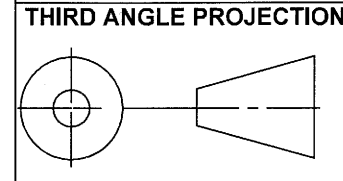


REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	SEE DCN: 7880	12/23/2010	

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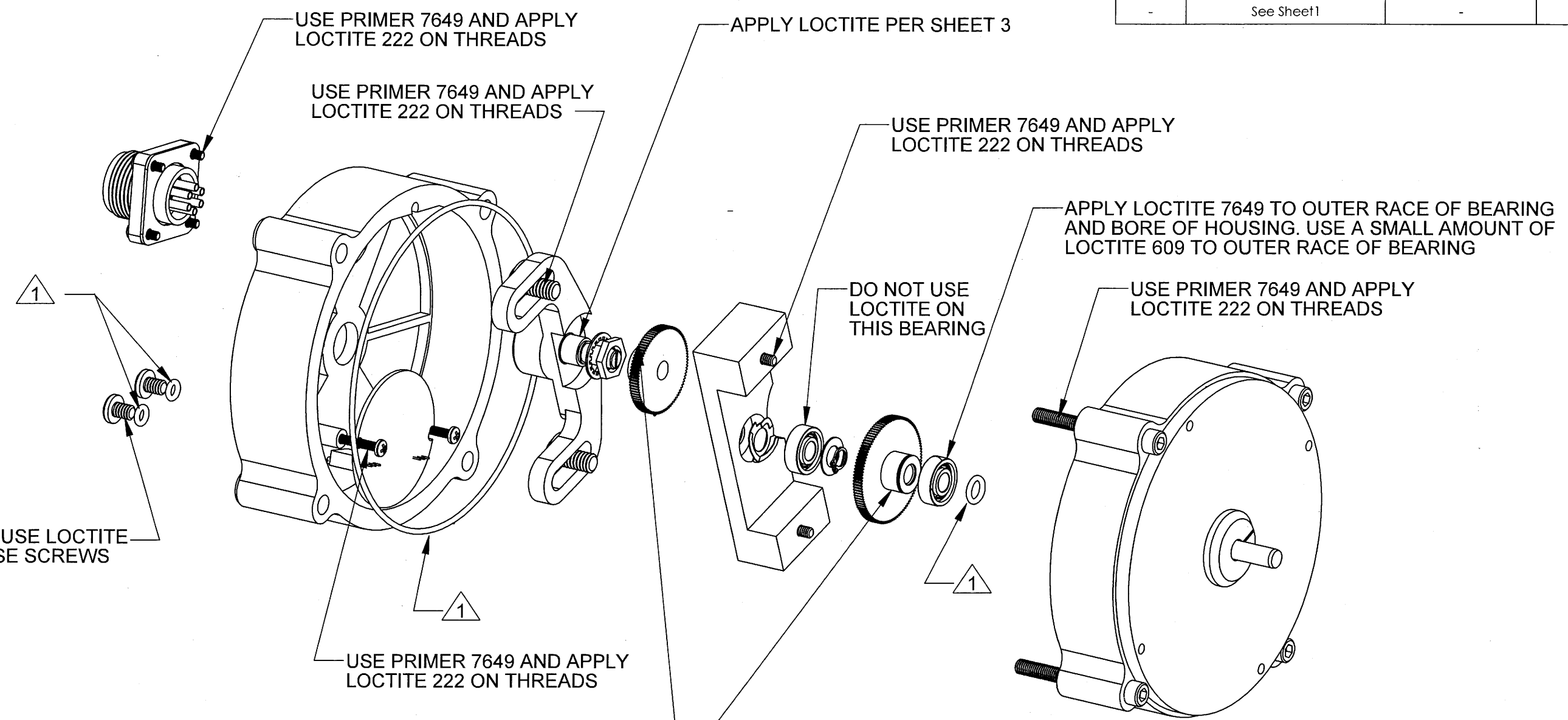
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APPROVALS		DATE	TITLE	
DRAWN	M. KRATOFIL	08/11/08	ASSEMBLY DRAWING RT9000 SERIES	
CHKD	MSK	1/29/11	SIZE	REV
DO NOT SCALE DRAWING		SCALE: 1:2	CODE IDENT. NO	DWG. NO.
			B	52158
			PS-146	A
			SHEET 1 OF 9	

ORIGINAL

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
-	See Sheet 1	-	-

A
B
C
D
E
F
G



STEEL GEAR:
APPLY PRIMER 7649 TO SET SCREW AND GEAR THEN APPLY LOCTITE 222 TO THREADS

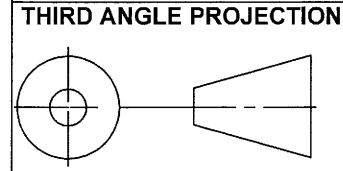
PLASTIC GEAR:
APPLY 1 DROP OF LOCTITE 425 INTO THE THREADS OF PLASTIC GEAR. THEN INSERT THE SET SCREW INTO GEAR. TIGHTEN 1/4 TO 1/2 TURN PAST INITIAL CONTACT

ORIGINAL

1 All o-rings to be entirely coated using Parker Super-lube o-ring lubricant.

NOTES: unless otherwise specified

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TITLE
**ASSEMBLY DRAWING
RT9000 SERIES**

APPROVALS		DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN	M.KRATOFIL	08/11/08	B	52158	PS-146	A
CHKD	MSK	1/20/11	DO NOT SCALE DRAWING		SCALE: 1:2	SHEET 2 OF 9

A

1. INSERT POT THROUGH HOLE IN BRACKET, AND INSTALL WASHER AGAINST BRACKET.
2. APPLY 1 DROP OF LOCTITE 222 TO THE THREADS, APPROX. 1 TO 2 THREADS FROM THE TOP OF THE LOCKWASHER USING A BLUE TIPPED DISPENSER.
3. ATTACH NUT TO THREADS OF POT AND TIGHTEN TO 20-25 IN-LBS OF TORQUE.

B

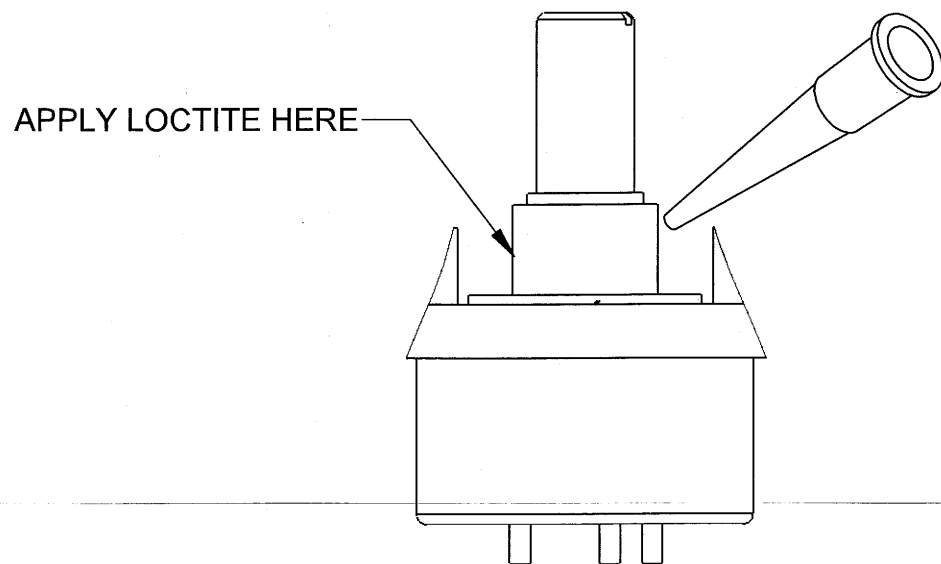
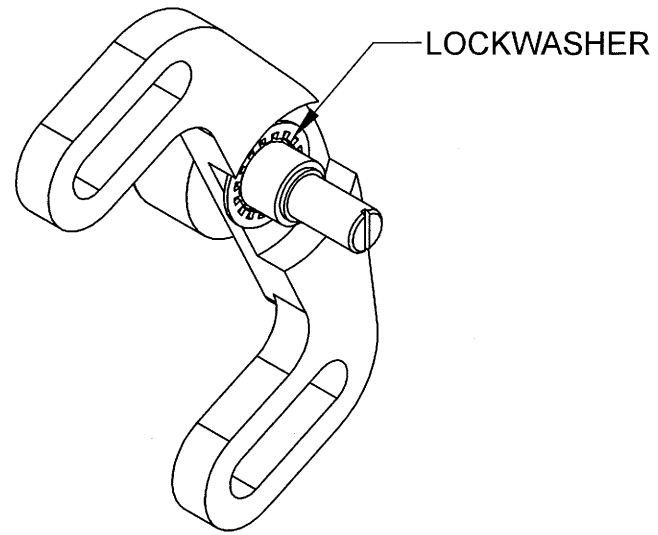
C

D

E

F

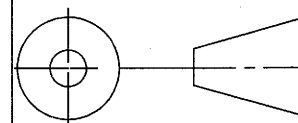
G



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THIRD ANGLE PROJECTION



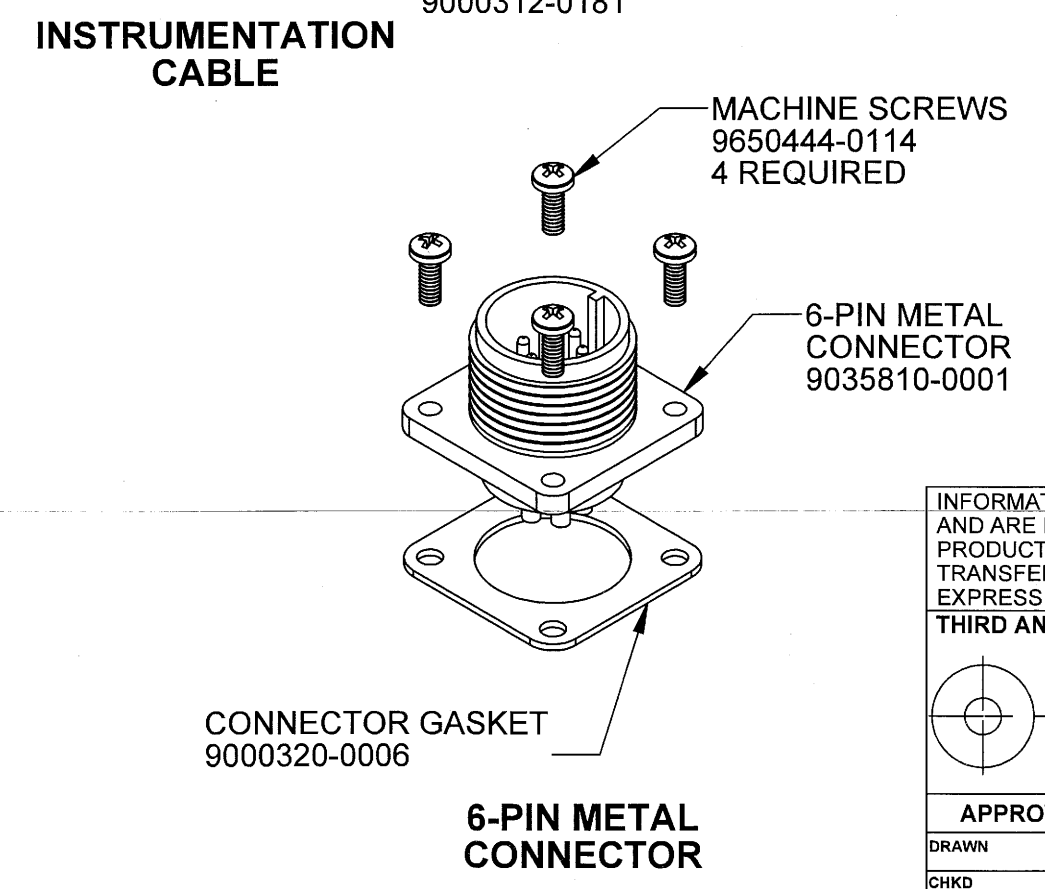
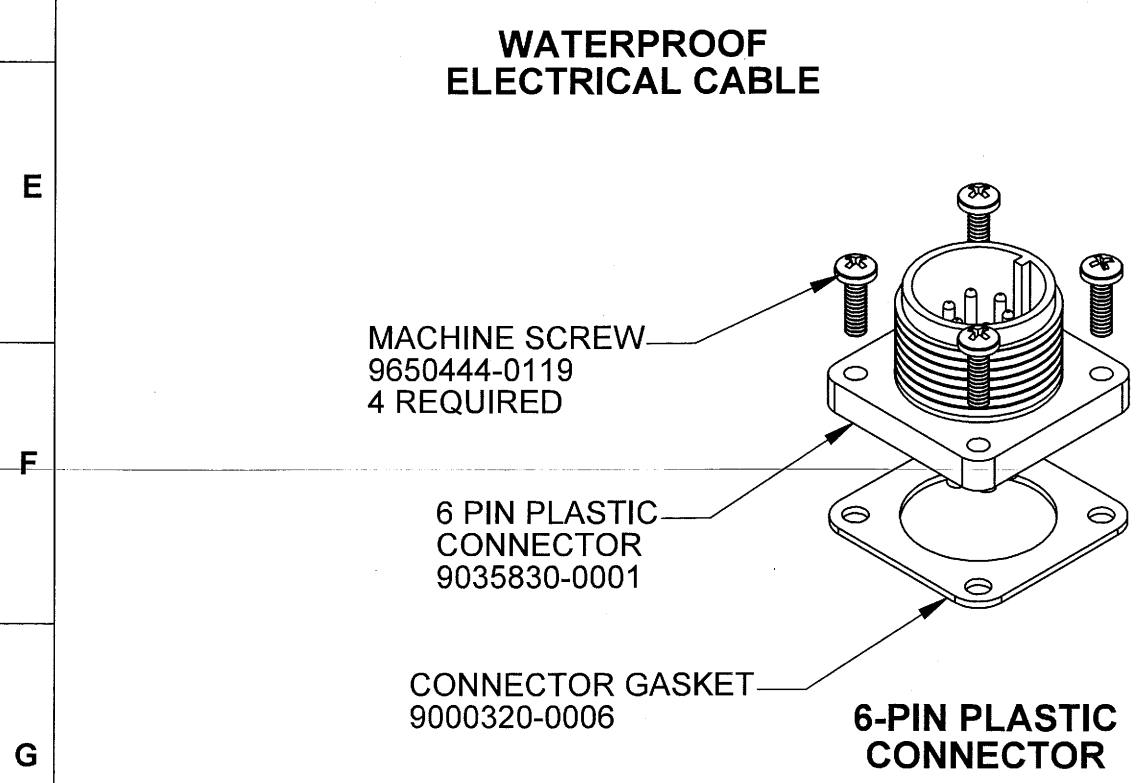
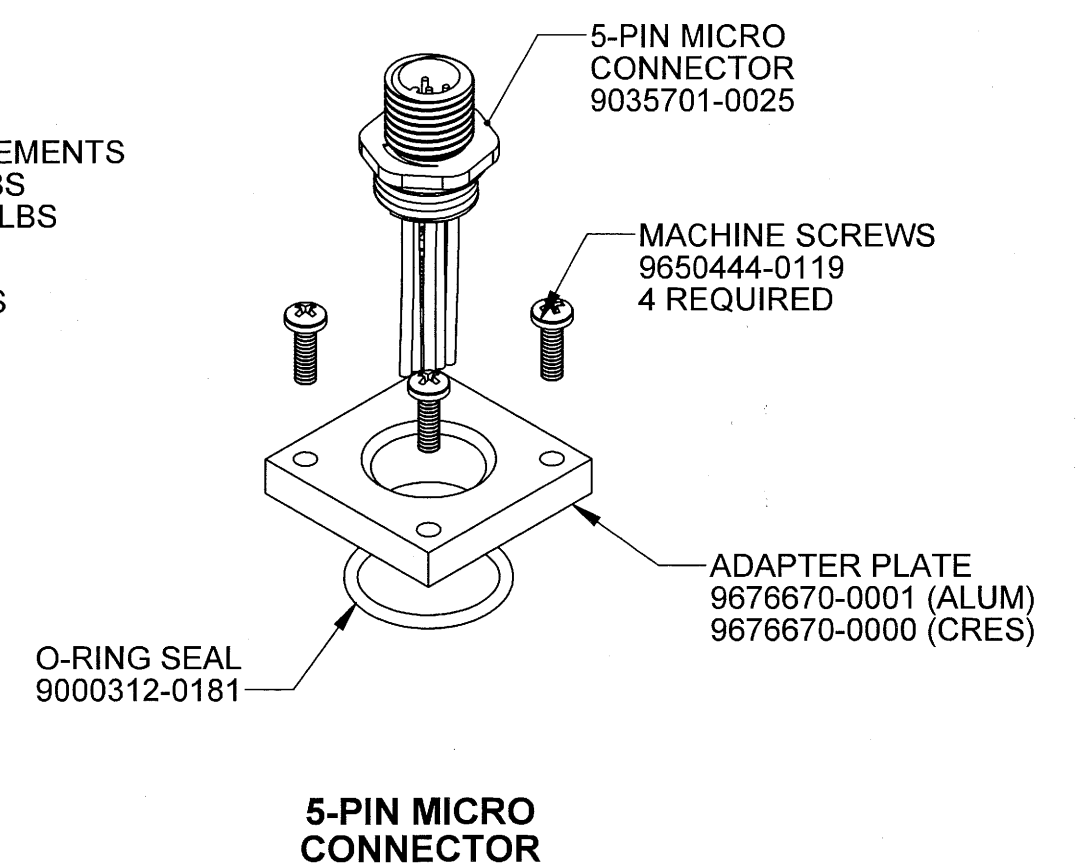
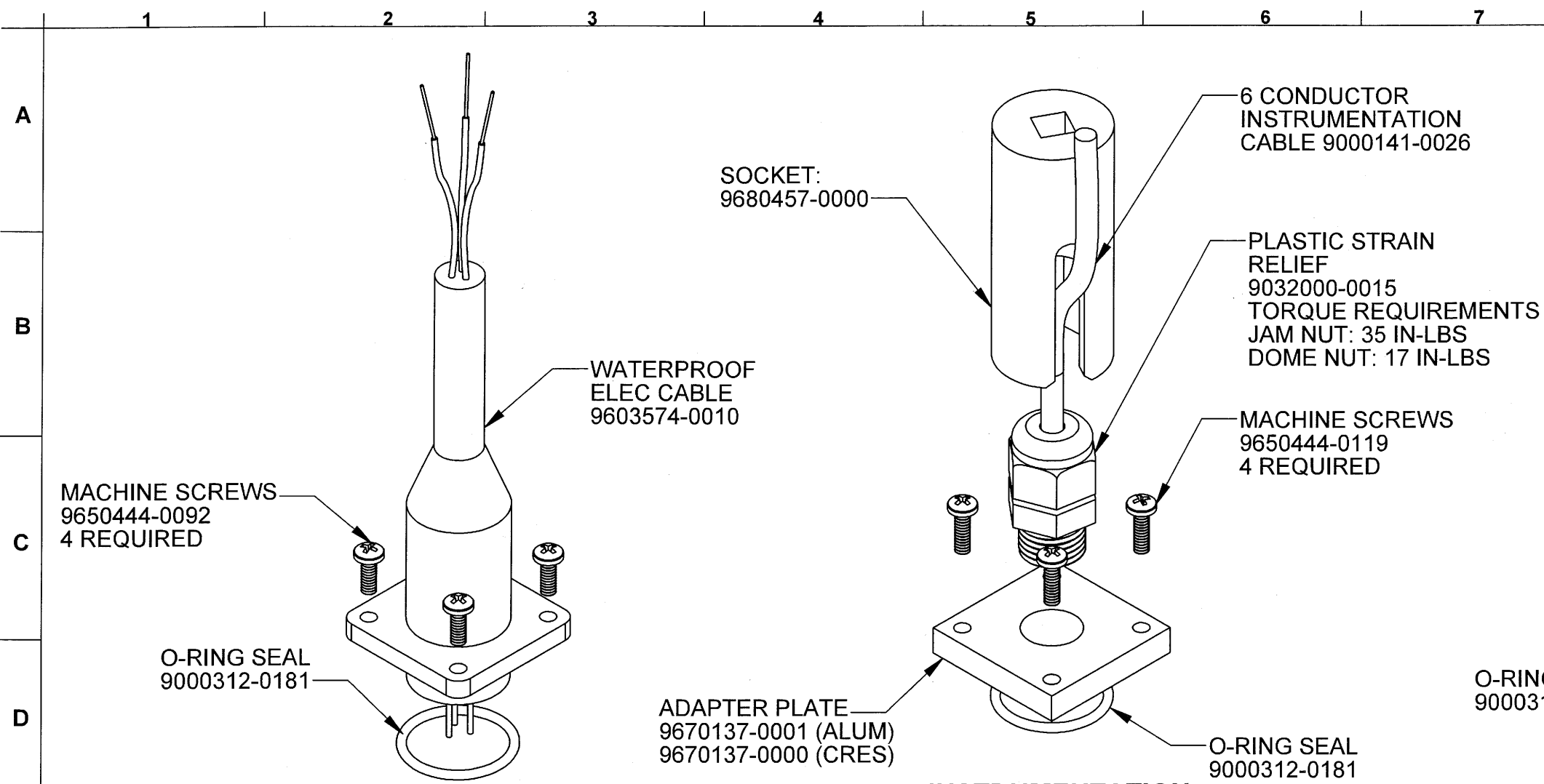
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TITLE
**ASSEMBLY DRAWING
RT9000 SERIES**

APPROVALS		DATE		SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN M.KRATOFIL		08/11/08		B	52158	PS-146	A
CHKD MSK		1/20/11		DO NOT SCALE DRAWING		SCALE: 2:1	SHEET 3 OF 9

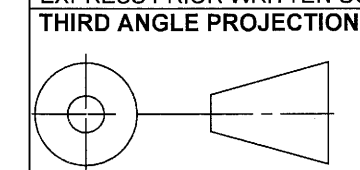
REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
-	See Sheet 1	-	-



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APPROVALS		DATE		TITLE	
DRAWN	M. KRATOFIL	08/11/08		ASSEMBLY DRAWING RT9000 SERIES	
CHKD	MSK	1/20/11	SIZE	CODE IDENT. NO	DWG. NO.
DO NOT SCALE DRAWING			B	52158	PS-146
			SCALE: 1:2	SHEET 4 OF 9	

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
-	See Sheet1	-	-

TABLE 1

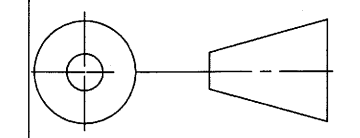
		RT9101	RT9420 **	RT9510 **	RT9232 **	RT9CN *	RT9DN *
ELECTRONICS	2 WIRE 4-20 mA	---	9604224-0001	---	---	---	---
	3 WIRE 4-20 mA	---	9604238-0001	---	---	---	---
	0-5 VDC or 0-10 VDC	---	---	9604246-0001	---	---	---
	2 mV/V BRIDGE	9603980-0016	---	---	---	---	---
	0-30 mVADJUSTABLE BRIDGE	9603980-0013	---	---	---	---	---
	RS232	---	---	---	9604014-0001	---	---
	CAN BUS SAE J1939	---	---	---	---	9604012-0001	---
	DEVICE NET ISO 11898	---	---	---	---	---	9603945-0001
GEARS AND POTS	RANGE	POT GEAR	SHAFT GEAR	POT 500 OHMS	POT 1K OHMS	POT 5K OHMS	POT 10K OHMS
	1/4 TURN	9678770-0120	9000440-0033	9083000-0052	9083000-0053	9080000-0001	9080000-0003
	1/2 TURN	9678770-0110	9000440-0030	9083000-0052	9083000-0053	9080000-0001	9080000-0003
	1 TURN	9000440-0022	9000440-0010	9083000-0052	9083000-0053	9080000-0001	9080000-0003
	2 TURN	9678770-0110	9000440-0017	9083000-0052	9083000-0053	9080000-0001	9080000-0003
	3 TURN	9678770-0120	9000440-0006	9083000-0052	9083000-0053	9080000-0001	9080000-0003
	5 TURN	9000440-0022	9000440-0010	9085000-0004	9085000-0011	9085000-0013	9085000-0001
	10 TURN	9000440-0022	9000440-0010	9085000-0003	9085000-0006	9085000-0010	9085000-0002
	20 TURN	9678770-0110	9000440-0025	9085000-0003	9085000-0006	9085000-0010	9085000-0002
	30 TURN	9678770-0120	9000440-0041	9085000-0003	9085000-0006	9085000-0010	9085000-0002
50 TURN	9678770-0130	9000440-0031	9085000-0003	9085000-0006	9085000-0010	9085000-0002	

ORIGINAL

* ONLY AVAILABLE WITH 5K OHM POTENTIOMETER
 ** ONLY AVAILABLE WITH 500 OHM POTENTIOMETER

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THIRD ANGLE PROJECTION



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TITLE
**ASSEMBLY DRAWING
 RT9000 SERIES**

APPROVALS	DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN M.KRATOFIL	08/11/08	B	52158	PS-146	A
CHKD <i>MSK</i>	<i>1/20/11</i>				
DO NOT SCALE DRAWING		SCALE: 1:1		SHEET 5 OF 9	

A

RT9101			
	POTENTIOMETER		
	CCW (1)	CW (3)	S (2)
6-PIN CONNECTOR	PIN A	PIN B	PIN C
INSTRUMENTATION CABLE	RED	BLACK	GREEN
WATERPROOF CABLE	WHITE	BLACK	GREEN

B

RT9DN and RT9CN			
	3-PIN HARNESS 604019		
	WHITE	GREEN	BLACK
POTENTIOMETER	CCW (1)	S (2)	CW (3)

C

RT9420 (CSA APPROVED)			
	WIRES SOLDERED TO PC BOARD		
	RED (E7)	BLACK (E6)	GREEN (E5)
6-PIN CONNECTOR	PIN A	PIN B	PIN D
INSTRUMENTATION CABLE	RED	BLACK	GREEN
WATERPROOF CABLE	WHITE	BLACK	GREEN

D

	WIRES SOLDERED TO PC BOARD		
	WHITE (E1)	GREEN (E4)	BLACK (E2)
POTENTIOMETER	CCW (1)	S (2)	CW (3)

E

RT9510 (0-5 VDC, 0-10 VDC)			
	4-PIN HARNESS 604066		
	WHITE	GREEN	BLACK
6-PIN CONNECTOR	PIN A	PIN B	PIN C
INSTRUMENTATION CABLE	RED	GREEN	BLACK
WATERPROOF CABLE	WHITE	GREEN	BLACK
	3PIN HARNESS 604019		
	WHITE	GREEN	BLACK
POTENTIOMETER	CCW (1)	S (2)	CW (3)

F

RT9101 ADJUSTABLE BRIDGE CIRCUIT				
	4 WIRE RIBBON CABLE FROM PCB			
	RED	BLACK	WHITE	GREEN
6-PIN CONNECTOR	PIN A	PIN B	PIN C	PIN D
INSTRUMENTATION CABLE	RED	BLACK	WHITE	GREEN

G

	3 WIRE RIBBON CABLE FROM PCB		
	WHITE	GREEN	BLACK
POTENTIOMETER	CCW (1)	S (2)	CW (3)

RT9510 (-5 TO +5 VDC, and -10 TO +10 VDC)			
	4-PIN HARNESS 604066		
	RED	GREEN	BLACK
6-PIN CONNECTOR	PIN A	PIN B	PIN C
INSTRUMENTATION CABLE	RED	GREEN	BLACK
WATERPROOF CABLE	WHITE	GREEN	BLACK
	3-PIN HARNESS 604019		
	WHITE	GREEN	BLACK
POTENTIOMETER	CW (1)	S (2)	CCW (3)

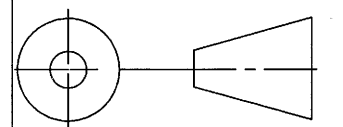
RT9420 (2-WIRE 4-20mA)			
	4-PIN HARNESS 604066		
	WHITE	BLACK	GREEN
6-PIN CONNECTOR	PIN A	PIN B	PIN D
INSTRUMENTATION CABLE	RED	BLACK	GREEN
WATERPROOF CABLE	WHITE	BLACK	GREEN
	3-PIN HARNESS 604019		
	WHITE	GREEN	BLACK
POTENTIOMETER	CCW (1)	S (2)	CW (3)

RT9420 (3-WIRE 4-20mA)			
	4-PIN HARNESS 604066		
	WHITE	BLACK	GREEN
6-PIN CONNECTOR	PIN A	PIN B	PIN C
INSTRUMENTATION CABLE	RED	BLACK	GREEN
WATERPROOF CABLE	WHITE	BLACK	GREEN
	3-PIN HARNESS 604019		
	WHITE	GREEN	BLACK
POTENTIOMETER	CCW (1)	S (2)	CW (3)

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TITLE
**ASSEMBLY DRAWING
RT9000 SERIES**

APPROVALS	DATE	SIZE	CODE IDENT. NO	DWG. NO.	REV
DRAWN M.KRATOFIL	08/11/08	B	52158	PS-146	A
CHKD WSK	1/20/11	DO NOT SCALE DRAWING		SCALE: 1:1	SHEET 6 OF 9

POTENTIOMETER ADJUSTMENT PROCEDURE RT9101, RT9420 & RT9510

1. SET THE APPLIED VOLTAGE TO 10.00VDC \pm .010VDC.
2. PRIOR TO INSTALLING THE COVER, ALIGN THE SCRIBE OF THE SHAFT WITH THE SCRIBE ON THE HOUSING AND ADJUST THE OUTPUT VOLTAGE AT 0.0° BETWEEN **0.05VDC & 0.15VDC**.

OUTPUT CALIBRATION PROCEDURE

- FOR RANGES LESS THAN OR EQUAL TO 10 TURNS, MOUNT TRANSDUCER TO FIXTURE 680339.
- FOR RANGES GREATER THAN 10 TURNS, MOUNT TRANSDUCER TO FIXTURE 680413.

ZERO SETTING

1. ALIGN THE SCRIBE OF THE SHAFT WITH SCRIBE ON THE HOUSING, RESET THE COUNTER.

2. ADJUST THE ZERO POSITION TRIM POT PER TABLE 2.

FULL SCALE SETTING

1. ROTATE THE FIXTURE DIAL FULLY COUNTER CLOCKWISE (FACING THE DIAL) UNTIL THE FULL SCALE IS REACHED.

2. ADJUST THE FULL SCALE TRIM POT PER TABLE 2.

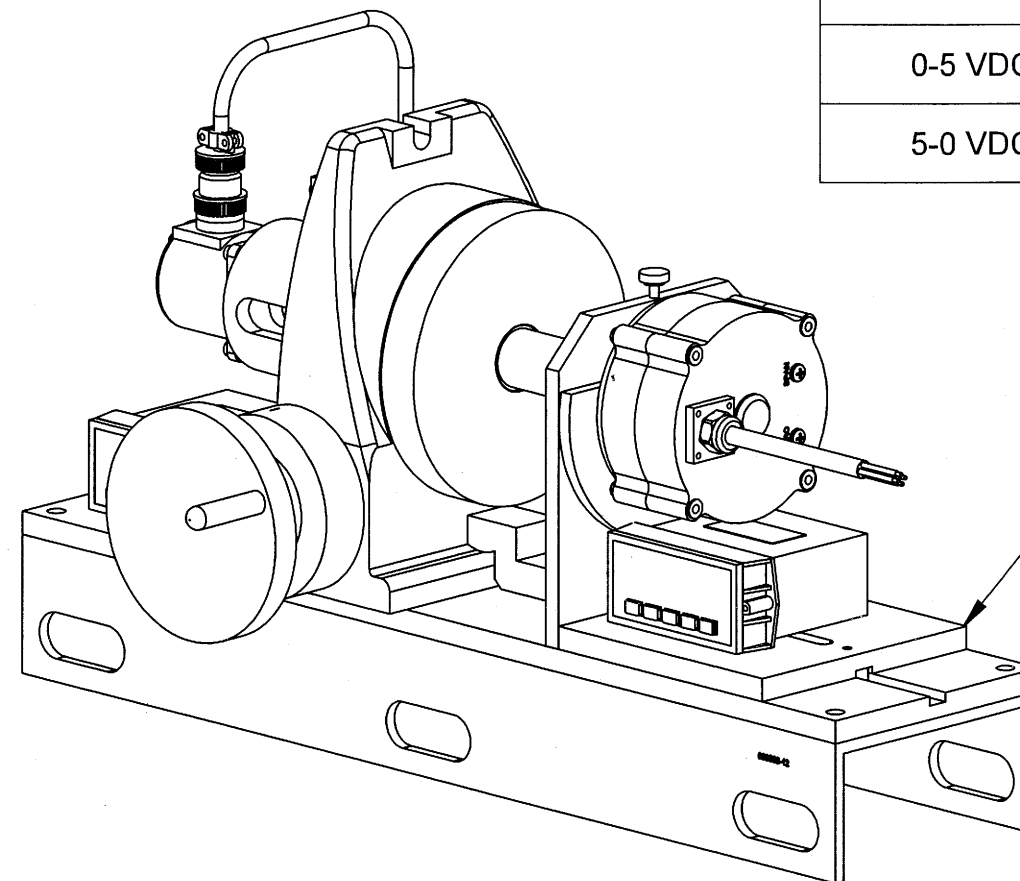
ACCEPTANCE TEST PROCEDURE

1. ROTATIONAL STANDARD TO BE 680339 OR 680413.
2. IF NOT ALREADY MOUNTED, SECURE TRANSDUCER ONTO THE DEVICE AND ALIGN THE FLAT OF THE SHAFT WITH THE SCRIBE ON THE HOUSING.
3. RESET THE COUNTER.
4. RECORD THE DATA PER TABLE 3 AND SEQUENCE NUMBER, AND ENTER INTO TEST DATA COMPUTER.

TABLE 2
END POINT ADJUSTMENT

ELECTRONICS	ZERO SETTING	FULL SCALE SETTING
4-20 mA 2 WIRE & CSA	3.98 - 4.02mA .995 - 1.005VDC*	19.98 - 20.02mA 4.995-5.005 VDC*
20-4 mA 2 WIRE & CSA	19.98 - 20.02mA 4.995-5.005 VDC*	3.98 - 4.02mA .995 - 1.005VDC*
0-20 mA 3 WIRE	0.0 - 0.05mA 0.0 - .0125VDC*	19.975 - 20.025mA 4.993 - 5.006VDC*
20-0mA 3 WIRE	19.975 - 20.025mA 4.993 - 5.006VDC*	3.98-4.02mA .995 - 1.005VDC*
0-10 VDC	0.0 - .01 VDC	9.99 - 10.01 VDC
10-0 VDC	9.99 - 10.01 VDC	0.0 - .01 VDC
0-5 VDC	0.0 - .01 VDC	4.99 - 5.01 VDC
5-0 VDC	4.99 - 5.01 VDC	0.0 - .01 VDC

* VOLTAGE OUTPUT WHEN MEASURED ACROSS A 250 Ω RESISTOR.



TEST FIXTURE 680339 SHOWN

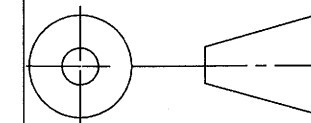
ORIGINAL

TABLE 3
TEST SEQUENCE

SHAFT POSITION % F.S.	OUTPUT (CLOCKWISE)	OUTPUT (COUNTER CLOCKWISE)	OUTPUT (CLOCKWISE)
0%	#1	#10	#11
25%	#2	#9	#12
50%	#3	#8	#13
75%	#4	#7	#14
100%	#5	#6	#15

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TITLE

**ASSEMBLY DRAWING
RT9000 SERIES**

APPROVALS DATE

DRAWN M.KRATOFIL 08/11/08

CHKD *MSK* 7/20/11

SIZE CODE IDENT. NO DWG. NO. REV

B 52158 PS-146 A

DO NOT SCALE DRAWING

SCALE: 1:4 SHEET 7 OF 9

A

**POTENTIOMETER ADJUSTMENT
PROCEDURE RT9CN & RT9DN**

1. SET THE APPLIED VOLTAGE TO 10.00VDC ±.010VDC.
2. PRIOR TO INSTALLING THE COVER, ALIGN THE SCRIBE OF THE SHAFT WITH THE SCRIBE ON THE HOUSING AND ADJUST THE OUTPUT VOLTAGE AT 0.0° BETWEEN **0.05VDC & 0.15VDC**.

B

**OUTPUT CALIBRATION PROCEDURE
(PCB INSTALLED)**

- FOR RANGES LESS THAN OR EQUAL TO 10 TURNS, MOUNT TRANSDUCER TO FIXTURE 680339.
- FOR RANGES GREATER THAN 10 TURNS, MOUNT TRANSDUCER TO FIXTURE 680413.

C

DEVICE NET

FOLLOW THE INSTRUCTIONS FOR TEST DATA PROCEDURE PER CELESCO DRAWING 603945-6.

CANBus

FOLLOW THE INSTRUCTIONS FOR TEST DATA PROCEDURE PER CELESCO DRAWING 604012-6.

D

ACCEPTANCE TEST PROCEDURE

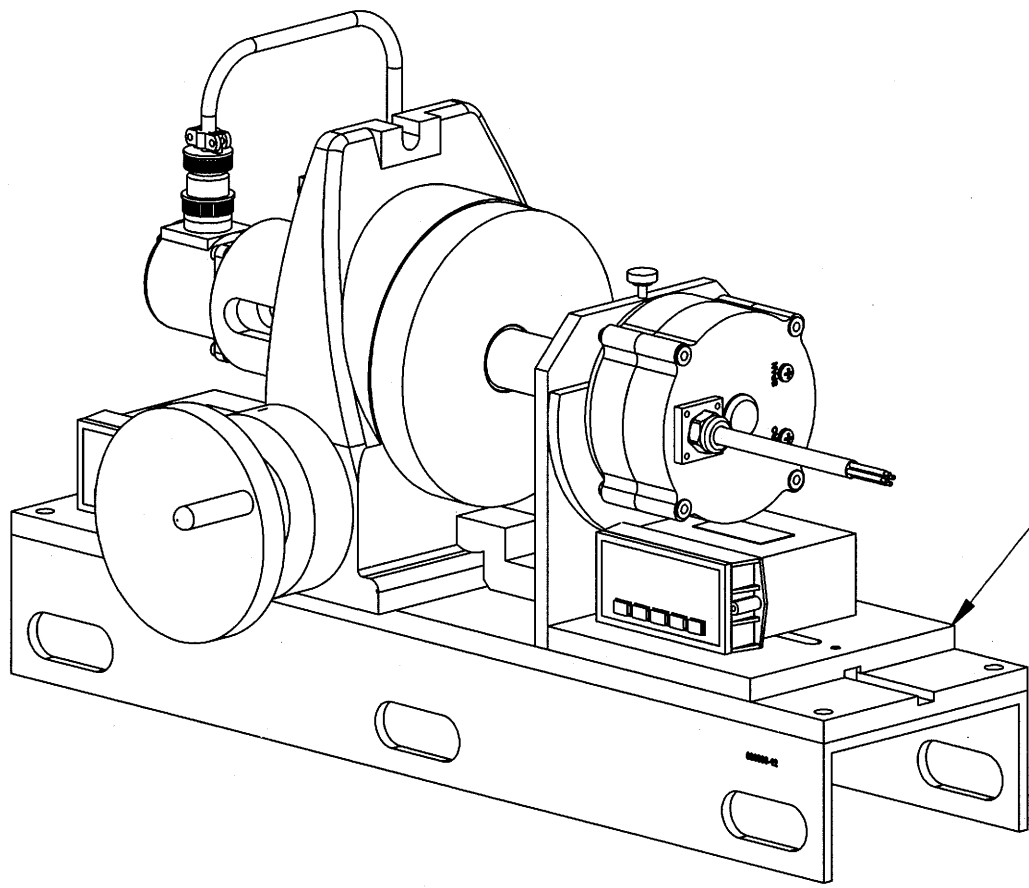
1. ROTATIONAL STANDARD TO BE 680339 OR 680413.
2. IF NOT ALREADY MOUNTED, SECURE TRANSDUCER ONTO THE DEVICE AND ALIGN THE FLAT OF THE SHAFT WITH THE SCRIBE ON THE HOUSING.
3. RESET THE COUNTER.
4. RECORD THE DATA PER TABLE 4 AND SEQUENCE NUMBER, AND ENTER INTO TEST DATA COMPUTER.

E

F

G

TABLE 4 CALIBRATION SEQUENCE	
SHAFT POSITION % F.S.	OUTPUT RANGE HEX COUNTS (CLOCKWISE)
0%	0 - D
25%	3A98 - 3FFD
50%	61A8 - 7FF9
75%	AFC8 - BFF6
100%	EA60 - FFFF

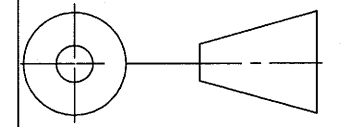


TEST FIXTURE 680339 SHOWN

ORIGINAL

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TITLE
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RT9000 SERIES**

APPROVALS DATE

DRAWN M.KRATOFIL 08/11/08
CHKD MSR 1/20/11

SIZE CODE IDENT. NO DWG. NO. REV
B 52158 PS-146 A

DO NOT SCALE DRAWING

SCALE: 1:4 SHEET 8 OF 9

