Remington Arms Company, Inc.
Manufacturing Process Document

Document ID:	Trig Con 700 7 700SS 7SS	**Effective Date:**	27-Jun-02
Product Line:	C/F Rifle	**Origination Date:**	24-Jul-93

General Instructions:

Use the Control Buttons above and below to access the various sections of this process. If your screen is not wide enough to display all the section data, use the arrows at the lower right to pan the desired data into view. Simply click on a tab or a button to move to that section of the document.

Process Routing Table:

Click on the button below containing the operation number you wish to view.

Micro-Carb harden, Oil Quench, Wash
Lindberg Temper (Draw)
Inspect For Hardness
Sand Tumble
Wash, Magnaflux, Inspect 100%, Demagnatize
Black Oxide For Identification

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(Enter Oper #) (Enter the Operation Name in this field)

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PROCESS CONTROL INSPECTION RECORD THIS RECORD MUST STAY WITH THE PRODUCTION ORDER AT ALL TIMES				Revision Date: 27-Jun-02		Processed by:
Part No:	Part Name: Trig Con 700 7 700SS 7SS		C/F Rifle			Date: 8/14/2006
Operation No: (Enter Oper #)	Operation: (Enter the Operation Name in this field)					Work Center:
Prod. Qty:	Prod. Order #:		**Operator**			Setup inspected by & Date:
Gage Description and Characteristic	Gage Number	Gage Frequency	**1st Shift**	**2nd Shift**	**3rd Shift**	Remarks, Causes, Action Taken, Etc.
VISUAL	VISUAL	100%	INSPECT / REJECT			
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	Pieces Run:					Remington Arms Company, Inc. -- Ilion, New York

35 Micro-Carb harden, Oil Quench, Wash

PROCESS RECORD - HEAT TREAT SPECIFICATION

Operation Step Detail Operation: 35

Step	Operation / Step Description
1	Rack Parts in Basket
2	Load Rack on Furnace Base With Shroud
3	Wash Parts If Needed - Parts Must Be Clean and Dry
4	Load Work on Furnace Apron
5	Load Work - Carburize
6	Oil Quench
7	Unload Work from Furnace
8	Wash Parts - Furnace Base and Shroud - Parts Must Be Clean and Dry

Operation Tool Detail Operation: 35

Tool Number	Tooling Description
Std	MicroCarb Furnace
Std	Proceco Washer
D-44637	Fixture Microcarb Shroud
D-44683	Fixture Microcarb Base
STD	Fixture Microcarb Medium Mesh Basket (12"x 21"x 2"}

PROCESS RECORD - HEAT TREAT SPECIFICATION

Operation Procedure Notes Operation: 35

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Description

WASH, MICROCARB HARDEN, QUENCH AND WASH

Process

Material: C-1010
Furnace: Micro Carb
Rack: Std.12"x21"x2" medium mesh basket
Maximum Load: 1500 per basket, Layered evenly.
2 baskets max. per load. 3000 pcs per load max.

Wash: If Needed Wash. Parts are to be clean, free of cutting fluid, and dry.
Proceo Washer Cycle
Wash 2 Minutes with Aqua Tre Cleaner (Wintech 287 4-8%/Vol or Equiv) @ 160 - 200 Deg F.
Rinse 10 seconds with Rust Inhibitor (Wintech 287 4-8%/Vol or Equiv)@ 160 - 200 Deg F.
Air Blow Off 1 Minute.

Temperature: 1600 deg. F
Soak Time: 1 hr. at temp.
Carbon %: 0.75%
Quench: Oil Beacon K-9 or equivalent. Temp. 130 - 180 degrees F
Time: 5 minutes minimum.
Wash: Parts are to be clean, free of quench oil, and dry.
Proceco Washer Cycle
Wash 2 Minutes with Aqua Tre Cleaner (Wintech 287 4-8%/Vol or Equiv) @ 160 - 200 Deg F.
Rinse 10 seconds with Rust Inhibitor (Wintech 287 4-8%/Vol or Equiv)@ 160 - 200 Deg F.
Air Blow Off 1 Minute.

Notes: Parts should be clean for temper operation.
Run Shim Stock with each load for Met Chem Inspection.
Inspect: File Hardness

Inspection

Appearance of Parts: Clean And Free of Oil

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PROCESS CONTROL INSPECTION RECORD THIS RECORD MUST STAY WITH THE PRODUCTION ORDER AT ALL TIMES				Revision Date: 27-Jun-02		Processed by:
Part No:	Part Name: Trig Con 700 7 700SS 7SS			C/F Rifle		Date: 8/14/2006
Operation No: 35	Operation: Micro-Carb harden, Oil Quench, Wash					Work Center:
Prod. Qty:	Prod. Order #		Operator			Setup inspected by & Date:
Gage Description and Characteristic	Gage Number	Gage Frequency	1st Shift	2nd Shift	3rd Shift	Remarks, Causes, Action Taken, Etc.
VISUAL	VISUAL	100%	INSPECT / REJECT			
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			Pieces Run:				Remington Arms Company, Inc. -- Ilion, New York

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40 Lindberg Temper (Draw)

Operation Step Detail Operation: 40

Step	Operation / Step Description
1	Load Work in Temper Furnace
2	Temper Parts
3	Unload Work from Furnace
4	Dump parts into work pans.

Operation Tool Detail Operation: 40

Standard Lindberg Furnace

Process Data Operation 40

Load Size: 5000 pcs. Max.
Temperature: 350 Deg F.
Soak Time: 1 Hour Minimum In Furnace
Carbon %: N/A
Quench: Air - Cool with fan if necessary
Wash: N/A
Inspect: Clean And Free of Oil.
****NOTE:** LEAVE PARTS RACKED UNTIL HEAT TREAT INSPECTION IS APPROVED

PROCESS CONTROL INSPECTION RECORD THIS RECORD MUST STAY WITH THE PRODUCTION ORDER AT ALL TIMES		Revision Date: 27-Jun-02	Processed by:
Part No:	Part Name: Trig Con 700 7 700SS 7SS	C/F Rifle	Date: 8/14/2006

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Operation No: 40	Operation: Lindberg Temper (Draw)			Work Center:			
Prod. Qty:	Prod. Order #:		Operator			Setup inspected by & Date:	
Gage Description and Characteristic	Gage Number	Gage Frequency	1st Shift	2nd Shift	3rd Shift	Remarks, Causes, Action Taken, Etc.	
VISUAL	VISUAL	100%	INSPECT REJECT				
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	Pieces Run:					Remington Arms Company, Inc. -- Ilion, New York

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43 Inspect For Hardness

Operation Step Detail Operation: 43

Step	Operation / Step Description
1	Inspect For Hardness
2	Break Test N/A
3	Record Results on Inspection Form
4	Stamp Paper Work
5	Record Results in Log Book
6	If part fails test put hold ticket on load for Met/chem lab to inspect.

Operation Tool Detail Operation: 43

Tool Number	Tooling Description
Std	ROCKWELL HARDNESS TESTER WITH SMALL PENCIL POST ANVIL

Operation Procedure Notes Operation: 43

Process

Material: ASAI/SAE 1010
Furnace: Microcarb
Notes: Inspect Using Small Pencil Post Anvil

Inspection

Inspection: Hardness
Inspect For: Rockwell Hardness

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15N 88-92
Break Test: N/A
Tensile Machine Settings: N/A
APPEARANCE OF PARTS: Clean Oiled for Assembly

PROCESS CONTROL INSPECTION RECORD THIS RECORD MUST REMAIN IN HEAT TREAT INPSECTION FOR ONE YEAR	Revision Date: 27-Jun-02		Inspected by:
	Part No:	Prod. Qty:	Production Order #:
	Part Name: Trig Con 700 7 700SS 7SS C/F Rifle		
Operation No: 43	Operation: Inspect For Hardness	Work Center:	Inspec. Date: 8/14/2006

Furnace and Load Number	Draw Temp	Furnace Date	Hardness Specificaton HRc N/A	Hardness Specificaton H15n 88-92	Hardness Specificaton H45n N/A	Break Test N/A

HRc Tester No	H15n Tester No	H15n Tester No	H45n Tester No
35	60	81	37
36	61	82	38
37	62	83	39
38	63	84	40
39	64	85	41
40	65	86	42
41	66	87	43
42	67	**88**	44
43	68	**89**	45
44	69	**90**	46
45	70	**91**	47
46	71	**92**	48
47	72	93	49
48	73	94	50
49	74	95	51
50	75	96	52
51	76	97	53
52	77	98	54

Break Test Results (lbs)

Sample Plan

Lot Size	Sample Size	Allowable Outside
1-5	All	0
6 - 50	6	0
51 - 100	7	0
101 - 200	7	0
201- 800	16	1

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45 Sand Tumble

Operation Step Detail Operation: 45

Step	Operation / Step Description
	SAND TUMBLE
1	Place 1000 parts into barrel
2	Add enough sand to completely cover the parts in the barrel
3	Use a 1 hour cycle time
4	Start cycle

Operation Tool Detail Operation: 45

Tool Number	Tooling Description
Std	Open Barrel
Std	Sand (Aluminum Oxide)

PROCESS CONTROL INSPECTION RECORD THIS RECORD MUST STAY WITH THE PRODUCTION ORDER AT ALL TIMES				Revision Date: 27-Jun-02		Processed by:
Part No:	Part Name: Trig Con 700 7 700SS 7SS			C/F Rifle		Date: 8/14/2006
Operation No: 45	Operation: Sand Tumble					Work Center:
Prod. Qty:	Prod. Order #:		**Operator**			Setup inspected by & Date:
Gage Description and Characteristic	Gage Number	Gage Frequency	**1st Shift**	**2nd Shift**	**3rd Shift**	Remarks, Causes, Action Taken, Etc.

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VISUAL	VISUAL	100%	INSPECT / REJECT			
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	Pieces Run:					Remington Arms Company, Inc. -- Ilion, New York

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50 Wash, Magnaflux, Inspect 100%, Demagnatize

Operation Step Detail Operation: 50

Step	Operation / Step Description
	WASH, MAGNA-FLUX, INSPECT 100%, DEMAGNATIZE
1	Place lift tray onto cart
2	Place parts into tub
3	Place tub into lift tray
4	Hoist lift tray to conveyor rollers
5	Push tray into washer and close door
6	Set wash timer to 2 minutes
7	Set rinse timer to 40 seconds
8	Set dry timer to 2 minutes
	*NOTE: WHEN RINSE CYCLE BEGINS, PLACE MANUAL DOOR SWITCH TO "UP" POSITION SO THAT DOOR WILL OPEN IMMEDIATELY AT CYCLE END
9	Remove tub

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10 Place 2000 pieces in a pan length-wise

11 Place pan in coil

12 Spray enough 1500 AMP wet solution to soak all 2000 parts

13 Let pan drain

14 Lay parts on a rag and let dry

15 Visually inspect parts in booth 100x for cracks

16 Any and all parts with cracks are to be scrapped

17 Run acceptable parts through coil 100x to demagnatize

Operation Tool Detail **Operation: 50**

Tool Number	Tooling Description
Std	Magna-Flux Machine

Operation Procedure Notes **Operation: 50**

Description

PROCESS RECORD - HEAT TREAT SPECIFICATION

MATERIAL & SPECIFICATION: .08/.20

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TEMPERATURE:

MAXIMUM LOAD:

TIME:

QUENCH:

REMARKS: Must Be Clean of Oil and Dirt Before Magna-Flux
Must Be Demagnetized After Inspection 100%
(Good Parts Only)

INSPECT FOR: Cracks Around Hole

HEAT TREAT INSPECTION:

STANDARD PRACTICE NO:

HARDNESS LIMITS:

APPEARANCE OF PARTS:

PROCESS CONTROL INSPECTION RECORD THIS RECORD MUST STAY WITH THE PRODUCTION ORDER AT ALL TIMES		Revision Date: 27-Jun-02	Processed by:
Part No:	Part Name: Trig Con 700 7 700SS 7SS	C/F Rifle	Date: 8/14/2006
Operation No: 50	Operation: Wash, Magnaflux, Inspect 100%, Demagnatize		Work Center:

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Prod Qty:	Prod Order #:	Operator			Setup inspected by & Date:
Gage Description and Characteristic	Gage Number / Gage Frequency	1st Shift	2nd Shift	3rd Shift	Remarks, Causes, Action Taken, Etc.
VISUAL	VISUAL 100%	INSPECT / REJECT			
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				INSPECT / REJECT			Remington Arms Company, Inc. -- Ilion, New York
		Pieces Run:					

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55 **Black Oxide For Identification**
To MRP Crib #29

Operation Step Detail **Operation:** 55

BLACK OXIDE

1 Rack Parts onto standard stacking mesh baskets.
2 Hoist Basket onto Loading Cart
3 Start and Run Complete Cycle
Must put in Acid
Bump Cycle
4 Dip Parts in Soluble Oil
5 Unload Parts Carefully - Do Not Mar or Remove Color

Click Here To Display Detail

Note: Black Oxide Color for Identification.

PROCESS CONTROL INSPECTION RECORD THIS RECORD MUST STAY WITH THE PRODUCTION ORDER AT ALL TIMES						Revision Date: **27-Jun-02**	Processed by:
Part No:	Part Name: Trig Con 700 7 700SS 7SS					C/F Rifle	Date: 8/14/2006
Operation No: 55	Operation: Black Oxide For Identification						Work Center:
Prod. Qty:	Prod. Order #:		**Operator**			Setup inspected by & Date:	
Gage Description and Characteristic	Gage Number	Gage Frequency	**1st Shift**	**2nd Shift**	**3rd Shift**	Remarks, Causes, Action Taken, Etc.	

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VISUAL	VISUAL	100%	INSPECT / REJECT			
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	Pieces Run:					Remington Arms Company, Inc. -- Ilion, New York

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Dept	Oper	Operation Description	Part Numbers
9132	1	Issue from Crib	19461 200655
8551	35	Wash, Micro-Carb Harden, Oil Quench, Wash	19461 200655
8551	40	Lindberg Draw	19461 200655
8551	43	Inspect for hardness. ********** * INSPECT FOR HARDNESS * * MUST STAMP ---> * * * INITIALS _____ * * * * * * * * * * * * *	19461 200655
8551	45	Sand Tumble	19461 200655
8502	50	Wash Magna-Flux, Inspect 100%, Demagnatize M M M M M M M M Stamp M M M M M M MagnaFlux M M M M M M M M M M M DELIVER PART # 200655 TO MRP Crib #25	19461 200655
8551	55	Black Oxide for Identification To MRP Crib #29	19461

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Dept	Oper	Operation Description	Part Numbers

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Dept	Oper	Operation Description	Part Numbers

Printed on:
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Dept	Oper	Operation Description	Part Numbers

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description
19461	1						Trigger Connector - 700 7
		91937	10	35	1.000		Blank
200655	5						Trigger Connector - 700SS 7SS
		91937	10	35	1.000		Blank

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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Parent	Rv	Child	Fnd	Oper	Qty	UM	Description

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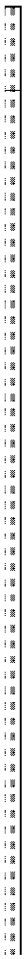

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Date:	Reason for Revision:	Eng:	Log #:
27-Jun-02	Copied from VAXcamps Process entitled TRIG_CON_700_7_ 700SS_7SS ECN #302845 - Verified -JES- 09-26-02	RTB	304220
09-Jan-03	Updated Heat treat and Inspection, Sand Tumble and Black Oxide	Rray	308463

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Date:	Reason for Revision:	Eng:	Log #:

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Date:	Reason for Revision:	Eng:	Log #:

Dept	Num	Procedure by Steps	Safety Key Points

PROCESS CONTROL INSPECTION RECORD THIS RECORD MUST STAY WITH THE PRODUCTION ORDER AT ALL TIMES			Revision Date: 27-Jun-02			Processed by:
Part No:	Part Name: Trig Con 700 7 700SS 7SS		C/F Rifle			Date: 8/14/2006
Operation No. Part No:	Operation: Part Name:					Work Center:
Prod. Qty:	Prod. Order #:		**Operator**			Setup Inspected by & Date:
Gage Description and Characteristic	Gage Number	Gage Frequency	**1st Shift**	**2nd Shift**	**3rd Shift**	Remarks, Causes, Action Taken, Etc.
VISUAL	VISUAL	100%	INSPECT / REJECT			
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	Pieces Run:					Remington Arms Company, Inc. -- Ilion, New York

Type "Ctrl+h" *from the desired destination* to insert this form. Execute *before* the next form below.

PROCESS CONTROL INSPECTION RECORD			Revision Date: 27-Jun-02		Inspected by:
THIS RECORD MUST REMAIN IN HEAT TREAT INPSECTION FOR ONE YEAR			Part No:	Prod. Qty:	Production Order #:
	Part Name: Trig Con 700 7 700SS 7SS C/F Rifle				
Operation No: Part No:	Operation: Part Name:			Work Center:	Inspec. Date: 8/14/2006

Furnace and Load Number	Draw Temp	Furnace Date	Hardness Specificaton HRc INSPECT REJECT	Hardness Specificaton H15n INSPECT REJECT	Hardness Specificaton H45n INSPECT REJECT	Break Test INSPECT REJECT

HRc Tester No	H15n Tester No	H15n Tester No	H45n Tester No
35	60	81	37
36	61	82	38
37	62	83	39
38	63	84	40
39	64	85	41
40	65	86	42
41	66	87	43
42	67	88	44
43	68	89	45
44	69	90	46
45	70	91	47
46	71	92	48
47	72	93	49
48	73	94	50
49	74	95	51
50	75	96	52
51	76	97	53
52	77	98	54
53	78	99	55
54	79	100	56

Break Test Results (lbs)

Sample Plan

Lot Size	Sample Size	Allowable Outside
1-5	All	0
6 - 50	6	0
51 - 100	7	0
101 - 200	7	0
201 - 800	16	1
801 - 3000	17	1
3001 - 20000	27	2

55	80	101	57	
				Rev 0

Type "Ctrl+r" *from the desired destination* to insert this form. Execute *after* the HTPCIR above.

PROCESS RECORD - HEAT TREAT SPECIFICATION

Process

Material:
Furnace:
Rack:
Maximum Load:

Temperature:
Soak Time:
Carbon %:
Quench:
Wash:
Notes:

Inspection

Hardness:

Break Test:
Color Only:
Appearance of Parts:

Unassigned Button Clicked

You have clicked a button that is not assigned to a process sheet

Click the button to return to the Header Sheet