Tap Usage – Technical Data Sheet

Tap cuts Oversize:

1. Tap out of alignment with the hole or tap not running true
2. Feed pressure incorrect producing thin or deformed threads
3. Core hole too small:
4. Incorrect tap for the material

   eg. a) Cutting rake too great b) Incorrect thread relief c) Chamfer lead too short
5. Incorrect sharpening eg. chamfer relief uneven or excessive

Tap Cutting Edges Chip:

6. Tap hitting bottom of a blind hole
7. Tap reversed carelessly
8. Lubrication lacking or of wrong quality
9. Material too hard or abrasive of the type of tap

Rapid Tap Wear:

Items 3, 8, 9

10. Speed too fast

Poor Thread Finish:

Items 3, 4, 8

11. Tap requires resharpening

Tap Breaks:

Items 1, 3, 4c, 5, 6, 7, 8, 9, 10, 11

12. Tap flutes blocked with swarf
13. Blind hole: Below 4mm if tapping depth is more than 3/4” thread length, tap may break by chip clogging or tap may break by hitting bottom

Tap Usage – Technical Data Sheet (continued)

14. Deep hole tapping: If tapping depth is more than thread length, tap may break by chip clogging

15. In a punched hole the diameter of the hole reduces from top to bottom hence material tend to grip the tap resulting in breakage of the tap

16. The tap may break while reversing if jerk is given while reversing

17. It is recommended to use proper coolant or lubricating oils while tapping, as use of coolant reduces friction during tapping & reduces heat generation during tapping which subsequently reduces the property of welding build-up edge formation

18. Improper drill size - only recommended tapping drills should be used

19. Tap may break during tapping, if cutting load is going beyond torsional strength of the tap due to excessive torque. Guideline for maximum torque that can be applied is shown below:

Size of TAP				Torque in lbsforce x inch(distance)
BSW/BSF/ME	UNC/UNF/NS	Metric	BA	
	4		6	8
1/8	5, 1/8	3		12
	6	3.5	5	17
5/32	5/32	4	4	23
	8			25
11/64 , 3/16	10 , 3/16	4.5	3	45
13/64		5		57
			2	62
7/32	12, 7/32	5.5	1	71
		6		90
1/4			0	105
9/32		7		130
5/16	5/16	8		183
		9		261
3/8	3/8			298
		10		337
7/16	7/16	11		430
		12		570
1/2	1/2			641