

# Avon Engineering Supplies Ltd

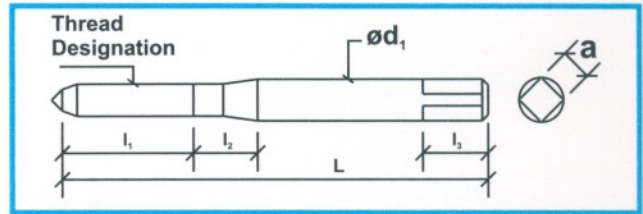
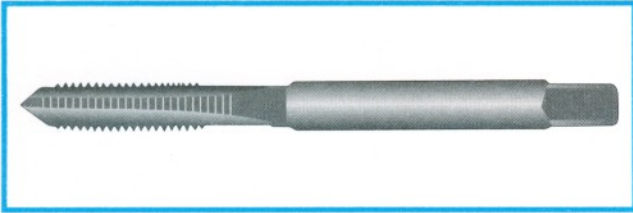
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## HAND & SHORT MACHINE TAPS

ISO Metric HSS Ground Threads  
Coarse Pitch

IS 6175 (part 1) 1992  
ISO 529 1993 (E)

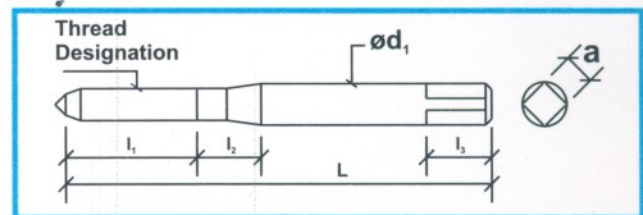
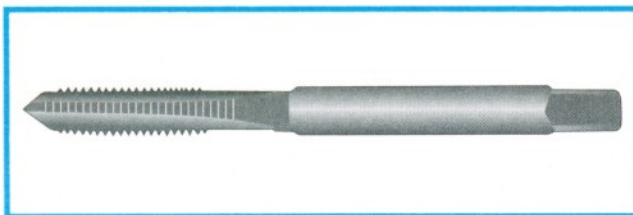


Thread Designation	Pitch	Shank Diameter (d.)	Thread Length (l <sub>1</sub> )	Recess Length (l <sub>2</sub> )	Overall Length (L)	Square		75% Thread depth drill size
						Size (a)	Length (l <sub>3</sub> )	
M 1	0.25	2.50	5.50	4.50	38.50	2.00	4.00	0.76
(M 1.1)	0.25	2.50	5.50	4.50	38.50	2.00	4.00	0.86
M 1.2	0.25	2.50	5.50	4.50	38.50	2.00	4.00	0.96
(M 1.4)	0.3	2.50	7.00	5.00	40.00	2.00	4.00	1.11
M 1.6	0.35	2.50	8.00	5.00	41.00	2.00	4.00	1.26
(M 1.8)	0.35	2.50	8.00	5.00	41.00	2.00	4.00	1.46
M 2	0.4	2.50	8.00	5.50	41.00	2.00	4.00	1.61
(M 2.2)	0.45	2.80	9.50	6.00	44.50	2.24	5.00	1.76
M 2.5	0.45	2.80	9.50	6.00	44.50	2.24	5.00	2.06

## HAND & SHORT MACHINE TAPS

ISO Metric HSS Ground Threads  
Fine Pitch

IS 6175 (part 1) 1992  
ISO 529 1993 (E)



Thread Designation	Pitch	Shank Diameter (d.)	Thread Length (l <sub>1</sub> )	Recess Length (l <sub>2</sub> )	Overall Length (L)	Square		75% Thread depth drill size
						Size (a)	Length (l <sub>3</sub> )	
M 1	0.20	2.50	5.50	4.50	38.50	2.00	4.00	0.81
(M 1.1)	0.20	2.50	5.50	4.50	38.50	2.00	4.00	0.91
M 1.2	0.20	2.50	5.50	4.50	38.50	2.00	4.00	1.01
(M 1.4)	0.20	2.50	7.00	5.00	40.00	2.00	4.00	1.21
M 1.6	0.20	2.50	8.00	5.00	41.00	2.00	4.00	1.41
(M 1.8)	0.20	2.50	8.00	5.00	41.00	2.00	4.00	1.61
M 2	0.25	2.50	8.00	5.50	41.00	2.00	4.00	1.76
(M 2.2)	0.25	2.80	9.50	6.00	44.50	2.24	5.00	1.96
M 2.5	0.35	2.80	9.50	6.00	44.50	2.24	5.00	2.16

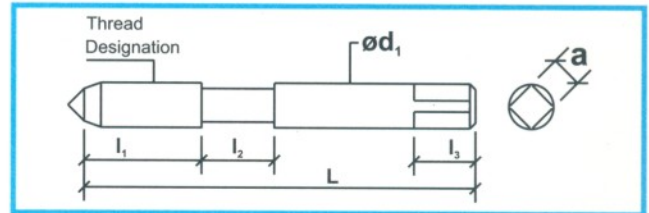
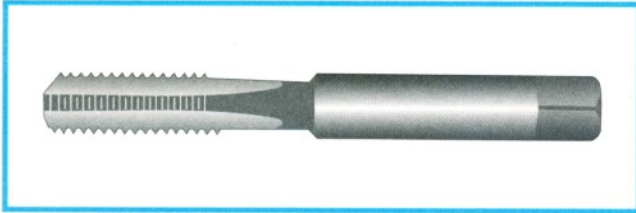
Dimensions are in mm.

All taps will be as per thread tolerance 6H, other tolerances of 4H, 7H can be supplied on request.  
Above 6 mm size, taps will be supplied with female centers on both sides.

## HAND & SHORT MACHINE TAPS

ISO Metric HSS Ground Threads  
Coarse Pitch

IS 6175 (part 2) 1992  
ISO 529 1993 (E)

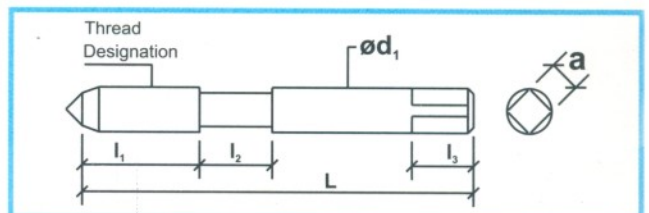
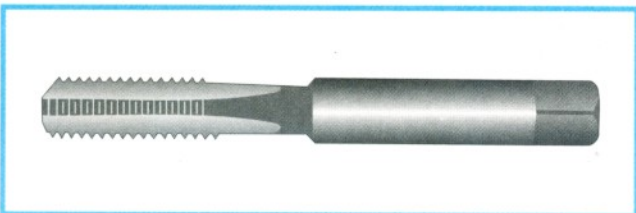


Thread Designation	Pitch	Shank Diameter (d <sub>1</sub> )	Thread Length (l <sub>1</sub> )	Recess Length (l <sub>2</sub> )	Overall Length (L)	Square		75% Thread depth drill size
						Size (a)	Length (l <sub>3</sub> )	
M3	0.50	3.15	11.00	7.00	48.00	2.50	5.00	2.51
(M3.5)	0.60	3.55	13.00	7.00	50.00	2.80	5.00	2.92
M4	0.70	4.00	13.00	8.00	53.00	3.15	6.00	3.32
(M4.5)	0.75	4.50	13.00	8.00	53.00	3.55	6.00	3.77
M5	0.80	5.00	16.00	9.00	58.00	4.00	7.00	4.22
M6	1.00	6.30	19.00	11.00	66.00	5.00	8.00	5.03
(M7)	1.00	7.10	19.00	11.00	66.00	5.60	8.00	6.03
M8	1.25	8.00	22.00	13.00	72.00	6.30	9.00	6.78
(M9)	1.25	9.00	22.00	14.00	72.00	7.10	10.00	7.78
M10	1.50	10.00	24.00	15.00	80.00	8.00	11.00	8.54

## HAND & SHORT MACHINE TAPS

ISO Metric HSS Ground Threads  
Fine Pitch

IS 6175 (part 2) 1992  
ISO 529 1993 (E)



Thread Designation	Pitch	Shank Diameter (d <sub>1</sub> )	Thread Length (l <sub>1</sub> )	Recess Length (l <sub>2</sub> )	Overall Length (L)	Square		75% Thread depth drill size
						Size (a)	Length (l <sub>3</sub> )	
M 3	0.35	3.15	11.00	7.00	48.00	2.50	5.00	2.66
(M 3.5)	0.35	3.55	13.00	7.00	50.00	2.80	5.00	3.16
M 4	0.50	4.00	13.00	8.00	53.00	3.15	6.00	3.51
(M 4.5)	0.50	4.50	13.00	8.00	53.00	3.55	6.00	4.01
M 5	0.50	5.00	16.00	9.00	58.00	4.00	7.00	4.51
(M 5.5)	0.50	5.60	17.00	9.00	62.00	4.50	7.00	5.01
M 6	0.75	6.30	19.00	11.00	66.00	5.00	8.00	5.27
(M 7)	0.75	7.10	19.00	11.00	66.00	5.60	8.00	6.27
M 8	0.75	8.00	16.00	13.00	66.00	6.30	9.00	7.27
M 8	1.00	8.00	19.00	13.00	69.00	6.30	9.00	7.03
(M 9)	0.75	9.00	16.00	14.00	66.00	7.10	10.00	8.27
(M 9)	1.00	9.00	19.00	14.00	69.00	7.10	10.00	8.03
M 10	0.75	10.00	17.00	15.00	73.00	8.00	11.00	9.27
M 10	1.00	10.00	20.00	15.00	76.00	8.00	11.00	9.03
M 10	1.25	10.00	20.00	15.00	76.00	8.00	11.00	8.78

Dimensions are in mm.

All taps will be as per thread tolerance 6H, other tolerances of 4H, 7H can be supplied on request.

Upto 6 mm size, taps will be supplied with male centers on both sides.

Above 6 mm size, taps will be supplied with female centers on both sides.

The Overall Length, Thread Length of the tap blanks may vary in ISO 529 -1993 (E) from the chart indicated above.

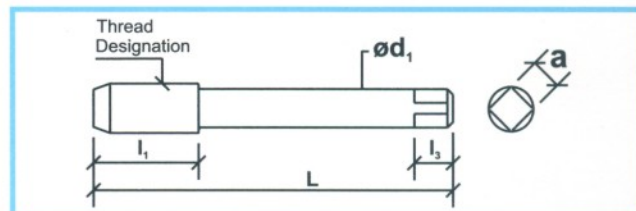
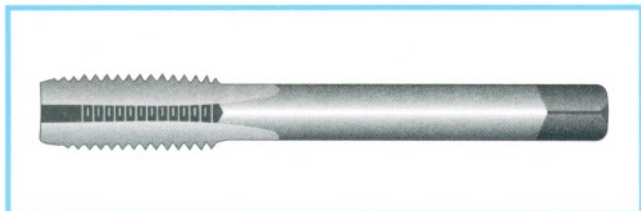
## HAND & SHORT MACHINE TAPS

ISO Metric HSS Ground Threads

Coarse Pitch

IS 6175 (part 3) 1992

ISO 529 1993 (E)



Thread Designation	Pitch	Shank Diameter (d <sub>1</sub> )	Thread Length (l <sub>1</sub> )	Overall Length (L)	Square		75% Thread depth drill size
					Size (a)	Length (l <sub>3</sub> )	
M3	0.50	2.24	11.00	48.00	1.80	4.00	2.51
( M3.5 )	0.60	2.50	13.00	50.00	2.00	4.00	2.92
M4	0.70	3.15	13.00	53.00	2.50	5.00	3.32
( M4.5 )	0.75	3.55	13.00	53.00	2.80	5.00	3.77
M5	0.80	4.00	16.00	58.00	3.15	6.00	4.22
M6	1.00	4.50	19.00	66.00	3.55	6.00	5.03
( M7 )	1.00	5.60	19.00	66.00	4.50	7.00	6.03
M8	1.25	6.30	22.00	72.00	5.00	8.00	6.78
( M9 )	1.25	7.10	22.00	72.00	5.60	8.00	7.78
M10	1.50	8.00	24.00	80.00	6.30	9.00	8.54
( M11 )	1.50	8.00	25.00	85.00	6.30	9.00	9.54
M12	1.75	9.00	29.00	89.00	7.10	10.00	10.30
( M14 )	2.00	11.20	30.00	95.00	9.00	12.00	12.05
M16	2.00	12.50	32.00	102.00	10.00	13.00	14.05
( M18 )	2.50	14.00	37.00	112.00	11.20	14.00	15.56
M20	2.50	14.00	37.00	112.00	11.20	14.00	17.56
( M22 )	2.50	16.00	38.00	118.00	12.50	16.00	19.56
M24	3.00	18.00	45.00	130.00	14.00	18.00	21.08
( M27 )	3.00	20.00	45.00	135.00	16.00	20.00	24.08
M30	3.50	20.00	48.00	138.00	16.00	20.00	26.59
( M33 )	3.50	22.40	51.00	151.00	18.00	22.00	29.59
M36	4.00	25.00	57.00	162.00	20.00	24.00	32.10

Dimensions are in mm.

All taps will be as per thread tolerance 6H, other tolerances of 4H, 7H can be supplied on request.

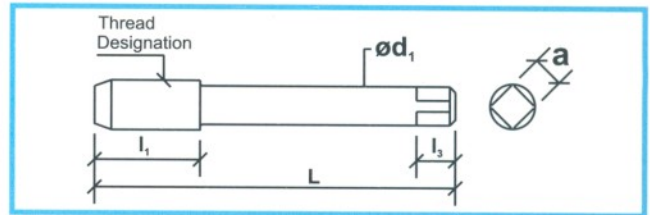
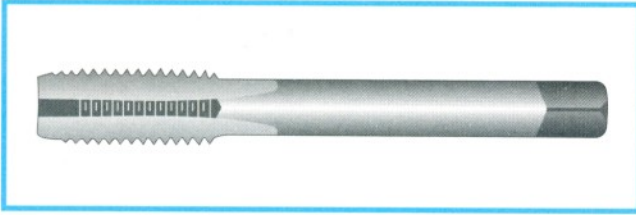
Upto 6 mm size, taps will be supplied male centers on both sides.

Above 6 mm size, taps will be supplied with female centers on both sides.

## HAND & SHORT MACHINE TAPS

ISO Metric HSS Ground Threads  
Fine Pitch

IS 6175 (part 3) 1992  
ISO 529 1993 (E)

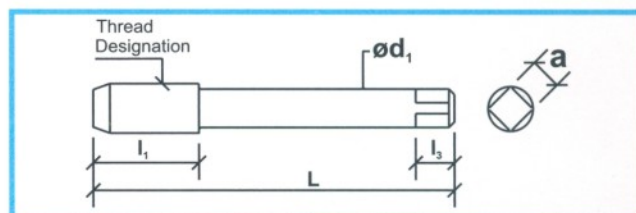
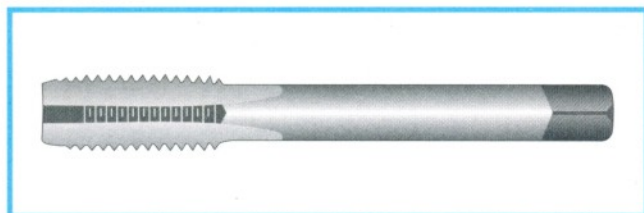


Thread Designation	Pitch	Shank Diameter (d <sub>1</sub> )	Thread Length (l <sub>1</sub> )	Overall Length (L)	Square		75% Thread depth drill size
					Size (a)	Length (l <sub>3</sub> )	
M3	0.35	2.24	11.00	48.00	1.80	4.00	2.66
( M3.5 )	0.35	2.50	13.00	50.00	2.00	4.00	3.16
M4	0.50	3.15	13.00	53.00	2.50	5.00	3.51
( M4.5 )	0.50	3.55	13.00	53.00	2.80	5.00	4.01
M5	0.50	4.00	16.00	58.00	3.15	6.00	4.51
(M5.5)	0.50	4.00	17.00	62.00	3.15	6.00	5.01
M6	0.75	4.50	19.00	66.00	3.55	6.00	5.27
( M7 )	0.75	5.60	19.00	66.00	4.50	7.00	6.27
M8	0.75	6.30	16.00	66.00	5.00	8.00	7.27
M8	1.00	6.30	19.00	69.00	5.00	8.00	7.03
( M9 )	0.75	7.10	16.00	66.00	5.60	8.00	8.27
(M9)	1.00	7.10	19.00	69.00	5.60	8.00	8.03
M10	0.75	8.00	17.00	73.00	6.30	9.00	9.27
M10	1.00	8.00	20.00	76.00	6.30	9.00	9.03
M10	1.25	8.00	20.00	76.00	6.30	9.00	8.78
(M11)	0.75	8.00	20.00	80.00	6.30	9.00	10.27
(M11)	1.00	8.00	20.00	80.00	6.30	9.00	10.03
M12	1.00	9.00	20.00	80.00	7.10	10.00	11.03
M12	1.25	9.00	24.00	84.00	7.10	10.00	10.78
M12	1.50	9.00	29.00	89.00	7.10	10.00	10.54
(M14)	1.00	11.20	22.00	87.00	9.00	12.00	13.03
(M14)	1.25	11.20	25.00	90.00	9.00	12.00	12.78
(M14)	1.50	11.20	30.00	95.00	9.00	12.00	12.54
(M15)	1.00	11.20	22.00	87.00	9.00	12.00	14.03
(M15)	1.50	11.20	30.00	95.00	9.00	12.00	13.54
M16	1.00	12.50	22.00	92.00	10.00	13.00	15.03
M16	1.50	12.50	32.00	102.00	10.00	13.00	14.54
(M17)	1.00	12.50	22.00	92.00	10.00	13.00	16.03
(M17)	1.50	12.50	32.00	102.00	10.00	13.00	15.54
(M18)	1.00	14.00	22.00	97.00	11.20	14.00	17.03
(M18)	1.50	14.00	29.00	104.00	11.20	14.00	16.54
(M18)	2.00	14.00	37.00	112.00	11.20	14.00	16.05
M20	1.00	14.00	27.00	102.00	11.20	14.00	19.03
M20	1.50	14.00	29.00	104.00	11.20	14.00	18.54
M20	2.00	14.00	37.00	112.00	11.20	14.00	18.05
(M22)	1.00	16.00	29.00	109.00	12.50	16.00	21.03
(M22)	1.50	16.00	33.00	113.00	12.50	16.00	20.54
(M22)	2.00	16.00	38.00	118.00	12.50	16.00	20.05

## HAND & SHORT MACHINE TAPS

ISO Metric HSS Ground Threads  
Fine Pitch

IS 6175 (part 3) 1992  
ISO 529 1993 (E)



Thread Designation	Pitch	Shank Diameter (d <sub>1</sub> )	Thread Length (l <sub>1</sub> )	Overall Length (L)	Square		75% Thread depth drill size
					Size (a)	Length (l <sub>3</sub> )	
M24	1.00	18.00	29.00	114.00	14.00	18.00	23.03
M24	1.50	18.00	35.00	120.00	14.00	18.00	22.54
M24	2.00	18.00	35.00	120.00	14.00	18.00	22.05
(M25)	1.00	18.00	29.00	114.00	14.00	18.00	24.03
(M25)	1.50	18.00	35.00	120.00	14.00	18.00	23.54
(M25)	2.00	18.00	35.00	120.00	14.00	18.00	23.05
(M26)	1.50	18.00	35.00	120.00	14.00	18.00	24.54
(M27)	1.00	20.00	30.00	120.00	16.00	20.00	26.03
(M27)	1.50	20.00	37.00	127.00	16.00	20.00	25.54
(M27)	2.00	20.00	37.00	127.00	16.00	20.00	25.05
(M28)	1.00	20.00	30.00	120.00	16.00	20.00	27.03
(M28)	1.50	20.00	37.00	127.00	16.00	20.00	26.54
(M28)	2.00	20.00	37.00	127.00	16.00	20.00	26.05
(M30)	1.00	20.00	30.00	120.00	16.00	20.00	29.03
(M30)	1.50	20.00	37.00	127.00	16.00	20.00	28.54
(M30)	2.00	20.00	37.00	127.00	16.00	20.00	28.05
(M30)	3.00	20.00	48.00	138.00	16.00	20.00	27.08
(M32)	1.50	22.40	37.00	137.00	18.00	22.00	30.54
(M32)	2.00	22.40	37.00	137.00	18.00	22.00	30.05
(M33)	1.50	22.40	37.00	137.00	18.00	22.00	31.54
(M33)	2.00	22.40	37.00	137.00	18.00	22.00	31.05
(M33)	3.00	22.40	51.00	151.00	18.00	22.00	30.08
(M35)	1.50	25.00	39.00	144.00	20.00	24.00	33.54
M36	1.50	25.00	39.00	144.00	20.00	24.00	34.54
M36	2.00	25.00	39.00	144.00	20.00	24.00	34.05
M36	3.00	25.00	57.00	162.00	20.00	24.00	33.08

Dimensions are in mm.

All taps will be as per thread tolerance 6H, other tolerances of 4H, 7H can be supplied on request.

Upto 6 mm size, taps will be supplied male centers on both sides.

Above 6 mm size, taps will be supplied with female centers on both sides.

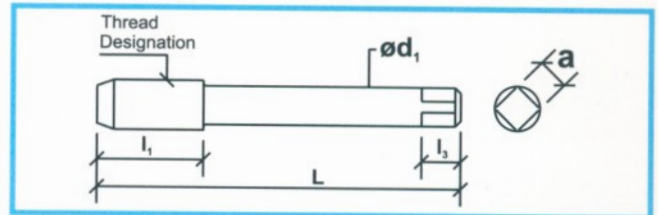
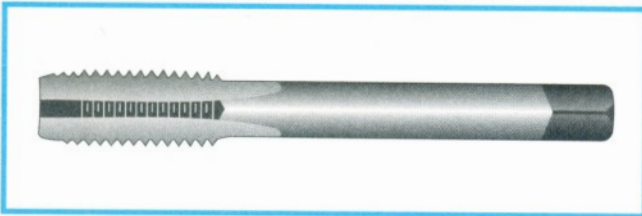
The Overall Length, Thread Length of the tap blanks may vary in ISO 529 -1993 (E) from the chart indicated above.

## LONG SHANK MACHINE TAPS

IS 6175 (part 4) 1991

ISO Metric HSS Ground Threads

Coarse Pitch



Thread Designation	Pitch	Shank Diameter (d <sub>1</sub> )	Thread Length (l <sub>1</sub> )	Overall Length (L)	Square		75% Thread depth drill size
					Size (a)	Length (l <sub>2</sub> )	
M3	0.50	2.24	11.00	66.00	1.80	4.00	2.51
(M3.5)	0.60	2.50	13.00	68.00	2.00	4.00	2.92
M4	0.70	3.15	13.00	73.00	2.50	5.00	3.32
(M4.5)	0.75	3.55	13.00	73.00	2.80	5.00	3.77
M5	0.80	4.00	16.00	79.00	3.15	6.00	4.22
M6	1.00	4.50	19.00	89.00	3.55	6.00	5.03
(M7)	1.00	5.60	19.00	89.00	4.50	7.00	6.03
M8	1.25	6.30	22.00	97.00	5.00	8.00	6.78
(M9)	1.25	7.10	22.00	97.00	5.60	8.00	7.78
M10	1.50	8.00	24.00	108.00	6.30	9.00	8.54
(M11)	1.50	8.00	25.00	115.00	6.30	9.00	9.54
M12	1.75	9.00	29.00	119.00	7.10	10.00	10.30
(M14)	2.00	11.20	30.00	127.00	9.00	12.00	12.05
M16	2.00	12.50	32.00	137.00	10.00	13.00	14.05
(M18)	2.50	14.00	37.00	149.00	11.20	14.00	15.56
M20	2.50	14.00	37.00	149.00	11.20	14.00	17.56
(M22)	2.50	16.00	38.00	158.00	12.50	16.00	19.56
M24	3.00	18.00	45.00	172.00	14.00	18.00	21.08

Dimensions are in mm.

All taps will be as per thread tolerance 6H, other tolerances of 4H, 7H can be supplied on request.

Upto 6 mm size, taps will be supplied male centers on both sides.

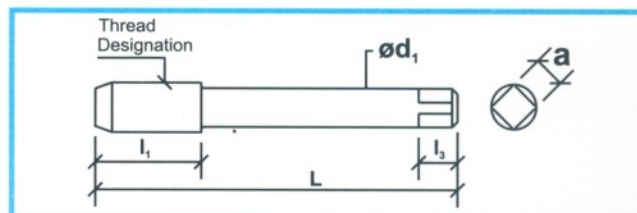
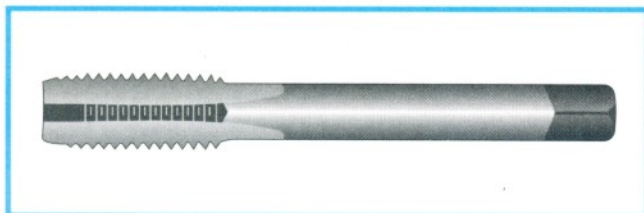
Above 6 mm size, taps will be supplied with female centers on both sides.



## LONG SHANK MACHINE TAPS

ISO Metric HSS Ground Threads  
Fine Pitch

IS 6175 (part 4) 1991



Thread Designation	Pitch	Shank Diameter (d <sub>1</sub> )	Thread Length (l <sub>1</sub> )	Overall Length (L)	Square		75% Thread depth drill size
					Size (a)	Length (l <sub>2</sub> )	
M3	0.35	2.24	11.00	66.00	1.80	4.00	2.66
( M3.5 )	0.35	2.50	13.00	68.00	2.00	4.00	3.16
M4	0.50	3.15	13.00	73.00	2.50	5.00	3.51
( M4.5 )	0.50	3.55	13.00	73.00	2.80	5.00	4.01
M5	0.50	4.00	16.00	79.00	3.15	6.00	4.51
(M5.5)	0.50	4.00	17.00	84.00	3.15	6.00	5.01
M6	0.75	4.50	19.00	89.00	3.55	6.00	5.27
(M7)	0.75	5.60	19.00	89.00	4.50	7.00	6.27
M8	0.75	6.30	16.00	91.00	5.00	8.00	7.27
M8	1.00	6.30	19.00	97.00	5.00	8.00	7.03
(M9)	0.75	7.10	16.00	94.00	5.60	8.00	8.27
(M9)	1.00	7.10	19.00	97.00	5.60	8.00	8.03
M10	0.75	8.00	17.00	104.00	6.30	9.00	9.27
M10	1.00	8.00	20.00	108.00	6.30	9.00	9.03
M10	1.25	8.00	20.00	108.00	6.30	9.00	8.78
(M11)	0.75	8.00	20.00	110.00	6.30	9.00	10.27
(M11)	1.00	8.00	20.00	110.00	6.30	9.00	10.03
M12	1.00	9.00	20.00	110.00	7.10	10.00	11.03
M12	1.25	9.00	24.00	119.00	7.10	10.00	10.78
M12	1.50	9.00	29.00	119.00	7.10	10.00	10.54
(M14)	1.00	11.20	22.00	124.00	9.00	12.00	13.03
(M14)	1.25	11.20	25.00	127.00	9.00	12.00	12.78
(M14)	1.50	11.20	30.00	127.00	9.00	12.00	12.54
(M15)	1.00	11.20	22.00	124.00	9.00	12.00	14.03
(M15)	1.50	11.20	30.00	127.00	9.00	12.00	13.54
M16	1.00	12.50	22.00	127.00	10.00	13.00	15.03
M16	1.50	12.50	32.00	137.00	10.00	13.00	14.54
(M17)	1.00	12.50	22.00	127.00	10.00	13.00	16.03
(M17)	1.50	12.50	32.00	137.00	10.00	13.00	15.54
(M18)	1.00	14.00	22.00	135.00	11.20	14.00	17.03
(M18)	1.50	14.00	29.00	142.00	11.20	14.00	16.54
(M18)	2.00	14.00	37.00	149.00	11.20	14.00	16.05
M20	1.00	14.00	27.00	140.00	11.20	14.00	19.03
M20	1.50	14.00	29.00	142.00	11.20	14.00	18.54
M20	2.00	14.00	37.00	149.00	11.20	14.00	18.05
(M22)	1.00	16.00	29.00	149.00	12.50	16.00	21.03
(M22)	1.50	16.00	33.00	153.00	12.50	16.00	20.54
(M22)	2.00	16.00	38.00	158.00	12.50	16.00	20.05
M24	1.50	18.00	35.00	172.00	14.00	18.00	22.54
M24	2.00	18.00	35.00	172.00	14.00	18.00	22.05

Dimensions are in mm.

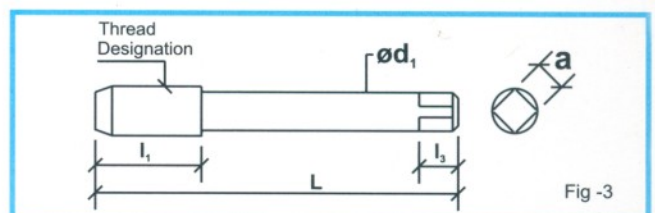
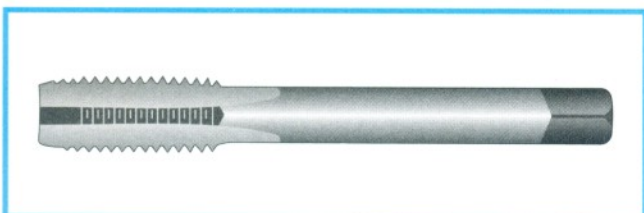
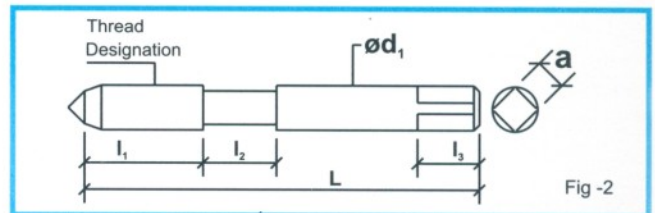
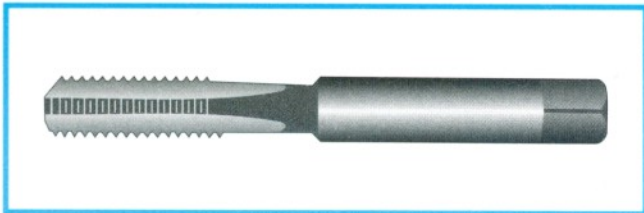
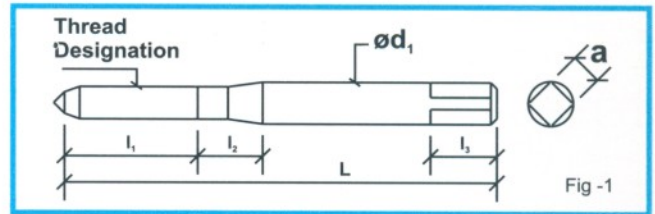
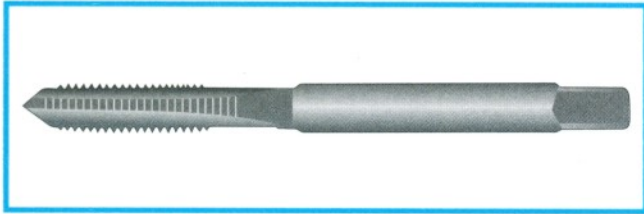
All taps will be as per thread tolerance 6H, other tolerances of 4H, 7H can be supplied on request.

Upto 6 mm size, taps will be supplied with male centers on both sides.

Above 6 mm size, taps will be supplied with female centers on both sides.

## HAND & SHORT MACHINE TAPS UNC

BS 949 (part 1) 1992  
ISO 529 1993 (E)



Thread Designation	Nominal Diameter	TPI	Thread Length ( $l_1$ )	Recess Length ( $l_2$ )	Overall Length (L)	Shank Diameter ( $d_1$ )	Square		75% Thread depth drill size
							Size (a)	Length ( $l_3$ )	
No 1	1.854	64	8.00	5.50	41.00	2.50	2.00	4.00	1.49
No 2	2.184	56	9.50	6.00	44.50	2.80	2.24	5.00	1.77
No 3	2.515	48	9.50	6.00	44.50	2.80	2.24	5.00	2.03
No 4	2.845	40	11.00	7.00	48.00	3.15	2.50	5.00	2.26
No 5	3.175	40	11.00	7.00	48.00	3.15	2.50	5.00	2.59
No 6	3.505	32	13.00	7.00	50.00	3.55	2.80	5.00	2.77
No 8	4.166	32	13.00	8.00	53.00	4.50	3.55	6.00	3.44
No 10	4.826	24	16.00	9.00	58.00	5.00	4.00	7.00	3.85
No 12	5.486	24	17.00	9.00	62.00	5.60	4.50	7.00	4.51
1/4"	6.350	20	19.00	11.00	66.00	6.30	5.00	8.00	5.18
5/16"	7.937	18	22.00	13.00	72.00	8.00	6.30	9.00	6.64
3/8"	9.525	16	24.00	15.00	80.00	10.00	8.00	11.00	8.06
7/16"	11.112	14	25.00	0.00	85.00	8.00	6.30	9.00	9.45
1/2"	12.700	13	29.00	0.00	89.00	9.00	7.10	10.00	10.90
9/16"	14.288	12	30.00	0.00	95.00	11.20	9.00	12.00	12.83
5/8"	15.875	11	32.00	0.00	102.00	12.50	10.00	13.00	13.75
3/4"	19.050	10	37.00	0.00	112.00	14.00	11.20	14.00	16.71
7/8"	22.225	9	38.00	0.00	118.00	16.00	12.50	16.00	19.63
1"	25.400	8	45.00	0.00	130.00	18.00	14.00	18.00	22.48
1 1/8"	28.575	7	48.00	0.00	138.00	20.00	16.00	20.00	25.24
1 1/4"	31.750	7	51.00	0.00	151.00	22.40	18.00	22.00	28.41
1 3/8"	34.925	6	57.00	0.00	162.00	25.00	20.00	24.00	31.03
1 1/2"	38.100	6	60.00	0.00	170.00	28.00	22.40	26.00	34.20

Thread designation dimensions are in "inches" and all other details are in mm.

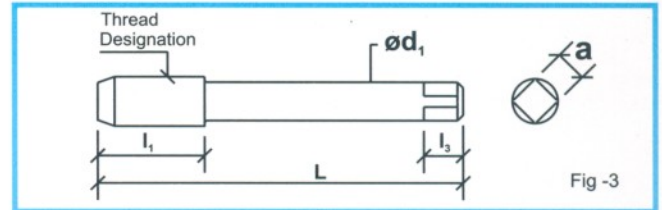
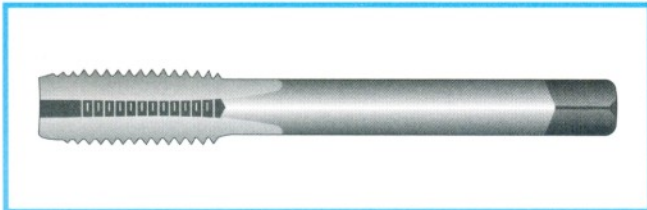
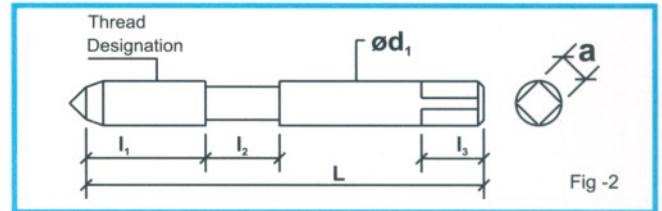
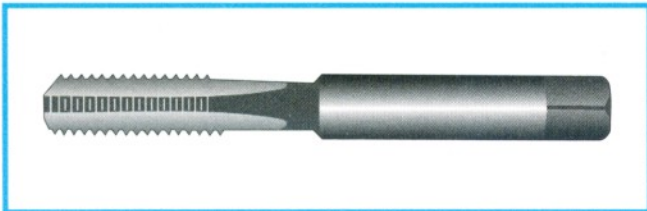
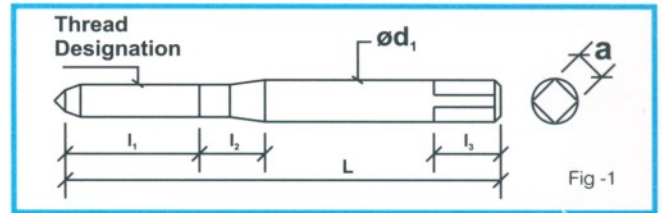
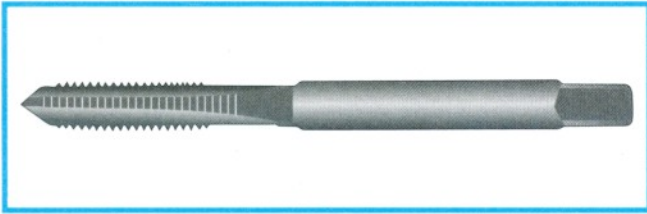
Fig.- 1. Upto No.3 UNC.

Fig.- 2. Above No. 3 UNC to 3/8" UNC. Upto 1/4" UNC size taps will be supplied with male centers on both sides.  
Above 1/4" UNC taps will be supplied with female centers on both sides.

Fig.- 3. Above 3/8" UNC.

## HAND & SHORT MACHINE TAPS UNF

BS 949 (part 1) 1992  
ISO 529 1993 (E)



Thread Designation	Nominal Diameter	TPI	Thread Length ( $l_1$ )	Recess Length ( $l_2$ )	Overall Length ( $L$ )	Shank Diameter ( $d_1$ )	Square		75% Thread depth drill size
							Size ( $a$ )	Length ( $l_3$ )	
No 0	1.524	80	8.00	5.00	41.00	2.50	2.00	2.00	1.23
No 1	1.854	72	8.00	5.50	41.00	2.50	2.00	2.00	1.53
No 2	2.184	64	9.50	6.00	44.50	2.80	2.24	2.20	1.82
No 3	2.515	56	9.50	6.00	44.50	2.80	2.24	2.20	2.10
No 4	2.845	48	11.00	7.00	48.00	3.15	2.50	2.30	2.36
No 5	3.175	44	11.00	7.00	48.00	3.15	2.50	2.30	2.64
No 6	3.505	40	13.00	7.00	50.00	3.55	2.80	2.50	2.92
No 8	4.166	36	13.00	8.00	53.00	4.50	3.55	3.00	3.52
No 10	4.826	32	16.00	9.00	58.00	5.00	4.00	4.70	4.10
No 12	5.486	28	17.00	9.00	62.00	5.60	4.50	4.70	4.65
1/4"	6.350	28	19.00	11.00	66.00	6.30	5.00	5.80	5.52
5/16"	7.938	24	22.00	13.00	72.00	8.00	6.30	6.90	6.96
3/8"	9.525	24	24.00	15.00	80.00	10.00	8.00	11.00	8.55
7/16"	11.112	20	25.00	0.00	85.00	8.00	6.30	9.00	9.95
1/2"	12.700	20	29.00	0.00	89.00	9.00	7.10	10.00	11.53
9/16"	14.288	18	30.00	0.00	95.00	11.20	9.00	12.00	12.99
5/8"	15.875	18	32.00	0.00	102.00	12.50	10.00	13.00	14.58
3/4"	19.050	16	37.00	0.00	112.00	14.00	11.20	14.00	17.59
7/8"	22.23	14	38.00	0.00	118.00	16.00	12.50	16.00	20.56
1"	25.400	12	45.00	0.00	130.00	18.00	14.00	18.00	23.45
1 1/8"	28.575	12	48.00	0.00	138.00	20.00	16.00	20.00	26.63
1 1/4"	31.750	12	51.00	0.00	151.00	22.40	18.00	22.00	29.80
1 3/8"	34.93	12	57.00	0.00	162.00	25.00	20.00	24.00	32.98
1 1/2"	38.100	12	60.00	0.00	170.00	28.00	22.40	26.00	36.15

Thread designation dimensions are in "inches" and all other details are in mm.

Fig.- 1. Upto No.3 UNF.

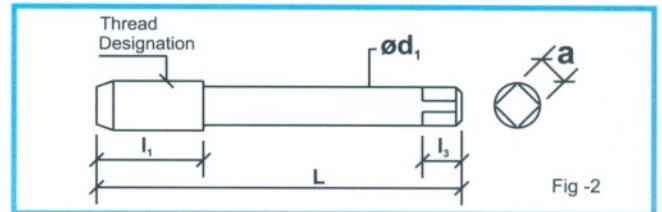
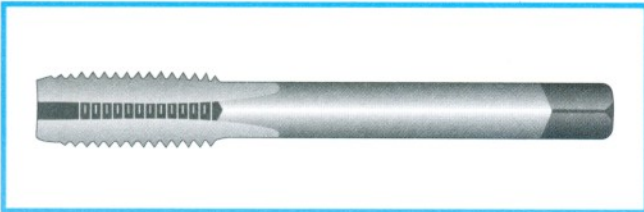
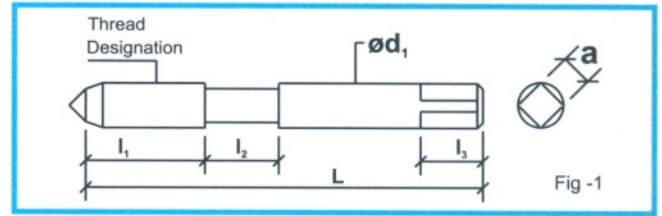
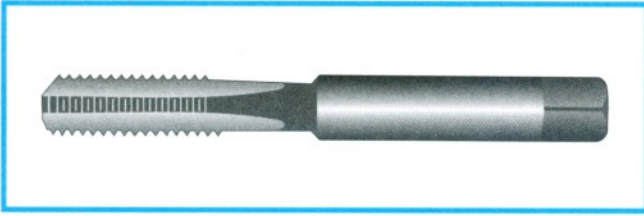
Fig.- 2. Above No. 3 UNF to 3/8" UNF. Upto 1/4" UNF size taps will be supplied with male centers on both sides. Above 1/4" UNF taps will be supplied with female centers on both sides.

Fig.- 3. Above 3/8" UNF.

The Overall Length, Thread Length of the tap blanks may vary in ISO 529 -1993 (E) from the chart indicated above

## HAND & SHORT MACHINE TAPS BSW

BS 949 (part 1) 1992  
ISO 529 1993 (E)



Thread Designation	Nominal Diameter	TPI	Thread Length (l <sub>1</sub> )	Recess Length (l <sub>2</sub> )	Overall Length (L)	Shank Diameter (d <sub>1</sub> )	Square		75% Thread depth drill size
							Size (a)	Length (l <sub>3</sub> )	
1/8"	3.175	40	11.00	7.00	48.00	3.15	2.50	5.00	2.57
3/16"	4.762	24	16.00	9.00	58.00	5.00	4.00	7.00	3.75
1/4"	6.350	20	19.00	11.00	66.00	6.30	5.00	8.00	5.13
5/16"	7.938	18	22.00	13.00	72.00	8.00	6.30	9.00	6.58
3/8"	9.525	16	24.00	15.00	80.00	10.00	8.00	11.00	8.00
7/16"	11.112	14	25.00	0.00	85.00	8.00	6.30	9.00	9.37
1/2"	12.700	12	29.00	0.00	89.00	9.00	7.10	10.00	10.67
9/16"	14.288	12	30.00	0.00	95.00	11.20	9.00	12.00	12.25
5/8"	15.875	11	32.00	0.00	102.00	12.50	10.00	13.00	13.66
11/16"	17.462	11	37.00	0.00	112.00	14.00	11.20	14.00	15.24
3/4"	19.050	10	37.00	0.00	112.00	14.00	11.20	14.00	16.61
7/8"	22.225	9	38.00	0.00	118.00	16.00	12.50	16.00	19.51
1"	25.400	8	45.00	0.00	130.00	18.00	14.00	18.00	22.35
1 1/8"	28.575	7	48.00	0.00	138.00	20.00	16.00	20.00	25.09
1 1/4"	31.750	7	51.00	0.00	151.00	22.40	18.00	22.00	28.26
1 1/2"	38.100	6	60.00	0.00	170.00	28.00	22.40	26.00	34.03

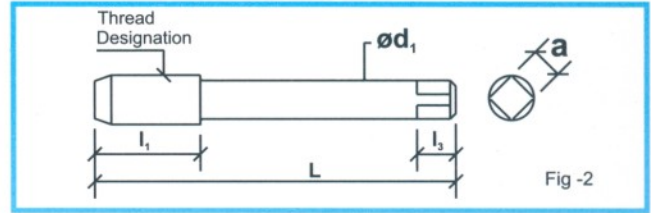
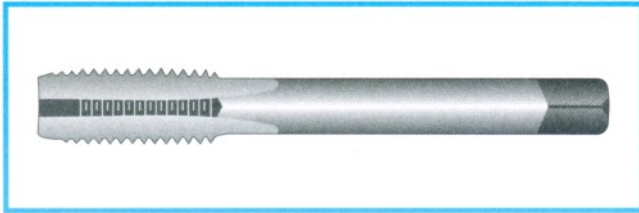
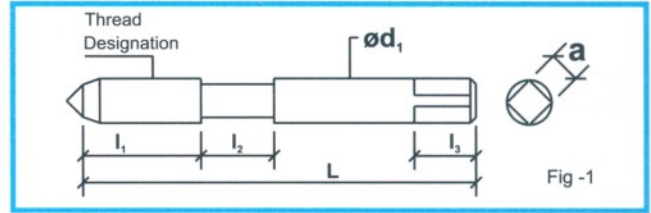
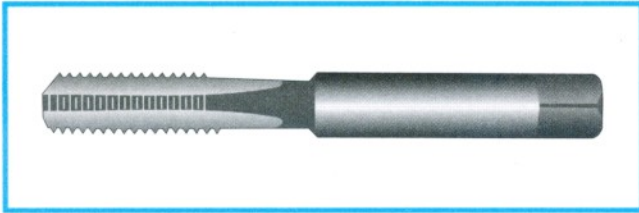
Thread designation dimensions are in "inches" and all other details are in mm.

Fig.- 1. Upto 3/8" BSW.-Upto 1/4" BSW size taps will be supplied with male centers on both sides,  
Above 1/4" BSW size taps will be supplied with female centers on both sides.

Fig.- 2. Above 3/8" BSW

## HAND & SHORT MACHINE TAPS BSF

BS 949 (part 1) 1992  
ISO 529 1993 (E)



Thread Designation	Nominal Diameter	TPI	Thread Length ( $l_1$ )	Recess Length ( $l_2$ )	Overall Length ( $L$ )	Shank Diameter ( $d_1$ )	Square		75% Thread depth drill size
							Size ( $a$ )	Length ( $l_3$ )	
3/16"	4.762	32	16.00	9.00	58.00	5.00	4.00	7.00	4.00
7/32"	5.556	28	17.00	9.00	62.00	5.60	4.50	7.00	4.68
1/4"	6.350	26	19.00	11.00	66.00	6.30	5.00	8.00	5.41
9/32"	7.143	26	19.00	11.00	66.00	7.10	5.60	8.00	6.20
5/16"	7.938	22	22.00	13.00	72.00	8.00	6.30	9.00	6.83
3/8"	9.525	20	24.00	15.00	80.00	10.00	8.00	11.00	8.31
7/16"	11.112	18	25.00	0.00	85.00	8.00	6.30	9.00	9.76
1/2"	12.700	16	29.00	0.00	89.00	9.00	7.10	10.00	11.18
9/16"	14.288	16	30.00	0.00	95.00	11.20	9.00	12.00	12.76
5/8"	15.875	14	32.00	0.00	102.00	12.50	10.00	13.00	14.13
11/16"	17.462	14	37.00	0.00	112.00	14.00	11.20	14.00	15.43
3/4"	19.050	12	37.00	0.00	112.00	14.00	11.20	14.00	17.02
7/8"	22.225	11	38.00	0.00	118.00	16.00	12.50	16.00	20.01
1"	25.400	10	45.00	0.00	130.00	18.00	14.00	18.00	22.96
1 1/8"	28.575	9	48.00	0.00	138.00	20.00	16.00	20.00	25.86
1 1/4"	31.750	9	51.00	0.00	151.00	22.40	18.00	22.00	29.04
1 3/8"	34.925	8	57.00	0.00	162.00	25.00	20.00	24.00	31.88
1 1/2"	38.100	8	60.00	0.00	170.00	28.00	22.40	26.00	35.05

Thread designation dimensions are in "inches" and all other details are in mm.

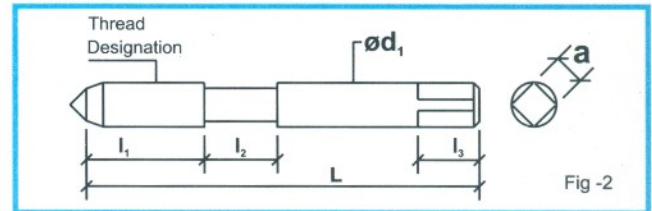
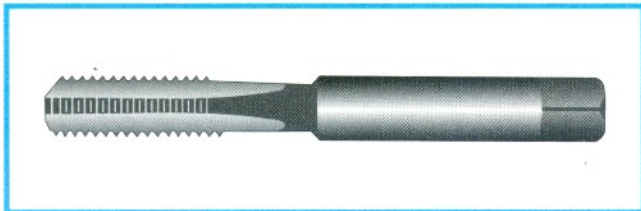
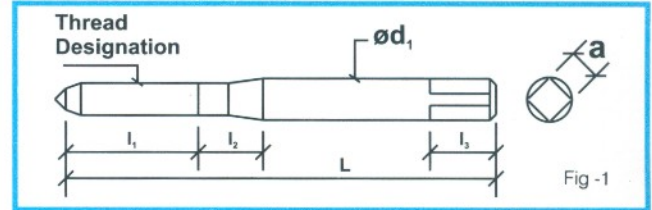
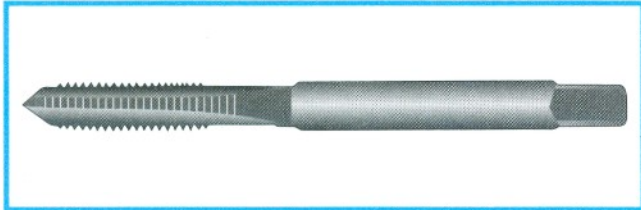
Fig.- 1. Upto 3/8" BSF.-Upto 1/4" BSF size taps will be supplied with male centers on both sides,

Above 1/4" BSF size taps will be supplied with female centers on both sides.

Fig.- 2. Above 3/8" BSF.

## HAND & SHORT MACHINE TAPS BA

BS 949 (part 1) 1992  
ISO 529 1993 (E)



Thread Designation	Nominal Diameter	Pitch	Thread Length ( $l_1$ )	Recess Length ( $l_2$ )	Overall Length ( $L$ )	Shank Diameter ( $d_1$ )	Square		75% Thread depth drill size
							Size (a)	Length ( $l_3$ )	
No 0	6.000	1.000	19.00	11.00	66.00	6.30	5.00	8.00	5.10
No 1	5.300	0.900	17.00	9.00	62.00	5.60	4.50	7.00	4.49
No 2	4.700	0.810	16.00	9.00	58.00	5.00	4.00	7.00	3.97
No 3	4.100	0.730	13.00	8.00	53.00	4.50	3.55	6.00	3.44
No 4	3.600	0.660	13.00	7.00	50.00	3.55	2.80	5.00	3.01
No 5	3.200	0.590	11.00	7.00	48.00	3.15	2.50	5.00	2.67
No 6	2.800	0.530	9.50	6.00	44.50	2.80	2.24	5.00	2.32
No 8	2.200	0.430	9.50	6.00	44.50	2.80	2.24	5.00	1.81
No 9	1.900	0.390	8.00	5.50	41.00	2.50	2.00	4.00	1.55
No 10	1.700	0.350	8.00	5.00	41.00	2.50	2.00	4.00	1.39
No 11	1.500	0.310	8.00	5.00	41.00	2.50	2.00	4.00	1.22
No 12	1.300	0.280	7.00	5.00	40.00	2.50	2.00	4.00	1.05
No 13	1.200	0.250	5.50	4.50	38.50	2.50	2.00	4.00	0.98
No 14	1.000	0.230	5.50	4.50	38.50	2.50	2.00	4.00	0.79

Thread designation dimensions are in "inches" and all other details are in mm.

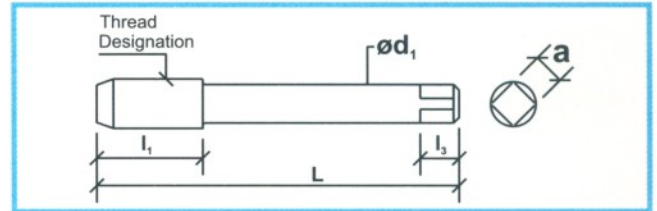
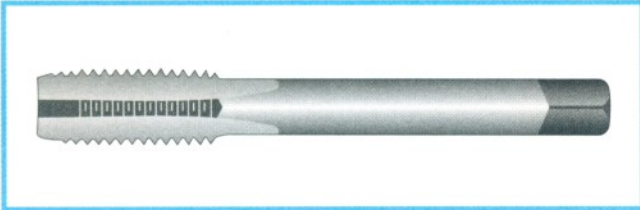
Fig.- 1. From No. 6 BA to No.14 BA.

Fig.- 2. From No. 0 BA to No.5 BA.

All the taps will be supplied with male centers on both sides.

## HAND TAPS BSP

BS 949 (part II) 1969

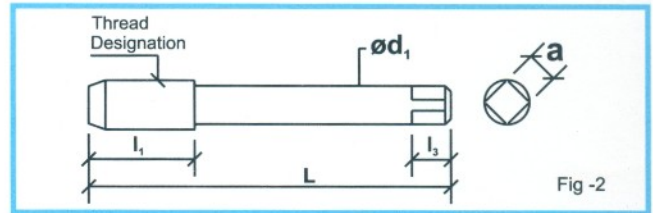
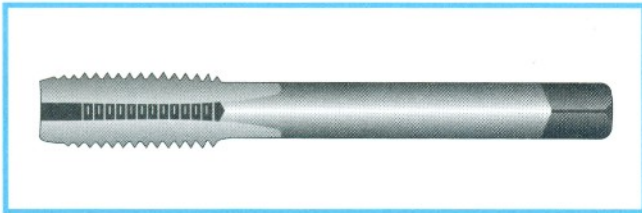
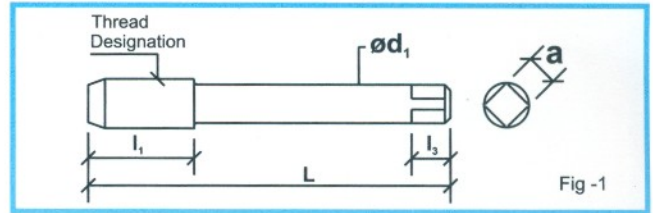
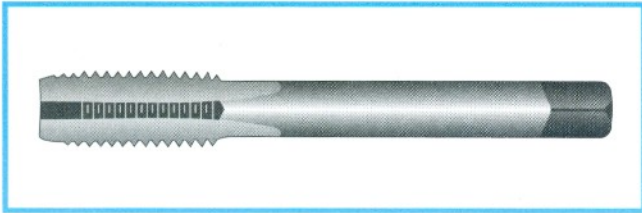


Thread Designation	Basic Major Diameter	TPI	Thread Length (L <sub>1</sub> )	Overall Length (L)	Shank Diameter (d <sub>1</sub> )	Square		75% Thread depth drill size
						Size (a)	Length (L <sub>3</sub> )	
1/8"	0.383	28	3/4	2 1/8	0.318	0.238	5/16	8.86
1/4"	0.518	19	1 1/16	2 7/16	0.429	0.322	7/16	11.87
3/8"	0.656	19	1 1/16	2 9/16	0.542	0.406	1/2	15.38
1/2"	0.825	14	1 3/8	3 1/8	0.687	0.515	5/8	19.21
5/8"	0.902	14	1 3/8	3 3/16	0.800	0.600	11/16	21.17
3/4"	1.041	14	1 3/8	3 1/4	0.906	0.679	11/16	24.70
7/8"	1.189	14	1 9/16	3 1/2	1.093	0.812	3/4	28.46
1"	1.309	11	1 3/4	3 3/4	1.125	0.843	13/16	31.03
1 1/4"	1.650	11	1 3/4	4	1.312	0.984	15/16	39.69
1 1/2"	1.882	11	1 3/4	4 1/4	1.500	1.125	1	45.58
1 3/4"	2.116	11	1 3/4	4 3/8	1.625	1.218	1 1/16	51.53
2"	2.347	11	1 3/4	4 1/2	1.875	1.406	1 1/8	57.40

Except Drill depth details, all other dimensions are in "Inches"  
All the taps will be supplied with female centers on both sides.

## HAND & SHORT MACHINE TAPS BSCy

BS 949 (part 2) 1951



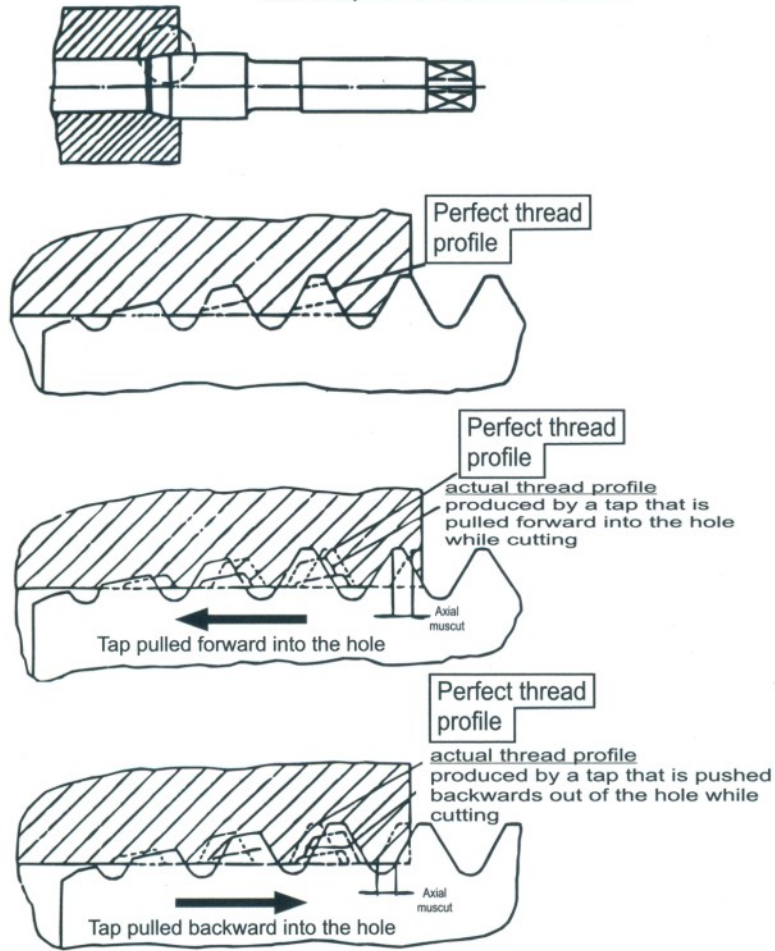
Thread Designation	Basic Major Diameter	TPI	Thread Length (l <sub>1</sub> )	Overall Length (L)	Shank Diameter (d <sub>1</sub> )	Square		75% Thread depth drill size
						Size (a)	Length (l <sub>3</sub> )	
14 SWG	2.273	56	7/16	1 <sup>3</sup> / <sub>4</sub>	0.128	0.105	3/16	1.84
10 SWG	3.589	40	11/16	2	0.144	0.116	3/16	2.98
9 SWG	3.995	40	3/4	2 <sup>1</sup> / <sub>8</sub>	0.159	0.123	1/4	3.39
5/32 BSCy	3.968	32	3/4	2 <sup>1</sup> / <sub>8</sub>	0.159	0.123	1/4	3.21
3/16 BSCy	4.762	32	7/8	2 <sup>3</sup> / <sub>8</sub>	0.189	0.149	1/4	4.00
7/32 BSCy	5.556	26	7/8	2 <sup>3</sup> / <sub>8</sub>	0.221	0.173	1/4	4.62
1/4 BSCy	6.350	26	1	2 <sup>1</sup> / <sub>8</sub>	0.253	0.197	9/32	5.41
5/16 BSCy	7.937	26	1 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	0.315	0.242	11/32	7.00
7/16 BSCy	11.112	26	1 <sup>1</sup> / <sub>4</sub>	3	0.323	0.242	13/32	10.17
1/2 BSCy	12.700	26	1 <sup>1</sup> / <sub>4</sub>	3	0.367	0.275	7/16	11.76
9/16 BSCy	14.287	26	1 <sup>1</sup> / <sub>2</sub>	3	0.429	0.322	1/2	13.35
1.0 BSCy	25.400	24	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	0.8	0.600	13/16	24.38
1.370 BSCy	34.798	24	1 <sup>1</sup> / <sub>2</sub>	4	1.108	0.831	1 <sup>1</sup> / <sub>16</sub>	33.78
1.375 BSCy	34.925	24	1 <sup>1</sup> / <sub>2</sub>	4	1.108	0.831	1 <sup>1</sup> / <sub>16</sub>	33.91

Except Drill depth & Basic Major diameters details, all other dimensions are in "Inches"

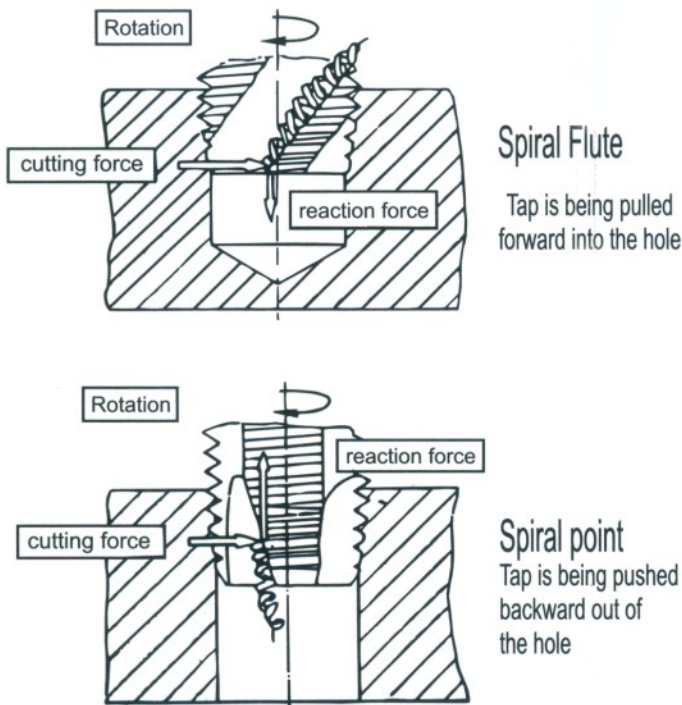
- Fig.1. Upto 1/4" BSCy size, taps will be supplied with male centers on both sides.  
 Above 1/4 " BSCy size taps will be supplied with female centers on both sides.  
 Fig.2. Above 1/4" size.



## Miscut Threads because of uncompensated axial forces



## Axial forces as result of flute geometry

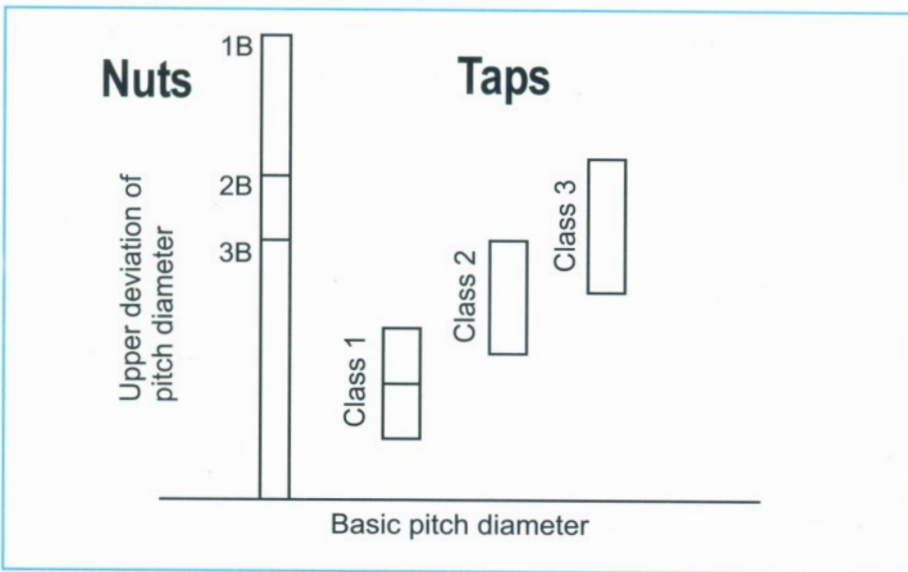


## Selection of tap tolerance class

The relationship between the class of tap and the nut tolerance is only of a general nature. The accuracy of tapping varies with a number of factors, such as the material being tapped, condition of the machine tool, tapping attachment, tapping speed, lubricant used and accuracy built into the tap geometry during its manufacture. Therefore it is recommended to select in every case from previous experience or from special tests, the most suitable class of tap that will produce the required thread tolerance in the component.

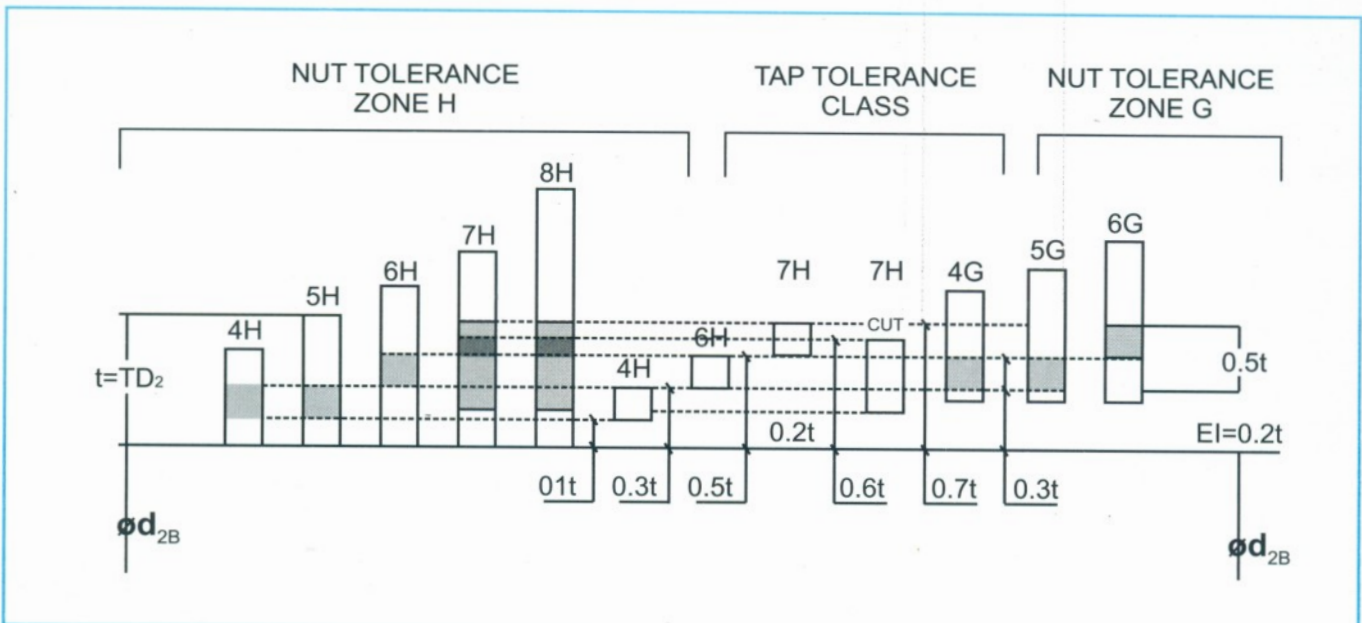
Difference between thread classes varies in the limits of size of the tap major diameter and pitch diameter. The relationship between the different classes of tap and their relationship with the nut pitch diameter are illustrated in below figure.

### BS 949 Part 2 1992



Relationship of tap classes to nut tolerances

### IS 6173 Part I 1992



## Comparision of Different Types of Threads and Thread Limit of Taps

Thread Type	Limit of Tap	Class of Fit which can be produced in normal conditions	
BSW	Zone 3	Medium and Normal	BS 84 - 1956
BSF	Zone 3	Medium and Normal	BS 84 - 1956
Brass	Zone 4	Medium and Normal	BS 84 - 1956
BA	Zone 3		BS 93 - 1951
G ( BSPF) Parallel Pipe	Zone 3		ISO 228
Rc ( BSPT) Taper Pipe	---		ISO 7
UNC	"H" Limits	1B, 2B	ANSI B1.1
UNF	"H" Limits	1B, 2B	ANSI B1.1
Metric ISO	Class 2	Medium 6H , 5G	BS 3643
Conduit ( Metric)	Class 2	7 H	BS 31 - 1940

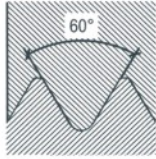
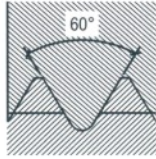
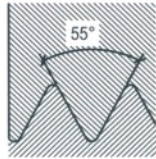
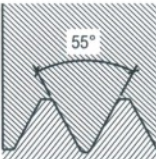
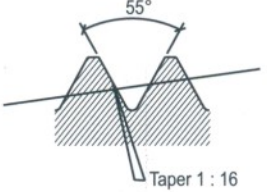
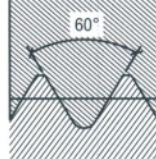
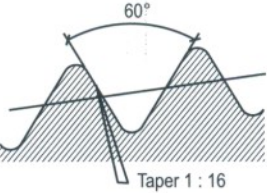
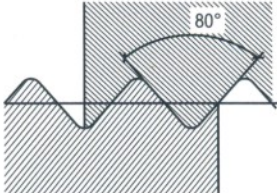
## Trouble Shooting Guide

Specific Problem	Causes	Solutions
<b>Dimensional Accuracy</b>		
Over Size Pitch Diameter	Incorrect Tap	<ul style="list-style-type: none"> <li>a) Use proper tolerance taps.</li> <li>b) Use longer taper lead taps.</li> </ul>
	Chip Packing	<ul style="list-style-type: none"> <li>a) Use Spiral fluted taps.</li> <li>b) Reduce number of flutes to increase space for chips.</li> <li>c) If tapping a blind hole, allow the extra depth for chamfer entry or reduce the chamfer length.</li> <li>d) Use proper lubricant.</li> </ul>
	Galling	<ul style="list-style-type: none"> <li>a) Use proper surface treated taps like steam tempered or TIN coated.</li> <li>b) Use proper cutting lubricant.</li> <li>c) Reduce tapping speed.</li> <li>d) Use proper cutting face angle in accordance with material being tapped.</li> <li>e) Use larger hole size.</li> </ul>
	Operating Conditions	<ul style="list-style-type: none"> <li>a) Apply proper tapping speed.</li> <li>b) Correct alignment of tap and drill hole.</li> <li>c) Use proper tapping speed to avoid torn or roguh threads.</li> <li>d) Use pitch control tapping.</li> <li>e) Use proper tapping machine with suitable power.</li> <li>f) Avoid mis alignment of the tap with respect to workpeice.</li> </ul>
Under Size Pitch Diameter	Incorrect Tap	<ul style="list-style-type: none"> <li>a) Use oversize taps for</li> <li>i) Cutting materials such as copper alloy, aluminium alloy and cast iron.</li> <li>b) Use proper chamfer angle.</li> <li>c) Increase cutting angle of tap in relation with material to be tapped.</li> </ul>
	Damaged thread	<ul style="list-style-type: none"> <li>a) Use proper reversing speed to avoid damaging tapped thread on the way out of the hole.</li> </ul>

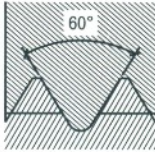
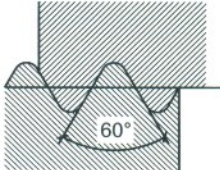
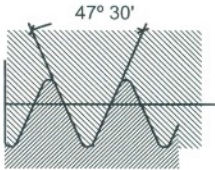
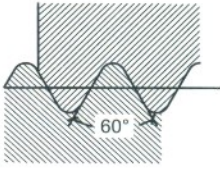
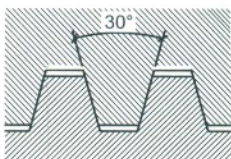
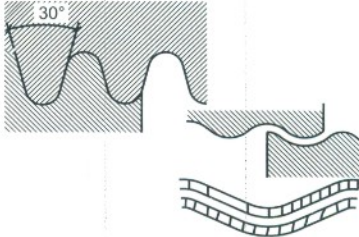
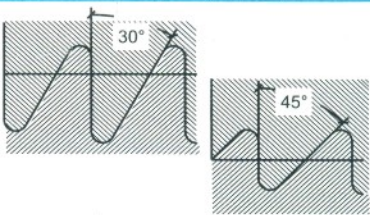
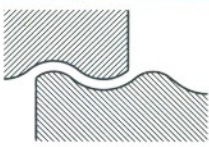
## Trouble Shooting Guide

Specific Problem	Causes	Solutions
<b>Surface Finish</b>		
Torn or Rough Threads	Chamfer Too Short	a) Increase the chamfer length.
	Wrong Cutting Angle	b) Select the correct cutting face angle.
	Galling	a) Use thread relieved taps. b) Reduce land width. c) Use proper surface treated taps like steam tempered or TIN coated. d) Use over size drill. e) Obtain proper alignment between tap and work.
	Chip Packing	a) Use Spiral fluted taps. b) Use oversize drill.
<b>Tool Life</b>		
Breakage	Incorrect Tap Selection	a) Avoid chip packing in the flutes or bottom of the hole. b) Use spiral fluted taps for blind holes. c) Use proper surface treated taps like steam tempered or TiN coated.
	Excessive Tapping Torque	a) Use larger drill size. b) Increase the chamfer length. c) Increase cutting angle. d) Apply a tap with more thread relief and reduced land width.
	Operating Conditions	a) Reduce tapping speed. b) Avoid misalignment between tap and the hole and tapered hole. c) Use floating tap holder. d) Use tapping holder with torque adjustment. e) Avoid hitting bottom of the hole with tap.
	Tool Condition	a) Do not grind the bottom of the flute. b) Avoid too narrow of a land width. c) Regrind tool more frequently.
Edge Chipping	Incorrect Tap Selection	a) Reduce cutting angle. b) Increase chamfer length.
	Operating Conditions	a) Reduce tapping speed. b) Avoid misalignment between tap and the hole. c) Avoid sudden return or reverse in the blind hole tapping.
Wear	Incorrect Tap Selection	a) Apply specially designed taps for tapping high tensile materials. b) Change to a type of high - speed tap that contains vanadium. c) Use proper surface treated taps like steam tempered or TIN coated. d) Increase chamfer length.
	Operating Conditions	a) Reduce tapping speed. b) Apply proper cutting lubricants. c) Avoid work hardened hole. d) Use larger hole size.

## POPULAR THREAD FORMS

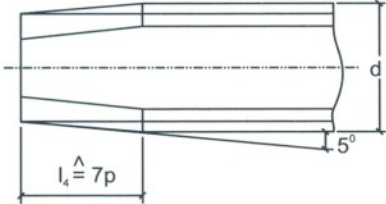
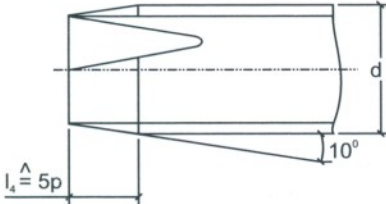
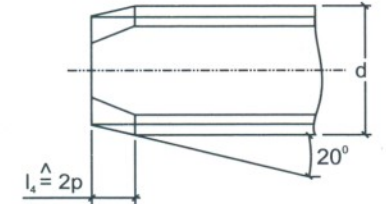
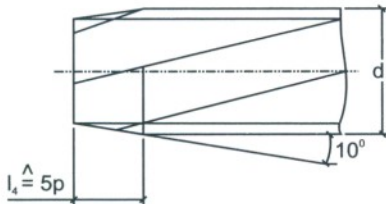
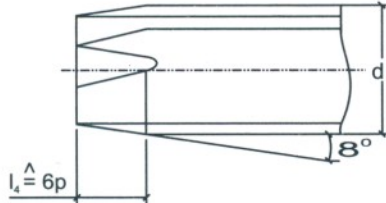
Sr. No.	Name Of Thread	Symbol	Form Of Thread	Standard
1	ISO METRIC THREAD	M		IS 4218 DIN 13, DIN 14 JIS B 0205, JIS B 0207 BS 3643
2	UNIFIED THREAD	U		ANSI B 1.1 BS 1580 JIS B 0206 JIS B 0208
3	WHITWORTH THREAD	W		BS 84
4	STRAIGHT PIPE THREAD	R BSP PF		DIN 259 DIN 2999 DIN 3858 BS 21 JIS B 0203
5	TAPER PIPE THREAD	R BSP PT		DIN 2999 DIN 3858 BS 21 JIS B 0203
6	AMERICAN STANDARD STRAIGHT PIPE THREAD	NPS		ANSI B 2.1
7	AMERICAN STANDARD TAPER PIPE THREAD	NPT NPTF		ANSI B 2.1 ANSI B 1.20.3 ANSI B 1.20.4
8	STEEL CONDUIT THREAD	PG C		DIN 40430 JIS B 0204

## POPULAR THREAD FORMS

Sr. No.	Name Of Thread	Symbol	Form Of Thread	Standard
9	SEWING MACHINE THREAD	SM		JIS B 0226
10	BYCYCLE THREAD	FG BSCy BC		DIN 79012 BS 811 JIS B 0225
11	BRITISH ASSOCIATION THREAD	BA		BS 93
12	AUTOMOBILE TYPE VALVE THREAD	Vg TV		DIN 7756 JIS D 4208
13	ACME THREAD	Tr TM		DIN 103 JIS B 0221
14	KNUCKLE THREAD	Rd		DIN 405 DIN 20400 DIN 15403 DIN 3182 DIN 7273
15	BUTTRESS THREAD	S		DIN 513  DIN 2781
16	EDISON SCREW THREAD	E		DIN 40400 JIS C 7709

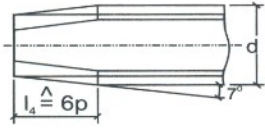
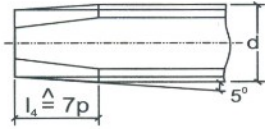

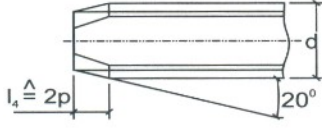
## STYLE OF CHAMFERS

### MACHINE TAPS

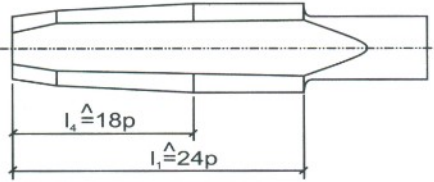
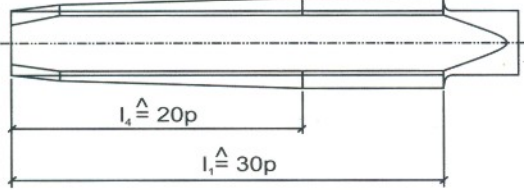
Chamfer Style	View	Description
A	 <p>Technical drawing of Chamfer Style A showing a long chamfer with a 5° angle and a length of <math>l_4 \hat{=} 7p</math>. The diameter is labeled as <math>d</math>.</p>	<p>Long Chamfer - suitable for through holes. This type reduces the chip load on the teeth of the tap.</p>
B	 <p>Technical drawing of Chamfer Style B showing a chamfer with a 10° angle and a length of <math>l_4 \hat{=} 5p</math>. The diameter is labeled as <math>d</math>.</p>	<p>Suitable for through holes &amp; blind holes with sufficient chip pocket. Has a rugged design.</p>
C	 <p>Technical drawing of Chamfer Style C showing a short chamfer with a 20° angle and a length of <math>l_4 \hat{=} 2p</math>. The diameter is labeled as <math>d</math>.</p>	<p>Short Chamfer suitable for blind holes. This Chamfer is used on hand taps, bottoming machine taps, left &amp; right hand, spiral fluted taps.</p>
D	 <p>Technical drawing of Chamfer Style D showing a medium chamfer with a 10° angle and a length of <math>l_4 \hat{=} 5p</math>. The diameter is labeled as <math>d</math>.</p>	<p>Medium Chamfer, suitable for both through &amp; blind holes &amp; specially in spiral taps .</p>
E	 <p>Technical drawing of Chamfer Style E showing a special chamfer with an 8° angle and a length of <math>l_4 \hat{=} 6p</math>. The diameter is labeled as <math>d</math>.</p>	<p>Special Chamfer for spoon taps or lip taps. Due to the rugged design of the flutes, it is specially suited for tapping materials of thin sections.</p>

## TYPE OF CHAMFERS

### HAND TAPS

Chamfer Type	View	Description
TAPER ROUGHER		<u>Taps set of Two Pieces - Fine Pitch</u> Non Serial Taps - Taper Serial Taps - Rougher
TAPER ROUGHER		<u>Taps set of Three Pieces - Coarse Pitch</u> Non Serial Taps - Taper Serial Taps - Rougher
SECOND INTERMEDIATE		<u>Taps set of Three Pieces</u> Non Serial Taps - Second Serial Taps - Intermediate
BOTTOMING FINISHER		<u>Taps set of Two Pieces &amp; Three Pieces</u> Non Serial Taps - Bottoming Serial Taps - Finisher

### NIB TAPS & NUT TAPS

CHAMFER	VIEW	DESCRIPTION
LONG LEAD = 75 - 80% OF THREAD LENGTH		Specially designed Nib Tabs for highspeed nut tapping on cold forged components.
		Conventional Nut Taps with long thread length suitable for nut tapping of hot forged components.