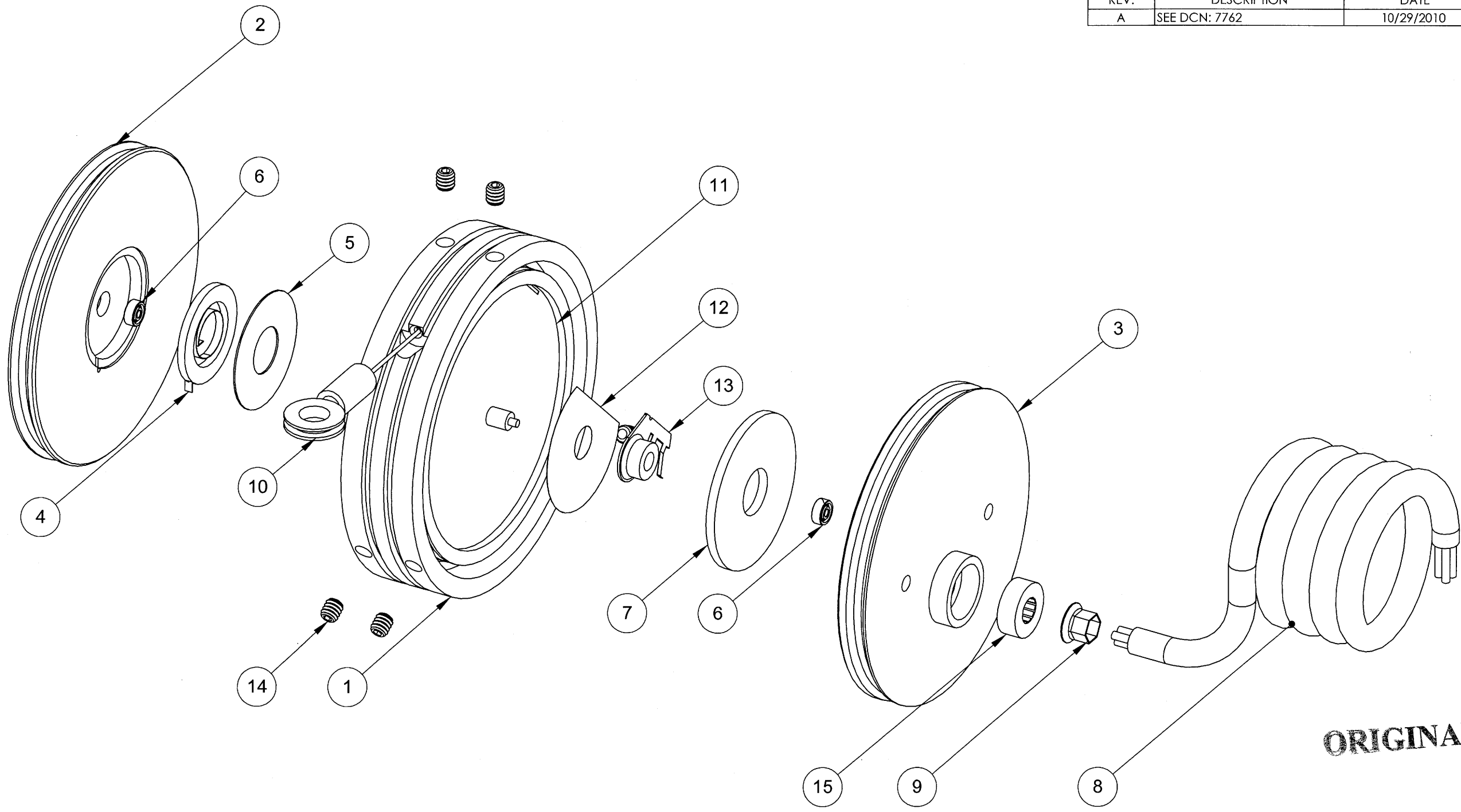


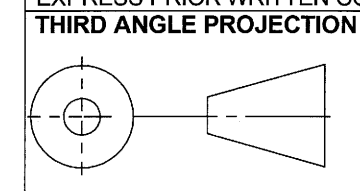
REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
A	SEE DCN: 7762	10/29/2010	N.O.



**ORIGINAL**

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TITLE  
**ASSEMBLY DRAWING  
MTA - 5"**

APPROVALS	DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV						
<table border="1"> <tr> <td>DRAWN</td> <td>E.GARCIA</td> <td>10/29/2010</td> </tr> <tr> <td>CHKD</td> <td>MSL</td> <td>3/31/11</td> </tr> </table>	DRAWN	E.GARCIA	10/29/2010	CHKD	MSL	3/31/11		<b>B</b>	<b>52158</b>	<b>PS-172</b>	<b>A</b>
DRAWN	E.GARCIA	10/29/2010									
CHKD	MSL	3/31/11									
DO NOT SCALE DRAWING		SCALE: 3:2		SHEET 1 OF 10							

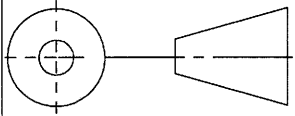
				TABLE 1					
A	ITEM NO	OPTIONS					QTY		
		5	5A	E	L	W		C	
	②	9678380-0000	9679327-0000	-	-	-	-	1	
	④	9678125-0000	9679036-0000	-	-	-	-	1	
	⑪	9678381-000	9679328-0000	-	-	-	-	1	
B	③	-	-	-	-	9678752-0000	9670106-0000	1	
	⑨	-	-	-	-	-	9000400-0170	1	
	⑧	-	-	-	-	-	9000141-0030	3.5 FT	
C	⑩	-	-	9603874-0005	9603935-0005	-	-	1	

	15	9000010-0052	ADHESIVE,EPOXY, ECCOBOND 286	1
	14	9650444-0038	SSCR,CRES,0.112-40 X .12 SKT HD	6
	13	9085000-0020	WIPER,1 TURN,5K OHM,MTA	1
	12	9678122-0000	DISK,INSULATING,TAPE,MTA	1
	11	SEE TABLE 1	SPOOL,ALUM,5 INCH,MTA	1
F	10	SEE TABLE 1	KIT,CABLE,Ø0.024	1
	9	SEE TABLE 1	EYELET FOR "C" OPTION ONLY	1
	8	SEE TABLE 1	ELECTRICAL CONNECTION	1
	7	9085000-0027	ELEMENT,1 TURN,5K OHM,MTA	1
	6	9000410-0020	BEARING,BALL,.047 X .156	2
	5	9678127-0001	DISK,SPRING,.01THK,MTA	1
	4	SEE TABLE 1	POWER SPRING, MTA	1
G	3	SEE TABLE 1	PLATE,POT SIDE,MTA - 5	1
	2	SEE TABLE 1	PLATE,SPRING SIDE	1
	1	9678384-0000	HOUSING,SPOOL,ALUM,MTA-5	1
	ITEM NO.	PART NUMBER	DESCRIPTION	QTY.

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TITLE  
**ASSEMBLY DRAWING  
MTA - 5"**

APPROVALS		DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN	E.GARCIA	10/29/2010	B	52158	PS-172	A
CHKD	MSK	7/31/11				

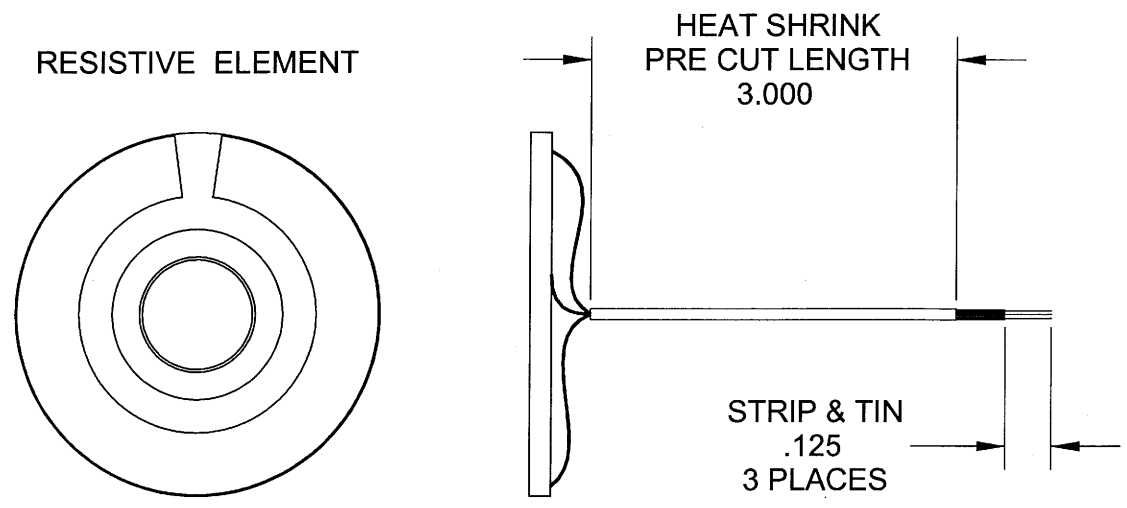
DO NOT SCALE DRAWING SCALE: 3:2 SHEET 2 OF 10

A  
B  
C  
D  
E  
F  
G

**STEP 1: RESISTIVE ELEMENT PREPARATION**

**OPTION W:**

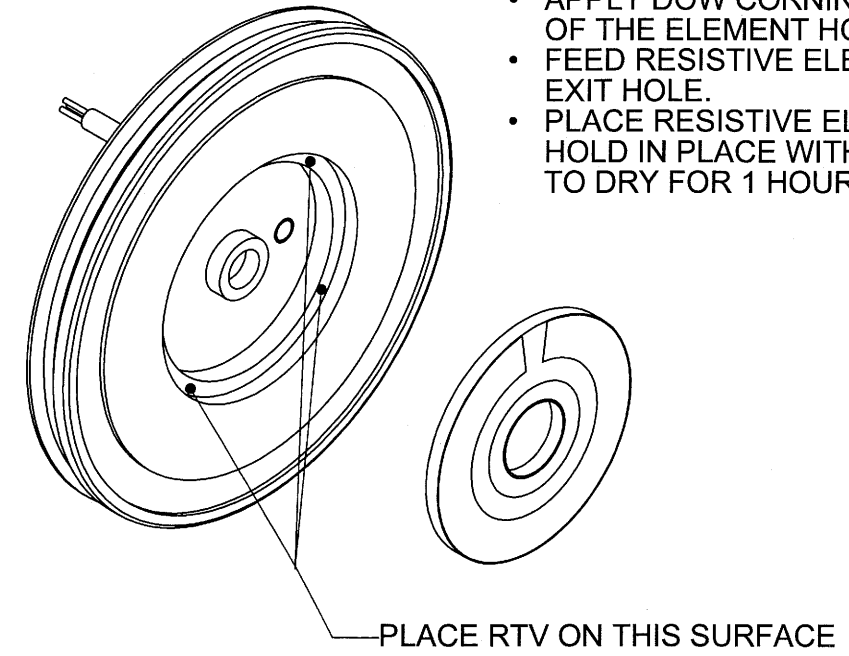
- SLIDE SHRINK TUBING, P/N 9000320-0012, OVER ELEMENT WIRES. PLACE TUBING AS CLOSE TO THE ELEMENT AS POSSIBLE.
- SHRINK TUBING WITH HEAT GUN.
- STRIP CONDUCTORS TO THE DIMENSION SHOWN.



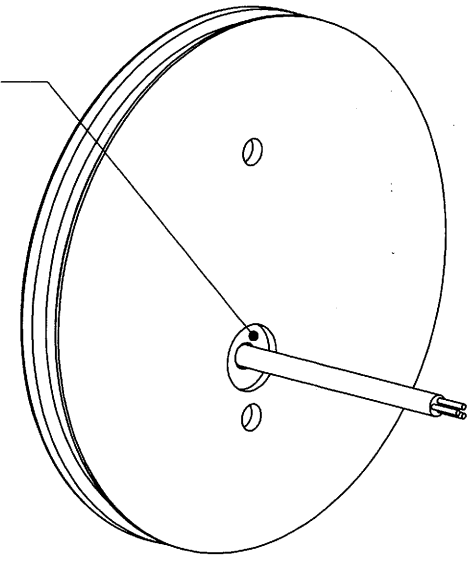
**STEP 2: ELECTRICAL CONNECTION**

**OPTION W:**

- APPLY DOW CORNING RTV 732 TO THE INSIDE OF THE ELEMENT HOUSING AS NOTED.
- FEED RESISTIVE ELEMENT WIRES THRU THE EXIT HOLE.
- PLACE RESISTIVE ELEMENT ON THE RTV AND HOLD IN PLACE WITH A CLAMP AND ALLOW TO DRY FOR 1 HOUR MINIMUM.

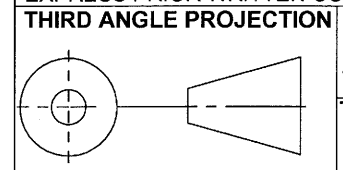


**STEP 3: STRAIN RELIEF APPLICATION**  
FILL CAVITY WITH ECCOBOND 286, SEE MIXING INSTRUCTIONS ON SHEET 5.



**ORIGINAL**

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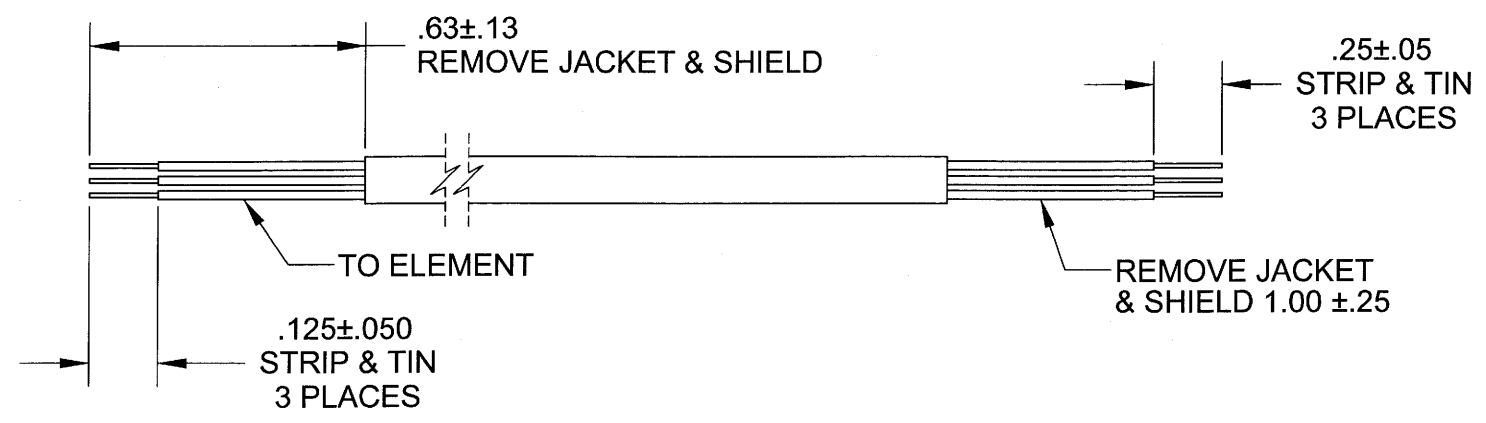
APPROVALS		DATE	TITLE	
DRAWN	E.GARCIA	10/29/2010	SIZE	CODE IDENT. NO/DWG. NO.
CHKD	WISK	7/31/11	<b>B</b>	<b>52158 PS-172</b>
DO NOT SCALE DRAWING			SCALE: 3:2	SHEET 3 OF 10

**ELECTRICAL CONNECTION**

**OPTION C - STEP 1:**

- TRIM ELECTRICAL CABLE & ELEMENT LEADS AS SHOWN.

A

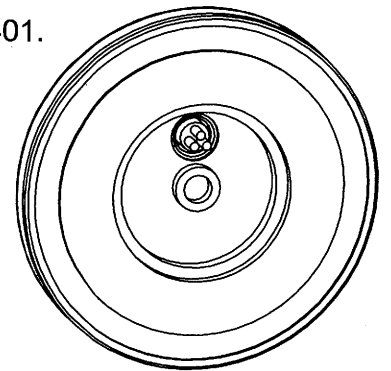


B

**ELECTRICAL CONNECTION**

**OPTION C: - STEP 3**

- SECURE THE EYELET TO THE HOUSING USING LOCTITE 401.

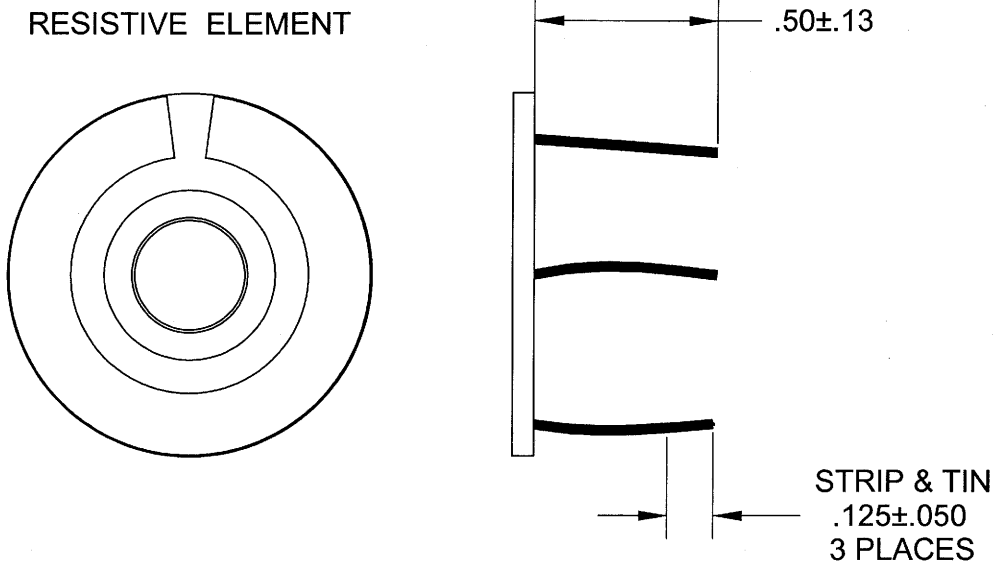


**ELECTRICAL CONNECTION**

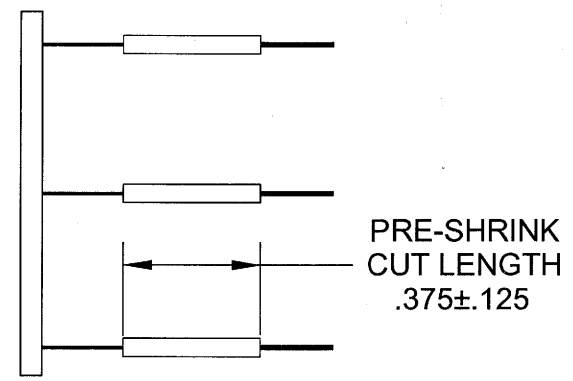
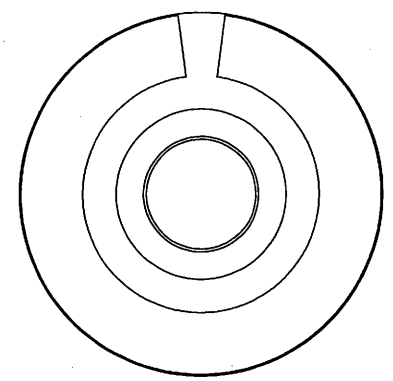
**OPTION C - STEP 4:**

- SOLDER ELECTRICAL CABLE TO THE ELEMENT LEADS PER TABLE 2.
- USE .375 LONG PIECE OF HEAT SHRINK, 9000200-0023 TO SEAL CONNECTION.

C



**RESISTIVE ELEMENT**



D

**ELECTRICAL CONNECTION**

**OPTION C: - STEP 5**

- APPLY DOW CORNING RTV TO THE INSIDE OF THE ELEMENT HOUSING AS NOTED.
- PLACE RESISTIVE ELEMENT ON THE RTV (ENSURE THE HEAT SHRINK PORTION REMAINS IN THE HOUSING)
- HOLD ELEMENT IN PLACE WITH A CLAMP AND ALLOW TO DRY FOR 1 HOUR MINIMUM.
- FILL CAVITY WITH ECCOBOND 286, SEE MIXING INSTRUCTIONS ON SHEET 5.

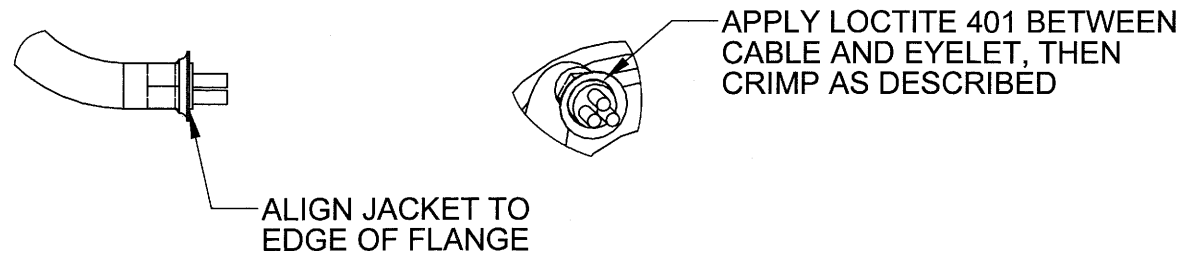
E

**ELECTRICAL CONNECTION**

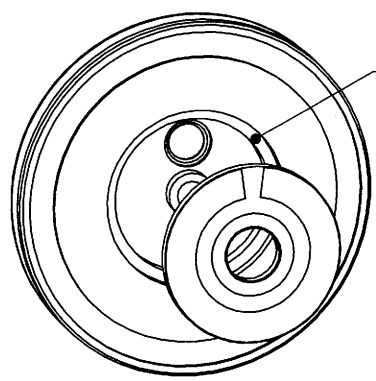
**OPTION C - STEP 2:**

- SLIDE THE ELEMENT HOUSING OVER THE CABLE BEFORE THE EYELET AND ALIGN JACKET WITH FLANGE, SEE VIEW BELOW.
- SECURE THE CABLE TO THE EYELET USING LOCTITE 401, ALLOW TO DRY.
- USING SAVA CRIMPING PLIERS, T-185 POSITION "C", SECURE THE EYELET TO THE ELECTRICAL CABLE.

F



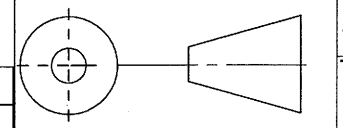
G



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TITLE

**ASSEMBLY DRAWING  
MTA - 5"**

TABLE 2	
ELEMENT WIRE COLOR	ELECTRICAL CABLE COLOR
ORANGE	BLACK
BROWN	RED
RED	GREEN

APPROVALS	DATE
DRAWN E.GARCIA	10/29/2010
CHKD NSX	7/31/11
DO NOT SCALE DRAWING	

SIZE	CODE IDENT. NO	DWG. NO.	REV
<b>B</b>	<b>52158</b>	<b>PS-172</b>	<b>A</b>
SCALE: 3:2		SHEET 4 OF 10	

1

2

3

4

5

6

7

8

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10

A

**MIXING INSTRUCTIONS:**

- USE CONNECTOR COVER 9640087-0004 AS A MIXING BOWL, OR EQUIVALENT.
- MIX INTO THE CONNECTOR COVER, EQUAL PARTS OF ECCOBOND 286, CELESCO P/N: 9000010-0052.
- USE A TAPERED SYRINGE, CELESCO P/N: 9650732-0000, TO DISPENSE INTO THE CAVITY AS SHOWN.
- KEEP LEVEL AT LEAST FOR THE FIRST 30 MIN TO KEEP EPOXY FROM RUNNING OUT
- ALLOW TO CURE AT LEAST 24 HOURS BEFORE HANDLING.

B

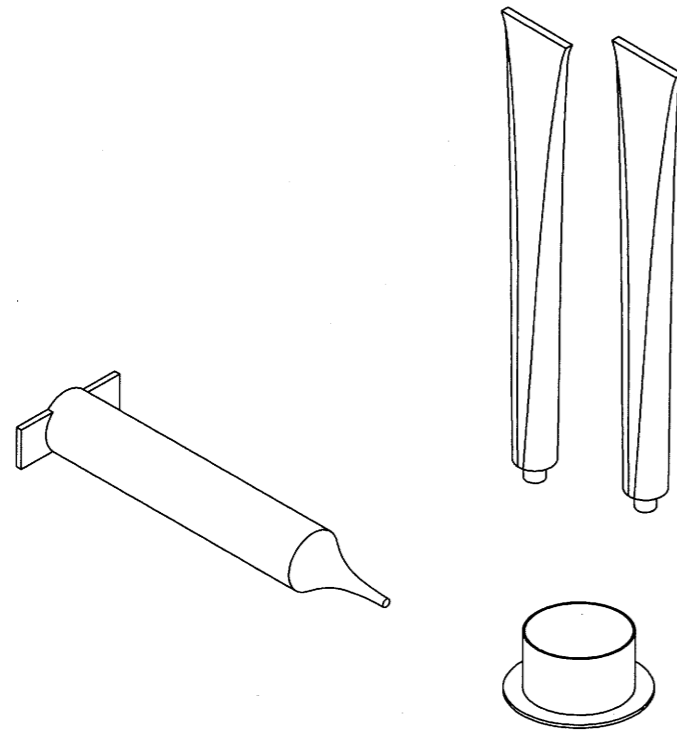
C

D

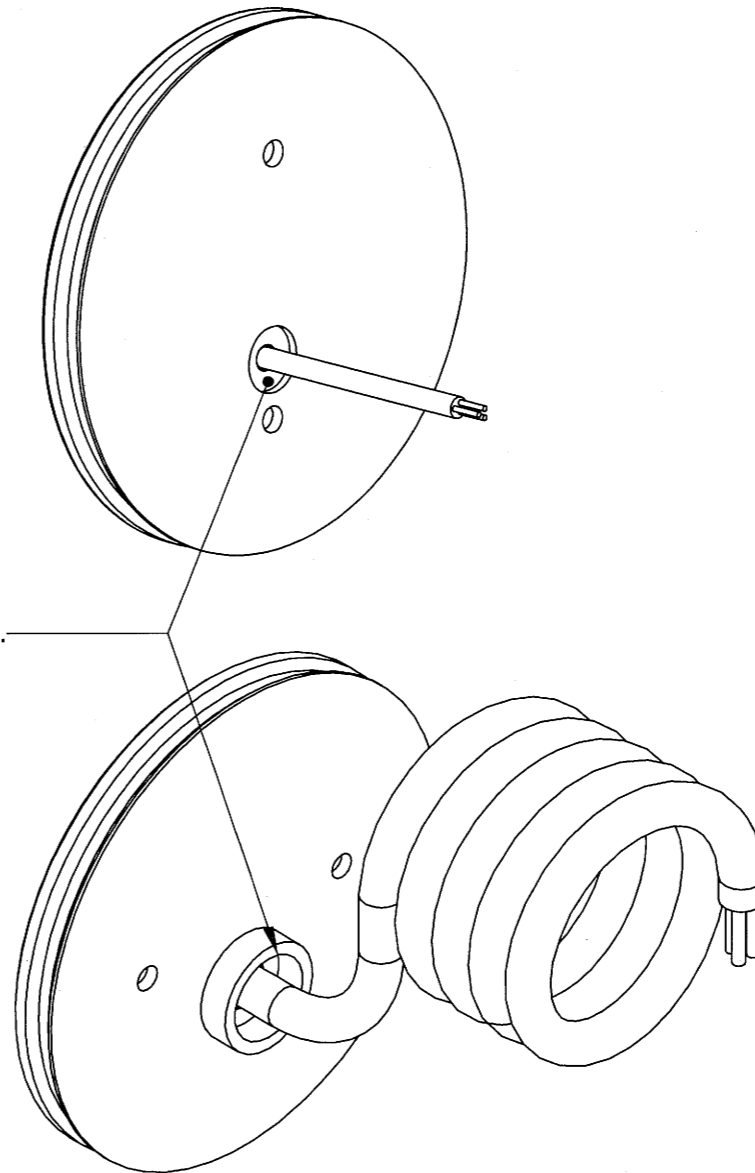
E

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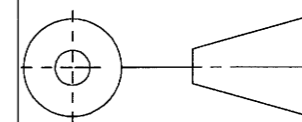
FILL CAVITY WITH ECCOBOND 286.



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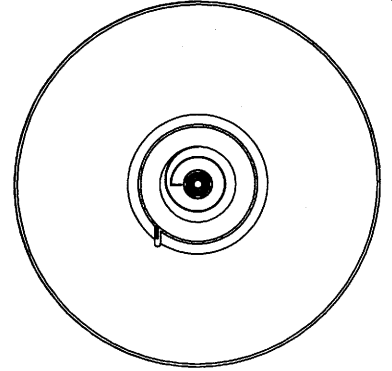
TITLE  
**ASSEMBLY DRAWING  
MTA - 5"**

APPROVALS		DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN	E.GARCIA	10/29/2010	<b>B</b>	<b>52158</b>	<b>PS-172</b>	<b>A</b>
CHKD	<i>MSK</i>	<i>3/31/11</i>	DO NOT SCALE DRAWING		SCALE: 3:2	SHEET 5 OF 10

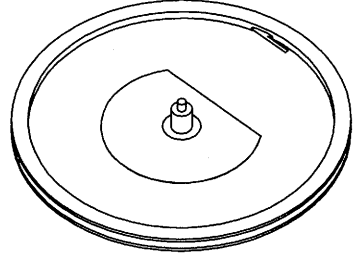
**ASSEMBLY**

A  
B  
C  
D  
E  
F  
G

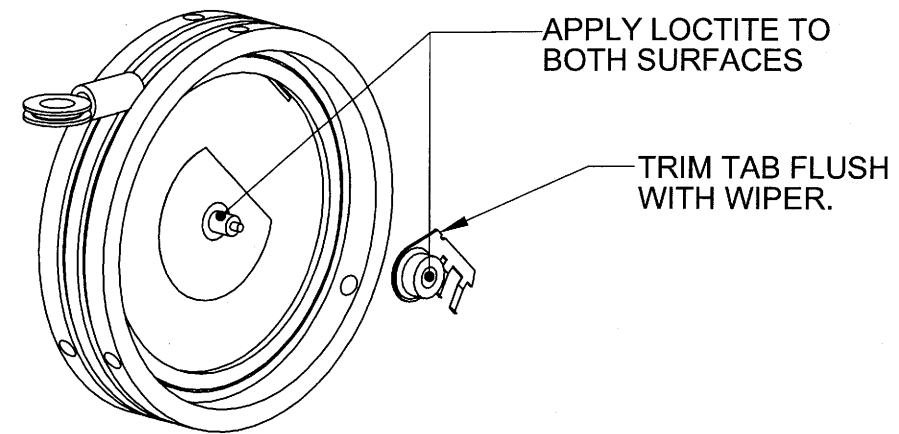
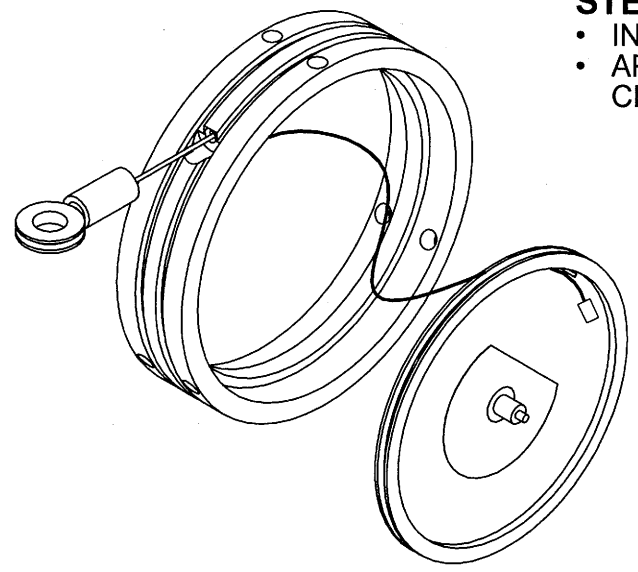
- STEP 1 SPRING INSTALLATION**
- INSERT BEARING INTO SPRING HOUSING.
  - INSERT SPRING INTO HOUSING AS SHOWN.
  - APPLY 2 DROPS OF SILICONE OIL, 9000000-00001, USING DISPENSER 9650601-0000.



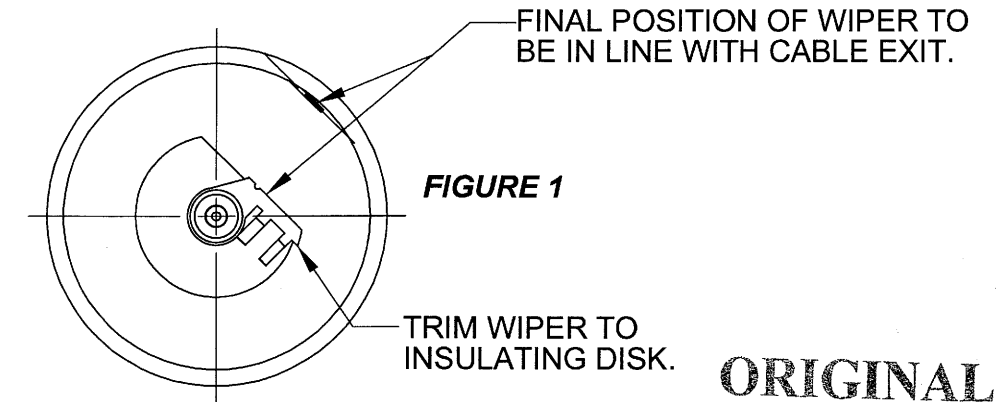
- STEP 2 INSULATING DISK INSTALLATION**
- INSTALL INSULATING DISK TAPE ON SPOOL AS SHOWN.
  - ALIGN FLAT OF DISK, PARALLEL, WITH CABLE EXIT HOLE.



- STEP 3 CABLE SUB ASSEMBLY INSTALLATION**
- INSTALL CRIMP PER CABLE ASSEMBLY DRAWING.
  - APPLY A SMALL DROP OF LOCTITE 401 BETWEEN THE CRIMP AND THE SPOOL, ENSURING IT LAYS FLAT.



- STEP 4 WIPER INSTALLATION**
- PLACE WIPER ON SPOOL HUB AND TRIM WIPER TO INSULATING DISK, SEE FIGURE 1.
  - AFTER TRIMMING, CLEAN SPOOL HUB AND WIPER BORE WITH ISOPROPYL ALCOHOL, ALLOW TO DRY.
  - USING A PINK LOCTITE DISPENSER, P/N: 9650602-0001, APPLY 2 DROPS OF LOCTITE AROUND THE SPOOL HUB AND INSIDE THE ELEMENT BORE.
  - **\*\*FINAL POSITION OF WIPER TO BE IN LINE WITH CABLE EXIT HOLE, SEE FIGURE 1\*\*.**



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TITLE  
**ASSEMBLY DRAWING  
MTA - 5"**

APPROVALS	DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN E.GARCIA	10/29/2010	<b>B</b>	<b>52158</b>	<b>PS-172</b>	<b>A</b>
CHKD <i>MSK</i>	3/31/11	DO NOT SCALE DRAWING		SCALE: 1:1	SHEET 6 OF 10

A

B

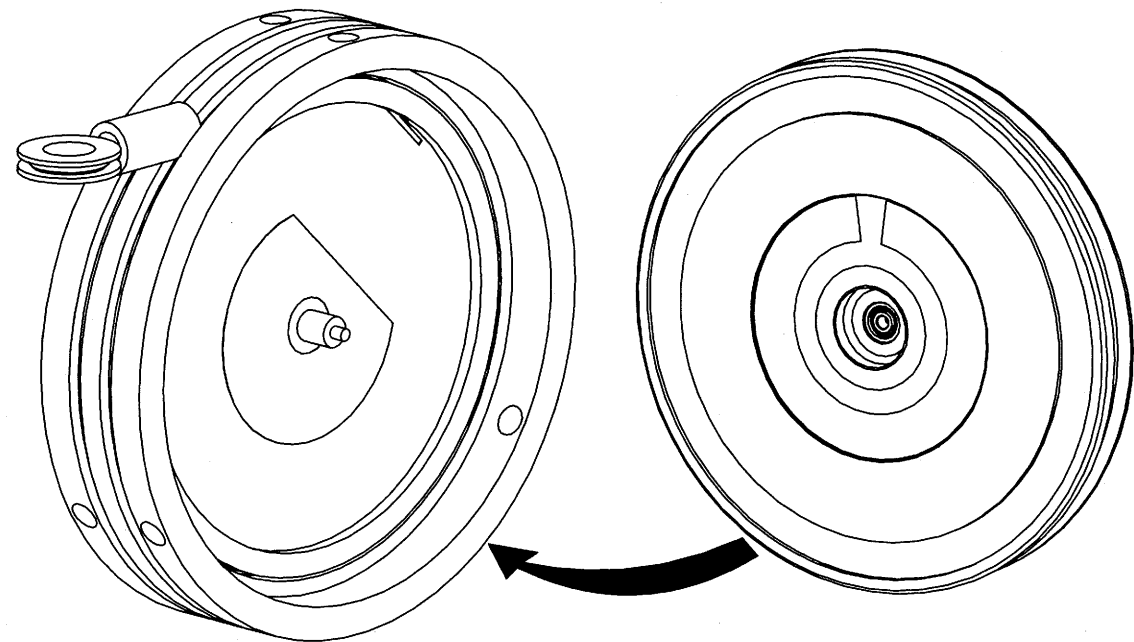
C

D

E

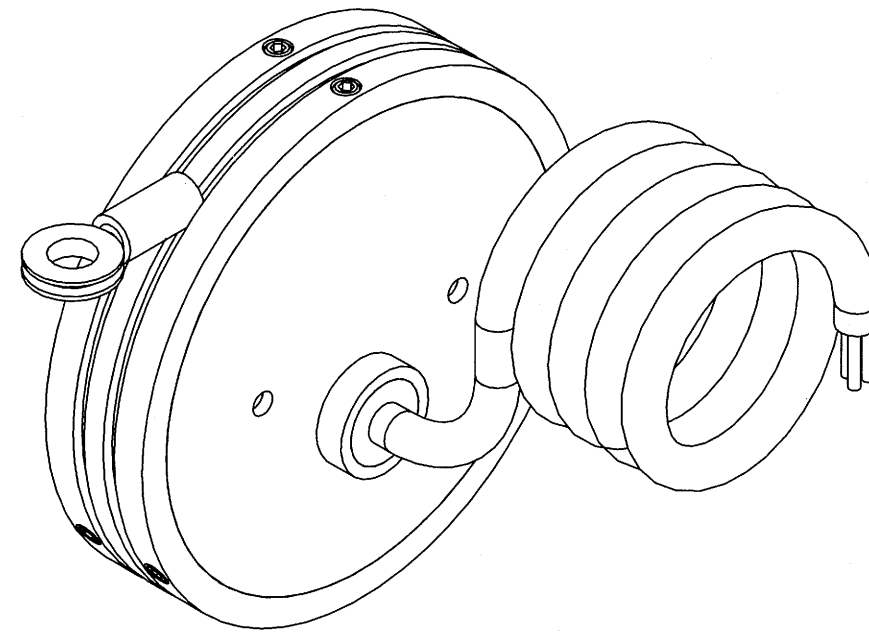
F

G



**STEP 5 ELEMENT ASSEMBLY INSTALLATION**

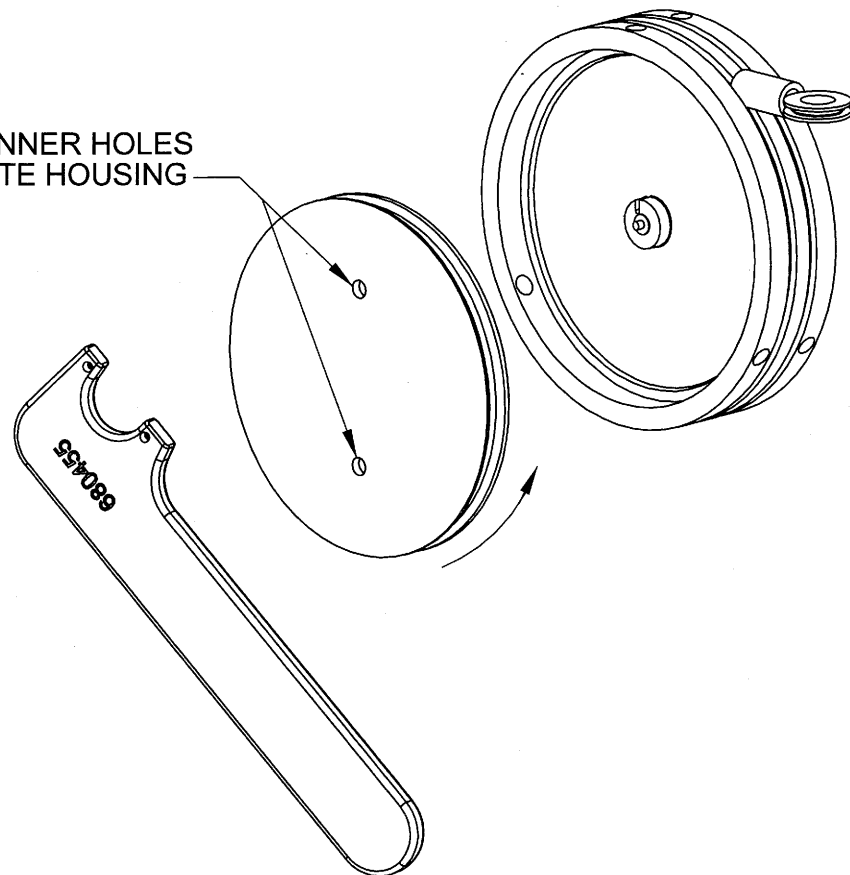
- PREPARE 3 SET SCREWS FOR INSTALLATION USING LOCTITE PRIMER 7649, ALLOW TO DRY.
- INSERT THE BEARING INTO THE ELEMENT HOUSING, CHECK THAT THE BEARING ROTATES FREELY.
- SLIGHTLY SECURE THE ELEMENT TO THE SPOOL HOUSING WITH THE SET SCREWS.



**STEP 7 OUTPUT ADJUSTMENT**

- USING A DVM, POWER SUPPLY SET TO 10.000 ±.001 VDC AND WIRED PER TABLE 3, ROTATE THE ELEMENT HOUSING TO ACHIEVE AN OUTPUT OF .04 - .06 VDC.
- SECURE ELEMENT HOUSING TO THE SPRING HOUSING, USE LOCTITE 222 ON THE THREE SCREWS.

USE SPANNER HOLES TO ROTATE HOUSING



**STEP 6 SPRING ASSEMBLY INSTALLATION**

- PREPARE 3 SET SCREWS FOR INSTALLATION USING LOCTITE PRIMER 7649, ALLOW TO DRY.
- WITH THE CABLE FULLY RETRACTED, INSERT THE SPRING ASSEMBLY INTO THE SPOOL HOUSING AND ENGAGE THE SPOOL ARBOR WITH THE SPRING HOOK.
- SLIGHTLY TIGHTEN THE SCREWS TO HOLD THE SPRING HOUSING IN PLACE.
- USING SPANNER WRENCH PN: 680455 ROTATE THE SPRING HOUSING 2.5 ± .5 TURNS IN THE DIRECTION INDICATED.
- SECURE THE SPRING HOUSING TO THE SPOOL HOUSING USING LOCTITE 222 ON ALL 3 SCREWS.

**ORIGINAL**

TABLE 3		
FUNCTION	ELEMENT WIRE OPTION	ELECTRICAL CABLE OPTION
+ INPUT	BROWN	RED
COMMON	ORANGE	BLACK
+ SIGNAL	RED	GREEN

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APPROVALS	DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN E.GARCIA	10/29/2010	B	52158	PS-172	A
CHKD <i>MSK</i>	3/31/11				

DO NOT SCALE DRAWING SCALE: 3:2 SHEET 7 OF 10

**ACCEPTANCE TEST PROCEDURE**

A

- USING THE TEST FIXTURE CI3034 AND THE HARNESS LABELED "PT101", ENTER THE DATA PER THE SEQUENCE NUMBER IN TABLE 4 INTO THE TEST DATA COMPUTER. REFER TO TABLE 5 FOR LIMITS.

B

TABLE 4		
CABLE POSITION % F.S.	OUTPUT DURING EXTENSION	OUTPUT DURING RETRACTION
0%	#1	#22
10%	#2	#21
20%	#3	#20
30%	#4	#19
40%	#5	#18
50%	#6	#17
60%	#7	#16
70%	#8	#15
80%	#9	#14
90%	#10	#13
100%	#11	#12

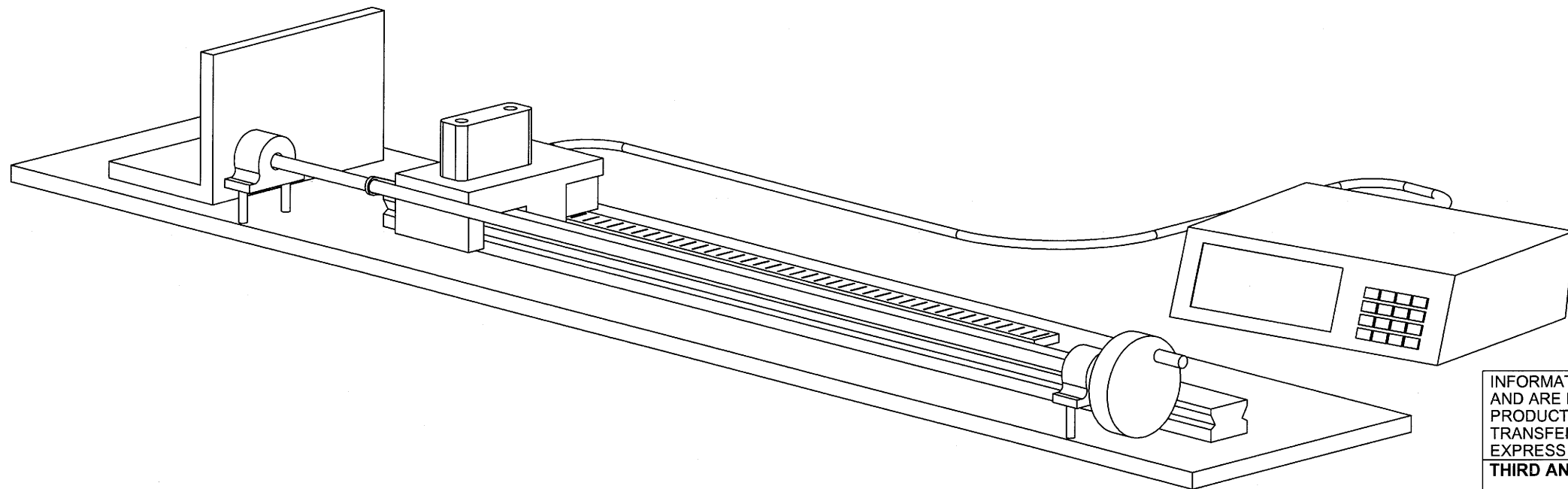
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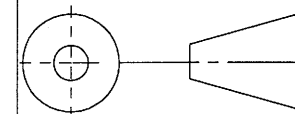


**ORIGINAL**

TABLE 5	
ACCEPTANCE TEST LIMITS	
0% F.S.	0.03-0.08 VDC
100% F.S.	9.30-10.00 VDC
%F.S. ACCURACY	±.4%

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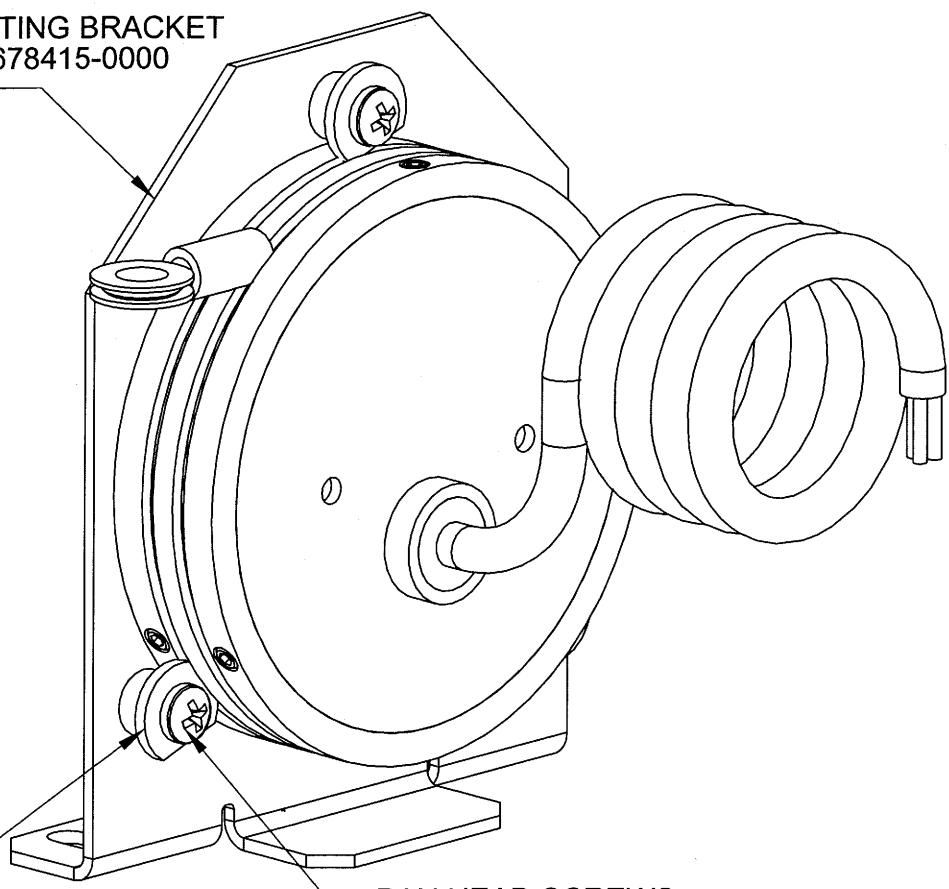
APPROVALS	DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN E.GARCIA	10/29/2010	B	52158	PS-172	A
CHKD MSK	3/31/11	DO NOT SCALE DRAWING		SCALE: 1:4	SHEET 8 OF 10

A  
B  
C  
D  
E  
F  
G

**MOUNTING BRACKET OPTION**

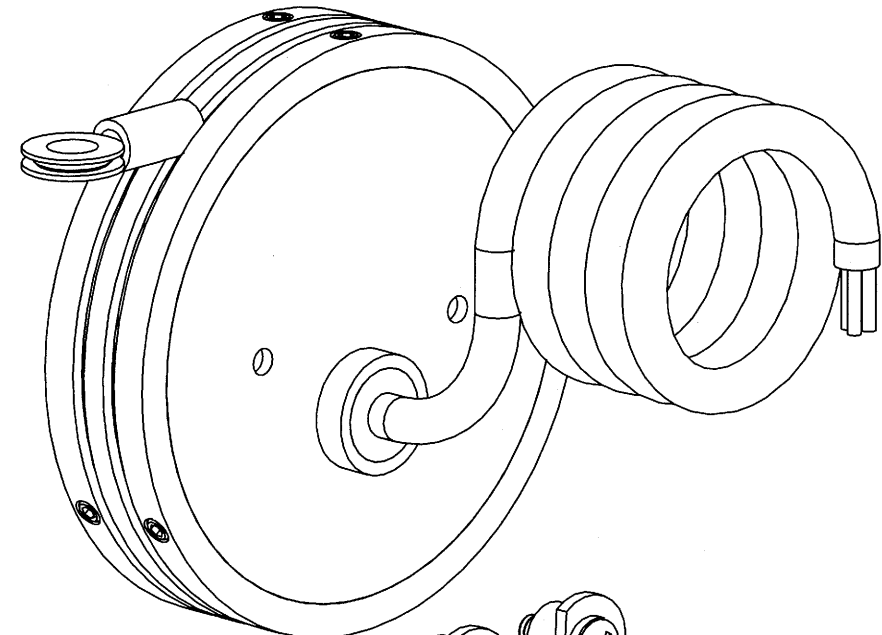
**SERVO CLAMP OPTION**

MOUNTING BRACKET  
P/N: 9678415-0000  
QTY 1



SERVO CLAMP  
P/N: 9000400-0133  
QTY 3

PAN HEAD SCREWS  
P/N: 9650444-0092  
QTY 3



SERVO CLAMP  
P/N: 9000400-0133  
QTY 3

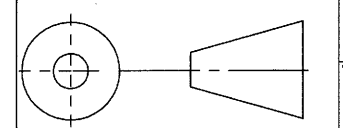
PLACE CLAMPS AND SCREWS IN A  
PLASTIC BAG PRIOR TO SHIPPING;  
ATTACH TO UNIT.

PAN HEAD SCREWS  
P/N: 9650444-0092  
QTY 3

**ORIGINAL**

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THIRD ANGLE PROJECTION



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www.celesco.com

TITLE  
**ASSEMBLY DRAWING  
MTA - 5"**

APPROVALS		DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN	E.GARCIA	10/29/2010	<b>B</b>	<b>52158</b>	<b>PS-172</b>	<b>A</b>
CHKD	<i>MSK</i>	7/31/11				

DO NOT SCALE DRAWING SCALE: 3:2 SHEET 9 OF 10

