

Ratio Estimate Data

Summary

Part Name Receiver Insert
Part Number 300401

Operation Name Adjust on Comparator
Operation Number 50

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
	0.005999933		\$ -	\$ 13,000.00	\$ 400.00

Low- 53 sec. 105 sec. 150 sec. - High
0.01472222 0.02916666 0.04166666

Assumptions:

Fixture designed will be redesigned from lion fixture

Comparator may not have to be bought, utilize one of the in-house fixtures

83

Risks/unknowns:

Run Time Analysis

Part Name Receiver Insert Operation Name Adjust on Comparator
 Part Number 300401 Operation Number 50

Run Time Analysis

Operation	Cutter Used	Cutter Dia.	Cut Depth/length (in.)	SFM	IPR	RPM	IPM	Cut Time (min.)	Rapid Traverse Time (min.)	Tool Change Time (min.)	Total Time per Operation (min.)
Adjust Trigger											0.104
Adjust Trigger Pull											0.127
Recheck Trigger/Pull											0.060
Place/Grab housing in Tray											0.069
Total Time per Part (min.)											0.360
Total Time per Part (hr.)											0.0060

Inspection Procedure

Part Name	Receiver Insert
Part Number	300401

Operation Name	Adjust on Comparator	
Operation Number	50	

Inspection Procedure

[illegible]

Tooling

Part Name	Receiver Insert
Part Number	300401

Operation Name	Adjust on Comparator		
Operation Number	50		

Tooling

[illegible]

TOTAL PRE-OP DOLLARS	400
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TOTAL COST PER PART	0.0000
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Capital

Part Name Receiver Insert
Part Number 300401

Operation Name Adjust on Comparator
Operation Number 50

Capital Required

Machine or Fixture	Dollars		Expected Delivery
Fixturing	5000		
Comparator	8,000		
TOTAL CAPITAL	13,000		

Summary

Part Name	Receiver Insert
Part Number	300401

Operation Name	Assemble-Stage 1
Operation Number	30

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
	0.012009		\$ -	\$ 3,000.00	\$ -

57 sec

0.01583333

Assumptions:

Tooling Tip Used to Press Screw into housing will have to be replaced at regular intervals

Brass will be used for tooling Tips to press Screws into housing.

Fixture will be designed and built in-house.

Hydraulic/Pneumatic Press price will be after Engineering meeting decision

Risks/unknowns:

Run Time Analysis

Part Name Receiver Insert Operation Name Assemble-Stage 1
 Part Number 300401 Operation Number 30

Run Time Analysis

Operation	Cutter Used	Cutter Dia.	Cut Depth/length (in.)	SFM	IPR	RPM	IPM	Cut Time (min.)	Rapid Traverse Time (min.)	Tool Change Time (min.)	Total Time per Operation (min.)
Place Housing into Fixture											0.095
Slide Template over Housing Place screw into Template											0.138
Slide Fixture into Press Activate Press Cycle											0.162
Place Side Plate onto Housing w/ Two Pins											0.217
Remove Housing from Fixture Replace New Housing											0.109
Total Time per Part (min.)											0.721
Total Time per Part (hr.)											0.0120

Inspection Procedure

Part Name	Receiver Insert
Part Number	300401

Operation Name	Assemble-Stage 1	
Operation Number	30	

Inspection Procedure

[illegible]

Tooling

Part Name	Receiver Insert
Part Number	300401

Operation Name	Assemble-Stage 1		
Operation Number	30		

Tooling

[illegible]TOTAL PRE-OP
DOLLARS

0

TOTAL COST PER
PART

0.0000

Machine or Fixture	Dollars		Expected Delivery
Housing Fixture	1000		
Pneumatic Press	1200		
Screw Press Tool	800		
TOTAL CAPITAL	3,000		

Summary

Part Name Receiver Insert
Part Number 300401

Operation Name Ultrasonic Weld
Operation Number 10

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
	0.004166667		\$ 0.00	\$ -	\$ 2,100.00

17 seconds
0.00472222

Assumptions:

Redesigned horn estimated in Pre-Op.

Inspection Tool for Height is made in house (May be viewed through a comparator every 50 parts)

33

Risks/unknowns:

Inspection Tool not within Specification has to be outsourced (Cost est. 1100.00)

01

1977-78

p. Detail 10

83

Inspection Procedure

Part Name	Receiver Insert
Part Number	300401

Operation Name	Ultrasonic Weld	
Operation Number	10	

Inspection Procedure

[illegible]

Tooling

Part Name Receiver Insert
Part Number 300401

Operation Name Ultrasonic Weld
Operation Number 10

Tooling

Operation	Tool Name	Dollars	Tool Life (parts/tool)	Cost /part	Lead Time
Ultrasonic Weld	Horn	2100		0.0010	

TOTAL PRE-OP
DOLLARS 2100

TOTAL COST PER
PART 0.0010

Operation Name	Ultrasonic Weld	
Operation Number	10	

Machine or Fixture	Dollars		Expected Delivery
TOTAL CAPITAL	0		

Summary

Part Name	Receiver Insert
Part Number	300401

Operation Name	Assembly Stage 2	
Operation Number	40	

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start-up
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	0.0149517		\$ -	\$ -	\$ 1,535.00
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56 sec.
.01555555

Assumptions:

Fixture will be designed and created in-house

Risks/unknowns

Operator can complete operation w/o pneumatic press, Shelly requested any operation where presses should be applied that the presses should be pneumatic or hydraulic.

Plastic may bend, crack, warp, deform, etc. . Under pressure. Operator my just hammer in pins

Inspection Procedure

Part Name	Receiver Insert
Part Number	300401

Operation Name	Assembly Stage 2	
Operation Number	40	

Inspection Procedure

[illegible]

Run Time Analysis

Part Name Receiver Insert
 Part Number 300401

Operation Name Assembly Stage 2
 Operation Number 40

Run Time Analysis

Operation	Cutter Used	Cutter Dia.	Cut Depth/length (in.)	SFM	IPR	RPM	IPM	Cut Time (min.)	Rapid Traverse Time (min.)	Tool Change Time (min.)	Total Time per Operation (min.)
Place Trigger in Housing w/ Pin											0.240
Place Spring Spring & Sear											0.255
Place Trigger in Housing w/ Pin											0.333
Place/Grab housing in Tray											0.069
Total Time per Part (min.)											0.897
Total Time per Part (hr.)											0.0150

Tooling

Part Name	Receiver Insert
Part Number	300401

Operation Name	Assembly Stage 2		
Operation Number	40		

Tooling

[illegible]

TOTAL PRE-OP DOLLARS	1535
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TOTAL COST PER PART	0.0000
---------------------	--------

Part Name	Receiver Insert
Part Number	300401

Operation Name	Assembly Stage 2	
Operation Number	40	

[illegible]

Summary

Part Name Receiver Insert
Part Number 300401

Operation Name Function Testing
Operation Number 60

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
	0.004568333		\$ -	\$ -	\$ -

Assumptions:

Check Safety Function, Sear, and Trigger Three Times a piece. Safety function is checked when safety is put on Receiver insert, sear is checked at assembly one trigger is checked constantly at comparator. Do these checks need to be done a second time? Does this need to be done away with?

Risks/unknowns:

Insert	Open
300401	Open

Operation Name	Function Testing
Operation Number	60

Op. Detail 60

Inspection Procedure

Part Name	Receiver Insert
Part Number	300401

Operation Name	Function Testing	
Operation Number	60	

Inspection Procedure

[illegible]

Tooling

Part Name	Receiver Insert
Part Number	300401

Operation Name	Function Testing		
Operation Number	50		

Tooling

[illegible]

TOTAL PRE-OP
DOLLARS

0

TOTAL COST PER
PART

0.0000

Part Name	Receiver Insert
Part Number	300401

Operation Name	Function Testing	
Operation Number	50	

[illegible]

Summary

Part Name Receiver Insert
Part Number 300401

Operation Name Demagnetize Metal Components
Operation Number 20

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start-up
	0.0004		\$ -	\$ -	\$ -

15 sec. per container - once a month
0.00416666

Assumptions:

Utilizing Current Demagnetizer in Lab - moved to tool crib and demagnetized before delivery to assembly area - needs to be removed from assembly time.

Risks/unknowns

Operation Name	Demagnetize Metal Components
Operation Number	20

1977-78

Operation Name	Demagnetize Metal Components	
Operation Number	20	

Inspection Procedure

[illegible]

Tooling

Part Name	Receiver Insert
Part Number	300401

Operation Name	Demagnetize Metal Componen		
Operation Number	20		

Tooling

[illegible]TOTAL PRE-OP
DOLLARS

0

TOTAL COST PER
PART

0.0000

Capital

Part Name	Receiver Insert
Part Number	300401

Operation Name	Demagnetize Metal Components	
Operation Number	20	

Capital Required

[illegible]

Ken-tron

FYI
copy



October 11, 1999

Metty E. Morgan
Remington Arms Company, Inc.
22 Rifle Trail
P.O. Box 99
Hickory, KY 42051
fax 502 856-3233

Dear Metty E. Morgan,

Ken-tron Mfg., Inc. would like to thank you for the Request For Quote we received for Remington Part #s: E-300363, C-300405, & D-300408. Unfortunately, after our Engineering Department reviewed the drawings for these parts it was determined that we cannot economically fabricate these parts with our current facilities. The specific reasons we have chosen to no quote are as follows:

Remington Part #	Reason For No Quote
E-300363	Blank size too large for our machines.
C-300405	Blank size too large for our machines.
D-300408	Material thickness exceeds our machine capacity.

If you have any questions or comments please do not hesitate to contact me at anytime. We hope that you will continue to consider Ken-tron as a potential supplier when you assemble future quote packages.

Sincerely,

Howard Burton
Ken-tron Mfg., Inc

COPY

TOOL & MANUFACTURING CO., INC.

9550 JOLIET ROAD • McCOOK, ILLINOIS 60525
PHONE (708) 485-6130 FAX (708) 485-6540

Quotation: 07408-00

Date: 09/30/99

To: Remington Arms Company, Inc.
22 Rifle Trail
Hickory, KY 42051

Attention: Metty E. Morgan

Gentlemen:

In response to your recent inquiry we are pleased to submit the following quotation for your consideration.

Item Number	E-300363	Item Description	Magazine Box
E.C.L. Level	5	Tooling Description	Progressive Die
Tooling Lead Time (Weeks)	14	Material Description	.030 1010/1020 CRS
Quoted Material Cost/Pound	.3950	Finishing Description	Black Oxide
Quoted Finishing Cost/Each	.089	Quoted Deburring Cost/Each	.000
Estimated Weight Per Piece	.255	Tooling Cost	\$46,155.00
Miscellaneous Cost/Each	.000		

Quantities Each	5000	10000	12000			
	.466	.374	.351			

Notes:

Our Selling Prices at various quantities are based on raw material purchases, set-up and running of those quoted quantities. Therefore, we cannot accept orders with more than 60 days between first and last shipments.

ODM reserves the right to re-quote to a production release print.

Above prices do not include deburring.

Quote based on bulk packaging in capacities up to 1100 pounds.

Quoted at quarterly release quantities.

Material 1010/1020 1/4-1/2 hard

Spring back won't allow for tight seam, need to spot weld or clinch, not quoted.

This quotation is subject to immediate acceptance unless otherwise agreed upon. We reserve the right to alter terms and conditions if contingencies develop which were not apparent at the time of quotation. Delivery promises are an estimated date only and not guarantee of performance. We are not liable for delays due to fire, strikes or causes beyond our control. Cancelled orders will be subject to our charges as invoiced. We wish to thank you for your inquiry.

Very truly yours,

By: Chip Michalski

Terms: Net 30/ F.O.B. Our Plant



METAL STAMPING • COMPLETE MANUFACTURING

MF0335

COPY
FYI



**INDUSTRIES
INC.**

200 ELLIS STREET
P.O. BOX 2470
NEW BRITAIN, CONN. 06050
(860) 225-8707 FAX (860) 225-7047

QUOTATION
No. 99055

September 30, 1999

Ms. Metty E. Morgan
Materials Manager
Remington Arms Company, Inc.
22 Rifle Trail, P.O. Box 99
Hickory, KY 42051

Ref: E-300363
Terms: Net 30 Days
Tools: Net 10 Days
F.O.B.: Our Plant

Dear Ms. Morgan:

We are pleased to quote the following:

Tooling Charge Dwg. #E-300363, Magazine Box.....\$46,500.00

The above listed tool charge will be your only tool charge: Okay Industries, Inc. to absorb all maintenance and up-keep costs for the life of the program. Tools to remain at our plant, as your property, and for your exclusive use.

Your parts produced from the above tooling using C1010, #3 temper, Rb 60 min./Rb 75 max., including black oxide finish will be priced as follows:

20,000 Piece Order at \$3.65/Each Piece*
40,000 Piece Order at \$3.05/Each Piece*
60,000 Piece Order at \$2.90/Each Piece*

*Note: Seam weld needs to be moved to opposite side of slot.

Delivery: Samples in 16 to 18 weeks after receipt of order.

Note: Tooling cost and deliveries will be finalized upon review and acceptance of permanent part print drawings.

Remington Arms is to supply any required fixtures or inspection equipment that would be non-standard. Any testing, documentation, or special requirements will be disclosed prior to OKAY's acceptance of an order.

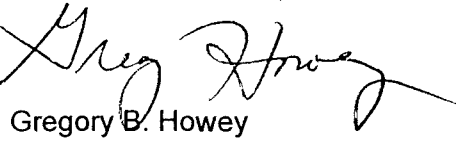
Payment terms for tooling are net 10 days: One-half payment (\$23,250.00) to be made with order, and the balance (\$23,250.00) due upon approval of samples.

Unless otherwise specified in our quotation, OKAY Terms and Conditions as outlined on the back of this form supersede all other Terms and Conditions.

This quote is valid for thirty (30) days.

Thank you for the opportunity to work with you. We have enclosed our brochure for your reference. If there are any questions concerning the above, please feel free to contact us.

Sincerely,
OKAY INDUSTRIES, INC.


Gregory B. Howey
President

emd

See reverse side for conditions applying to this quotation.

FAXED
9/30/99
FORM NO. 0-1286

MF0336



CARPENTER
Engineered Products

FAX

TO: Matt Golemboski	FROM: Travis Ayers
COMPANY: Remington Arms	DATE: January 3, 2000
FAX#: 270.856.3233	
CC:	
PAGES TO FOLLOW: 2	
RE: Firing Pin Head Quote	

Dear Matt,

I trust this is what you need, but please call me if not.

Best regards,

CONFIDENTIAL

The information contained in this facsimile message is confidential information, and is intended only for the use of the individual or entity name above. If you are not the intended recipient, or the person responsible for delivering this facsimile to the named receiver, you are notified that any use of this facsimile or its contents, including any dissemination or copying, is strictly prohibited. If you receive this facsimile in error, please notify us immediately by collect telephone call at (707) 778-2266, and return the original message to us at the address below via the United States Postal Service. We will reimburse you for the postal expenses. Thank you.

If you do not receive all copies, please call: (707) 778-2266

2221 Pine View Way • Petaluma, CA 94954 • Phone: (707) 778-2266 • Fax: (707) 778-2262

MF0337



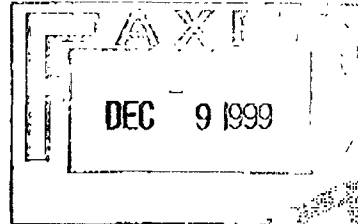
CARPENTER
Engineered Products

Parmatech Corporation
2221 Pine View Way
Petaluma, CA 94954

Tel: 707.778.2266
Fax: 707.778.2262

December 9, 1999

Ms. Metty Morgan
Remington Arms Company
22 Rifle Trail, P.O. Box 99
Hickory, KY 42051



Via Fax: (270) 856-3233

RE: REQUEST FOR QUOTE FOR FIRING PIN HEAD, PARMATECH QUOTE #2199-2

Dear Ms. Morgan:

Pursuant to a recent request from Matt Golembuski, I am pleased to provide the following revised quotation.

TOOLING OPTIONS

Design and build tooling to produce the Firing Pin Head per drawing C300336, no revision

One-Cavity Production Mold	\$24,000
One-Cavity Prototype Mold	\$9,000
Tapping Fixtures (if required)	\$2,000

Terms: 33% with Purchase Order
33% with first sample delivery
Balance due at first article approval
Due and payable upon receipt of each invoice

Delivery: Mold delivery 10 - 12 weeks after receipt and acceptance of customer's formal purchase order and three copies of final blueprints. Delivery is subject to material availability and shop load at time of acceptance.

Notes: First samples delivered 4-6 weeks after mold delivery.

- 1.) All tooling subject to 7.5% California sales tax.
- 2.) Tooling amortization may be available given a multi-year agreement.
- 3.) Prototype mold cavity would be made of P20 tool steel, and have a limited life. Quotation assumes removing radii from back face to allow part to be made entirely in one half of the tool. Parts run from prototype tool would be subject to \$2,500 lot charge.

Metty Morgan
Remington Arms
Quote #2199-2
December 9, 1999
Page 2

PART PRODUCTION

Produce the Firing Pin Head per drawing C300336, no revision via metal injection molding (MIM) in 2%NiFe (MIM4600) from a production tool.

Option	20,000 Price	40,000 Price	60,000 Price
One	\$3.27	\$2.11	\$1.86
Two	\$1.77	\$1.26	\$1.12
Three	\$2.68	\$1.81	\$1.56

Option Definitions:

- One: One cavity, part complete including heat treat, plating, and tapping.
Two: One cavity, part as-sintered, no tapping.
Three: One cavity, part heat treated and plated, no tapping.

Notes:

- 1.) This quotation is based on a blanket purchase order with monthly or quarterly releases.
- 2.) Final tolerances, parting line, gate location, draft, and ejector pin locations to be mutually agreed upon during final engineering review before purchase order acceptance and tool design and build.
- 3.) Different pricing structure may be negotiated if combined with other MIM components.

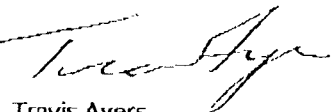
Terms: Net 30 days, FOB Petaluma, CA. Pamatech Corporation's Standard Terms and Conditions of Sale apply (IR2 12/82 copy attached).

Delivery: Part delivery 4-6 weeks after first article approval, subject to material availability and shop load at time of acceptance.

Validity: This quotation is valid for 60 days.

Thank you for the opportunity to quote on this program. If you have any questions, or wish to discuss this further, please do not hesitate to call me directly at (707) 781-2955.

Best regards,



Travis Ayers
Director of Sales and Engineering

cc. Ed Blake - Carpenter SAO

Tuscarora Incorporated
1479 Parker Road
Conyers, GA 30094
800 347-3626
770 922-3513
Fax 770 922-1471



MATT
COPY FYI
2/11
MM

REMINGTON ARMS COMPANY
ATTN: METTY MORGAN
22 RIFLE TRAIL
HICKORY KY 42051

E-Mail:
Phone: 502-856-4204
Fax: 502-856-3233

WE ARE PLEASED TO SUBMIT THE FOLLOWING QUOTATION:				QUOTATION NO. S99-680A	
ANTICIPATED PRODUCTION PLANT Lewisburg, TN				FOB Lewisburg, TN	
DATE 08/17/99	INQUIRY NO.	PRICE PER	Piece	TERMS Net 30 Days	
PART NO., DRAWING NO. OR DESCRIPTION		QUANTITY	PRICE PER		
710 FOAM BED		50,000/Year	\$0.090 Each		
FABRICATED LID		50,000/Year	\$0.180 Each		
TOOLING CHARGE			\$18,900.00		
NUMBER OF CAVITIES			3		
WEEKLY PRODUCTION					

REMARKS:

1. Material Regular Grade EPS.
2. Lid will be encapsulated in foam bed.
3. This quote supercedes Quote S99-680 dated 8/13/99.

TOOLING DELIVERY: (8-10) WEEKS AFTER RECEIPT OF
ORDER AND APPROVED DRAWINGS.

QUOTATION SUBJECT TO CONDITIONS ON REVERSE SIDE.

TUSCARORA INCORPORATED

By *Fitz Ross*

cl

Fitz Ross
Account Manager

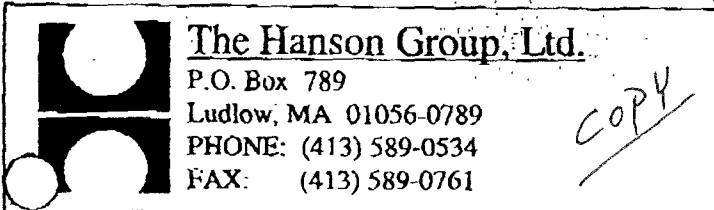
Form #311

Issue Date: November 17, 1998

Revision Date: January 28, 1999

Tuscarora Incorporated 1479 Parker Road Conyers, Georgia 30207 770.922.3513 Fax 770.922.1471

MF0340



QUOTATION NO. **990118-2010-9**
 DATE **August 31, 1999**
 TERMS **Net 30 Days**

TO
 Mr. Jim McCollum
 REMINGTON ARMS CO., INC.
 14 Hoefler Street
 Ilion, NY 13357

REFERENCE: **Receiver Insert, #2E-300327, Rev. 27, HGL Job#9990204**

We are pleased to quote you as follows:

Extend Rib area and add Fillet:

Delivery: 2-3 weeks after receipt of purchase order.

\$ 3,700.00

F and S can not be added.

Sample part using IQC process:

Sampling includes shipping mold to Detroit and sample with IQC process.

\$ 1,200.00

- Lead times are based on construction time required for the job under normal conditions and assume all pertinent data, such as CAD information or part prints are complete and available at time of release. Actual delivery dates will be assigned at time of purchase and will be based on conditions of required materials and actual Engineering start date.
- F.O.B. Ludlow, MA, Freight Collect

F (270) 737-9576

We await your reply and assure you of our best attention and services at all times.

(Quote valid for 30 days.)

Subject to the terms and conditions on the reverse side hereof.

FILE COPY

Eugene Tabarovsky
 Eugene Tabarovsky
 Engineering Manager

F03.005SQ

MF0341



The Hanson Group, Ltd.

P.O. Box 789

Ludlow, MA 01056-0789

PHONE: (413) 589-0534

FAX: (413) 589-0761

QUOTATION NO.

990118-2010-10

DATE

September 15, 1999

TERMS

Net 30 Days

TO

**Mr. Jim McCollum
REMINGTON ARMS CO., INC.
315 West Ring Road
Elizabethtown, KY 42701-9318**

REFERENCE: **Receiver Insert, #1E-300327, HGL Job#9990204G**

We are pleased to quote you as follows:

Modify mold per revision 28 and 29:

Delivery: 2-3 weeks after receipt of purchase order.

Sample part using IQC process:

\$ 2,823.00

\$ 1,200.00

- Lead times are based on construction time required for the job under normal conditions and assume all pertinent data, such as CAD information or part prints are complete and available at time of release. Actual delivery dates will be assigned at time of purchase and will be based on conditions of required materials and actual Engineering start date.
- F.O.B. Ludlow, MA, Freight Collect

T (270) 769-7600

F (270) 737-9576

We await your reply and assure you of our best attention and services at all times.

(Quote valid for 30 days.)

Subject to the terms and conditions on the reverse side hereof.

**Eugene Tabarovsky
Engineering Manager**

FILE COPY

F03.005SQ

Rev. 1.0.0.0

MF0342

FYI
QUOTATION

November 23, 1999

Remington Arms Company, Inc.
22 Rifle Trail
PO Box 99
Hickory, Ky 42051

Attn: Metty Morgan

Ref: Part # E-300363 rev. 9

We are pleased to submit the following quotation for your consideration.

TOOLING COST

Design and build progressive die to stamp part complete \$79,000.00

PRODUCTION COST PER/M

Quantities:

	Price/M
20/M	\$600.36/M
40/M	\$511.61/M
60/M	\$476.20/M

Notes: Quote based on running part in quarterly production runs.

Parts will be bulk packed in Deer Park boxes on a skid.

Material quoted is a 1010/1020 Cold Rolled Steel.

Parts are to be produced by stamping in a progressive die and welding the overlap

Tooling cost includes cost for welding fixture.

Inspection: Production parts to be sample inspected per Deer Park's internal procedure when no other standard is specified by the client.

Delivery: Tooling, 14-16 weeks. Production, 4-6 weeks upon receipt of raw material

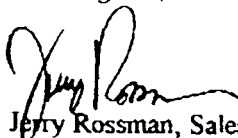
Terms: Tooling, 1/3 at PO, 1/3 at sample submission, 1/3 at customer approval.

Terms: Production, Net 30 days.

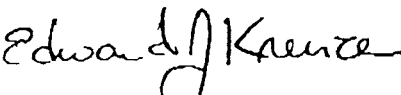
FOB: Deer Park

Thank you for considering Deer Park Die & Stamping, an ISO 9001 certified firm, as your supplier.

Best Regards,



Jerry Rossman, Sales Engineer



Edward J. Kreuzer, Vice President/General Manager
Co. Mike Koonoy, Remington Arms Company, Inc.

FACSIMILE COVER PAGE

Date: 12/2/99
Time: 14:03:04
Page: 1

To: Matt Golembowski
Company: Remington Arms
Fax #: 270-856-3233

From: Jerry Rossman
Company: Brainin - Deer Park Die & Stamping Div.
Address: 4348 LeSaint Court
Fairfield, OH 45014
Fax #: 513-874-9764
Voice #: 513-874-9760

Message:

Matt-

I just wanted to drop you a quick line to let you know we haven't forgotten you. I am currently waiting on prices from our laser cutter. Once I receive them I will be able to submit your prototype pricing for the magazine box. I hope you find our pricing acceptable and we look forward to working with you.

Regards,

Jerry Rossman

November 17, 1999
ER/rt/ng - 65/99

REMINGTON Arms Co., Inc.

14 Hoefler Avenue
ILION, NEW YORK 13357

U. S. A.

ATTN.: Mr. Joseph Jerzak
Purchases

ATTN: Matt Golemboski

Dear Mr. Jerzak,

We are glad to submit to you our best price and terms relevant to the rifle magazine 710, made according to your preliminary drawings, as follows:

REMINGTON RIFLE MAGAZINE 710

- Magazine Housing E 300-363
 - Material: Fe PO MBRL UNI 5961/84 (thickness 1mm)
 - Heat-treatment: none
 - Surface finish: blued
- Magazine Follower D 300-364
 - Material: PA6, filled with 30% of glass fibers, black
- Magazine spring C 300-405
 - Material: C72
- Magazine Floorplate D 300-405
 - Material: PA 6 filled with 30% of glass fibers, black
- **ANNUAL QUANTITY:**
 - to be determined
- **UNIT PRICE:**
 - US \$ 5.50= FOB New York, goods cleared From Customs

PAGE 1/2

Cap. Soc. Lit. 20.000.000 i.v.

I - 25063 GARDONE V.T. (Brescia) - Via Madonnina, 64
Tel. 030/8911719 r.a. - 8912687 - Fax 030/8910065 - P.O.Box 67
Internet: <http://www.mec-gar.it> - E-mail: info@mec-gar.it
Cod. Fisc. 0291154 0173 - Part. IVA IT 0070472 0988

Reg. Imp. Trib. Brescia n. BS029-36480
C.C.I.A.A. Brescia n. 303837
N. Meccanografico BS003720

Banche: Banco di Brescia
Cassa Risparmio P.P. Lombarda

November 8, 1999
ER/rf/ng - 65/99

REMINGTON Arms Co., Inc.

14 Hoefler Avenue
ILION, NEW YORK 13357

U. S. A.

SHARING TOOLING COSTS

• **PRICE:**

US \$ 60,750=

"REMINGTON WILL HAVE OWNERSHIP OF THE DIES; ALL DIES WILL PHYSICALLY REMAIN ON THE PREMISES AT MEC-GAR IN ITALY FOR A PERIOD OF TIME OF 5(five) RENEWABLE YEARS, FOR THE SOLE AND EXCLUSIVE PRODUCTION OF PARTS FOR REMINGTON ARMS COMPANY, INC."

• **DELIVERY TERMS:**

- sample magazines from tooling: 6 working months from receiving your Order
- following shipment: to be agreed

• **TRANSPORTATION INSURANCE** . included

• **PACKING** . in bulk, included in the price

• **PAYMENT TERMS** . a) goods: 30 days net
b) tooling costs: 30% on issuing of the purchase order
30% on delivery of the sample magazines
40% on delivery of the first lot of 100 pcs.

• **SHIPMENT** . by air

This offer is three-month valid.

We hope our terms and conditions will allow you to place an order with us.
Should you need any further information, please do not hesitate to call or fax.

Best regards,

E. RACCHI
MEC-GAR



Engineering

Sectors

Precious Metals
Telecommunication
Products
Plastic Mouldings

Industries/ Markets served

Jewellery
Electronics
Dental
Electrical
Telecommunications
Material Handling
Recreational Materials
Custom Moulding

Products and services

The division produces specialised engineered products in three main business sectors:

Precious Metals is one of the world's leading suppliers to the jewellery industry of precious metals fabricated into wire, sheet, tubing, casting grains, chain and components, known as "findings". It also manufactures finely engineered precision stampings for electrical and electronic applications and a range of dental products.

Telecommunication Products both manufactures and installs fibre optic aerial cable systems and manufactures tapes and composites for the wire and cable industry.

Plastic Mouldings serves the materials handling and recreational markets with proprietary structural foam and injected moulded products.

Contribution to Group Turnover



Contribution to Group Operating Profit



Cookson Subsidiaries and Associates

Electronics

Alpha Best Soldas Hera, Brazil
 Alpha Fry Ltd, England
 Alpha Fry France SA, France
 Alpha Metals Inc., USA
 Alpha Metals (Korea) Ltd, Korea
 Alpha Metals Lotsysteme GmbH, Germany
 Alpha Metals Ltd, Hong Kong
 Alpha Metals of Japan Ltd, Japan
 Alpha Metals SpA, Italy
 Alpha Metals (Taiwan) Inc., Taiwan
 Alpha Yunnan Tin Solder Company Ltd, China
 Cookson Electronics PC FAB Limited, England
 Cookson India Ltd (91%), India
 Cookson Singapore Pte Ltd, Singapore
 Fry's Metals, Inc., USA
 Polyclad Asia Ltd, Hong Kong
 Polyclad Dalian Advanced Laminates Company
 (65%), China
 Polyclad Europe AB, Sweden
 Polyclad Europe SA, France
 Polyclad Laminates, Inc., USA
 Poly-Flex Circuits, Inc., USA
 Screen Manufacturing Technologies, Inc., USA
 Specialty Coating Systems, Inc., USA
 Speedline Technologies, Inc., USA
 TAM Ceramics, Inc., USA
 TAM Ceramics Japan Co. Ltd., Japan
 Witmetaal B.V., Netherlands

Associates

Cookson Fukuda Ltd (50%), England
 Parylene Japan KK (50%), Japan

Engineering

- Brainin-Advance Industries, Inc., USA
- Cookson Precious Metals Ltd, England
- Engineering Polymers Corporation, USA
- Fibers et Techniques SA, France
- Focas Ltd, England
- Focas, Inc., USA
- General Metal Finishing Co. Inc., USA
- IMPLA-MED, Inc., USA
- Inverness Corporation, USA
- Loudon Plastics, Inc., USA
- Matrix, Inc, USA
- NEPTCO, Inc., USA
- Pacific Industries, Inc., USA
- Stern/Leach Company, USA
- Stern Metals, Inc., USA
- Wauconda Tool & Engineering Co., Inc., USA

Associate

Ceramics

Becker & Piscantor GmbH, Germany
 Cookson Plibrico, Australia
 Flogates Ltd, UK
 Hi-Tech Ceramics, Inc., USA
 KSR Ltd, UK
 Monofrax, Inc., USA
 Vesuvius Belgium NV, Belgium
 Vesuvius Canada Ceramics Ltd, Canada
 Vesuvius Corporation SA, Switzerland
 Vesuvius Ceska Republika, AS (60%), Czech Republic
 Vesuvius China, China
 Vesuvius Deutschland GmbH, Germany
 Vesuvius Deutschland Wulfrath GmbH (75%), Germany
 Vesuvius France SA, France
 Vesuvius Haznedar A.S., Turkey
 Vesuvius Iberica SA, Spain
 Vesuvius India Ltd (51%), India
 Vesuvius International Corporation, USA
 Vesuvius Italia SpA, Italy
 Vesuvius Japan, Inc., Japan
 Vesuvius McDanel Company, USA
 Vesuvius Mexico SA de CV, Mexico
 Vesuvius Polska Skawina (60%), Poland
 Vesuvius Refractanos de Venezuela, Venezuela
 Vesuvius Refractanos Ltda, Brazil
 Vesuvius Scandinavia AB, Sweden
 Vesuvius UK Ltd, Scotland
 Vesuvius USA Corporation, USA
 Vesuvius (Vear) SA, Argentina
 Zedmark, Italy

Associate

Kawasaki-Vesuvius Advanced Refractory
 Technology, Inc. (50%), Japan

Registered Office and Group Head Office

Cookson Group plc
 The Adelphi
 1-11 John Adam Street
 London WC2N 6HJ
 Tel +44 (0)171 766 4500
 Fax +44 (0)171 747 6600
 www.cooksongroup.co.uk
 (Registered in England, No 251997)

Corporate Website

More information about the Company is available on the
 Corporate Website <http://www.cooksongroup.co.uk>

CUSTOMER

Brainin
Deer Park Die & Stamping Division

Brainin
Brainin de Mexico, S.A. de C.V.

Brainin
Precision Metallurgical Division

Brainin
Brainin Advance Industries

stern metal

Cookson ©

QUOTATION

October 18, 1999

Remington Arms Company, Inc
22 Rifle Trail
PO Box 99
Hickory, Ky 42051

Attn: Metty Morgan
Ref: Part # E-300363

We are pleased to submit the following quotation for your consideration.

TOOLING COST

Design and build progressive and secondary die to stamp part complete \$89,000.00

PRODUCTION COST PER/M

Quantities:

	Price/M
20/M.	\$841.23/M
40/M.	\$754.67/M
60/M.	\$721.45/M

Notes: Quote based on running part in quarterly production runs.
Parts will be bulk packed in Deer Park boxes on a skid.
Material quoted is a 1010/1020 Cold Rolled Steel with Black oxide finish.
Parts are to be produced by blanking in a progressive die and forming in a secondary die.

Inspection: Production parts to be sample inspected per Deer Park's internal procedure when no other standard is specified by the client

Delivery: Tooling, 14-16 weeks. Production, 4-6 weeks upon receipt of raw material.

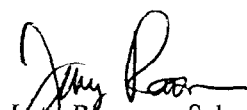
Terms: Tooling, 1/3 at PO, 1/3 at sample submission, 1/3 at customer approval.

Terms: Production, Net 30 days.

FOB: Deer Park

Thank you for considering Deer Park Die & Stamping, an ISO 9001 certified firm, as your supplier.

Best Regards,


Jerry Rossman, Sales Engineer


Edward J. Kreuzer, Vice President/General Manager

TOOL & MANUFACTURING CO., INC.

9550 JOLIET ROAD • McCOOK, ILLINOIS 60525
PHONE (708) 485-6130 FAX (708) 485-6540

Quotation: 07408-00

Date: 09/30/99

To: Remington Arms Company, Inc.
22 Rifle Trail
Hickory, KY 42051

Attention: Metty E. Morgan

Gentlemen:

In response to your recent inquiry we are pleased to submit the following quotation for your consideration.

Item Number	E-300363	Item Description	Magazine Box
E.C.L. Level	5	Tooling Description	Progressive Die
Tooling Lead Time (Weeks)	14	Material Description	.030 1010/1020 CRS
Quoted Material Cost/Pound	3950	Finishing Description	Black Oxide
Quoted Finishing Cost/Each	089	Quoted Deburring Cost/Each	.000
Estimated Weight Per Piece	.255	Tooling Cost	\$46,155.00
Miscellaneous Cost/Each	.000		

Quantities Each	5000	10000	12000			
	.466	.374	.351			

Notes:

Our Selling Prices at various quantities are based on raw material purchases, set-up and running of those quoted quantities. Therefore we cannot accept orders with more than 60 days between first and last shipments.

ODM reserves the right to re-quote to a production release print.

Above prices do not include deburring.

Quote based on bulk packaging in capacities up to 1100 pounds.

Quoted at quarterly release quantities.

Material 1010/1020 1/4-1/2 hard

Spring back won't allow for tight seam, need to spot weld or clinch, not quoted.

This quotation is subject to immediate acceptance unless otherwise agreed upon. We reserve the right to alter terms and conditions if contingencies develop which were not apparent at the time of quotation. Delivery promises are an estimated date only and not guarantee of performance. We are not liable for delays due to fire, strikes or causes beyond our control. Cancelled orders will be subject to our charges as invoiced.

We wish to thank you for your inquiry

Very truly yours,

By: Chip Michalski

Terms Net 30/ F.O.B. Our Plant

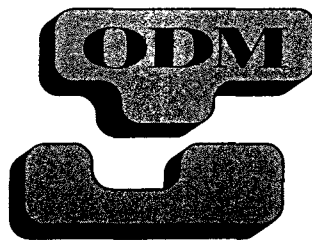


METAL STAMPING • COMPLETE MANUFACTURING

MF0351

“STAMP OF EXCELLENCE”

ODM pledges that our customers can rely upon us, without reservation, for the highest quality, most dependable service and cost-effective pricing in the industry. We will continue to provide the most modern advancements in equipment and procedures. And we are dedicated to maintaining an environmentally responsible approach to all operations. Capable, Reliable, Versatile—ODM will continue to be the most progressive name in stamping... our quality pledge to you.



“THE MOST PROGRESSIVE NAME IN STAMPING”



ODM TOOL & MANUFACTURING CO., INC.
9550 Joliet Road, McCook, Illinois 60525
Telephone: (708) 485-6130 FAX: (708) 485-6540

STAMPINGS

PART NUMBER	DESCRIPTION	VENDOR	RFQ SENT	DUE BACK	QUOTE	SET-UP	LEAD TIME
E-300363	MAGAZINE BOX	TABER BUSHNELL, INC.	07/22/99	08/19/99	NO QUOTE-NOT IN CAPABILITIES		
		NEW HAMPSHIRE STAMPING CO., INC.	07/22/99	08/19/99	NO QUOTE		
		MORRISSEY, INC.	08/06/99	08/26/99	NO QUOTE-NOT SUIT. FOR VENDOR		
		METAL FLOW CORP.	09/02/99	ASAP			
		TRIANGLE PRECISION			NO QUOTE-EQUIPMENT		
					5M=\$.466EA;		
					10M=\$.374/EA;		
					12M=\$.51/EA		
		ODM	09/21/99	09/30/99		\$46,155.00	
		HIGHLANDS DIVERSIFIED	09/23/99	09/30/99			
		KICKHAEFER MFG. CO.					
		LOGAN STAMPINGS			NO QUOTE-MACHINE NOT CAPABLE		
					20M=\$3.65/EA;		
					40M=\$3.05/EA;		
					60M=\$2.90/EA		
		OKAY INDUSTRIES				\$46,500	SAMP 16-18 WKS.
		KEN-TRON MFG.	10/06/99	10/14/99	No Quote		
		F & G MULTI-SLIDE, INC.	10/06/99	10/14/99	machinery		
		TWOSEN TOOL		10/14/99	No Quote		
					Capacity		
		DEER PARK		10/19	20 40 60 .84, .75, .72/in		
					#89,000.00		
					High		

01/31/00

C:\WINDOWS\Desktop\710 Capital & Start up Costs.xls\710 capital by operation

In House Capital

Part Name	Operation	Equipment	Capital Required	Capital Actual	(Under)/Over	Date Ordered	Expected Delivery Date	PO #
Barrel	Cut off		\$0		0			
	Drill	cones	\$9,960		(9,960)			
	Ream		\$0		0			
	Rifle	gages	\$9,800		(9,800)			
	Wash & Stress Relieve	baskets	\$6,900		(6,900)			
	Turn	gages	\$10,100		(10,100)			
	Face & Chamber	gages	\$33,300		(33,300)			
	Face & Chamber	machine	\$221,380	221,500	(1,380)	12/21	4/7	
	Cut off and Crown	chuck	\$15,000		(15,000)			
	wash and eddy current test	machine	\$75,000		(75,000)			
	Induction Harden	machine	\$166,000	148,950	(17,050)	1/17	4/20	M017474
	Inspect Hardness	machine	\$12,000		(12,000)			
	Drill and tap sight	fix & gages	\$7,600		(7,600)			
	Roll mark	fix & gages	\$6,300		(6,300)			
	Angularity Straighten	fix & gages	\$3,500		(3,500)			
	Centerless Polish		\$0		0			
	Glass Bead Blast	fixtures	\$2,500		(2,500)			
	Color	racks	\$6,000		(6,000)			
Bolt Head	Inspect Purchased Part							
	Blank	gage	\$2,500		(2,500)			
	Superabrasive Grind Lugs	fix & gage	\$43,800		(43,800)			
	CNC Machine Bolt Face							
	Complete	fix & gage	\$174,784		(174,784)			
	CNC Machine Cam Cuts							
	Ejector Retaining Pin Hole	fix & gage	\$15,000		(15,000)			
	CNC Machine Bolt Head							
	Retaining Pin Hole	fix & gage	\$15,000		(15,000)			
	Punch Form Ejector							
	Rotation Notch	fix & gage	\$10,000		(10,000)			
	Vendor Heat Treat		\$0		0			
Bolt Body	Inspect for Hardness		\$0		0			
	Black Oxide		\$0		0			
	Inspect Purchased Part							
	Blank	gage	\$2,000		(2,000)			
	Machine Cam Cuts	machine	\$0		0			
	Assemble Braze Bolt	machine	\$90,000		(90,000)			
	Deplate	tanks	\$9,500		(9,500)			
	Eddy Current Test		\$0		0			
Receiver	Glass Bead Blast	fix	\$2,500		(2,500)			
	Black Oxide		\$0		0			
	Inspect Purchased Part							
	Blank	gage	\$2,500		(2,500)			
	Machine A-load	machine & CM	\$513,831		(513,831)			
	Machine B-load		\$0		0			
	Vibratory tumble deburr		\$0		0			

REMINGTON ARMS COMPANY, INC.
FIREARMS - MAYFIELD

01/31/00

C:\WINDOWS\Desktop\710 Capital & Start up Costs.xls\710 capital by operation

Barrel

Assembly	Press Receiver to Barrel	fixture	\$0	0
	Inspect for straightness	gage	\$3,500	(3,500)

Final

Assembly	Gallery	100yd range	\$100,000	(100,000)
		snails	\$30,000	(30,000)
		HVAC	\$25,000	(25,000)
		other	\$10,000	(10,000)
			0	0
			\$100,000	(100,000)
			\$65,000	(65,000)

TOTAL IN HOUSE CAPITAL \$1,801,755 (1,801,755)

Purchased Parts

Part #	Part Name	Capital	Tool	Capital Actual	Date Ordered	Expected Delivery Date	PO #
300327	Receiver Insert	48,000	Mold	(48,000)			
300333	Side Plate	10,000	Stamping Die	(10,000)			
300334	Safety Arm	23,880	Stamping Die	(23,880)			
300345	Bolt Stop	6,820	PM	(6,820)			
300361	Recoil Bracket	2,225	Stamping Die	550	1/19	3/15	M017486
300360	Bolt Handle Blank	12,800	Invest Cast Die	(12,800)			
300366	Bolt H. Braze Shim	0	Use Paste	0			
300368	Bolt Plug	38,088	Mold	38,000	12/14	3/21	M017443
300336	Firing pin head	25,000	MIM Mold	16,000	1/14	3/16	M017470
300362	Mag Latch	33,480	Mold	31,806	1/11	4/24	M017465
300363	Magazine Box	28,000	Mold	0	1/13	3/9	
300364	Magazine Follower	33,300	Mold	0			M017466
300365	Magazine Bottom	47,880	Mold	73,786	1/12	4/17	M017466
	Stock	150,300	Mold	145,300	12/13	3/29	M017435
	Styrofoam Bed	0	Die	0			
	PPI	38000	See PPI Detail	(38,000)			
	} follower and box bottom family mold						
TOTAL VENDOR CAPITAL		\$495,773		\$ 305,442		(190,331)	

Addition Items Unbudgeted

Total	\$2,297,528
Installation	\$0
	<u>\$2,297,528</u>

Barrel Capital - Line item Detail

Item	Estimated Price	Actual Price	Date Ordered	Date Due	PO Number
Air Gauge	\$ 6,080.00				
Basket	\$ 4,708.00				
Basket	\$ 4,708.00				
Profile Gauge	\$ 5,000.00				
AIR GAGE, SET RINGS, MASTER TAPER	\$ 6,390.00				
SHOULDER DEPTH GAGE W/MASTER AND DESIGN COST	\$ 3,780.00				
THROAT DEPTH GAGE W/MASTER AND DESIGN COST	\$ 3,780.00				
NECK DEPTH GAGE W/MASTER AND DESIGN COST	\$ 3,780.00				
2.995 LENGTH GAGE	\$ 3,500.00				
HEADING GAGE, HEADING PLUGS	\$ 9,240.00				
Okuma LB-300 MY 250T Space Turn Lathe	\$ 201,700.00				
Thru-Spindle Coolant	\$ 6,669.00				
Hi-Pressure Coolant	\$ 981.00				
Manual Touch Setter	\$ 3,200.00				
Extra Memory (2100 ft)	\$ 3,710.00				
Chip Conveyor	\$ 6,620.00				
Installation	\$ 2,138.22				
Clamping Chuck	\$ 15,000.00				
Sight Hole location Fixture - Design & Build	\$ 7,640.00				
Sight Hole Position Gage - Design & Build	\$ 6,875.00				
Induction Hardening Machining	\$ 166,000.00				
Rockwell 200IT Hardness Tester	\$ 14,800.00				
Installation	\$ 766.26				
Wash and eddy current test	\$ 75,000.00				
New Barrel Ejection System for Ilion's Press Machine	\$ 5,000.00				
Bench centers	\$ 4,530.00				
Hydraulic Press	\$ 5,000.00				
Roll Mark Fixture - Design and Build	\$ 3,730.00				
Color Racks	\$ 6,000.00				
Glass Bead Fixture	\$ 2,500.00				
Locator/Roller Adapter	\$ 1,500.00				
	\$ 584,245				

Additional Non-Capital items that were included as capital tooling in the estimate

.708 C'BORE PLUG GAGE	\$ 67.00
.7045 C'BORE PLUG GAGE	\$ 67.00
C'BORE DIAL GAGE	\$ 550.00
PISTOL GRIP INDICATOR	\$ 500.00
CHAMFER GAGE	\$ 220.00
.325 PLUG GAGE W/DESIGN	\$ 960.00
FORM GAGE/LOCKING LUG W/DE	\$ 570.00

Barrel Capital Sheet

REMINGTON ARMS COMPANY, INC.

01/31/00

FIREARMS - MAYFIELD

710 Start Up Costs White Paper vs Actual

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	White Paper Costs	Actual Costs						Total	(Under)/ Over
		Aug-99	Sep-99	Oct-99	Nov-99	Dec-99	Jan-00		
Direct Labor	44,537.04							-	(44,537.04)
From Overhead									
Setters	25,914.48			1,394.36				1,394.36	(24,520.12)
Maintenance	27,083.36							-	(27,083.36)
EBs	56,570.23			648.62				648.62	(55,921.61)
Other Costs									
Travel	10,124.93	124.93		1,803.39	3,158.68	(1,010.34)	202.37	4,289.03	(5,835.90)
Material for Receiver	2,175.00		1,425.00					1,425.00	(750.00)
Material for Bolt Body	3,000.00		750.00					750.00	(2,250.00)
Material for 1,000 Learning									
Guns (\$43.86/ea)	43,860.00							-	(43,860.00)
Material for 60 T&P									
Guns (\$43.86/ea)	2,631.60							-	(2,631.60)
Material for 30 DAT									
Guns (\$43.86/ea)	1,315.80							-	(1,315.80)
15,000 rns of Ammo	3,000.00							-	(3,000.00)
Disassembly & Rearrange	6,000.00							-	(6,000.00)
Tooling & Inspection	64,015.47		16,503.92	15,521.26	4,738.20	2,949.01		39,712.39	(24,303.09)
Prototype Parts	32,000.00		149.75		23,780.00		765.00	24,694.75	(7,305.25)
Material Handling Purchases	58,000.00						3,862.32	3,862.32	(54,137.68)
Miscellaneous	36,906.85				1,288.00		1,638.77	2,926.77	(33,980.08)
1999 startup Costs	417,134.76	124.93	18,828.67	19,367.63	32,974.88	1,938.67	6,468.46	79,703.24	(337,431.52)

NO INFORMATION IS
TO THE
REMINGTON ARMS COMPANY, INC.

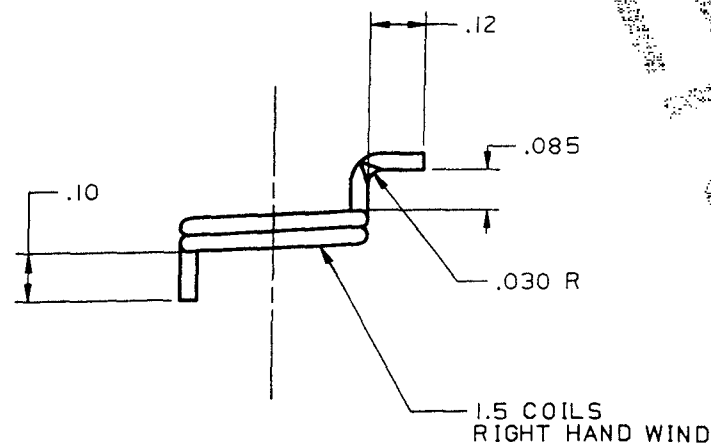
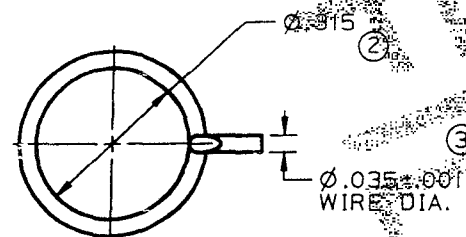
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2 PLACE (.01) - TOLERANCE $\pm .005$
3 PLACE (.001) - TOLERANCE $\pm .0005$
& ON FRACTIONAL DIMENSIONS $\pm 1/64$
& ON ANGULAR DIMENSIONS $\pm .0075$
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VALUES AND ARE THE MAXIMUM ROUGHNESS
ACCEPTABLE, UNLESS OTHERWISE SPECIFIED.
FINISH ROUGHNESS TO BE $\sqrt{125}$ OR BETTER.

MATERIAL AND HEAT TREAT

MATERIAL SAE 5160
HEAT TREAT STRESS RELIEVE
HARDNESS _____
COLOR DL
HEAT TREAT AND COLOR TO BE DONE BY
REMINGTON

ALTERATIONS

ALT.	DATE	REF.	BY
1			MDK
2			MDK
3			MDK



MODEL	PART NO.	PART USE
DES. BY DATE	DRN. BY DATE	CHK. BY DATE
	MDK 07/01/99	
TITLE SAFETY DETENT SPRING		
NUMBER	SCALE	SUPERSEDES
B-300407	4:1	REFERS
REMINGTON ARMS CO. RESEARCH DIV.		

CV FREMANK - PARTS RIF. 710 SAFETY-DET-SPRING.300407

Bolt head Summary

		material	Runtime	external Processing	Variable tooling	Capital	Pre-op
Op 10	Machine face	1.75	0.0198		0.28	1739222	2491.95
Op20	Grind Lugs						
Op 30	Machine Ejector ret. Hole		0.0076		0.037	19500	1089
Op 40	Bolt head ret. Hole		0.0172		0.25	28000	1700
			0.0446		0.567	1786722	5280.95

.0446 equates to \$2.87 in labor and OH

TOTAL COST \$4.62

Quick Tek
MFG, INC.

COPY
FYI
1/25

January 24, 2000

VIA FAX 270-856-3233 2 page

Metty E. Morgan
Materials Manager
Remington Arms, Mayfield Plant
22 Rifle Trail, P.O. Box 99
Hickory, KY 40251

RE: Bolt Head Machining

Dear Ms. Morgan;

Matt Golemboski asked us to quote production machining of additional features on the Bolt Head, E-300338 per REV 17 Drawing dated 7/29/99. This supplements our quotation dated 12/6/99 for the Blank at a price of \$1.49 each for 20,000 pieces plus a Fixturing and Programming Charge of \$580.

Our price to drill the .250 cross hole, .078 cross hole, .125 counterbore, and .125 end hole would be \$0.51 each for 20,000 pieces plus Fixturing and Programming of \$175. We could also do an automatic deburring on the Swiss turning/drilling machine of the two sets of intersecting holes by drilling into two holes a second time to knock out burrs made by the intersecting drilling. This operation price would be \$0.17 each. 0.17

Our price for contour T-milling the .1190 "undercut cavity" would be \$1.31 each for 20,000 pieces plus Fixturing and Programming of \$850. This operation would include a quick deburring pass with a small abrasive wheel automatically while on a Machining Center.

Thus the total price of the Blank with these additional operations would be \$3.48 each (\$1.49 + \$0.51 + \$0.17 + \$1.31) plus Fixturing and Programming of \$1,605.

Also, Matt asked us to quote adding the drilling and milling to the forty extra Bolt Head Blanks that we have not shipped to you. Our price for forty pieces is \$18.00 each. If you wanted us to do 150 pieces the unit price would be \$10.67. To both prices add the cost of the Blank of \$4.60 each.

We will quote the Section F-F milling later and the B-300346 Bolt Plug Insert tomorrow.

Cordially,

Chuck
Chuck Ulinski

Manufacturing Services, Conventional & CNC Machining

104 Second St. Paris, KY 40361 606-987-2591 Fax 606-987-2563 e-mail quicktek1@aol.com

Summary

Part Name	Bolt Head
Part Number	300338

Operation Name	CNC Machine Bolt Face
Operation Number	10

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
\$1.75	0.0198	n/a	\$0.2798	\$173,922.22	\$2,491.95

Assumptions: Process on a Okuma VMC on a palletized machine.
5 collet style fixtures locating on -A- datum. Same pallet has 5 positions for bolt handles
Machine burden for this operation at 200/day 4.7 hrs at 80% efficiency.
Add use the design of the Grind Lug Operation for the gaging. Build cost only.

Risks/unknowns:
Assumed tool lives from experience with m/597 carbon bolt which is the same material (4140).

Run Time Analysis

Part Name	Bolt Head	Operation Name	CNC Machine Bolt Face
Part Number	300338	Operation Number	10

Run Time Analysis

Operation	Cutter Used	Cutter Dia.	Cut Depth/length (in.)	SFM	IPR	RPM	IPM	Cut Time (min.)	Rapid Traverse Time (min.)	Tool Change Time (min.)	Total Time per Operation (min.)
Finish Mill Bolt Face Counterbore	3/8 Carbide Endmill, 4 flute	0.3750	0.733	130	0.0060	1,324	7.95	0.092	0.03125	0.1	0.224
Mill Extractor Undercut	5/16 HSS T-Slot Cutter	0.3125	1.128	130	0.0080	1,589	12.71	0.089	0.03125	0.1	0.220
Spot Face for .125 Ejector Hole	1/8 Carbide Endmill, 4 Flute	0.1250	0.200	130	0.0040	3,973	15.89	0.013	0.03125	0.1	0.144
Spot Drill .125 Ejector Hole	#3 Center Drill	0.1100	0.250	65	0.0030	2,257	6.77	0.037	0.03125	0.1	0.168
Peck Drill .125 Ejector Hole	1/8 Parabolic HSS drill	0.1250	1.890	65	0.0030	1,986	5.96	0.302	0.03125	0.1	0.433
Total Time per Part (min.)											1.189
Total Time per Part (hr.)											0.0198

Inspection Procedure

Part Name	Bolt Head
Part Number	300338

Operation Name	CNC Machine Bolt Face	
Operation Number	10	

Inspection Procedure

[illegible]

Tooling

Part Name Bolt Head
Part Number 300338

Operation Name CNC Machine Bolt Face
 10 2

Tooling

Operation	Tool Name	Quantity	Dollars	Pre-op	Tool Life (parts/tool)	Cost /part	Lead Time
Finish Mill Bolt Face Counterbore	3/8 Carbide Endmill, 4 flute	3	\$15.97	\$47.91	800	0.0200	1 wk
	KENNAMETAL CV40DA387300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$10.83	\$21.66			
Mill Extractor Undercut	5/16 HSS T-Slot Cutter	3	\$55.45	\$166.35	250	0.2218	8 wks
	KENNAMETAL CV40DA500300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$10.83	\$21.66			
Spot Face for .125 Ejector Hole	1/8 Carbide Endmill, 4 Flute	3	8.25	24.75	600	0.0138	1wk
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$10.83	\$21.66			
Spot Drill .125 Ejector Hole	#3 Center Drill	3	6.75	20.25	600	0.0113	1 wk
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$10.83	\$21.66			
Peck Drill .125 Ejector Hole	1/8 Parabolic HSS drill	3	0.78	2.34	60	0.0130	1 wk

Tooling

KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
ERICKSON COLLET	2	\$10.83	\$21.66			
TOTAL PRE-OP DOLLARS		843.4	\$2,141.95			
				TOTAL COST PER PART	0.2798	

REWORK

Capital

Part Name	Bolt Head
Part Number	300338

Operation Name	CNC Machine Bolt Face
Operation Number	10

Capital Required

Machine or Fixture	Dollars	Expected Delivery
Machine or Fixture	Dollars	Expected Delivery
Okuma Crown V-4018 VMC	\$ 104,900.00	
Thru-Spindle Coolant	\$ 9,648.00	
32 Tool ATC	\$ 6,426.00	
Manual Pallet Changer	\$ 24,000.00	
Extra Memory (4200ft)	\$ 1,750.00	
Tool Life Management	\$ 3,480.00	
Work Coordinate System, 50 Sets	\$ 580.00	
Chip Conveyor	\$ 4,000.00	
CMM Fixture	\$ 7,000.00	
Machining Fixture - Bolt Head & Bolt Handle	\$ 10,000.00	
Installation	\$ 2,138.22	
TOTAL CAPITAL	\$ 173,922.2	

Summary

Part Name	Bolt Head
Part Number	300338

Operation Name	Superabrasive Grind Lugs
Operation Number	20

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start-up
	0.0189	n/a	\$0.394	\$39,500.00	\$315.00

Assumptions: Add use the Edgetek, According to current machine burden at 300/per on m/597, of 10 hrs. Assumed 800 pc/wheel based on approx 1000 bolts/wheel for 597. Material will be soft vs HRC 38-42 on bolt, and material removed is approx .150 cubic inches for 710 bolt head vs. .14 cu. In. for the 597 bolt. Conservative estimate on tool life. Additional coolant flow required. Mayfield capital project for 2000 for new coolant filtration and sump will cover this. If not add to 710 project approx \$60,000.

Risks/unknowns:
Not done this way on m/700, which is milled. Proper function of coolant system. May have to have two fixtures if parts will not fit on one pedestal fixture, increase operator time by 140% of estimate.

Run Time Analysis

Part Name Bolt Head
Part Number 300338

Operation Name Superabrasive Grind Lugs
Operation Number 20

Run Time Analysis

Operation	
Metal Removal Rate (in. ³ /min./in. of wheel face) (minimum: 0.5 & maximum: 2.0)	1.25
SFM	29,000
Wheel Diameter (in.)	8.00
Wheel Width (in.)	0.81
Cross-sectional Area of Cut (in. ²)	0.0492
RPM	13,846
Feedrate (IPM; calculated as follows: Metal Removal Rate X wheel width/cross-sectional area)	20.63
Length of Cut per Side(in.)	5.00
Grind Time per Side (min.)	0.24
Number of Sides	3
Total Grind Time (min.)	0.727
Rapid Traverse Time (min.)	0.135
Machine load/unload Time (min.)	0.270
Total Machine Cycle Time (min.)	1.132
Grind Time per Part (hr.)	0.0189

Inspection Procedure

Part Name	Bolt Head
Part Number	300338

Operation Name	Superabrasive Grind Lugs	
Operation Number	20	

Inspection Procedure

Machine or Tool	Feature Name		Dimension and Tolerance		Cost of Tool
Form Gage - GO/NOGO					see Capital
TOTAL					0.0000

Tooling

Part Name Bolt Head
Part Number 300338

Operation Name Superabrasive Grind Lugs
Operation Number 20

Tooling

Operation	Tool Name	Dollars	Tool Life (parts/tool)	Cost /part	Lead Time
Grind Lugs	Wheel	315	800	0.3938	6 wks

TOTAL PRE-OP DOLLARS	315
TOTAL COST PER PART	0.3938

Capital

Part Name	Bolt Head
Part Number	300338

Operation Name	Superabrasive Grind Lugs	
Operation Number	20	

Capital Required

Machine or Fixture	Dollars		Expected Delivery
Gage	\$8,000.00		
Comparator Fixture	\$4,500.00		
Machining Fixtures	\$27,000.00		
TOTAL CAPITAL	\$39,500.00		

Fixture Layout

Summary

Part Name Bolt Head
Part Number 300338

Operation Name CNC Machine Ejector Retaining Hole
Operation Number 30

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
	0.0076	n/a	\$0.037	\$19,500.00	\$1,089.96

Assumptions: Process on a Okuma VMC MX-45VAE, like existing machines, on a palletized machine.
5 collet style fixtures locating on -A- datum. Same pallet has 5 positions for .250 retaining hole.
Machine burden for this operation at 200/day 4.7 hrs at 80% efficiency.
Add use the design of the Grind Lug Operation for the gaging. Build cost only.

Risks/unknowns:
Assumed tool lives from experience with m/597 carbon bolt which is the same material (4140).

Run Time Analysis

Part Name Bolt Head Operation Name CNC Machine Ejector Retaining Hole
Part Number 300338 Operation Number 30

Run Time Analysis

Operation	Cutter Used	Cutter Dia.	Cut Depth/length (in.)	SFM	IPR	RPM	IPM	Cut Time (min.)	Rapid Traverse Time (min.)	Tool Change Time (min.)	Total Time per Operation (min.)
Spot Face	1/4 Carbide End Mill	0.2500	0.250	130	0.0060	1,986	11.92	0.021	0.03125	0.1	0.152
Center Drill	#5 Center Drill	0.2500	0.150	130	0.0040	1,986	7.95	0.019	0.03125	0.1	0.150
Drill	1/4 Carbide SE Drill	0.2500	0.600	325	0.0060	4,966	29.79	0.020	0.03125	0.1	0.151
Total Time per Part (min.)											0.454
Total Time per Part (hr.)											0.0076
Total Time per Part (hr.)											0.0000
Total Time per Part (hr.)											0.0001

Inspection Procedure

Part Name	Bolt Head
Part Number	300338

Operation Name	CNC Machine Ejector Retaining Hole	
Operation Number	30	

Inspection Procedure

[illegible]

Tooling

Part Name Bolt Head
Part Number 300338

Operation Name CNC Machine Ejector Retaining Hole
Operation Number 30

Tooling

Operation	Tool Name	Quantity	Dollars	Pre-op	Tool Life (parts/tool)	Cost /part	Lead Time
Spot Face	1/4 Carbide Endmill, 4 flute	3	9.5	\$28.50	800	\$0.012	1 wk
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$14.00	\$28.00			
Center Drill	#5 Center Drill	3	8.25	\$24.75	600	\$0.014	1 wk
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$14.00	\$28.00			
Drill 1/4 Head Retaining Pin Hole	1/4" Carbide SE drill	3	6.75	\$20.25	600	\$0.011	1 wk
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$14.00	\$28.00			
	TOTAL PRE-OP DOLLARS		487.73	\$999.96			
TOTAL COST PER PART						\$0.037	

Capital

Part Name Bolt Head
Part Number 300338

Operation Name CNC Machine Ejector Retaining Hole
Operation Number 30

Capital Required

Machine or Fixture	Dollars		Expected Delivery
CMM Fixture	\$4,500.00		
Machining Fixtures	\$15,000.00		1-Mar
			15-Feb
(add use Bolt face machine)			
TOTAL CAPITAL	\$19,500.00		

Summary

Part Name Bolt Head
Part Number 300338

Operation Name CNC Machine Bolt Head Retain Hole and Cam Cuts
Operation Number 40

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
n/a	0.0172	n/a	\$0.2529	\$28,000.00	\$1,700.78

Assumptions: Process on a Okuma VMC Crown V-4018. Use twin rotary indexer mounted next to pallet.

Risks/unknowns:
Assumed tool lives from experience with m/597 carbon bolt which is the same material (4140).

Run Time Analysis

Part Name Bolt Head Operation Name CNC Machine Bolt Head Retain Hole and Cam Cuts
 Part Number 300338 Operation Number 40

Run Time Analysis

Operation	Cutter Used	Cutter Dia.	Cut Depth/length (in.)	SFM	IPR	RPM	IPM	Cut Time (min.)	Rapid Traverse Time (min.)	Tool Change Time (min.)	Total Time per Operation (min.)
Finish Mill Cam Cut	3/8 Carbide Endmill, 4 flute	0.3750	2.100	130	0.0060	1,324	7.95	0.264	0.03125	0.1	0.396
Counterbore Ejector Retaining Pin Hole	1/8 Carbide Endmill, 4 Flute	0.1250	0.150	130	0.0040	3,973	15.89	0.009	0.03125	0.1	0.141
Spot Drill .078 Ejector Retaining Pin Hole	#2 Center Drill	0.0780	0.250	65	0.0030	3,183	9.55	0.026	0.03125	0.1	0.157
Peck Drill .078 Ejector Retaining Pin Hole	5/64 Parabolic Drill	0.0780	2.000	65	0.0030	3,183	9.55	0.209	0.03125	0.1	0.341
								Total Time per Part (min.)		1.034	
								Total Time per Part (hr.)		0.0172	
								Total Time per Part (hr.)		0.0000	

Inspection Procedure

Part Name	Bolt Head
Part Number	300338

Operation Name	CNC Machine Bolt Head Retain Hole and Cam Cuts	
Operation Number	40	

Inspection Procedure

Machine or Tool	Feature Name	Dimension and Tolerance	Cost of Tool
CMM			Add use Lug CMM
CMM Fixture			
Plug Gage			90
Plug Gage			140
TOTAL			\$230

Tooling

Part Name Bolt Head
Part Number 300338

Operation Name CNC Machine Bolt Head Retain Hole and Cam Cuts
Operation Number 40

Tooling

Operation	Tool Name	Quantity	Dollars	Pre-op	Tool Life (parts/tool)	Cost /part	Lead Time
Finish Mill Cam Cut	3/8 Carbide Endmill, 4 flute	3	9.5	28.5	800	0.0119	1 wk
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$14.00	\$28.00			
Counterbore Ejector Retaining Pin Hole	1/8 Carbide Endmill, 4 Flute	3	54	162	250	0.2160	8 wks
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$14.00	\$28.00			1 wk
Spot Drill .078 Ejector Retaining Pin Hole	#2 Center Drill	3	8.25	24.75	600	0.0138	
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$14.00	\$28.00			
Peck Drill .078 Ejector Retaining Pin Hole	5/64 Parabolic Drill	3	6.75	20.25	600	0.0113	1 wk
	KENNAMETAL CV40DA188300	2	\$140.41	\$280.82			
	ERICKSON COLLET	2	\$14.00	\$28.00			

Tooling

TOTAL PRE-OP DOLLARS		696.14	1470.78
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TOTAL COST PER PART	0.2529
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Capital

Part Name	Bolt Head
Part Number	300338

Operation Name	CNC Machine Bolt Head Retain Hole and Cam Cuts	
Operation Number	40	

Capital Required

Machine or Fixture	Dollars		Expected Delivery
Machining Fixtures	\$15,000.00		1-Mar
Machine Crown V-4018			15-Feb
(add use Bolt face machine)			
Haas HA5C2 Rotary Table - 2 Spindle	\$13,000.00		
TOTAL CAPITAL	\$28,000.00		

Machining Fixtures	\$15,000.00		1-Mar
Machine Crown V-4018			15-Feb
(add use Bolt face machine)			
Haas HA5C2 Rotary Table - 2 Spindle	\$13,000.00		
TOTAL CAPITAL	\$28,000.00		

Summary

Part Name	Bolt Head
Part Number	300338

Operation Name	Punch Form Anti-Rotation Notch	
Operation Number	50	

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
n/a	0.0064	n/a	\$0.010	\$10,766.26	\$100.00

Assumptions:

A/U Ilion Rate

33

Risks/unknown's					
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Inspection Procedure

Part Name	Bolt Head
Part Number	300338

Operation Name	Punch Form Anti-Rotation Notch	
Operation Number	50	

Inspection Procedure

[illegible]

Tooling

Part Name	Bolt Head
Part Number	300338

Operation Name	Punch Form Anti-Rotation Notch	
Operation Number	50	

Tooling

Operation	Tool Name	Dollars	Tool Life (parts/tool)		Cost /part	Lead Time
Punck form Notch	Punch Tip	\$100.00	10,000		\$0.010	
TOTAL PRE-OP DOLLARS		\$100.00				
TOTAL COST PER PART					\$0.010	

Capital

Part Name	Bolt Head
Part Number	300338

Operation Name	Punch Form Anti-Rotatio
Operation Number	50

Capital Required

Machine or Fixture	Dollars		Expected Delivery
Dennison Press	\$7,000.00		
Fixture	\$3,000.00		
Installation	\$766.26		
TOTAL CAPITAL	\$10,766.26		

n Notch

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Summary

Part Name	
Part Number	

Operation Name		
Operation Number		

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start-up

Assumptions:

Risks/unknowns:

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

Year	Total (%)	Male (%)
1960	25	20
1970	45	40
1980	65	60
1990	85	80

Inspection Procedure

Part Name	
Part Number	

Operation Name		
Operation Number		

Inspection Procedure

[illegible]

Tooling

Part Name	
Part Number	

Operation Name		
Operation Number		

Tooling

[illegible]

TOTAL PRE-OP
DOLLARS

TOTAL COST PER
PART

[illegible]

Summary

Part Name BOLT BODY
Part Number 300339

Operation Name MACHINE BOLT BODY
Operation Number 10

Material	Run Time	External Processing	Variable Overhead	Capital Required	Preop and start up
\$0.740	0.0326	n/a	0.2911	\$ 4,579.95	\$5,568.76

Assumptions:

- * A/U CMM from Receiver
- * A/U Okuma Lt-15MY from Receiver
- * Bolt Body seamless tubing has sufficiently good concentricity that no boring work needs to be done

anges:

Revised Tooling cost based on run-off experience
Added chamfer tool for I.D. Chamfer

Risks/unknowns:

Machine Complete from Bar Stock

Part Name BOLT BODY
Part Number 300339

Operation Name MACHINE BOLT BODY
Operation Number 10

Operation	Cutter Used	Cutter Dia.	Cut Depth/length (in.)	SFM	IPR	RPM	IPM	Cut Time (min.)	Rapid Traverse Time (min.)	Tool Change Time (min.)	Total Time per Operation (min.)	Spindle used (Turret or Main)	Motor Horsepower Requirements (Hp)	Spindle Torque (ft.-lb)	Tool Holder Type
Transfer Part from Main to Sub-Spindle	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.167	n/a	n/a	n/a	n/a
Spot Face for .250 C-Datum Hole	5/32 Endmill	0.1563	0.100	210	0.0060	5,132	30.79	0.003	0.03125	0.1	0.134	Turret	1.0	1	End Mill/Drill Unit
Spot Drill .250 C-Datum Hole	3/8 Carbide Spotting Drill (a/u receiver)	0.3750	0.250	100	0.0050	1,019	5.09	0.049	0.03125	0.1	0.180	Turret	1.0	5	End Mill/Drill Unit; a/u Receiver Tool
Drill .250 C-Datum Hole	250 Carbide Drill	0.2500	0.900	100	0.0050	1,528	7.64	0.039	0.03125	0.1	0.249	Turret	0.7	2	End Mill/Drill Unit
Finish Mill Cam Cut	5/32 Endmill	0.1563	2.100	225	0.0060	5,500	33.60	0.064	0.03125	0.1	0.195	Turret	0.9	1	End Mill/Drill Unit
Spot Drill .250 Bolt Handle Pin Hole	3/8 Carbide Spotting Drill (a/u receiver)	0.3750	0.250	100	0.0050	1,019	5.09	0.049	0.03125	0.1	0.180	Turret	1.0	5	End Mill/Drill Unit; a/u Receiver Tool
Drill .250 Bolt Handle Pin Hole	250 Carbide Drill	0.2500	0.300	100	0.0050	1,528	7.64	0.039	0.03125	0.1	0.171	Turret	0.7	2	End Mill/Drill Unit
Mill .125R Slots	3/16 Carbide Endmill	0.1875	5.356	225	0.0060	4,564	27.50	0.195	0.03125	0.1	0.326	Turret	1.2	1	Side Mill/Drill Unit
Turn Firing Pin Head Retaining Groove	Kenn. A06-NER1 Grooving Boring Bar w/ NG-1094L KC 720 Insert	0.5200	0.250	250	0.0050	1,836	9.18	0.027	0.03125	0.1	0.158	Main	1.5	4	Boring Bar Holder & I.D. Tool Holder
Cut-off part & Chamfer front end	Cut-off Tool	0.5975	0.250	325	0.0018	2,078	3.74	0.067	0.03125	0.1	0.198	Main	0.7	2	O.D. ToolHolder attachment; a/u receiver cut-off
Total Time per Part (min.)											1.959				
Total Time per Part (hr.)											0.0326				

Horsepower requirements based on unit power of 1.4 for dull tool in steel of Bhn<200 and motor efficiency of 80%

Inspection Procedure

Part Name	bolt
Part Number	300339

Operation Name	machine bolt body	
Operation Number	10	

Inspection Procedure

[illegible]

Tooling

Part Name BOLT BODY
Part Number 300339

Operation Name MACHINE BOLT BODY
Operation Number 10

Tooling

Operation	Tool Name	Quantity	Cost per tool	Total Cost	Tool Life (parts/tool)	Cost /part	Lead Time	Comments
FINISH MILL CAM CUT	3/16 6-flute endmill, Garr EDP#51114	2	\$11.47	\$22.94	400	\$0.029		Used a 2-flute HSS TiN coated endmill for runoff w/ little wear after 130 pcs., carbide will give better finish & longer life
	SIDE DRILLING ENMILL UNIT	1	\$1,602.00	\$1,602.00				
	32ER COLLET	2	\$30.00	\$60.00				
SPOT DRILL .250 C-DATUM HOLE, SPOT DRILL .250 BOLT HANDLE PIN HOLE	#3 Tin Coated center drill, Stores #306184	a/u	\$18.20	N/A	600	\$0.030		replaced 3/8 N/C spot drill with center drill
DRILL .250 C-DATUM HOLE, DRILL .250 BOLT HANDLE PIN HOLE	1/4 carbide 2-flute drill, TiCN coated, Screw machine length	2	\$20.05	\$40.10	400	\$0.050		based on run-off experience
	SIDE DRILLING ENMILL UNIT	1	\$1,602.00	\$1,602.00				
	32ER COLLET	2	\$30.00	\$60.00				
MILL .125R SLOTS	1/4 4-flute carbide endmill, Garr EDP# 13150	2	\$10.20	\$20.40	300	\$0.034		based on run-off experience
	SIDE DRILLING ENMILL UNIT	1	\$1,602.00	\$1,602.00				
	ERICKSON COLLET	2	\$30.00	\$60.00				
TURN FIRING PIN HEAD RETAINING GROOVE, Chamfer I.D.	KENNAMETAL BORING BAR W/NG 1094L	1	\$175.00	\$175.00				ESTIMATE
	KC 720 INSERT	2	\$ 10.16	\$20.32	100	\$0.102		TL based on 597 cutoff and crown
CUT-OFF	CUT-OFF TOOL & INSERT	N/A	\$10.16	N/A	250	\$0.041		A/U RECEIVER TOOLING
Chamfer I.D. Front End	Severence Countersink Tool	2	\$20.00	\$40.00	3500	\$0.006		based on run-off experience
	KENNAMETAL SS100FC108659	1	\$254.00	\$254.00				
	ERICKSON COLLET	1	\$10.00	\$10.00				
			Pre-Op req'd	\$5,568.760	TOTAL COST PER PART	\$0.291		

Capital

Part Name BOLT BODY Operation Name MACHINE BOLT BODY
 Part Number 300339 Operation Number 10

Capital Required

Machine or Fixture	Dollars	Expected Delivery
CMM FIXTURE	\$ 4,500.00	
.250 PLUG GAGE	\$ 79.95	
TOTAL CAPITAL	\$ 4,579.95	

Summary

Part Name Bolt Body
Part Number 300339

Operation Name Assemble & Braze Handle to Body
Operation Number 30

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
n/a	0.0125	n/a	\$0.005	\$94,693.36	\$3,010.00

Assumptions:

Run two bolt bodies per cycle @ 1.5 minute cycle time (app. Ilion run-rate)
Pressing pin into bolt body, assembling, and applying braze paste internal to machine cycle time

Changes:

run-rate was .0116 (Ilion's estimate)
Added capital for press
Added braze paste dispenser
Added press fixture

Risks/unknowns

Body
339

Bolt Body
300339

Out Depth/length (m.)

Operation Name	Assemble & Braze Handle to Body	
Operation Number	30	

Inspection Procedure

[illegible]

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Capital

Part Name	Bolt Body
Part Number	300339

Operation Name	Assemble & Braze Handl
Operation Number	30

Capital Required

Machine or Fixture	Dollars		Expected Delivery
Induction Brazing Machine	\$80,000.00		
Coils & Fixtures	\$10,000.00		
Press for Assembly Pin	\$3,500.00		
Installation	\$1,193.36		
TOTAL CAPITAL	\$94,693.36		

e to Body

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Summary

Part Name Bolt Body
Part Number 300339

Operation Name Deplate & Wash
Operation Number 40

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
n/a	0.0020	n/a	\$0.066	\$10,500.00	\$660.00

Assumptions: Run-rate assumes 2 minute wash, 3 minute deplate, one minute load/unload, 50 pcs/basket

add/use existing baskets

need to add deplate solution tank

Changes:

Run-Rate was .001

Risks/unknowns

Inspection Procedure

Part Name	Bolt Body
Part Number	300339

Operation Name	Deplate & Wash	
Operation Number	40	

Inspection Procedure

[illegible]

Tooling

Part Name	Bolt Body
Part Number	300339

Operation Name	Deplate & Wash	
Operation Number	40	

Tooling

Operation	Tool Name	Dollars	Tool Life (parts/tool)	Cost /part	Lead Time
deplate	deplate solution, 55 gal.	\$660.00	10000	\$0.066	
TOTAL PRE-OP DOLLARS		\$660.00			
TOTAL COST PER PART				\$0.066	

Capital

Part Name	Bolt Body
Part Number	300339

Operation Name	Deplate & Wash	
Operation Number	40	

Capital Required

Machine or Fixture	Dollars		Expected Delivery
Deplate Tank & Controls	\$9,500.00		
Installation	\$1,000.00		
TOTAL CAPITAL	\$10,500.00		

Summary

Part Name Bolt Body
Part Number 300339

Operation Name Glass Bead
Operation Number 50

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
n/a	0.0056	n/a	\$0.000	\$0.00	\$252.00

Assumptions:

Add/use M/597 run-rate

Risks/unknowns

Inspection Procedure

Part Name	Bolt Body
Part Number	300339

Operation Name	Glass Bead	
Operation Number	50	

Inspection Procedure

[illegible]

Tooling

Part Name Bolt Body
Part Number 300339

Operation Name Glass Bead
Operation Number 50

Tooling

Operation	Tool Name	Cost per tool	# req'd	Total Cost	Tool Life (parts/tool)	Cost /part
Glass Bead	Holder - Bottom	21	12	\$252.00		
TOTAL PRE-OP DOLLARS				\$252.00		
					TOTAL COST PER PART	\$0.000

[illegible]

1/28/00

Operation 50 Detail - Bolt Body Glass Bead

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Capital

Part Name	Bolt Body
Part Number	300339

Operation Name	Glass Bead	
Operation Number	50	

Capital Required

Machine or Fixture	Dollars	Expected Delivery
TOTAL CAPITAL	\$0.00	

Summary

Part Name Bolt Body
Part Number 300339

Operation Name Black Oxide
Operation Number 60

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up
n/a	0.0021	n/a	\$0.004	\$0	\$8,568.00

Assumptions:

Run-rate is 597 Rate/2 - Assumes 100 parts per rack

Run-Rate is Material Handling Time Only

Black Oxide Use per part is approximately 0.01 lb per barrel - based on Air Quality audit report for black oxide line makeup rates from 5/98.

Changes:

Risks/unknowns:

Inspection Procedure

Part Name	Bolt Body
Part Number	300339

Operation Name	Black Oxide	
Operation Number	60	

Inspection Procedure

[illegible]

Tooling

Part Name Bolt Body
Part Number 300339

Operation Name Black Oxide
Operation Number 60

Tooling

Operation	Tool Name	Price per Tool	# Req'd	Total Cost
Black oxide	Black Oxide Solution	\$0.38 per lb.		
Black Oxide	Racks	\$1,428 00	6	\$8,568.00

TOTAL PRE-OP DOLLARS			\$8,568.00
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TOTAL COST PER PART	\$0.004
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Capital

Part Name	Bolt Body
Part Number	300339

Operation Name	Black Oxide	
Operation Number	60	

Capital Required

[illegible]

Summary

art Name	Receiver
rt Number	300340

Operation Name	machine receiver	
Operation Number	10	

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-op and Start Up
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\$2.178	0.08372	n/a	1.001	\$ 522,208.72	\$12,695.61
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Assumptions.

* Run time shown is for receiver only. Bolt body will be machined on this machine as well, and the resulting cycle time for making equal numbers of parts is 11637 hr., or app. 34,600 parts per year

* Receiver Seamless tubing concentricity between O.D. & I.D. good enough to use without boring I.D. (.01 TIR max.)

* Based on a Okuma LT-15MY machine.

Risks/unknowns:

CNC Machine Complete(Bar Stock)

Operation	Cutter Used	Cutter Dia.	Cut Depth/length (in.)	SFM	IPR	RPM	IPM	Cut Time (min.)	Rapid Traverse Time (min.)	Turret Index Time (min.)	Total Time per Operation (min.)	Spindle Used (Turret or Main)	Motor Horsepower Requirements (Hp)	Horsepower % of Turret Spindle Motor Cont. Rating LT10 (1.5 Hp cont.; 3 Hp 15 min.)	Horsepower % of Turret Spindle Motor Cont. Rating LT15 (3Hp cont.; 5Hp 15 Min.)	Spindle Torque Requirements (ft.-lb)
Transfer Part from Main to Sub-Spindle	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0 17	n/a	n/a	n/a	n/a	n/a
Mill Fire Control Slot	15/64 Carbide End Mill, 3 flute	0 2344	2 800	210	0 0060	3 422	20 53	0 136	0 03125	0 04167	0 209	Turret	1 5	99%	50%	2 3
Spot Face for 265 Clearance Hole	15/64 Carbide End Mill, 3 flute	0 2344	0 188	210	0 0060	3 422	20 53	0 009	0 03125	0 04167	0 082	Turret	1 6	103%	52%	2 4
Center Drill for 265 Clearance Hole	3/8 NC Spot Drill	0 3750	0 188	100	0 0060	3 422	20 53	0 037	0 03125	0 04167	0 110	Turret	1 0	66%	33%	5 1
Drill 265 Clearance Hole	17/64 Drill	0 2656	0 218	100	0 0060	1 438	7 19	0 037	0 03125	0 04167	0 103	Turret	0 7	46%	23%	2 5
Rough Mill Magazine Box Slot	3/4 Carbide End Mill	0 7500	2 500	210	0 0100	1 070	10 70	0 234	0 03125	0 04167	0 307	Turret	2 5	166%	83%	12 2
Finish Mill Magazine Box Slot	15/64 Carbide End Mill, 3 flute	0 2344	8 000	210	0 0060	3 422	20 53	0 390	0 03125	0 04167	0 462	Turret	1 5	99%	50%	2 3
Rough Mill Ejection Port	1/2 Carbide End Mill	0 5000	3 380	210	0 0100	1 604	16 04	0 211	0 03125	0 04167	0 284	Turret	2 5	166%	83%	8 1
Finish Mill Ejection Port	1/2 Carbide End Mill	0 5000	6 750	210	0 0060	1 604	9 63	0 701	0 03125	0 04167	0 774	Turret	1 5	99%	50%	4 9
Mill Bolt Stop Flat	1/2 Carbide End Mill	0 5000	1 000	300	0 0060	2 292	13 75	0 073	0 03125	0 04167	0 146	Turret	2 1	142%	71%	4 9
Mill Ejection Port Mouth	Special 3/4 End Mill w/ 625R Spherical Nose	0 7500	3 250	210	0 0100	1 070	10 70	0 304	0 03125	0 04167	0 377	Turret	1 0	69%	35%	5 1
Mill Bolt Handle Cam / Clearance Cut	3/8 Carbide Endmill	0 3750	3 250	210	0 0060	2 139	12 83	0 253	0 03125	0 04167	0 326	Turret	1 5	99%	50%	3 7
Mill Receiver Top Tang Radius Cut	3/4 Carbide End Mill	0 7500	1 750	300	0 0060	1 528	9 15	0 191	0 03125	0 04167	0 264	Turret	1 0	67%	33%	3 4
Center Drill for Scope Screw Holes	3/8 NC Spot Drill	0 3750	0 281	100	0 0050	1 019	5 09	0 055	0 03125	0 04167	0 128	Turret	1 0	66%	33%	5 1
Tap Drill for Scope Screw Holes	#30 Drill	0 1285	0 872	60	0 0050	1 784	8 92	0 098	0 03125	0 04167	0 171	Turret	0 2	13%	7%	0 6
Tap #6-48 Scope Screw Holes	#6/48 NS-2 Tap	0 1380	1 700	70	0 0208	1 938	40 36	0 042	0 03125	0 04167	0 115	Turret	1 1	70%	35%	2 9
Center Drill 118 Drill Point	3/8 NC Spot Drill	0 3750	0 100	100	0 0050	1 019	5 09	0 020	0 03125	0 04167	0 093	Turret	1 0	66%	33%	5 1
Center Drill	3/8 NC Spot Drill	0 3750	0 188	100	0 0050	1 019	5 09	0 037	0 03125	0 04167	0 110	Turret	1 0	66%	33%	5 1
Drill 279 Hole	7 1 mm Drill	0 2795	0 188	100	0 0050	1 367	6 83	0 028	0 03125	0 04167	0 100	Turret	0 7	49%	24%	2 8
Bore 1 046 6 5 deep & Counterbore 1 227 1 30 Deep	Boring Bar Kennametal C12-SCLPR2 w/ CPMT21 51-LF KC9010	1 1365	9 200	600	0 0100	2 017	20 17	0 456	0 03125	0 04167	0 529	Main	5 7	n/a	n/a	14 9
Cut-off	Cut-off Tool	1 2250	0 200	400	0 0017	1 247	2 12	0 094	0 03125	0 04167	0 167	Main	2 5	n/a	n/a	10 6
Total Time per Part (min.)											5 023					
Total Time per Part (hr.)											0 0837					

Horsepower requirements based on unit power of 1 4 for dull tool in steel of Bhn<200 and motor efficiency of 80%

RECEIVER
300340

Tooling

Tooling

Operation	Tool Name	Quantity	Cost per tool	Total Cost	Tool Life (parts/tool)	Cost/Part	Lead Time	Comments
MILL FIRE CONTROL SLOT, FINISH MILL MAGAZINE BOX SLOT	1/4 3-flute TiCN coated carbide endmill, Garr Tool EDP#12154	\$ 2 00	\$ 14.48	\$ 20.10	225	\$ 0.064		Change made based on runoff experience
	SIDE DRILLING END MILL UNIT	\$ 1 00						INCLUDED IN MACHINE TOOL KIT
	32ER COLLET	\$ 2.00	\$ 30 00	\$ 60.00				
ROUGH MILL MAGAZINE BOX SLOT, Rough Mill Ejection Port	1/2 indexable insert drilling endmill, Kennametal K1CR-0 50-S02.8-0	\$ 2 00	\$ 75 68	\$ 151.36				
	Kennametal Insert SDHC2.61-52ENLO KC725M for endmill above	\$ 10.00	\$ 11.41	\$ 114 10	200	\$ 0.057		Changes made based on runoff experience - 2 cutting edge indexes per insert - assume 100 pcs Per index
	SIDE DRILLING END MILL UNIT	\$ 1.00						INCLUDED IN MACHINE TOOL KIT
	32ER COLLET	\$ 2 00	\$ 30.00	\$ 60 00				
CENTER DRILL FOR 265 CLEARANCE HOLE, SCOPE SCREW HOLES	#3 TiN Coated Carbide Center Drill, Stores #306184	\$ 2 00	\$ 18.20	\$ 36.40	450	\$ 0.040		was 3/8 carbide spot drill, however, performance at run-off tested in change; tool life based on 597 barrel assembly
	SIDE DRILLING END MILL UNIT	\$ 1 00						INCLUDED IN MACHINE TOOL KIT
	32ER COLLET	\$ 2 00	\$ 30 00	\$ 60 00				
DRILL 265 CLEARANCE HOLE	17/64 TiN Coated HSS Screw Machine Length Drill, MSC #63804462 (Cleveland Twist)	\$ 2 00	\$ 9.48	\$ 18 96	100	\$ 0 024		Was 17/64 Carbide 3-flute; change made based on run-off experience
	SIDE DRILLING END MILL UNIT	\$ 1 00						INCLUDED IN MACHINE TOOL KIT
	32ER COLLET	\$ 2 00	\$ 30 00	\$ 60.00				
FINISH MILL EJECTION PORT, MILL BOLT STOP FLAT	1/2 6-flute TiCN coated carbide endmill, Garr Tool EDP#51814	\$ 2 00	\$ 39.48	\$ 51 18	250	\$ 0 158		Tool life lowered based on runoff experience; tool change made based on runoff experience
	SIDE DRILLING END MILL UNIT	\$ 1 00	\$ 1,602.00	\$ 1,602 00				
	32ER COLLET	\$ 2 00	\$ 30.00	\$ 60 00				
MILL EJECTION PORT MOUTH	SPECIAL 3/4 END MILL W/ 625 SPHERICAL NOSE	\$ 2 00	\$ 133.85	\$ 267.70	300	\$ 0.446		Price from hammer endmill price Based on runoff experience
	SIDE DRILLING END MILL UNIT	\$ 1.00	\$ 1,602.00	\$ 1,602.00				
	32ER COLLET	\$ 2.00	\$ 30.00	\$ 60.00				
MILL BOLT HANDLE CAM/CLEARANCE CUT	3/8 6-flut carbide endmill, TiCN coated, Garr EDP#51234	\$ 2.00	\$ 26.12	\$ 52 24	225	\$ 0.116		Based on 597 carbon bolt 1/4" emill at 225 pt/tool
	SIDE DRILLING END MILL UNIT	\$ 1 00	\$ 1,602.00	\$ 1,602.00				
	32ER COLLET	\$ 2 00	\$ 30.00	\$ 60.00				
TAP DRILL FOR SCOPE SCREW HOLES	#30 DRILL	\$ 2 00	\$ 0 66	\$ 1 32	250	\$ 0.003		based on 597 barrels job
	SIDE DRILLING END MILL UNIT	\$ 1 00	\$ 1,602 00	\$ 1,602.00				
	32ER COLLET	\$ 2 00	\$ 30.00	\$ 60.00				
TAP #6-48 SCOPE SCREW HOLES	#6-48 NS-2 TAP	\$ 2 00	\$ 14 25	\$ 28 50	750	\$ 0 019		based on 597 barrel job
	SIDE DRILLING END MILL UNIT	\$ 1 00	\$ 1,602.00	\$ 1,602 00				
	32ER COLLET	\$ 2 00	\$ 30.00	\$ 60.00				
DRILL 279 HOLE	"K" (281) HSS Screw Machine Length Drill, MSC#63792105 (Cleveland Twist)	\$ 2 00	\$ 2 32	\$ 4.64	250	\$ 0 009		was 7.1mm carbide; change made based on runoff experience
	SIDE DRILLING END MILL UNIT	\$ 1 00	\$ 1,602.00	\$ 1,602.00				
	32ER COLLET	\$ 2 00	\$ 30.00	\$ 60 00				
COUNTERBORE 1.227	BORING BAR	\$ 1.00	\$ 250.00					
	INSERT	\$ 2.00	\$ 12 00	\$ 24 00	500	\$ 0.024		
CUT-OFF	CUT-OFF TOOL	\$ 1.00	\$ 90.79	\$ 90.79				Identical to 306854 in Mayfield Stores
	KC722 INSERT	\$ 2 00	\$ 10 16	\$ 20.32	250	\$ 0 041		TL BASED ON 597 CUTOFF AND CROWN OPERATION
EXTRA TOOL HOLDER 1/28/00	SIDE DRILLING END MILL UNIT	\$ 1 00	\$ 1,602 00	\$ 1,602.00				
	TOTAL PRE-OP DOLLARS			#####				Page 4 of 7

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TOTAL COST PER PART	\$ 1.001
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Part Name	receiver	Operation Name	machine complete
Part Number	300340	Operation Number	10

Capital Required

Machine or Fixture	Dollars		Expected Delivery
CMM FIXTURE	\$ 4,500.00		
#6-48 THREAD GAGE	\$ 225.90		
TOTAL CAPITAL			\$ 4,725.90

Capital-Machinery

Part Name	Receiver
Part Number	300340

Operation Name	machine receiver
Operation Number	

Capital Required

Machine or Fixture	Dollars		Expected Delivery
Okuma LT-15 MY Twin Spindle/Twin Turret Turning Center	\$ 389,200.00		12 wks ARO
Manual Touch Setter for LT-15MY	\$ 22,203.00		
LNS THB 42-LC Bar Feeder (Single Bar)	\$ 16,570.00		
Okuma Part Catcher for RH Turret	\$ 11,385.00		
Side Chip Conveyor	\$ 10,530.00		
Barfeeder Modification	\$ 2,673.00		
Barfeeder Interface	\$ 2,420.00		
Extra Memory(2100 ft.)	\$ 3,710.00		
Signal Tower	\$ 1,400.00		
Tool Life Management	\$ 1,740.00		
G&L Discovery CMM	\$ 52,000.00		
Installation	\$ 3,651.82		
TOTAL CAPITAL	\$ 517,482.82		

Summary

Part Name	
Part Number	

Operation Name		
Operation Number		

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up

Assumptions:

Risks/unknowns:

0 Detail - Receiver O.D. Cylindrical Grind

Inspection Procedure

Part Name	
Part Number	

Operation Name		
Operation Number		

Inspection Procedure

[illegible]

Tooling

Part Name	
Part Number	

Operation Name		
Operation Number		

Tooling

[illegible]

TOTAL PRE-OP
DOLLARS

TOTAL COST PER
PART

Capital

Part Name	
Part Number	

Operation Name		
Operation Number		

Capital Required

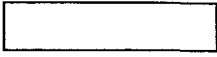
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1/28/00

Operation 20 Detail - Receiver O.D. Cylindrical Grind

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Summary

Part Name	
Part Number	

Operation Name		
Operation Number		

Material	Run Time	External Processing	Variable Overhead	Capital Required	Pre-Op and Start -up

Assumptions:

CONFIDENTIAL

Risks/unknowns	
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1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

Cut Depth/length
(m.)

Inspection Procedure

Part Name	
Part Number	

Operation Name		
Operation Number		

Inspection Procedure

[illegible]

Tooling

Part Name	
Part Number	

Operation Name
Operation Number

Tooling

[illegible]TOTAL PRE-OP
DOLLARS

TOTAL COST PER
PART

Part Name	
Part Number	

Operation Name		
Operation Number		

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MF0436

M/700 Costs - 8/27/99									
PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	Labor a/o	Vendor Ht \$	Var O.H. \$	Total O.H. \$	Piece Price	COMMENTS/ASSUMPTIONS
Document Envelope Assembly	1748	\$ 0.09							M/597 document envelope and box assembly
Document Envelope	1649	\$ 0.08							
Users manual (N&C)	3391	\$ 0.15							
Product Owners Card	1426	\$ 0.03							
Remington Authorized Gunsmith	3413	\$ 0.07							
Safety Booklet	3499	\$ 0.10							
Remington Museum Flyer	3475	\$ -							
Oval Label	3491	\$ 0.01							
Document Envelope Assembly total									
Carton Assembly Complete	330031	\$ 2.05							Ilion Carton to avoid \$19000 Capital
Carton	1640								
Styrofoam bed	300185								
Box and Envelope Label (710)	993002								
Barrel Assembly Complete	305410		0.0790	a					final assy estimate
Barrel Assembly	305400			o					drawing level
Barrel	305315	\$4.80	0.3866	o					150% of .2577 run time,8.38lbs/bbl
Receiver	300340	\$1.76	0.0055	o					Assume tubing on LT15 operator of .004 for a 4 min cycle
Receiver Insert Assembly Complete	300401		0.0530	a					150% of estimated 2.13min.
Receiver Insert Assembly	300400		0.0050	a					
Receiver Insert	300327	\$0.62							Ilion quote
Threaded Insert	300347	\$0.04							
Side Plate	300333	\$0.09	0.0010	o					
Side Plate Pin (2)	300328	\$0.12	0.0010	o					
Sear Safety Cam	15666	\$ 0.94							Ilion PMPD, key features on this make it not easily moved.
Pivot Pin (3)	300351	\$ 0.18							
Sear Spring	17047	\$ 0.02							Ilion 700
Trigger	15280	\$ 1.53							Ilion 700, quoting issues
Trigger Connector	19461	\$ 1.03							Ilion 700

M/700 Costs - 8/27/99									
PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	Labor a/o	Vendor Ht \$	Var O.H. \$	Total O.H. \$	Piece Price	COMMENTS/ASSUMPTIONS
Trigger Screw Front	17053	\$ 0.10							Ilion 700
Trigger Engagement Screw	91128	\$ 0.03							Ilion 700
Trigger Spring	15400	\$ 0.03							Ilion 700
Trigger Stop Screw	15481	\$ 0.06							Ilion 700
Safety	300408	\$ 0.31							May increase with additional bend \$0.07
Safety Pivot Pin	300352	\$ 0.06							
Safety Spring	300407	\$ 0.05							new part
Bolt Stop	300345	\$ 0.19	0.0010	o					Assume outside PMPd base on a similar size parts quoted for the m99 and 597.
Receiver Plug Screws (4)	17034	\$ 0.12							M597
Recoil Bracket	300361	\$ 0.19	0.0010	o					Square Stamping
Bolt Body Assembly	300403		0.0275	o					Ilion run times due to experience. High -not grouped.
Bolt Body	300339	\$ 0.74	0.0032	o					5 min bar change
Bolt Handle	300370		0.0120	o					load unload time at machining
Bolt Handle Blank	300360	\$ 1.63		o					Investment cast using the m597 bolt @\$1.80 and bolt handle at \$.80 as a guide.
Bolt Handle Pin	300329	\$ 0.06		o					
Bolt Head Assembly	305390		0.0580	a					150% would be .0875
Bolt Head	300338	\$ 1.60	0.0809	o	\$ 0.15				Assumed Ilion quoted blank cost. Run time assumes full cut time could drop to .034 depending on machine
Extractor	93712	\$ 0.77		o					
Ejector	300342	\$ 0.16	0.0010	o					
Ejector Spring	300367	\$ 0.03		o					597 \$0.02
Ejector Pin	94555	\$ 0.01		o					
Bolt Assembly Pin	300330	\$ 0.10	0.0010	o					Second loading raises price from a normal pin.
Firing Pin Assembly	300404		0.0070	a					Added , not in estimates
Bolt Plug	300368	\$ 0.25							Par 4
Bolt Plug Insert	300346	\$ 0.29							Higher \$ risk, unquoted part
Lock Tumbler			0.0050	o					
Lock Detent		\$ 0.08							
Lock Spring		\$ 0.01							
Lock Key and Cap		\$0.69							

M/700 Costs - 8/27/99									COMMENTS/ASSUMPTIONS
PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	Labor a/o	Vendor Ht \$	Var O.H. \$	Total O.H. \$	Piece Price	
Firing Pin	300334	\$ 0.27	0.0010	o					
Firing Pin Tip	300335	\$ 1.50	0.0015	o	\$ 0.10				
Firing Pin Head	300336	\$ 1.45	0.0020	o	\$ 0.05				Parmatech MIM part
Firing Pin Spring	300399	\$ 0.14							Ilion 700 cost
Front Sight	94084	\$ 0.82							Higher due to Ilion part, not outsourced
Front Sight Ramp	94657	\$ 1.13	0.0020	o					Ilion 700 cost
Front Sight Ramp Screws (2)	28505	\$ 0.09							m597
Rear Sight Assembly	103146			n/a					level for drawings only
Elevation Screw	90906	\$ 0.02							m597
Rear Sight Aperture	94333	\$ 0.14	0.0010	o					m597
Rear Sight Base	103531	\$ 0.97	0.0010	o					m597
Rear Sight Slide	94335	\$ 0.47	0.0050	o					m597
Windage Screw	90904	\$ 0.02							
Rear Sight Base Screw (2)	28505	\$ 0.09							597 #
Stock Assembly Complete	????			n/a					level for drawings only
Stock Assembly	????		0.0160	a					Not in any assumptions: This is for assy of butt plate+50%
Stock	????	\$ 5.38							Par 4
Front Screw Bushing	15161	\$ 0.13							
Middle Screw Bushing	????	\$ 0.05							
Rear Screw Bushing	????	\$ 0.05							
Grip Cap	97971	\$ 0.18							
Recoil Pad	97973	\$ 1.63							
Recoil Pad Screw (2)	98008	\$ 0.05							
Magazine Latch	300362	\$ 0.25							Based on similar parts
Magazine Latch Spring	300398	\$ 0.02							
Magazine Latch Pin	300371	\$ 0.04	0.0010	o					
Sling Swivel Stud (2)	300096	\$ 0.14							M/597 Price
Takedown Screw (2)	????	\$ 0.16							
Rear Takedown Screw	????	\$ 0.08							

M/700 Costs - 8/27/99								
PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	Labor a/o	Vendor Ht \$	Var O.H. \$	Total O.H. \$	Piece Price
Magazine Assembly	305395		0.0083	a				
Magazine Box	300363	\$ 2.79	0.0010	o				
Magazine Follower	300364	\$ 0.26						
Magazine Bottom	300365	\$ 0.26						
Magazine Spring	300405	\$ 0.42						
Gallery;inspect;pack		1.15	0.1500					
Total Cost		\$ 41.43	0.9186		\$ 0.30			
			51.7505					
			\$ 0.30					
			41.4313					
			93.4818					

M/710 Estimate

	Proposed	Part #	Alt Part #	Rev #	Material	Labor	Fixed	Var	Total	Estimated	PART DESCRIPTION	Part #	Print #
	Process				\$	\$	O.H. \$	O.H. \$	O.H. \$	Price			
PART DESCRIPTION													
Carton Assembly	Purchase	1444	1444								Carton Assembly	1444	1444
Corrugated Box	Purchase										Corrugated Box		
Bed	Purchase										Bed		
Document Envelope Assembly	Purchase	????	????								Document Envelope Assembly	????	????
Document Envelope	Purchase	1649	1649								Document Envelope	1649	1649
Instruction Book	Purchase	????	????								Instruction Book	????	????
Product Owners Card	Purchase	1426	1426								Product Owners Card	1426	1426
Remington Authorized Gunsmith	Purchase	3413	3413								Remington Authorized Gunsmith	3413	3413
Safety Booklet	Purchase	3499	3499								Safety Booklet	3499	3499
Remington Museum Flyer	Purchase	3475	3475								Remington Museum Flyer	3475	3475
Oval Label	Purchase	3491	3491								Oval Label	3491	3491
Box and Envelope Label (710)	Purchase	993002	993002								Box and Envelope Label (710)	993002	993002
Barrel Assembly Complete	Assemble	305410	C-305410	No Rev							Barrel Assembly Complete	305410	C-305410
Barrel Assembly	Assemble & Machine	305400	C-305400	No Rev							Barrel Assembly	305400	C-305400
Barrel	Machine	305315	E-305315	5							Barrel	305315	E-305315
Receiver	Purchase	300340	E-300340	6	\$0.000						Receiver	300340	E-300340
Receiver Insert Assembly Complete	Assemble	300401	D-300401	No Rev							Receiver Insert Assembly Complete	300401	D-300401
Receiver Insert Assembly	Ultrasonic Weld	300400	C-300400	No Rev							Receiver Insert Assembly	300400	C-300400
Receiver Insert	Purchase	300327	E-300327-1-2	(1E)-5 (2E)-23							Receiver Insert	300327	E-300327-1-2
Threaded Insert	Purchase	300347	A-300347	A	\$0.036						Threaded Insert	300347	A-300347
Side Plate	Purchase & Color	300333	C-300333	No Rev	\$0.090						Side Plate	300333	C-300333
Side Plate Pin (2)	Purchase & Color	300328	A-300328	No Rev	\$0.009						Side Plate Pin (2)	300328	A-300328
Sear Safety Cam	AU M/700	15666	C-15666	24	\$0.260						Sear Safety Cam	15666	C-15666
Pivot Pin (3)	Purchase & Heat Treat	300351	B-300351	No Rev	\$0.180						Pivot Pin (3)	300351	B-300351
Sear Spring	AU M/700	17047	A-17047	26	\$0.028						Sear Spring	17047	A-17047
Trigger	AU M/700	15280	C-15280	31	\$0.377						Trigger	15280	C-15280
Trigger Connector	AU M/700	19461	C-19461	21	\$1.506						Trigger Connector	19461	C-19461
Trigger Screw Front	AU M/700	17053	B-17053	32	\$0.040						Trigger Screw Front	17053	B-17053
Trigger Engagement Screw	AU M/700	91128	B-91128	7	\$0.027						Trigger Engagement Screw	91128	B-91128
Trigger Spring	AU M/700	15400	A-15400	11	\$0.029						Trigger Spring	15400	A-15400
Trigger Stop Screw	AU M/700	15481	B-17053	32	\$0.042						Trigger Stop Screw	15481	B-17053
Safety Arm	Assemble & Heat Treat	300408	D-300408	1	\$0.230						Safety Arm	300408	D-300408
Safety Detent Spring		300407	C-300407	1	\$0.058						Safety Detent Spring	300407	C-300407
Lock tumbler	Purchase	??	???	??							Lock tumbler	??	???
Lock Detent	AU M/7	???	???	???							Lock Detent	???	???
Safety Pivot Pin	Purchase & Heat Treat	300352	B-300352	1	\$0.140						Safety Pivot Pin	300352	B-300352
Snap Washer		17044	B-17044	26	\$0.025						Safety Snap Washer	17044	B-17044
Bolt Stop	PM/Heat Treat/Color	300345	C-300345	2	\$0.219						Bolt Stop	300345	C-300345
Receiver Plug Screws (4)	A/U M/700	17034	B-17034	34	\$0.135						Receiver Plug Screws (4)	17034	B-17034
Recoil Bracket	Purchase & Color	300361	B-300361	No Rev	\$0.123						Recoil Bracket	300361	B-300361
Bolt Assembly Complete		????	????	??							Bolt Assembly Complete	????	????
Bolt Body Assembly	Braze & Finish	300403	D-300403	No Rev							Bolt Body Assembly	300403	D-300403
Bolt Body	Purchase	300339	D-300339	1	\$2.050						Bolt Body	300339	D-300339
Bolt Handle	Bend to Form	300370	C-300370	No Rev	\$1.630						Bolt Handle	300370	C-300370
Bolt Handle Blank	Purchase	300360	C-300360	No Rev							Bolt Handle Blank	300360	C-300360
Bolt Handle Pin	Purchase	300329	A-300329	1	\$0.100						Bolt Handle Pin	300329	A-300329
Bolt Head Assembly	Assemble	305390	B-305390	No Rev							Bolt Head Assembly	305390	B-305390
Bolt Head	Machined	300338	E-300338	14	\$1.750						Bolt Head	300338	E-300338
Extractor	A/U M/700	93712	C-93712	2	\$0.772						Extractor	93712	C-93712
Ejector	Purchase & Color	300342	B-300342	1	\$0.110						Ejector	300342	B-300342
Ejector Spring	Purchase	300367	A-300367	No Rev	\$0.015						Ejector Spring	300367	A-300367
Ejector Pin	A/U M/700	94555	A-94555	1	\$0.014						Ejector Pin	94555	A-94555

M/710 Estimate

	Proposed Process	Part #	Part #	Rev #	Material \$	Labor \$	Fixed O.H. \$	Var O.H. \$	Total O.H. \$	Estimated Piece Price	PART DESCRIPTION	Part #	Print #
PART DESCRIPTION													
Bolt Assembly Pin	Purchase & Color	300330	B-300330	No Rev	\$0 150						Bolt Assembly Pin	300330	B-300330
Firing Pin Assembly	Assemble	300404	B-300404	No Rev							Firing Pin Assembly	300404	B-300404
Bolt Plug	Purchase	300368	C-300368	1	\$0 215						Bolt Plug	300368	C-300368
Bolt Plug Insert	Purchase	300346	B-300346	No Rev	\$0 808						Bolt Plug Insert	300346	B-300346
Firing Pin	Purchase & Color	300334	C-300334	No Rev	\$1 190						Firing Pin	300334	C-300334
Firing Pin Tip	Purchase & Heat Treat	300335	B-300335	No Rev	\$0 230						Firing Pin Tip	300335	B-300335
Firing Pin Head	MIM	300336	C-300336	No Rev	\$1 753						Firing Pin Head	300336	C-300336
Firing Pin Spring	Purchase	300399	A-300399	No Rev	\$0 101						Firing Pin Spring	300399	A-300399
Front Sight Assembly											Front Sight Assembly	0	0
Front Sight	A/U M/700	94084	C-15373	26	\$0 786						Front Sight	94084	C-15373
Front Sight Ramp	A/U M/700	94657	B-28510	24	\$1 188						Front Sight Ramp	94657	B-28510
Front Sight Ramp Screws (2)	A/U M/700	28505	B-28505	24	\$0 076						Front Sight Ramp Screws (2)	28505	B-28505
Rear Sight Assembly	A/U M/700	103145	B-103145	11	\$0 719						Rear Sight Assembly	103145	B-103145
Elevation Screw	A/U M/700	90906	A-90906	19	\$0 024						Elevation Screw	90906	A-90906
Rear Sight Aperture	A/U M/700	97681	C-93905	9	\$0 140						Rear Sight Aperture	97681	C-93905
Rear Sight Aperture Blank		93906	C-93906	6							Rear Sight Aperture Blank	93906	C-93906
Rear Sight Base	A/U M/700	103531	C-103530	3	\$0 968						Rear Sight Base	103531	C-103530
Rear Sight Slide	A/U M/700	94335	C-93904	7	\$1 200						Rear Sight Slide	94335	C-93904
Windage Screw	A/U M/700	300026	B-300026	5	\$0 106						Windage Screw	300026	B-300026
Rear Sight Base Screw (2)	A/U M/700	28505	B-28505	21							Rear Sight Base Screw (2)	28505	B-28505
Stock Assembly Complete	Purchase	????	????	??							Stock Assembly Complete	????	????
Stock Assembly	Purchase	????	????	??							Stock Assembly	????	????
Stock	Purchase	????	????	??	\$3 780						Stock	????	????
Front Screw Bushing	A/U M/700	15161	B-15161	??							Front Screw Bushing	15161	B-15161
Front Screw Bushing Blank		91915	????	??							Front Screw Bushing Blank	91915	????
Middle Screw Bushing	Purchase	????	????	??							Middle Screw Bushing	????	????
Rear Screw Bushing	Purchase	????	????	??							Rear Screw Bushing	????	????
Grip Cap	A/U M/700	97971	C-97971	No Rev	\$0 180						Grip Cap	97971	C-97971
Recoil Pad	A/U M/700	97973	D-97973	26	\$1 610						Recoil Pad	97973	D-97973
Backer Plate		97972	C-97972	No Rev	\$ 0 390						Backer Plate	97972	C-97972
Recoil Pad Screw (2)	A/U M/700	98008	A-98008	7	\$0 022						Recoil Pad Screw (2)	98008	A-98008
Magazine Latch	Purchase	300362	C-300362	2	\$0 191						Magazine Latch	300362	C-300362
Magazine Latch Spring	Purchase	300398	B-300398	No Rev	\$0 026						Magazine Latch Spring	300398	B-300398
Magazine Latch Pin	Purchase & Color	300371	B-300371	No Rev	\$0 070						Magazine Latch Pin	300371	B-300371
Sling Swivel Stud (2)	Purchase	300096	B-300096	4							Sling Swivel Stud (2)	300096	B-300096
Takedown Screw (2)	Purchase	????	????	??							Takedown Screw (2)	????	????
Rear Takedown Screw	Purchase	????	????	??							Rear Takedown Screw	????	????
Magazine Assembly	Assemble	305395	B-305395	No Rev							Magazine Assembly	305395	B-305395
Magazine Box	Purchase & Color	300363	B-300363	5	\$2 790						Magazine Box	300363	B-300363
Magazine Follower	Purchase	300364	B-300364	1	\$0 093						Magazine Follower	300364	B-300364
Magazine Bottom	Purchase	300365	B-300365	No Rev	\$0 105						Magazine Bottom	300365	B-300365
Magazine Spring	A/U M/700	300405	C-300405	No Rev							Magazine Spring	300405	C-300405
Value Added Cost of Proof/Gallery/Inspect/Pack					\$0.000	\$ -	\$ -	\$ -	\$ -	\$ -			
Total Cost					\$34,234	\$ -	\$ -	\$ -	\$ -	\$ -			

Quoted Parts							In House Processing							
Rev#	Price/part \$	Order Qty M	Eng Charge \$	Vendor Capital \$	Vendor Gages \$	PPI Charge \$	Comments	PART DESCRIPTION	Part #	Print #	Rev#	Material \$	Labor (hrs)	Variable Tools \$
?								Carton Assembly	1444	????	0			
	\$ 0 502	20					ORION-CK-Stone Corporation							
	\$ 0 690	20		\$ 19,000 00			Tuscarora							
?								Document Envelope Assembly	????	????	0			
?								Document Envelope	1649	1426	0			
?								Instruction Book	????	3413	0			
?								Product Owners Card	1426	3499	0			
?								Remington Authorized Gunsm	3413	3475	0			
?								Safety Booklet	3499	3491	0			
?								Remington Museum Flyer	3475	0	0			
?								Oval Label	3491	993002	0			
?								Box and Envelope Label (710)	993002	C-305410	No Rev.			
										C-305400	No Rev			
No Rev								Barrel Assembly Complete	C-305410	E-305315	5			
No Rev								Barrel Assembly	C-305400	E-300340	6			
5								Barrel	E-305315	D-300401	No Rev	\$ 4 800		\$ 0 59
6	\$ -	0					Federal Steel--Quote	Receiver	E-300340	C-300400	No Rev			
No Rev								Receiver Insert Assembly Comp	D-300401	E-300327-1-2	(1E)-5 (2E)-23			
No Rev								Receiver Insert Assembly	C-300400	A-300347	A			
(1E)-5 (2E)-23						\$ 5,650 00		Receiver Insert	E-300327-1-2	C-300333	No Rev			
A	\$ 0 036	20				\$ 200 00	Precision Fasteners	Threaded Insert	A-300347	A-300328	No Rev			
No Rev	\$ 0 090	20				\$ 1,500 00	Historical Data	Side Plate	C-300333	C-15666	24			
No Rev	\$ 0 160	60	\$ 225 00			\$ -	Iseli--Quote	Side Plate Pin (2)	A-300328	B-300351	No Rev			
24	\$ 0 760	20		\$ 11,300 00		\$ 3,000 00	Sterling Sintered Tech Inc --Qu	Sear Safety Cam	C-15666	A-17047	26			
No Rev	\$ 0 180	60	\$ 450 00			\$ -	Automatic Swiss Corporation--	Slide Pin (3)	B-300351	C-15280	31			
26	\$ 0 023	20				\$ -	Ilion Quote	Sear Spring	A-17047	C-19461	21			
31	\$ 0 377	20		\$ 15,225 00		\$ 3,000 00	Sterling Sintered Tech Inc --Qu	Trigger	C-15280	B-17053	32			
21	\$ 1.51					\$ 3,000 00		Trigger Connector	C-19461	B-91128	7			
32	\$ 0 040	0 10				\$ 300 00	Fastenal--Quote 8/19/99	Trigger Screw Front	B-17053	A-15400	11			
7	\$ 0 027	0 10				\$ 300 00	Ilion Quote SAP	Trigger Engagement Screw	B-91128	B-17053	32			
11	\$ 0 029	20				\$ -	Ilion Quote SAP	Trigger Spring	A-15400	D-300408	1			
32	\$ 0 042	20				\$ 300 00	Fastenal--Quote	Trigger Stop Screw	B-17053	C-300407	1			
1	\$ 0 230	20		\$ 25,552 00		\$ 2,400 00	New Hampshire Stamping--Qu	Safety Arm	D-300408	???	??			
1	\$ 0 058	20				\$ -	Midstate Spring Inc --Quote	Safety Detent Spring	C-300407	????	???			
??						\$ -		Lock Washer	???	B-300352	1			
??						\$ -		Lock Detent	???	B-17044	26			
1	\$ 0 140	20	\$ 225 00			\$ -	Iseli Company--Quote 8/25/99	Safety Pivot Pin	B-300352	C-300345	2			
26	\$ 0 025					\$ 120 00	Ilion Quote SAP	Snap Washer	B-17044	0	0			
2	\$ 0 219	20		\$ 6,820 00		\$ 1,500 00	Sterling Sintered Tech Inc --	Bolt Stop	C-300345	B-17034	34			
0						0			0	B-300361	No Rev			
34	\$ 0 135					\$ -	Ilion Quote SAP	Recoil Plug Screws (4)	B-17034	????	??			
No Rev	\$ 0 123	20	\$ 550 00			\$ -	Square Stamping Quote Aug 11	Recoil Bracket	B-300361	D-300403	No Rev			
??						\$ -		Bolt Assembly Complete	????	D-300339	1			
No Rev						\$ -		Bolt Body Assembly	D-300403	0	0			
1	\$ 2 050	20				\$ -	Ken-Mar Tools--Quote 8/26/99	Bolt Body	B-300339	0	0			\$ 79 95
0						\$ -			0	C-300370	No Rev			
0						\$ -			0	C-300360	No Rev			
No Rev	\$ 1 630	20		\$12,575 00		\$ -	Fansteel--Quote 8/12/99	Bolt Handle	C-300370	A-300329	1			
No Rev						\$ 2,500 00		Bolt Handle Stop	C-300360	0	0			
1	\$ 0 100	20	\$ 450 00			\$ -	Automatic Swiss Corporation--Qu	Bolt Handle Pin	A-300329	B-305390	No Rev			
No Rev						\$ -		Bolt Head Assembly	B-305390	C-93712	2			
14	\$ 1 750					\$ 120 00	Parker & Harper Mfg Company	Bolt Head	E-300338	B-300342	1			\$ 0 50
2	\$ 0 772					\$3,300 00	Ilion Quote SAP	Extractor	E-300371	A-300367	No Rev			
1	\$ 0 110	20	\$ 400 00			\$ 3,000 00	Iseli--Quote 8/25/99	Ejector	B-300342	A-94555	1			
No Rev	\$ 0 015	20				\$ -	Midstate Spring, Inc --Quote 8/	Ejector Spring	A-300367	B-300330	No Rev			
1	\$ 0 014	20				\$ -	Ilion Quote SAP	Ejector Pin	A-94555	B-300404	No Rev			

Quoted Parts								In House Processing						
Rev#	Price/part \$	Order Qty M	Eng. Charge \$	Vendor Capital \$	Vendor Gages \$	PPI Gages \$	Comments	PART DESCRIPTION	Part #	Print #	Rev#	Material \$	Labor (hrs)	Variable Tools \$
No Rev	\$ 0.150	20	\$ 450.00			\$ -	Automatic Swiss Corporation--	Bolt Assembly Pin	B-300330	C-300368	1			
No Rev						\$ -		Firing Pin Assembly	B-300404	B-300346	No Rev			
1	\$ 0.215	20		\$ 36,000.00		\$ 800.00	Kellems & Coe--Quote 8/17/99	Bolt Plug	C-300368	C-300334	No Rev			
No Rev	\$ 0.808	60		\$ 0.00		\$ 3,000.00	Swiss Precision Machining, Inc	Bolt Plug Insert	B-300346	B-300335	No Rev			
No Rev	\$ 1.190	20	\$ 400.00			\$ 3,000.00	Iselt--Quote 8/16/99	Firing Pin	C-300334	C-300336	No Rev			
No Rev	\$ 0.230	20	\$ 225.00			\$ 3,300.00	Iselt--Quote 8/16/99	Firing Pin Tip	300335	No Rev	0			
No Rev	\$ 1.753	20		\$ 17,500.00		\$ 1,500.00	Megamet Industries--Quote 9/1	Firing Pin Head	C-300336	A-300399	No Rev			
No Rev	\$ 0.101	20				\$ -				0	0			
0						\$ -	Midscale Spring--Quote 8/20/9	Firing Pin Spring	A-300399	C-15373	26			
26	\$ 0.786					\$ -		Front Sight Assembly	0	B-28510	33			
33	\$ 1.188					\$ -	Ilion Quote SAP	Front Sight	C-15373	B-28505	21			
21	\$ 0.075					\$ 400.00	Ilion Quote SAP	Front Sight Ramp	B-28510	B-103145	11			
11	\$ 3.719					\$ -	Mayfield Quote SAP	Front Sight Ramp Screws (2)	B-28505	A-90906	19			
19	\$ 0.024	20				\$ -	Ilion Quote SAP	Rear Sight Assembly	B-103145	C-93905	9			
9	\$ 0.140	20				\$ -	Ilion Quote	Elevation Screw	A-90906	C-93906	6			
6						\$ -		Rear Sight Aperture	C-93905	C-103530	3			
3	\$ 0.968	80		\$ 17,500.00		\$ -	Ilion Quote	Rear Sight Aperture Blank	C-93906	C-93904	7			
7	\$ 1.200	80		\$ 17,500.00		\$ -	Megamet Industries--Quote 9/2	Rear Sight Base	C-103530	B-300026	5			
5	\$ 0.191	25	\$ 400.00			\$ -	Swiss Precision Machining Inc --	Rear Sight Slide	C-93904	B-28505	21			
21						\$ -		Windage Screw	B-300026	???	??			
??						\$ -		Rear Sight Base Screw (2)	B-28505	???	??			
??						\$ -		Stock Assembly Complete	???	???	0			
0	\$ 5.380	20		\$ 150,300.00		\$ 4,500.00	Par 4 Plastics, Inc	Stock Assembly	???	0	0			
0						\$ -		Stock	???	B-15161	??			
??						\$ -		Front Screw Bushing	B-15161	???	???			
??						\$ -			???	???	??			
??						\$ -		Middle Screw Bushing	???	C-97971	No Rev			
??						\$ -		Rear Screw Bushing	???	D-97973	26			
No Rev	\$ 0.180					\$ -	Ilion Quote SAP	Grip Cap	C-97971	C-97972	No Rev			
26	\$ 1.610					\$ 400.00	Ilion Quote SAP	Recoil Pad	D-97973	A-98008	7			
No Rev	\$ 0.390					\$ -	Ilion Quote SAP	Backer Plate	C-97972	C-300362	2			
7	\$ 0.022	20				\$ -	Fastenal--Quote	Recoil Pad Screw (2)	A-98008	B-300398	No Rev			
2	\$ 0.191	20		\$ 39,000.00		\$ 0.00	Kellems & Coe--Quote 8/17/99	Magazine Latch	C-300362	B-300371	No Rev			
No Rev	\$ 0.026	20				\$ -	Industrial Spring--Quote 8/21/	Magazine Latch Spring	B-300398	0	0			
No Rev	\$ 0.070	20	\$ 225.00			\$ -	Iselt--Quote 8/25/99	Magazine Latch Pad	B-300371	B-300096	4			
4						\$ -		Sling Swivel Stud (2)	B-300096	???	???			
??						\$ 200.00		Takedown Screw (2)	???	B-305395	No Rev			
???						\$ 200.00		Rear Takedown Screw	???	B-300363	5			
No Rev						\$ -		Magazine Assembly	B-305395	B-300364	1			
5	\$ 2.790	20				\$ 4,500.00	Historical Data Used	Magazine Box	B-300363	B-300365	No Rev			
1	\$ 0.093	20		\$ 78,786.00		\$ 3,000.00	Par 4 Plastics, Inc --Quote 8/27/9	Magazine Follower	B-300364	C-300405	No Rev			
No Rev	\$ 0.105	20		\$ -		\$ -	Par 4 Plastics, Inc --Quote 8/27/	Magazine Bottom	B-300365					
No Rev						\$ 3,000.00		Magazine Spring	C-300405					
Total Cost											Total	\$ 4.80	\$ -	\$ 81.04

M/710 Estimate

	Proposed Process	Part #	Print #	Rev #	Material \$	Labor \$	Fixed O.H. \$	Var O.H. \$	Total O.H. \$	Estimated Price	PART DESCRIPTION	Part #	Print #	Rev#
PART DESCRIPTION														
Carton Assembly	Purchase	1444	1444								Carton Assembly	1444	1444	?
Corrugated Box	Purchase													
Bed	Purchase													
Document Envelope Assembly	Purchase	????	????								Document Envelope Assembly	????	????	?
Document Envelope	Purchase	1649	1649								Document Envelope	1649	1649	?
Instruction Book	Purchase	????	????								Instruction Book	????	????	?
Product Owners Card	Purchase	1426	1426								Product Owners Card	1426	1426	?
Remington Authorized Gunsmith	Purchase	3413	3413								Remington Authorized Gunsmith	3413	3413	?
Safety Booklet	Purchase	3499	3499								Safety Booklet	3499	3499	?
Remington Museum Flyer	Purchase	3475	3475								Remington Museum Flyer	3475	3475	?
Oval Label	Purchase	3491	3491								Oval Label	3491	3491	?
Box and Envelope Label (710)	Purchase	993002	993002								Box and Envelope Label (710)	993002	993002	?
Barrel Assembly Complete	Assemble	305410	C-305410	No Rev							Barrel Assembly Complete	305410	C-305410	No Rev
Barrel Assembly	Assemble & Machine	305400	C-305400	No Rev							Barrel Assembly	305400	C-305400	No Rev
Barrel	Machine	305315	E-305315	5							Barrel	305315	E-305315	5
Receiver	Purchase	300340	E-300340	6	\$0 000						Receiver	300340	E-300340	6
Receiver Insert Assembly Complete	Assemble	300401	D-300401	No Rev							Receiver Insert Assembly Complete	300401	D-300401	No Rev
Receiver Insert Assembly	Ultrasonic Weld	300400	C-300400	No Rev							Receiver Insert Assembly	300400	C-300400	No Rev
Receiver Insert	Purchase	300327	E-300327-1-2	(1E)-5 (2E)-23							Receiver Insert	300327	E-300327-1-2	(1E)-5 (2E)-23
Threaded Insert	Purchase	300347	A-300347	A	\$0 036						Threaded Insert	300347	A-300347	A
Side Plate	Purchase & Color	300333	C-300333	No Rev	\$0 090						Side Plate	300333	C-300333	No Rev
Side Plate Pin (2)	Purchase & Color	300328	A-300328	No Rev	\$0 160						Side Plate Pin (2)	300328	A-300328	No Rev
Sear Safety Cam	AU M/700	15666	C-15666	24	\$0 760						Sear Safety Cam	15666	C-15666	24
Pivot Pin (3)	Purchase & Heat Treat	300351	B-300351	No Rev	\$0 180						Pivot Pin (3)	300351	B-300351	No Rev
Sear Spring	AU M/700	17047	A-17047	26	\$0 023						Sear Spring	17047	A-17047	26
Trigger	AU M/700	15280	C-15280	31	\$0 377						Trigger	15280	C-15280	31
Trigger Connector	AU M/700	19461	C-19461	21	\$1 506						Trigger Connector	19461	C-19461	21
Trigger Screw Front	AU M/700	17053	B-17053	32	\$0 040						Trigger Screw Front	17053	B-17053	32
Trigger Engagement Screw	AU M/700	91128	B-91128	7	\$0 027						Trigger Engagement Screw	91128	B-91128	7
Trigger Spring	AU M/700	15400	A-15400	11	\$0 029						Trigger Spring	15400	A-15400	11
Trigger Stop Screw	AU M/700	15481	B-17053	32	\$0 042						Trigger Stop Screw	15481	B-17053	32
Safety Arm	Assemble & Heat Treat	300408	D-300408	1	\$0 230						Safety Arm	300408	D-300408	1
Safety Detent Spring		300407	C-300407	1	\$0 058						Safety Detent Spring	300407	C-300407	1
Lock tumbler	Purchase	??	???	??							Lock tumbler	??	???	??
Lock Detent	AU M/7	???	???	???							Lock Detent	???	???	???
Safety Pivot Pin	Purchase & Heat Treat	300352	B-300352	1	\$0 140						Safety Pivot Pin	300352	B-300352	1
Snap Washer		17044	B-17044	26	\$0 025						Safety Snap Washer	17044	B-17044	26
Bolt Stop	PM/Heat Treat/Color	300345	C-300345	2	\$0 219						Bolt Stop	300345	C-300345	2
Receiver Plug Screws (4)	AU M/700	17034	B-17034	34	\$0 135						Receiver Plug Screws (4)	17034	B-17034	34
Recoil Bracket	Purchase & Color	300361	B-300361	No Rev	\$0 123						Recoil Bracket	300361	B-300361	No Rev
Bolt Assembly Complete		????	???	??							Bolt Assembly Complete	????	???	??
Bolt Body Assembly	Braze & Finish	300403	D-300403	No Rev							Bolt Body Assembly	300403	D-300403	No Rev
Bolt Body	Purchase	300339	D-300339	1	\$2 050			\$ 0 17			Bolt Body	300339	D-300339	1
Bolt Handle	Bend to Form	300370	C-300370	No Rev	\$1 630						Bolt Handle	300370	C-300370	No Rev
Bolt Handle Blank	Purchase	300360	C-300360	No Rev							Bolt Handle Blank	300360	C-300360	No Rev
Bolt Handle Pin	Purchase	300329	A-300329	1	\$0 100						Bolt Handle Pin	300329	A-300329	1
Bolt Head Assembly	Assemble	305390	B-305390	No Rev							Bolt Head Assembly	305390	B-305390	No Rev
Bolt Head	Machined	300338	E-300338	14	\$1 750						Bolt Head	300338	E-300338	14
Extractor	AU M/700	93712	C-93712	2	\$0 772						Extractor	93712	C-93712	2
Ejector	Purchase & Color	300342	B-300342	1	\$0 110						Ejector	300342	B-300342	1
Ejector Spring	Purchase	300367	A-300367	No Rev	\$0 015						Ejector Spring	300367	A-300367	No Rev

M/710 Estimate

	Proposed Process	Part #	Print #	Rev #	Material \$	Labor \$	Fixed O.H. \$	Var O.H. \$	Total O.H. \$	Estimated Piece Price	PART DESCRIPTION	Part #	Print #	Rev #
PART DESCRIPTION														
Ejector Pin	A/U M/700	94555	A-94555	1	\$0 014						Ejector Pin	94555	A-94555	1
Bolt Assembly Pin	Purchase & Color	300330	B-300330	No Rev	\$0 150						Bolt Assembly Pin	300330	B-300330	No Rev
Firing Pin Assembly	Assemble	300404	B-300404	No Rev							Firing Pin Assembly	300404	B-300404	No Rev
Bolt Plug	Purchase	300368	C-300368	No Rev	\$0 215						Bolt Plug	300368	C-300368	1
Bolt Plug Insert	Purchase	300346	B-300346	No Rev	\$0 608						Bolt Plug Insert	300346	B-300346	No Rev
Firing Pin	Purchase & Color	300334	C-300334	No Rev	\$4 190						Firing Pin	300334	C-300334	No Rev
Firing Pin Tip	Purchase & Heat Treat	300335	B-300335	No Rev	\$0 230						Firing Pin Tip	300335	B-300335	No Rev
Firing Pin Head	MIM	300336	C-300336	No Rev	\$1 753						Firing Pin Head	300336	C-300336	No Rev
Firing Pin Spring	Purchase	300399	A-300399	No Rev	\$0 187						Firing Pin Spring	300399	A-300399	No Rev
Front Sight Assembly											Front Sight Assembly	0	0	0
Front Sight	A/U M/700	94084	C-15373	26	\$0 786						Front Sight	94084	C-15373	26
Front Sight Ramp	A/U M/700	94657	B-28510	33	\$0 644						Front Sight Ramp	94657	B-28510	33
Front Sight Ramp Screws (2)	A/U M/700	28505	B-28505	21	\$0 068						Front Sight Ramp Screws (2)	28505	B-28505	21
Rear Sight Assembly	A/U M/700	103145	B-103145	11	\$ 3 719						Rear Sight Assembly	103145	B-103145	11
Elevation Screw	A/U M/700	90906	A-90906	19	\$0 024						Elevation Screw	90906	A-90906	19
Rear Sight Aperture	A/U M/700	97681	C-93905	9	\$0 140						Rear Sight Aperture	97681	C-93905	9
Rear Sight Aperture Blank		93906	C-93906	6							Rear Sight Aperture Blank	93906	C-93906	6
Rear Sight Base	A/U M/700	103531	C-103530	3	\$0 968						Rear Sight Base	103531	C-103530	3
Rear Sight Slide	A/U M/700	94335	C-93904	7	\$1 206						Rear Sight Slide	94335	C-93904	7
Windage Screw	A/U M/700	300026	B-300026	5	\$0 191						Windage Screw	300026	B-300026	5
Rear Sight Base Screw (2)	A/U M/700	28505	B-28505	21							Rear Sight Base Screw (2)	28505	B-28505	21
Stock Assembly Complete	Purchase	???	???	??							Stock Assembly Complete	???	???	??
Stock Assembly	Purchase	???	???	??							Stock Assembly	???	???	??
Stock	Purchase	???	???		\$5 380						Stock	???	???	0
Front Screw Bushing	A/U M/700	15161	B-15161	??							Front Screw Bushing	15161	B-15161	??
Front Screw Bushing Blank		91915	???	???								91915	???	???
Middle Screw Bushing	Purchase	???	???	???							Middle Screw Bushing	???	???	???
Rear Screw Bushing	Purchase	???	???	??							Rear Screw Bushing	???	???	??
Grip Cap	A/U M/700	97971	C-97971	No Rev	\$0 180						Grip Cap	97971	C-97971	No Rev
Recoil Pad	A/U M/700	97973	D-97973	26	\$1 610						Recoil Pad	97973	D-97973	26
Backer Plate		97972	C-97972	No Rev	\$ 0 390						Backer Plate	97972	C-97972	No Rev
Recoil Pad Screw (2)	A/U M/700	98008	A-98008	7	\$0 022						Recoil Pad Screw (2)	98008	A-98008	7
Magazine Latch	Purchase	300362	C-300362	2	\$0 191						Magazine Latch	300362	C-300362	2
Magazine Latch Spring	Purchase	300398	B-300398	No Rev	\$0 026						Magazine Latch Spring	300398	B-300398	No Rev
Magazine Latch Pin	Purchase & Color	300371	B-300371	No Rev	\$0 070						Magazine Latch Pin	300371	B-300371	No Rev
Sling Swivel Stud (2)	Purchase	300096	B-300096	4							Sling Swivel Stud (2)	300096	B-300096	4
Takedown Screw (2)	Purchase	???	???	???							Takedown Screw (2)	???	???	???
Rear Takedown Screw	Purchase	???	???	???							Rear Takedown Screw	???	???	???
Magazine Assembly	Assemble	305395	B-305395	No Rev							Magazine Assembly	305395	B-305395	No Rev
Magazine Box	Purchase & Color	300363	B-300363	5	\$2 790						Magazine Box	300363	B-300363	5
Magazine Follower	Purchase	300364	B-300364	1	\$0 093						Magazine Follower	300364	B-300364	1
Magazine Bottom	Purchase	300365	B-300365	No Rev	\$0 105						Magazine Bottom	300365	B-300365	No Rev
Magazine Spring	A/U M/700	300405	C-300405	No Rev							Magazine Spring	300405	C-300405	No Rev
Value Added Cost of:					\$0.000	\$ -	\$ -	\$ -	\$ -	\$ -				
Proof/Gallery/Inspect/Pack														
			Total Cost		\$34.234	\$ -	\$ -	\$ 0.17	\$ -	\$ -				Total Cost

Quoted Parts						
Price/part \$	Order Qty	Eng. Charge	Vendor Capital \$	Vendor Gages \$	PPI Gages \$	Comments
\$ 0 014	20				\$ -	Ilion Quote SAP
\$ 0 150	20	\$ 250 00			\$ -	Automatic Swiss Corporation--
					\$ -	
\$ 0 215			\$ 36,000 00		\$ 800 00	Kellems & Coe--Quote 8/17/99
\$ 0 808	60		\$0 00		\$3,000 00	Swiss Precision Machining, Inc
\$ 1 190	20	\$ 400 00			\$ 200 00	Iseli--Quote 8/16/99
\$ 0 230	20	\$ 200 00			\$3,300 00	Iseli--Quote 8/16/99
\$ 1 753	20		\$ 17,500 00		\$ 1,500 00	Megamet Industries--Quote 9/1
					\$ -	
\$ 0 101	20				\$ -	Midstate Spring--Quote 8/20/9
					\$ -	
\$ 0 786					\$ -	Ilion Quote SAP
\$ 1 188					\$400 00	Ilion Quote SAP
\$ 0 075					\$ -	Mayfield Quote SAP
\$ 3 719					\$ -	Ilion Quote SAP
\$ 0 024	20				\$ -	Ilion Quote SAP
\$ 0 140	20				\$ -	Ilion Quote
					\$ -	
\$ 0 968	80		\$ 4,500 00		\$ -	Ilion Quote
\$ 1 200	80		\$17,500 00		\$ -	Megamet Industries--Quote 9/1
\$ 0 191	25	\$ 400 00			\$ -	Swiss Precision Maching Inc --
					\$ -	
					\$ -	
					0	
\$ 5 380	20		\$450,300 00		\$4,500 00	Par 4 Plastics, Inc
					\$ -	
					\$ -	
					\$ -	
					\$ -	
					\$ -	
\$ 0 180					\$ -	Ilion Quote SAP
\$ 1 610					\$400 00	Ilion Quote SAP
\$ 0 390					\$ -	Ilion Quote SAP
\$ 0 022	20				\$ -	Fastenal--Quote
\$ 0 191	20		\$39,000 00		\$0 00	Kellems & Coe--Quote 8/17/99
\$ 0 026	20				\$ -	Industrial Spring--Quote 8/21/
\$ 0 070	20	\$ 225 00			\$ -	Iseli--Quote 8/25/99
					\$ -	
					\$200 00	
					\$200 00	
					\$ -	
\$ 2 790	20				\$ 4,500 00	Historical Data Used
\$ 0 093	20		\$ 78,786 00		\$ 3,000 00	Par 4 Plastics, Inc --Quote 8/27/9
\$ 0 105	20		\$ -		\$ -	Par 4 Plastics, Inc --Quote 8/27/
					\$ 3,000 00	
\$ 34.23	1045.20	\$ 4,000.00	\$ 428,058.00	\$ -	\$ 55,190.00	

SEE MILE ON BUSHINGS

→ CHECK PAR 4 QUOTE

In House Processing										
PART DESCRIPTION	Part #	Points	Rev#	Material \$	Labor (hrs)	Variable Tools \$	Pre-Op Startup \$	Capital \$	Material Handling \$	Comments
Carton Assembly	1444	????	0							
Document Envelope Assembly	????	????	0							
Document Envelope	1649	3426	0							
Instruction Book	????	3413	0							
Product Owners Card	1426	3499	0							
Remington Authorized Gunsm	3413	3475	0							
Safety Booklet	3499	3491	0							
Remington Museum Flyer	3475	0	0							
Oval Label	3491	993002	0							
Box and Envelope Label (710)	993002	C-305410								
		C-305400	No Rev							
Barrel Assembly Complete	C-305410	E-305315								
Barrel Assembly	C-305400	E-300340								
Barrel	E-305315	D-300401	No Rev	\$ 4 800		\$ 2,585 59	\$ 59,098 14	\$ 286,430 00		
Receiver	E-300340	C-300400	No Rev				\$ -	\$ 563,556 90		
Receiver Insert Assembly Comp	D-300401	E-300327-1-2	(1E)-5 (2E)							
Receiver Insert Assembly	C-300400	A-300347								
Receiver Insert	E-300327-1-2	C-300333	No Rev							
Threaded Insert	A-300347	A-300328	No Rev							
Side Plate	C-300333	C-15666								
Side Plate Pin (2)	A-300328	B-300351	No Rev							
Sear Safety Cam	C-15666	A-17047	26							
Pivot Pin (3)	B-300351	C-15280	31							
Sear Spring	A-17047	C-19461	21							
Trigger	C-15280	B-17053	32							
Trigger Connector	C-19461	B-91128	7							
Trigger Screw Front	B-17053	A-15400	11							
Trigger Engagement Screw	B-91128	B-17053	32							
Trigger Spring	A-15400	D-300408	1							
Trigger Stop Screw	B-17053	C-300407	1							
Safety Arm	D-300408	???	??							
Safety Detent Spring	C-300407	????	???							
Lock tumbler	???	B-300352	1							
Lock Detent	????	B-17044	26							
Safety Pivot Pin	B-300352	C-300345	2							
Snap Washer	B-17044	0	0							
Bolt Stop	C-300345	B-17034	34							
	0	B-300361	No Rev							
Receiver Plug Screws (4)	B-17034	????	??							
Recoil Bracket	B-300361	D-300403	No Rev							
Bolt Assembly Complete	????	D-300339	1							
Bolt Body Assembly	D-300403	0	0							
Bolt Body	D-300339	0	0			\$ 79 95	\$ 35,403 50	\$ 4,500 00		
	0	C-300370	No Rev							
	0	C-300360	No Rev							
Bolt Handle	C-300370	A-300329	1							
Bolt Handle Blank	C-300360	0	0							
Bolt Handle Pin	A-300329	B-305390	No Rev							
Bolt Head Assembly	B-305390	C-93712	2							
Bolt Head	E-300338	B-300342	1			\$ 0 50	\$ 5,761 38	\$ 316,500 00		
Extractor	C-93712	A-300367	No Rev							
Ejector	B-300342	A-94555	1							
Ejector Spring	A-300367	B-300330	No Rev							

In House Processing									
PART DESCRIPTION	Part #	Rev#	Material \$	Labor (hrs)	Variable Tools \$	Pre-Op Startup \$	Capital \$	Material Handling \$	Comments
Ejector Pin	A-94555	B-300404	No Rev						
Bolt Assembly Pin	B-300330	C-300368	1						
Firing Pin Assembly	B-300404	B-300346	No Rev						
Bolt Plug	C-300368	B-300335	No Rev						
Bolt Plug Insert	B-300346	B-300335	No Rev						
Firing Pin	C-300334	C-300346	No Rev						
Firing Pin Tip	300335	No Rev	0						
Firing Pin Head	C-300336	A-300399	No Rev						
		0							
Firing Pin Spring	A-300399	C-15373	26						
Front Sight Assembly	0	B-28510	33						
Front Sight	C-15373	B-28505	11						
Front Sight Ramp	B-28510	B-103145	11						
Front Sight Ramp Screws (2)	B-28505	A-90906	19						
Rear Sight Assembly	B-103145	C-93905	7						
Elevation Screw	A-90906	C-93906	8						
Rear Sight Aperture	C-93905	C-103530	3						
Rear Sight Aperture Blank	C-93906	C-93904	7						
Rear Sight Base	C-103530	B-300026	??						
Rear Sight Slide	C-93904	B-28505	21						
Windage Screw	B-300026	????	??						
Rear Sight Base Screw (2)	B-28505	????	??						
Stock Assembly Complete	????	????	0						
Stock Assembly	????	0	0						
Stock	????	B-15161	????						
	0	????	????						
Front Screw Bushing	B-15161	????	????						
	????	????	??						
Middle Screw Bushing	????	C-97971	No Rev						
Rear Screw Bushing	????	D-97973	26						
Grip Cap	C-97971	C-97972	No Rev						
Recoil Pad	D-97973	A-98008	7						
Backer Plate	C-97972	C-300362	2						
Recoil Pad Screw (2)	A-98008	B-300398	No Rev						
Magazine Latch	C-300362	B-300371	No Rev						
Magazine Latch Spring	B-300398	0	0						
Magazine Latch Pin	B-300371	B-300096	4						
Sling Swivel Stud (2)	B-300096	????	????						
Takedown Screw (2)	????	B-305395	No Rev						
Rear Takedown Screw	????	B-300363	5						
Magazine Assembly	B-305395	B-300364	1						
Magazine Box	B-300363	B-300365	No Rev						
Magazine Follower	B-300364	C-300405	No Rev						
Magazine Bottom	B-300365								
Magazine Spring	C-300405								
Total			\$ 4 80	\$ -	\$ 2 06 00	\$ 70 26 00	\$ 1,170,986 90	\$ -	

Last Quote on DWG

	Proposed	Part #	Print #	Rev #	Quote Cost
	Process				
PART DESCRIPTION		0	0	0	
Carton Assembly	Purchase	1444	1444	0	\$0.000
Corrugated Box	Purchase	0	0	0	\$0.000
Bed	Purchase	0	0	0	\$0.000
Document Envelope Assembly	Purchase	???	???	0	\$0.000
Document Envelope	Purchase	1649	1649	0	\$0.000
Instruction Book	Purchase	???	???	0	\$0.000
Product Owners Card	Purchase	1426	1426	0	\$0.000
Remington Authorized Gunsmith	Purchase	3413	3413	0	\$0.000
Safety Booklet	Purchase	3499	3499	0	\$0.000
Remington Museum Flyer	Purchase	3475	3475	0	\$0.000
Oval Label	Purchase	3491	3491	0	\$0.000
0	0	0	0	0	\$0.000
Box and Envelope Label (710)	Purchase	993002	993002	0	\$0.000
0	0	0	0	0	\$0.000
Barrel Assembly Complete	Assemble	305410	C-305410	No Rev.	\$0.000
Barrel Assembly	Assemble & Machine	305400	C-305400	No Rev.	\$0.000
Barrel	Machine	305315	E-305315	5	\$0.000
Receiver	Purchase	300340	E-300340	6	\$0.000
Receiver Insert Assembly Complete	Assemble	300401	D-300401	No Rev.	\$0.000
Receiver Insert Assembly	Ultrasonic Weld	300400	E-300400	No Rev.	\$0.000
Receiver Insert	Purchase	300327	E-300327-1-2	(1E)-5 (2E)-23	\$0.000
Threaded Insert	Purchase	300347	A-300347	A	\$0.036
Side Plate	Purchase & Color	300333	C-300333	No Rev.	\$0.090

Side Plate Pin (2)	Purchase & Color	300328	A-300328	No Rev.	\$0.160
Sear Safety Cam	AU M/700	15666	C-15666	24	\$0.760
Pivot Pin (3)	Purchase & Heat Trea	300351	B-300351	No Rev.	\$0.180
Sear Spring	AU M/700	17047	A-17047	26	\$0.023
Trigger	AU M/700	15280	C-15280	31	\$0.377
Trigger Connector	AU M/700	19461	C-19461	21	\$1.506
Trigger Screw Front	AU M/700	17053	B-17053	32	\$0.040
Trigger Engagement Screw	AU M/700	91128	B-91128	7	\$0.027
Trigger Spring	AU M/700	15400	A-15400	11	\$0.029
Trigger Stop Screw	AU M/700	15481	B-17053	32	\$0.042
Safety Arm	assemble & Heat Trea	300408	D-300408	1	\$0.230
Safety Detent Spring	0	300407	C-300407	1	\$0.058
Lock tumbler	Purchase	??	???	??	\$0.000
Lock Detent	AU M/7	???	???	???	\$0.000
Safety Pivot Pin	Purchase & Heat Trea	300352	B-300352	1	\$0.140
Snap Washer	0	17044	B-17044	26	\$0.025
Bolt Stop	PM/Heat Treat/Color	300345	C-300345	2	\$0.219
0	0	0	0	0	\$0.000
Receiver Plug Screws (4)	A/U M/700	17034	B-17034	34	\$0.135
Recoil Bracket	Purchase & Color	300361	B-300361	No Rev.	\$0.123
Bolt Assembly Complete	0	???	???	??	\$0.000
Bolt Body Assembly	Braze & Finish	300403	D-300403	No Rev.	\$0.000
Bolt Body	Purchase	300339	D-300339	1	\$2.050
0	0	0	0	0	\$0.000
0	0	0	0	0	\$0.000
Bolt Handle	Bend to Form	300370	C-300370	No Rev.	\$1.630
Bolt Handle Blank	Purchase	300360	C-300360	No Rev.	\$0.000
Bolt Handle Pin	Purchase	300329	A-300329	1	\$0.100
0	0	0	0	0	\$0.000

Bolt Head Assembly	Assemble	305390	B-305390	No Rev.	\$0.000
Bolt Head	Machined	300338	E-300338	14	\$1.750
Extractor	A/U M/700	93712	C-93712	2	\$0.772
Ejector	Purchase & Color	300342	B-300342	1	\$0.110
Ejector Spring	Purchase	300367	A-300367	No Rev.	\$0.015
Ejector Pin	A/U M/700	94555	A-94555	1	\$0.014
Bolt Assembly Pin	Purchase & Color	300330	B-300330	No Rev.	\$0.150
Firing Pin Assembly	Assemble	300404	B-300404	No Rev.	\$0.000
Bolt Plug	Purchase	300368	C-300368	1	\$0.215
Bolt Plug Insert	Purchase	300346	B-300346	No Rev.	\$0.808
Firing Pin	Purchase & Color	300334	C-300334	No Rev.	\$1.190
Firing Pin Tip	Purchase & Heat Treat	300335	B-300335	No Rev.	\$0.230
Firing Pin Head	MM	300336	C-300336	No Rev.	\$1.753
0	0	0	0	0	\$0.000
Firing Pin Spring	Purchase	300399	A-300399	No Rev.	\$0.101
Front Sight Assembly	0	0	0	0	\$0.000
Front Sight	A/U M/700	94084	C-15373	26	\$0.786
Front Sight Ramp	A/U M/700	94657	B-28510	33	\$1.188
Front Sight Ramp Screws (2)	A/U M/700	28505	B-28505	21	\$0.075
Rear Sight Assembly	A/U M/700	103145	B-103145	11	\$3.719
Elevation Screw	A/U M/700	90906	A-90906	19	\$0.024
Rear Sight Aperture	A/U M/700	97681	C-93905	9	\$0.140
Rear Sight Aperture Blank	0	93906	C-93906	6	\$0.000
Rear Sight Base	A/U M/700	103531	C-103530	3	\$0.968
Rear Sight Slide	A/U M/700	94335	C-93904	7	\$1.200
Windage Screw	A/U M/700	300026	B-300026	5	\$0.191
Rear Sight Base Screw (2)	A/U M/700	28505	B-28505	21	\$0.000
Stock Assembly Complete	Purchase	???	???	??	\$0.000
Stock Assembly	Purchase	???	???	??	\$0.000

Stock	Purchase	????	????	0	\$5.380
0	0	0	0	0	\$0.000
Front Screw Bushing	A/U M/700	15161	B-15161	??	\$0.000
Front Screw Bushing Blank	0	91915	????	???	\$0.000
Middle Screw Bushing	Purchase	????	????	???	\$0.000
Rear Screw Bushing	Purchase	????	????	??	\$0.000
Grip Cap	A/U M/700	97971	C-97971	No Rev.	\$0.180
Recoil Pad	A/U M/700	97973	D-97973	26	\$1.610
Backer Plate	0	97972	C-97972	No Rev.	\$0.390
Recoil Pad Screw (2)	A/U M/700	98008	A-98008	7	\$0.022
Magazine Latch	Purchase	300362	C-300362	2	\$0.191
Magazine Latch Spring	Purchase	300398	B-300398	No Rev.	\$0.026
Magazine Latch Pin	Purchase & Color	300371	B-300371	No Rev.	\$0.070
0	0	0	0	0	\$0.000
Sling Swivel Stud (2)	Purchase	300096	B-300096	4	\$0.000
Takedown Screw (2)	Purchase	????	????	???	\$0.000
Rear Takedown Screw	Purchase	????	????	????	\$0.000
Magazine Assembly	Assemble	305395	B-305395	No Rev.	\$0.000
Magazine Box	Purchase & Color	300363	B-300363	5	\$2.790
Magazine Follower	Purchase	300364	B-300364	1	\$0.093
Magazine Bottom	Purchase	300365	B-300365	No Rev.	\$0.105
Magazine Spring	A/U M/700	300405	C-300405	No Rev.	\$0.000
0	0	0	0	0	\$0.000
Value Added Cost of: Proof/Gallery/	0	0	0	0	\$0.000
0	0	0	Total Cost	0	\$34.234

Current DWG Revision

0	Proposed	Part #	Print #	Rev #
0	Process	0	0	
PART DESCRIPTION		0	0	
Carton Assembly	Purchase	1444	1444	
Corrugated Box	Purchase	0	0	
Bed	Purchase	0	0	
Document Envelope Assembly	Purchase	????	????	
Document Envelope	Purchase	1649	1649	
Instruction Book	Purchase	????	????	
Product Owners Card	Purchase	1426	1426	
Remington Authorized Gunsm	Purchase	3413	3413	
Safety Booklet	Purchase	3499	3499	
Remington Museum Flyer	Purchase	3475	3475	
Oval Label	Purchase	3491	3491	
0	0	0	0	
Box and Envelope Label (710)	Purchase	993002	993002	
0	0	0	0	
Barrel Assembly Complete	Assemble	305410	C-305410	
Barrel Assembly	sssemble & Machin	305400	C-305400	
Barrel	Machine	305315	E-305315	11
Receiver	Purchase	300340	E-300340	
Receiver Insert Assembly Comple	Assemble	300401	D-300401	
Receiver Insert Assembly	Ultrasonic Weld	300400	C-300400	
Receiver Insert	Purchase	300327	E-300327-1-2	(1E) - 17 (2E) - 29
Threaded Insert	Purchase	300347	A-300347	
Side Plate	Purchase & Color	300333	C-300333	5

Side Plate Pin (2)	Purchase & Color	300328	A-300328	1
Sear Safety Cam	AU M/700	15666	C-15666	
Pivot Pin (3)	urchase & Heat Tre	300351	B-300351	
Sear Spring	AU M/700	17047	A-17047	
Trigger	AU M/700	15280	C-15280	
Trigger Connector	AU M/700	19461	C-19461	
Trigger Screw Front	AU M/700	17053	B-17053	
Trigger Engagement Screw	AU M/700	91128	B-91128	
Trigger Spring	AU M/700	15400	A-15400	
Trigger Stop Screw	AU M/700	15481	B-17053	
Safety Arm	assemble & Heat Tre	300408	D-300408	
Safety Detent Spring	0	300407	C-300407	
Lock tumbler	Purchase	??	???	
Lock Detent	AU M/7	???	????	
Safety Pivot Pin	urchase & Heat Tre	300352	B-300352	
Snap Washer	0	17044	B-17044	
Bolt Stop	M/Heat Treat/Colo	300345	C-300345	
0	0	0	0	3
Receiver Plug Screws (4)	A/U M/700	17034	B-17034	
Recoil Bracket	Purchase & Color	300361	B-300361	
Bolt Assembly Complete	0	????	????	
Bolt Body Assembly	Braze & Finish	300403	D-300403	
Bolt Body	Purchase	300339	D-300339	
0	0	0	0	2
0	0	0	0	
Bolt Handle	Bend to Form	300370	C-300370	
Bolt Handle Blank	Purchase	300360	C-300360	
Bolt Handle Pin	Purchase	300329	A-300329	
0	0	0	0	

Bolt Head Assembly	Assemble	305390	B-305390	
Bolt Head	Machined	300338	E-300338	2
Extractor	A/U M/700	93712	C-93712	17
Ejector	Purchase & Color	300342	B-300342	
Ejector Spring	Purchase	300367	A-300367	
Ejector Pin	A/U M/700	94555	A-94555	
Bolt Assembly Pin	Purchase & Color	300330	B-300330	
Firing Pin Assembly	Assemble	300404	B-300404	
Bolt Plug	Purchase	300368	C-300368	
Bolt Plug Insert	Purchase	300346	B-300346	2
Firing Pin	Purchase & Color	300334	C-300334	
Firing Pin Tip	urchase & Heat Tre	300335	B-300335	
Firing Pin Head	MIM	300336	C-300336	1
0	0	0	0	A, B
Firing Pin Spring	Purchase	300399	A-300399	
Front Sight Assembly	0	0	0	A, B, C, D
Front Sight	A/U M/700	94084	C-15373	
Front Sight Ramp	A/U M/700	94657	B-28510	
Front Sight Ramp Screws (2)	A/U M/700	28505	B-28505	
Rear Sight Assembly	A/U M/700	103145	B-103145	
Elevation Screw	A/U M/700	90906	A-90906	
Rear Sight Aperture	A/U M/700	97681	C-93905	
Rear Sight Aperture Blank	0	93906	C-93906	
Rear Sight Base	A/U M/700	103531	C-103530	
Rear Sight Slide	A/U M/700	94335	C-93904	
Windage Screw	A/U M/700	300026	B-300026	
Rear Sight Base Screw (2)	A/U M/700	28505	B-28505	
Stock Assembly Complete	Purchase	???	????	
Stock Assembly	Purchase	????	????	

Stock	Purchase	????	????	
0	0	0	0	
Front Screw Bushing	A/U M/700	15161	B-15161	
Front Screw Bushing Bl	0	91915	????	
Middle Screw Bushing	Purchase	????	????	
Rear Screw Bushing	Purchase	????	????	
Grip Cap	A/U M/700	97971	C-97971	
Recoil Pad	A/U M/700	97973	D-97973	
Backer Plate	0	97972	C-97972	
Recoil Pad Screw (2)	A/U M/700	98008	A-98008	
Magazine Latch	Purchase	300362	C-300362	
Magazine Latch Spring	Purchase	300398	B-300398	3
Magazine Latch Pin	Purchase & Color	300371	B-300371	A, B
0	0	0	0	A
Sling Swivel Stud (2)	Purchase	300096	B-300096	
Takedown Screw (2)	Purchase	????	????	
Rear Takedown Screw	Purchase	????	????	
Magazine Assembly	Assemble	305395	B-305395	
Magazine Box	Purchase & Color	300363	B-300363	
Magazine Follower	Purchase	300364	B-300364	7
Magazine Bottom	Purchase	300365	B-300365	
Magazine Spring	A/U M/700	300405	C-300405	7
0	0	0	0	
Value Added Cost of: Proof/Galle	0	0	0	
0	0	0	Total Cost	



M/710 Estimate													
	Proposed Process	Part #	Part #	Rev #	Material \$	Labor \$	Fixed O.H. \$	Var O.H. \$	Total O.H. \$	Estimated Piece Price	PART DESCRIPTION	Part #	Print #
PART DESCRIPTION													
Carton Assembly	Purchase	1444	1444								Carton Assembly	1444	1444
Corrugated Box	Purchase										Corrugated Box		
Bed	Purchase										Bed		
Document Envelope Assembly	Purchase	????	????								Document Envelope Assembly	????	????
Document Envelope	Purchase	1649	1649								Document Envelope	1649	1649
Instruction Book	Purchase	????	????								Instruction Book	????	????
Product Owners Card	Purchase	1426	1426								Product Owners Card	1426	1426
Remington Authorized Gunsmith	Purchase	3413	3413								Remington Authorized Gunsmith	3413	3413
Safety Booklet	Purchase	3499	3499								Safety Booklet	3499	3499
Remington Museum Flyer	Purchase	3475	3475								Remington Museum Flyer	3475	3475
Oval Label	Purchase	3491	3491								Oval Label	3491	3491
Box and Envelope Label (710)	Purchase	993002	993002								Box and Envelope Label (710)	993002	993002
Barrel Assembly Complete	Assemble	305410	C-305410	No Rev							Barrel Assembly Complete	305410	C-305410
Barrel Assembly	Assemble & Machine	305400	C-305400	No Rev							Barrel Assembly	305400	C-305400
Barrel	Machine	305315	E-305315	5							Barrel	305315	E-305315
Receiver	Purchase	300340	E-300340	6	\$0.600			\$	-		Receiver	300340	E-300340
Receiver Insert Assembly Complete	Assemble	300401	D-300401	No Rev							Receiver Insert Assembly Complete	300401	D-300401
Receiver Insert Assembly	Ultrasonic Weld	300400	C-300400	No Rev							Receiver Insert Assembly	300400	C-300400
Receiver Insert	Purchase	300327	E-300327-1-2	(1E)-5 (2E)-23							Receiver Insert	300327	E-300327-1-2
Threaded Insert	Purchase	300347	A-300347	A	\$0.036						Threaded Insert	300347	A-300347
Side Plate	Purchase & Color	300333	C-300333	No Rev	\$0.090						Side Plate	300333	C-300333
Side Plate Pin (2)	Purchase & Color	300328	A-300328	No Rev	\$0.160						Side Plate Pin (2)	300328	A-300328
Sear Safety Cam	AU M/700	15666	C-15666	24	\$0.960						Sear Safety Cam	15666	C-15666
Pivot Pin (3)	Purchase & Heat Treat	300351	B-300351	No Rev	\$0.180						Pivot Pin (3)	300351	B-300351
Sear Spring	AU M/700	17047	A-17047	26	\$0.023						Sear Spring	17047	A-17047
Trigger	AU M/700	15280	C-15280	31	\$0.377						Trigger	15280	C-15280
Trigger Connector	AU M/700	19461	C-19461	21	\$1.506						Trigger Connector	19461	C-19461
Trigger Screw Front	AU M/700	17053	B-17053	32	\$0.040						Trigger Screw Front	17053	B-17053
Trigger Engagement Screw	AU M/700	91128	B-91128	7	\$0.027						Trigger Engagement Screw	91128	B-91128
Trigger Spring	AU M/700	15400	A-15400	11	\$0.029						Trigger Spring	15400	A-15400
Trigger Stop Screw	AU M/700	15481	B-17053	32	\$0.042						Trigger Stop Screw	15481	B-17053
Safety Arm	Assemble & Heat Treat	300408	D-300408	1	\$0.230						Safety Arm	300408	D-300408
Safety Detent Spring		300407	C-300407	1	\$0.058						Safety Detent Spring	300407	C-300407
Lock tumbler	Purchase	??	???	??							Lock tumbler	??	???
Lock Detent	AU M/7	???	???	???							Lock Detent	???	???
Safety Pivot Pin	Purchase & Heat Treat	300352	B-300352	1	\$0.140						Safety Pivot Pin	300352	B-300352
Snap Washer		17044	B-17044	26	\$0.025						Safety Snap Washer	17044	B-17044
Bolt Stop	PM/Heat Treat/Color	300345	C-300345	2	\$0.219						Bolt Stop	300345	C-300345
Receiver Plug Screws (4)	A/U M/700	17034	B-17034	34	\$0.135						Receiver Plug Screws (4)	17034	B-17034
Recoil Bracket	Purchase & Color	300361	B-300361	No Rev	\$0.123						Recoil Bracket	300361	B-300361
Bolt Assembly Complete		????	????	??							Bolt Assembly Complete	????	????
Bolt Body Assembly	Braze & Finish	300403	D-300403	No Rev							Bolt Body Assembly	300403	D-300403
Bolt Body	Purchase	300339	D-300339	1	\$2.050			\$	0.17		Bolt Body	300339	D-300339
												0	0
												0	0
Bolt Handle	Bend to Form	300370	C-300370	No Rev	\$1.630						Bolt Handle	300370	C-300370
Bolt Handle Blank	Purchase	300360	C-300360	No Rev							Bolt Handle Blank	300360	C-300360
Bolt Handle Pin	Purchase	300329	A-300329	1	\$0.100						Bolt Handle Pin	300329	A-300329
Bolt Head Assembly	Assemble	305390	B-305390	No Rev							Bolt Head Assembly	305390	B-305390
Bolt Head	Machined	300338	E-300338	14	\$1.750						Bolt Head	300338	E-300338
Extractor	A/U M/700	93712	C-93712	2	\$0.772						Extractor	93712	C-93712
Ejector	Purchase & Color	300342	B-300342	1	\$0.110						Ejector	300342	B-300342
Ejector Spring	Purchase	300367	A-300367	No Rev	\$0.015						Ejector Spring	300367	A-300367

Quoted Parts							
Rev#	Price/part	Order Qty	Eng Charge	Vendor Capital	Vendor Gages	PPI Gages	Comments
	\$	M	\$	\$	\$	\$	
?						\$ -	
	\$ 0.002	20				\$ -	ORPACK-Stone Corporation
	\$ 0.090	20		\$ 19,000.00		\$ -	Tuscurora
?						\$ -	
?						\$ -	
?						\$ -	
?						\$ -	
?						\$ -	
?						\$ -	
?						\$ -	
?						\$ -	
?						\$ -	
No Rev						\$ -	
No Rev						\$ -	
5						\$ -	
6	\$ -	0				\$ -	Federal Steel--Quote
No Rev						\$ -	
No Rev						\$ -	
(1E)-5 (2E)-23						\$ 5,650.00	
A	\$ 0.036	20				\$ 200.00	Precision Fasteners
No Rev	\$ 0.090	20				\$ 1,500.00	Historical Data
No Rev	\$ 0.160	60	\$ 225.00			\$ -	Iseli--Quote
24	\$ 0.760	20		\$ 11,300.00		\$ 3,000.00	Sterling Sintered Tech Inc --Qu
No Rev	\$ 0.180	60	\$ 450.00			\$ -	Automatic Swiss Corporation--
26	\$ 0.023	20				\$ -	Ilion Quote
31	\$ 0.377	20		\$ 15,225.00		\$ 3,000.00	Sterling Sintered Tech Inc --Quo
21	\$ 1.51					\$ 3,000.00	
32	\$ 0.040	0 10				\$ 300.00	Fastenal--Quote 8/19/99
7	\$ 0.027	0 10				\$ 300.00	Ilion Quote SAP
11	\$ 0.029	20				\$ -	Ilion Quote SAP
32	\$ 0.042	20				\$ 300.00	Fastenal--Quote
1	\$ 0.230	20		\$ 25,000.00		\$ 2,400.00	New Hampshire Stamping--Quot
1	\$ 0.058	20				\$ -	Midstate Spring Inc --Quote 9/
??						\$ -	
??						\$ -	
1	\$ 0.140	20	\$ 225.00			\$ -	Iseli Company--Quote 8/25/99
26	\$ 0.025					\$ 120.00	Ilion Quote SAP
2	\$ 0.219	20		\$ 6,820.00		\$ 1,500.00	Sterling Sintered Tech Inc --
0						\$ 0	
34	\$ 0.135					\$ -	Ilion Quote SAP
No Rev	\$ 0.123	20	\$ 550.00			\$ -	Square Stamping Quote Aug 11
??						\$ -	
No Rev						\$ -	
1	\$ 2.050	20				\$ -	Ken-Mar Tools--Quote 8/26/99
0						\$ -	
0						\$ -	
No Rev	\$ 1.630	20		\$12,575.00		\$ -	Fansteel--Quote 8/12/99
No Rev						\$ 2,500.00	
1	\$ 0.100	20	\$ 450.00			\$ -	Automatic Swiss Corporation--Qu
						\$ -	
No Rev						\$ -	
14	\$ 1.750					\$ 120.00	Parker & Harper Mfg Company
2	\$ 0.772					\$3,300.00	Ilion Quote SAP
1	\$ 0.110	20	\$ 400.00			\$ 3,000.00	Iseli--Quote 8/25/99
No Rev	\$ 0.015	20				\$ -	Midstate Spring, Inc --Quote 8/

Remington Arms Company, Inc.
Mayfield Plant
Analysis of Electrical Expense
For year 1999

8/5/99 15:14

	Billing Days	KW Usage	KW Usage Per Day	KW Charge	Max Usage Interval	Usage Charge	Misc Charge	Taxes 9 18%	Total Charge	Average Per KW	1999 Budget Charge	(fav)/Unfav
December	31	252,900	8,158	8,721.99	664.65	5,097.46	37.00	1,272.02	15,128.46	0.060	15,604.74	(476.28)
January	31	255,600	8,245	8,808.47	618.66	4,697.34	37.00	1,243.23	14,786.04	0.058	15,003.67	(217.63)
February	28	214,200	7,650	7,482.43	626.22	4,763.11	37.00	1,127.54	13,410.08	0.063	13,564.34	(154.26)
March	31	255,600	8,245	8,808.47	661.50	5,070.05	37.00	1,277.44	15,192.96	0.059	17,406.48	(2,213.52)
April	30	243,000	8,100	8,404.89	662.76	5,081.01	37.00	1,241.40	14,764.30	0.061	14,518.95	245.35
May	31	242,100	7,810	8,376.06	675.36	5,190.63	37.00	1,248.82	14,852.51	0.061	14,844.33	8.19
June	30	263,700	8,790	9,067.91	629.37	4,790.52	37.00	1,275.60	15,171.03	0.058	16,324.00	(1,152.97)
July	31	260,100	8,390	8,952.60	687.33	5,294.77	37.00	1,311.31	15,595.68	0.060	16,443.67	(847.99)
August	31	-	-	621.60		(685.00)	37.00	(2.42)	(28.82)	#DIV/0!	15,630.66	
September	30	-	-	621.60		(685.00)	37.00	(2.42)	(28.82)	#DIV/0!	14,407.12	
October	31	-	-	621.60		(685.00)	37.00	(2.42)	(28.82)	#DIV/0!	15,286.93	
November	30	-	-	621.60		(685.00)	38.00	(2.33)	(27.73)	#DIV/0!	15,604.74	
	365	1,987,200	5,444	71,109.22		37,244.90	445.00	9,987.76	118,786.87	0.060	184,639.64	(4,809.11)

February 01, 2000

Proposal # 00201-2P

Gerald A. Helmer
Remington Arms
22 Rifle Trail
Hickory, KY 42051

QUOTATION

Item #	Qty	Part #	Description	Price Each	Total
1	1		Measure Max Programming of parts E-300340 & D-300339. Price for programming Includes: • Fixtures • Renishaw stylus • Programs • Installation of Programs at your facility • Travel and lodging (Expense)	\$5,675.00 \$2,837.50 J. Helmer 3/17/00	\$5,675.00

Terms: Net 30

Delivery:

F.O.B. : Shipping Point

Quote Valid for 30 days after issue date

Thank you for this opportunity to quote. If additional information is required please contact me: (615) 333-6310



Matthew Pearson
Application Engineer

FOR M/710

- Louisville Office - 4554 Poplar Level Rd. Louisville, Kentucky 40213 Phone (502) 968-7993 Fax (502) 968-3275
- Nashville Office - 137 Space Park Dr. Nashville, Tennessee 37211 Phone (615) 333-6310 Fax (615) 611-8288
- Indianapolis Office - (317) 888-8888

March 16, 2000

Proposal # 00313-1P

Jerry Helmer
Remington Arms
22 Rifle Way
Hickory, KY

QUOTATION

Item #	Qty	Part #	Description	Price Each	Total
1	1	E-300363	Magazine Box Programming	\$5,350.00 3,850.00	\$5,350.00 3,850.00
2	1	E-300338	Bolt Head	\$3,635.00	\$3,635.00
3	1	E-300416	Bolt Head	\$3,635.00	\$3,635.00

Terms: Net 30

Delivery: [Click here and type Scheduled Delivery]

F.O.B. : Shipping Point

Quote Valid for 30 days after issue date

Thank you for this opportunity to quote. If additional information is required please contact me: [1] 615-333-6310

Please note that this quote is for programming only. If you would like Gage R&R run or any extras this needs to be discussed before programming starts.

The Magazine box includes Remington Arms providing fixture.

Regal and Remington Arms need to discuss the fixture for the Bolt Head.

Matthew Pearson
Application Engineer

- Louisville Office - 4554 Poplar Level Rd. Louisville, Kentucky 40213 Phone (502) 968-7993 Fax (502) 968-3275
- Nashville Office - 137 Space Park Dr. Nashville, Tennessee 37211 Phone (615) 333-6310 Fax (800) 611-8289
- Indianapolis Office - (317) 889-6666

ME0467

83

MF0468



GEN- CON, INC.

P.O. Box 87
Hickory, KY 42051
(502) 856-3794
FAX (502) 856-3791

PROPOSAL

Page No. 1 of 1 Pages

JOB NAME/NO.

Stainless steel tanks

LOCATION

Passivate and black oxide line

PHONE

502-856-4207

DATE

02-04-98

To: Remington Arms

Originator: Joe Insco

We hereby submit specifications and estimates for:

- > Three (3) stainless steel tanks set in place with vent hoods and extension of lexan enclosure and I beam which was discussed at the project site by myself and plant engineer Joe Insco. 83

This shall be done on a straight time basis for the sum of \$ 14,500.00.

NOTE: In the event that overtime is required, it shall be paid by Remington Arms.

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WE PROPOSE hereby to furnish material and labor — complete in accordance with these specifications, for the sum of:

Fourteen Thousand Five Hundred & 00/100 - - - - - dollars (\$ 14,500.00).

Payable as follows:

Net 30

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents, or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance.

Authorized
Signature

NOTE: This proposal may be withdrawn
by us if not accepted within 30 days

ACCEPTANCE OF PROPOSAL — The prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____

Date _____

Signature _____

Date _____

MAYFIELD PRINTING INC. MAYFIELD, KENTUCKY 42066

MF0469

Plastic totes					
<u>Material</u>	<u>Size</u>	<u>Stock #</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Small Tall Totes	9 3/16"x6 9/16"x5 1/2"	TB91060	24	\$ 8.60	\$ 206.40
Small Dividers Long		DL91060	96	\$ 1.30	\$ 124.80
Small Dividers Short		DS91060	96	\$ 1.20	\$ 115.20
Small Tote Tops		CO91060	96	\$ 3.70	\$ 355.20
Large Totes	20 5/8"x15 5/8"x7 1/2"	TB93080	4	\$ 24.30	\$ 97.20
Large Dividers Long		DL93080	96	\$ 3.00	\$ 288.00
Large Dividers Short		DS9080	96	\$ 2.40	\$ 230.40
				Total	\$ 1,417.20
Small totes will be used for sending Bolt Heads out to vendor for Heat Treat.					
Large totes will be used for storing receivers after being machined.					

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Three sided Carts for 710 barrels after cutoff			
<u>Material</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Swivel Castors 4"	6	\$ 11.49	\$ 68.94
Rigid Castors 4"	6	\$ 9.86	\$ 59.16
2" x 3/16" Angle Iron (90 ft needed) sold in 20 ft	5	\$ 14.00	\$ 70.00
1 1/2" x 3/16" Flat Steel(15 ft needed) sold in 20ft	1	\$ 7.65	\$ 7.65
Paint	30	\$ 0.99	\$ 29.70
Labor (cost per hour)	15	\$ 50.00	\$ 750.00
		Total sent out	\$ 985.45
		Total in house	\$ 235.45
Castors -Grainger- p.2134 Stk# 1G197 & 1G200			
Steel quoted by Joey at Barclay Metal			
Labor estimated at \$50.00 for outside vendor			

CONFIDENTIAL 83

Bolt Holders			
<u>Material</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
1" x 4" lumber (sold in 10ft. Sticks)	11	\$ 3.00	\$ 33.00
1/4" plywood (sold in 4'x8' Sheets)	1	\$ 13.00	\$ 13.00
Wood glue	1	\$ 5.00	\$ 5.00
Outside Vendor (per hour)	10	\$ 50.00	\$ 500.00
		Total sent out	\$ 551.00
		Total in-house	\$ 51.00
All lumber quoted by Myers Lumber, 247-6800			

CONFIDENTIAL

Heat Treat Baskets

Vendor was Barry Irvan
Phone: 270-345-2730 (home)
270-832-3509 (work)

Mr. Irvan has Blueprints & guessed the baskets to run at around \$4000.00
I figured we needed 2

CONFIDENTIAL 83

Costs

3 SIDED CARTS for TIO after cutoff & RAKE & RITE

MATERIAL	Quantity	Cost	Total
SWIVEL CASTORS ¹	6	11.49	68.94
RIGID CASTORS ²	6	9.86	59.16
2" x 3/16" ANGLE Iron ³	90	14.00 @ 20#	70.00
1 1/2" x 3/16" Flat Steel ⁴	15	7.65 @ 20#	7.65
LABOR ⁵	15 hrs	50.00 @ hr	750.00
Paint	30	.99	29.70
			885.45
			30 78.48
			913.93

1. Grainger p. 2134 St. # 16197 4"

2. Grainger p. 2134 St. # 16200 4"

3. Barclay Metal quote by Joey Barclay

4. Barclay Metal Quote by Joey Barclay

5. Outside Vendor 50 @ hr Guesstimate

ASSEMBLY - Huebel Material

MATERIAL	SIZE	ST#	Quantity	Cost	Total
Small Tall Tote ¹	9 3/16" x 6 9/16" x 5 1/2"	TB91060	24	8.60	206.40
LARGE Receiver Tote	20 5/8" x 15 5/8" x 7 1/2"	TB93080	4	24.30	97.20
Small Dividers Long		DL91060	96 - 19 TOTES	1.30	124.80
Small Dividers Short		DS91060	96 - 13 TOTES	1.20	115.20
LARGE Dividers Long		DL93080	96 - 19 TOTES	3.00	288.00
LARGE Dividers Short		DS93080	96 - 13 TOTES	2.40	230.40
Small Tote Top		CO91000	96 -	3.70	355.20

1. Use for sending bolt heads to heat treat & holding bolts after being assembled

2. Receiver Tote use 5 long & 7 short

3. Small Totes use 5 long & 11 short

24 Small Totes - 13 w/ DIVIDERS - \$446.40

12 Large Totes - 12 w/ DIVIDERS - \$810.00

BOAT HOLDERS

MATERIAL	Quantity	Cost	Total	
1" x 4" L	11 brds.	300 @ 10¢	33.00	
1/4" Plywood ²	1 slt	13.00	13.00	
Wood Glue ²	1	5.00	5.00	
Outside Vendor	10 hrs	50.00	500.00	In House
			\$551.00	51.00

1. 1" x 4" Quoted by Myers Lumber 247-6800
2. 1/4" Plywood Quoted by Myers Lumber
3. Wood Glue estimated

Heat Treat BASKETS

- 10953.65
- VENDOR - BARRY IRVAN 345-2730 (Home) 832-3509 (Work)
- 2 Mr. IRVAN has blueprints & guessed baskets to run about \$4000.00

Coloring RACKS

ARC - Rack Comp MAKING Prototype

Brahm Greve 615-754-6660

Tables

<u>Material Description</u>	<u>Page #</u>	<u>Stock #</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
2" Square Tubing 3/16" wall			340	\$ 3.12	\$ 1,060.80
4" Flat Steel 1/4" thick			26	\$ 32.06	\$ 833.56
48" x 24" Plastic Laminated Top	1148	5169T51	8	\$ 72.98	\$ 583.84
60" x 36" Laminated Hard Maple Top	1148	4882T16	4	\$ 182.53	\$ 730.12
24" x 36" 1/4" Steel Plate Top			1	\$ 25.00	\$ 25.00
All Priced by McMaster-Carr except Steel Plate Top				Total	\$ 3,233.32

2" Square Tubing 3/16" wall			340	\$ 1.80	\$ 612.00
4" Flat Steel 1/4" thick			26	\$ 0.95	\$ 24.70
48" x 24" Plastic Laminated Top	1148	5169T51	8	\$ 72.98	\$ 583.84
60" x 36" Laminated Hard Maple Top	1148	4882T16	4	\$ 182.53	\$ 730.12
24" x 36" 1/4" Steel Plate Top			1	\$ 25.00	\$ 25.00
Metal Priced By Barclay Metal and Tops Priced by McMaster-Carr				Total	\$ 1,975.66

CONFIDENTIAL 83

ELECTRONIC

COST PER MONTH AT \$.055 PER KWH

MACHINE	KWH	COST AT FULL LOAD	KWH	COST AT NORMAL LOAD
	AT FULL LOAD	AT \$.055 PER KWH	AT NORMAL LOAD	AT \$.055 PER KWH
OKUMA LU15	11434	\$628.90	3773.22	\$207.53
OKUMA HB50	17787.17	\$978.30	5869.77	\$327.84
OKUMA CROWN	6352.56	\$349.40	2096.35	\$115.30
OKUMA 4018	7623.07	\$419.27	2515.61	\$138.35
OKUMA 4018	7623.07	\$419.27	2515.61	\$138.35
HEAT TREAT	10164.09	\$559.03	3354.15	\$184.48
INDUCTION UNIT	8968.32	\$493.25	2959.54	\$162.77
CHILLER	2541.02	\$139.75	838.54	\$46.12
CHILLER	2541.02	\$139.75	838.54	\$46.12
TOTAL WITH NO HB50	57247.15	\$3,148.62	18891.56	\$1,039.05
TOTAL WITH HB50 & ONE 4018	67411.25	\$3,707.65	22245.71	\$1,223.52

NORMAL LOAD IS 30%
OF FULL LOAD

1000 AMPS SPARE - 2 MORE BUSES

MACHINE	COST FOR RIGGERS & EQUIPMENT	COST FOR ELECTRICAL INSTALLATION
OKUMA LU 15	\$476.00	\$1,954.30
OKUMA HB50	\$1,536.00	\$3,214.40
OKUMA CROWN	\$476.00	\$1,620.60
OKUMA 4018	\$476.00	\$1,620.60
OKUMA 4018	\$476.00	\$1,620.60
HEAT TREAT	IN HOUSE	\$470.74
INDUCTION UNIT	IN HOUSE	\$356.86
CHILLER	IN HOUSE	\$609.11
CHILLER	IN HOUSE	\$609.11
TOTAL WITH NO HB50	\$1,904.00	\$8,861.92
TOTAL WITH HB50 & ONE 4018	\$2,964.00	\$10,455.72
COST FOR OTHER EQUIPMENT	GENI BOOM	\$1,400.00
PER MONTH	SCISSOR LIFT	\$700.00

BASE ON 120FF.

COST PER MONTH AT \$.055 PER KWH AT FULL LOAD

MACHINE	KWH	COST
OKUMA LU15	11434.00	\$628.90
OKUMA HB50	17787.17	\$978.30
OKUMA CROWN	6352.56	\$349.40
OKUMA 4018	7623.07	\$419.27
OKUMA 4018	7623.07	\$419.27
HEAT TREAT	10164.09	\$559.03
INDUCTION OVEN	8968.32	\$493.25
CHILLER	2541.02	\$139.75
CHILLER	2541.02	\$139.75
AC UNIT	17787.17	\$978.30
AC UNIT	22869.22	\$1257.81
TOTAL USING TWO 4018'S AND NO HB50	80116.99	\$4406.43
TOTAL USING ONE 4018 AND ONE HB50	90281.10	\$4965.45

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CONFIDENTIAL

Golemboski, Matt R.

From: Chamblee, Danny
Sent: Friday, July 02, 1999 6:30 PM
To: Bristol, II Ronald H.
Cc: Golemboski, Matt R.
Subject: M710 costs

Ron,

Attached are files related to m710. The M710 estimate rev1 is updated engineering version. On the tabs labeled m710 est lilon times & m710 est Mayfield run times, the lilon cost is compared to Mayfield cost as follows:

	<u>Material</u>	<u>Labor</u>	<u>Overhead</u>	<u>Total</u>
lilon	\$56.64	\$18.14	\$51.68	\$126.47
Mayfield @ .8822/m710	43.86	9.15	32.76	85.77
Mayfield @ .8027/m710	43.86	8.28	30.21	82.35

Head count and 597 are computed on m710 Overhead-heads-597 saving spreadsheet and are as follows:

	<u>Head count</u>	<u>597 Saving</u>
Mayfield @ .8822/m710	9.4	\$2.34
Mayfield @ .8027/m710	8.5	\$1.69


M710 estimate rev1


m710
Overhead-heads-597 saving

If you have any questions or comments please let me know

Thanks
Danny

CONFIDENTIAL 83

M/710 Estimate								M/710 Costs - Based on M/597 and 700 ADL costing								
PART DESCRIPTION	Part #	Material \$	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Estimated Piece Price	PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Piece Price
Document Envelope Assembly	????	\$ 0.08	\$ -	\$ -	\$ -	\$ -	\$ 0.08	Document Envelope Assembly	1721	\$ 0.09		\$ -	\$ -	\$ -	\$ -	\$ 0.09
Document Envelope	1649	\$ 0.08	\$ -	\$ -	\$ -	\$ -	\$ 0.08	Document Envelope	1649	0.08		-	-	-	-	0.08
Instruction Book	????	\$ 0.63	\$ -	\$ -	\$ -	\$ -	\$ 0.63	Users manual	3391	0.15		-	-	-	-	0.15
Product Owners Card	1426	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03	Product Owners Card	1426	0.03		-	-	-	-	0.03
Remington Authorized Gunsmith	3413	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Remington Authorized Gunsmith	3413	0.07		-	-	-	-	0.07
Safety Booklet	3499	\$ 0.10	\$ -	\$ -	\$ -	\$ -	\$ 0.10	Safety Booklet	3499	0.10		-	-	-	-	0.10
Remington Museum Flyer	3475	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01	Remington Museum Flyer	3475	-		-	-	-	-	-
Oval Label	3491	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01	Oval Label	3491	0.01		-	-	-	-	0.01
Carton Assembly	1444	\$ 2.05	\$ -	\$ -	\$ -	\$ -	\$ 2.05	Carton Assembly	1444	1.58		-	-	-	-	1.58
Box and Envelope Label (710)	993002	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Box and Envelope Label (710)	993002	0.04		-	-	-	-	0.04
Barrel Assembly Complete	????	\$ (0.58)	\$ (0.38)	\$ (0.06)	\$ (1.10)	\$ (1.15)	\$ (2.11)	Barrel Assembly Complete	????		0.0174	0.18	0.22	0.44	0.66	0.85
Barrel Assembly	????	\$ -	\$ 1.38	\$ 1.63	\$ 4.02	\$ 5.64	\$ 7.02	Barrel Assembly	????		0.0711	0.76	0.88	1.82	2.70	3.46
Barrel	305315	\$ 3.35	\$ 6.91	\$ 4.34	\$ 18.51	\$ 22.85	\$ 33.11	Barrel	305315	4.92	0.3661	3.89	4.55	9.37	13.92	22.73
Receiver	300340	\$ 14.65	\$ 0.13	\$ 0.05	\$ 0.34	\$ 0.39	\$ 15.17	Receiver	300340	5.00	0.0072	0.08	0.09	0.18	0.27	5.35
Receiver Insert Assembly Complete	????	\$ -	\$ 1.26	\$ 0.25	\$ 1.70	\$ 1.95	\$ 2.91	Receiver Insert Assembly Complete	????		0.0628	0.67	0.78	1.61	2.39	3.06
Receiver Insert Assembly	????	\$ -	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	Receiver Insert Assembly	????		0.0000	0.00	0.00	0.00	0.00	0.00
Receiver Insert	300327	\$ 0.62	\$ -	\$ -	\$ -	\$ -	\$ 0.62	Receiver Insert	300327	0.62	0.0000	-	-	-	-	0.62
Threaded Insert	300347	\$ 0.04	\$ -	\$ -	\$ -	\$ -	\$ 0.04	Threaded Insert	300347	0.04	0.0000	-	-	-	-	0.04
Side Plate	300333	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09	Side Plate	300333	0.09	0.0000	-	-	-	-	0.09
Side Plate Pin (2)	300328	\$ 0.12	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.12	Side Plate Pin (2)	300328	0.12	0.0000	-	-	-	-	0.12
Sear Safety Cam	15666	\$ 0.26	\$ 0.16	\$ 0.03	\$ 0.48	\$ 0.52	\$ 0.94	Sear Safety Cam	15666	0.94		-	-	-	-	0.94
Pivot Pin (3)	300351	\$ 0.18	\$ 0.06	\$ 0.02	\$ 0.14	\$ 0.15	\$ 0.40	Pivot Pin (3)	300351	0.18		-	-	-	-	0.18
Sear Spring	17047	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ 0.02	Sear Spring	17047	0.02		-	-	-	-	0.02
Trigger	15280	\$ 0.01	\$ 0.38	\$ 0.12	\$ 1.02	\$ 1.14	\$ 1.53	Trigger	15280	0.55		-	-	-	-	0.55
Trigger Connector	19461	\$ 1.03	\$ 0.13	\$ 0.04	\$ 0.27	\$ 0.31	\$ 1.48	Trigger Connector	19461	1.03		-	-	-	-	1.03
Trigger Screw Front	17053	\$ 0.10	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.10	Trigger Screw Front	17053	0.10		-	-	-	-	0.10
Trigger Engagement Screw	91128	\$ 0.03	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.03	Trigger Engagement Screw	91128	0.03		-	-	-	-	0.03
Trigger Spring	15400	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03	Trigger Spring	15400	0.03		-	-	-	-	0.03
Trigger Stop Screw	15481	\$ 0.06	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.06	Trigger Stop Screw	15481	0.06		-	-	-	-	0.06
Safety Assembly	????	\$ 0.30	\$ 0.12	\$ 0.03	\$ 0.30	\$ 0.32	\$ 0.74	Safety Assembly	????	0.0015	0.02	0.02	0.04	0.06	0.07	
Safety	300344	\$ 0.30	\$ -	\$ -	\$ -	\$ -	\$ 0.30	Safety	300344	0.26	0.0001	-	-	-	-	0.26
Safety Button	91852	\$ 0.00	\$ 0.02	\$ 0.00	\$ 0.09	\$ 0.10	\$ 0.12	Safety Button	91852	0.06		-	-	-	-	0.06
Safety Pivot Pin	300352	\$ 0.12	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.05	\$ 0.19	Safety Pivot Pin	300352	0.13		-	-	-	-	0.13
Safety Spring	300343	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ 0.05	Safety Spring	300343	0.05		-	-	-	-	0.05
Snap Washer	17044	\$ 0.02	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.05	\$ 0.09	Snap Washer	17044	0.02		-	-	-	-	0.02
Bolt Stop	300345	\$ 0.01	\$ 0.11	\$ 0.01	\$ 0.44	\$ 0.45	\$ 0.57	Bolt Stop	300345	0.28	0.0001	0.00	0.00	0.00	0.00	0.28
Receiver Plug Screws (4)	17034	\$ 0.12	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.13	Receiver Plug Screws (4)	17034	0.12		-	-	-	-	0.12
Recoil Bracket	300361	\$ 0.19	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.19	Recoil Bracket	300361	0.20	0.0001	0.00	0.00	0.00	0.00	0.20
Bolt Assembly Complete	????	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Bolt Assembly Complete	????		0.0275	0.29	0.34	0.71	1.05	1.34
Bolt Body Assembly	????	\$ -	\$ 0.47	\$ 0.17	\$ 1.02	\$ 1.19	\$ 1.66	Bolt Body Assembly	????		0.0160	0.17	0.20	0.41	0.61	3.28
Bolt Body	300339	\$ 5.53	\$ -	\$ -	\$ -	\$ -	\$ 5.53	Bolt Body	300339	2.50	0.0120	0.13	0.15	0.31	0.46	0.58
Bolt Handle	300370	\$ -	\$ 0.13	\$ 0.06	\$ 0.31	\$ 0.37	\$ 0.51	Bolt Handle	300370							1.50
Bolt Handle Blank	300360	\$ 2.66	\$ -	\$ -	\$ -	\$ -	\$ 2.66	Bolt Handle Blank	300360	1.50		-	-	-	-	0.07
Bolt Handle Pin	300329	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Bolt Handle Pin	300329	0.07		-	-	-	-	0.05
Bolt Handle Brazing Shim	300366	\$ 0.06	\$ -	\$ -	\$ -	\$ -	\$ 0.06	Bolt Handle Brazing Shim	300366	0.05		-	-	-	-	0.74
Bolt Head Assembly	????	\$ -	\$ 0.30	\$ 0.06	\$ 0.46	\$ 0.52	\$ 0.81	Bolt Head Assembly	????		0.0152	0.16	0.19	0.39	0.58	6.80
Bolt Head	300338	\$ 1.60	\$ 1.72	\$ 0.76	\$ 4.00	\$ 4.76	\$ 8.08	Bolt Head	300338	1.60	0.1069	1.13	1.33	2.73	4.06	0.77
Extractor	93712	\$ 0.77	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.78	Extractor	93712	0.77		-	-	-	-	0.16
Ejector	300342	\$ 0.16	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.16	Ejector	300342	0.16	0.0000	0.00	0.00	0.00	0.00	0.03
Ejector Spring	????	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03	Ejector Spring	????	0.03		-	-	-	-	0.01
Ejector Pin	94555	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01	Ejector Pin	94555	0.01		-	-	-	-	0.22
Bolt Assembly Pin	300330	\$ 0.22	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.22	Bolt Assembly Pin	300330	0.22	0.0001	0.00	0.00	0.00	0.00	0.76
Firing Pin Assembly	????	\$ -	\$ 0.26	\$ 0.10	\$ 0.52	\$ 0.62	\$ 0.88	Firing Pin Assembly	????		0.0156	0.17	0.19	0.40	0.59	

M/710 Estimate								M/710 Costs - Based on M/597 and 700 ADL costing								
PART DESCRIPTION	Part #	Material \$	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Estimated Piece Price	PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Piece Price
Bolt Plug	300368	\$ 0.94	\$ -	\$ -	\$ -	\$ -	\$ 0.94	Bolt Plug	300368	0.94	-	-	-	-	-	0.94
Bolt Plug Insert	300346	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ 0.29	Bolt Plug Insert	300346	0.29	-	-	-	-	-	0.29
Firing Pin	300334	\$ 0.30	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.30	Firing Pin	300334	0.30	-	-	-	-	-	0.30
Firing Pin Tip	300335	\$ 1.28	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.06	\$ 1.35	Firing Pin Tip	300335	1.28	0.0015	0.02	0.02	0.04	0.06	1.35
Firing Pin Head	300336	\$ 0.33	\$ 0.26	\$ 0.02	\$ 0.05	\$ 0.06	\$ 1.22	Firing Pin Head	300336	0.33	0.0020	0.02	0.02	0.05	0.08	0.43
Firing Pin Spring	????	\$ 0.14	\$ -	\$ -	\$ -	\$ -	\$ 0.14	Firing Pin Spring	????	0.14	-	-	-	-	-	0.14
Front Sight	94084	\$ 0.01	\$ 0.25	\$ 0.05	\$ 0.51	\$ 0.56	\$ 0.82	Front Sight	94084	0.31	-	-	-	-	-	0.31
Front Sight Ramp	94657	\$ 0.02	\$ 0.26	\$ 0.07	\$ 0.78	\$ 0.85	\$ 1.13	Front Sight Ramp	94657	0.85	-	-	-	-	-	0.85
Front Sight Ramp Screws (2)	28505	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09	Front Sight Ramp Screws (2)	28505	0.09	-	-	-	-	-	0.09
Rear Sight Assembly	103146	\$ 0.28	\$ 0.91	\$ 0.15	\$ 1.86	\$ 2.02	\$ 3.20	Rear Sight Assembly	103146	-	-	-	-	-	-	-
Elevation Screw	90906	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ 0.02	Elevation Screw	90906	0.02	-	-	-	-	-	0.02
Rear Sight Aperture	94333	\$ 0.00	\$ 0.08	\$ 0.02	\$ 0.22	\$ 0.23	\$ 0.31	Rear Sight Aperture	94333	0.14	0.0001	0.00	0.00	0.00	0.00	0.14
Rear Sight Base	103531	\$ 0.16	\$ 0.24	\$ 0.02	\$ 0.56	\$ 0.58	\$ 0.48	Rear Sight Base	103531	0.97	0.0001	0.00	0.00	0.00	0.00	0.97
Rear Sight Slide	94335	\$ 0.07	\$ 0.38	\$ 0.07	\$ 0.75	\$ 0.82	\$ 1.28	Rear Sight Slide	94335	0.47	0.0035	0.04	0.04	0.09	0.13	0.64
Windage Screw	90904	\$ 0.02	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.02	Windage Screw	90904	0.02	-	-	-	-	-	0.02
Rear Sight Base Screw (2)	28505	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09	Rear Sight Base Screw (2)	28505	0.09	-	-	-	-	-	0.09
Stock Assembly Complete	????						\$ -	Stock Assembly Complete	????		0.0160	0.14	0.17	0.35	0.51	0.66
Stock Assembly	????						\$ -	Stock Assembly	????		-	-	-	-	-	-
Stock	????	\$ 9.10	\$ -	\$ -	\$ -	\$ -	\$ 9.10	Stock	????	6.00	-	-	-	-	-	6.00
Front Screw Bushing	15161	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15	Front Screw Bushing	15161	0.13	-	-	-	-	-	0.13
Middle Screw Bushing	????	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15	Middle Screw Bushing	????	0.13	-	-	-	-	-	0.13
Rear Screw Bushing	????	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15	Rear Screw Bushing	????	0.13	-	-	-	-	-	0.13
Grp Cap	97971	\$ 0.18	\$ -	\$ -	\$ -	\$ -	\$ 0.18	Grp Cap	97971	0.18	-	-	-	-	-	0.18
Recoil Pad	97973	\$ 1.63	\$ -	\$ -	\$ -	\$ -	\$ 1.63	Recoil Pad	97973	1.63	-	-	-	-	-	1.63
Recoil Pad Screw (2)	98008	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ 0.05	Recoil Pad Screw (2)	98008	0.05	-	-	-	-	-	0.05
Magazine Latch	300362	\$ 0.26	\$ -	\$ -	\$ -	\$ -	\$ 0.26	Magazine Latch	300362	0.20	-	-	-	-	-	0.20
Magazine Latch Spring	????	\$ 0.04	\$ -	\$ -	\$ -	\$ -	\$ 0.04	Magazine Latch Spring	????	0.02	-	-	-	-	-	0.02
Magazine Latch Pin	300371	\$ 0.05	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.05	Magazine Latch Pin	300371	0.01	0.0001	0.00	0.00	0.00	0.00	0.01
Sling Swivel Stud (2)	300096	\$ 0.30	\$ -	\$ -	\$ -	\$ -	\$ 0.30	Sling Swivel Stud (2)	300096	0.14	-	-	-	-	-	0.14
Takedown Screw (2)	????	\$ 0.16	\$ 0.01	\$ 0.00	\$ 0.02	\$ 0.02	\$ 0.19	Takedown Screw (2)	????	0.08	-	-	-	-	-	0.08
Rear Takedown Screw	????	\$ 0.08	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.10	Rear Takedown Screw	????	0.04	-	-	-	-	-	0.04
Magazine Assembly	????	\$ -	\$ 0.42	\$ 0.08	\$ 0.66	\$ 0.74	\$ 1.16	Magazine Assembly	????		0.0217	0.23	0.27	0.56	0.83	1.06
Magazine Box	300363	\$ 2.79	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 2.79	Magazine Box	300363	2.79	0.0001	0.00	0.00	0.00	0.00	2.79
Magazine Follower	300364	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ 0.29	Magazine Follower	300364	0.29	-	-	-	-	-	0.29
Magazine Bottom	300365	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ 0.29	Magazine Bottom	300365	0.29	-	-	-	-	-	0.29
Magazine Spring	17028	\$ 0.42	\$ -	\$ -	\$ -	\$ -	\$ 0.42	Magazine Spring	17028	0.42	-	-	-	-	-	0.42
										0.02	-	-	-	-	-	0.02
Value Added Cost of:																
Proof/Gallery/Inspect/Pack	Joy	\$ 1.15	\$ 2.08	\$ 0.48	\$ 4.39	\$ 4.87	\$ 8.11			1.15	0.1174	1.05	1.23	2.54	3.78	5.98
Totals:		\$ 56.64	\$ 18.14	\$ 8.59	\$ 43.08	\$ 51.68	\$ 126.47	Total Cost		\$ 43.86	0.8822	9.15	10.71	22.05	32.76	85.77

M/710 Estimate								M/710 Costs - Based on M/597 and 700 ADL costing								
PART DESCRIPTION	Part #	Material \$	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Estimated Piece Price	PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Piece Price
Document Envelope Assembly	????	\$ 0.08	\$ -	\$ -	\$ -	\$ -	\$ 0.08	Document Envelope Assembly	1721	\$ 0.09		\$ -	\$ -	\$ -	\$ -	\$ 0.09
Document Envelope	1649	\$ 0.08	\$ -	\$ -	\$ -	\$ -	\$ 0.08	Document Envelope	1649	\$ 0.08		-	-	-	-	0.08
Instruction Book	????	\$ 0.63	\$ -	\$ -	\$ -	\$ -	\$ 0.63	Users manual	3391	\$ 0.15		-	-	-	-	0.15
Product Owners Card	1426	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03	Product Owners Card	1426	\$ 0.03		-	-	-	-	0.03
Remington Authorized Gunsmith	3413	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Remington Authorized Gunsmith	3413	\$ 0.07		-	-	-	-	0.07
Safety Booklet	3499	\$ 0.10	\$ -	\$ -	\$ -	\$ -	\$ 0.10	Safety Booklet	3499	\$ 0.10		-	-	-	-	0.10
Remington Museum Flyer	3475	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01	Remington Museum Flyer	3475	\$ -		-	-	-	-	-
Oval Label	3491	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01	Oval Label	3491	\$ 0.01		-	-	-	-	0.01
Carton Assembly	1444	\$ 2.05	\$ -	\$ -	\$ -	\$ -	\$ 2.05	Carton Assembly	1444	\$ 1.58		-	-	-	-	1.58
Box and Envelope Label (710)	993002	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Box and Envelope Label (710)	993002	\$ 0.04		-	-	-	-	0.04
Barrel Assembly Complete	????	\$ (0.58)	\$ (0.38)	\$ (0.06)	\$ (1.10)	\$ (2.12)	\$ (2.12)	Barrel Assembly Complete	????		0.0174	0.16	0.19	0.38	0.57	0.73
Barrel Assembly	????	\$ -	\$ 1.38	\$ 1.63	\$ 4.02	\$ 5.64	\$ 7.02	Barrel Assembly	????		0.0711	0.76	0.90	1.86	2.76	3.51
Barrel	305315	\$ 3.35	\$ 6.91	\$ 4.34	\$ 18.51	\$ 22.85	\$ 33.11	Barrel	305315	\$4.92	0.2471	2.62	3.12	6.46	9.58	17.12
Receiver	300340	\$ 14.65	\$ 0.13	\$ 0.05	\$ 0.34	\$ 0.39	\$ 15.27	Receiver	300340	\$5.00	0.0700	0.74	0.88	1.83	2.71	8.46
Receiver Insert Assembly Complete	????	\$ -	\$ 1.26	\$ 0.25	\$ 1.70	\$ 1.95	\$ 3.21	Receiver Insert Assembly Complete	????		0.0628	0.67	0.79	1.64	2.43	3.10
Receiver Insert Assembly	????	\$ -	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	Receiver Insert Assembly	????		0.0000	0.00	0.00	0.00	0.00	0.00
Receiver Insert	300327	\$ 0.62	\$ -	\$ -	\$ -	\$ -	\$ 0.62	Receiver Insert	300327	\$0.62		-	-	-	-	0.62
Threaded Insert	300347	\$ 0.04	\$ -	\$ -	\$ -	\$ -	\$ 0.04	Threaded Insert	300347	\$0.04	0.0000	-	-	-	-	0.04
Side Plate	300333	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09	Side Plate	300333	\$0.09	0.0000	-	-	-	-	0.09
Side Plate Pin (2)	300328	\$ 0.12	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.12	Side Plate Pin (2)	300328	\$0.12	0.0000	-	-	-	-	0.12
Sear Safety Cam	15666	\$ 0.26	\$ 0.16	\$ 0.03	\$ 0.48	\$ 0.52	\$ 0.94	Sear Safety Cam	15666	\$ 0.94		-	-	-	-	0.94
Pivot Pin (3)	300351	\$ 0.18	\$ 0.06	\$ 0.02	\$ 0.14	\$ 0.15	\$ 0.40	Pivot Pin (3)	300351	\$ 0.18		-	-	-	-	0.18
Sear Spring	17047	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ 0.02	Sear Spring	17047	\$ 0.02		-	-	-	-	0.02
Trigger	15280	\$ 0.01	\$ 0.38	\$ 0.12	\$ 1.02	\$ 1.14	\$ 1.53	Trigger	15280	\$ 0.55		-	-	-	-	0.55
Trigger Connector	19461	\$ 1.03	\$ 0.13	\$ 0.04	\$ 0.27	\$ 0.31	\$ 1.48	Trigger Connector	19461	\$ 1.03		-	-	-	-	1.03
Trigger Screw Front	17053	\$ 0.10	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.10	Trigger Screw Front	17053	\$ 0.10		-	-	-	-	0.10
Trigger Engagement Screw	91128	\$ 0.03	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.03	Trigger Engagement Screw	91128	\$ 0.03		-	-	-	-	0.03
Trigger Spring	15400	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03	Trigger Spring	15400	\$ 0.03		-	-	-	-	0.03
Trigger Stop Screw	15481	\$ 0.06	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.06	Trigger Stop Screw	15481	\$ 0.06		-	-	-	-	0.06
Safety Assembly	????	\$ 0.30	\$ 0.12	\$ 0.03	\$ 0.30	\$ 0.32	\$ 0.74	Safety Assembly	????		0.0015	0.02	0.02	0.04	0.06	0.07
Safety	300344	\$ 0.30	\$ -	\$ -	\$ -	\$ -	\$ 0.30	Safety	300344	\$ 0.26		-	-	-	-	0.26
Safety Button	91852	\$ 0.00	\$ 0.02	\$ 0.00	\$ 0.09	\$ 0.10	\$ 0.12	Safety Button	91852	\$ 0.06		-	-	-	-	0.06
Safety Pivot Pin	300352	\$ 0.12	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.05	\$ 0.19	Safety Pivot Pin	300352	\$ 0.13		-	-	-	-	0.13
Safety Spring	300343	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ 0.05	Safety Spring	300343	\$ 0.05		-	-	-	-	0.05
Snap Washer	17044	\$ 0.02	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.05	\$ 0.09	Snap Washer	17044	\$ 0.02		-	-	-	-	0.02
Bolt Stop	300345	\$ 0.01	\$ 0.11	\$ 0.01	\$ 0.44	\$ 0.45	\$ 0.57	Bolt Stop	300345	\$ 0.28	0.0001	0.00	0.00	0.00	0.00	0.28
Receiver Plug Screws (4)	17034	\$ 0.12	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.13	Receiver Plug Screws (4)	17034	\$ 0.12		-	-	-	-	0.12
Recoil Bracket	300361	\$ 0.19	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.19	Recoil Bracket	300361	\$ 0.20	0.0001	0.00	0.00	0.00	0.00	0.20
Bolt Assembly Complete	????	\$ -	\$ 0.47	\$ 0.17	\$ 1.02	\$ 1.19	\$ 1.66	Bolt Assembly Complete	????		0.0275	0.29	0.35	0.72	1.07	1.36
Bolt Body Assembly	????	\$ -	\$ 0.47	\$ 0.17	\$ 1.02	\$ 1.19	\$ 1.66	Bolt Body Assembly	????		0.0275	0.29	0.35	0.72	1.07	1.36
Bolt Body	300339	\$ 5.53	\$ -	\$ -	\$ -	\$ -	\$ 5.53	Bolt Body	300339	\$ 2.50	0.0160	0.17	0.20	0.42	0.62	3.29
Bolt Handle	300370	\$ -	\$ 0.13	\$ 0.06	\$ 0.31	\$ 0.37	\$ 0.51	Bolt Handle	300370		0.0120	0.13	0.15	0.31	0.47	0.59
Bolt Handle Blank	300360	\$ 2.66	\$ -	\$ -	\$ -	\$ -	\$ 2.66	Bolt Handle Blank	300360	\$ 1.50		-	-	-	-	1.50
Bolt Handle Pin	300329	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Bolt Handle Pin	300329	\$ 0.07		-	-	-	-	0.07
Bolt Handle Brazing Shim	300366	\$ 0.06	\$ -	\$ -	\$ -	\$ -	\$ 0.06	Bolt Handle Brazing Shim	300366	\$ 0.05		-	-	-	-	0.05
Bolt Head Assembly	????	\$ -	\$ 0.30	\$ 0.06	\$ 0.46	\$ 0.52	\$ 0.81	Bolt Head Assembly	????		0.0152	0.16	0.19	0.40	0.59	0.75
Bolt Head	300338	\$ 1.60	\$ 1.72	\$ 0.76	\$ 4.00	\$ 4.76	\$ 8.08	Bolt Head	300338	\$ 1.60	0.0924	0.98	1.17	2.42	3.58	6.16
Extractor	93712	\$ 0.77	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.78	Extractor	93712	\$ 0.77		-	-	-	-	0.77
Ejector	300342	\$ 0.16	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.16	Ejector	300342	\$ 0.16	0.0000	0.00	0.00	0.00	0.00	0.16
Ejector Spring	????	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03	Ejector Spring	????	\$ 0.03		-	-	-	-	0.03
Ejector Pin	94555	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01	Ejector Pin	94555	\$ 0.01		-	-	-	-	0.01
Bolt Assembly Pin	300330	\$ 0.22	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.22	Bolt Assembly Pin	300330	\$ 0.22	0.0001	0.00	0.00	0.00	0.00	0.22
Firing Pin Assembly	????	\$ -	\$ 0.26	\$ 0.10	\$ 0.52	\$ 0.62	\$ 0.88	Firing Pin Assembly	????		0.0156	0.17	0.20	0.41	0.61	0.77

M/710 Estimate								M/710 Costs - Based on M/597 and 700 ADL costing								
PART DESCRIPTION	Part #	Material \$	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Estimated Piece Price	PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Piece Price
Bolt Plug	300368	\$ 0.94	\$ -	\$ -	\$ -	\$ -	\$ 0.94	Bolt Plug	300368	\$ 0.94		-	-	-	-	0.94
Bolt Plug Insert	300346	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ 0.29	Bolt Plug Insert	300346	\$ 0.29		-	-	-	-	0.29
Firing Pin	300334	\$ 0.30	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.30	Firing Pin	300334	\$ 0.30		-	-	-	-	0.30
Firing Pin Tip	300335	\$ 1.28	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.08	\$ 1.35	Firing Pin Tip	300335	\$ 1.28	0.0015	0.02	0.02	0.04	0.06	1.36
Firing Pin Head	300336	\$ 0.33	\$ 0.26	\$ 0.02	\$ 0.03	\$ 0.03	\$ 1.22	Firing Pin Head	300336	\$ 0.33	0.0020	0.02	0.03	0.05	0.08	0.43
Firing Pin Spring	????	\$ 0.14	\$ -	\$ -	\$ -	\$ -	\$ 0.14	Firing Pin Spring	????	\$ 0.14		-	-	-	-	0.14
Front Sight	94084	\$ 0.01	\$ 0.25	\$ 0.05	\$ 0.51	\$ 0.56	\$ 0.82	Front Sight	94084	\$ 0.31		-	-	-	-	0.31
Front Sight Ramp	94657	\$ 0.02	\$ 0.26	\$ 0.07	\$ 0.78	\$ 0.83	\$ 1.13	Front Sight Ramp	94657	\$ 0.85	0.0020	0.02	0.03	0.05	0.08	0.95
Front Sight Ramp Screws (2)	28505	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09	Front Sight Ramp Screws (2)	28505	\$ 0.09		-	-	-	-	0.09
Rear Sight Assembly	103146	\$ 0.28	\$ 0.91	\$ 0.15	\$ 1.86	\$ 2.02	\$ 3.20	Rear Sight Assembly	103146			-	-	-	-	-
Elevation Screw	90906	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ 0.02	Elevation Screw	90906	\$ 0.02		-	-	-	-	0.02
Rear Sight Aperture	94333	\$ 0.00	\$ 0.08	\$ 0.02	\$ 0.22	\$ 0.23	\$ 0.23	Rear Sight Aperture	94333	\$ 0.14	0.0001	0.00	0.00	0.00	0.00	0.14
Rear Sight Base	103531	\$ 0.16	\$ 0.24	\$ 0.02	\$ 0.56	\$ 0.58	\$ 0.94	Rear Sight Base	103531	\$ 0.97	0.0001	0.00	0.00	0.00	0.00	0.97
Rear Sight Slide	94335	\$ 0.07	\$ 0.38	\$ 0.07	\$ 0.75	\$ 0.82	\$ 1.29	Rear Sight Slide	94335	\$ 0.47	0.0035	0.04	0.04	0.09	0.14	0.64
Windage Screw	90904	\$ 0.02	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.02	Windage Screw	90904	\$ 0.02		-	-	-	-	0.02
Rear Sight Base Screw (2)	28505	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09	Rear Sight Base Screw (2)	28505	\$ 0.09		-	-	-	-	0.09
Stock Assembly Complete	????						\$ -	Stock Assembly Complete	????		0.0160	\$ 0.14	0.17	0.35	0.52	0.67
Stock Assembly	????						\$ -	Stock Assembly	????			-	-	-	-	-
Stock	????	\$ 9.10	\$ -	\$ -	\$ -	\$ -	\$ 9.10	Stock	????	\$ 6.00		-	-	-	-	6.00
Front Screw Bushing	15161	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15	Front Screw Bushing	15161	\$ 0.13		-	-	-	-	0.13
Middle Screw Bushing	????	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15	Middle Screw Bushing	????	\$ 0.13		-	-	-	-	0.13
Rear Screw Bushing	????	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15	Rear Screw Bushing	????	\$ 0.13		-	-	-	-	0.13
Grp Cap	97971	\$ 0.18	\$ -	\$ -	\$ -	\$ -	\$ 0.18	Grp Cap	97971	\$ 0.18		-	-	-	-	0.18
Recoil Pad	97973	\$ 1.63	\$ -	\$ -	\$ -	\$ -	\$ 1.63	Recoil Pad	97973	\$ 1.63		-	-	-	-	1.63
Recoil Pad Screw (2)	98008	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ 0.05	Recoil Pad Screw (2)	98008	\$ 0.05		-	-	-	-	0.05
Magazine Latch	300362	\$ 0.26	\$ -	\$ -	\$ -	\$ -	\$ 0.26	Magazine Latch	300362	\$ 0.20		-	-	-	-	0.20
Magazine Latch Spring	????	\$ 0.04	\$ -	\$ -	\$ -	\$ -	\$ 0.04	Magazine Latch Spring	????	\$ 0.02		-	-	-	-	0.02
Magazine Latch Pin	300371	\$ 0.05	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.05	Magazine Latch Pin	300371	\$ 0.01	0.0001	0.00	0.00	0.00	0.00	0.01
Sling Swivel Stud (2)	300096	\$ 0.30	\$ -	\$ -	\$ -	\$ -	\$ 0.30	Sling Swivel Stud (2)	300096	\$ 0.14		-	-	-	-	0.14
Takedown Screw (2)	????	\$ 0.16	\$ 0.01	\$ 0.00	\$ 0.02	\$ 0.02	\$ 0.19	Takedown Screw (2)	????	\$ 0.08		-	-	-	-	0.08
Rear Takedown Screw	????	\$ 0.08	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.10	Rear Takedown Screw	????	\$ 0.04		-	-	-	-	0.04
Magazine Assembly	????	\$ -	\$ 0.42	\$ 0.08	\$ 0.66	\$ 0.74	\$ 1.16	Magazine Assembly	????		0.0109	0.12	0.14	0.28	0.42	0.54
Magazine Box	300363	\$ 2.79	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 2.79	Magazine Box	300363	\$ 2.79	0.0001	0.00	0.00	0.00	0.00	2.79
Magazine Follower	300364	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ 0.29	Magazine Follower	300364	\$ 0.29		-	-	-	-	0.29
Magazine Bottom	300365	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ 0.29	Magazine Bottom	300365	\$ 0.29		-	-	-	-	0.29
Magazine Spring	17028	\$ 0.42	\$ -	\$ -	\$ -	\$ -	\$ 0.42	Magazine Spring	17028	\$ 0.42		-	-	-	-	0.42
Value Added Cost of:										\$ 0.02		-	-	-	-	0.02
Proof/Gallery/Inspect/Pack	Joy	\$ 1.15	\$ 2.08	\$ 0.48	\$ 4.39	\$ 4.87	\$ 8.11			1.15	0.1174	1.05	1.25	2.59	3.85	6.05
Totals:		\$ 56.64	\$ 18.14	\$ 8.59	\$ 43.08	\$ 51.68	\$ 126.47	Total Cost		\$ 43.86	0.8027	\$ 8.28	\$ 9.85	\$ 20.36	\$ 30.21	\$ 82.35

3.42000 1.25 0.00 0.00
Time.

M/710 Costs - Based on M/597 and 700 ADL costing				
PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	COMMENTS/ASSUMPTIONS
Document Envelope Assembly	1748	\$ 0.09		M/597 document envelope
Document Envelope	1649	\$ 0.08		and box assembly
Users manual	3391	\$ 0.15		
Product Owners Card	1426	\$ 0.03		
Remington Authorized Gunsmith	3413	\$ 0.07		
Safety Booklet	3499	\$ 0.10		
Remington Museum Flyer	3475	\$		
Oval Label	3491	\$ 0.01		
Document Envelope Assembly total				
Carton Assembly Complete	330031	\$ 0.39		Carton assy cost is for JU Kevil to assembly the parts
Carton	1640	\$ 0.44		
Styrofoam bed	300185	\$ 0.75		
Box and Envelope Label (710)	993002	\$ 0.04		
Barrel Assembly Complete	???		0.0174	includes pressing receiver insert in the receiver tube and assembling the sights. Ilion run time.
Barrel Assembly	???		0.0711	Mayfield run time plus 150%.
Barrel	305315	\$4.92	0.2471	Increase barrel length from 17" for Ilion process to 25" @ \$0.197/inch. Our estimated run time of .17 hrs plus 145% for error margin.
Receiver	300340	\$5.00	0.0700	Assumed a tube is received at \$5.00 per blank. This part must be processed as a tube and machine complete for .07 hrs. This is an unvalidated assumption on material price. Run rate is grouped with bolt head machines.
Receiver Insert Assembly Complete	???		0.0628	
Receiver Insert Assembly	???		0.0000	
Receiver Insert	300327	\$0.62		Ilion quote
Threaded Insert	300347	\$0.04	0.0000	Ilion quote
Side Plate	300333	\$0.09	0.0000	Ilion quote
Side Plate Pin (2)	300328	\$0.12	0.0000	Ilion quote

M/710 Costs - Based on M597 and 700 ADL costing				
PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	COMMENTS/ASSUMPTIONS
Sear Safety Cam	15666	\$ 0.94		Ilion PMPD, key features on this make it not easily moved.
Pivot Pin (3)	300351	\$ 0.18		Similar to 597 part plus \$0.01 for HT
Sear Spring	17047	\$ 0.02		700 a/u
Trigger	15280	\$ 0.55		Based on a similar sized part quoted by and outside PM vendor. Could be lower than this.
Trigger Connector	19461	\$ 0.03		700 a/u
Trigger Screw Front	17053	\$ 0.10		700 a/u
Trigger Engagement Screw	91128	\$ 0.03		700 a/u
Trigger Spring	15400	\$ 0.03		700 a/u
Trigger Stop Screw	15481	\$ 0.06		700 a/u
Safety Assembly	????		0.0015	Ilion run time is .003696
Safety	300344	\$ 0.26		Hold open is \$.09, more bends in this part \$.26 is ok.
Safety Button	91852	\$ 0.06		Assume outside PM at 50% of PMPD.
Safety Pivot Pin	300352	\$ 0.13		Complex pin
Safety Spring	300343	\$ 0.05		Includes heat treat at \$.01. Part compares to a larger bolt handle spring.
Snap Washer	17044	\$ 0.02		700 a/u
Bolt Stop	300345	\$ 0.28	0.0001	Assume outside PMPD base on a similar size parts quoted for the m99 and 597.
Receiver Plug Screws (4)	17034	\$ 0.12		700 a/u
Recoil Bracket	300361	\$ 0.20	0.0001	Ilion estimate
Bolt Assembly Complete	????			Does not apply comparison level only
Bolt Body Assembly	????		0.0275	Ilion run times due to experience.
Bolt Body	300339	\$ 2.50	0.0160	Assumed a screw machined blank and finish process in house. Blank cost from m700.
Bolt Handle	300370		0.0120	mill radius on handle, not grouped with other machines
Bolt Handle Blank	300360	\$ 1.50		Investment cast using the m597 bolt @\$1.80 and bolt handle at \$.80 as a guide.
Bolt Handle Pin	300329	\$ 0.07		
Bolt Handle Brazing Shim	300366	\$ 0.05		
Bolt Head Assembly	????		0.0152	Ilion run time

M/710 Costs - Based on M/597 and 700 ADL costing				
PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	COMMENTS/ASSUMPTIONS
				Assumed Ilion quoted blank cost and Ilion run time.
Bolt Head	300338	\$ 1.60	0.0924	Mayfiled run time proposed at .05396 (2.3 min difference)
Extractor	93712	\$ 0.77		
Ejector	300342	\$ 0.16	0.0000	
Ejector Spring	????	\$ 0.03		597 \$0.02
Ejector Pin	94555	\$ 0.01		
Bolt Assembly Pin	300330	\$ 0.22	0.0001	Second loading raises price from a normal pin.
Firing Pin Assembly	????		0.0156	Assemble tip, head, spring
Bolt Plug	300368	\$ 0.94		Ilion quote insert molded makes it high.
Bolt Plug Insert	300346	\$ 0.29		
Firing Pin	300334	\$ 0.30		Ilion quote, missed black oxide
Firing Pin Tip	300335	\$ 1.33	0.0015	Ilion quote plus vendor HT of \$0.05
Firing Pin Head	300336	\$ 0.33	0.0020	
Firing Pin Spring	????	\$ 0.14		based on m/700 spring
Front Sight	94084	\$ 0.31		Based on 25% of PMPd
Front Sight Ramp	94657	\$ 0.85	0.0020	Based on 25% of PMPd
Front Sight Ramp Screws (2)	28505	\$ 0.09		m/597 cost
Rear Sight Assembly	103146			
Elevation Screw	90906	\$ 0.02		m/597 cost
Rear Sight Aperture	94333	\$ 0.14	0.0001	Based on 50% PMPd due to geometry.
Rear Sight Base	103531	\$ 0.97	0.0001	MIM is a good number, PM is where the costing difference is the greatest.
Rear Sight Slide	94335	\$ 0.47	0.0035	MIM
Windage Screw	90904	\$ 0.02		m/597 cost
Rear Sight Base Screw (2)	28505	\$ 0.09		m/597 cost
Stock Assembly Complete	????		0.0160	
Stock Assembly	????			
Stock	????	\$ 6.00		Based slightly heavier (2lbs vs. 2.2 lbs) that a M/597 at \$5.40.
Front Screw Bushing	15161	\$ 0.13		m/700

M/710 Costs - Based on M/597 and 700 ADL costing				
PART DESCRIPTION	Part #	Material \$	Run Rate (hrs/pc)	COMMENTS/ASSUMPTIONS
Middle Screw Bushing	????	\$ 0.13		m/700
Rear Screw Bushing	????	\$ 0.13		m/700
Grip Cap	97971	\$ 0.18		m/700
Recoil Pad	97973	\$ 1.63		m/700
Recoil Pad Screw (2)	98008	\$ 0.05		m/700
Magazine Latch	300362	\$ 0.20		Based on similar parts
Magazine Latch Spring	????	\$ 0.02		based on m/7400 latch spring
Magazine Latch Pin	300371	\$ 0.01	0.0001	
Sling Swivel Stud (2)	300096	\$ 0.14		m/597
Takedown Screw (2)	????	\$ 0.08		m/597
Rear Takedown Screw	????	\$ 0.04		m/597
Magazine Assembly	????		0.0109	
Magazine Box	300363	\$ 2.79	0.0001	Ilion quote, may be high??
Magazine Follower	300364	\$ 0.29		May be able to cut by 1/3 locally.
Magazine Bottom	300365	\$ 0.29		May be able to cut by 1/3 locally.
Magazine Spring	17028	\$ 0.42		
		\$ 0.02		
			0.1174	
Total Cost		\$ 42.76	0.8027	

M/710 Estimate								M/700 Costs - SKU 927478 30-06 ADL Synthetic							
PART DESCRIPTION	Part #	Material \$	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Estimated Piece Price	PART DESCRIPTION	Part #	Material \$	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Piece Price
Document Envelope Assembly	????	\$ 1.02	\$ -	\$ -	\$ -	\$ -	\$ 1.02	Document Envelope Assembly	1721	\$ 1.02	\$ -	\$ -	\$ -	\$ -	\$ 1.02
Document Envelope	1649	\$ 0.08	\$ -	\$ -	\$ -	\$ -	\$ 0.08	Document Envelope	1649	\$ 0.08	\$ -	\$ -	\$ -	\$ -	\$ 0.08
Instruction Book	????	\$ 0.63	\$ -	\$ -	\$ -	\$ -	\$ 0.63	Instruction Book	3391	\$ 0.63	\$ -	\$ -	\$ -	\$ -	\$ 0.63
Product Owners Card	1426	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03	Product Owners Card	1426	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03
Remington Authorized Gunsmith	3413	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Remington Authorized Gunsmith	3413	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07
Safety Booklet	3499	\$ 0.10	\$ -	\$ -	\$ -	\$ -	\$ 0.10	Safety Booklet	3499	\$ 0.10	\$ -	\$ -	\$ -	\$ -	\$ 0.10
Remington Museum Flyer	3475	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01	Remington Museum Flyer	3475	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01
Oval Label	3491	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01	Oval Label	3491	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01
Carton Assembly	1444	\$ 2.05	\$ -	\$ -	\$ -	\$ -	\$ 2.05	Carton Assembly	1444	\$ 2.05	\$ -	\$ -	\$ -	\$ -	\$ 2.05
Box and Envelope Label (710)	993002	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Box and Envelope Label (710)	993002	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07
Barrel Assembly Complete	????	\$ 36.30	\$ 15.61	\$ 8.03	\$ 37.97	\$ 46.88	\$ 97.91								
Barrel Assembly	????	\$ 18.00	\$ 8.42	\$ 6.01	\$ 22.87	\$ 28.88	\$ 55.30	Barrel Assembly	103095	\$ 5.69	\$ 10.02	\$ 5.16	\$ 26.83	\$ 31.99	\$ 47.70
Barrel	305315	\$ 3.35	\$ 6.91	\$ 4.34	\$ 18.51	\$ 22.85	\$ 33.51	Barrel	26291	\$ 2.27	\$ 3.08	\$ 2.01	\$ 8.48	\$ 10.49	\$ 15.85
Receiver	300340	\$ 14.65	\$ 0.13	\$ 0.05	\$ 0.34	\$ 0.39	\$ 15.17	Receiver	99304	\$ 2.60	\$ 4.94	\$ 1.83	\$ 12.78	\$ 14.61	\$ 22.15
Receiver Insert Assembly Complete	????	\$ 3.23	\$ 2.27	\$ 0.51	\$ 4.44	\$ 4.86	\$ 10.46	Receiver Assembly	26345	\$ 2.33	\$ 2.77	\$ 0.71	\$ 5.11	\$ 5.82	\$ 10.92
Receiver Insert Assembly	????	\$ 0.66	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.66	Trigger Housing assembly	26655	\$ 0.19	\$ 0.71	\$ 0.21	\$ 1.34	\$ 1.55	\$ 2.45
Receiver Insert	300327	\$ 0.62	\$ -	\$ -	\$ -	\$ -	\$ 0.62								
Threaded Insert	300347	\$ 0.04	\$ -	\$ -	\$ -	\$ -	\$ 0.04								
Side Plate	300333	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09								
Side Plate Pin (2)	300328	\$ 0.12	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.12								
Sear Safety Cam	15666	\$ 0.26	\$ 0.16	\$ 0.03	\$ 0.48	\$ 0.52	\$ 0.94	Sear Safety Cam	15666	\$ 0.26	\$ 0.16	\$ 0.03	\$ 0.48	\$ 0.52	\$ 0.94
Pivot Pin (3)	300351	\$ 0.18	\$ 0.06	\$ 0.02	\$ 0.14	\$ 0.15	\$ 0.29	Bolt Stop Pin, Trigger Pin, Sear Pin	24477	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.10
Sear Spring	17047	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ 0.02	Sear Spring	17047	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ 0.02
Trigger	15280	\$ 0.01	\$ 0.38	\$ 0.12	\$ 1.02	\$ 1.14	\$ 1.53	Trigger	15280	\$ 0.01	\$ 0.38	\$ 0.12	\$ 1.02	\$ 1.14	\$ 1.53
Trigger Connector	19461	\$ 1.03	\$ 0.13	\$ 0.04	\$ 0.27	\$ 0.31	\$ 2.48	Trigger Connector	19461	\$ 1.03	\$ 0.13	\$ 0.04	\$ 0.27	\$ 0.31	\$ 1.48
Trigger Screw Front	17053	\$ 0.10	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.11	Trigger Screw Front	17053	\$ 0.10	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.11
Trigger Engagement Screw	91128	\$ 0.03	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.03	Trigger Engagement Screw	91128	\$ 0.03	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.03
Trigger Spring	15400	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03	Trigger Spring	15400	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03
Trigger Stop Screw	15481	\$ 0.06	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.06	Trigger Stop Screw	15481	\$ 0.06	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.06
Safety Assembly	????	\$ 0.30	\$ 0.12	\$ 0.03	\$ 0.30	\$ 0.32	\$ 0.74	Safety Assembly	92297	\$ 0.26	\$ 0.10	\$ 0.03	\$ 0.26	\$ 0.29	\$ 0.66
Safety	300344	\$ 0.30	\$ -	\$ -	\$ -	\$ -	\$ 0.30	Safety	92212	\$ 0.26	\$ -	\$ -	\$ -	\$ -	\$ 0.26
Safety Button	91852	\$ 0.00	\$ 0.02	\$ 0.00	\$ 0.09	\$ 0.10	\$ 0.12	Safety Button	91852	\$ 0.00	\$ 0.02	\$ 0.00	\$ 0.10	\$ 0.10	\$ 0.12
Safety Pivot Pin	300352	\$ 0.12	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.05	\$ 0.19	Safety Pivot Pin	17043	\$ 0.05	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.06
Safety Spring	300343	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ 0.05	Safety Spring	15368	\$ 0.00	\$ 0.03	\$ 0.01	\$ 0.07	\$ 0.08	\$ 0.11
Snap Washer	17044	\$ 0.02	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.05	\$ 0.09								
Bolt Stop	300345	\$ 0.01	\$ 0.11	\$ 0.01	\$ 0.44	\$ 0.45	\$ 0.57	Bolt Stop	17013	\$ 0.16	\$ 0.05	\$ 0.02	\$ 0.10	\$ 0.12	\$ 0.33
Receiver Plug Screws (4)	17034	\$ 0.12	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.13	Bolt Stop Release	15478	\$ 0.0858	\$ 0.00682	\$ 0.001748	\$ 0.01	\$ 0.01566	\$ 0.11
Receiver Bracket	300361	\$ 0.19	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.19	Receiver Plug Screws	17034	\$ 0.12	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.13
Bolt Assembly Complete	????	\$ 11.11	\$ 2.62	\$ 1.04	\$ 5.80	\$ 6.85	\$ 20.58	Barrel Bracket	14810	\$ 0.83	\$ 0.13	\$ 0.05	\$ 0.30	\$ 0.35	\$ 1.31
Bolt Body Assembly	????	\$ 8.32	\$ 0.60	\$ 0.23	\$ 1.33	\$ 1.56	\$ 10.49	Bolt Body Assembly	94097	\$ 6.15	\$ 3.29	\$ 1.36	\$ 7.49	\$ 8.85	\$ 18.29
Bolt Body	300339	\$ 5.53	\$ -	\$ -	\$ -	\$ -	\$ 5.53	Bolt Body	20200	\$ 2.40	\$ -	\$ -	\$ -	\$ -	\$ 2.40
								Bolt Body Brazing Shim	18493	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01
Bolt Handle	300370	\$ 2.66	\$ 0.13	\$ 0.06	\$ 0.31	\$ 0.37	\$ 3.17	Ejector Washers	17011	\$ 0.14	\$ -	\$ -	\$ -	\$ -	\$ 0.14
Bolt Handle Blank	300360	\$ 2.66	\$ -	\$ -	\$ -	\$ -	\$ 2.66	Bolt Handle	26330	\$ 1.74	\$ 0.14	\$ 0.05	\$ 0.26	\$ 0.31	\$ 2.19
Bolt Handle Pin	300329	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07	Bolt Handle Blank	21562	\$ 1.74	\$ -	\$ -	\$ -	\$ -	\$ 1.74
Bolt Handle Brazing Shim	300366	\$ 0.06	\$ -	\$ -	\$ -	\$ -	\$ 0.06	Bolt Handle Brazing Shim	20186	\$ 0.04	\$ -	\$ -	\$ -	\$ -	\$ 0.04
Bolt Head Assembly	????	\$ 2.57	\$ 2.02	\$ 0.82	\$ 4.47	\$ 5.29	\$ 9.88	Bolt Head	32820	\$ 1.71	\$ -	\$ -	\$ -	\$ -	\$ 1.71
Bolt Head	300338	\$ 1.60	\$ 1.72	\$ 0.76	\$ 4.00	\$ 4.76	\$ 8.08								

M710 Estimate								M700 Costs - SKU 927478 30-06 ADL Synthetic							
PART DESCRIPTION	Part #	Material \$	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Estimated Piece Price	PART DESCRIPTION	Part #	Material \$	Labor \$	Fixed OH \$	Var OH \$	Total OH \$	Piece Price
Extractor	93712	\$ 0.77	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.78	\$ 0.78	Extractor	93712	\$ 0.77	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.78
Ejector	300342	\$ 0.16	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.16	\$ 0.16	Ejector	17017	\$ 0.35	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.36
Ejector Spring	????	\$ 0.03	\$ -	\$ -	\$ -	\$ 0.03	\$ 0.03	Ejector Spring	17019	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03
Ejector Pin	94555	\$ 0.01	\$ -	\$ -	\$ -	\$ 0.01	\$ 0.01	Ejector Pin	94555	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01
Bolt Assembly Pin	300330	\$ 0.22	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.22	\$ 0.22	Bolt Pin	18758	\$ 0.16	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.17
Firing Pin Assembly	????	\$ 3.28	\$ 0.54	\$ 0.12	\$ 1.18	\$ 5.12	\$ 5.12	Firing Pin Assembly	94094	\$ 3.39	\$ 0.83	\$ 0.29	\$ 1.66	\$ 1.95	\$ 6.17
Bolt Plug	300368	\$ 0.94	\$ -	\$ -	\$ -	\$ 0.94	\$ 0.94	Bolt Plug	94091	\$ 1.10	\$ 0.24	\$ 0.09	\$ 0.48	\$ 0.57	\$ 1.91
Bolt Plug Insert	300346	\$ 0.29	\$ -	\$ -	\$ -	\$ 0.29	\$ 0.29								
Firing Pin	300334	\$ 0.30	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.30	\$ 0.30	Firing Pin	22020	\$ 1.34	\$ 0.07	\$ 0.02	\$ 0.15	\$ 0.17	\$ 1.58
Firing Pin Tip	300335	\$ 1.28	\$ 0.02	\$ 0.01	\$ 0.05	\$ 1.35	\$ 1.35								
Firing Pin Head	300336	\$ 0.33	\$ 0.26	\$ 0.02	\$ 0.61	\$ 1.22	\$ 1.22	Firing Pin Head	23320	\$ 0.74	\$ 0.26	\$ 0.09	\$ 0.51	\$ 0.60	\$ 1.60
								Firing Pin Cross Pin	17022	\$ 0.07	\$ 0.02	\$ 0.00	\$ 0.03	\$ 0.04	\$ 0.13
Firing Pin Spring	????	\$ 0.14	\$ -	\$ -	\$ -	\$ 0.14	\$ 0.14	Firing Pin Spring	17029	\$ 0.14	\$ -	\$ -	\$ -	\$ -	\$ 0.14
Front Sight	94084	\$ 0.01	\$ 0.25	\$ 0.05	\$ 0.51	\$ 0.82	\$ 0.82	Front Sight	94084	\$ 0.01	\$ 0.25	\$ 0.05	\$ 0.51	\$ 0.82	\$ 0.82
Front Sight Ramp	94657	\$ 0.02	\$ 0.26	\$ 0.07	\$ 0.78	\$ 1.13	\$ 1.13	Front Sight Ramp	94657	\$ 0.02	\$ 0.26	\$ 0.07	\$ 0.78	\$ 0.85	\$ 1.13
Front Sight Ramp Screws (2)	28505	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09	\$ 0.09	Front Sight Ramp Screws (2)	28505	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09
Rear Sight Assembly	103146	\$ 0.28	\$ 0.91	\$ 0.15	\$ 1.86	\$ 3.20	\$ 3.20	Rear Sight Assembly	103146	\$ 0.28	\$ 0.91	\$ 0.15	\$ 1.86	\$ 2.02	\$ 3.20
Elevation Screw	90906	\$ 0.02	\$ -	\$ -	\$ -	\$ 0.02	\$ 0.02	Elevation Screw	90906	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ 0.02
Rear Sight Aperture	94333	\$ 0.00	\$ 0.08	\$ 0.02	\$ 0.22	\$ 0.31	\$ 0.31	Rear Sight Aperture	94333	\$ 0.00	\$ 0.08	\$ 0.02	\$ 0.22	\$ 0.23	\$ 0.31
Rear Sight Base	103531	\$ 0.16	\$ 0.24	\$ 0.02	\$ 0.56	\$ 0.98	\$ 0.98	Rear Sight Base	103531	\$ 0.16	\$ 0.24	\$ 0.02	\$ 0.56	\$ 0.58	\$ 0.98
Rear Sight Slide	94335	\$ 0.07	\$ 0.38	\$ 0.07	\$ 0.75	\$ 1.28	\$ 1.28	Rear Sight Slide	94335	\$ 0.07	\$ 0.38	\$ 0.07	\$ 0.75	\$ 0.82	\$ 1.28
Windage Screw	90904	\$ 0.02	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.02	\$ 0.02	Windage Screw	90904	\$ 0.02	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.02
Rear Sight Base Screw (2)	28505	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09	\$ 0.09	Rear Sight Base Screw (2)	28505	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09
Stock Assembly Complete	????	\$ 12.01	\$ 0.01	\$ 0.00	\$ 0.03	\$ 12.06	\$ 12.06	Stock Assembly	106183	\$ 9.62	\$ -	\$ -	\$ -	\$ -	\$ 9.62
Stock Assembly	????	\$ 9.50	\$ 0.01	\$ 0.00	\$ 0.03	\$ 9.55	\$ 9.55								
Stock	????	\$ 9.10	\$ -	\$ -	\$ -	\$ 9.10	\$ 9.10								
								Foam Insert	98978	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01
Front Screw Bushing	15161	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.15	\$ 0.15	Front Screw Bushing	200423	\$ 0.13	\$ 0.01	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15
Middle Screw Bushing	????	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.15	\$ 0.15								
Rear Screw Bushing	????	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.15	\$ 0.15								
Grip Cap	97971	\$ 0.18	\$ -	\$ -	\$ -	\$ 0.18	\$ 0.18	Grip Cap	97971	\$ 0.18	\$ -	\$ -	\$ -	\$ -	\$ 0.18
Recoil Pad	97973	\$ 1.63	\$ -	\$ -	\$ -	\$ 1.63	\$ 1.63	Recoil Pad	97973	\$ 1.63	\$ -	\$ -	\$ -	\$ -	\$ 1.63
Recoil Pad Screw (2)	98008	\$ 0.05	\$ -	\$ -	\$ -	\$ 0.05	\$ 0.05	Recoil Pad Screw (2)	98008	\$ 0.06	\$ -	\$ -	\$ -	\$ -	\$ 0.06
Magazine Latch	300362	\$ 0.26	\$ -	\$ -	\$ -	\$ 0.26	\$ 0.26								
Magazine Latch Spring	????	\$ 0.04	\$ -	\$ -	\$ -	\$ 0.04	\$ 0.04								
Magazine Latch Pin	300371	\$ 0.05	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.05	\$ 0.05								
								Threaded Insert 2	97999	\$ 0.12	\$ -	\$ -	\$ -	\$ -	\$ 0.12
Sling Swivel Stud (2)	300096	\$ 0.30	\$ -	\$ -	\$ -	\$ 0.30	\$ 0.30	Sling Swivel Stud (2)	97812	\$ 0.15	\$ -	\$ -	\$ -	\$ -	\$ 0.15
Takedown Screw (2)	????	\$ 0.16	\$ 0.01	\$ 0.00	\$ 0.02	\$ 0.19	\$ 0.19	Front Guard Screw/Rear Guard Screw	99363	\$ 0.16	\$ 0.01	\$ 0.00	\$ 0.02	\$ 0.02	\$ 0.19
Rear Takedown Screw	????	\$ 0.08	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.10	\$ 0.10	Center Guard screw	104250	\$ 0.05	\$ 0.01	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.07
Magazine Assembly	????	\$ 3.80	\$ 0.42	\$ 0.08	\$ 0.66	\$ 4.96	\$ 4.96								
Magazine Box	300363	\$ 2.79	\$ 0.00	\$ 0.00	\$ 0.00	\$ 2.79	\$ 2.79	Magazine	15284	\$ 1.88	\$ 0.04	\$ 0.01	\$ 0.08	\$ 0.10	\$ 2.02
Magazine Follower	300364	\$ 0.29	\$ -	\$ -	\$ -	\$ 0.29	\$ 0.29	Magazine Follower	92492	\$ 0.63	\$ 0.00	\$ 0.00	\$ 0.03	\$ 0.03	\$ 0.66
Magazine Bottom	300365	\$ 0.29	\$ -	\$ -	\$ -	\$ 0.29	\$ 0.29								
Magazine Spring	17028	\$ 0.42	\$ -	\$ -	\$ -	\$ 0.42	\$ 0.42	Magazine Spring	17028	\$ 0.42	\$ -	\$ -	\$ -	\$ -	\$ 0.42
								Magazine Tab Screw	15940	\$ 0.02	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.02
Value Added Cost of: Proof/Gallery/Inspect/Pack	Joy	\$ 1.15	\$ 2.08	\$ 0.48	\$ 4.39	\$ 8.11	\$ 8.11								
Totals:		\$ 56.65	\$ 18.15	\$ 8.60	\$ 43.08	\$ 51.68	\$ 126.47	Total Cost		\$ 36.37	\$ 24.59	\$ 9.07	\$ 55.49	\$ 64.56	\$ 125.52

Document Envelope Assembly	1721	\$	1.02	Document Envelope Assembly	1748	\$0.09	
Document Envelope	1649	\$	0.08	Document Envelope	1649	\$0.08	
Instruction Book	3391	\$	0.63	User's Manual	3489	\$0.15	
Product Owners Card	1426	\$	0.03	Warranty response card	1426	\$0.03	
Remington Authorized Gunsmith	3413	\$	0.07	Remington Authorized Gunsmith	3413	\$0.07	
Safety Booklet	3499	\$	0.10	Safety Booklet	3499	\$0.10	
Remington Museum Flyer	3475	\$	0.01	NONE			
Oval Label	3491	\$	0.01	Oval Label	3491	\$0.01	
				Shelf talker label	300325	\$0.14	
Carton Assembly	1444	\$	2.05	Carton Assy Complete	330031	\$0.39	1 58 total
				carton	1640	\$0.44	
				Styrofoam bed	300185	\$0.75	
Box and Envelope Label (710)	993002	\$	0.07	Box and Envelope label	993002	\$0.04	
Total		\$	3.14	Total		\$2.28	

Remington Arms Company Inc
Mayfield Plant
M710 Head Count

	Run Rates	
	Ilion	Mayfield
# of Guns	20,000	20,000
Build Rates per Gun	0.8822	0.8027
# of hours	17,644	16,054

Change in headcount

Based on 240 work
days and 98%
attendance

(17,644/(240*8*.98))	9.38	
(16,054/(240*8*.98))		8.53

CONFIDENTIAL

Remington Arms Company Inc
Mayfield Plant
597 Overhead Change/Gun

597 Overhead reduction @ Ilion run Rates of .8822/gun

Direct labor related to 597	759,039
Total overhead rate W/O M710	<u>385%</u>

Overhead Applied	<u>2,922,099</u>
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Direct labor related to 597	759,039
Total overhead rate With M710	<u>360%</u>

Overhead Applied	<u>2,735,138</u>
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Difference in Overhead Applied	186,960
# of 597 in analysis	<u>80,000</u>

Saving per 597	<u>\$ 2.34</u>
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597 Overhead reduction @ Mayfield run Rates of .8027/gun

Direct labor related to 597	759,039
Total overhead rate W/O M710	<u>385%</u>

Overhead Applied	<u>2,922,099</u>
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Direct labor related to 597	759,039
Total overhead rate With M710	<u>367%</u>

Overhead Applied	<u>2,786,609</u>
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Difference in Overhead Applied	135,490
# of 597 in analysis	<u>80,000</u>

Saving per 597	<u>\$ 1.69</u>
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M/710 ESTIMATE - REV 6 - CLASS 2 ESTIMATE										
PART DESCRIPTION	Part #	Proposed Process	Capital Dollars	Operations Dollars	Material \$	Labor \$	Fixed Overhead \$	Variable Overhead \$	Total Overhead \$	Estimated Piece Price
Document Envelope Assembly	????	Purchase	N/A	N/A	\$ 1.02	\$ -	\$ -	\$ -	\$ -	\$ 1.02
Document Envelope	1649	Purchase	N/A	N/A	\$ 0.08	\$ -	\$ -	\$ -	\$ -	\$ 0.08
Instruction Book	????	Purchase	N/A	N/A	\$ 0.63	\$ -	\$ -	\$ -	\$ -	\$ 0.63
Product Owners Card	1426	Purchase	N/A	N/A	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03
Remington Authorized Gunsmith	3413	Purchase	N/A	N/A	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07
Safety Booklet	3499	Purchase	N/A	N/A	\$ 0.10	\$ -	\$ -	\$ -	\$ -	\$ 0.10
Remington Museum Flyer	3475	Purchase	N/A	N/A	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01
Oval Label	3491	Purchase	N/A	N/A	\$ 0.01	\$ -	\$ -	\$ -	\$ -	\$ 0.01
Carton Assembly	1444	Purchase	N/A	N/A	\$ 2.05	\$ -	\$ -	\$ -	\$ -	\$ 2.05
Box and Envelope Label (710)	993002	Purchase	N/A	N/A	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ 0.07
Barrel Assembly Complete	????	Assemble	\$ 1,200	\$ 750	\$ 36.28	\$ 15.46	\$ 7.96	\$ 37.61	\$ 45.58	\$ 97.32
Barrel Assembly	????	Assemble & Machine	\$ 16,086	\$ 2,000	\$ 18.00	\$ 8.42	\$ 6.01	\$ 22.87	\$ 28.88	\$ 55.30
Barrel	305315	Machine	\$ 473,000	\$ 86,450	\$ 3.35	\$ 6.91	\$ 4.34	\$ 18.51	\$ 22.85	\$ 33.11
Receiver	300340	Purchase	\$ 13,750	\$ 2,200	\$ 14.65	\$ 0.13	\$ 0.05	\$ 0.34	\$ 0.39	\$ 15.17
Receiver Insert Assembly Complete	????	Assemble	\$ 8,000	\$ 600	\$ 3.08	\$ 2.14	\$ 0.49	\$ 3.95	\$ 4.45	\$ 9.67
Receiver Insert Assembly	????	Ultrasonic Weld	\$ 2,000	\$ 500	\$ 0.66	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.66
Receiver Insert	300327	Purchase	\$ 60,250	\$ -	\$ 0.62	\$ -	\$ -	\$ -	\$ -	\$ 0.62
Threaded Insert	300347	Purchase	\$ -	\$ -	\$ 0.04	\$ -	\$ -	\$ -	\$ -	\$ 0.04
Side Plate	300333	Purchase & Color	\$ 9,300	\$ 500	\$ 0.09	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.09
Side Plate Pin (2)	300328	Purchase & Color	\$ -	\$ 790	\$ 0.12	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.12
Sear Safety Cam	15666	AU M/700	N/A	N/A	\$ 0.26	\$ 0.16	\$ 0.03	\$ 0.48	\$ 0.52	\$ 0.94
Pivot Pin (3)	300351	Purchase & Heat T	\$ -	\$ 290	\$ 0.18	\$ 0.06	\$ 0.02	\$ 0.14	\$ 0.15	\$ 0.40
Sear Spring	17047	AU M/700	N/A	N/A	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ 0.02
Trigger	15280	AU M/700	N/A	N/A	\$ 0.01	\$ 0.38	\$ 0.12	\$ 1.02	\$ 1.14	\$ 1.53
Trigger Connector	19461	AU M/700	N/A	N/A	\$ 0.03	\$ 0.13	\$ 0.04	\$ 0.27	\$ 0.31	\$ 1.48
Trigger Screw Front	17053	AU M/700	N/A	N/A	\$ 0.10	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.11
Trigger Engagement Screw	91128	AU M/700	N/A	N/A	\$ 0.03	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.03
Trigger Spring	15400	AU M/700	N/A	N/A	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ 0.03
Trigger Stop Screw	15481	AU M/700	N/A	N/A	\$ 0.06	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.06
Safety Assembly	????	Assemble & Heat	\$ -	\$ -	\$ 0.30	\$ 0.42	\$ 0.03	\$ 0.30	\$ 0.32	\$ 0.74
Safety	300344	Purchase	\$ 11,400	\$ 500	\$ 0.30	\$ -	\$ -	\$ -	\$ -	\$ 0.30
Safety Button	91852	AU M/7	N/A	N/A	\$ 0.00	\$ 0.02	\$ 0.00	\$ 0.09	\$ 0.10	\$ 0.12
Safety Pivot Pin	300352	Purchase & Heat T	\$ -	\$ 560	\$ 0.12	\$ 0.02	\$ 0.01	\$ 0.05	\$ 0.05	\$ 0.19
Safety Spring	300343	Purchase	\$ 21,500	\$ 500	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ 0.05

M/716 ESTIMATE - REV. 6 - CLASS 2 ESTIMATE										
PART DESCRIPTION	Part #	Proposed Process	Capital Dollars	Operations Dollars	Material \$	Labor \$	Fixed Overhead \$	Variable Overhead \$	Total Overhead \$	Estimated Piece Price
Stock Assembly Complete	????	Purchase			\$ 12.01	\$ 0.01	\$ 0.00	\$ 0.03	\$ 0.03	\$ 12.06
Stock Assembly	????	Purchase			\$ 9.50	\$ 0.01	\$ 0.00	\$ 0.03	\$ 0.03	\$ 9.55
Stock	????	Purchase	\$ 130,000		\$ 9.10	\$ -	\$ -	\$ -	\$ -	\$ 9.10
Front Screw Bushing	15161	A/U M/700	N/A	N/A	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15
Middle Screw Bushing	????	Purchase	\$ -	\$ -	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15
Rear Screw Bushing	????	Purchase	\$ -	\$ -	\$ 0.13	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.15
Grip Cap	97971	A/U M/700	N/A	N/A	\$ 0.18	\$ -	\$ -	\$ -	\$ -	\$ 0.18
Recoil Pad	97973	A/U M/700	N/A	N/A	\$ 1.63	\$ -	\$ -	\$ -	\$ -	\$ 1.63
Recoil Pad Screw (2)	98008	A/U M/700	N/A	N/A	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ 0.05
Magazine Latch	300362	Purchase	\$ 23,975	\$ 500	\$ 0.26	\$ -	\$ -	\$ -	\$ -	\$ 0.26
Magazine Latch Spring	????	Purchase	\$ -	\$ -	\$ 0.04	\$ -	\$ -	\$ -	\$ -	\$ 0.04
Magazine Latch Pin	300371	Purchase & Color	\$ -	\$ 710	\$ 0.05	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.05
Sling Swivel Stud (2)	300096	Purchase	\$ -	\$ -	\$ 0.30	\$ -	\$ -	\$ -	\$ -	\$ 0.30
Takedown Screw (2)	????	Purchase	\$ -	\$ -	\$ 0.16	\$ 0.01	\$ 0.00	\$ 0.02	\$ 0.02	\$ 0.19
Rear Takedown Screw	????	Purchase	\$ -	\$ -	\$ 0.08	\$ 0.00	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.10
Magazine Assembly	????	Assemble	\$ -	\$ 250	\$ 3.80	\$ 0.42	\$ 0.08	\$ 0.66	\$ 0.74	\$ 4.96
Magazine Box	300363	Purchase & Color	\$ 39,710	\$ 500	\$ 2.79	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 2.79
Magazine Follower	300364	Purchase	\$ 26,250	\$ -	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ 0.29
Magazine Bottom	300365	Purchase	\$ -	\$ -	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ 0.29
Magazine Spring	17028	A/U M/700	N/A	N/A	\$ 0.42	\$ -	\$ -	\$ -	\$ -	\$ 0.42
Value Added Cost of:										
Proof/Gallery/Inspect/Pack	Joy		\$ -	\$ 1,250	\$ 1.15	\$ 2.08	\$ 0.48	\$ 4.39	\$ 4.87	\$ 8.11
Trial and Pilot Testing	Findlay									
Guns										
Ammunition (90,000 x \$.25 rds)										
Manpower (3 menx40 hrsx4weeksx\$45.00)										
Totals:			\$ 1,091,171	\$ 124,825	\$ 56.63	\$ 17.99	\$ 8.53	\$ 42.72	\$ 51.26	\$ 125.88
Total Capital		\$ 1,091,171								
Total Operations		\$ 124,825								
Total Project		\$ 1,215,996								

Comparison

M/700 ADL Synthetic .30-06 cal. 05 Costing					
Description	Part #	Material	Labor	Overhead	Total
Overall Gun	927478	\$ 36.37	\$ 24.59	\$ 64.56	\$ 125.52
Receiver	99304	\$ 2.60	\$ 4.94	\$ 14.61	\$ 22.15
Barrel	26291	\$ 2.27	\$ 3.08	\$ 10.49	\$ 15.84
Bolt Assy	94097	\$ 6.16	\$ 3.30	\$ 8.85	\$ 18.31
Stock Assy	106183	\$ 9.51	\$ -	\$ -	\$ 9.51
Firecontrol	26345	\$ 2.33	\$ 2.77	\$ 5.82	\$ 10.92
Misc		\$ 13.50	\$ 10.50	\$ 24.79	\$ 48.79

M/710 Synthetic .30-06 Estimated Cost					
Description		Material	Labor	Overhead	Total
Overall Gun	\$	56.63	\$ 17.99	\$ 51.26	\$ 125.88
Receiver	\$	14.65	\$ 0.13	\$ 0.39	\$ 15.17
Barrel	\$	3.35	\$ 6.91	\$ 22.85	\$ 33.11
Bolt Assy	\$	11.11	\$ 2.49	\$ 6.48	\$ 20.08
Stock Assy	\$	12.01	\$ 0.01	\$ 0.03	\$ 12.06
Firecontrol	\$	3.08	\$ 2.14	\$ 4.45	\$ 9.67
Misc	\$	12.42	\$ 6.31	\$ 17.06	\$ 35.79

Comparison: M/700 ADL minus M/710					
Description		Material	Labor	Overhead	Total
Overall Gun		\$ (20.26)	\$ 6.60	\$ 13.30	\$ (0.36)
Receiver		\$ (12.05)	\$ 4.81	\$ 14.22	\$ 6.98
Barrel		\$ (1.08)	\$ (3.83)	\$ (12.36)	\$ (17.27)
Bolt Assy		\$ (4.95)	\$ 0.81	\$ 2.37	\$ (1.77)
Stock		\$ (2.50)	\$ (0.01)	\$ (0.03)	\$ (2.55)
Firecontrol		\$ (0.75)	\$ 0.63	\$ 1.37	\$ 1.25
Misc.		\$ 1.08	\$ 4.19	\$ 7.73	\$ 13.00

MEMO

TO: Matt Golemboski

From: Kristan Sacharnoski

Subject: Braze Machine Runoff

Date: April 25, 2000

The following items are required for keeping a designated runoff date of May 16 with Cybertech:

- **Inspection fixture**

Currently the inspection fixture is complete. I am going to keep the inspection fixture in-house until the 10th. I would like to complete several tests with the fixture using the bolt bodies in-house and the assembled bolt handles (refer to bolt handle for information)

- **Bolt Bodies**

Cambell's Machine are making a total of 160 bolt handles, 15 of which will be sent to Cybertech by Wed 26th. By Wed 10th the other 145 will be shipped to Cybertech. The bolt bodies will only reflect the true location of the holes because of the fixture locator in the brazing machine other dimensions are irrelevant to runoff needs.

- **Bolt Handles**

I am currently working on producing a machined bolt handle in-house. I plan to complete at least 15 bolt handles to have pins pressed and sent to Cybertech by Wed 26th. I plan to finish the other 145 over the next week depending on scheduling needs of Shelley Truax. In an extreme case I may have to complete the bolt handles over the weekend. This is not a problem for me to be in here on a Saturday.

- **Bolt Handle Pins**

There are currently about 120 pins in-house. I requested that Cambell's machine to produce 50 more to send to Cybertech by May 8th. He will probably have them complete by the 5th.

- **Bolt Handle Press Fixture**

Jimmy plans to have the bolt handle press fixture complete by May 5th. I plan to use the next five days to test the press in-house to debug any problems that may occur. We will be using the same fixture used for initial machining of the fixture.

After speaking with Jimmy, I feel the fixture will hold the part better than a manual clamp, plus it eliminates any ergonomic issues. A pneumatic ratchet will have to be purchased to include in this operation. I spoke with Jimmy today on creating an extension hose to put on a ratchet. The air ratchet will be needed to turn the pump screw on the fixture. We currently have two ratchets out for service. He expects both ratchets returned by the end next week.

- **Paste**

I believe there will be an adequate supply of paste for the runoff. To this date Cybertech has 50 oz from Omni, 50 oz from Lucas-Milhaupt, and Joe ordered 50 oz from Omni. The last 50-oz was communication flaw with Joe and I. We are covered on the paste.

- **PPE**

On the operators perspective of the runoff I have contacted Gordon Summer on the personal protective equipment. He feels common gloves used within our present processes will be adequate for the brazing operation with detailed attention of the operator not to touch the brazing area after the bolt bodies and handles have been washed.

I am going to contact Gordon Summer today to go over the operating requirements he feels we need to have before we come down there outside of the information listed above. Also I have a few items that I want to go over with him in respects to the brazing machine.

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CONFIDENTIAL

Machine Deliveries and Run-offs --- Spring 2000

Machine: **Braze Machine**

Part Number	300403
Part Name	bolt body assembly
Vendor	Cyber Tech
Date of run-off	4/19 - 4/21 4/20/00
Run-off qty	200- 420 pc
Date Machine/Tool Received	5/5/00

Drawing #	B-300403
Rev. Level	0

CONFERENCE CALL:
SEND PRINTS:

Required for Runoff

	Name	Supplier	Date available	Date Shipped to Machine Vendor	Quantity Shipped
Parts	Bolt Body	Ippolito	4/15/00	4/19/00	
(300 pc)	Bolt Handle	N.American	3/27/00		
(CITIZENS note 150)	Pin	...	3/15/00		
	Braze Paste	ancy & Harmon	3/30/00		
Gages	Alignment gage				
	Plug Gage/bore				
MISSG	Air permit				
	Duct work				

	Person	DATE
PRESS: -	KUSTAN	3/10/00
FIXTURE -		
ALIGNMENT GAGE	KUSTAN	3/2/00

DATE AFTER COST CASE

Note: Bolt bodies and machined bolt handles must be available for 4/20/00.

Other: Assembly drawing from R&D with tolerances ←

Machine Deliveries and Run-offs --- Spring 2000

Machine: LB 300

Part Number

305315

Part Name

Barrel

Drawing #

E-305315

Rev. Level

21

Vendor

okuma

Date of run-off

4/12/00

Run-off qty

200

Date Machine/Tool Received

4/20/00

Required for Runoff

Parts

Gages

Name	Supplier	Date available	Date Shipped to Machine Vendor	Quantity Shipped
Barrel Blanks	Ilion			
barrels	Mayfield			
All Tools		3/8/00	1/10/00	
Air gages		3/31/00		
Step Gage				
Heading Gage		3/31/00		
Chmb. Casts				
function gage		3/31/00		
Hole position gage	IDE			
HEADING PLUGS				

Replicate - older MATERIAL ASAP.

Buy from CLYMER.

Timeline for barrel process in Mayfield

Machine Deliveries and Run-offs --- Spring 2000

Machine: Welduction

Part Number

305315

Drawing #

E-305315

Part Name

Barrel

Rev. Level

21

Vendor

Welduction

Date of run-off

4/15/00

Run-off qty

150

Date Machine/Tool Received

4/25/00

100 pcs. + 50 pcs. = 150 pcs.

5/1/00

Required for Runoff

	Name	Supplier	Date available	Date Shipped to Machine Vendor	Quantity Shipped
Parts	Barrels	Mayfield	4/13/00		
Gages	Magnaflux	Ilion	5/1/00		
	Resonant				
	Magnaflux Training				

TRAINING
MELUSSA

MELUSSA RIDER
RENTAL TRUCK

BENCH CENTER

TEST - CENTRAL LOCATION
ASAP - 2 wks

Machine Deliveries and Run-offs --- Spring 2000

Machine: **Magnaflux**

Part Number

305315

Part Name

Barrel

Drawing #

E-305315

Rev. Level

21

Vendor

Ilion

Date of run-off

~~4/15/00~~ 5/1/00

Run-off qty

300

Date Machine/Tool Received

~~4/25/00~~

Lot #

Required for Runoff

	Name	Supplier	Date available	Date Shipped to Machine Vendor	Quantity Shipped
Parts	Barrels	Welduction	4/15/00 4/25/00		
Gages	Micros by Lab				
	Training				

Machine Deliveries and Run-offs --- Spring 2000

Machine: Air Gages/Gundrills

(2/HKS)

Part Number

305315

Part Name

Barrel

Drawing #

E-305315

Rev. Level

Q1

Vendor

Mayfield

Date of run-off

3/20/00

Run-off qty

500

Date Machine/Tool Received

Lot #

Required for Runoff

	Name	Supplier	Date available	Date Shipped to Machine Vendor	Quantity Shipped
Parts	Barrels	Ilion			
		Federal			
Gages	Air Gages		3/31/00		
	Drop Gage		3/1/00		
	Centers		3/1/00		
	All tools		3/1/00		
	Oiler				
	CUTOFF LENGTH GAGE				

RABBIT.
NEED BARREL BLANK
BTR STOCK BY
3/15/00.
REPAIR.
WHIP GUIDES / JOL TO
DETERMINE CORRECT
SIZE.

Machine Deliveries and Run-offs --- Spring 2000

Machine: Turn

Part Number

305315

Part Name

Barrel

Drawing #

E-305315

Rev. Level

11

Vendor

Mayfield

Date of run-off

3/20/00

Run-off qty

500

Date Machine/Tool Received

Lot #

Required for Runoff

	Name	Supplier	Date available	Date Shipped to Machine Vendor	Quantity Shipped
Parts	Barrels	Ilion			
Gages	Snap Gages				
	Centers		3/17/00		
	All tools				

→ PHI MEETING TODAY
BARREL CART 3/20/00

Machine Deliveries and Run-offs --- Spring 2000

Machine: VMC

Part Number

bolt handle

Drawing #

C-300370

Part Name

300370

Rev. Level

B

Vendor

okuma

Date of run-off

Run-off qty

0

Date Machine/Tool Received

Required for Runoff

	Name	Supplier	Date available	Date Shipped to Machine Vendor	Quantity Shipped
Parts	Bolt Handles	N. American	4/1/00		
Gages	Fixture	Mayfield	3/16/00		
	Gage	CHH	3/20/00		

Fixture to be built in house and completed 5 positions by 3/20/00

Review in 3/9/00

Additional Runoffs and tooling required

Part Number	Part Name	PO Rev	Current Rev	Tool	ordered	Due	gage required	delivery of gage	runoff date	runoff qty	Action Items
	Receiver			none							
	Bolt Body			none							
	Trigger		C	PM Die	14-Jan	16-Mar					
	Bolt Plug Insert			Extrusion die	20-Jan	29-Mar					
	Tumbler			MIM Mold	20-Jan	29-Mar					
	Magazine Spring			Stamping Die							
	Magazine Spring (prototype)										samples due 3/6/00
300327	Receiver Insert			Mold							
300333	Side Plate			Stamping Die	1/20	3/29					
300334	Safety Arm			Stamping Die	3/26	4/15					
300345	Bolt Stop			PM	1/23	2/28					
300361	Recoil Bracket			Stamping Die	1/19	3/15					
300360	Bolt Handle Blank			Invest Cast Die	1/24	3/27					Adjusting on Stamp - JHREN
300366	Bolt H. Braze Shim			Use Paste	canceled						
300368	Bolt Plug			Mold	12/14	3/21					
300336	Firing pin head			MIM Mold	1/14	3/16					
300362	Mag Latch			Mold	1/11	4/24					
300363	Magazine Box		14	Mold	1/13	3/9					
	Magazine Box (proto type)										
300364	Magazine Follower		16	Mold	see Mag. Bottom						
300365	Magazine Bottom		20	Mold	1/12	4/17					
	Stock			Mold	12/13	3/29					
	Styrofoam Bed			Die							on hold use M700

BOLT HEAD CMM PROGRAM - 3/27/00

2 WKS

Part Number	Part Name	PO Rev	Current Rev	Tool	ordered	Due	gage required	delivery of gage	runoff date	runoff qty	Action Items
	Snails for short range				2/29/00						AFTER DESIGN PRINTS
	100 yard snail										AFTER BIDS
	Micro Centric Chuck			Chuck head	21-Jan	10-Feb					installation 3/30/00
	Roll mark										DESIGN @ PRO
	Roll mark fixture										
	ang straighten gage										JOE
	Assembly press										DESIGN PRESS & DRAWING - GIVEN → JOE - TALK → 1/11/00
	Bolt extractor assy fixture			GAH							
	Receiver insert assy fixture										
	Front sight fixture										
	Engagement Fixture										
	Proof Device										
	Accuracy Device										
	Laser Fixture										

CONF
5/3/00

Bolt Extractor in
RETAIN PIN FIXTURE - PRESS

PRESS SCREENS in - KRISTIAN - UPDATE IN WEEK.

→ ASSEMBLY

→ ONCE WE GET FRONT SIGHTS in -

THP TEST SCHEDULE

From: Morgan, Metty E.
Sent: Wednesday, February 16, 2000 5:03 PM
To: Golemboski, Matt R.
Cc: Hutson, Linda R.; Helmer, Gerald A.; Greer, Donna L.; Zajk, Joseph J; Chamblee, Danny; Burnett, Mark A.
Subject: Minutes Non-Capital Components 2/16

02/16/2000

MINUTES: NON-CAPITAL COMPONENT TEAM MEETING OF 02/16/2000

ATTENDING: Linda Hutson
Jerry Helmer
Jeff Dick
Donna Greer
Danny Chamblee
Matt Golemboski
Mett Morgan

Opened meeting by going over the minutes of the meeting held on 01/21. Reviewing assignments and where we have gotten on them.

Parts Inspection Process:

Jerry Helmer passed out copies of his spreadsheet showing where he is on each component in regard to having inspection folders, gauging, fixtures, etc; Of the 63 parts mentioned in the first meeting that would need attention, he stated that 20% or so have been taken care of. Matt warned that the difficult items will take much longer than these that have been done, and Jerry is to ask for help if he deems it necessary to complete his process in time. Monitoring of spending for inspection items, fixturing, gauging, etc. is being done by Linda and Danny. Danny will copy Linda with a report of current expenditures against the budget each week, in order to keep her abreast of the current funds remaining.

Add / Use Items:

A spreadsheet was created by Linda since the last meeting to monitor the orders from Ilion. Purchase orders have been created by Mett thru Transport Orders for all Add /Use items. Mark Burnett has received (3) three items from the spreadsheet to date. We will update the spreadsheet on Fridays. The question of mixing 710 requirements with 597 requirements was brought up. On those seven (7) like items, Danny suggested we pull the 710 requirements out now, and keep them separate. Matt agreed. Mett provided a list of the like items to Danny who will do the necessary transactions. Jerry Helmer went over the add / use list vs. the new current parts list. This deleted two (2) items from the add / use list. Mett will get quotes on these two items right away. Donna Greer inquired as to where or what location has been set up as the 710 inventory. Mett will get with Janice and Matt to finalize this location.

Non Add / Use Components:

Purchase orders are in place for all necessary prototype parts for DAT testing. Mike Keeney will be ask for a list of any items he feels he needs in excess of the list Jerry and Mett have been working from, to make sure nothing is overlooked. Currently, there are four (4) items still out for quote. Two of those are the new ones Jerry pointed out. Outside of these four, it seems all components have been quoted. Only prototype parts have been ordered at this point. **No production quantity PO's have been placed at this time.**

Summary:

All team members feel comfortable where they are with this project at this time. All members will continue to watch the time line to accomplish the team goal. **Next team meeting will be March the 2nd, Thursday at @ 2:10, same location.**

Individual Task Summary

Phase I: Machine Area

1. Joe & Kristan: Meeting today at 1:00 P.M. to go over part processing in plant to produce a visual flow chart. 100% Complete

Take into account all products that presently are routed through the plant for the purpose of manufacturing. Develop a product routing chart using simple TQM process symbols.

Kristan: After meeting with Joe a flow chart will be created. The first meeting with ADHOCC team members will begin 1/18/00 @ 5:00 a.m. for third shift. This meeting time will be at the same time until a final design is completed during the week of Jan 30, 2000 - **20% complete**

Attention: Developing Routing Sheets in Visio to have a visual, that team members can understand the operations they are working with to improve the plant layout.

Attention: Task Developed for Scott on third shift to create the present process flows on paper.

Then the flow will be placed on a single sheet in TQM format

2. Tommy & Shelley ----100% Complete 1/17/00

Choose the people from all shifts that are free to develop machine list. The machine list will then be placed in to an Excel spreadsheet in alphabetical order, number of machines, name of location, and type of product that flows through machine.

3. Tommy & Shelley-----100% Complete 1/17/00

Miscellaneous equipment includes testing equipment, tables, trash cans, and tools need for specific operations. A spreadsheet needs to be developed in the same manner as the machine list.

4. Scott (Tommy & Shelley) ----100% Complete 1/17/00 Matt G. forwarded me a copy of the last time study completed. This will be applied

A time study needs to be done on all processes within the plant. The time study is important for the team because it will show machining cells where bottlenecks are created. An inventory storage bin or table may have to be placed in these specific areas because of the bottlenecks.

5. All Team Members

All members of the plant will be utilized during the duration of this task on a daily basis. Each meeting will go over specific part routings and the order in which machines will be grouped to complete the product routing.

Attention: All shifts had meetings dealing with the barrel cell as of 1/18/00-1/19/00. 2nd: Steve Peoples met with Kristan at 3:30 to discuss idea of layout on the 18th with a finalized idea on the 19th. The same discussion was repeated by 1st, Andy, Jason, Kristan and 3rd Dennis, Lee, Scott, and Kristan.

Attention: Thursday and Friday the same type of meeting will take place, observing operations of the other cells. Monday will begin using the whole machining area with all the shifts.

6. **Maintenance**—Costing has already been established in the past. Incurring problems exist around how the machine moving equipment will enter and exit the plant. Currently the route taken is the 12' overhead door on the South West corner of the building. Future plans for construction of a gun range will close this area. ***Question: Where are the moving machines going to enter and exit the building? What are our options?***

The cost of moving machines and electrical hook-up will be up to maintenance. A cost sheet should be developed showing the min. and max. requirements of the Visio layouts.

7. Team Members

Develop Proposal
Finalize Proposal

Phase II: Assembly Area

All task applied towards the assembly area will be already be established by the Assembly Team. The two teams will then meet to produce the assembly layout after Phase I is complete.

On Thursday John Stairs may need to be present in the core meeting to understand about ideas that need to be viewed in developing the assembly side of the layout.

Who Does What as of : 01/19/00

Attention: Spoke with John about process flows that should be taken in consideration when working with the assembly team. Idea is to keep from reinventing the wheel when phase two is started.

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Barrel Processing Team

Objective:

- Set up necessary manufacturing operations to manufacture the 710 barrel & barrel assembly. These operations must fulfill the following requirements:
 - Be safe
 - Statistically controlled & repeatable
 - Well-documented
- Set up all gaging, fixturing, and tooling for process, including design & build
- Educate operators on the critical aspects of their individual operations and how they relate to the overall function of the 710 rifle.
- Stock all necessary tooling and items in Stores to support the 710 barrel processing

Leaders: Joe Zajk

Members:

Kristan Sacharnoski
Shelly Truax
Maintenance (1)
Setter (3)
Operators (3)

Tasks required:

- Order gundrill tooling
- Order reaming tooling
- Design rifling gages
- Order rifling gages & tooling
- Design turn tooling & gages
- Order turn tooling & gages
- Design Chamber tooling & gages
- Order Chamber tooling & gages
- Design Sight Hole tooling & gages
- Order Sight Hole tooling & gages
- Design C'less polish tooling
- Order C'less polish tooling
- Order necessary racks for black oxide line
- Order induction harden gage
- Order receiver/barrel assembly/inspect for runout gages
- Design angularity straighten fixture adapter & straighten pins
- Order angularity fixture adapter & pins
- Process DAT barrels through turn – 270 & 30-06
- Process barrels through turn for machine run-off
- Perform machine runoffs - LB-300 & induction hardening
- Assist in machine installations - LB-300 & induction hardening
- Hold instructional meetings on critical features of 710 barrel
- Hold instructional meetings on gaging procedures & gage use
- Stock tools in Stores
- Form sub groups for writing process records for each operation
- Process T&P barrel/barrel assembly
- Organize instruction on magna-fluxing & eddy current testing

Timeline:

- All special tooling designed: 1/10/00
- Organize Core Group: 1/14/00
- All special tooling designed and ordered: 2/11/00
- Fixture design complete (in-house): 2/17/00
- Fixture design & build complete(all): 4/28/00
- All machinery runoffs complete: 4/28/00
- T&P run complete: 6/2/00
- Stores Items Stocked Complete: 6/16/00
- Documentation Complete: 6/16/00

Measurement Goals

- \$ Spent vs. estimate
- \$ Per part vs. estimate
- On time vs. estimate
- Completeness of documentation
- Controllability of process (scrap & re-work \$)

Expected results

- 1) Barrel assembly to print
- 2) Cost detail
- 3) All tooling and gaging required
- 4) All process documentation complete
- 5) All necessary Stores Items Stocked

As the preceding sheets show, in order to be able to accomplish the goal of bringing the Model 710 Barrel online on time it is necessary to divide up the work. I am asking that the following people work together in sub-teams or cells in order to handle some of the items that need to be accomplished:

Gundrill Cell Team

Team Leader: Kenny Lee

Members:

Marcus Baldry
Lee Mayes
Brian Mohan

Operations responsible for:

- Op. 10 Cut-off
- Op. 20 Gundrill Bore
- Op. 30 Ream Bore
- Op. 40 Rifle Bore
- Op. 50 Wash & Stress Relieve Barrels

Objectives:

1. Order and track all standard tooling and gages
2. Assisting Engineering with design and ordering of special tooling
3. Work with Engineering in preparing Stores Stocking sheets
4. Prepare Gundrill Cell to run 710 barrels efficiently. This includes:
 - Correcting the binding problem with the whip guides support plates
 - Optimizing and documenting changeover procedures for switching between 710 barrels and 597 barrels
 - Designing and constructing a lubricating system for oiling all barrels before rifling to eliminate the need for the manual lubing of the barrels
5. Coordinate with Material Handling Team on design and build of handling implements for gundrill area
6. Assist Engineering with processing any test barrels required.
7. Assist Engineering with documenting process.
8. Assist with stocking of necessary Stores items

Timelines:

1. Standard Plug Gages & standard tooling ordered by 2/4
2. Special Tooling ordered by 2/11.
3. Stores Stocking Sheets submitted to Stores by 3/3.
4. Gundrill Binding Problem corrected by 3/17.
5. Documentation complete by 4/28.
6. New lubricating system design complete by 5/12.
7. Lubricating System installed by 6/23.

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Turn & Chamber Cell

Team Leader: Joe Zajk

Members:

Andy Newsom
Jason Morris
Jim Gooch
Shelly Truax

Operations responsible for:

- Op. 60 Turn O.D.
- Op. 70 Chamber Complete
- Op. 80 Cut-Off & Crown
- Op. 90 Wash
- Op. 100 Induction Harden
- Op. 110 Wash & descale
- Op. 120 Inspect for Cracks

Objectives:

1. Order and track all standard tooling and gages
2. Assisting Engineering with design and ordering of special tooling
3. Become knowledgeable with centerfire rifle chamber terminology, and understand critical nature of machining operations in this cell to overall performance of rifle.
4. Work with Engineering in preparing Stores Stocking sheets
5. Assist Engineering with LB-300 machine Runoff
6. Assist Engineering with Induction Hardening Runoff
7. Coordinate with Material Handling Team on design and build of handling implements for turn. Chamber area.
8. Assist Engineering with documenting process
9. Assist Engineering with processing any test barrels required.
10. Assist Engineering with machine capability studies
11. Assist with stocking of necessary Stores items

Timelines:

1. Standard Plug Gages & standard tooling ordered by 2/4
2. Special Tooling ordered by 2/11.
3. Stores Stocking Sheets submitted to Stores by 3/3.
4. All necessary tooling, gages, and parts for LB-300 runoff in plant by 4/1.
5. All necessary parts for Induction hardening machine runoff complete by 4/14.
6. All necessary gaging and fixturing not critical to run-offs in-house by 4/28
7. Documentation complete by 6/16.

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Sight Hole, Polish & Assembly Cell

Team Leader: Kristan Sacharnoski

Members:

Steve Peeples
Dennis Burns
Randy Mathis
Scott Dick
Michelle Kelly
Andy Taylor

Operations responsible for:

- Op. 130 Sight Hole
- Op. 140 Centerless Polish
- Op. 150 Roll Mark
- Op. 160 Press Receiver onto Barrel
- Op. 170 Inspect for Runout
- Op. 180 Angularity Straighten
- Op. 190 Glass bead
- Op. 200 Black Oxide

Objectives:

1. Order and track all standard tooling and gages
2. Assisting Engineering with design and ordering of special tooling
3. Become knowledgeable with centerfire rifle chamber terminology, and understand critical nature of machining operations in barrel to overall performance of rifle.
4. Work with Engineering in preparing Stores Stocking sheets
5. Coordinate with Material Handling Team on design and build of handling implements for sight hole & assembly area.
6. Modify Black Oxide tanks to accept 710 barrels
7. Assist Engineering with documenting process
8. Assist Engineering with processing any test barrels required.
9. Assist Engineering with machine capability studies
10. Assist with stocking of necessary Stores items

Timelines:

1. Standard Plug Gages & standard tooling ordered by 2/4
2. Special Tooling ordered by 2/11.
3. Stores Stocking Sheets submitted to Stores by 3/3.
4. All necessary gaging and fixturing in house by 4/17.
5. Black oxide tanks ready to accept 710 barrels by 5/5
6. Documentation complete by 6/16.

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Meeting Frequency

I will meet with the sub-team members weekly on Monday to review progress of each sub-group. Our first meeting will be on 1/31.

From time to time I will hold instructional meetings with all members of a machining cell for instructional classes on centerfire rifle nomenclature, how the features machined in the barrel interact with the rest of the rifle, and how each feature is planned to be inspected.

Notes for Sub-Team Leaders

I expect that the sub-teams will meet on a regular basis, daily if necessary if only to briefly go over what has been accomplished and what needs to be done, who needs help, etc. 83

The sub-team leaders need to bring to the weekly meetings a status report summarizing what has been accomplished to date (tools, gages, and fixtures ordered and delivery date, tools, gages and fixtures, received, what areas need extra help, etc.).

We have Operation Detail sheets I will pass out to you that we created last year detailing the tooling and gaging that needs to be bought, made, etc. for each operation. This is the roadmap for the sub-teams to follow.

Attached is a copy of the barrel process flow as it currently stands. This is the latest but not necessarily the final 710 process flow.

Final Thoughts

Every member of this group has a very important role to play in bringing the 710 on line. The barrel/ barrel assembly is the most complicated component of the gun being made, and is one of the most critical components in the rifle. Only with everyone's cooperation will we be able to bring the barrel on line in time to have T&P guns complete by the end of May. Everyone in this team has a voice. I honestly believe there is no such thing as a "stupid" question. Sometimes even what seems on the surface as an otherwise silly question can reveal serious flaws in a plan. When I was in Ilion I was the engineer in charge of the centerfire barrel shop. That means that I have a lot of experience in making centerfire rifle barrels, but it also means there is the chance that my experience or pre-conceived notions on how something should be done can mask a flaw. So don't be afraid to ask questions or offer opinions.

I believe that Mayfield has the opportunity with the 710 to make a rifle of exceptional performance at a reasonable cost. Much of that depends on the quality of the barrel. If we do everything right, I know we'll be making the best, most accurate barrels in the company outside of the Custom Shop, and we'll really be able to put Mayfield on the map.

Joe

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