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Compumotor

717/721 Display
User Guide

Compumotor Division
Parker Hannifin Corporation
p/n 88-001393-01

Parker

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COMPUMOTOR CORPORATION

7/83

PRELIMINARY OPERATOR'S MANUAL
717/721 DISPLAY

System Description

The Display is a seven digit up/down counter which, when connected to the Compumotor 2100 Indexer, will indicate motor position in steps (or scaled multiples of steps).

The Display consists of seven .3 inch, seven segment, LED displays and one plus/minus display. An optical filter is used to reduce glare and improve contrast of the display. The Display is designed to attach to the top of a Compumotor 2100 Indexer. This combination will fit an E.I.A. standard 19 inch rack with the optional rack mount kit.

The logic includes a switch selectable divide-by-N prescaler, leading zero blanking, and a switch selectable decimal point.

The switch selection of the divide-by-N prescaler is presented in Table 2.1. The switch selection of the remaining options are presented in Table 2.2. Switches are accessed by removing the top cover.

Decimal Point

The position of the decimal point is set with switch group S2, switches 1 through 4. The switch defines how many digits will be after the decimal. Switch S2-1 "On" will cause 1 digit after the decimal point (.0). Switch S2-3 and Switch S2-4 control three and four digits respectively after the decimal point. If two or more of these switches are on, the decimal point is turned off. The normal preset mode is S2-3 "On". See Table 2.2.

Overflow and Leading Zero Blanking

Leading zeros to the left of the decimal point will be blanked, except if an overflow condition occurs (more than 9,999,999), the count will continue to count as if there was an eighth digit, and leading zeros will not be blanked. This is the only indication of an overflow condition.

P/N 88-001393-01

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SWITCH BANK S1

Switch Bank S1 controls the input count prescaler divide-by ratio. By selecting the appropriate 8 bit binary code, the prescaler may divide the input pulse by any decimal value from 1 to 255. The counter is normally preset at the factory with switch bank S1 set to divide-by-25. This allows the indexer software to automatically select either divide-by-25 or divide-by-1.

DIVIDE BY	S1-8	7	6	5	4	3	2	1	COMMENTS
0	0	0	0	0	0	0	0	0	Invalid Setting
1	0	0	0	0	0	0	0	1	1 pulse per increment *
2	0	0	0	0	0	0	1	0	2 pulses per increment
3	0	0	0	0	0	0	1	1	3 pulses per increment
4	0	0	0	0	0	1	0	0	Etc.
5	0	0	0	0	0	1	0	1	
6	0	0	0	0	0	1	1	0	
7	0	0	0	0	0	1	1	1	
8	0	0	0	0	1	0	0	0	
9	0	0	0	0	1	0	0	1	
10	0	0	0	0	1	0	1	0	
11	0	0	0	0	1	0	1	1	
				Etc.					
24	0	0	0	1	1	0	0	0	
*25	0	0	0	1	1	0	0	1	
26	0	0	0	1	1	0	1	0	
27	0	0	0	1	1	0	1	1	
28	0	0	0	1	1	1	0	0	
29	0	0	0	1	1	1	0	1	
30	0	0	0	1	1	1	1	0	
31	0	0	0	1	1	1	1	1	
32	0	0	1	0	0	0	0	0	
33	0	0	1	0	0	0	0	1	
				Etc.					
253	1	1	1	1	1	1	0	1	
254	1	1	1	1	1	1	1	0	
255	1	1	1	1	1	1	1	1	

0 = Switch Off 1 = Switch On

*Normal Factory Setting

For any other divide-by ratio, S2-5 must be on and switch bank S1 must be set to the appropriate divide-by ratio.

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SWITCH BANK S2

Switch Bank S2 controls the decimal point position, enables and disables indexer control over decimal point and prescaling, and controls the Up/Down count polarity.

S2-8 7 6 5 4 3 2 1	Description
X X X X 0 0 0 0	Not Valid-no decimal point and LS 4 digits do not have leading zero blanking
X X X A 0 0 0 1	.0 Normally preset at the factory
X X X A 0 0 1 0	.00 Normally preset at the factory
X X X A 0 1 0 0	.000
X X X A 1 0 0 0	.0000
X X X X B B B B	Decimal point disabled
X X X 0 X X X X	Indexer enables or disables decimal point and prescaler Switch Bank S1 must be set to divide-by 25. Normally preset at the factory.
X X X 1 X X X X	Enables decimal point and prescaler. User must select decimal point status and prescaler status. (Factory setting).
X X 0 X X X X X	Normal up/down count direction. Clockwise motor rotation counts in positive direction. Normally preset at the factory
X X 1 X X X X X	Inverts up/down count direction. Counter-clockwise motor rotation counts in positive direction.

0 = Switch Off	X = Don't Care
1 = Switch On	A = See Note A
	B = See Note B

Note A: This is valid if Switch S2-5 is on, or if Switch S2-5 and the indexer has the decimal point enabled. If Switch S2-5 if off and the indexer has the decimal point disabled, no decimal point will be displayed.

Note B: If more than one switch (S2-1, S2-2, S2-3, and S2-4) are on, the decimal point will be disabled. This has priority over switch S2-5 and the indexer.

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Environmental Requirements

Operating Environment

The display will not be affected by any one or any combination of the following conditions during operation:

Temperature: 0°C to 50°C

Humidity: 10% to 90% non-condensing.

Non-Operating Environment

The display will not be affected by any one or any combination of the following conditions during storage or shipment:

Temperature: -30°C to 80°C

Humidity: 10% to 90% non-condensing

Vibration: Will withstand .02" P-P displacement with frequency varied from 10 to 55 Hz for 15 minutes in each of three axes.

Transporation: Meets limits of NSTC test procedure 1A with a 30-inch drop.

Failure Repair:

Other than the proper setting of the dip switch options, there are no user serviceable parts in the display. Repairs are to be done at the factory level. The only exceptions are repair by Compumotor field service personnel or repair by qualified technical personnel operating under Compumotor instructions.

Display Warning of Limit Switch Encounter

The display will blink on and off if either extreme end of travel limit switch is encountered. It will continue to blink until the limit switch is cleared and the indexer is given a new start command after the direction bit polarity is reversed.

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MODEL 717 DISPLAY

INSTALLATION INSTRUCTIONS

FIGURE 1 Model 172 Indexer

STEP 1. Detach the side plate (A) from the Model 172 Indexer by removing four screws (C).

2. Remove the top cover (B) by removing two flat head screws (E) and three pan head screws (D).

FIGURE 2 Model 717 Display

Step 3. Detach the top cover (F) from the Model 717 Display by removing two flat head screws (J) and two pan head screws (H).

FIGURE 3 Model 172/717 Assembly

Step 4. Place Model 172 Indexer next to Model 717 Display. Attach them using four screws (L) (supplied with Model 717 Ship Kit).

5. Plug flat cable assembly (K) into J5 of Model 172 and into J2 of Model 717.

6. Check Model 717 Display DIP switch settings. Model 717 DIP switches are preset at the factory as follows:

	1	2	3	4	5	6	7	8
S1	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
S2	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF

7. Replace Model 172 top cover (B) using two flat head screws (E) and three pan head screws (D).

8. Replace Model 717 top cover (F) using two flat head screws (J) and two pan head screws (H).

9. Attach Model 172 side plate (A) to open side of Model 717

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using four screws (C).

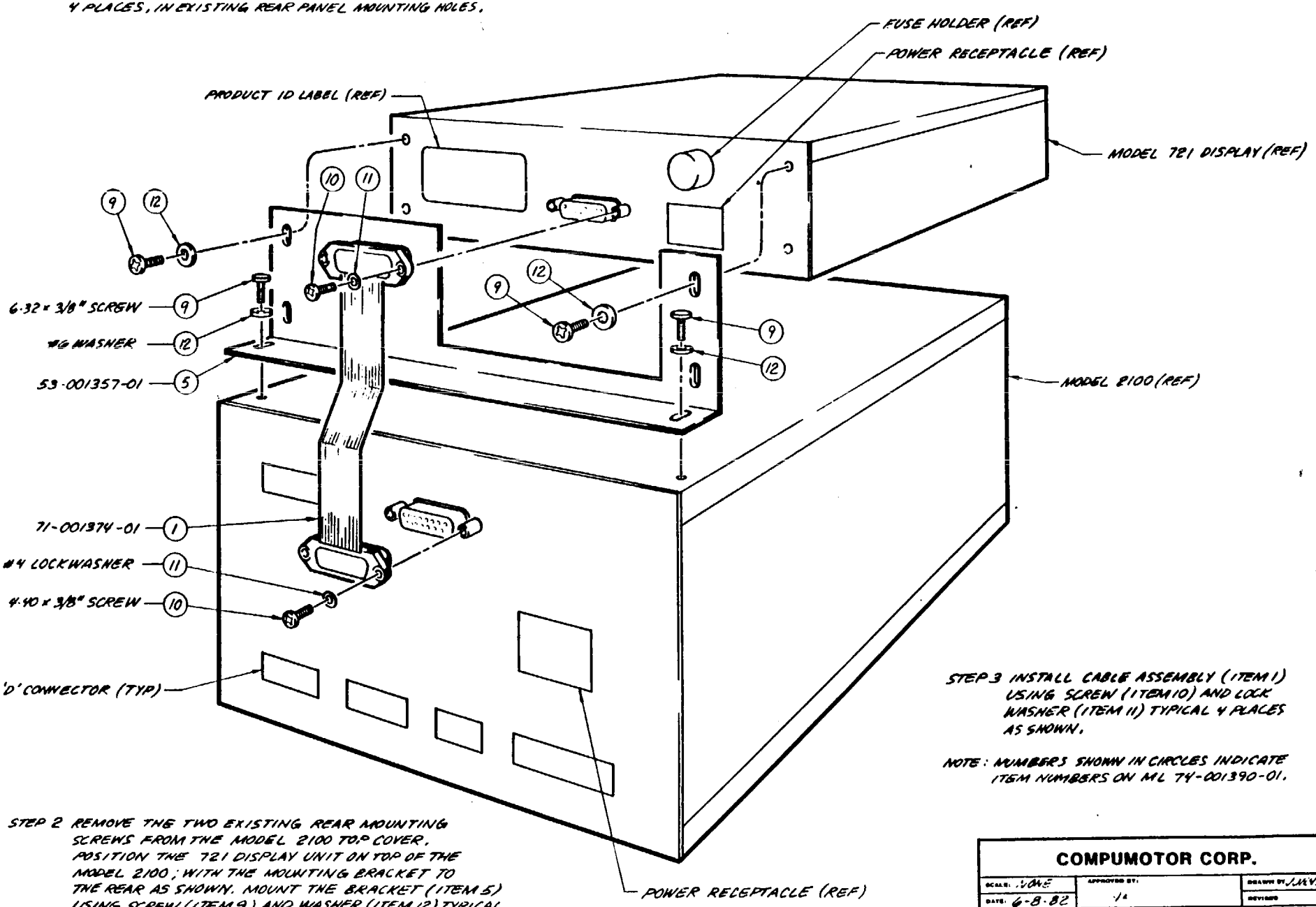
LIST OF PARTS

(Referred to in these instructions)

REF. DES.	DESCRIPTION	QTY
(A)	SIDE PLATE, MODEL 172 INDEXER	1
(B)	COVER, MODEL 172 INDEXER	1
(C)	SCREW, PHP, 6-32 X 1/4", BLACK	4
(D)	SCREW, PHP, 6-32 X 1/4", BLACK	3
(E)	SCREW, FHP, 6-32 X 1/4", BLACK	2
(F)	COVER, MODEL 717 DISPLAY	1
(H)	SCREW, PHP, 6-32 X 1/4", BLACK	2
(J)	SCREW, FHP, 6-32 X 1/4", BLACK	2
(K)	ASSY, CABLE, 717/172	1
(L)	SCREW, PHP, 6-32 X 3/8", STAINLESS (SUPPLIED WITH MODEL 717 SHIP KIT)	4

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STEP 1 REMOVE THE FOUR EXISTING REAR PANEL MOUNTING SCREWS FROM THE 721 DISPLAY UNIT. INSTALL THE MOUNTING BRACKET (ITEM 5) USING SCREW (ITEM 9) AND WASHER (ITEM 12) TYPICAL 4 PLACES, IN EXISTING REAR PANEL MOUNTING HOLES.



STEP 2 REMOVE THE TWO EXISTING REAR MOUNTING SCREWS FROM THE MODEL 2100 TOP COVER. POSITION THE 721 DISPLAY UNIT ON TOP OF THE MODEL 2100, WITH THE MOUNTING BRACKET TO THE REAR AS SHOWN. MOUNT THE BRACKET (ITEM 5) USING SCREW (ITEM 9) AND WASHER (ITEM 12) TYPICAL 2 PLACES, IN EXISTING TOP COVER MOUNTING HOLES.

STEP 3 INSTALL CABLE ASSEMBLY (ITEM 1) USING SCREW (ITEM 10) AND LOCK WASHER (ITEM 11) TYPICAL 4 PLACES AS SHOWN.

NOTE: NUMBERS SHOWN IN CIRCLES INDICATE ITEM NUMBERS ON ML 74-001390-01.

COMPUMOTOR CORP.

SCALE: NONE	APPROVED BY:	DRAWN BY: JMV/JAV
DATE: 6-8-82		REVISED

INSTALLATION INSTRUCTIONS, 721 TO 2100 MOUNTING KIT

DRAWING NUMBER: 88-001954 A

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88-001086-01

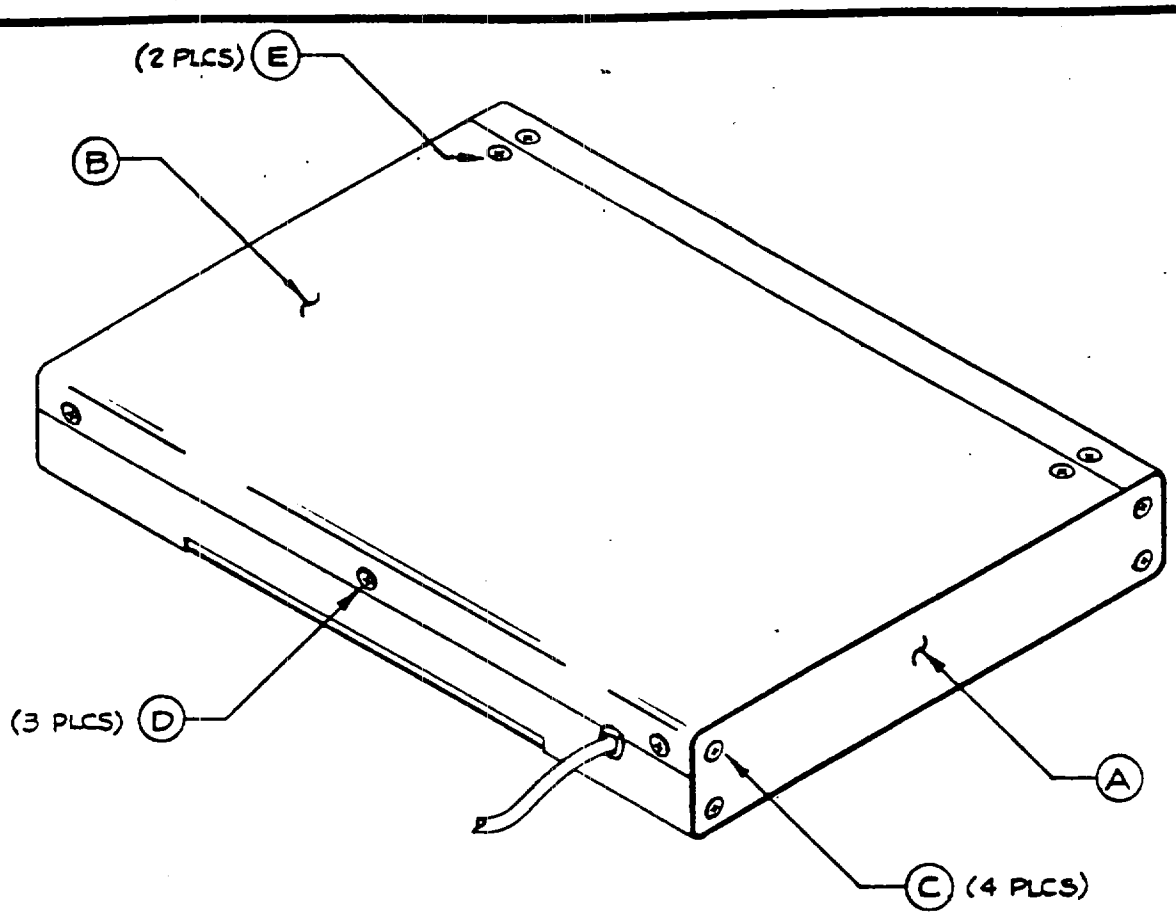


FIG. 1
MODEL 172 INDEXER

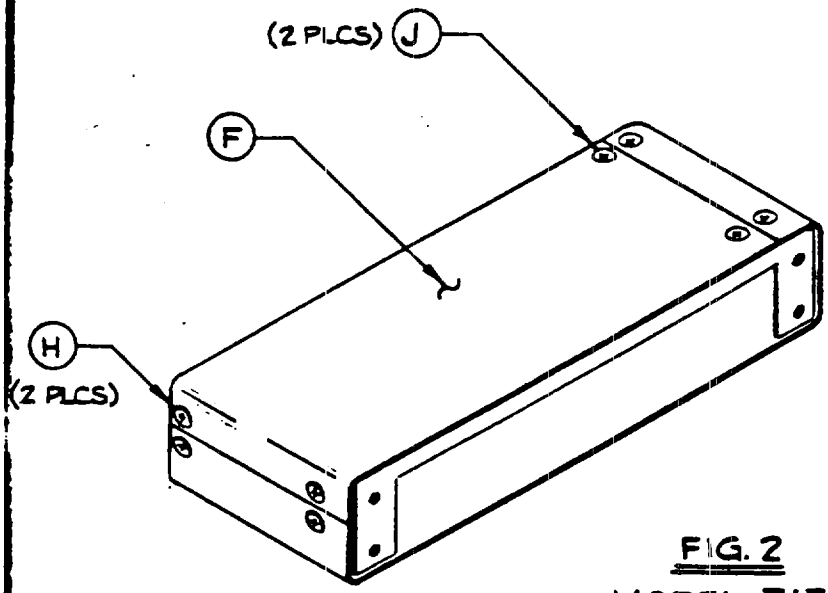


FIG. 2
MODEL 717 DISPLAY

Compumotor Corporation	88-001086-01	B	1
	DRAWING NUMBER	REV	SHEET

FORM 87-000331

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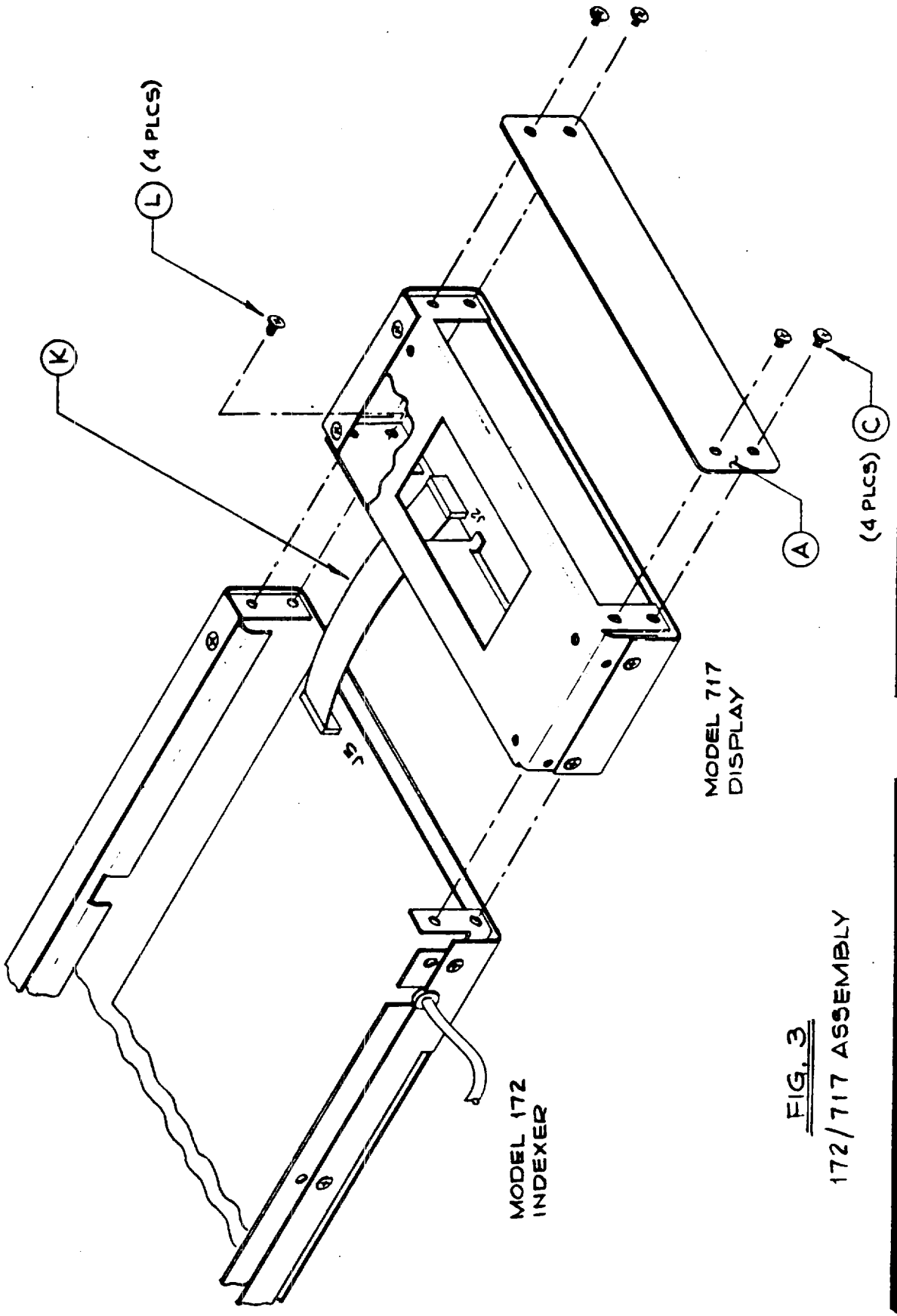


FIG. 3
172/717 ASSEMBLY

Compumotor Corporation	88-001086-01	B	2
	DRAWING NUMBER	REV	SHEET

FORM 87-000331

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