CABLE FOR ELEVATE ACTUATOR
  5. CONNECT THE RED MERCURY SWITCH AND ELEVATING MICROSWITCH TO THE RED CONNECTION ON THE RELAY BOX USING THE Y-CABLE.
  6. PLUG THE BLACK MERCURY SWITCH INTO THE BLACK CABLE CONNECTION ON THE RELAY BOX.  
NOTE: IF LIMIT SWITCH IS NOT USED, A SHORTING SHUNT MUST BE USED.
  7. CONNECT THE P&G INTERFACE TO THE RELAY BOX VIA A TOGGLING OR NON-TOGGLING INTERLOCK CABLE WITH APPROPRIATE LIMIT SWITCHES. CONNECT THE INTERFACE TO THE CONTROLLER. CONNECT THE JOYSTICK TO THE INTERFACE.
  8. SECURE THE RELAY BOX TO THE BOTTOM OF THE SEAT PAN OR SEAT BACK. ENSURE THAT THE CONNECTORS ARE CLEAR FROM INTERFERENCE THROUGHOUT THE RANGE OF TILT AND RECLINE.

UNCONTROLLED

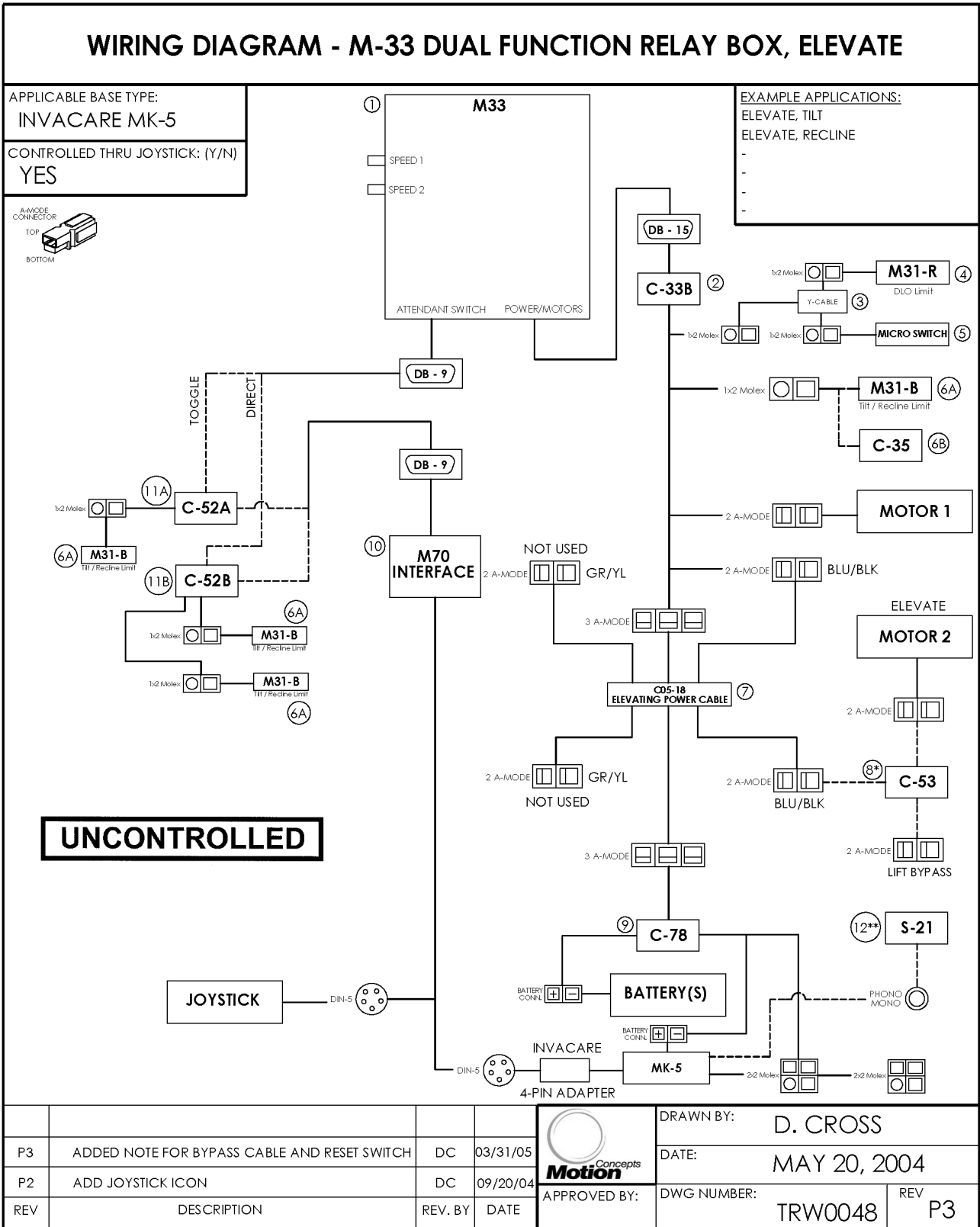
NOTE: REFER TO THE HELIX 2.0 CONFIGURATION GUIDE PROVIDED FOR APPROPRIATE INTERNAL SETTINGS FOR DIP SWITCHES AND JUMPERS.  
REFER TO APPENDIX B IN THE INSTALLATION MANUAL OR THE GENERAL SET-UP MANUAL FOR INSTRUCTIONS ON SETTING THE TIP SWITCHES.

					DRAWN BY: <b>D. CROSS</b>
P3	REPLACE C-87 POWER CABLE - DISCONTINUED	DC	08/03/05		DATE: <b>SEPTEMBER 20, 2004</b>
P2	UPDATE BOM QUANTITIES FOR ITEM 3A	DC	03/31/05		DWG NUMBER: <b>TRW0073</b>
REV	DESCRIPTION	REV. BY	DATE		REV <b>P3</b>

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## iv) M14/33- Dual Function for Invacare MK5 (thru Joystick, w/ Elevate) (p. 1 of 2)



# Appendix I. - Wiring Diagrams



## iv) M14/33- Dual Function for Invacare MK5 (thru Joystick, w/ Elevate) (p. 2 of 2)

### WIRING DIAGRAM - M-33 DUAL FUNCTION RELAY BOX, ELEVATE

APPLICABLE BASE TYPE:  
INVACARE MK-5

CONTROLLED THRU JOYSTICK: (Y/N)  
YES

ITEM	QTY	PART NO.	DESCRIPTION
1	1	TRE0208	WIZARD DUAL RELAY BOX
2	1	TRE0005-18	ACTUATOR CABLE DUAL MODE
3	1	TRE0406	ELEVATING MERCURY Y-CABLE
4	1	TRE0207	RED MERCURY LIMIT SWITCH
5	1	TRE0407	ELEVATING MICRO SWITCH CABLE
6A	1, 2, 3	TRE0206	BLACK MERCURY LIMIT SWITCH
6B	1	TRE0021	MOLEX SHUNT
7	1	TRE0405-18	ELEVATING POWER CABLE
(8*)	(1)	TRE0045	ACTUATOR BYPASS CABLE
9	1	TRE0066	POWER CABLE PICK-UP
10	1	TRE0232	SINGLE CHANNEL INTERFACE
11A	1	TRE0427	NON-TOGGLING ELEVATING LOCKOUT
11B	1	TRE0428	TOGGLING ELEVATING LOCKOUT
(12**)	(1)	TRE0218	SINGLE PUSH BUTTON
			*NOT REQUIRED FOR 3G STORM BASE
			**FOR MPJ JOYSTICK ONLY - SEE LINE 11

**INSTRUCTIONS:**

1. PLUG THE POWER CABLE INTO THE MATING CONNECTION ON THE BASE CONTROLLER.
2. PLUG THE POWER CABLE INTO THE MATING CONNECTIONS ON THE BATTERY(S).
3. CONNECT THE POWER CABLE TO THE ELEVATING POWER CABLE EXTENSION.
4. CONNECT THE ELEVATING POWER CABLE EXTENSION TO THE ACTUATOR HARNESS - POWER CONNECTION (3-MODE) AND ACTUATOR CONNECTION (BLU/BLK 2-MODE) - GR/YL 2 MODE NOT USED.
5. CONNECT THE ACTUATOR HARNESS TO THE RELAY BOX.
6. CONNECT THE ELEVATING POWER CABLE TO THE ELEVATING ACTUATOR - (BLU/BLK 2-MODE) VIA THE BYPASS CABLE (IF APPLICABLE).
7. CONNECT THE ACTUATOR HARNESS TO THE TILT OR RECLINE ACTUATOR.
8. CONNECT THE RED MERCURY SWITCH AND ELEVATING MICROSWITCH TO THE ACTUATOR HARNESS USING THE Y-CABLE
9. CONNECT THE BLACK MERCURY SWITCH TO THE ACTUATOR HARNESS.
- NOTE: IF LIMIT SWITCH IS NOT USED, A SHORTING SHUNT MUST BE USED.
10. CONNECT THE INTERFACE TO THE RELAY BOX VIA A TOGGLING OR NON-TOGGLING INTERLOCK CABLE WITH APPROPRIATE LIMIT SWITCHES.
11. CONNECT THE INTERFACE TO THE MATING CONNECTION ON THE BASE CONTROLLER. CONNECT THE JOYSTICK TO THE INTERFACE.
- NOTE: FOR MPJ JOYSTICK, ECU RESET SWITCH IS TO BE SUPPLIED UNLESS OTHERWISE SPECIFIED.
12. VELCRO THE RELAY BOX TO THE SEAT BACK. ENSURE THAT THE CONNECTORS ARE CLEAR FROM INTERFERENCE THROUGHOUT THE RANGE OF TILT OR RECLINE.

NOTE: REFER TO THE M-33 CONFIGURATION GUIDE PROVIDED FOR APPROPRIATE INTERNAL SETTINGS FOR DIP SWITCHES AND JUMPERS. REFER TO APPENDIX B IN THE INSTALLATION MANUAL OR THE GENERAL SET-UP MANUAL FOR INSTRUCTIONS ON SETTING THE TIP SWITCHES.

DWG NUMBER:

TRW0048

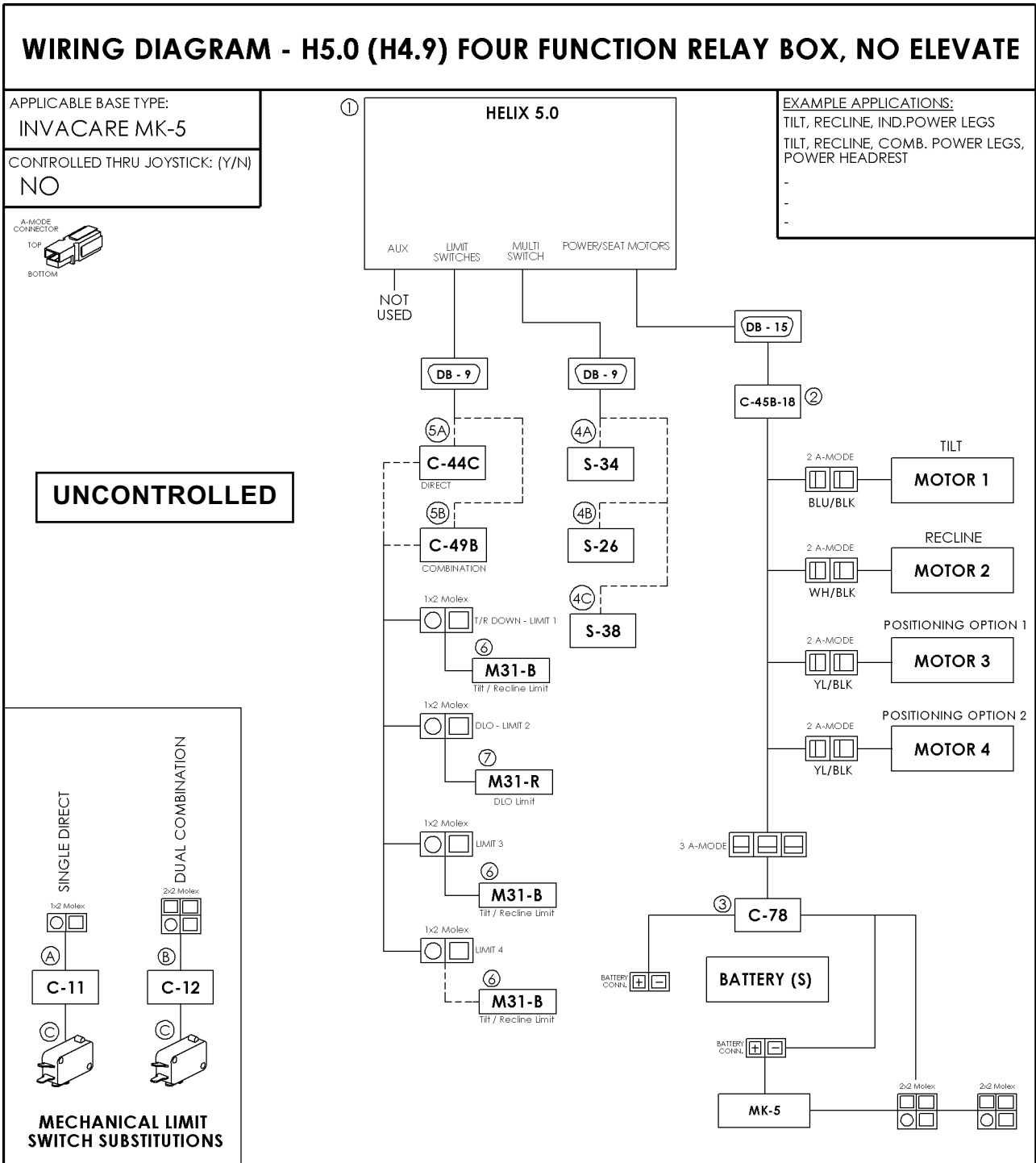
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## v) Helix 5.0 (4 motors) for Invacare MK5 electronics- (No Joystick) (p. 1 of 2)



					DRAWN BY: D. CROSS
				APPROVED BY:	DATE: APRIL 25, 2005
REV	DESCRIPTION	REV. BY	DATE		DWG NUMBER: TRW0096
					REV P1

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## v) Helix 5.0 (4 motors) for Invacare MK5 electronics- (No Joystick) (p. 2 of 2)

### WIRING DIAGRAM - H5.0 (H4.9) FOUR FUNCTION RELAY BOX, NO ELEVATE

APPLICABLE BASE TYPE:

INVACARE MK-5

CONTROLLED THRU JOYSTICK: (Y/N)

NO

ITEM	QTY	PART NO.	DESCRIPTION
1	1	TRE5000	HELIX 5.0
2	1	TRE0033-18	POWER/MOTOR CABLE
3	1	TRE0066	POWER CABLE PICK-UP
4A	1	TRE0245	QUAD PUSH BUTTON SWITCH
4B	1	TRE0254	4-WAY TOGGLE SWITCH
4C	1	TRE0246	DUAL TOGGLE SWITCH
5A	1	TRE0034	LIMIT SWITCH HARNESS (4 LIMITS)
5B	1	TRE0037-18	LIMIT SWITCH HARNESS
6	2,(3)	TRE0206	BLACK MERCURY LIMIT SWITCH
7	1	TRE0207	RED MERCURY LIMIT SWITCH
(A)	(AS REQ)	TRE0030-18	MICROSWITCH HARNESS, SINGLE LOCKOUT
(B)	(AS REQ)	TRE0031-18	MICROSWITCH HARNESS, DUAL LOCKOUT
(C)	(AS REQ)	TRE0311	MICROSWITCH

**INSTRUCTIONS:**

1. PLUG THE POWER CABLE INTO THE MATING CONNECTION ON THE BASE CONTROLLER.
2. PLUG THE POWER CABLE INTO THE MATING CONNECTIONS ON THE BATTERY(S).
3. CONNECT THE POWER CABLE TO THE ACTUATOR HARNESS.
4. CONNECT THE ACTUATOR HARNESS TO THE RELAY BOX.
5. CONNECT THE MOTOR 1, MOTOR 2, MOTOR 3, AND MOTOR 4 CABLES FROM THE ACTUATOR HARNESS INTO THEIR DESIGNATED ACTUATORS/MOTORS.
6. CONNECT THE LIMIT SWITCH HARNESS TO THE RELAY BOX. DEPENDING ON APPLICATION, DIFFERENT LIMIT COMBINATIONS CAN BE USED
7. CONNECT THE LIMIT SWITCHES THE HARNESS USING THE RED LIMIT SWITCH FOR THE DRIVE LOCKOUT. IF MECHANICAL LIMIT SWITCHES ARE REQUIRED USE THE APPROPRIATE MICROSWITCH HARNESS TO CONNECT A SUBSTITUTE MICROSWITCH(S)
8. CONNECT THE TRX SWITCH TO THE RELAY BOX.
9. RELAY BOX IS MOUNTED TO THE SEAT BACK. ENSURE THAT THE CONNECTORS ARE CLEAR FROM INTERFERENCE THROUGHOUT THE RANGE OF TILT OR RECLINE.

NOTE: REFER TO THE H5.0 CONFIGURATION GUIDE PROVIDED FOR APPROPRIATE INTERNAL SETTINGS FOR DIP SWITCHES AND JUMPERS. REFER TO THE INSTALLATION MANUAL OR THE GENERAL SET-UP MANUAL FOR INSTRUCTIONS ON SETTING THE TIP SWITCHES.

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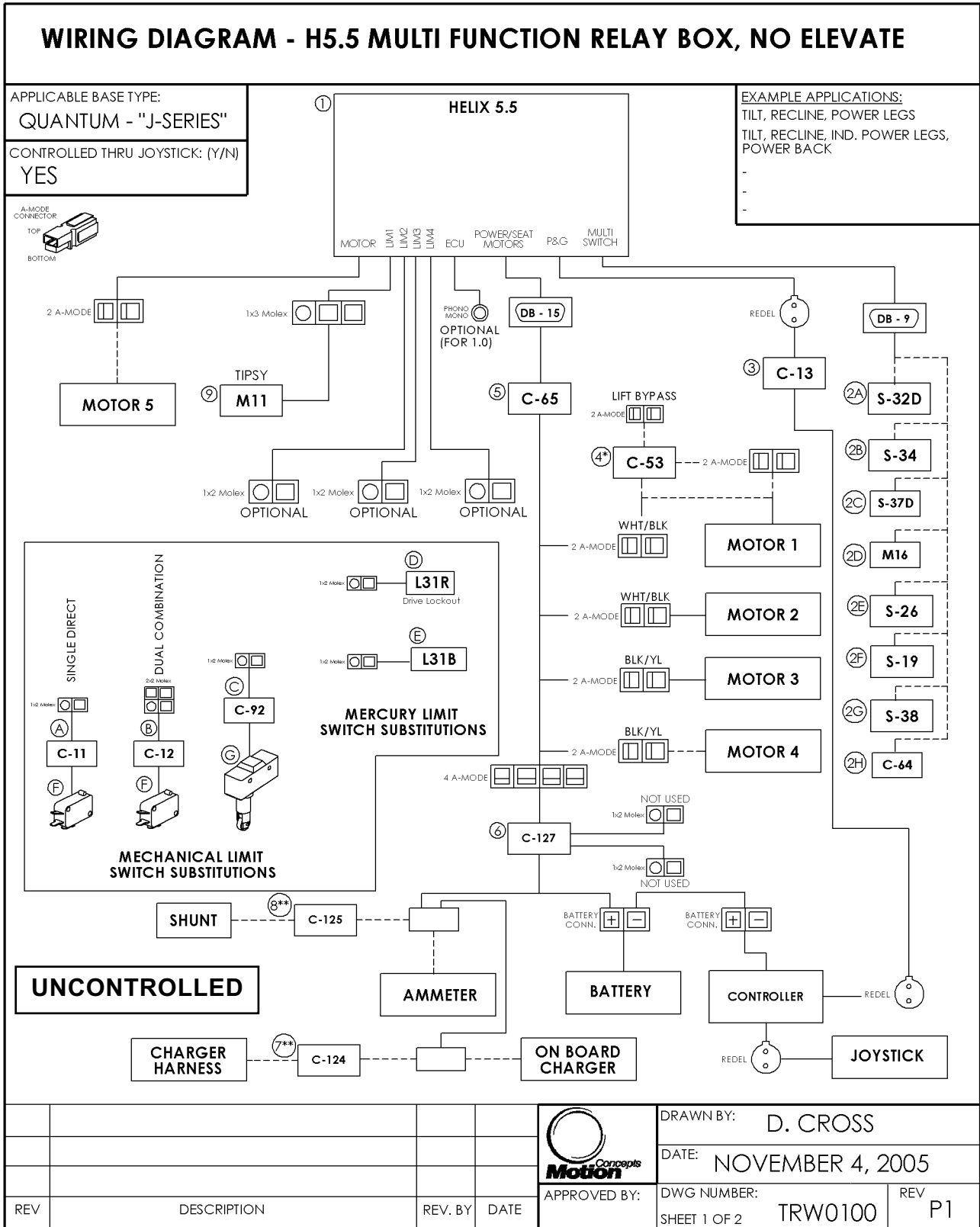
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## vi) Helix 5.5 (5+ motors) for Pride "Jazzy Series" (thru Joystick) (p. 2 of 2)

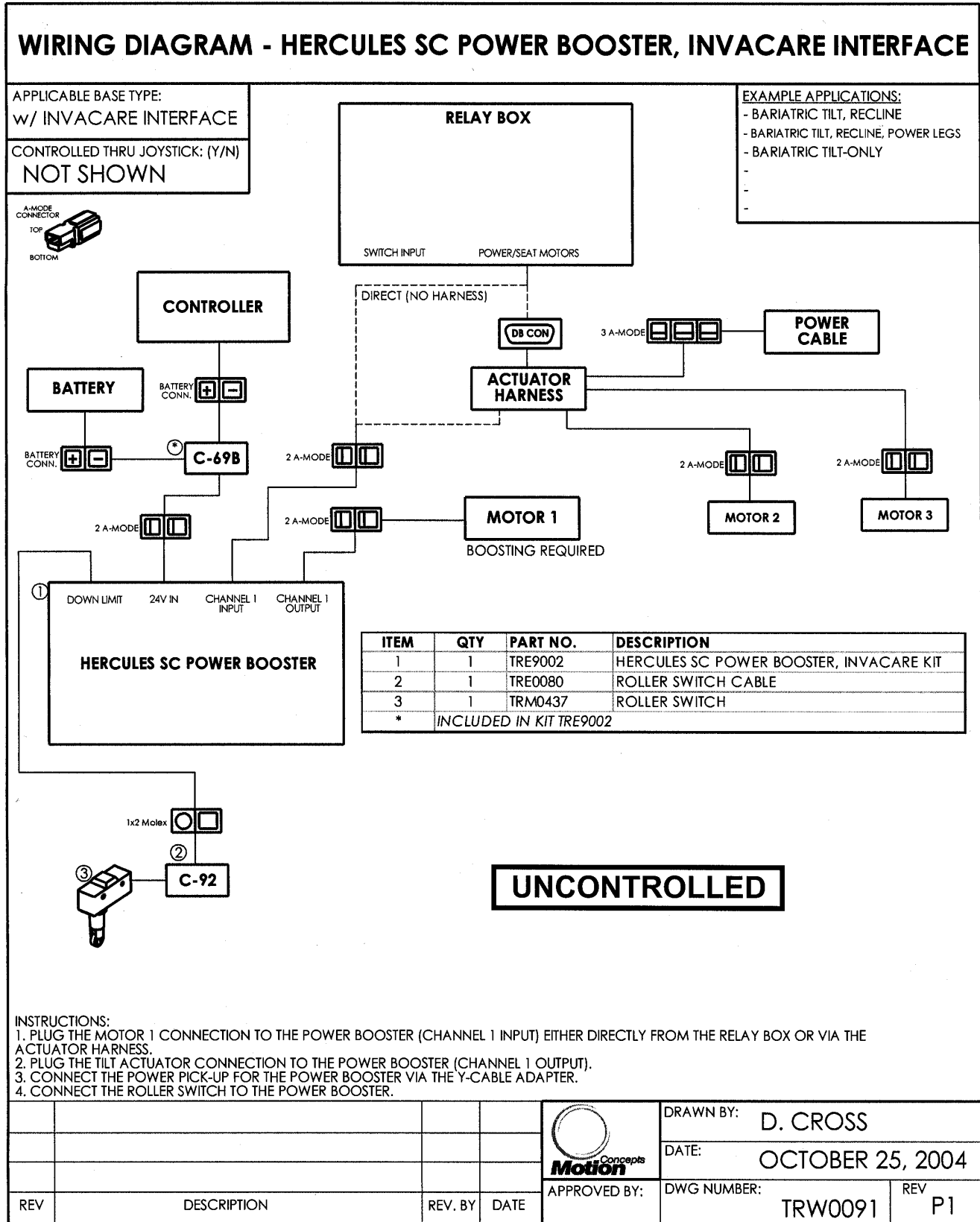




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## vii) M51B Hercules Power Booster for Invacare Interface



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## viii) M51B Hercules Power Booster for PG Electronics (Quickie/ Pride)

