

Test Lab Work Request Form

Rev.3 -20 April, 2000

Date Submitted: 4/2/02	Tracking # : TLW0822
Project # : 241230	Engineer: Franz for Golemboski
Test Objective: To evaluate the "Hole-less Connector" in the Model 710 product line. A secondary objective will be to evaluate a heat treat process change (tempered) to the scope mount screws for the same product.	
Test Description: 15 guns will be used for this testing. (Eight .30-06 cal. and seven .270 Win. Caliber) The following measurements and tests will be done. • Measurements as Rec'd (All 15 guns) ○ Trigger Pull (spec. is 4.0 – 5.5 lbs.) ○ Engagement (spec. is .020 - .025 in.) ○ Over travel (spec. is .20 - .025 in.) ○ Headspace • Proof and Re-measure Headspace (All 15 guns) • SAAMI Jar-Off, Drop Rotation (6 guns; 3 of each caliber chosen at random) ○ Drop with scopes mounted (Use std. Screws) ○ Set fire controls to process minimums - TRIGGER PULL: 4.0 lbs. - ENGAGEMENT: 0.020 in. • Extended SAAMI Jar-Off Only (same 6 guns) ○ Drop with scopes mounted (Use std. Screws) ○ Set fire controls to process minimums - TRIGGER PULL: 4.0 lbs. - ENGAGEMENT: 0.020 in. • 100 Rd. Jack Fcn. Test (9 guns) ○ Shoot with scopes mounted on 8 guns, 9th gun has no scope mounted ▪ Use special mount screws provided (tempered screws) ▪ Use Loctite 222MS and torque screws to 15 – 20 in. lb. ○ Fire 100 rds per gun in the heavy shooting jacks (any ammo type but note what's used) ○ Track malfunctions ○ Pay special attention to fire control function and feel ○ Cycle Safety from Fire to Safe every feeding cycle ○ Check Scope mount screws for tightness after firing 100 rds ○ Remove and inspect screws for cracks after firing	
Resource Usage:	Test Results Required:

ET31348

Manpower Requirements -1to2 techs	Formal Report: Data Only: X
Facility Requirements -Drop area, F&C	Requested Completion Date: 4/12/02
Required Materials/Parts/Equipment (include quantities): 15 guns, 32 scope mount screws	
Test Parts Availability Date: Now	
Start Date:4/1/02 Completion Date: 4/4/02 JA Report Date: 4/11/02 SF	Test Assigned To:Arnold Assignment Date:4/1/02

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PROJECT# 241230									
TLW 0822									
M/710 CONNECTOR W/O HOLE									
MEASUREMENTS									
TRIGGER PULL (pounds)					ENGAGEMENT (inches)				
GUN	#1	#2	#3	AVERAGE	GUN	#1	#2	#3	AVERAGE
A-1	4.75	4.75	4.75	4.75	A-1	0.0248	0.0251	0.0247	0.0249
A-2	4.50	4.25	4.50	4.42	A-2	0.0247	0.0248	0.0247	0.0247
A-3	5.00	5.25	5.00	5.08	A-3	0.0262	0.0256	0.0255	
A-4	4.50	4.75	4.75	4.67	A-4	0.0241	0.0247	0.0243	0.0244
A-5	3.50	3.75	3.75		A-5	0.0236	0.0249	0.0244	0.0243
A-6	5.00	4.75	5.00	4.92	A-6	0.0219	0.0217	0.0222	0.0219
A-7	5.00	5.00	4.75	4.92	A-7	0.0226	0.0231	0.0225	0.0227
A-8	5.00	4.75	5.00	4.92	A-8	0.0247	0.0242	0.0244	0.0244
A-9	5.00	5.25	5.25	5.17	A-9	0.0262	0.0255	0.0257	
A-10	4.75	4.50	4.50	4.58	A-10	0.0249	0.0251	0.0248	0.0249
A-11	5.25	5.25	5.00	5.17	A-11	0.0243	0.0248	0.0244	0.0244
A-12	5.00	5.00	5.25	5.08	A-12	0.0236	0.0244	0.0233	0.0238
A-13	4.50	4.75	4.75	4.67	A-13	0.0245	0.0241	0.0243	0.0243
A-14	4.50	5.00	5.00	4.83	A-14	0.0232	0.0238	0.0236	0.0235
A-15	5.50	5.25	5.50	5.42	A-15	0.0238	0.0241	0.0238	0.0239
			Avg.	4.82				Avg.	0.0243
			S.D.	0.41				S.D.	0.0010
OVERTRAVEL MEASUREMENT (inches)									
Note: Actual Over Travel is this measurement minus the Engagement									
GUN	Meas. #1	Meas. #2	Meas. #3	AVERAGE	Over Travel				
A-1	0.0451	0.0446	0.0443	0.0447					
A-2	0.0441	0.0435	0.0443	0.0440					
A-3	0.0450	0.0451	0.0453	0.0451					
A-4	0.0452	0.0455	0.0451	0.0453	0.0209				
A-5	0.0456	0.0461	0.0457	0.0458	0.0215				
A-6	0.0452	0.0454	0.0452	0.0453	0.0233				
A-7	0.0434	0.0440	0.0436	0.0437	0.0209				
A-8	0.0462	0.0461	0.0456	0.0460	0.0215				
A-9	0.0451	0.0450	0.0443	0.0448					
A-10	0.0441	0.0452	0.0443	0.0445					
A-11	0.0466	0.0462	0.0463	0.0464	0.0219				
A-12	0.0421	0.0442	0.0436	0.0433					
A-13	0.0461	0.0451	0.0453	0.0455	0.0212				
A-14	0.0441	0.0432	0.0442	0.0438	0.0203				
A-15	0.0477	0.0514	0.0478	0.0490	0.0251				
			Avg.	0.0451	0.0209				
			S.D.	0.0014	0.0017				
= Denotes out of Spec.									

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PROJECT# 241230				
TLW 0822				
M/710 CONNECTOR W/O HOLE				
HEAD SPACE PROOF HEAD SPACE				
GUN	HEAD SPACE	PROOF	HEAD SPACE	COMMENTS
A-1	0.002	1 RD	0.002	NO PROBLEMS
A-2	0.003	1 RD	0.004	NO PROBLEMS
A-3	0.002	1 RD	0.003	NO PROBLEMS
A-4	0.001	1 RD	0.002	NO PROBLEMS
A-5	0.002	1 RD	0.002	NO PROBLEMS
A-6	0.002	1 RD	0.002	NO PROBLEMS
A-7	0.002	1 RD	0.002	NO PROBLEMS
A-8	0.002	1 RD	0.002	NO PROBLEMS
A-9	0.003	1 RD	0.004	NO PROBLEMS
A-10	0.004	1 RD	0.005	NO PROBLEMS
A-11	0.002	1 RD	0.004	NO PROBLEMS
A-12	0.003	1 RD	0.004	NO PROBLEMS
A-13	0.004	1 RD	0.004	NO PROBLEMS
A-14	0.001	1 RD	0.003	NO PROBLEMS
A-15	0.001	1 RD	0.002	NO PROBLEMS
Avg.	0.002		0.003	

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PROJECT# 241230

TLW'S 0822

M/710 S.A.A.M.I. JAR-OFF, DROP, AND ROTATION TEST.

4/2/2002

SAAMI JAR-OFF, DROP, AND ROTATION TEST

SERIAL# 71053572 30.06

ENGAGEMENT AT START - .0204 TRIGGER PULL AT START - 3.958 LBS

PASSED ALL DROPS. REAR TAKE DOWN SCREW WELL BROKEN OFF.

ENGAGEMENT AT END - .0205 TRIGGER PULL AT END - 3.958

SAAMI JAR-OFF, DROP, AND ROTATION TEST

SERIAL# 71053511 30.06

ENGAGEMENT AT START - .0204 TRIGGER PULL AT START - 4.041 LBS

PASSED ALL DROPS. REAR TAKE DOWN SCREW WELL BROKEN OFF.

ENGAGEMENT AT END - .0205 TRIGGER PULL AT END - 4

SAAMI JAR-OFF, DROP, AND ROTATION TEST

SERIAL# 71053525 30.06

ENGAGEMENT AT START - .0203 TRIGGER PULL AT START - 4.125

PASSED ALL DROPS.

ENGAGEMENT AT END - .0205 TRIGGER PULL AT END - 4.083

SAAMI JAR-OFF, DROP, AND ROTATION TEST

SERIAL# 71050327 270

ENGAGEMENT AT START - .0211 TRIGGER PULL AT START - 3.958

PASSED ALL DROPS.

ENGAGEMENT AT END - .0202 TRIGGER PULL AT END - 3.916

SAAMI JAR-OFF, DROP, AND ROTATION TEST

SERIAL# 71051201 270

ENGAGEMENT AT START - .0206 TRIGGER PULL AT START - 4.041

PASSED ALL DROPS. REAR TAKE DOWN SCREW WELL BROKEN OFF.

ENGAGEMENT AT END - .0203 TRIGGER PULL AT END - 4

SAAMI JAR-OFF, DROP, AND ROTATION TEST

SERIAL# 71051543 270

ENGAGEMENT AT START - .0204 TRIGGER PULL AT START - 3.916

PASSED ALL DROPS.

ENGAGEMENT AT END - 3.958 TRIGGER PULL AT END - 3.958

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PROJECT# 241230

TLW'S 0822

M/710 HOLELESS CONNECTOR EXTENDED JAR-OFF TEST

4/4/2002

SERIAL# CAL
71053525 30.06

BARREL HORIZONTAL BOTTOM OF STOCK UP AT 48" (GUN FIRED)

SERIAL#
71053520 30.06

PASSED ALL DROPS WITH NO PROBLEMS.

SERIAL#
71053564 30.06

BARREL HORIZONTAL BOTTOM OF STOCK UP AT 48" (GUN FIRED)

SERIAL#
71050327 270

BARREL HORIZONTAL BOTTOM OF STOCK UP AT 48" (GUN FIRED)

SERIAL#
71051543 270

PASSED ALL DROPS WITH NO PROBLEMS.

SERIAL#
71048705 270

PASSED ALL DROPS WITH NO PROBLEMS.

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PROJECT# 241230

TLW 0822

M/710 HOLELESS CONNECTOR TEST GUNS 100 ROUND FUNCTION TEST.

AMMO - R30062 30.06 AND R270W2 .270

GUN	CAL	COMMENTS
A-4	30.06	NO PROBLEMS
A-5	30.06	NO PROBLEMS
A-6	30.06	NO PROBLEMS
A-7	30.06	NO PROBLEMS
A-8	30.06	NO PROBLEMS
A-11	270	NO PROBLEMS
A-12	270	NO PROBLEMS
A-13	270	NO PROBLEMS
A-14	270	NO PROBLEMS

ALL GUNS SHOT WITH NEW SCOPE RAIL SCREWS. NONE OF THE
SCREWS CAME LOOSE DURING THIS TEST. GAVE SCREWS TO S. FRANZ.

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Dimensional Checks of 2 "Holeless" Connectors

H. Carson Jr.

Both parts were sent to
Mayfield for confirmation

DO NOT SCALE THE DRAWING; WORK TO FIGURES
UNLESS OTHERWISE NOTED.
TOLERANCES ON DECIMAL DIMENSIONS ARE:
1 PLACE (0.1) - TOLERANCE ± .015
2 PLACE (0.01) - TOLERANCE ± .010
3 PLACE (0.001) - TOLERANCE ± .005
4 ON RATIONAL DIMENSIONS ± 1/64
5 ON ANGULAR DIMENSIONS ± 30"
RUNDIMS ARE DESIGNATED BY ROOT MEAN
SQUARE (RMS) MICRO INCH ROUGHNESS
VALUES AND ARE THE MAXIMUM ROUGHNESS
ACCEPTABLE UNLESS OTHERWISE SPECIFIED.
FINISH ROUGHNESS TO BE ✓ OR BETTER

MATERIAL AND HEAT TREAT

③ MATERIAL AISI 1016-1020 or 1008
④ HEAT TREAT SEE C-300484
⑤ FINISH SEE C-300484
HEAT TREAT COLOR TO 10 BOYET REMINGTON
JEU 07/31/01

ALTERATIONS

ALT.	WHO	REF.	BY	DATE
1	INTERCHANGED DATUMS B & C	ED0044	MDK	08-14-01
2	.150 ± .050	ED0044	MDK	08-14-01
3	ADDED "OR 1008"	ED0033	MDK	07-31-01
4	ADDED REF.	ED0061	MDK	11-26-01
5	REMOVED .075-.074	ED0061	MDK	11-26-01
6	REMOVED .220	ED0061	MDK	11-26-01
7	REMOVED .6"	ED0061	MDK	11-26-01
8	REMOVED 16 RMS SURFACE FINISH	ED0061	MDK	11-26-01
9	REMOVED HEAT TREAT AND FINISH SPEC	ED0063	MDK	12-20-01

Note: No Hole

A1 = .166" Hg
A12 = .167" Hg

POLISH DIRECTION
✓ OR BETTER

A1 = .118"
A12 = .0925"

A1 = 2.833°
A12 = 2.508°

A1 = 89.849°
A12 = 90.000°

A1 = .0041"/.0004"
A12 = .0038"/.0009"

A1 = .0757"
A12 = .0749"

A1 = 1.083°
A12 = 1.083°

A1 = .0009"
A12 = .0016"

FOR BLANK SEE DRAWING C-300484

Includes raised
sections in
corners
Does not include
raised sections

710	300485	CONNECTOR
MODEL	PART NO.	PART USE
DEL BY DATE	DRN BY DATE	CHG BY DATE
JAW 08-25-00	JWR 11-08-00	
TITLE CONNECTOR		
NUMBER	SCALE	QUANTITIES
C-300485	4:1	300485
		REV. 1
		REFERENCE
		DCR E-00041

SOLIDWORKS FILE:FileName (H:\JAW\710 Red Arrow Confidential\710 Common Parts\SWD\300485 Connector C-300485.sld

C-300485

INGRAPHIC OF INFORMATION
PROPERTY INFORMATION TO THE
REMINGTON ARMS COMPANY, INC.

DO NOT SCALE THIS DRAWING. WORK TO FIGURES
UNLESS OTHERWISE NOTED.
TOLERANCES ON DECIMAL DIMENSIONS ARE:
1 PLACE (1) - TOLERANCE ± 0.15
2 PLACE (2) - TOLERANCE ± 0.10
3 PLACE (3) - TOLERANCE ± 0.05
4 ON FRACTIONAL DIMENSIONS ± 0.001
5 ON ANGULAR DIMENSIONS $\pm 0.01^\circ$
DIMENSIONS ARE DESIGNATED BY ROOT MEAN
SQUARE (R.M.S.) MICRO INCH SURFACE
VALUES AND ARE THE MAXIMUM ROUGHNESS
ACCEPTABLE UNLESS OTHERWISE SPECIFIED.
FINISH ROUGHNESS TO BE $\sqrt{\text{ }}$ OR BETTER.

MATERIAL AND HEAT TREAT

MATERIAL ASI 1010-1020 or 1008
HEAT TREAT SEE C-300484
FINISH SEE C-300484
HEAT TREAT AND COLOR TO BE DONE BY REMINGTON

JEU 07/31/01

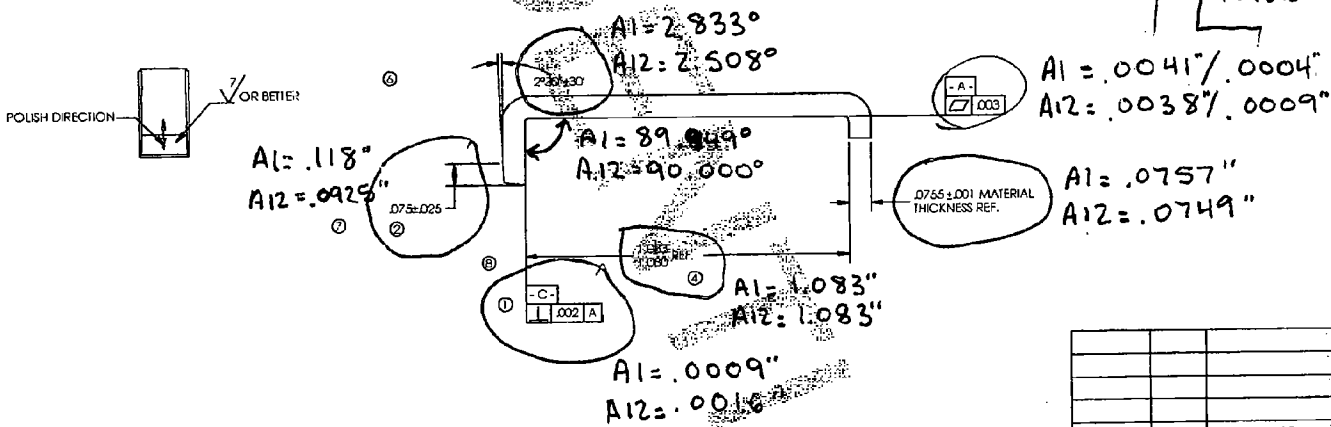
ALTERATIONS

ALT.	WAS	REF.	BY	DATE
1	INTERCHANGED DATUMS B & C	100044	MDK	03-14-01
2	.150 $\pm$.030	100044	MDK	03-14-01
3	ADDED "OR 1008"	100000	MDK	07-31-01
4	ADDED REF.	100041	MDK	11-29-01
5	REMOVED .073-.074	100051	MDK	11-26-01
6	REMOVED .220	100041	MDK	11-26-01
7	REMOVED 6"	100041	MDK	11-26-01
8	REMOVED 16 R.M.S. SURFACE FINISH	100041	MDK	11-26-01
9	REMOVED HEAT TREAT AND FINISH SPEC	100041	MDK	12-20-01

Note: No Hole

A1 = .166" H0
A12 = .167" H0

Includes raised
sections in
corners
Does not include
raised sections



FOR: BLANK SEE DRAWING C-300484

710	300485	CONNECTOR
MODEL	PART NO.	PART USE
DEL BY DATE	JAW 08-25-00	JWR 11-08-00
FILE	CONNECTOR	
NUMBER	SCALE 4:1	REFERENCE 100041
C-300485	100041	100041

SOLID WORKS FILE: RemArms C:\N\710 Bell Action C\c\alpha\alpha\N\700 Common Park\SWD 6000018P Connector C-300485

ET31356

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Williams v. Remington