

# INSTALLATION

Push-To-Start Switch  
Panel Retrofit Kit  
Instructions for  
Vista and 1/Vista  
Dispensers



## **READ THIS MANUAL BEFORE YOU BEGIN**

Dispensers have both electricity and a hazardous, flammable and potentially explosive liquid. Failure to follow the below precautions and the Warning and Caution instructions in this manual may result in serious injury. Follow all rules, codes and laws that apply to your area and installation.

When retrofitting dispensers, any installation or modification must comply with the requirements of the National Electric Code (NFPA 70), the Automotive and Marine Service Station Code (NFPA 30A) and any other applicable code.

NFPA 30A states that: “When maintenance to Class I dispensing devices becomes necessary and such maintenance may allow the accidental release or ignition of liquid, the following precautions shall be taken before such maintenance is begun:

- Only persons knowledgeable in performing the required maintenance shall perform the work.
- All electrical power to the dispensing device and pump serving the dispenser shall be shut off at the main electrical disconnect panel.
- The emergency shut-off valve at the dispenser, if installed, shall be closed.
- All vehicle traffic and unauthorized persons shall be prevented from coming within 20 feet (6 m) of the dispensing device.”

## **SAFETY PRECAUTIONS - MAINTENANCE**

Always make sure ALL power to the dispenser is turned OFF if you need to open the dispenser cabinet for maintenance. Physically lock, restrict access to, or tag the circuit breakers you turn off when servicing the dispenser. Be sure to close the emergency valve(s) under the dispenser BEFORE beginning maintenance.

Make sure you know how to turn OFF power to the dispenser and submersible pumps in an emergency.

## **HOW TO CONTACT WAYNE**

Trouble with the installation and operation of the dispenser should be referred to your authorized Wayne service personnel or Wayne Technical Support (1-800-926-3737).

## **INDICATORS AND NOTATIONS**



Danger indicates a hazard or unsafe practice which, if not avoided, will result in severe injury or possibly death.



Warning indicates a hazard or unsafe practice which, if not avoided, may result in severe injury or possibly death.



Caution indicates a hazard or unsafe practice which, if not avoided, may result in minor injury.

### **Note:**

Important information to consider, otherwise, improper installation and/or damage to components may occur.

# **Push-To-Start Switch Panel Retrofit Kit Installation for Vista and 1/Vista Dispensers**



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## 1. INTRODUCTION

This manual provides installation instructions for retrofitting Vista and 1/Vista dispensers with a new style Push-To-Start (PTS) switch panel using large rocker type push buttons. See Figure 1-4. on page 7 to determine the correct retrofit kit and button configuration for your model.

Standard Vista series dispensers are indicated by a “V” in the main body of the model number, such as V390D1/. Models designated by a “1” in the prefix, such as 1/V390D1, indicates an enhanced version of the Vista series dispenser referred to herein as 1/Vista models. Model numbers referred to in the instructions with no prefix apply to both V and 1/V models.

Both a mechanical parts kit and a graphics kit must be ordered to complete this conversion.

### 1.1. KIT PARTS LISTS

Before you begin the installation, verify that you have the correct graphics kit and that the mechanical parts kit contains the required parts as shown in the following tables.

**TABLE 1-1. MECHANICAL KIT PARTS LISTS**

KIT NUMBER	MODEL NUMBER	BUTTON CONFIG	PART NUMBER	DESCRIPTION	QTY
<b>Note: All KITS Contain the Following Unless Otherwise Noted:</b>					
			-201722-XXX	Switch Opening Plate	2
			-880616-001	Switch Opn Plate Gasket	2
			-918470-	Ball Stud Receptacle	4
			-916847-	Receptacle Screw	8
			-920325-	Instruction Manual	1
			XX-129865-	UL Kit Label	1
<b>See Table 1-2. and Table 1-3. for Graphics Kits</b>					
XXX-921426-KIT	V390, V590, 1/V390 & 1/V590	3 Offset	2-301187-XXX	3 Switch Offset Pnl Assy	2
			5-301929-HRN	Cable Assy	2
XXX-921427-KIT	1/V490	4 Offset	1-301187-XXX	4 Switch Offset Pnl Assy	2
			1-301929-HRN	Cable Assembly, Side 1	1
			2-301929-HRN	Cable Assembly, Side 2	1
XXX-921428-KIT	V490	4 Offset	1-301187-XXX	4 Switch Offset Pnl Assy	2
			3-301929-HRN	Cable Assembly, Side 1	1
			4-301929-HRN	Cable Assembly, Side 2	1
			883633-002	EPROM, Rev 8.02	1
XXX-921429-KIT	1/V591	4 Offset	1-301187-XXX	4 Switch Offset Pnl Assy	2
			7-301929-HRN	Cable Assembly	2
XXX-921430-KIT	390/U & 590/U	3 Offset	3-301187-XXX	390/U and 590/U Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
F80-921430-KIT	Chevron 390/U & 590/U	3 Offset	2-301187-F80	3 Switch Offset Pnl Assy	2
			5-301929-HRN	Cable Assembly	2

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**TABLE 1-1. MECHANICAL KIT PARTS LISTS (continued)**

<b>KIT NUMBER</b>	<b>MODEL NUMBER</b>	<b>BUTTON CONFIG</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
XXX-921431-KIT	395	3 Center 1 Right	5-301187-XXX	395 3C 1R Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
XXX-921432-KIT	X/V395 & X/V490	3 Center 1 Left	6-301187-XXX	X/V395 & X/V490/U 3C 1L Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
F80-921432-KIT	Chevron X/V395 & X/V490	4 Offset	1-301187-F80	4 Switch Offset Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
			8-301929-HRN	Assy - Jumper Cable	2
XXX-921433-KIT	395/U	4 Center	7-301187-XXX	395/U 4 C Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
XXX-921434-KIT	395/U	5 Center	8-301187-XXX	395/U 5 C Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
XXX-921435-KIT	399	2 Offset	14-301187-XXX	399 2 Offset Pnl Assy	2
			-883633-002	Chipset Rev 11	1
			9-301929-HRN	Cable Assy	2
XXX-921436-KIT	387	1 Right	9-301187-XXX	387 1 R Pnl Assy	2
			6-301929-HRN	Cable Assembly	2
XXX-921437-KIT	389	2 Offset	10-301187-XXX	389 2 Offset Pnl Assy	2
			6-301929-HRN	Cable Assembly	2
			-883633-002	Chipset Rev 11	1
			9-301929-HRN	Cable Assy	2
XXX-921438-KIT	580/U	3 Center	11-301187-XXX	580/U 3 C Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
F80-921438-KIT	Chevron 580/U	3 Offset	15-301187-F80	580/U 3 Offset Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
XXX-921439-KIT	585/U	4 Center	12-301187-XXX	585/U 4 C Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
XXX-921440-KIT	585/U	5 Center	13-301187-XXX	585/U 5 C Pnl Assy	2
			5-301929-HRN	Cable Assembly	2
XXX-921441-KIT	395	4 Center 1 Right	16-301187-XXX	395 4 C 1 R Pnl Assy	2
			5-301929-HRN	Cable Assembly	2

**Note:** A prefix of XXX in the kit numbers and suffix of XXX in the part numbers designates color. J21 is black, F80 is light gray, A32 is dark gray, etc.



**TABLE 1-2. PUSH-TO-START GRAPHICS KITS, WIDE BEZEL**

<b>CUSTOMER</b>	<b>V/390 V590 1/V/390 1/V/590 XXX-921456-KIT</b>	<b>V/490 1/V/490 1/V/591 XXX-921457-KIT</b>	<b>V/390U V590U 1/V/390U 1/V/590U XXX-921458-KIT</b>	<b>V395 1/V/395 (3+1) XXX-921459-KIT</b>	<b>X/V395 X/V490U (1+3) XXX-921460-KIT</b>	<b>V395U 1/V395U (4 Product) XXX-921461-KIT</b>	<b>V395U 1/V395U (5 Product) XXX-921462-KIT</b>	<b>V399 1/V399 XXX-921463-KIT</b>
GENERIC (See note below)	1-921456-KIT	1-921457-KIT	1-921458-KIT	1-921458-KIT	1-921457-KIT	1-921457-KIT	1-921462-KIT	1-921463-KIT
AMOCO	2-921456-KIT	2-921457-KIT	2-921458-KIT	N/A	N/A	N/A	N/A	N/A
BJ'S	N/A	N/A	15-921458-KIT	N/A	N/A	N/A	N/A	N/A
BP	3-921456-KIT	3-921457-KIT	3-921458-KIT	1-921459-KIT	1-921460-KIT	N/A	N/A	N/A
CHEVRON	N/A	N/A	4-921458-KIT	N/A	N/A	N/A	N/A	N/A
CHEVRON ARIZONA	N/A	N/A	5-921458-KIT	N/A	N/A	N/A	N/A	N/A
CHEVRON CALIFORNIA	N/A	N/A	4-921458-KIT	N/A	N/A	N/A	N/A	N/A
CITGO	4-921456-KIT	4-921457-KIT	6-921458-KIT	2-921459-KIT	2-921459-KIT	2-921459-KIT	2-921459-KIT	N/A
CITGO FL SPECIFIED	5-921456-KIT	5-921457-KIT	6-921458-KIT	2-921459-KIT	2-921459-KIT	2-921459-KIT	2-921459-KIT	N/A
CLARK	N/A	N/A	7-921458-KIT	3-921459-KIT	3-921459-KIT	N/A	N/A	N/A
CONOCO (RED)	6-921456-KIT	6-921457-KIT	8-921458-KIT	4-921459-KIT	2-921460-KIT	N/A	2-921462-KIT	N/A
CROWN	12-921456-KIT	14-921457-KIT	1-921458-KIT	1-921458-KIT	1-921458-KIT	N/A	N/A	N/A
CUMBERLAND FARMS	7-921456-KIT	N/A	9-921458-KIT	N/A	N/A	N/A	N/A	N/A
EXXON (BLUE)	8-921456-KIT	7-921457-KIT	10-921458-KIT	5-921459-KIT	3-921460-KIT	N/A	N/A	N/A
EXXON ESSO DIESEL	N/A	8-921457-KIT	N/A	5-921459-KIT	3-921460-KIT	N/A	N/A	N/A
MOBIL	13-921456-KIT	13-921457-KIT	16-921458-KIT	10-921459-KIT	10-921459-KIT	10-921459-KIT	N/A	1-921463-KIT
PHILLIPS-ALL GAS	9-921456-KIT	9-921457-KIT	11-921458-KIT	6-921459-KIT	6-921459-KIT	6-921459-KIT	6-921459-KIT	N/A
PHILLIPS-W/DIESEL	N/A	10-921457-KIT	N/A	6-921459-KIT	6-921459-KIT	6-921459-KIT	6-921459-KIT	N/A
RANDALL'S	N/A	N/A	1-921458-KIT	N/A	N/A	N/A	N/A	N/A
SAM'S	N/A	N/A		N/A	N/A	N/A	N/A	N/A
SHELL	14-921456-KIT	15-921457-KIT	17-921458-KIT	11-921459-KIT	11-921459-KIT	N/A	N/A	N/A
SUN	N/A	N/A	N/A	7-921459-KIT	7-921459-KIT	7-921459-KIT	7-921459-KIT	N/A
TEXACO	10-921456-KIT	11-921457-KIT	13-921458-KIT	8-921459-KIT	8-921459-KIT	8-921459-KIT	8-921459-KIT	N/A
TEXACO CALIFORNIA	11-921456-KIT	12-921457-KIT	13-921458-KIT	N/A	N/A	N/A	N/A	N/A
TOTAL PETROLEUM	N/A	N/A	14-921458-KIT	9-921459-KIT	9-921459-KIT	9-921459-KIT	9-921459-KIT	N/A
ULTRAMAR	15-921456-KIT	16-921457-KIT	1-921458-KIT	12-921459-KIT	12-921459-KIT	N/A	N/A	N/A
<b>Note: The standard base number may not apply to Generic kits for certain models.</b>								

**TABLE 1-3. PUSH-TO-START GRAPHICS KITS, NARROW BEZEL**

<b>CUSTOMER</b>	<b>1/V387, V387 XXX-921464-KIT</b>	<b>1/V389, V389 XXX-921465-KIT</b>	<b>1/V580, V580 XXX-921466-KIT</b>	<b>1/V585,V585 (4 Product) XXX-921467-KIT</b>	<b>1/V585,V585 (5 Product) XXX-921468-KIT</b>
GENERIC (See note below)	1-921464-KIT	1-921465-KIT	1-921458-KIT	1-921458-KIT	1-921462-KIT
AMOCO DIESEL	2-921464-KIT				
AMOCO KEROSENE	3-921464-KIT				
AMOCO REGULAR	4-921464-KIT				
AMOCO SILVER	5-921464-KIT				
AMOCO ULTIMATE	6-921464-KIT				
AMOCO REG/SILVER		2-921465-KIT			
AMOCO REG/ULTIMA		3-921465-KIT			
AMOCO SILVE/ULTIM		4-921465-KIT			
BJ'S	N/A	N/A	N/A	N/A	N/A
BP			1-921466-KIT		
BP DIESEL	7-921464-KIT				
BP KEROSENE	8-921464-KIT				
BP REGULAR	9-921464-KIT				
BP PLUS	10-921464-KIT				
BP SUPER	11-921464-KIT				
CHEVRON	12-921464-KIT				
CHEVRON CALIFORNIA	13-921464-KIT				
CHEVRON ARIZONA					
CITGO			6-921458-KIT	2-921459-KIT	2-921459-KIT
CITGO REGULAR	14-921464-KIT				
CITGO MID-GRADE	15-921464-KIT				
CITGO SUPER PREM	16-921464-KIT				
CITGO PREMIUM-FL	17-921464-KIT				
CITGO DIESEL	18-921464-KIT				
CITGO KEROSENE	19-921464-KIT				
CITGO DIESEL/KERO		5-921465-KIT			
CLARK KEROSENE	20-921464-KIT				
CLARK RACING FUEL	21-921464-KIT				
CONOCO (RED)	22-921464-KIT		2-921466-KIT	N/A	N/A
CROWN	N/A	N/A	1-921458	N/A	N/A
CROWN: REGULAR	36-921464-KIT	N/A	N/A	N/A	N/A
CROWN: PLUS	37-921464-KIT	N/A	N/A	N/A	N/A
CROWN: PREMIUM	38-921464-KIT	N/A	N/A	N/A	N/A
CROWN: DIESEL	39-921464-KIT	N/A	N/A	N/A	N/A
CROWN: KEROSENE	40-921464-KIT	N/A	N/A	N/A	N/A

**TABLE 1-3. PUSH-TO-START GRAPHICS KITS, NARROW BEZEL (continued)**

<b>CUSTOMER</b>	<b>1/V387, V387 XXX-921464-KIT</b>	<b>1/V389, V389 XXX-921465-KIT</b>	<b>1/V580, V580 XXX-921466-KIT</b>	<b>1/V585, V585 (4 Product) XXX-921467-KIT</b>	<b>1/V585, V585 (5 Product) XXX-921468-KIT</b>
CUMBERLAND FARMS		6-921465-KIT	9-921458-KIT		
EXXON (BLUE)			3-921466-KIT		
EXXON DIESEL	23-921464-KIT				
EXXON ESSO DIESEL	24-921464-KIT				
MOBIL	N/A	N/A	16-921458	N/A	N/A
MOBIL: KEROSENE	41-921464-KIT	N/A	N/A	N/A	N/A
MOBIL: DIESEL	42-921464-KIT	N/A	N/A	N/A	N/A
MOBIL: DIESEL TRUCK/ CAR	N/A	11-921465-KIT	N/A	N/A	N/A
MOBIL: DIESEL/KERO- SENE	N/A	12-921465-KIT	N/A	N/A	N/A
MOBIL: REGULAR / SUPER + / SPECIAL	N/A	13-921465-KIT	N/A	N/A	N/A
MOBIL: REGULAR	43-921464-KIT	N/A	N/A	N/A	N/A
MOBIL: SUPER +	44-921464-KIT	N/A	N/A	N/A	N/A
MOBIL: SPECIAL	45-921464-KIT	N/A	N/A	N/A	N/A
MOBIL: MOBILDIESEL	46-921464-KIT	N/A	N/A	N/A	N/A
MOBIL: MOBILDIESEL POWER PLUS	47-921464-KIT	N/A	N/A	N/A	N/A
PHILLIPS	25-921464-KIT				
RANDALL'S	N/A	N/A	N/A	N/A	N/A
SAM'S					
SHELL	N/A	N/A	17-921458	N/A	N/A
SHELL: AUTO DIESEL	48-921464-KIT	N/A	N/A	N/A	N/A
SHELL: PLUS	49-921464-KIT	N/A	N/A	N/A	N/A
SHELL: PREMIUM	50-921464-KIT	N/A	N/A	N/A	N/A
SHELL: REGULAR	51-921464-KIT	N/A	N/A	N/A	N/A
SHELL: AUTO DIESEL/ KEROSENE	N/A	14-921465-KIT	N/A	N/A	N/A
SHELL: REGULAR / PLUS / PREMIUM	N/A	15-921465-KIT	N/A	N/A	N/A
SUN			N/A	7-921459-KIT	7-921459-KIT
SUNOCO DIESEL	26-921464-KIT				
SUNOCO KEROSENE	27-921464-KIT				
TEXACO			13-921458-KIT		
TEXACO DIESEL	28-921464-KIT				
TEXACO DIESEL-CA	29-921464-KIT				
TEXACO UNLEADED	30-921464-KIT				
TEXACO UNL-CA	31-921464-KIT				

**TABLE 1-3. PUSH-TO-START GRAPHICS KITS, NARROW BEZEL (continued)**

<b>CUSTOMER</b>	<b>1/V387, V387 XXX-921464-KIT</b>	<b>1/V389, V389 XXX-921465-KIT</b>	<b>1/V580, V580 XXX-921466-KIT</b>	<b>1/V585,V585 (4 Product) XXX-921467-KIT</b>	<b>1/V585,V585 (5 Product) XXX-921468-KIT</b>
TEXACO POWR PLUS	32-921464-KIT				
TEXACO P PLUS-CA	33-921464-KIT				
TEXACO POWR PREM	34-921464-KIT				
TEXACO P PREM-CA	35-921464-KIT				
TEXACO DIESEL 1+2		7-921465-KIT			
TEXACO UNL/P PLUS		8-921465-KIT			
TEXACO UNL/P PREM		9-921465-KIT			
TEXACO PLUS&PREM		10-921465-KIT			
TOTAL PETROLEUM			14-921458-KIT		
ULTRAMAR	52-921464-KIT	N/A	1-921458-KIT	N/A	N/A
<b>Note: The standard base number may not apply to Generic kits for certain models.</b>					

**1.2. PARTS NOT INCLUDED**

The following parts may be required but are not included in the kits:

- EPROM, p/n 849079-001/00K
- Instruction Decal, p/n 5-202004, (for Chevron 390s and 590s without CATs)
- Instruction Decal, p/n 6-202004, (for Chevron 490s and 591s without CATs)
- Bezel Repair Kit, p/n 1-921091-KIT

**1.3. TOOLS REQUIRED**

1/4" Nut Driver

1-1/2" Hole Saw

Drill Motor


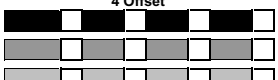
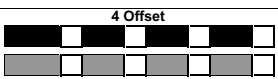
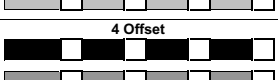
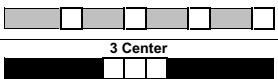
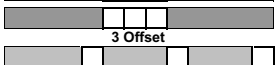
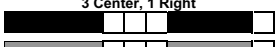
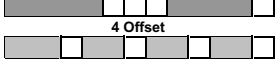
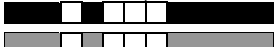
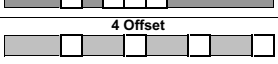
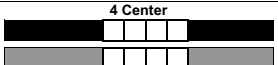
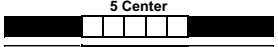
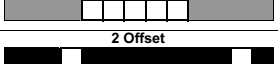

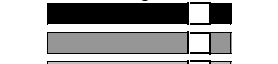
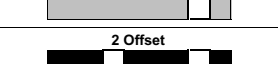
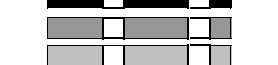
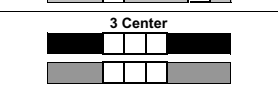
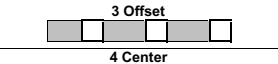
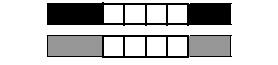
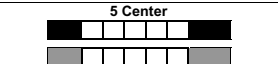
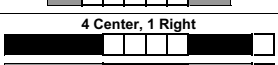
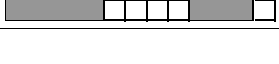
Flat Head Screwdriver

Phillips Head Screwdriver

Switch Panel Tester, p/n 2-202008

**TABLE 1-4. PUSH-TO-START BUTTON CONFIGURATION CHART**

Push to Start Mechanical Kits  
Vista and Vista Enhanced Dispensers

Vista Model	PTS Mechanical Kit Number	Panel	Button Configuration
V390, V590 1/V390, 1/V590	J21- 921426 -KIT A32- 921426 -KIT F80- 921426 -KIT (Chevron)	Black Gray Light Gray	3 Offset 
V490	J21- 921427 -KIT A32- 921427 -KIT F80- 921427 -KIT (Chevron)	Black Gray Light Gray	4 Offset 
1/V490	J21- 921428 -KIT A32- 921428 -KIT F80- 921428 -KIT (Chevron)	Black Gray Light Gray	4 Offset 
V591, 1/V591	J21- 921429 -KIT A32- 921429 -KIT F80- 921429 -KIT (Chevron)	Black Gray Light Gray	4 Offset 
V390U, V590U 1/V390U, 1/V590U	J21- 921430 -KIT A32- 921430 -KIT F80- 921430 -KIT (Chevron)	Black Gray Light Gray	3 Center  3 Offset 
V395, 1/V395	J21- 921431 -KIT A32- 921431 -KIT F80- 921431 -KIT (Chevron)	Black Gray Light Gray	3 Center, 1 Right  4 Offset 
X395/X490U	J21- 921432 -KIT A32- 921432 -KIT	Black Gray	3 Center, 1 Left  4 Offset 
X395/X490U	F80- 921432 -KIT (Chevron)	Light Gray	4 Offset 
V395U, 1/V395U	J21- 921433 -KIT A32- 921433 -KIT	Black Gray	4 Center  5 Center 
V395U, 1/V395U	J21- 921434 -KIT A32- 921434 -KIT	Black Gray	5 Center 
V399, 1/V399	J21- 921435 -KIT A32- 921435 -KIT	Black Gray	2 Offset 
V387, 1/V387	J21- 921436 -KIT A32- 921436 -KIT F80- 921436 -KIT (Chevron)	Black Gray Light Gray	1 Right 
V389, 1/V389	J21- 921437 -KIT A32- 921437 -KIT F80- 921437 -KIT (Chevron)	Black Gray Light Gray	2 Offset 
V580U, 1/V580	J21- 921438 -KIT A32- 921438 -KIT F80- 921438 -KIT (Chevron)	Black Gray Light Gray	3 Center  3 Offset 
V585, 1/V585	J21- 921439 -KIT A32- 921439 -KIT	Black Gray	4 Center  5 Center 
V585, 1/V585	J21- 921440 -KIT A32- 921440 -KIT	Black Gray	5 Center 
V395, 1/V395	J21- 921441 -KIT A32- 921441 -KIT	Black Gray	4 Center, 1 Right 

Note: These kits consist of mechanical parts only, graphics must be ordered separately.



## 2. INSTALLATION INSTRUCTIONS

### **WARNING**

**Electric shock hazard! More than one disconnect switch may be required to de-energize the dispenser for maintenance and servicing. Use a voltmeter to make sure ALL circuits in the dispenser are de-energized. Failure to do so may result in serious injury.**

Standard Vista series dispensers are indicated by a “V” in the main body of the model number, such as V390D1/. Models designated by a “1” in the prefix, such as 1/V390D1, indicates an enhanced version of the Vista series dispenser referred to herein as 1/Vista models. Model numbers referred to in the instructions with no prefix apply to both V and 1/V models.

1. Locate the serial number plate at the bottom front of the dispenser and determine the model of the dispenser as explained in Section 1. If standard Vista model 390, 490 or 590 (not including the 390/U or 590/U), proceed with Step 2. If 1/Vista model 390, 490 and 590 and all other models go to Step 3.
2. Pull down the ad panel and slide open the Function Switch access door. Enter the Option Programming mode and go to Option 02. Note the software revision level of the pump computer. If lower than Rev “42.00”, record **all** the option settings for the dispenser.
3. Disconnect electrical power to the dispenser.
4. Lower the bezel. Disconnect the cable at the Push-To-Start switch and all other wiring to the bezel. Remove the bezel from the dispenser and move to a non-hazardous area.
5. This Step only applies to 390, 490 and 590 models. V591 and all other models go to Step 7. Changes to the EPROM chip on the computer base for the various models are as follows: **390s and 590s:** If a 1/Vista model go to step 7. If a standard Vista model and the pump software revision level is Rev 42.00 or higher, go to Step 7; otherwise go to Step 6. **490s:** If a 1/Vista model, replace the EPROM chip with that provided in the kit, and then go to Step 7. If a standard Vista model and the pump software revision level is Rev 42.00 or higher, go to Step 7; otherwise go to Step 6.
6. Disconnect the DEM by turning the attaching screws 1/4 turn and lower it to a horizontal position. Disconnect all cables from the solenoid drive board. Remove the solenoid drive board, and replace the EPROM chip on the pump computer base with a REV 44.00 chip, p/n 849079-001/00K. Some solenoid drive boards are retained with four push pins only, where others have four additional screws attaching it to the DEM. Using Rev 44.00, the Option 02 Macro setting is 02 for a V390, 03 for a V490, and 07 for a V590. Reprogram the EPROM accordingly and for the remaining options use the settings recorded in Step 2 above.
7. Replacement cable assemblies from the Switch Panel to the cash credit select boards are required for all models and these are included with each kit. Some models require an updated EPROM chip P/N 883633-002 and it is also included if required.  
Particular points to note are as follows:  
**V490** - Replace the P/N 881692 cables with the P/N 1-301929-HRN cable (side one, junction box side) and P/N 2-301929-HRN cable (side two) provided in the kit.  
**1/V490** - Replace the P/N 881692 cables with the P/N 3-301929-HRN cable (side one, junction box side) and P/N 4-301929-HRN cable (side two) provided in the kit. Replace the EPROM chip with P/N 883633-002 provided in the kit.  
**389 and 399 MODELS** - These kits include both Vista and 1/Vista parts.  
**V389 and V399** - Replace the P/N 881692-001 cables with the 6-301929-HRN cables provided in the kit. Do not replace the EPROM chipset.

**1/V389 and 1/399** - Replace the P/N 881692-001 cables with the 9-301929-HRN cables provided in the kit. Replace the EPROM chip with P/N 883633-002 provided in the kit.

**Chevron X/395 and X/490/U** - On this model a jumper cable, p/n 8-301929-HRN must be attached to the electrical connector on the end of the cash/credit interface cable, p/n 5-301929-HRN.

**Note: 591 ONLY** - Before starting work on the 591 locate the Function Control board immediately to the left of the DEM. Read the board part number. It must be p/n 884577-002. If it is p/n 884577-001 it must be replaced with a -002 version of the board.

Cable assemblies p/n 884593-001 connect terminals J3 and J4 on the Function Control board to the two Push-to-Start Switches currently on the pump. Remove the "red" four pin connector from terminal J3 (side one) or J4(side two); discard the cable, and replace the connector with the "red" four pin connector on the 7-301929-HRN harness supplied with the kit. This connector has only two wires attached to it. Also, cable assemblies p/n 884594-001 connect terminals J4 and J5 on the Cash/Credit select board to the Function Control board. Remove the "red" sixteen pin connector from terminal J4 on the Cash/Credit select board and replace it with the "red" sixteen pin connector on the 7-301929-HRN harness supplied with the kit. The sixteen pin connector on p/n 884594-001 is not used and is left "hanging".

8. From the front side of the bezel, use a flat head screwdriver to remove the front cover of the Push-To-Start switch. From the back side of the bezel, use a 1/4" nut driver to remove the eight (8) screws that secure the switch. Remove the Push-To-Start switch together with its gasket. Scrape the surface if necessary to ensure all gasket material is removed. Retain the 8 screws. [See Figure 2-1.](#) and [Figure 2-2.](#)
9. Attach the Switch Opening Plate and the new gasket to the bezel using the eight (8) screws retained above. [See Figure 2-3.](#)
10. Remove the Ad Panel Assembly by removing the screw holding the chain to the bezel and, at the same end of the bezel, removing the screw and square plastic retainer located under the panel hinge pin. Slide the Ad Panel Assy out the end of bezel. Retain hardware. [See Figure 2-4.](#)
11. **Wide Bezel** - Using screws provided, attach two (2) new Ball Stud Receptacles on the bezel to mate with the ball studs on the new Switch Panel Assembly. [See Figure 2-5.](#)

**Note:** Older type bezels do not have pockets for these receptacles and in which case the two outside ball studs on the switch panel assembly must be removed. Only the two ball studs should be removed, leaving in place the two nuts and the two studs on the switch panel assembly.

**Narrow Bezel** - Replace the old Ball Stud Receptacles with the new parts provided in the kit.

12. In a non-hazardous area, drill a 1-1/2" hole in the bezel for the Bezel Fitting.  
**Wide Bezel** - Cut out and use the template on page [27](#) or use drawing 1-7197-C on page [23](#) to determine location of the hole. [See Figure 2-6.](#)  
**Narrow Bezel** - Use the template on page [28](#) or use drawing 1-7234-C on page [24](#) to determine the location of the hole. [See Figure 2-7.](#)
13. Examine the two hinge pin areas on each end of the bezel for any damage. Bezel Repair Kit, part number 1-921091-KIT, is available to repair the bezel if any damage is apparent. This kit must be ordered separately through Service Parts. See page [25](#) for instructions on this kit.
14. Install the new Switch Panel Assembly to the bezel and attach the free end of the chain to the face of the bezel. Reuse the hardware retained from Step 10 above. [See Figure 2-8.](#)



15. Find the decals provided in the kit. Install an actuator decal within the recess on the face of each Push-To-Start switch. If they are grade specific, make sure they are oriented appropriately to the grade indicated on the DEM. Some of the kits include product decals, others do not. If product decals are included with a particular kit install them in their appropriate locations on the front of the Switch Panel Assembly. The product decals have a cut-out for the switch and are designed to fit within the 0.030 inch recess area in the panel.  
Install the UL Label, part no. XX-129865 on the back of the switch panel.
16. Insert the rubber grommet, which is molded in place on the wiring harness attached to the switch panel, by forcing it into the drilled hole in the bezel using a blunt instrument such as a nut driver. Do not puncture the grommet with screwdriver or sharp instrument. The grommet should be a tight fit in the hole and should be firmly retained in order to prevent water intrusion.  
**Wide Bezel** - See Figure 2-9. and drawing 1-7197-C.  
**Narrow Bezel** - Orient the grommet and wires as shown in Figure 2-10.  
  
**Note:** Bend the wires as shown on the drawing and ensure that the wire tie does not stick up beyond the level of the wires.
17. Lift the bezel up to the dispenser and reconnect all bezel wiring previously removed and the cable to the Switch Panel. Figure 2-11. shows the correct installation.
18. Re-install the bezel to the dispenser and reconnect the electrical power. A typical bezel after the kit installation is complete is shown in Figure 2-12.
19. Flip down the switch panel and slide open the access door to the function switches. Enter the option programming mode. The correct settings for options 25 and 28 are shown in Table 2-1.

**TABLE 2-1. OPTION 25 AND 28 SETTINGS**

Model	Button Configuration	Option 25	Option 28
390, 490, 590		02	02
591		03	01
390/U, 590/U		03	01
395	3C1R	03	01
X/395, X/490/U		03	01
395/U	4C, 5C	03	01
389, 399		02	02
387		02	01
580	3C	03	01
585	4C, 5C	03	01
395	4C1R	03	01

20. Check for proper operation of each nozzle and appropriate Push-To-Start switch as follows:

**390, 490, 590 and Chevron 580 Models**

1. Remove Nozzle. LED on the Push-To-Start switch for that nozzle should flash.
2. Push appropriate switch. Dispenser should reset and the LED should go to constant ON.
3. Dispense product.
4. Hang up nozzle. LED should go OFF.
5. On **some** V590 dispensers that are non X configuration, the internal wiring is reversed so when the REGULAR nozzle is removed the Push-To-Start switch above the HIGH TEST nozzle will reset the dispenser and vice-versa.

The Push-To-Start switch wire connections to the Cash/Credit Interface Board are shown in [Figure 2-13](#), and [Figure 2-14](#). The “reversed” connections are shown in [Figure 2-14](#), for the V590 (side 2) non X configuration dispenser.

To correct the above situation make the following wiring changes:

- a. Disconnect the wiring harness from the Cash/Credit board to the Switch Panel at the Cash/Credit Board.
- b. Locate the white, nine pin P5 terminal on this harness and reverse the wires going to locations pin 3 and pin 7. There are no number identifiers on this terminal, but there is a jumper wire between locations pin 8 and pin 9, so location pin 7 can readily be found.
- c. Locate the red, sixteen pin P4 terminal and reverse the wires going to locations pin 3 and pin 11. Push the wires into their new locations using a very fine bladed screwdriver or the back of the blade of a thin bladed knife.
- d. Re-connect the wiring harness to the Cash/Credit Board and check that the Push-To-Start switches now match the appropriate nozzle.

**591 Models**

1. Remove DIESEL nozzle. Only the LED on the DIESEL switch should flash. Push the DIESEL switch. The dispenser should reset and the LED should go to constant ON. Dispense DIESEL product and hang up the nozzle. The LED should go OFF.
2. Remove any one of the GASOLINE nozzles. The LED on each one of the three gasoline switches should flash. Push on any one of the three gasoline switches. The dispenser should reset and the DEM should show the price appropriate to the chosen nozzle. Also, the LED on the Push-To-Start switch appropriate to the chosen nozzle should go to constant ON. For example, if the REGULAR nozzle is lifted and the PLUS switch is pushed, the REGULAR price will be displayed on the DEM and the dispenser will deliver REGULAR gasoline. The LED on the REGULAR Push-To-Start switch will go to constant ON. Dispense product and hang up the nozzle. Check for correct operation of the other gasoline nozzles.

**390/U, 590/U, 395/U, 580/U and 585/U Models**

1. Remove the nozzle. The LEDs on all the Push-To-Start switches should flash.
2. Push any switch. The dispenser should reset and the DEM should show the price of the appropriate activated switch. Also the LED on the activated switch should go to constant ON and the LEDs on the other switches should be OFF. Dispense product. Hang up the nozzle. The single lighted LED should go OFF. Check for correct operation of the other switches.

### **395 (3 Center 1 Right) and X/395 and X/490/U (3 Center 1 Left) Models**

1. Remove the nozzle below the single Push-To-Start switch. Only the LED on the single Push-To-Start switch should FLASH. Push this switch. The dispenser should reset, the DEM should show the price appropriate to the activated switch, and the LED should change to constant ON. Dispense product and hang up the nozzle. The LED should go OFF.
2. Remove the nozzle below the centered Push-To-Start switches. Only the LEDs on the center Push-To-Start switches should FLASH. Push any of the switches. The LED on that switch should change to constant ON, the dispenser should reset, the DEM should show the price appropriate to the activated switch. Dispense product and hang up the nozzle. The LED should go OFF. Check for correct operation of the other switches.

**Note:** Chevron X/395 and X/490/U models do not have three (3) of the Push-To-Start switches grouped together. Instead, all four (4) are equally spaced across the face of the Switch Panel with the DIESEL Push-To-Start switch almost directly over one of the two (2) nozzles. This DIESEL Push-To-Start switch is the single Push-To-Start switch referenced in Step 1 above. The mode of operation is as outlined in Steps 1 and 2 above.

### **389, 399 and 387 Models**

1. Remove the right hand nozzle. Only the LED on the right hand Push-To-Start switch should Flash. Push the switch. The dispenser should reset, the DEM should display the price appropriate to this switch, and the LED should change to constant ON. Dispense product and hang up the nozzle. The LED should go OFF.
  2. For 389 and 399 models repeat the procedure of step 1 above for the left hand switch and nozzle.
21. If applicable, check all other bezel functions: card reader, cash acceptor, preset keypad, Wayne Trac™, etc., for proper operation.

## **2.1. TROUBLESHOOTING**

Switch Panel Tester, p/n 2-202008

1. If the dispenser does not operate correctly with the new switches remove the bezel from the dispenser and disconnect the cable assembly from the cash credit board.
2. Plug the Switch Panel Tester into the Switch Panel Harness, red wire to red wire.
3. Press each Push-To-Start switch in turn. The LED on each switch should light as it is pressed and the other LEDs on the other switches should remain off. If the switches operate as described then the fault is probably in the dispenser and not in the new switches.
4. If only one of the switches fails to light then it has probably failed and it should be replaced.
5. As a double check measure the open circuit resistance between the BLACK common (Pin 13) and the colored wire to the particular switch. The colored wires are connected as shown in [Table 2-2](#).

**TABLE 2-2. SWITCH WIRE CONNECTIONS**

Model	Buttons	Wire Connections
390, 590 and 590/U		Left switch/Yellow wire/Pin 12 Middle switch/Violet wire/Pin 10 Right switch/Orange wire/Pin 8
490 and 591		Left switch/Yellow wire/Pin 12 Left Middle switch/Violet wire/Pin 10 Right Middle switch/Orange wire/Pin 8 Right switch/Pink wire/Pin 11
395	3C1R	Left Center switch/Yellow wire/Pin 12 Center switch/Violet wire/Pin 11 Right Center switch/Orange wire/Pin 10 Single Right switch/Pink wire/Pin 8
X/395 and X490/U		Single Left switch/Yellow wire/Pin 12 Left Center switch/Violet wire/Pin 10 Center switch/Orange wire/Pin 9 Right Center switch/Pink wire/Pin 8
395/U and 595/U	4C	Left switch/Yellow wire/Pin 12 Left Middle switch/Violet wire/Pin 11 Right Middle switch/Orange wire/Pin 10 Right switch/Pink wire/Pin 9
395/U and 595/U and 395	5C  4C1R	Left switch/Yellow wire/Pin 12 Left Middle switch/Violet wire/Pin 11 Center switch/Orange wire/Pin 10 Right Middle switch/Pink wire/Pin 9 Right switch/White&Black wire/Pin 8
389 and 399		Left switch/Violet wire/Pin 11 Right switch/Pink wire/Pin 9
387		Single switch/Pink wire/Pin 9

Any reading less than 200,000 ohms indicates a shorted switch which must be replaced. The closed circuit resistance should be between 5 and 40 ohms.

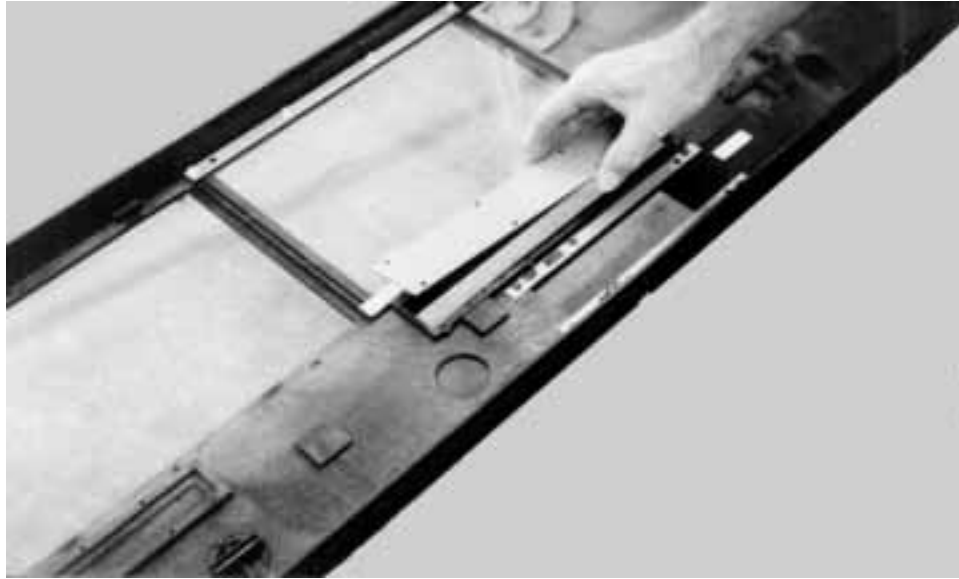
6. If all the switches do not light then the fault is probably in the cable assembly. Check the appropriate wires for continuity and repair/replace as required.



**FIGURE 2-1. REMOVING PUSH-TO-START SWITCH FRONT COVER**



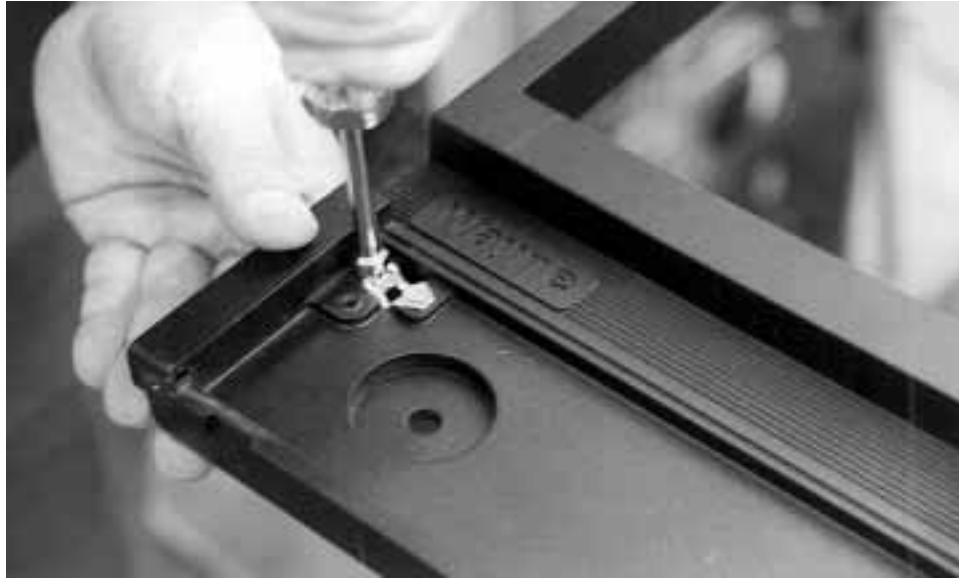
**FIGURE 2-2. REMOVING THE EXISTING PUSH-TO-START SWITCH**



**FIGURE 2-3. INSTALLING SWITCH OPENING PLATE**



**FIGURE 2-4. REMOVING SCREW AND PLASTIC RETAINER THAT SECURE AD PANEL (OPTIONAL)**



**FIGURE 2-5. ATTACHING BALL STUD RECEPTACLES (LOCATION MAY VARY)**



**FIGURE 2-6. DRILLING 1-1/2" HOLE FOR BEZEL FITTING CONNECTOR (WIDE BEZEL)**



**FIGURE 2-7. DRILLING 1-1/2" HOLE FOR THE BEZEL FITTING CONNECTOR (NARROW BEZEL)**



**FIGURE 2-8. INSTALLING NEW SWITCH PANEL**





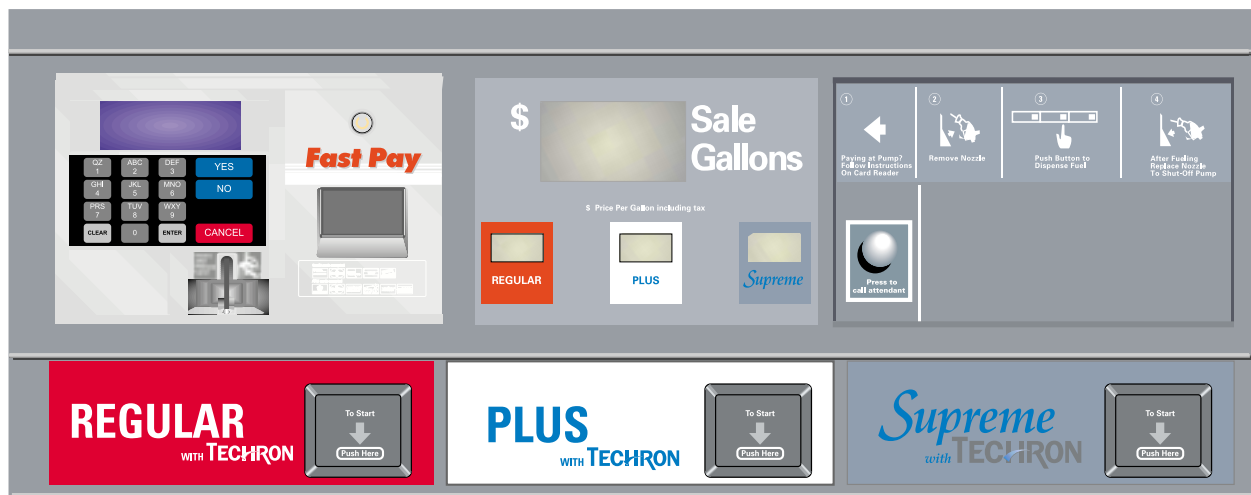
**FIGURE 2-9. INSTALLATION OF THE RUBBER GROMMET (WIDE BEZEL FRONT)**



**FIGURE 2-10. INSTALLATION OF RUBBER GROMMET (NARROW BEZEL FRONT)**



**FIGURE 2-11. CASH/CREDIT CABLE CONNECTION TO SWITCH PANEL HARNESS**



**FIGURE 2-12. TYPICAL BEZEL AFTER KIT INSTALLATION**

**Note: Decals -** The completed bezel shown above is for a 390 or 590 and includes the instruction decal which is attached on the panel on the right hand side of the BEZEL. The position of the decals vary with each particular KIT. They should be attached in locations appropriate to the particular product and customer.

(AS VIEWED FROM FRONT)

L = LEFT PTS SWITCH

M = MIDDLE PTS SWITCH

R = RIGHT PTS SWITCH

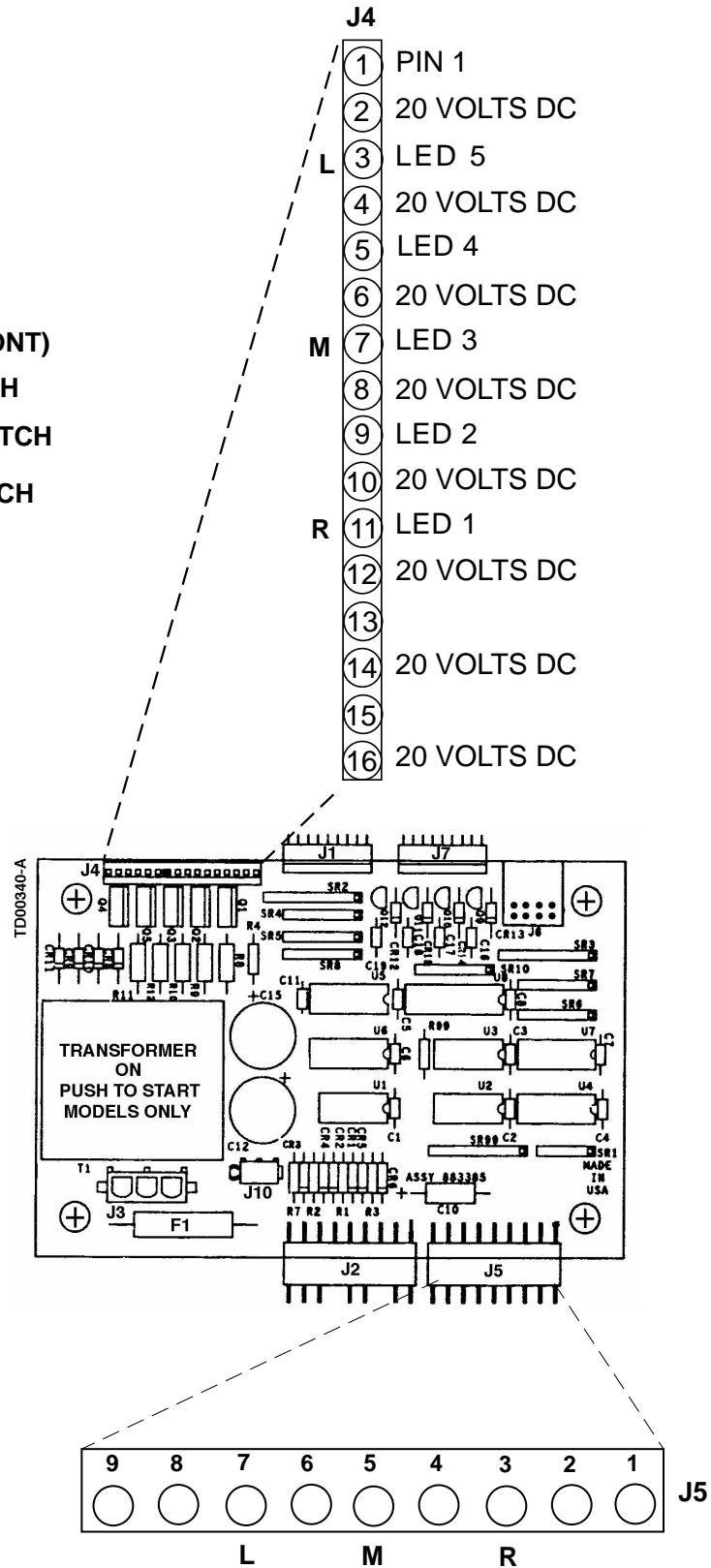


FIGURE 2-13. PUSH-TO-START SWITCH CONNECTIONS V390, 1/V390, V590, 1/V590 (SIDE 1)

(AS VIEWED FROM FRONT)

L = LEFT PTS SWITCH

M = MIDDLE PTS SWITCH

R = RIGHT PTS SWITCH

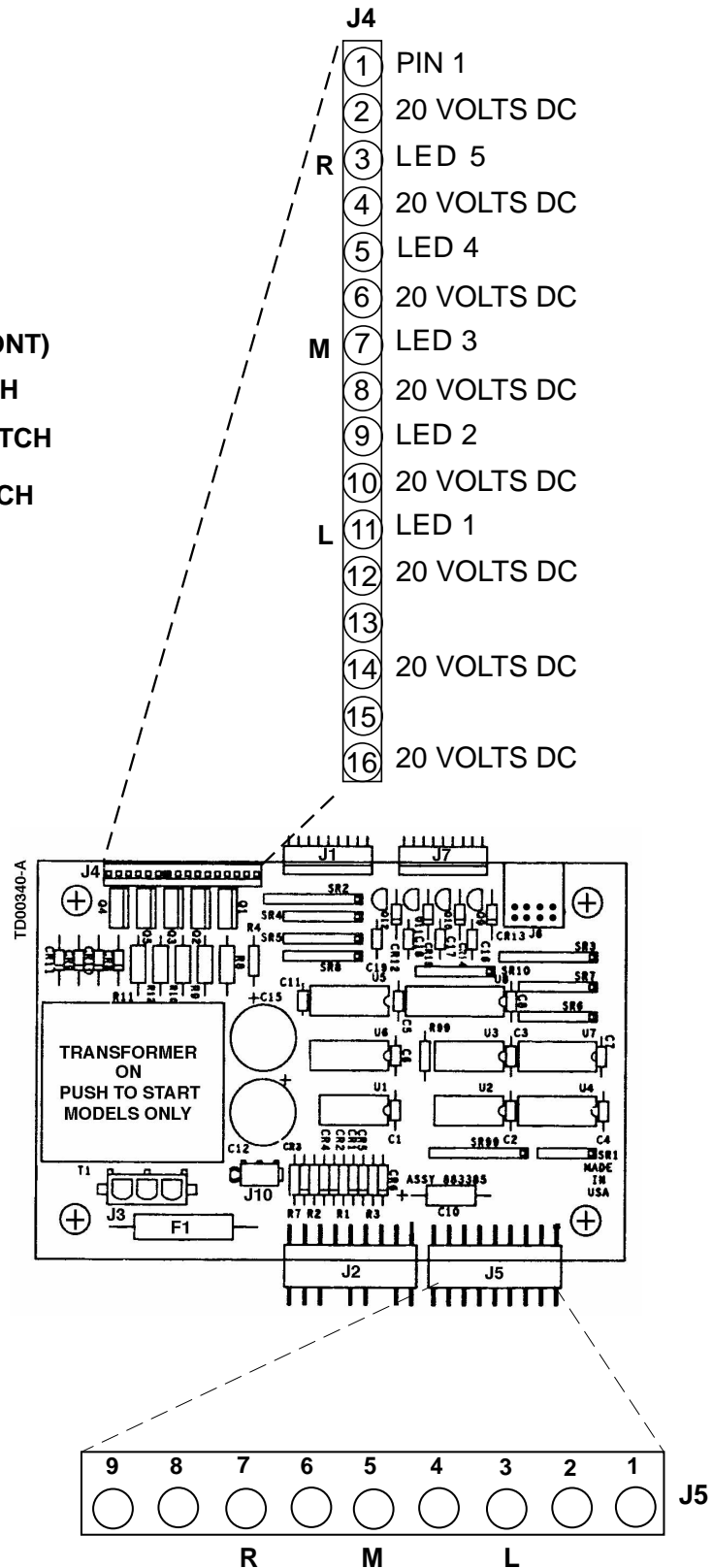


FIGURE 2-14. PUSH-TO-START SWITCH CONNECTIONS V590 (SIDE 2, NON X)

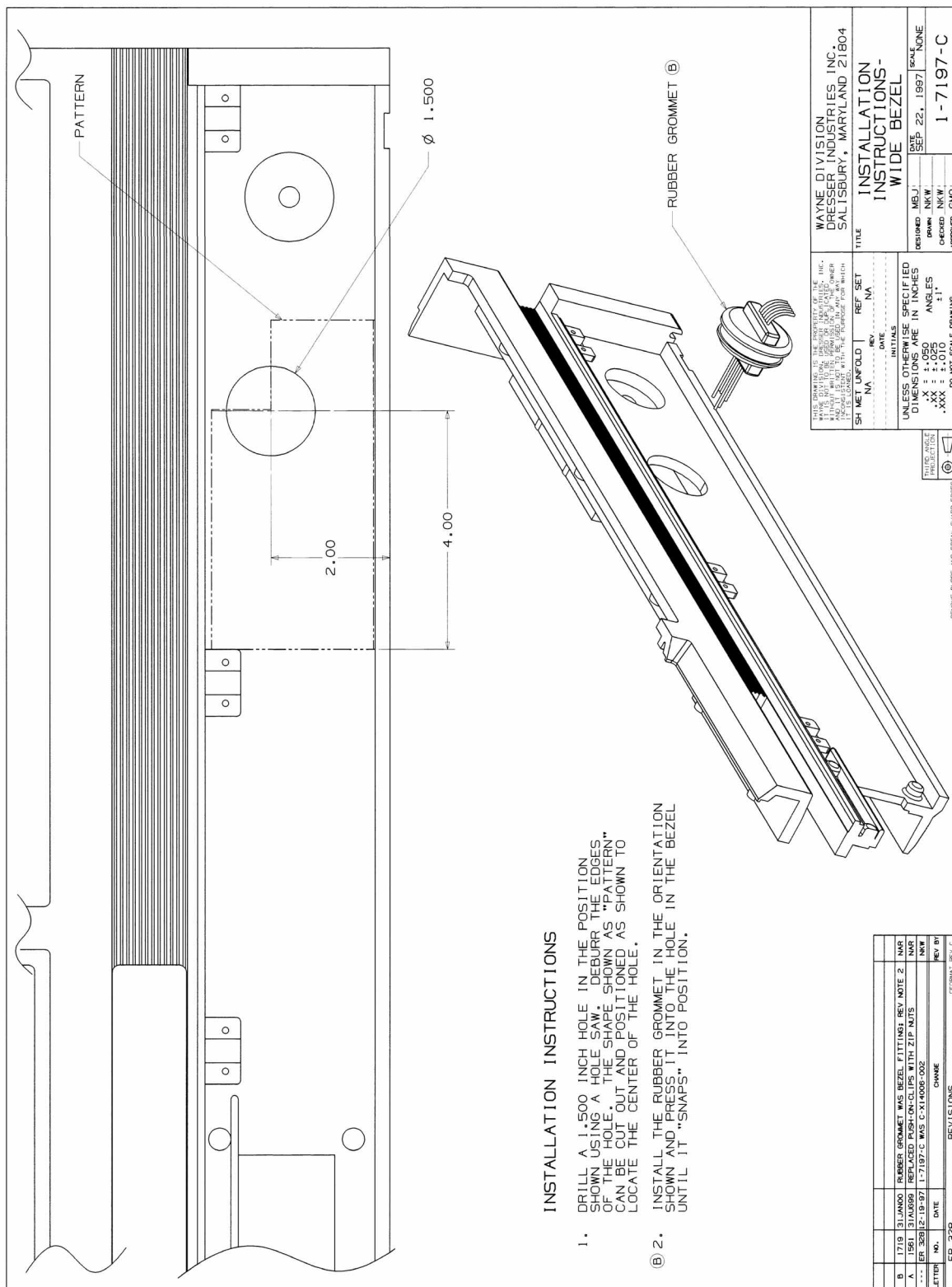


FIGURE 2-15. 1-7197-C - INSTALLATION INSTRUCTIONS - WIDE BEZEL FITTING

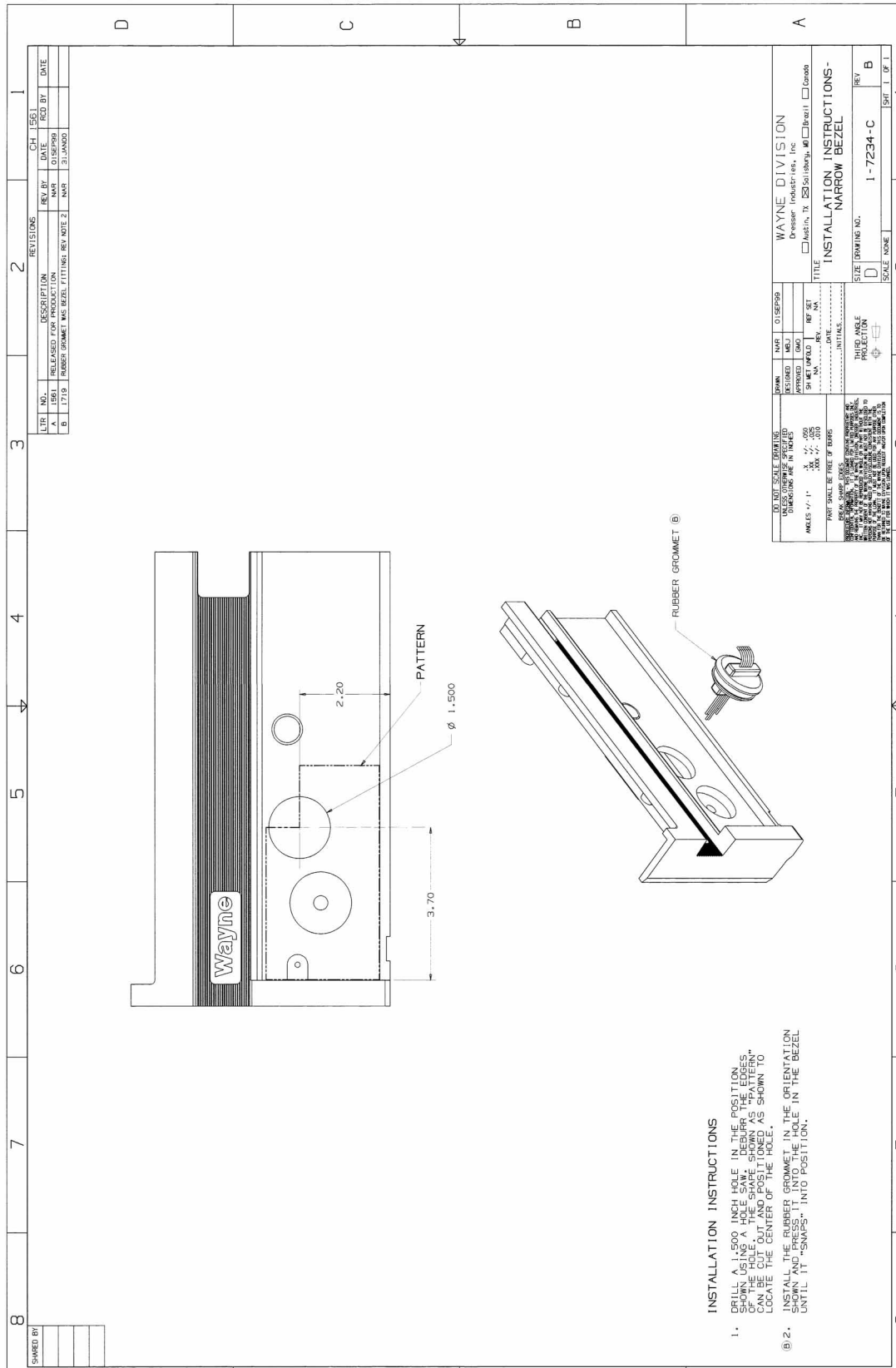


FIGURE 2-16. 1-7234-C INSTALLATION INSTRUCTIONS - NARROW BEZEL

### INSTALLATION INSTRUCTIONS

1. DISCONNECT THE ELECTRICAL POWER TO THE DISPENSER.
2. REMOVE THE BEZEL FROM THE DISPENSER.
3. REMOVE THE AD PANEL FROM THE DISPENSER. RETAIN THE ATTACHMENT SCREWS.
4. USING EITHER A FLAT FILE OR A DREMEL TYPE DIE GRINDER, CAREFULLY REMOVE THE MATERIAL "M" UNTIL THE HINGE PIN AREA OF THE BEZEL IS AS SHOWN IN FIGURE "A". SURFACE "X" MUST NOT EXCEED THE HEIGHT OF THE CORED HINGE PIN RECESS.
5. PLACE THE BEZEL REPAIR BRACKET IN THE RECESS AREA OF THE BEZEL AND ALIGN THE SCREW HOLES IN BOTH THE REPAIR BRACKET AND THE BEZEL. CHECK THAT SURFACES "Y" AND "Z" ARE IN CONTACT. IF NOT, REMOVE MORE BEZEL MATERIAL AS REQUIRED.
6. MOUNT THE AD PANEL TO THE BEZEL AND ATTACH THE BEZEL REPAIR BRACKET USING ONE OF THE RETAINED ATTACHMENT SCREWS OF STEP 3 ABOVE.

#### NOTE:

IF THE BEZEL MATERIAL AROUND THE ATTACHMENT SCREW IS STRIPPED OUT, THE BEZEL MAY BE DRILLED AS REQUIRED IN ORDER TO ACCEPT A LARGER ATTACHMENT SCREW. THIS LARGER SCREW MUST HAVE A COUNTERSUNK HEAD AND HAVE A NOMINAL HEAD DIAMETER SIMILAR TO THAT OF THE PRODUCTION SCREW. OTHERWISE, IT WILL FOUL THE VAPOR BARRIER DURING INSTALLATION OF THE BEZEL TO THE ELECTRONIC HEAD.

7. ATTACH THE REMAINDER OF THE SCREWS AND CHECK THAT THE AD PANEL ROTATES FREELY.
8. RECONNECT THE ELECTRICAL POWER.

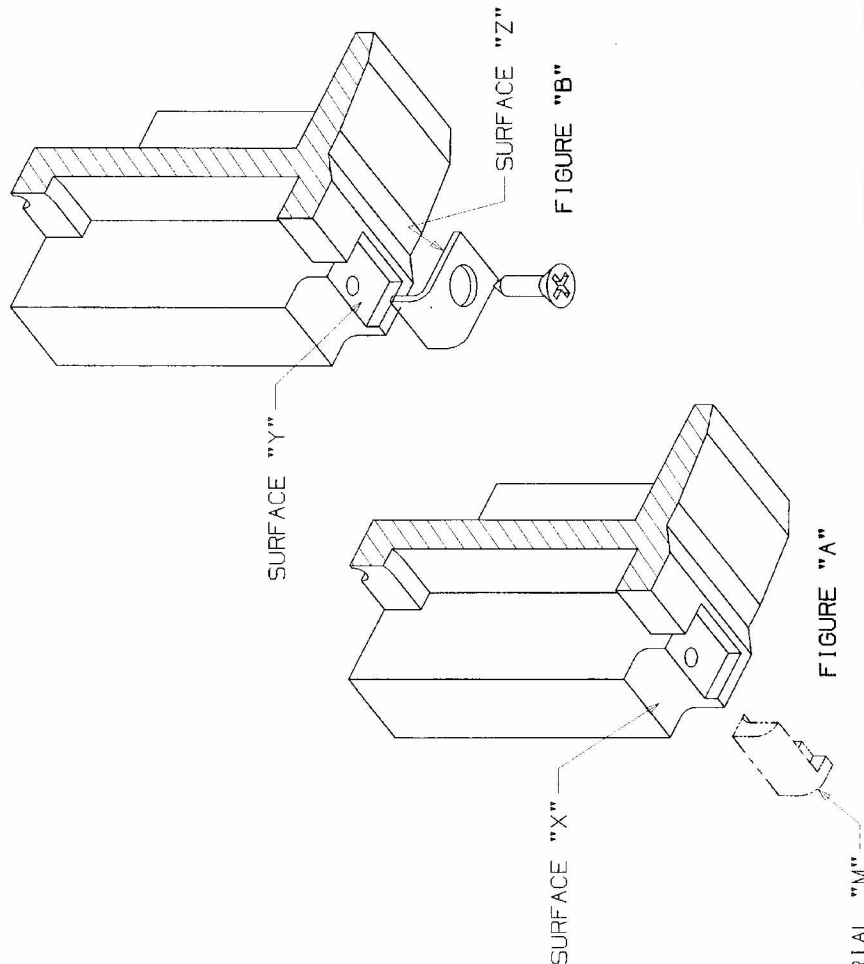


FIGURE "A"

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SH MET UNFOLD	REF SET	TITLE	
NA	NA	INSTALLATION	
DATE	REV	INSTRUCTIONS-	
INITIALS		BEZEL REPAIR BRACKET	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		DESIGNED: MBJ	DATE: SEP 25, 1997
X = ±.050 ANGLES		DRAWN: NKW	SCALE: NONE
XX = ±.025		CHECKED: NKW	
XXX = ±.010		APPROVED: GMD	1-10232-B
DO NOT SCALE DRAWING			
REVISIONS			
ER 328	DATE	CHANGE	REV BY
---	ER 328 12-22-97	1-10232-B WAS D-XI-4012-001	NKW





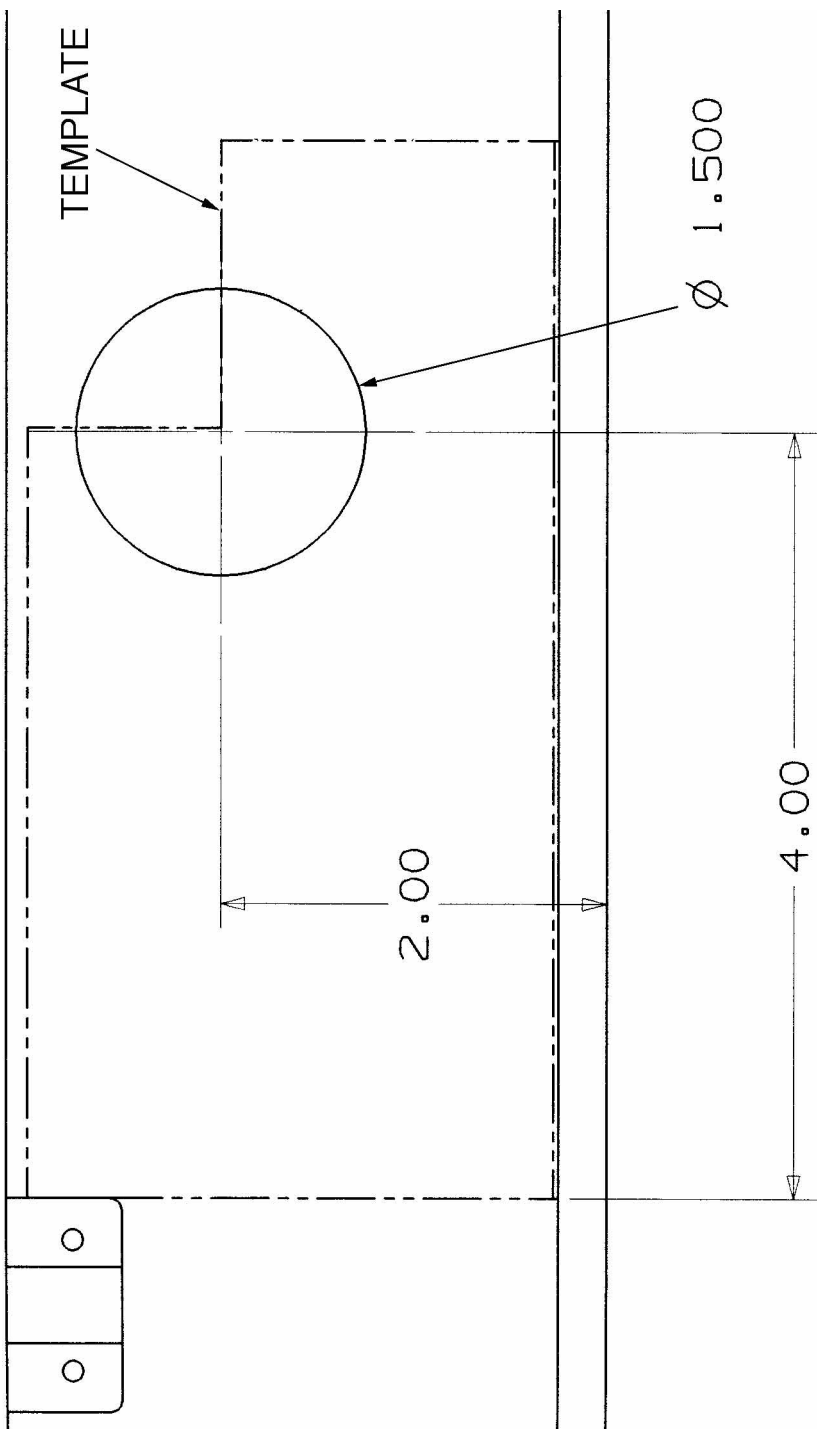


FIGURE 2-18. TEMPLATE - BEZEL FITTING HOLE (WIDE BEZEL)

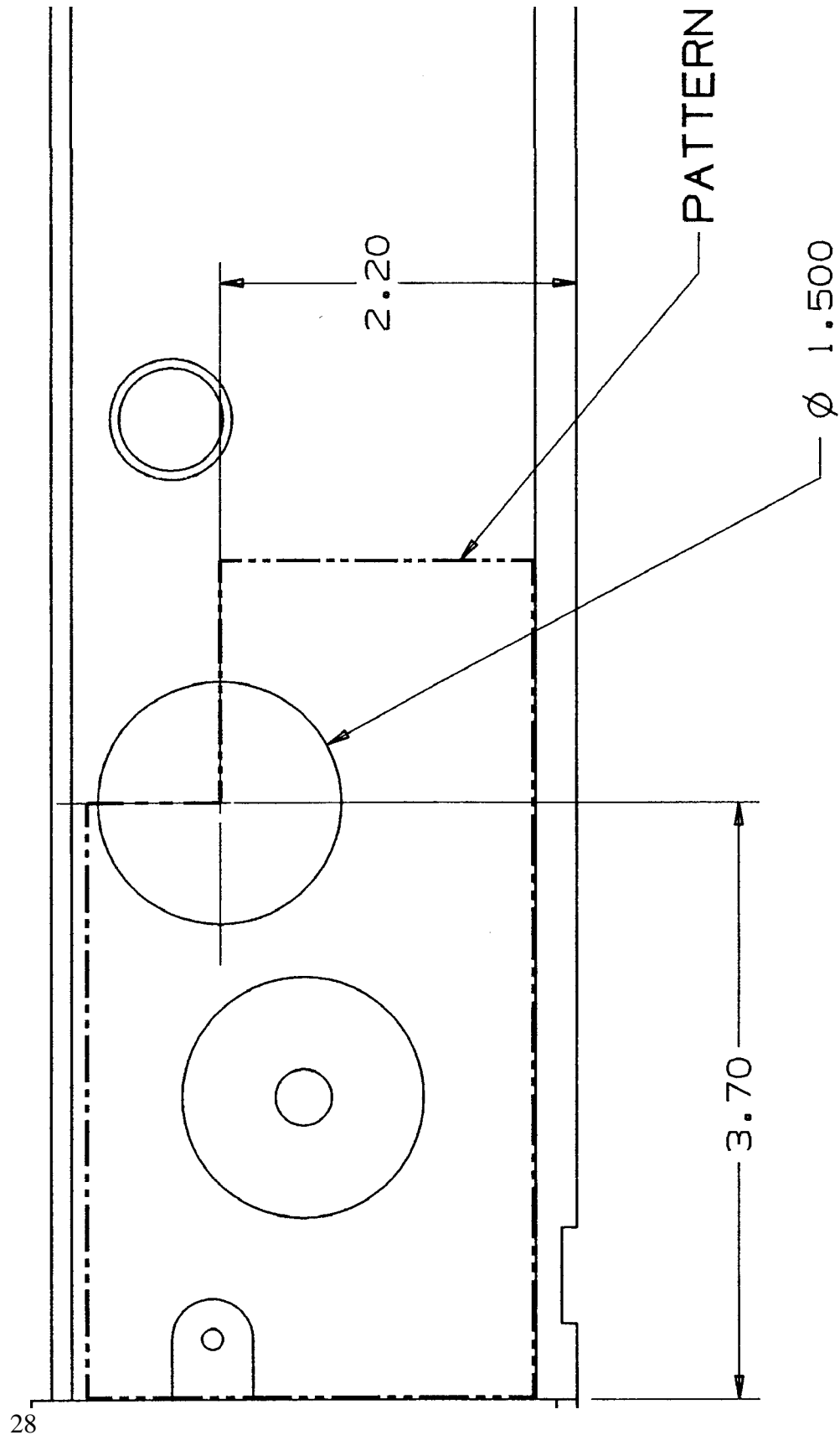


FIGURE 2-19. TEMPLATE - BEZEL FITTING HOLE (NARROW BEZEL)



"NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."



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