

REMINGTON ARMS COMPANY, INC.

ENGINEERING DEPARTMENT  COMPUTATION SHEET

SHEET NO 1

TITLE OF PROJ. 700 F/E TIPS

PRCJ NO DW

SUBJECT ADHESIVE STUDY -

WORKS

TIPS SHOOTING OFF IN GILBERT COMPUTER

DATE 3/25/80 15

TEST #1 -	VARMINT TIPS (ALO)		REG. TIPS	
	WASHED	UNWASHED	W	UNW
WELWOOD RESORCINOL -	# 1	2	3	4
# 66 BONDMASTER EPOXY -	5	6	7	8
WELWOOD WITH SILICONE SPRAY		# 13		# 14

TENON WAS MACHINED TO 1.152" PER PROJ. REQUIRED AND PARTS ASSEMBLED & CURED AT 70° - 48 HRS. SOME PARTS HAD TO BE DRIVEN ON & TWO SPLIT & WERE REPLACED. WASHED PARTS WERE CLEANED IN PARTS WASHER - ALKALINE CLEANER & RINSED. # 13 & 14 SPRAYED WITH SILICONE MOLD RELEASE

AFTER CURE, PARTS WERE PLACED IN VICE AND HIT WITH HAMMER & SCREWDRIVER FROM BOTTOM & IN BOL GROOVE. 10 OR MORE HEAVY BLOWS WERE REQUIRED TO LOOSEN TIP. IN ALL CASES TIP BROKE AND SHOWED 20 - 40% BOND TO PLASTIC. STRENGTH APPEARS EXCELLENT.

PRODUCTION PART - SIX RANDOM PRODUCTION PARTS (SCRAP) SHOWED EXCELLENT STRENGTH WITH UP TO 50% PLASTIC BOND.

ADDITIONAL SAMPLES - WITH UNDERSIZE TENONS AVERAGING 1.130 & 1.140 WERE PREPARED AND TESTED AFTER 24 HOUR ROOM CURE. THE 1.140 PARTS SHOWED EXCELLENT STRENGTH AND 4 OUT OF 4 TIPS BROKE WITH 20% PLASTIC BOND. THE 1.130 PARTS WERE STRONG BUT 2 OUT OF 4 CAME APART WITHOUT BREAKING. ABOUT 10% PLASTIC BOND NOTED. THESE PARTS PRODUCE NO ASSEMBLY PRESSURE BUT STILL GIVE A STRONG BOND.

TITLE OF PROJ. 700 F/E TIPS

PROJ NO DW

SUBJECT

WCR 5

COMPUTER

DATE 3/25/80 19

OBSERVATIONS TO DATE:

1. SILICONE MOLD RELEASE DOESN'T AFFECT ADHESION
2. EPOXY BOND IS EXCELLENT (SAME AS RESORCINOL)
3. BOND IS SLIGHTLY BETTER WITH TIGHT FIT - TENON 1.152 OR BIGGER - INTERFERENCE
4. BOND IS VERY GOOD AT 1.140 - 1.150 WHICH PRODUCES SLIGHT INTERFERENCE
5. BOND IS STILL ACCEPTABLE WITH 1.130 TENON - WHICH PRODUCES A SLIPPY FIT AND MAKES "PRESSURE ASSEMBLY" IMPOSSIBLE.

INTERIM CONCLUSIONS:

1. BEST TENON SIZE FOR "PRESSURE FIT" IS $1.145 \pm .005$ BUT SET-UP SHOULD BE MADE SO TIP WILL JUST CLOSE WITH TWO SPACERS
2. NO EXPLANATION FOR LOOSE TIPS WAS FOUND & 6 IN-PROCESS PRODUCTION PARTS TESTED EXCELLENT.
3. IMPROVEMENT IN CLAMPING OR ASSEMBLY SHOULD BE MADE
4. CUTTER ACTION SEEMS OK BUT IS INFLUENCED BY OPERATOR. AN AUTOMATIC FEED MACHINE WOULD HELP.

REMINGTON ARMS COMPANY, INC.

ENGINEERING DEPARTMENT



COMPUTATION SHEET

SHEET NO

3

TITLE OF PROJ. 700 F/E TIPS

PROJ NO

DW

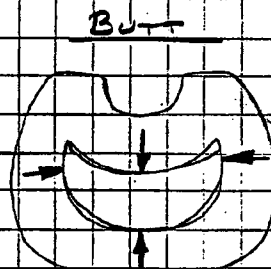
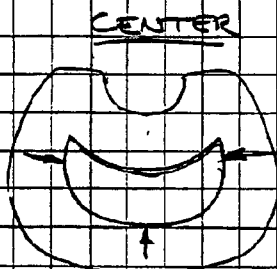
SUBJECT ADHESIVE STUDY

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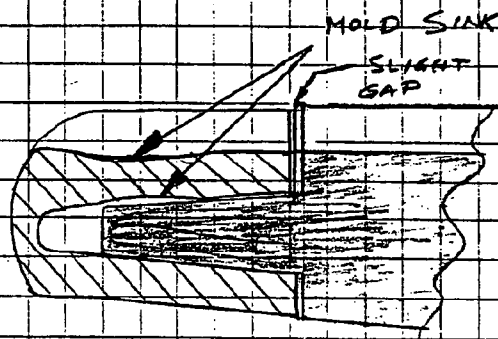
COMPUTER

DATE 3/27 19 80

PHYSICAL MATCH OF PARTS



GAPS ARE .005" TO .010"



COMMENTS:

1. OPERATORS COMPLAIN OF SLIGHT GAP AT BOL GROOVE
2. PRESSURE POINTS SHOWN LEAVE GAP OF NO PRESSURE BUT GOOD ADHESION IS NOT NECESSARILY AT PRESSURE POINTS AS WOULD BE SUPPOSED.
3. DESIGN MIGHT BE CHANGED TO IMPROVE UNIFORMITY OF PRESSURE POINTS BUT EXTENT OF PROBLEM DOESN'T SEEM TO JUSTIFY COST.