REMINGTON ARMS COMPANY, INC.

ENGINEERING DEPARTMENT (DUPONT) COMPUTATION SHEET SHEET NO 1

TITLE OF PROJ. 700 F/E TIPS PROJ NO. DW

SUBJECT ADHESIVE STUDY - WORKS

TIPS SHOOTING OFF IN GALLERY COMPUTER DATE 3/25/80 IS

| | VARMINT TIPS (ALO) | | REG TIPS | |
|---|---|---|---|---|
| | WASHED | UNWASHED | W | UW |
| TEST #1 - | | | | |
| WELDWOOD RESORCINOL - | #1 | 2 | 3 | 4 |
| #616 BONDMASTER EPOXY - | 5 | 6 | 7 | 8 |
| WELDWOOD WITH SILICONE SPRAY | | #13 | | #14 |

TENON WAS MACHINED TO 1.152" PER PROC. RECORD 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 STRENGHT 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.





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REMINGTON ARMS COMPANY, INC.

ENGINEERING DEPARTMENT DUPONT COMPUTATION SHEET SHEET NO 2

TITLE OF PROJ. 700 F/E TIPS PROJ NO. DW

SUBJECT WORK

COMPUTER DATE 3/25/80 19

OBSERVATIONS TO DATE:

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

INTERIM CONCLUSIONS:

1. BEST TENON SIZE FOR "PRESSURE FIT" IS 1.145 ± .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 (DUPONT) COMPUTATION SHEET Sheet No 3

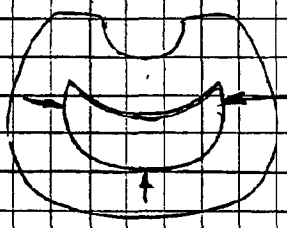
Title of Proj 700 F/E TIPS Proj No DW

Subject ADHESIVE STUDY Works

Computer Date 3/27 19 80

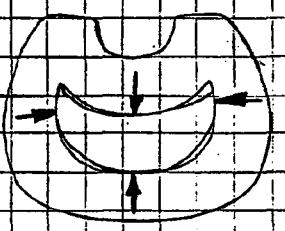
## PHYSICAL MATCH OF PARTS

CENTER

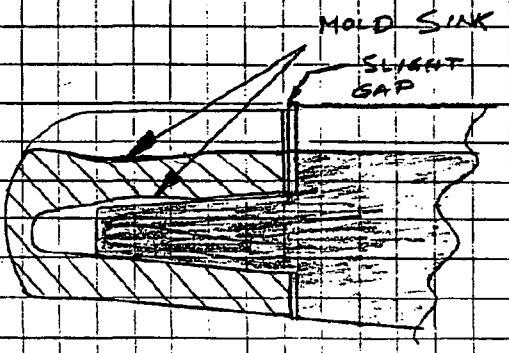


PRESSURE POINTS

BUTT



GAPS ARE .005" TO .010"




COMMENTS:

1. OPERATORS COMPLAIN OF SLIGHT GAP AT BBL 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 DOSEN'T SEEM TO JUSTIFY COST.





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