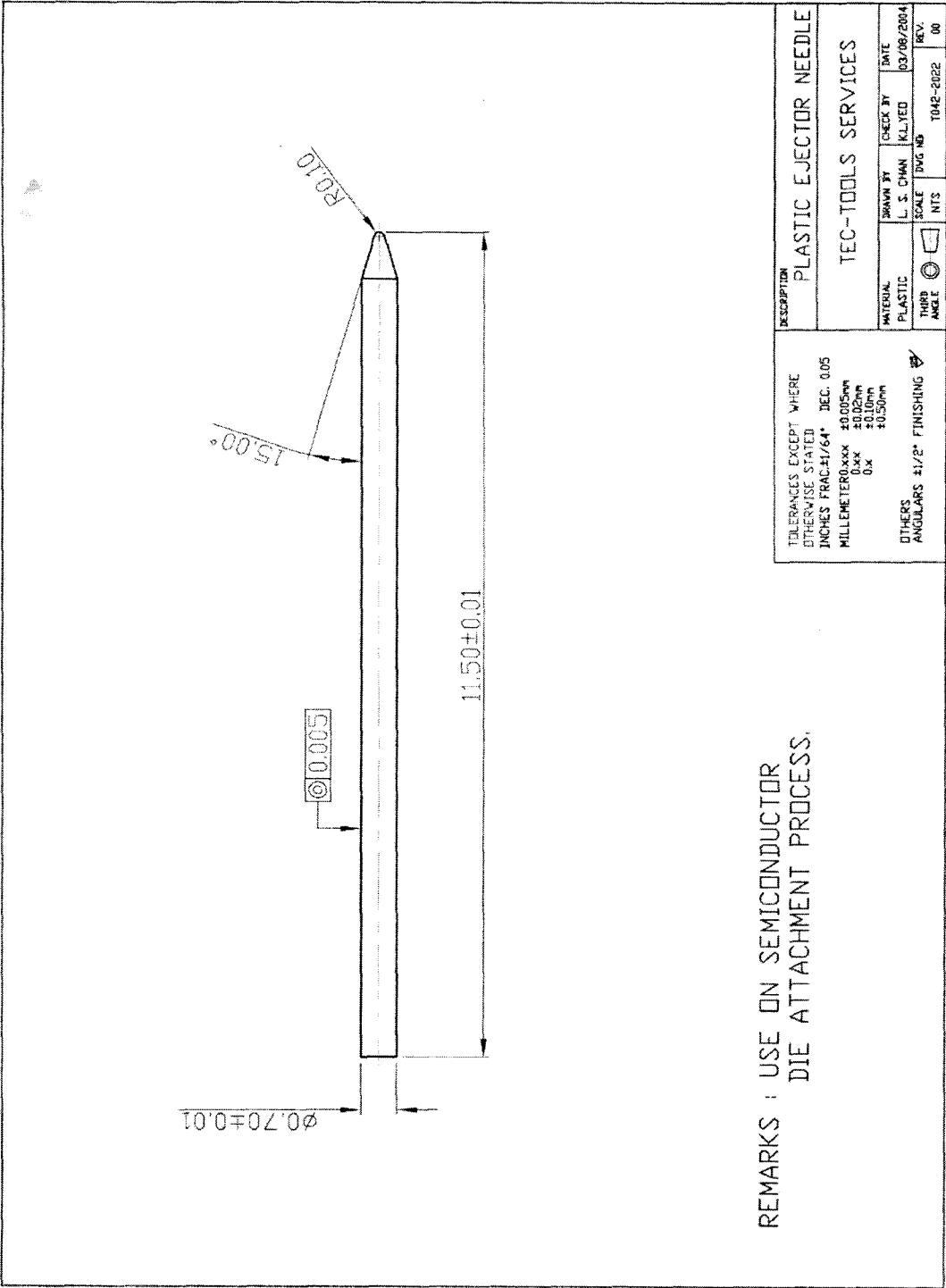




REMARKS : USE ON SEMICONDUCTOR
DIE ATTACHMENT PROCESS.

FIG.1

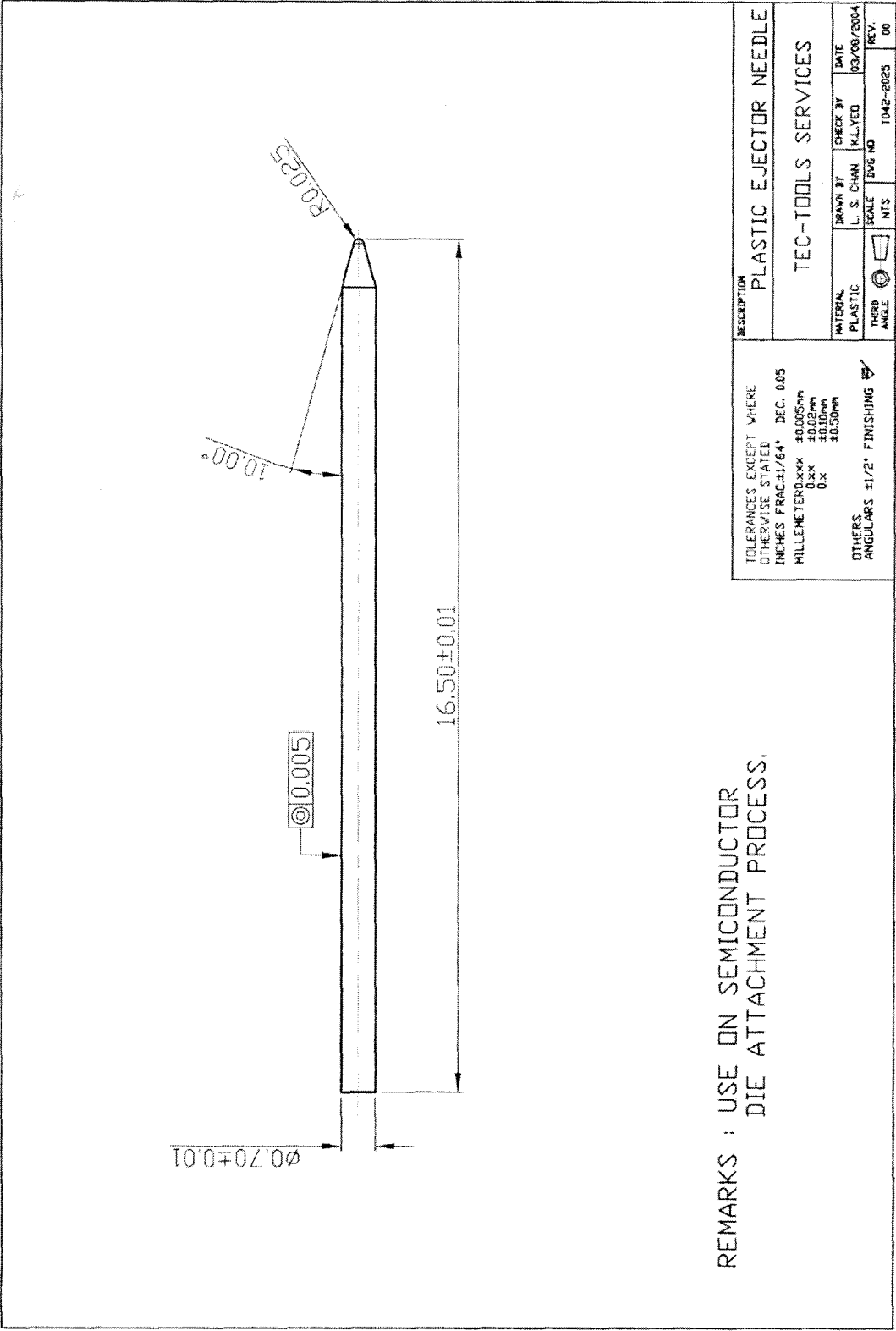


FIG.2

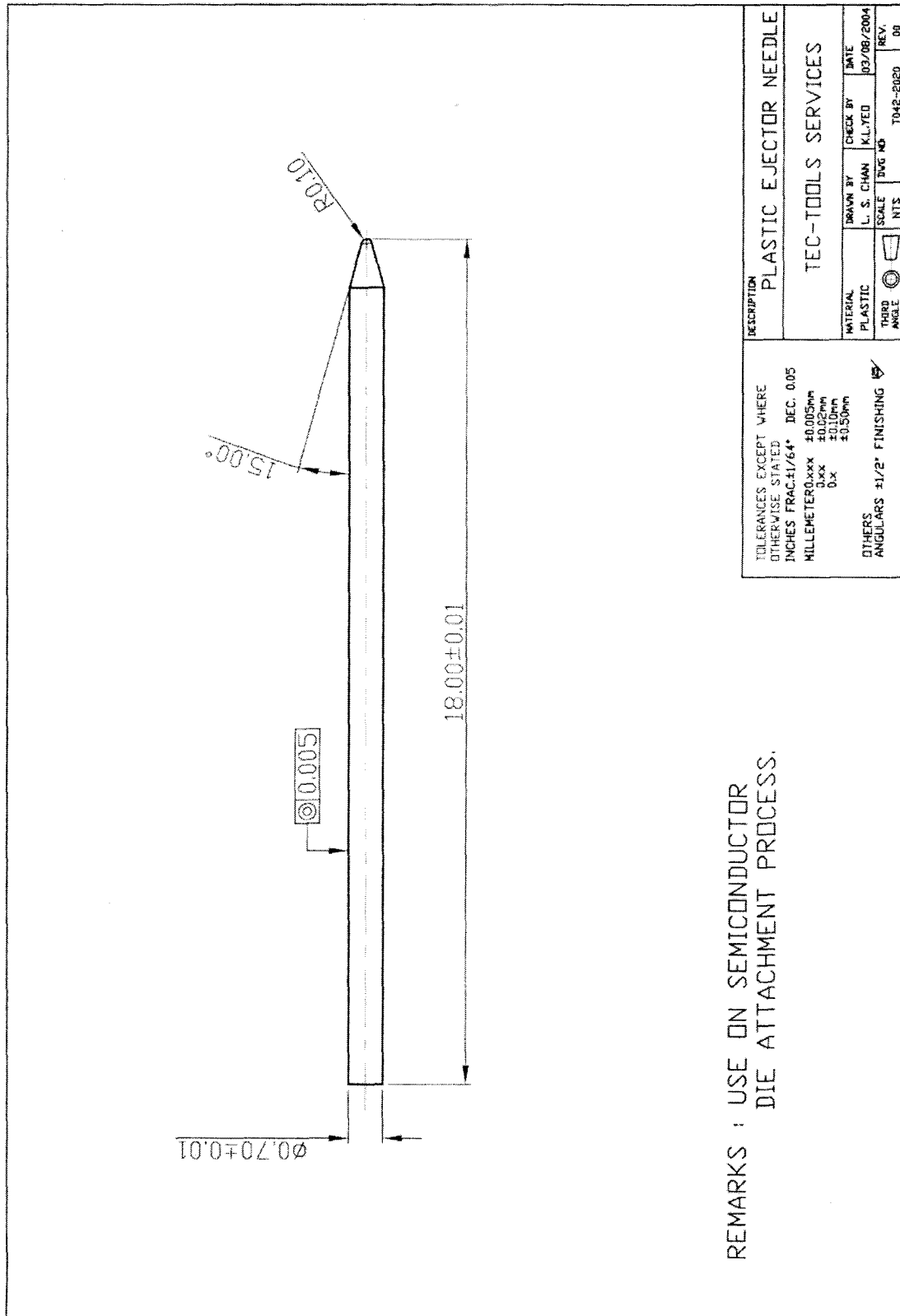


FIG.3

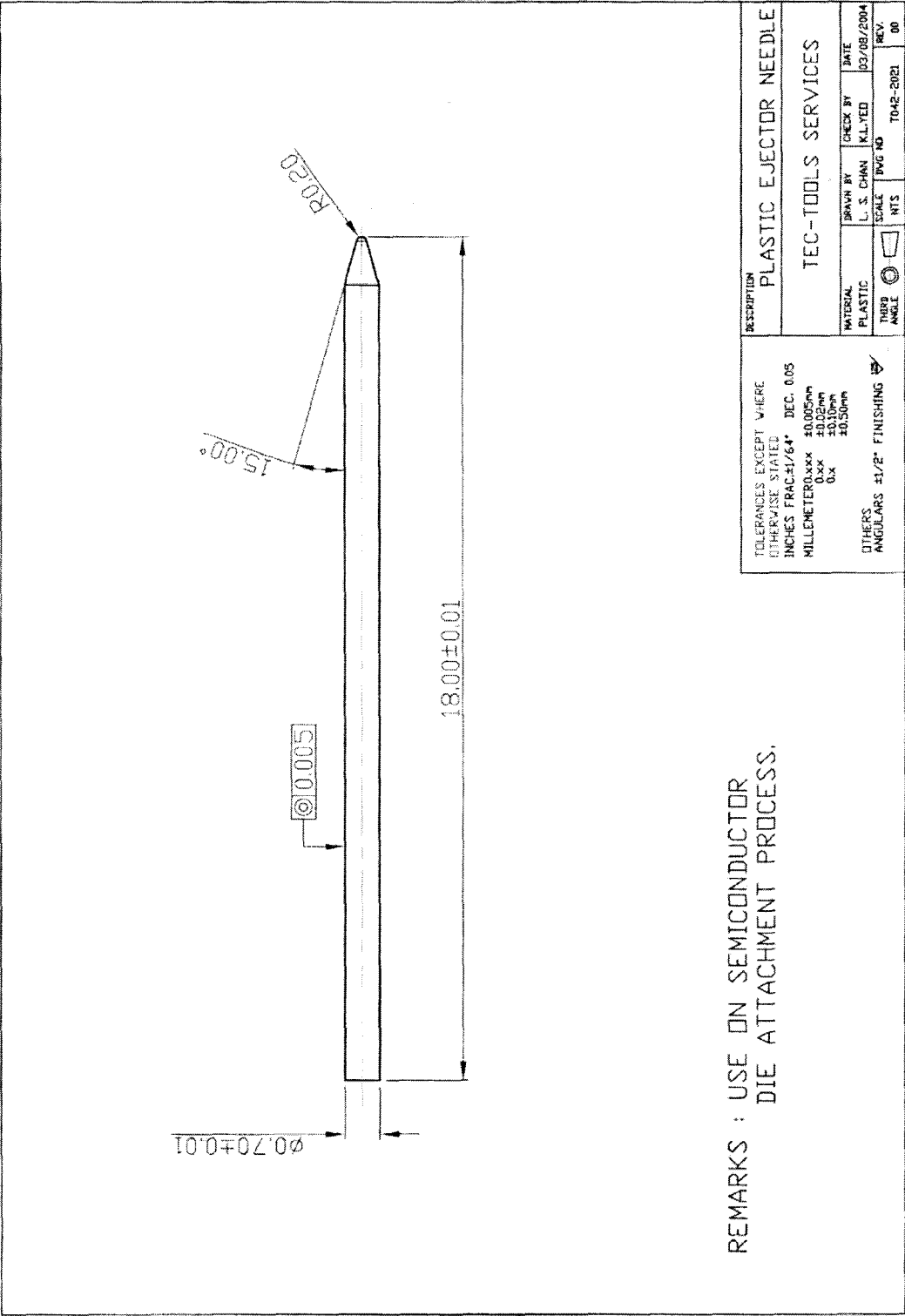


FIG.4

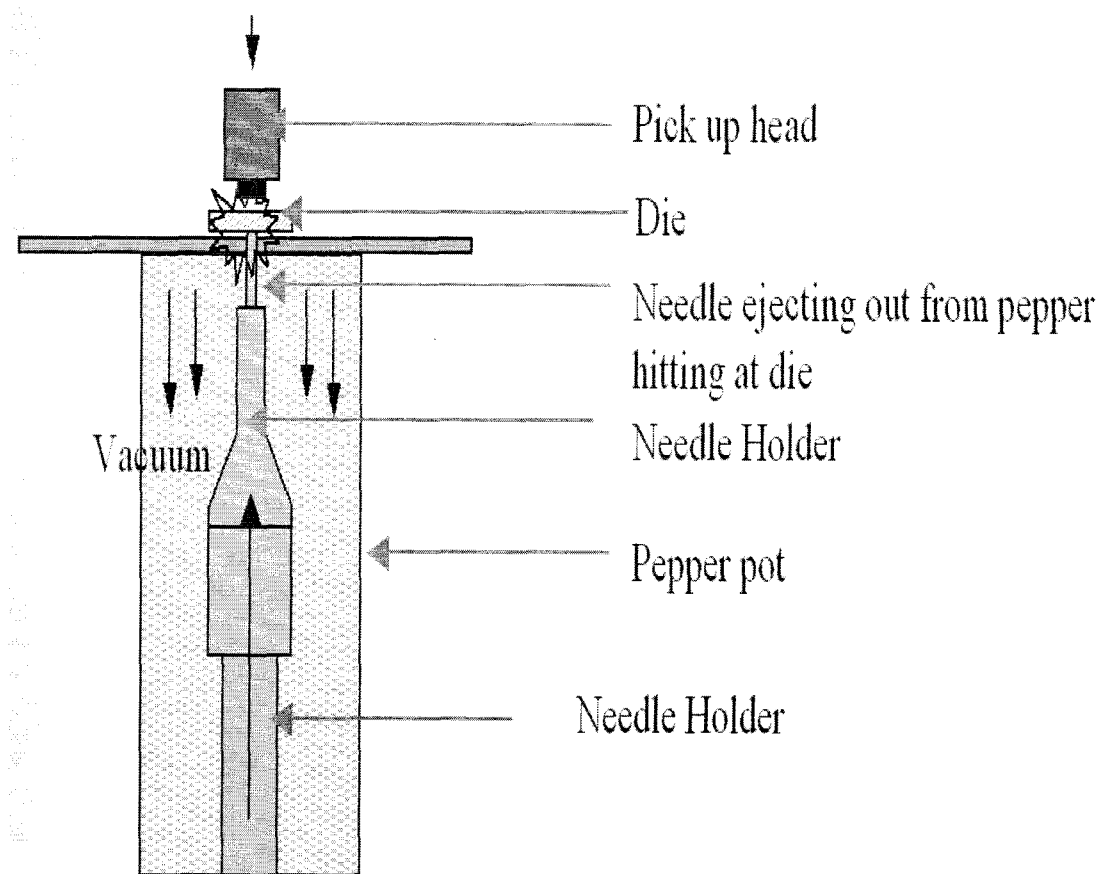


FIG. 5

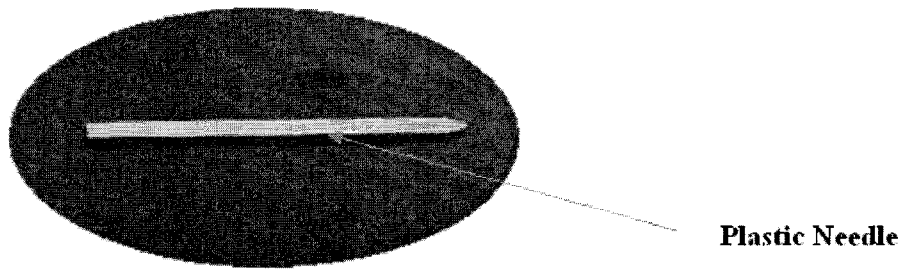


FIG. 6

Date	Die size (mm)	Device	Qty. Bonded (K unit)	4 Needles		Quality		Remark
				Needle Height (mm)	Needle Condition	Die back Mark	Mylar Pierce Through	
30-09-03	3.8 x 4.3	UT01ACB	20.1	1.2			No	No die back mark
01-10-03	3.8 x 5.27	UT51AAH	22.3	1.2			No	No die back mark
02-10-03	3.8 x 5.27	UT15AAH	24.6	1.2			No	No die back mark
03-10-03	3.8 x 5.27	UT15AAH	21.8	1.2			No	No die back mark
04-10-03	3.8 x 3.99	UD40CCH	23.5	1.2			No	No die back mark
05-10-03	3.8 X 4.33	UT01ACB	22.9	1.2			No	No die back mark
06-10-03	3.8 X 4.33	UT01ACB	24.1	1.2			No	No die back mark
07-10-03	3.8 X 4.33	UT01ACB	22.7	1.2			No	No die back mark
08-10-03	3.1 X 3.37	UL05ACA	21.8	1.2			No	No die back mark
09-10-03	3.8 X 4.33	UD64BBH	22.9	1.2			No	Unsuccessful die pick up after 10days running.
Total			226.9K units					

FIG. 7

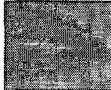
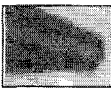
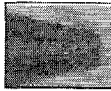
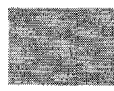
Date	Die Size (mm)	Device	Qty. Bonded (K unit)	Single Needle		Quality		Remark
				Needle Height (mm)	Needle Condition	Die back Mark	Mylar Pierce Through	
03-10-03	3.8 x 4.33	UT01ACB	41.1	1.1			No	No die back mark
04-10-03	3.8 x 4.33	UT01ACB	42.5	1.1			No	No die back mark
05-10-03	3.8 x 4.33	UT01ACB	43.8	1.1			No	No die back mark
06-10-03	3.8 x 4.33	UT01ACB	41.8	1.1			No	No die back mark
07-10-03	4.7 x 3.69	UT21AAB	40.8	1.1			No	No die back mark
08-10-03	4.7 x 3.69	UT21AAB	43.3	1.1			No	No die back mark
09-10-03	4.7 x 3.69	UT21AAB	41.2	1.1			No	No die back mark
10-10-03	4.7 x 3.69	UT21AAB	43.1	1.1			No	Unsuccessful die pick up after 8days running .
Total :			337.6K units					

FIG. 8

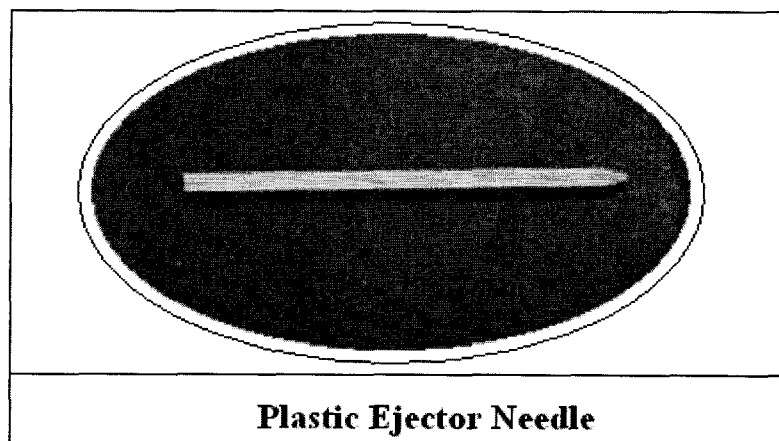


FIG. 9

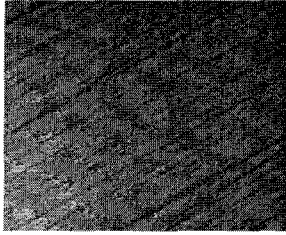
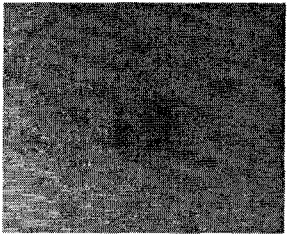
		
Day - 01	Non-pierce thru	No die back mark
		
Day - 07	Non-pierce thru	No die back mark

FIG. 10



FIG. 11

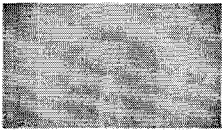
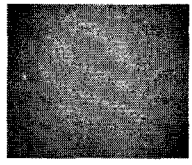
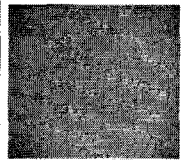
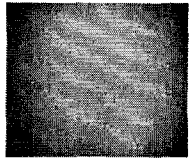
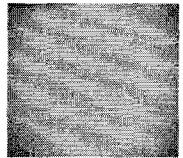
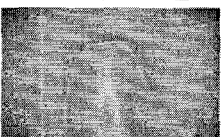
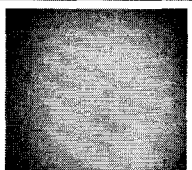
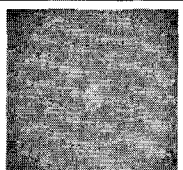
DAY (S)	NEEDLE CONDITION	NEEDLE LENGTH	WEAR RATE	BACK MARK	PIERCE THROUGH	TOTAL OUTPUT
1	 310 MOTOR STEP	17.989 mm	0.011 mm			-
2	 310 MOTOR STEP	17.982 mm	0.009 mm			39.2K
4	 310 MOTOR STEP	17.969 mm	0.013 mm			122.4K

FIG. 12

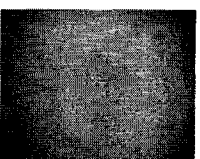
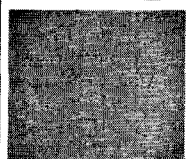
# OF DAY (S)	NEEDLE CONDITION	NEEDLE LENGTH	WEAR RATE	BACK MARK	PIERCE THROUGH	TOTAL OUTPUT
5	 310 MOTOR STEP	17.965 mm	0.004 mm			157.2K
6	 312 MOTOR STEP	17.957 mm	0.008 mm			196.1K
8	 312 MOTOR STEP	17.939	0.018			260.3K

FIG. 13

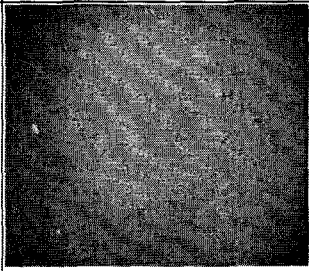
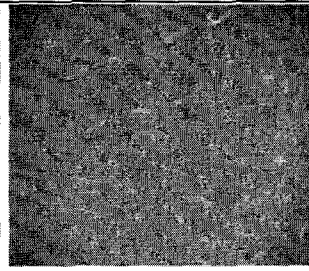
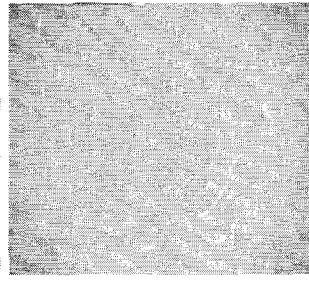
EJECTOR UP LEVEL	DIE BACK MARK	MYLAR PIERCE THRU	QUALITY CONCERN
310			- NO DIE BACK MARK - MYLAR NOT PIERCE THRU - FAILED TO PICK DICE 8 TIMES OVER 1200UNIT SAMPLES - NO DIE PLACING
330 (max height)			- NO DIE BACK MARK - MYLAR NOT PIERCE THRU - NO FAILED TO PICK DICE - NO DIE PLACEMENT PROBLEM

FIG. 14

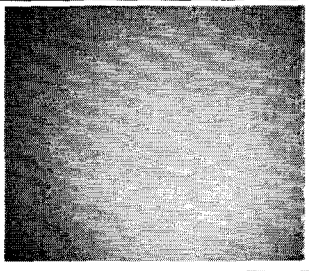
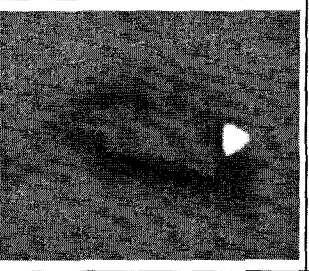
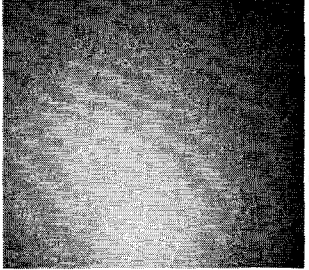
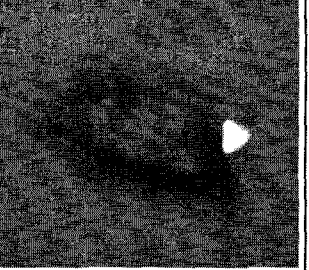
EJECTOR UP LEVEL	DIE BACK MARK	MYLAR PIERCE THRU	QUALITY CONCERN
305			- NO DIE BACK MARK - MYLAR NOT PIERCE THRU - FAILED TO PICK DICE 13 x - NO DIE PLACEMENT PROBLEM
340			- NO DIE BACK MARK - MYLAR NOT PIERCE THRU - NO FAILED TO PICK DICE - NO DIE PLACEMENT PROBLEM

FIG. 15

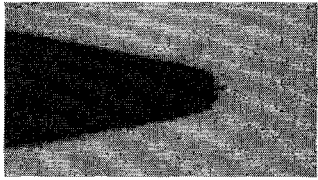
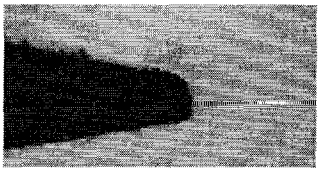
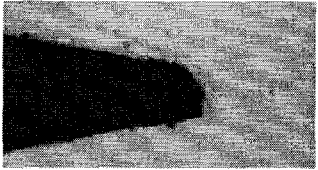
DAY (S)	NEEDLE CONDITION	NEEDLE LENGTH	WEAR RATE (%)	TOTAL OUTPUT
1		18.000 mm	-	-
8		17.937 mm	0.35	190 K
12		17.900 mm	0.56	377 K

FIG. 16

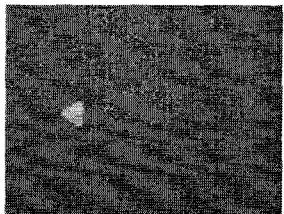
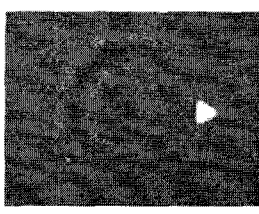
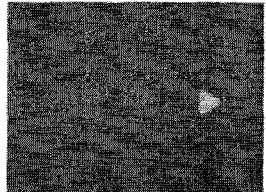
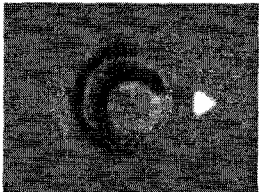
EJECTOR UP LEVEL	DIE BACK MARK	MYLAR PIERCE THRU	QUALITY CONCERN
300			- NO DIE BACK MARK - MYLAR NOT PIERCE THRU - NO FAILED TO PICK DICE - NO DIE PLACEMENT PROBLEM
340			- NO DIE BACK MARK - MYLAR NOT PIERCE THRU - NO FAILED TO PICK DICE - NO DIE PLACEMENT PROBLEM

FIG. 17