



Birla Precision Technologies Ltd.
**INDIAN TOOL
 MANUFACTURERS**
 (DIVISION)



PRICE LIST 1223

TWIST DRILLS | REAMERS | MILLING CUTTERS | GROUND THREAD TAPS
| MASONRY DRILLS | TOOL BITS



*APPLICATION SPECIFIC
 TOOLS*



The Krishna American Oil Co. | 8567041000
www.krishna.co.in

Birla Precision Technologies Limited

INDIAN TOOL MANUFACTURERS

(DIVISION)

PROFILE

INDIAN TOOL MANUFACTURER'S (ITM), A DIVISION OF BIRLA PRECISION TECHNOLOGIES LIMITED PIONEERED IN THE YEAR 1937 THE MANUFACTURE AND SUPPLY OF HIGH SPEED STEEL CUTTING TOOLS IN INDIA.

ITM HAS THREE MANUFACTURING UNITS IN MAHARASHTRA. THE FIRST PLANT AT NASIK WHERE STANDARD AS WELL AS SPECIAL TOOLS ARE MANUFACTURED AS PER CUSTOMER REQUIREMENT , SECOND PLANT AT AURANGABAD AND A NEW STATE OF THE ART PLANT AT CHALLISGAON , WHICH ARE MANUFACTURING STANDARD CATALOGUE ITEMS. OUR PLANTS ARE ISO 9001 -2015 CERTIFIED FROM TUV- RW.

ITM UNDERTAKES PRODUCTION OF CUTTING TOOLS IN VARIOUS GRADES OF HIGH SPEED STEEL LIKE M2, M35, M42, T42 ETC.

ITM ALSO PRODUCES AS PER SPECIFIC REQUIREMENTS OF THE CUSTOMER PARTICULARLY WITH REGARD TO PROFILE, GEOMETRY, DIMENSION ETC.

ITM'S "DAGGER" BRAND CUTTING TOOLS DISTRIBUTED WIDELY THROUGH A COUNTRY WIDE NETWORK OF DISTRIBUTORS AND DEALERS, BACKED BY BRANCH OFFICES. RESIDENT REPRESENTATIVES AND SERVICE ENGINEERS AT AHMEDABAD, BANGALORE, BARODA, BHOPAL, CHENNAI, COCHIN, DELHI, FARIDABAD, JAMSHEDPUR, KANPUR, KOLKATTA, LUDHIANA, MUMBAI, PUNE AND SECUNDERABAD.



UNIT NO.1 NASIK PLANT



UNIT NO.2 AURANGABAD PLANT



UNIT NO.3 CHALISGAON PLANT

PRICE LIST 0422

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TWIST DRILL

REAMERS

MILLING CUTTERS

GROUND THREAD TAPS

MASONRY DRILLS

TOOL BITS

**PANTHER SERIES PRODUCTS
(DRILLS & TAPS)**

REGISTERED OFFICE

23, Birla Mansion No. 2, 1st Floor,
D.D. Sathe Marg, Prarthana Samaj,
Mumbai - 400 004
Tel. : +91 22 23825060
E-mail : info@birlaprecision.com
Web.: www.birlaprecision.com

NASIK UNIT

62/63, MIDC Industrial Area,
Satpur, Nasik - 422 007.
Tel. : (0253) 2350320 / 21,
E-mail : itmnsk@indiantool.com

AURANGABAD UNIT

B-15/3, MIDC Industrial Area,
Waluj, Aurangabad - 431 133.
Tel.: (0240) 2564056 / 57
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CHALISGAON UNIT

Plot No. E-2/1, E-2/2, E-4/1
MIDC, Chalisgaon - 424 101.
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 <https://www.facebook.com/birlaprecision>
 @birlaprecision
 @birla_precision
 <https://in.linkedin.com/company/birla-precision-technologies-ltd>

- This Price List subject to alteration without prior notice and the prices are based on the present input costs.
- Prices given in this price list are for standard products and base prices only. Taxes are extra as applicable.
- The prices are for delivery on F.O.R. Destination.
- This price list effective from **01/12/2023 & supersedes all previous price lists.**

Note : The products indicate in this price list are conforming to National & International Standards. However, we can manufacture and supply **Special and Tailor Made Tools** to suit requirements of the Customers and End-users on request. For any specific requirements please send your enquiries to enquiry@indiantool.com

Birla Precision Technologies Limited

**INDIAN TOOL
MANUFACTURERS**

(DIVISION)

BRANCHES

AHMEDABAD

104, New Cloth Market,
Ahmedabad - 380 002.
Tel : (079) - 22123277 / 22124642
Mob.: +91 9607007737
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Plot No. 235, Express Road,
Kanpur Nagar,
Uttar Pradesh - 208 001
Mob.: +91 9607007752
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BANGALORE

TBH Plaza, 2nd Floor, No. 34,
SJP Road, Bangalore - 560 002
Tel : (080) - 22128347
Mob.: +91 9607007747
E-mail : itmblr@indiantool.com

KOLKATA

'NICCO' House, 4th Floor,
2 Hare Street, Kolkata - 700 001.
Tel : (033) - 22485191 / 22486449
Mob.: +91 9607007740
E-mail : itmkol@indiantool.com

CHENNAI

157, Linghi Chetty Street,
Chennai - 600 001.
Tel : (044) - 25342636, 42012503
Mob.: +91 9607007757
E-mail : itmchn@indiantool.com

LUDHIANA

JASSAL HOUSE, G.T. ROAD,
LUDHIANA - 141008
Tel. : (0161) 2722535
Mob.: +91 9607007741
E-mail : itmldh@indiantool.com

DELHI

XI / 4238-A at 1, Upper Ground Floor,
Ansari Road, Darya Ganj,
New Delhi - 110 002.
Tel. : (011) 43575500
Mob.: +91 9607007754
E-mail : itmldh@indiantool.com

PUNE

Shop No. 15, Pesh Industrial Premises
Co.Op. Society Ltd., Plot No. S-79/1/A,
Telco Road, Next to - Century
Enka Industry, MIDC, Bhosari,
Pune - 411 026
Mob.: +91 9607005949
E-mail : itmpune@indiantool.com

INDORE

M47, New Siyaganj,
Mal-Godam Road,
Indore - 452007 (MP)
Tel. : (0731) 4997791
Mob.: +91 9607007753
E-mail : itmindore@indiantool.com

SECUNDERABAD

D. No. 4-5-1 (Old No. 2060),
First Floor, Lala Temple Street,
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Tel : (040) 27713177
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MUMBAI OFFICE

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Email : itmth@indiantool.com
website : www.indiantool.com

NINJA PRODUCTS



NINJA Taps

After successful launch of Panther Taps, we at Indian Tool Manufacturers (ITM) – A division of Birla Precision Technologies Ltd., are proud to announce launch of our “NINJA Taps”, a new series of superior quality Taps. These Taps are made out of premium quality of HSS grade of Materials.

ITM NINJA Taps meets the customer needs of precise thread quality and improved productivity. The range of these products consists of SPPT Taps, Spiral Taps, St. Flute Taps, and Roll Form Taps.

- Spiral Point Taps : (Size Range M3-M16)
- Spiral Flute Taps : (Size Range M3-M16)
- St. Flute Taps : (Size Range M3-M16)
- Roll Form Taps : (Size Range M6-M16)

NINJA Drills

NINJA Series of Drills are made out of highest quality of HSS grade of Materials. These drills are manufactured on our latest CNC Machines, with special geometry to give better performance. These Drills can be used for Stainless Steels, Nickel Chromium Steels and Forged Steels, etc.

Size Range :

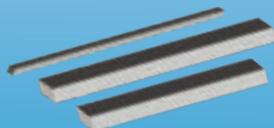
Ninja Series Drills are manufactured; as per IS: 5101 and BS: 328.

- Metric Size : 3.0 mm to 13.0 mm
- Inch Series : 1/8" to 1/2"

Applications :

Ninja series drills are best suitable for drilling on; Stainless Steels, Forged Steels, Nickel Chromium Steels and Tougher Machining Applications.

HATHYAR - TOOL BITS



ITM Hathyar Square Tool Bits are manufactured out of finest grades of HSS materials. All Tool Bits made with 15° bevel angle. This will give advantage to make easy end grinding preparation for end user.

HATHYAR - 20 – Suitable for free cutting materials.

HATHYAR - 50 – Suitable for difficult to cut materials.

HATHYAR - 51 – Suitable for Harder Alloy steels and stainless steels.

PANTHER PRODUCTS



APPLICATION SPECIFIC TAPS & DRILLS

These products are solutions for :

- ♦ Exceptional Performance ♦ Better Tool Life ♦ Superior quality

Drills

Panther series Drills are made-out of finest HSS Premium Materials and manufactured from latest CNC Machines, having special point geometry to produce better finish and accurate holes. These drills designed especially to machine difficult to cut material like Stainless steels, Nickel chromium steel and Forged steel, etc.

Advantages :

- ♦ Best Suitable for tougher material
- ♦ Unique point geometry to reduce thrust forced during drilling
- ♦ Special surface treatment for maximum wear resistance.
- ♦ Longer Tool Life

Taps

Panther series Taps are made - out of premium grades of HSS Materials. These taps are produced from our latest CNC Machines, having unique geometries to suit different work materials.

Panther series consists of Spiral Flute, Spiral Point, Roll Form and Cast Iron Taps. We can supply these taps with TiN, TiCN and Ti(Al)N coating to enhance performance of taps.

- ♦ **Spiral Flute Taps** : Best suitable for Blind Hole applications, spiral flutes eliminate the chip clogging.
- ♦ **Spiral Point Taps** : Best suitable for through hole applications, spiral point works as a chip breaker, to push chips towards forward direction.
- ♦ **Roll Form Taps** : Roll form tapping operation is a chip less operation, Form threads are produced by displacement of material. Best suitable for soft materials like Aluminum, Copper and Brass etc.
- ♦ **Cast Iron Taps** : Best suitable for blind and through application of Cast Iron materials.

Application Taps
'TORPEDO'
available on request.



HSS TWIST DRILLS



ITM offer a extensive range of standard and special twist drills in different grades of HSS, available in various diameters.

RANGE :

Type : Parallel Shank Stub series, Jobber series, Long Series, Taper Shank drills, Core drills, Extra long drills with Parallel & Taper Shank, Combined drills and countersinks (Centre drills), Taper Pin Drills, Shell drills, Special drills etc.

Size :

Range : Parallel Shank Twist Drills: 3mm - 31.5mm, 3/64" - 1.15/64"
Taper Shank drills : 3.0mm - 102mm : 1/8" - 4"
MAL-2000mm

Material : HSS-M2

Note : Drills can be supplied as per specific Customers needs on request as follows :

- Intermediate Diameters.
- Non Standard and Special Drills.
- In different grades of HSS Like M35, M42 etc.
- Various surface coating like TiN, TiAIN etc.
- Special goemetry to suit various applications.

HSS SCREWING TAPS



Available in a wide range of sizes, types and combinations.

RANGE :

Type : Hand and Short Machine Taps, Long Shank Machine Taps, .Nut Taps Pipe Taps, BSW, BSF, UNC, NC, NF, NGT and special Taps.

Size :

Range : 3mm - 100mm : 1/8 -4"

Material : HSS-M2

Note : Taps can be supplied as per Customers needs on request as follows :

- Serial or Non serial
- Individual Pieces or in Sets
- Different type of Flute like Straight, Helical, Spiral, Spiral Point & Fluteless.
- In different grades of HSS like M35, M42 etc.
- Various surface coating like TiN, TiAIN etc.
- Special Taps as per Customer's Drawing.

HSS REAMERS



Available in a wide range of diameters and manufactured to suit specific reaming operations to provide perfect accuracy and optimum surface finish.

RANGE :

Type : Parallel hand reamers, long fluted machine reamers, Chucking reamers with parallel shank or taper shank, Bridge reamers, Taper pin reamers, Socket reamers, Machine Jig reamers, Centre reamers, Shell reamers etc.

Size :

Range : 3.0mm - 76.2mm : 1/8" - 3"

Material : HSS-M2

Note : Reamers can also be supplied as per specific Customers needs as follows :

- Non standard and special as per Customers drawing.
- Intermediate diameters.
- In different grades of HSS like M35, M42 etc.
- Various surface coating like TiN, TiNAIN etc.

HSS MILLING CUTTERS



Available in a wide range of diameters and types suitable for various types of milling operations.

RANGE :

Size :

Range : Shank Type cutters : 3mm-63mm : 1/8"-2.1/2"
Bore Type cutter : 40mm-250mm : 1.1/2" - 10"

Type : Cylindrical cutters, Side & Face cutters, Shell End Mills, Single and Double Angle Cutters, Face cutters, Slotting cutters, Keyway Milling cutters, Hollow Mill, Convex and Concave Milling cutters, Single and Double corner rounding cutters, Parallel and Taper Shank Slot Drills, End Mills, "T" Slot cutters, Counter bores, Counter sinks, Woodruff Key Slot cutters with parallel shank and cutters as per special design.

Material : HSS-M2

Note : Milling cutters can also be supplied as per specific Customers needs as follows:

- Non standard and special as per Customer drawings.
- Intermediate diameters.
- In different grades of HSS like M35, M42 etc.

MASONRY DRILLS



ITM's : Carbide Tipped Masonry Drills are manufactured from Alloy Steel, have Ground Flutes, are in Bright Finish and combined with ITM's unique brazing and treatment process results in withstanding shock and outstanding resistance to wear during its use.

RANGE :

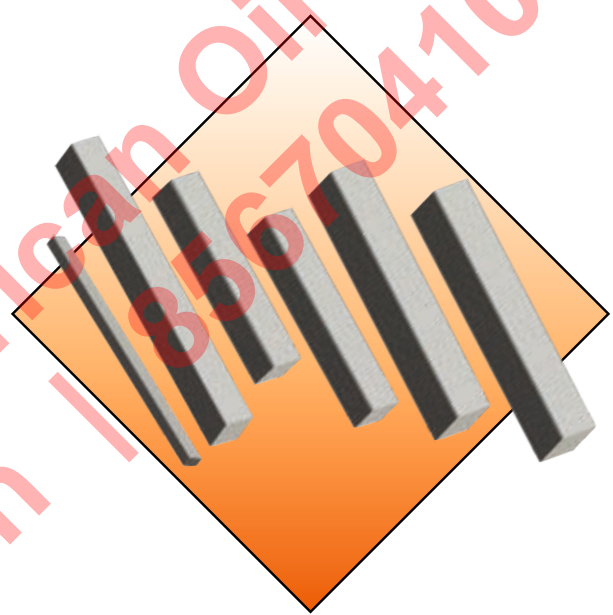
Type : ITM Masonry Drills are available in three categories. Standard, Delux and Super Granato.

Size Range : 3.0mm to 13mm : 1/8" to 1/2" in all three categories

Standard Masonry Drills Suitable for all general purpose. Available in 10 pcs packing.

Deluxe Masonry Drills Specially developed for use on tougher material like Stonework. Concrete and Marble etc.

HSS TOOL BITS



Backed by the high quality of High Speed Steel material ITM manufactures a comprehensive range of HSS Tool Bits, Dagger Tool bits ensure maximum red hardness for greater endurance.

Rigorous and regular metallurgical tests are undertaken to analyze the quality as well as the composition of the raw materials used. These include determination of carbide size, decarb, segregation, grain size, response to heat treatment etc., thus guaranteeing smooth, trouble free performance.

RANGE :

Size :

Range : Square tools size 5mm-25mm : 3/16"-1"

Material : HSS-M2 & T42.

Note :

- Cryogenic treatment for special applications on request.
- All square tool bite are supplied with the bevel angle of 150.

CARBIDE TIPPED DRILLS



Carbide Tipped Drills are made out of highest quality of "Carbide Tips". These CT drills are manufactured on our latest CNC Machines, with special geometry to give better performance. The Carbide Tipped are brazed by special process to ensure the better fitment to ensure faster, effective, correct drilling of hole sizes with highest finish.

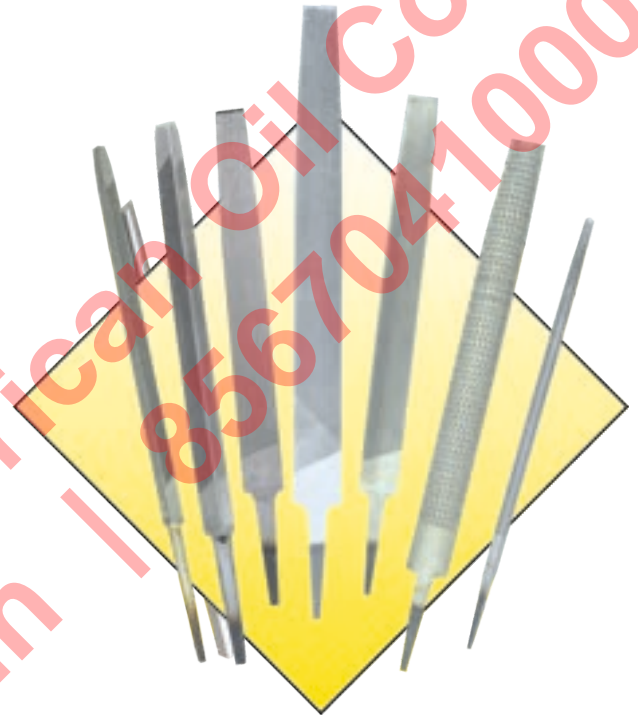
Application:

- These drills are used at Brake Lines, Foundry Industry, Composite materials and general Applications.

Size Range :

- Metric: 4 mm – 13 mm
- Inch: 11/64" – 1/2"

ENGINEERS FILES



Dagger Brand Files are made from the finest file steel material on State-of-the-Art Production Line. Files are manufactured on unique hydro pneumatically controlled machines resulting in uniform Teeth geometry and consistent desired finish cutting quality with.

RANGE :

Type : Machine Files, Saw Files, Rasps, Special Files & Mill Files

Size

Range : 100mm to 350mm : 4" to 14"

Cuts : Single Cut, Double Cut, Bastard Cut, 2nd Cut, Smooth Cut & Rasp Cut.

Shapes : Rectangle, Square, Round, Triangle, Half Round

Files are available in 10pcs packing up to 250mm & 5pcs packing for above 250mm.

LABLE COLOURS

Bastard Cut	: GREEN	
2nd Cut	: YELLOW	
Smooth Cut	: RED	

SDS PLUS HAMMER DRILLS



Hammer Drills are new series of product from ITM's product range. These drills have unique point geometry for better penetration and work at higher cutting Parameters.

Salient Features :

- Premium Quality Carbide Tips
- High Quality Steel Body
- Ergonomic Design
- Operates at High Speeds

Advantages :

- High Resistance to Shock Loads
- Highly Durable Tools
- Sustain at High Hammering Action
- High Removal Rate of Powder dust from Work area
- Less load on machine
- Higher Productivity

Application :

- These drills are widely used at Construction work, Concrete, Clinker Bricks (Furnace Brocks) and Stones etc.,

Size Range :

- Metric : Dia. 4 mm – 16 mm

ANNULAR CUTTERS



TUNGSTEN CATBIDE TIPPED (TCT) : TCT Annular Cutters are new series of product from ITM's product range. These cutters are manufactured on latest CNC Machines to get highest quality of Cutters. These cutters are used with Special Carbide Tips to give accurate Hole finish.

Advantages :

- No Pre Drilling & Step Drilling Required
- Burr Free Holes
- Required Less Thrust
- Less energy Peripheral Cutting
- Hole Finish Precise and Accurate

HSS ANNULAR CUTTER : HSS Annular Cutters are new series of product from ITM's product range. These cutters are manufactured on latest CNC Machines to get highest quality of Cutters. These cutter having special geometry to produce accurate hole finish.

Advantages :

- Increased Cutting Speed
- Minimize Tool Wear
- Better Alignment of Hole Axis
- Reduced Tooth Load
- Extended Tool Life

Application : TCT & HSS Annular Cutter

These cutters are widely used at Fabrication Industries, Tower Manufacturers, Railway Wagons etc.,

Size Range : TCT & HSS Annular Cutter :

Metric : Dia 12 mm to 50 mm

DOC 50 mm (Depth of Cut – DOC)

INDEX

HSS TWIST DRILLS	PG. NO.
Parallel Shank (Jobber Series)	1-2
Parallel Shank (Stub Series)	2-3
Parallel Shank (Long Series)	3-4
Taper Shank Drills	4-6
Taper Shank 3 or 4 Fluted Core Drills, Shell Drills	7
Combine Drills & Countersinks (Centre Drill)	8
Taper Shank Twist Drill (Long Series)	8-9
Taper Shank Extra Long Drills	10-13
Parallel Shank Extra Long Drills	13
Panther & Ninja Series - Parallel & Taper Drills	14
HSS REAMERS	
Parallel Hand Reamers / Long Fluted Machine Reamers and Parallel / Taper Shank Chucking Reamers / Taper Shank Extra Long Machine Reamers	15-16
Taper Pin Reamers Hand / Machine, Machine Jig Reamers	16
Socket Reamers Parallel / Taper, Machine Bridge Reamers, Shell Reamers	17
HSS MILLING CUTTERS	
Countersinks with Taper Shank Taper Shank Counterbores	17
Taper Shank Counterbores Cylindrical Cutters, Helical Cylindrical Cutters	18
High Power Cylindrical Cutters Side & Face Cutters, Single Angle Cutters, Double Angle Cutters, Equal Angle Cutters	18-20
Equal Angle Cutters, Double (Unequal) Angle Cutters	20

HSS MILLING CUTTERS	PG. NO.
Convex / Concave Cutters, Single / Double Corner Rounding Cutters	21
End Mills (Parallel and Taper Shank)	22-23
Slot Milling Cutters (Parallel & Taper Shank), Taper Shank T-Slot Cutters	23-24
Woodruff Key Slot Cutters, Face Cutters	25
Keyway Milling Cutters Form Relieved, Taper Shank T-Slot Cutters (Staggered Teeth)	25
Slotting Cutters, Shell End Mills	26
HSS TAPS	
Hand & Short Machine Taps and Nut Taps	26-27
Long Shank Machine Taps BSW, UNC, BSF, UN, NF Pipe Taps - BSP, NPS, NPSF, BSPT, NPTF, B.A. Hand Taps / Nut Taps.	28-29
Standard Hand & Short Machine Taps B.S.B., B.S.Cy., B.S.Con, NGT, BSGT, Hand Taps BSW, BSF, UNC, UNF & NUT Taps, NIB Taps.	29-30
NINJA Series Taps. Panther & Ninja Series End Mills.	30
Panther Series - Taps	31
Masonry Drills, Tool Bits / Decimal Equivalents	32
Tapping Chart / Hardness Conversion Chart	33
Point Enhancement / Point Grinding Techniques	34
Speed & Feed / Trouble Shooting (Drills - Taps)	35
Enhancement (Metallurgical)	36

**HSS PARALLEL SHANK (JOBBER SERIES)
TWIST DRILLS IS : 5101**

SIZE			PRICE (Rs.) 10 Nos.	SIZE			PRICE (Rs.) 10 Nos.
MM	INCH	DG		MM	INCH	DG	
0.30			1727	2.90★			655
0.40			1497	2.95		32	655
0.50			1087	3.00★			655
0.60			1087	3.05		31★	780
0.70			1087	3.10★			780
0.80★			910	3.17	1/8★		780
0.90★			868	3.20★			807
1.00★			554	3.26		30★	807
1.02		60	554	3.30★			807
1.04		59	554	3.40★			807
1.07		58	554	3.45		29	807
1.09		57	554	3.50★			807
1.10★			554	3.57	9/64★	28	807
1.18		56	554	3.60★			1140
1.19	3/64★		554	3.66		27	1140
1.20★			554	3.70★			1140
1.30★			554	3.73		26	1140
1.32		55	554	3.80★		25	1140
1.40★		54	554	3.86		24	1140
1.50★			554	3.90★			1140
1.51		53	554	3.91		23	1140
1.59	1/16★		554	3.97	5/32★		1140
1.60★			554	3.99		22	1140
1.61		52	596	4.00★			1140
1.70★		51	596	4.04		21	1384
1.78		50★	596	4.09		20	1384
1.80★			596	4.10★			1384
1.85		49	596	4.20★			1384
1.90★			596	4.22		19★	1384
1.93		48★	596	4.30★		18	1384
1.98	5/64★		596	4.37	11/64★		1384
1.99		47★	596	4.39		17	1384
2.00★			596	4.40★			1384
2.06		46	596	4.50★		16	1818
2.08		45	596	4.57		15	1818
2.10★			596	4.60			1818
2.18		44	596	4.62		14	1818
2.20★			596	4.70		13	1818
2.26		43★	596	4.76	3/16★		1818
2.30★			596	4.80★		12	1818
2.37		42	596	4.85		11	1973
2.38	3/32★		596	4.90★			1973
2.40★			596	4.92		10	1973
2.44		41	596	4.98		9	1973
2.49		40	596	5.00★			1973
2.50★			596	5.06		8	1973
2.53		39	596	5.10★			1973
2.58		38	596	5.11		7	1973
2.60★			596	5.16	13/64★		1973
2.64		37	596	5.18		6	1973
2.70★			596	5.20★			1973
2.71		36	596	5.22		5	2129
2.78	7/64★		596	5.30★			2129
2.79		35	655	5.31		4	2129
2.80★			655	5.40★			2129
2.82		34	655				
2.87		33	655				

**HSS PARALLEL SHANK (JOBBER SERIES)
TWIST DRILLS IS : 5101**

SIZE			PRICE (Rs.) 10 Nos.	SIZE			PRICE (Rs.) 10 Nos.
MM	INCH	DG		MM	INCH	DG	
5.41		3	2129	8.60★			5435
5.50★			2129	8.61		R	5435
5.56	7/32★		2129	8.70★			5435
5.60			2129	8.73	11/32★		5725
5.61		2	2395	8.80★			5725
5.70★			2395	8.84		S	5725
5.79		1	2395	8.90			5725
5.80★			2395	9.00★			5725
5.90			2395	9.09		T	5973
5.94		A	2395	9.10			5973
5.95	15/64★		2395	9.13	23/64★		5973
6.00★			2395	9.20★			5973
6.04		B	2608	9.30★			5973
6.10★			2608	9.34		U★	5973
6.15		C	2608	9.40★			5973
6.20★			2608	9.50★			5973
6.25		D	2608	9.52	3/8★		6770
6.30★			2608	9.58		V	6770
6.35★	1/4★	E	2608	9.60			6770
6.40★			2608	9.70			6770
6.50★			3267	9.80★		W	6770
6.53		F★	3267	9.90			7579
6.60★			3267	9.92	25/64★		7579
6.63		G	3267	10.00★			7579
6.70★			3267	10.08		X	7579
6.75	17/64★	H	3267	10.10			7579
6.80★			3267	10.20★			7579
6.90★		I	3576	10.26		Y	8212
7.00★			3576	10.30★			8212
7.03		J	3576	10.32	13/32★		8212
7.10★			3576	10.40★			8212
7.14	9/32★	K	3576	10.49		Z	8212
7.20★			3576	10.50★			8212
7.30			3773	10.60			8212
7.37		L	3773	10.70			8695
7.40			3773	10.72	27/64★		8695
7.49		M	3773	10.80			8695
7.50★			3773	10.90			8695
7.54	19/64★		4084	11.00★			8695
7.60			4084	11.10			9705
7.67		N	4084	11.11	7/16★		9705
7.70			4084	11.20★			9705
7.80★			4084	11.30			9705
7.90★			4084	11.40			9705
7.94	5/16★		4485	11.50★			10237
8.00★			4485	11.51	29/64★		10237
8.03		O	4485	11.60			10237
8.10★			4485	11.70			10237
8.20★		P	4485	11.80★			10237
8.30★			5435	11.90			10933
8.33	21/64★		5435	11.91	15/32★		10933
8.40★			5435	12.00★			10933
8.43		Q	5435	12.10			10933
8.50★			5435	12.20			10933

**HSS PARALLEL SHANK (JOBBER SERIES)
TWIST DRILLS IS : 5101**

SIZE		PRICE (Rs.) 10 Nos.	SIZE		PRICE (Rs.) 10 Nos.
MM	INCH		MM	INCH	
12.30	31/64 ★	11596	14.29	9/16 ★	18615
12.40		11596	14.50 ★		18615
12.50 ★		11596	14.68	37/64	20058
12.60		11596	14.75		20058
12.70 ★	1/2 ★	12243	15.00 ★		20058
12.80 ★		12349	15.08	19/32	20058
12.90		12349	15.25		20058
13.00 ★		12349	15.48	39/64	21733
13.10	33/64 ★	15361	15.50 ★		21733
13.20		15361	15.75		21733
13.30		15361	15.87	5/8 ★	21733
13.40		15361	16.00 ★		21733
13.49	17/32 ★	16353	17.00		22989
13.50 ★		16353	17.46	11/16	22989
13.60		16353	18.00		24876
13.70		16353	19.00		26310
13.80		16353	19.05	3/4	26310
13.89	35/64	17742	20.00 ★		31429
13.90		17742	21.00		31429
14.00 ★		17742	22.00		35243
14.25 ★		17742	22.22	7/8	35243

ITEMS MARKED ★ (ONLY IN RH) ARE EX-STOCK ITEMS. ALL REMAINING ITEMS IN (RH & LH) WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50000/- NETT OR MOQ OF 50 NOS. PER SIZE WHICHEVER IS HIGHER.

IMPORTANT NOTES :

- All sizes to be ordered in multiples of 10 only.
- For non-listed intermediate Sizes, the higher Price of the nearest listed size. (INCH or MM) will be applicable.
- (a) Quick Spiral or Slow Spiral Drills :
 Sizes up to (3.17 mm) 1/8" **50% extra**
 Sizes over (3.17 mm) 1/8" **25% extra**
 (b) Jobbers with Tenon **10% extra**
- For M35 = 40% & M42 = 80% extra

**HSS PARALLEL SHANK (JOBBER SERIES)
TWIST DRILLS IS : 5101**

Price Rs. / Set

Jobber Drill **25 Pcs. Set** (0.5 mm Rise)
1.00 To 13.00 MM. 12938

Jobber Drill **13 Pcs. Set** (1/64" Rise)
1/16" To 1/4" 2378

**HSS PARALLEL SHANK (STUB SERIES)
TWIST DRILLS IS : 5100**

SIZE		PRICE (Rs.) 10 Nos.	SIZE		PRICE (Rs.) 10 Nos.
MM	INCH		MM	INCH	
1.00 ★		581	9.20		5414
1.19	3/64	581	9.50		5414
1.20		581	9.52	3/8	5660
1.50		581	9.80		5660
1.59	1/16	581	9.92	25/64	6925
1.80		581	10.00		6925
1.98	5/64	581	10.20		6925
2.00		581	10.32	13/32	7455
2.20		581	10.50		7455
2.38	3/32	581	10.72	27/64	8393
2.50		581	10.80		8393
2.78	7/64 ★	581	11.00		8393
2.80		628	11.11	7/16	8742
3.00		655	11.20		8742
3.17	1/8 ★	760	11.50		9353
3.20		797	11.51	29/64	9353
3.50		797	11.80		9353
3.57	9/64 ★	797	11.91	15/32	9895
3.80		1104	12.00		9895
3.97	5/32 ★	1104	12.20		9895
4.00		1104	12.30	31/64	10754
4.20		1226	12.50		10754
4.37	11/64	1226	12.70	1/2	10986
4.50		1625	12.80		11081
4.76	3/16 ★	1625	13.00		11081
4.80		1625	13.20		12976
5.00		1728	13.49	17/32	12976
5.16	13/64 ★	1728	13.50		13828
5.20		1728	13.80		13828
5.50		1877	14.00		15055
5.56	7/32	1877	14.25		15055
5.80		2114	14.29	9/16	15055
5.95	15/64	2114	14.50		15680
6.00		2114	14.75		16954
6.20		2365	15.00		16954
6.35	1/4 ★	2365	15.08	19/32	16954
6.50		2858	15.25		16954
6.75	17/64	2858	15.50		18353
6.80		2858	15.75		18353
7.00		3133	15.87	5/8	18353
7.14	9/32	3133	16.00		18353
7.20		3133	16.25		18646
7.50		3255	16.50		18646
7.54	19/64	3576	16.67	21/32	18646
7.80		3576	16.75		19022
7.94	5/16 ★	3934	17.00		19022
8.00		3934	17.25		19368
8.20		3934	17.46	11/16	19368
8.33	21/64	4915	17.50		19368
8.50		4915	17.75		19632
8.73	11/32	5126	18.00		19632
8.80		5126	18.25		19981
9.00		5126	18.26	23/32	19981
9.13	23/64	5414	18.50		19981



**HSS PARALLEL SHANK (STUB SERIES)
TWIST DRILLS IS : 5100**

SIZE		PRICE (Rs.) 10 Nos.	SIZE		PRICE (Rs.) 10 Nos.
MM	INCH		MM	INCH	
18.75		20336	27.00		40521
19.00		20336	27.50		40521
19.05	3/4	20336	27.78	1.3/32	42883
19.25		20681	28.00		42883
19.50		20681	28.50		43209
19.75		20681	28.57	1.1/8	43209
19.84	25/32	20681	29.00		45342
20.00		21035	29.37	1.5/32	49914
20.25		21473	29.50		49914
20.50		21473	30.00		50581
20.64	13/16	21473	30.16	1.3/16	50581
20.75		22332	30.50		56921
21.00		22332	30.96	1.7/32	56921
21.25		22604	31.00		56921
21.43	27/32	22604	31.50		57775
21.50		23365	31.75	1.1/4	57775
21.75		23664	32.00		59019
22.00		23664	32.50		60868
22.22	7/8	23664	32.54	1.9/32	60868
22.25		25171	33.00		60868
22.50		25171	33.34	1.5/16	60868
22.75		25521	33.50		64027
23.00		25521	34.00		64027
23.02	29/32	25521	34.13	1.11/32	70268
23.25		26988	34.50		70268
23.50		26988	34.92	1.3/8	70268
23.75		26988	35.00		77264
23.81	15/16	26988	35.50		78366
24.00		29865	35.72	1.13/32	78366
24.25		29865	36.00		78366
24.50		29865	36.50		78366
24.61	31/32	29865	36.51	1.7/16	78366
24.75		32760	37.00		84242
25.00		32760	37.31	1.15/32	85502
25.25		32920	37.50		85502
25.40	1	32920	38.00		85502
25.50		37154	38.10	1.1/2	85502
26.00		37154	38.50		95473
26.19	1.1/32	38012	39.00		95473
26.50		38012	39.50		97117
26.99	1.1/16	38453	40.00		97117

ITEMS MARKED ★ (ONLY IN RH) ARE EX-STOCK ITEMS. ALL REMAINING ITEMS IN (RH & LH) WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50000/- NETT OR MOQ OF 50 NOS. PER SIZE WHICHEVER IS HIGHER.

IMPORTANT NOTES :

- Sizes upto 13 mm should be ordered in multiples of 10 only.
- For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.
- Quick Spiral or Slow Spiral Drills :**
 Sizes upto (3.17 mm) 1/8" **50% extra**
 Sizes over (3.17 mm) 1/8" **25% extra**
- For **M35 = 40% & M42 = 80% extra**

**HSS PARALLEL SHANK (LONG SERIES)
TWIST DRILLS IS : 5102**

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
0.60		608	5.30		606
0.70		568	5.40		606
0.80		508	5.50		606
1.00		322	5.56	7/32	606
1.10		322	5.60		657
1.19	3/64	322	5.70		657
1.20		322	5.80		657
1.30		322	5.90		657
1.40		322	5.95	15/64	657
1.50		322	6.00★		657
1.59	1/16	322	6.10		750
1.60		322	6.20		750
1.70		322	6.30		750
1.80		322	6.35	1/4★	686
1.90		322	6.40		956
1.98	5/64	322	6.50		956
2.00★		322	6.60		1153
2.10		322	6.70		1153
2.20		322	6.75	17/64	1153
2.30		412	6.80		1153
2.38	3/32★	412	6.90		1153
2.40		412	7.00		1153
2.50★		412	7.10		1153
2.60		412	7.14	9/32	1153
2.70		412	7.20		1153
2.78	7/64	412	7.30		1153
2.80★		412	7.40		1153
2.90		412	7.50		1153
3.00★		416	7.54	19/64	1153
3.10		416	7.60		1153
3.17	1/8★	416	7.70		1153
3.20		416	7.80		1153
3.30★		416	7.90		1188
3.40		416	7.94	5/16	1188
3.50★		416	8.00★		1188
3.57	9/64	416	8.10		1188
3.60		448	8.20		1188
3.70		448	8.30		1188
3.80		448	8.33	21/64	1188
3.90		448	8.40		1188
3.97	5/32★	448	8.50		1197
4.00★		448	8.60		1258
4.10		448	8.70		1258
4.20		448	8.73	11/32	1258
4.30		448	8.80		1523
4.37	11/64	448	9.00		1323
4.40		448	9.13	23/64	1497
4.50		448	9.20		1523
4.60		448	9.50		1323
4.70		448	9.52	3/8	1323
4.76	3/16	448	9.80		1531
4.80		448	9.92	25/64	1531
4.90		527	10.00★		1384
5.00★		527	10.20		1531
5.10		527			
5.16	13/64	527			
5.20		527			

**HSS PARALLEL SHANK (LONG SERIES)
TWIST DRILLS IS : 5102**

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
10.32	13/32	1384	18.65	47/64	3743
10.50		1662	18.75		3780
10.72	27/64	1889	19.00		3780
10.80		1889	19.05	3/4	3780
11.00		1739	19.25		3994
11.11	7/16	1739	19.45	49/64	4366
11.20		2020	19.50		3994
11.50		1788	19.75		3994
11.51	29/64	2020	19.84	25/32	3994
11.80		2020	20.00		4240
11.91	15/32	1788	20.24	51/64	4502
12.00		1844	20.25		4240
12.20		2056	20.30		4240
12.30	31/64	2056	20.64	13/16	4240
12.50		1843	20.75		4366
12.70	1/2	1843	21.00		4366
12.80		2821	21.03	53/64	4778
13.00		2557	21.25		4502
13.10	33/64	2843	21.43	27/32	4502
13.20		2843	21.50		4778
13.49	17/32	2608	21.75		4778
13.50		2843	21.83	55/64	5110
13.80		3094	22.00		4778
13.89	35/64	3094	22.22	7/8	4778
14.00		2843	22.25		5171
14.25		2843	22.15		5171
14.29	9/16	2843	22.62	57/64	5524
14.50		2979	22.75		5289
14.68	37/64	3281	23.00		5289
14.75		2979	23.02	29/32	5289
15.00		2979	23.25		5358
15.08	19/32	2979	23.42	59/64	6318
15.25		3094	23.50		5867
15.48	39/64	3381	23.75		5867
15.50		3094	23.81	15/16	5867
15.75		3094	24.00		6115
15.87	5/8	3094	24.21	61/64	6674
16.00		3143	24.25		6115
16.25		3143	24.50		6115
16.27	41/64	3498	24.61	31/32	6115
16.50		3203	24.75		6556
16.67	21/32	3203	25.00	63/64	6556
16.75		3281	25.25		6639
17.00		3281	25.40	1	6639
17.07	43/64	3564	25.50		8177
17.25		3281	25.75		8177
17.46	11/16	3281	25.80	1.1/64	8351
17.50		3498	26.00		8351
17.75		3498	26.19	1.1/32	8351
17.86	45/64	3867	26.25		9005
18.00		3564	26.50		9005
18.25		3564	26.59	1.3/64	9206
18.26	23/32	3564	26.75		9206
18.50		3712	26.99	1.1/16	9206

**HSS PARALLEL SHANK (LONG SERIES)
TWIST DRILLS IS : 5102**

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
27.00		9383	29.37	1.5/32	10810
27.25		9383	29.50		10952
27.38	1.5/64	9490	29.75		10952
27.50		9490	29.77	1.11/64	11163
27.75		9490	30.00		11163
27.78	1.3/32	9490	30.16	1.3/16	11163
28.00		10365	30.25		11865
28.18	1.7/64	10503	30.50		11865
28.25		10503	30.56	1.13/64	12086
28.50		10503	30.75		12086
28.57	1.1/8	10503	30.96	1.7/32	12086
28.75		10592	31.00		13443
28.97	1.9/64	10810	31.25		13443
29.00		10810	31.35	1.15/64	13929
29.25		10810	31.50		13929

ITEMS MARKED H (ONLY IN RH) ARE EX-STOCK ITEMS. ALL REMAINING ITEMS IN (RH) WILL ATTRACT MINIMUM ORDER VALUE OF Rs.50000/- NETT OR MOQ OF 50 NOS. PER SIZE WHICHEVER IS HIGHER.

IMPORTANT NOTES :

- For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.
- (a) Quick Spiral or Slow Spiral Drills :
 Sizes upto (3.17 mm) 1/8" **50% extra**
 Sizes over (3.17 mm) 1/8" **25% extra**
 (b) Long Series Drills with Tenon
 Sizes over 3 mm upto 6.50 mm **10% extra**
 Sizes over 6.50 mm **5% extra**
- For **M35 = 40% & M42 = 80% extra**
 Sizes below 1mm are manufactured to our Standard.

HSS TAPER SHANK TWIST DRILLS IS : 5103

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
3.00★		514	5.50★		694
3.17	1/8★	514	5.56	7/32★	694
3.20		537	5.80★		714
3.50★		514	5.95	15/64	714
3.57	9/64	537	6.00★		694
3.80		537	6.20		800
3.97	5/32	514	6.35	1/4★	794
4.00★		514	6.50★		862
4.20★		694	6.75	17/64★	875
4.37	11/64	694	6.80★		875
4.50		694	7.00★		862
4.76	3/16★	694	7.14	9/32★	862
4.80★		694	7.20★		875
5.00★		694	7.50★		862
5.16	13/64★	714	7.54	19/64	875
5.20★		714	7.80★		875

HSS TAPER SHANK TWIST DRILLS IS : 5103

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
7.94	5/16★	864	16.25★		2855
8.00★		864	16.27	41/64★	2855
8.20★		1054	16.50★		3034
8.33	21/64★	1110	16.67	21/32★	3034
8.50★		962	16.75★		3034
8.73	11/32★	1054	17.00★		3034
8.80★		1158	17.07	43/64	3084
9.00		1054	17.25		3084
9.13	23/64	1158	17.46	11/16★	3084
9.20		1158	17.50★		3201
9.50★		1054	17.75		3247
9.52	3/8★	1054	17.86	45/64★	3372
9.80		1244	18.00★		3372
9.92	25/64★	1244	18.25★		3372
10.00★		1126	18.26	23/32★	3372
10.20★		1230	18.50★		3372
10.32★	13/32	1188	18.65	47/64★	3413
10.50★		1457	18.75★		3413
10.72	27/64★	1510	19.00★		3413
10.80★		1510	19.05	3/4★	3413
11.00★		1510	19.25		3584
11.11	7/16★	1510	19.45	49/64	3584
11.20★		1559	19.50★		3584
11.50★		1559	19.75		3584
11.51	29/64★	1559	19.84	25/32★	3584
11.80★		1559	20.00★		3856
11.91	15/32★	1559	20.24	51/64	3903
12.00★		1575	20.25★		3903
12.20★		1575	20.50		3903
12.30	31/64	1575	20.64	13/16★	3903
12.50		1575	20.75		4069
12.70	1/2	1575	21.00★		4069
12.80★		2193	21.03	53/64	4168
13.00★		2193	21.25		4168
13.10	33/64★	2287	21.43	27/32	4168
13.20★		2287	21.50		4299
13.49	17/32★	2287	21.75★		4299
13.50★		2449	21.83	55/64	4379
13.80★		2449	22.00		4379
13.89	35/64★	2449	22.22★	7/8★	4379
14.00★		2449	22.25		4772
14.25★		2633	22.50★		4772
14.29	9/16★	2633	22.62★	57/64	4865
14.50★		2734	22.75		4865
14.68	37/64★	2734	23.00★		4865
14.75★		2734	23.02	29/32	5103
15.00★		2734	23.25		5649
15.08	19/32★	2734	23.42	59/64	5791
15.25★		2774	23.50★		5791
15.48	39/64★	2774	23.75		5791
15.50★		2774	23.81★	15/16	5791
15.75★		2774	24.00★		5962
15.87	5/8	2774	24.21	61/64	6063
16.00★		2855	24.25		6063

HSS TAPER SHANK TWIST DRILLS IS : 5103

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
24.50★		6063	33.73	1.21/64	14490
24.61	31/32	6063	34.00★		14490
24.75		6335	34.13	1.11/32	15104
25.00★	63/64	6335	34.50		15869
25.25		6419	34.58	1.23/64	16015
25.40	1★	6419	34.92	1.3/8★	16015
25.50★		6977	35.00★		16015
25.75		6977	35.32	1.25/64	16974
25.80	1.1/64	7053	35.50		16974
26.00★		6795	35.72	1.13/32	16974
26.19	1.1/32	6784	36.00★		17224
26.25		7329	36.12	1.27/64	17579
26.50★		7329	36.50★		17579
26.59	1.3/64	7497	36.51	1.7/16	17579
26.75		7497	36.91	1.29/64	17579
26.99	1.1/16★	7497	37.00★		18014
27.00★		7744	37.31	1.15/32	18014
27.25		7744	37.50★		19183
27.38	1.5/64	7767	37.70	1.31/64	19482
27.50★		7767	38.00★		19482
27.75		7767	38.10	1.1/2★	19482
27.78	1.3/32	7767	38.15	1.33/64	20090
28.00★		8493	38.89	1.17/32	20090
28.18	1.7/64	8517	39.00		21278
28.25		8517	39.29	1.35/64	21278
28.50★		8517	39.50		21278
28.57	1.1/8★	8517	39.69	1.9/16	21278
28.75		8775	40.00★		21825
28.97	1.9/64	8918	40.08	1.37/64	22184
29.00★		8918	40.48	1.19/32	22184
29.25		8918	40.50		23071
29.37	1.5/32★	8918	40.88	1.39/64	23071
29.50★		8953	41.00★		23071
29.75		8953	41.27	1.5/8	23071
29.77	1.11/64	9141	41.50		23975
30.00★		9141	41.67	1.41/64	23975
30.16	1.3/16	9651	42.00★		23975
30.25		10394	42.07	1.21/32	23975
30.50★		10394	42.47	1.43/64	24590
30.56	1.13/64	10562	42.50		24590
30.75		10562	42.86	1.11/16	24892
30.96	1.7/32	10562	43.00★		25476
31.00★		11753	43.26	1.45/64	25476
31.25★		11753	43.50		25476
31.35	1.15/64	12266	43.66	1.23/32	25476
31.50★		12266	44.00★		26374
31.75	1.1/4★	12266	44.05	1.47/64	26374
32.00★		13430	44.45	1.3/4	26374
32.15	1.17/64	13430	44.50		26374
32.50★		13430	44.85	1.49/64	26993
32.54	1.9/32	13430	45.00★		26993
32.94	1.19/64	13751	45.24	1.25/32	26993
33.00★		13751	45.50		28215
33.34	1.5/16	13751	45.64	1.51/64	28215
33.50		14223	46.00		28215

HSS TAPER SHANK TWIST DRILLS IS : 5103

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
46.04	1.13/16	28215	61.12	2.13/32	80902
46.43	1.53/64	29638	61.15		80902
46.50		29638	61.91	2.7/16	80902
46.83	1.27/32	29638	62.00 ★		80902
47.00		29638	62.50		80902
47.23	1.53/64	30259	62.71	2.15/32	82264
47.50		30259	63.00		82264
47.62	1.7/8	30259	63.50	2.1/2	82264
48.00 ★		32995	64.00		90922
48.02	1.57/64	32995	64.29	2.17/32	90922
48.42	1.29/32	32995	65.00 ★		90922
48.50		33236	65.09	2.9/16	91598
48.82	1.59/64	33236	65.88	2.19/32	91598
49.00 ★		33236	66.00		91598
49.21	1.15/16	33236	66.67	2.5/8	91598
49.50		33594	67.00		93834
49.61	1.61/64	33594	67.47	2.21/32	100724
50.00 ★		33594	68.00		100724
50.01	1.31/32	33859	68.26	2.11/16	100724
50.40	1.63/64	35381	69.00		109178
50.50		35381	69.06	2.23/32	109178
50.80	2 ★	35381	69.85	2.3/4	109178
51.00 ★		48037	70.00		109178
51.50		48037	70.64	2.25/32	117751
51.59	2.1/32	48037	71.00		117751
52.00 ★		48037	71.44	2.13/16	117751
52.39	2.1/16	48037	71.50		117751
52.50		62519	72.00		120024
53.00		62519	72.23	2.27/32	120024
53.18	2.3/32	62519	73.00		120024
53.50		62519	73.02	2.7/8	120024
53.97	2.1/8	62519	73.82	2.29/32	127739
54.00		62519	74.00		127739
54.50		65676	74.61	2.15/16	127739
54.77	2.5/32	65676	75.00 ★		129327
55.00 ★		65583	75.41	2.31/32	129327
55.50		65676	76.00		129327
55.56	2.3/16	65676	76.20	3	129327
56.00		68436	76.99	3.1/32	176926
56.36	2.7/32	68436	77.00		176926
56.50		68436	77.79	3.1/16	176926
57.00		68436	78.00		176926
57.15	2.1/4	68436	78.58	3.3/32	180453
57.50		74686	79.00		180453
57.94	2.9/32	74686	79.37	3.1/8	185243
58.00 ★		74686	80.00		185243
58.50		74686	80.17	3.5/32	198134
58.74	2.5/16	74686	80.96	3.3/16	198134
59.00		76113	81.00		198134
59.50		76113	81.76	3.7/32	203283
59.53	2.11/32	76113	82.00		203283
60.00 ★		76113	82.55	3.1/4	203283
60.32	2.3/8	76113	83.00		207483
60.50		80902	83.34	3.9/32	207483
61.00		80902	84.00		207483

HSS TAPER SHANK TWIST DRILLS IS : 5103

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
84.14	3.5/16	210933	92.07	3.5/8	268478
84.99	3.11/32	210933	93.00		268478
85.00		202335	93.66	3.11/16	278633
85.72	3.3/8	240602	94.00		278633
86.00		240602	95.00		278633
86.52	3.13/32	240602	95.25	3.3/4	278633
87.00		240602	96.00		287960
87.31	3.7/16	245630	96.84	3.13/16	287960
88.00		245630	97.00		287960
88.11	3.15/32	245630	98.00		293053
88.90	3.1/2	245630	98.42	3.7/8	297235
89.00		245630	99.00		297235
90.00		250640	100.00		297235
90.49	3.9/16	259988	100.01	3.15/16	302329
91.00		259988	101.00		302329
92.00		259988	101.60	4	302329
			102.00		302329

ITEMS MARKED ★ (ONLY IN RH) ARE EX-STOCK ITEMS. ALL REMAINING ITEMS IN (RH) WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50000/- NETT OR MOQ OF 5 NOS. PER SIZE WHICHEVER IS HIGHER.

IMPORTANT NOTES :

1. For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.
2. Quick Spiral or Slow Spiral Drills : **25% extra**
3. Oversize shank Drills to IS : 5104 in the following range **10% extra**
4. For **M35 = 40% & M42 = 80% extra**

SIZE RANGE		MT NO.	INSTEAD OF MT NO.
MM	INCH		
11.8 to 14.0	15/32 to 35/64	2	1
18.0 to 23.0	23/32 to 29/32	3	2
26.5 to 31.75	1.3/64 to 1.1/4	4	3
40.0 to 80.80	1.37/64 to 2	5	4
63.0 to 76.20	2.1/2 to 3	6	5

MORSE TAPER SHANK TWIST DRILLS (IS : 5103)

MORSE TAPER SHANK NO.	DRILL SIZE			
	MM		INCH	
	OVER	UPTO & INCL.	OVER	UPTO & INCL.
1	3.00	14.00	1/8	35/64
2	14.00	23.00	35/64	29/32
3	23.00	31.75	29/32	1.1/4
4	31.75	50.80	1.1/4	2
5	50.80	76.20	2	3
6	76.20	100.00	3	4



HSS TAPER SHANK 3 OR 4 FLUTED CORE DRILLS IS : 5366

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
7.94	5/16	1696	28.57	1.1/8	10650
8.00		1699	29.00		11146
9.52	3/8	1869	29.37	1.5/32	11146
10.00		1869	30.00		11838
10.32	13/32	1869	30.16	1.3/16	11838
11.00		1871	30.96	1.7/32	12289
11.11	7/16	1871	31.00		13816
11.91	15/32	2001	31.75	1.1/4	14426
12.00		2001	32.00		15808
12.70	1/2	2115	32.54	1.9/32	15808
13.00		2859	33.00		16140
13.49	17/32	3129	33.34	1.5/16	16140
14.00		3129	34.00		17700
14.29	9/16	3218	34.13	1.11/32	17700
15.00		3359	34.92	1.3/8	18694
15.08	19/32	3359	35.00		18694
15.87	5/8	3435	35.72	1.13/32	20106
16.00		3435	36.00		20106
16.67	21/32	3620	36.51	1.7/16	21211
17.00		3620	37.00		21211
17.46	11/16	3909	37.31	1.15/32	21814
18.00		4207	38.00		23338
18.26	23/32	4207	38.10	1.1/2	23338
19.00		4804	39.00		25593
19.05	3/4	4804	39.69	1.9/16	25593
19.84	25/32	4827	40.00		25593
20.00		4827	41.00		28206
20.64	13/16	5162	41.27	1.5/8	28206
21.00		5125	42.00		29042
21.43	27/32	5458	42.07	1.21/32	29042
22.00		5458	42.86	1.11/16	29978
22.22	7/8	5791	43.00		29978
23.00		6131	44.00		31684
23.02	29/32	6131	44.45	1.3/4	31684
23.81	15/16	6692	45.00		32804
24.00		7023	45.24	1.25/32	32803
24.61	31/32	7023	46.00		34019
25.00		8126	46.04	1.13/16	34019
25.40	1	8126	47.00		35353
26.00		8772	47.62	1.7/8	37174
26.19	1.1/32	8772	48.00		37174
26.99	1.1/16	9681	49.00		39695
27.00		9681	49.21	1.15/16	39695
27.78	1.3/32	10049	50.00		42717
28.00		10649	50.80	2	47233

HSS TAPER SHANK 3 OR 4 FLUTED CORE DRILLS IS : 5366

SIZE		PRICE (Rs.) EACH	SIZE		PRICE (Rs.) EACH
MM	INCH		MM	INCH	
51.00		47643	64.00		89222
52.00		52472	65.00		89222
52.39	2.1/16	52472	65.09	2.9/16	89222
53.00		61293	66.00		93549
53.97	2.1/8	61293	66.67	2.5/8	93549
54.00		61293	67.00		97454
55.00		64246	68.00		102185
55.36	2.3/16	64246	68.26	2.11/16	102185
56.00		66966	69.00		107179
57.00		66966	69.85	2.3/4	109187
57.15	2.1/4	66966	70.00		109187
58.00		73181	71.00		111348
58.74	2.5/16	73181	71.44	2.13/16	111348
59.00		74534	72.00		116437
60.00		74534	73.00		120754
60.32	2.3/8	74534	73.02	2.7/8	120754
61.00		79433	74.00		125319
61.91	2.7/16	79433	74.61	2.15/16	125319
62.00		79433	75.00		129937
63.00		81716	76.00		136178
63.50	2.1/2	81716	76.20	3	136178

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50000/- NETT OR 5NOS. PER SIZE WHICHEVER IS HIGHER.

IMPORTANT NOTES :

1. For non listed intermediate sizes. The higher price of the nearest listed size (INCH or MM) will be applicable.
2. Sizes upto 20 mm will be with 3 flutes and above 20 mm will be with 4 flutes unless otherwise specificd.
3. Core drills with non-standard number of flutes - 10% extra
4. For M35 = 40% & M42 = 80% extra

HSS SHELL DRILLS BS : 122 - 1964*

NOM DIA INCH	PRICE (Rs.) EACH	NOM DIA INCH	PRICE (Rs.) EACH
1	4242	2	9377
1.1/16	4479	2.1/8	10364
1.1/8	4747	2.1/4	11342
1.3/16	5038	2.3/8	12690
1.1/4	5261	2.1/2	15433
1.5/16	5517	2.5/8	17930
1.3/8	5831	2.3/4	19725
1.7/16	6087	2.7/8	21920
1.1/2	6307	3	24072
1.9/16	6668	3.1/8	26992
1.5/8	6960	3.1/4	29602
1.11/16	7900	3.3/8	31837
1.3/4	8082	3.1/2	34183
1.13/16	8398	3.5/8	40386
1.7/8	8651	3.3/4	42249
1.15/16	9069	3.7/8	48905
		4	54045

IMPORTANT NOTES

* For Metric sizes , price as per IS: 7772 - 1992 of the next listed size will be applicable.
ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50000/- NETT OR 5 NOS, PER SIZE WHICHEVER IS HIGHER.
For M35 = 40% & M42 = 80% extra

**HSS COMBINED DRILLS & COUNTERSINKS
(CENTRE DRILLS) IS : 6708 / TYPE 'A'**

PILOT DIA MM	BODY DIA MM	PRICE (Rs.) EACH	PILOT DIA MM	BODY DIA MM	PRICE (Rs.) EACH
1	3.15	279	4★	10	615
1.25	3.15	279	5	12.5	1037
1.6★	4	279	6.3	16	1227
2★	5	279	8	20	1894
2.5★	6.3	322	10	25	2439
3.15★	8	498			

**HSS COMBINED DRILLS & COUNTERSINKS
(CENTRE DRILLS) IS : 6710 / TYPE 'R'**

PILOT DIA MM	BODY DIA MM	PRICE (Rs.) EACH	PILOT DIA MM	BODY DIA MM	PRICE (Rs.) EACH
2	5	278	5	12.5	1037
2.5	6.3	322	6.3	16	1227
3.15	8	498	8	20	1894
4	10	616	10	25	2439

**HSS COMBINED DRILLS & COUNTERSINKS
(CENTRE DRILLS) IS : 6709 / TYPE 'B'**

PILOT DIA MM	BODY DIA MM	PRICE (Rs.) EACH	PILOT DIA MM	BODY DIA MM	PRICE (Rs.) EACH
1	4	458	4★	14	1833
1.25	5	489	5★	18	2620
1.6	6.3	570	6.3	20	3087
2	8	806	8	25	3995
2.5	10	1029	10	31.5	4742
3.15	11.20	1369			

**HSS COMBINED DRILLS & COUNTERSINKS
(CENTRE DRILLS) BS : 328 (PART 2) 1950**

B.S. NO.	PILOT DIA INCH	BODY DIA INCH	OAL INCH	PRICE (Rs.) EACH
BS-1	3/64	1/8	1.1/2	279
BS-2★	1/16	3/16	1.3/4	279
BS-3★	3/32	1/4	2	322
BS-4★	1/8	5/16	2.1/4	498
BS-5★	3/16	7/16	2.1/2	651
BS-6★	1/4	5/8	3	1227
BS-7	5/16	3/4	3.1/2	1894

ITEMS MARKEDH ARE EX-STOCK ITEMS. ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50000/- NETT OR MOQ OF 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

**HSS TAPER SHANK TWIST DRILLS (LONG SERIES)
IS : 8305 - 1976 (TYPE - N)**

SIZE		OAL	PRICE (Rs.) EACH	SIZE		OAL	PRICE (Rs.) EACH
MM	INCH			MM	INCH		
5.00★		155	1570	12.50	215	4010	
	13/64	155	1570	1/2	215	4010	
5.20		155	1570	12.80	215	4010	
5.50		161	1749	13.00★	215	4010	
	7/32	161	1749	33/64	215	4010	
5.80		161	1749	13.20	215	4011	
	15/64	161	1749	17/32	223	4396	
6.00★		161	1749	13.50	223	4396	
6.20		167	1949	13.80	223	4573	
	1/4	167	1948	35/64	223	4573	
6.50		167	1949	14.00★	223	4574	
	17/64	174	2101	14.25	245	5707	
6.80		174	2101	9/16	245	5707	
7.00		174	2101	14.50	245	5835	
	9/32	174	2101	37/64	245	5835	
7.20		174	2166	14.75	245	5835	
7.50		174	2166	15.00	245	5835	
	19/64	181	2291	19/32	251	5965	
7.80		181	2291	15.25	251	5965	
	5/16	181	2291	39/64	251	5965	
8.00★		181	2291	15.50	251	5965	
8.20		181	2337	15.75	251	6119	
	21/64	181	2337	5/8	251	6119	
8.50★		181	2337	16.00	251	6119	
	11/32	188	2533	16.25	257	6227	
8.80		188	2534	41/64	257	6227	
9.00★		188	2534	16.50	257	6227	
	23/64★	188	2594	21/32	257	6360	
9.20		188	2594	16.75	257	6360	
9.50		188	2594	17.00	257	6360	
	3/8	197	2594	43/64	263	6905	
9.80		197	2946	17.25	263	6905	
	25/64	197	2946	11/16	263	6905	
10.00★		197	2946	17.50	263	6905	
10.20		197	3028	17.75	263	6922	
	13/32	197	3028	45/64	263	6922	
10.50		197	3028	18.00★	263	6922	
	27/64	206	3094	18.25	269	7031	
10.80★		206	3094	23/32	269	7031	
11.00		206	3094	18.50	269	7031	
	7/16	206	3210	47/64	269	7143	
11.20★		206	3210	18.75	269	7143	
11.50		206	3210	19.00	269	7143	
	29/64	206	3210	3/4	275	7143	
11.80		206	3210	19.25	275	7338	
	15/32	215	3804	49/64	275	7338	
12.00		215	3804	19.50	275	7338	
12.20		215	4010	19.75	275	7459	
	31/64	215	4010	25/32	275	7459	

HSS TAPER SHANK TWIST DRILLS (LONG SERIES)
IS : 8305 - 1976 (TYPE-N)

SIZE			PRICE (Rs.) EACH	SIZE			PRICE (Rs.) EACH
MM	INCH	MM		MM	INCH	MM	
20.00		275	7459	28.25		351	18849
	51/64	282	7583	28.50		351	18849
20.25		282	7583				
20.50		282	7583		1.1/8	351	18849
	13/16	282	7724	28.75		351	19380
20.75		282	7724				
21.00★		282	7724	29.00		351	19380
	53/64	282	8974	29.25		351	19916
21.25		289	8973		1.5/32	351	19916
	27/32	289	8974	29.50		351	19916
21.50		289	8973	29.75		351	20481
21.75		289	9153	30.00		351	20481
	55/64	289	9153		1.3/16	360	20481
22.00		289	9153	30.25		360	21024
	7/8	289	9774	30.50		360	21024
22.25		289	9774	30.75		360	21024
22.50		296	9774		1.7/32	360	21024
	57/64	296	10246	31.00		360	21024
22.75		296	10246	31.25		360	21177
23.00		296	10246	31.50		360	21177
	29/32	296	12516	31.75	1.1/4	369	21994
23.25		319	12516	32.00		397	25334
	59/64	319	12516	32.50		397	26430
23.50		319	12516		1.9/32	397	26430
23.75		327	12516	33.00		397	26430
	15/16	327	12516		1.5/16	397	26430
24.00		327	12516	33.50		397	27580
	61/64	327	13063	34.00		406	27580
24.25		327	13063		1.11/32	406	28786
24.50		327	13063	34.50		406	28786
	31/32	327	13540		1.3/8	406	28786
24.75		327	13540	35.00		406	28786
25.00		327	13540	35.50		406	28786
25.25★		335	13540		1.13/32	416	31543
	1	335	13540	36.00		416	31543
25.50		335	13540	36.50		416	32723
25.75		335	14081		1.7/16	416	32723
26.00		335	14081	37.00		416	32723
	1.1/32	335	14486		1.15/32	416	35438
26.25		335	14486	37.50		416	35438
26.50		335	14486	38.00		426	35438
26.75		343	17170		1.1/2	426	35438
	1.1/16	343	17170	38.50		426	36600
27.00		343	17170		1.17/32	426	36600
27.25		343	17718	39.00		426	36600
27.50		343	17718	39.50		426	38049
27.75		343	18262		1.9/16	426	38049
	1.3/32	343	18262	40.00		426	38049
28.00		343	18829				

HSS TAPER SHANK TWIST DRILLS (LONG SERIES)
IS : 8305 - 1976 (TYPE-N)

SIZE			PRICE (Rs.) EACH	SIZE			PRICE (Rs.) EACH
MM	INCH	MM		MM	INCH	MM	
	1.19/32	436	38049		1.25/32		52602
40.50		436	38049	45.50		459	52602
41.00		436	38049	46.00			52602
	1.5/8	436	38049		1.13/16		52602
41.50		436	39996	46.50		459	54742
42.00		436	39996		1.27/32		54742
	1.21/32	436	42316	47.00			54742
42.50		436	42316	47.50		459	57507
	1.11/16	447	45459		1.7/8	470	57507
43.00		447	45459	48.00			57507
43.50		447	47920		1.29/32		62986
	1.23/32	447	47920	48.50		470	62986
44.00		447	47920	49.00			62986
	1.3/4	447	49891		1.15/16	470	62986
44.50		447	49891	49.50			62986
45.00		447	49891	50.00			66230

ITEMS MARKED H ARE EX-STOCK ITEMS. ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50000/- NETT OR MOQ OF 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTE :

For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.

HSS TAPER SHANK TWIST DRILLS - EXTRA LONG IS : 7822 - 1975

SIZE		OVERALL LENGTH IN MILLIMETERS											
		200	225	250	275	300	315	325	350	375	400		
MM	INCH	PRICE EACH											
3.00	1/8	Rs. 2208	Rs. 2594	Rs. 2874	Rs. 3270	Rs. 3709	Rs. -	Rs. 4282	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
3.50		Rs. 2268	Rs. 2594	Rs. 2955	Rs. 3352	Rs. 3803	Rs. -	Rs. 4398	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
4.00	5/32	Rs. 2268	Rs. 2594	Rs. 2955	Rs. 3352	Rs. 3803	Rs. -	Rs. 4398	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
4.50		Rs. 2328	Rs. 2668	Rs. 2955	Rs. 3432	Rs. 4033	Rs. -	Rs. 4627	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
5.00	3/16	Rs. 2328	Rs. 2668	Rs. 2955	Rs. 3432	Rs. 4033	Rs. -	Rs. 4627	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
5.50	7/32	Rs. 2328	Rs. 2688	Rs. 3099	Rs. 3634	Rs. 4118	Rs. -	Rs. 4750	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
6.00		Rs. 2339	Rs. 2688	Rs. 3129	Rs. 3634	Rs. 4118	Rs. 4502	Rs. 4750	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
6.50	1/4	Rs. 2374	Rs. 2772	Rs. 3146	Rs. 3817	Rs. 4282	Rs. 4644	Rs. 4889	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
7.00		Rs. 2587	Rs. 2913	Rs. 3269	Rs. 3889	Rs. 4479	Rs. 4927	Rs. 5136	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
7.50		Rs. 2616	Rs. 2985	Rs. 3364	Rs. 3959	Rs. 4598	Rs. 5038	Rs. 5232	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
8.00	5/16	Rs. 2733	Rs. 3052	Rs. 3498	Rs. 4102	Rs. 4713	Rs. 5117	Rs. 5378	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
8.50		Rs. 2821	Rs. 3166	Rs. 3565	Rs. 4176	Rs. 4802	Rs. 5181	Rs. 5528	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -

HSS TAPER SHANK TWIST DRILLS - EXTRA LONG IS : 7822 - 1975 (Contd.)

SIZE		OVERALL LENGTH IN MILLIMETERS											
		200	225	250	275	300	315	325	350	375	400		
MM	INCH	PRICE EACH											
9.00		Rs. 2867	Rs. 3213	Rs. 3651	Rs. 4197	Rs. 4837	Rs. 5315	Rs. 5574	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
9.50	3/8	Rs. 2937	Rs. 3250	Rs. 3651	Rs. 4312	Rs. 4960	Rs. 5388	Rs. 5599	Rs. -	Rs. -	Rs. -	Rs. -	Rs. -
10.00		Rs. 2946	Rs. 3333	Rs. 3759	Rs. 4389	Rs. 5056	Rs. 5519	Rs. 5753	Rs. 6440	Rs. 7261	Rs. 8076	Rs. 8750	Rs. 9054
10.50		Rs. 3028	Rs. 3459	Rs. 4010	Rs. 4637	Rs. 5315	Rs. 5755	Rs. 6045	Rs. 6912	Rs. 7766	Rs. 8524	Rs. 9054	Rs. 9962
11.00	7/16	Rs. 3095	Rs. 3565	Rs. 4051	Rs. 4713	Rs. 5413	Rs. 5943	Rs. 6201	Rs. 7039	Rs. 7893	Rs. 8824	Rs. 9054	Rs. 9962
11.50		Rs. 3210	Rs. 3639	Rs. 4154	Rs. 4828	Rs. 5545	Rs. 6045	Rs. 6318	Rs. 7227	Rs. 8099	Rs. 8824	Rs. 9054	Rs. 9962
12.00		Rs. -	Rs. 3804	Rs. 4334	Rs. 5020	Rs. 5753	Rs. 6279	Rs. 6598	Rs. 7459	Rs. 8282	Rs. 9291	Rs. 9962	Rs. 9962
12.50	1/2	Rs. -	Rs. 4010	Rs. 4479	Rs. 5204	Rs. 5931	Rs. 6482	Rs. 6779	Rs. 7811	Rs. 8817	Rs. 9962	Rs. 9962	Rs. 9962

HSS TAPER SHANK TWIST DRILLS - EXTRA LONG IS : 7822 - 1975 (Contd.)

SIZE		OVERALL LENGTH IN MILLIMETERS												
		250	275	300	315	325	350	375	400	425	450	475	500	
MM	INCH	PRICE EACH												
13.0		5315	6088	6912	7503	7893	8981	10079	11321	-	-	-	-	-
13.5		5486	6210	7098	7688	8034	9152	10331	11608	-	-	-	-	-
14.0		5669	6396	7227	7842	8163	9331	10543	11829	-	-	-	-	-
14.5	9/16	5707	6483	7336	7883	8282	9511	10725	12037	14153	15796	17777	19935	
15.0		5835	6624	7513	8051	8485	9701	10874	12234	14089	15987	17954	20140	
15.5		5967	6778	7584	8210	8600	9848	11082	12402	14190	16142	18110	20313	
16.0	5/8	6119	6893	7736	8325	8754	9991	11255	12615	14485	16419	18332	20536	
16.5		6227	6984	7883	8485	8892	10175	11462	12921	14704	16593	18519	20663	
17.0		6360	7154	7965	8585	9013	10331	11615	13063	14879	16799	18697	20855	
17.5	11/16	-	-	8163	8750	9186	10529	11814	13220	15056	16993	18935	21051	
18.0		-	-	8282	8947	9331	10698	12019	13460	15245	17169	19131	21253	
18.5		-	-	8415	9054	9499	10793	12162	13671	15439	17368	19262	21460	

HSS TAPER SHANK TWIST DRILLS - EXTRA LONG IS : 7822 - 1975 (Contd.)

SIZE		OVERALL LENGTH IN MILLIMETERS												
		250	275	300	315	325	350	375	400	425	450	475	500	
MM	INCH	PRICE EACH												
19.0	3/4	-	-	8563	9186	9641	10970	12350	13853	15602	17564	19452	21582	
19.5		-	-	8670	9291	9736	11168	12593	14135	15796	17772	19685	21793	
20.0		-	-	8817	9443	9920	11297	12762	14339	16110	17954	19900	22059	
20.5		-	-	8981	9614	10060	11486	12921	14551	16304	18262	20207	22392	
21.0	13/16	-	-	9141	9499	10232	11734	13188	14790	16656	18573	20577	22741	
21.5		-	-	9331	9962	10402	11939	13441	15072	16903	18964	20949	23206	
22.0		-	-	9535	10229	10698	12162	13671	15326	17169	19260	21284	23573	
22.5	7/8	-	-	9787	10443	10927	12369	13853	15489	17466	19526	21649	23965	

HSS TAPER SHANK TWIST DRILLS - EXTRA LONG IS : 7822 - 1975 (Contd.)

SIZE		OVERALL LENGTH IN MILLIMETERS											
		300	315	325	350	375	400	425	450	475	500	525	
MM	INCH	PRICE EACH											
23.0		10245	10935	11334	12777	14155	15765	17718	19881	21969	24314	-	
23.5		11255	-	12516	13717	15078	16303	18319	20448	22634	25060	-	
24.0	15/16	11255	-	12516	13853	15274	16875	18895	21096	23249	25729	-	
24.5		11608	-	13063	14484	15796	17450	19517	21696	23931	26427	-	
25.0		-	-	13538	15017	16419	17987	20068	22325	24594	27166	-	
25.5	1	-	-	-	15480	16903	18523	20639	22908	25257	27800	-	
26.0		-	-	-	16110	17514	19124	21253	23586	25908	28543	-	
26.5		-	-	-	16593	18024	19657	21845	24187	26520	29239	-	
27.0	1.1/16	-	-	-	17169	18657	20238	22423	24793	27213	29922	-	
27.5		-	-	-	17718	19131	20739	23019	25418	27842	30595	-	
28.0		-	-	-	18262	19685	21345	23586	26032	29092	31336	-	
28.5	1.1/8	-	-	-	18851	20267	21875	24136	26664	29192	31982	-	

HSS TAPER SHANK TWIST DRILLS - EXTRA LONG IS : 7822 - 1975 (Contd.)

SIZE		OVERALL LENGTH IN MILLIMETERS											
		300	315	325	350	375	400	425	450	475	500	525	
MM	INCH	PRICE EACH											
29.0		-	-	-	19380	20822	22473	24745	27300	29808	32706	-	
29.5		-	-	-	19916	21345	23004	25334	27881	30483	33422	-	
30.0	1.3/16	-	-	-	20481	21920	23573	25908	28510	31123	34079	-	
31.0	1.1/4	-	-	-	21024	22468	24144	26551	29250	31935	35040	-	
32.0		-	-	-	21177	22908	25334	27842	30665	33422	36667	39065	
33.0	1.5/16	-	-	-	-	-	26427	29082	32033	34918	38269	40828	
34.0		-	-	-	-	-	27581	30317	33402	36430	39915	42548	
35.0	1.3/8	-	-	-	-	-	28787	31650	34778	37951	41542	44270	
36.0		-	-	-	-	-	29922	32849	36123	39413	43170	45920	
37.0	1.7/16	-	-	-	-	-	31062	34079	37500	40895	44741	47641	
38.0	1.1/2	-	-	-	-	-	32246	35436	38952	42426	46438	49438	
39.0		-	-	-	-	-	33422	36989	40189	43773	47826	50907	

HSS TAPER SHANK TWIST DRILLS - EXTRA LONG IS : 7822 - 1975 (Contd.)

SIZE		OVERALL LENGTH IN MILLIMETERS									
		400	425	450	475	500	525				
MM	INCH	PRICE EACH									
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
40.0		34820	38049	41605	45254	49395	52512				
41.0	1.5/8	-	-	-	-	51031	-				
42.0		-	-	-	-	53300	-				
43.0		-	-	-	-	55665	-				
44.0		-	-	-	-	57986	-				
45.0	1.3/4	-	-	-	-	60350	-				
46.0	1.13/16	-	-	-	-	62904	-				
47.0		-	-	-	-	65448	-				
48.0	1.7/8	-	-	-	-	67997	-				
49.0	1.15/16	-	-	-	-	70498	-				
50.0		-	-	-	-	73338	-				

IMPORTANT NOTES :

- 1) Size 6 mm to 50 mm OAL 200,250,315,400 & 500 mm will be to IS 7822 - 1975. All other size to over standard; 2) For M35 = 40% & M42 = 80% extra
- 3) For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable..
- 4) ITEMS MARKED * ARE EX-STOCK ITEMS, ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS.50000/- NETT OR MOQ OF 5 NOS PER SIZE WHICHEVER IS HIGHER.

HSS PARALLEL SHANK TWIST DRILLS EXTRA LONG TO OUR STANDARD

SIZE		OVERALL LENGTH IN MILLIMETERS															
		50	100	125	150	175	200	225	250	300	350						
MM	INCH	PRICE (Rs.) EACH															
0.5		930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.6		869	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.8		595	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.0		-	575	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2	3/64	-	575	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1/16	-	-	711	848	-	-	-	-	-	-	-	-	-	-	-	-
	5/64	-	-	737	887	-	-	-	-	-	-	-	-	-	-	-	-
3.0	1/8	-	-	-	1197	1466	1660	1973	2328	2903	-	-	-	-	-	-	-
3.5		-	-	-	1168	1466	1749	2172	2616	3336	4528	-	-	-	-	-	-
4.0	5/32	-	-	-	1168	1360	1749	2172	2616	3336	4600	-	-	-	-	-	-
4.5		-	-	-	1196	1466	1749	2172	2616	3436	4600	-	-	-	-	-	-
5.0	3/16	-	-	-	1196	1525	1894	2337	2746	3539	4827	-	-	-	-	-	-
5.5	7/32	-	-	-	1308	1631	2024	2478	2927	3827	5031	-	-	-	-	-	-
6.0		-	-	-	1308	1703	2084	2522	3077	3961	5220	-	-	-	-	-	-
6.5	1/4	-	-	-	-	-	2132	2522	3081	4149	5220	-	-	-	-	-	-
7.0		-	-	-	-	-	2365	2859	3590	4659	5862	-	-	-	-	-	-
7.5	9/32	-	-	-	-	-	2408	2952	3604	4778	5862	-	-	-	-	-	-
8.0	5/16	-	-	-	-	-	2527	3108	3754	4895	6001	-	-	-	-	-	-
8.5	11/32	-	-	-	-	-	2608	3228	3830	4983	6408	-	-	-	-	-	-
9.0	3/8	-	-	-	-	-	2608	3228	3830	4983	6408	-	-	-	-	-	-
9.5		-	-	-	-	-	2746	3377	3830	4983	6408	-	-	-	-	-	-
10.0		-	-	-	-	-	2861	3519	3830	4983	6408	-	-	-	-	-	-
10.5	13/32	-	-	-	-	-	2956	3519	3963	5094	6612	-	-	-	-	-	-
11.0	7/16	-	-	-	-	-	2956	3519	3963	5094	6612	-	-	-	-	-	-
11.5		-	-	-	-	-	-	-	4377	5519	7266	-	-	-	-	-	-
12.0	15/32	-	-	-	-	-	-	-	4377	5519	7266	-	-	-	-	-	-
12.5	1/2	-	-	-	-	-	-	-	4595	5688	7498	-	-	-	-	-	-
		-	-	-	-	-	-	-	4739	5688	7498	-	-	-	-	-	-
		-	-	-	-	-	-	-	4739	6227	8204	-	-	-	-	-	-

IMPORTANT NOTES :

- 1) Other details will be maintained as per IS: 7823-1983. 2) For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable .
- 3) ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50000/- NETT OR 15 NOS, PER SIZE WHICHEVER IS HIGHER. 4) For M35 = 40% & M42 = 80% extra



PANTHER		NINJA					
Quicker • Sharper • More Powerful		SHARP HSS DRILL ACCURACY					
HSS - PARALLEL SHANK TWIST DRILLS IS : 5101							
SIZE		PANTHER PRICE (Rs.) 10 Nos.	NINJA PRICE (Rs.) 10 Nos.	SIZE		PANTHER PRICE (Rs.) 10 Nos.	NINJA PRICE (Rs.) 10 Nos.
MM	INCH			MM	INCH		
2.00		806	-	6.35	1/4	3521	4696
2.10		806	-	6.50		4408	5880
2.20		806	-	6.60		4408	5880
2.30		806	-	6.70		4408	5880
2.40		806	-	6.75	17/64	4408	5880
2.50		806	-	6.80		4408	5880
2.60		806	-	7.00		4826	6435
2.70		806	-	7.14	9/32	4826	6435
2.80		806	-	7.20		4826	6435
2.90		806	-	7.40		5094	6792
3.00		885	1178	7.50		5094	6792
3.10		1053	1405	7.60		5515	7352
3.17	1/8	1053	1405	7.80		5515	7352
3.20		1092	1452	7.94	5/16	6052	8072
3.30		1092	1452	8.00		6052	8072
3.40		1092	1452	8.10		6052	8072
3.50		1092	1452	8.20		6052	8072
3.57	9/64	1092	1452	8.30		7336	9782
3.60		1540	2055	8.33	21/64	7336	9782
3.70		1540	2055	8.50		7336	9782
3.80		1540	2055	8.60		7336	9782
3.90		1540	2055	8.70		7336	9782
3.97	5/32	1540	2055	8.80		7729	10303
4.00		1540	2055	9.00		7729	10303
4.10		1870	2491	9.30		8060	10751
4.20		1870	2491	9.40		8060	10751
4.30		1870	2491	9.50		8060	10751
4.37	11/64	1870	3271	9.52	3/8	9140	12185
4.40		1870	2491	9.70		9140	12185
4.50		2455	3271	9.80		9140	12185
4.60		2455	3271	10.00		10230	13641
4.76	3/16	2455	3271	10.20		10230	13641
4.80		2455	3271	10.30		11089	14781
5.00		2665	3552	10.32	13/32	11089	14781
5.10		2665	3552	10.40		11089	14781
5.16	13/64	2665	3552	10.50		11089	14781
5.20		2665	3552	10.70		11738	15651
5.30		2874	3832	11.00		11738	15651
5.40		2874	3832	11.11	7/16	13102	17470
5.50		2874	3832	11.50		13819	18425
5.56	7/32	2874	3832	11.80		13819	18425
5.60		2874	3832	12.00		14759	19677
5.80		3234	4312	12.50		15655	20872
6.00		3234	4312	12.70	1/2	16526	22038
6.10		3521	4696	12.80		16671	22229
6.20		3521	4696	13.00		16671	22229
6.30		3521	4696				

MINIMUM ORDER VALUE OF RS. 50000/- NETT OR MOQ 50 NOS. PER SIZE WHICHEVER IS HIGHER.
IMPORTANT NOTE :
All sizes to be ordered in multiples of 10 only.

PANTHER		NINJA					
Quicker • Sharper • More Powerful		SHARP HSS DRILL ACCURACY					
HSS - TAPER SHANK TWIST DRILLS IS : 5103							
SIZE		PANTHER PRICE (Rs.) EACH	NINJA PRICE (Rs.) EACH	SIZE		PANTHER PRICE (Rs.) EACH	NINJA PRICE (Rs.) EACH
MM	INCH			MM	INCH		
9.52	3/8	1425	1898	16.67	21/32	4094	5462
10.00		1520	2028	16.75		4094	5462
10.20		1659	2211	17.00★		4094	5462
10.32	13/32	1605	2138	17.25		4163	5550
10.50		1965	2622	17.46	11/16★	4163	5550
11.00		2040	2718	17.50★		4321	5762
11.50		2105	2807	18.00★		4554	6072
12.00★		2128	2835	18.25		4554	6072
12.50		2128	2835	18.26	23/32	4554	6072
12.70	1/2★	2128	2835	18.50★		4554	6072
13.00★		2959	3945	18.75		4606	6143
13.20		3089	4117	19.00★		4606	6143
13.49	17/32	3089	4117	19.05	3/4★	4606	6143
13.50★		3306	4408	19.25		4840	6453
13.80		3306	4408	19.50★		4840	6453
13.89	35/64	3306	4408	19.84	25/32★	4840	6453
14.00★		3306	4408	20.00★		5204	6939
14.20		3555	4739	20.24	51/64	5265	7024
14.25		3555	4739	20.25		5265	7024
14.29	9/16★	3555	4739	20.50★		5265	7024
14.50★		3693	4922	20.64	13/16	5265	7024
14.75		3693	4922	21.00★		5492	7324
15.00★		3693	4922	21.50★		5803	7737
15.08	19/32	3693	4922	22.00★		5912	7881
15.25		3745	4993	22.22	7/8	5912	7881
15.50★		3745	4993	22.50★		6441	8589
15.87	5/8★	3745	4993	23.00★		6569	8756
16.00★		3857	5141	23.50★		7819	10422
16.25		3857	5141	24.00★		8047	10730
16.27	41/64	3857	5141	24.50		8183	10913
16.30		4094	5462	25.00★	63/64	8552	11402
16.50★		4094	5462	25.40	1★	8665	11555

ITEMS MARKED ★ (ONLY IN RH) ARE EX-STOCK ITEMS.
ALL REMAINING ITEMS IN (RH) WILL ATTRACT MINIMUM ORDER VALUE - OF RS. 50000/- NETT OR MOQ 5 NOS PER SIZE WHICHEVER IS HIGHER.

HSS PARALLEL HAND REAMERS, HSS LONG FLUTED MACHINE REAMERS AND HSS PARALLEL/TAPER SHANK CHUCKING REAMERS

SIZE		HAND REAMERS IS : 5444	LONG FLUTED MACHINE REAMERS IS : 5445	CHUCKING REAMERS	
MM	INCH			PARALLEL SHANK IS:5446	TAPER SHANK IS:5447
3.00		1454	1454	1453	1454
3.17	1/8	1454	1454	1454	1454
3.50		1454	1454	1454	1454
3.97	5/32	1454	1454	1454	1454
4.00		1454	1454	1454	1454
4.50		1454	1454	1454	1454
4.76	3/16	1454	1454	1454	1454
5.00		1454	1454	1454	1454
5.50		1454	1454	1454	1454
5.56	7/32	1454	1454	1454	1454
6.00		1688	1688	1688	1688
6.35	1/4	1688	1688	1688	1688
7.00		1690	1690	1690	1690
7.14	9/32	1690	1690	1690	1690
7.94	5/16	1919	1919	1919	1919
8.00		1919	1919	1919	1919
8.73	11/32	2001	2001	2001	2001
9.00		2001	2001	2001	2001
9.12	23/64	2001	2001	2001	2001
9.52	3/8	2181	2181	2181	2181
9.92	25/64	2417	2417	2417	2417
10.00		2417	2417	2417	2417
10.32	13/32	2417	2417	2417	2417
11.00		2713	2713	2713	2713
11.11	7/16	2713	2713	2713	2713
11.91	15/32	2822	2822	2822	2822
12.00		2822	2822	2822	2822
12.70	1/2	2928	2928	2928	2928
13.00		3562	3562	3562	3562
13.49	17/32	3562	3562	3562	3562
14.00		3562	3562	3562	3562
14.29	9/16	3562	3562	3562	3562
15.00		3586	3586	3586	3586
15.08	19/32	3586	3586	3586	3586
15.87	5/8	3586	3586	3586	3586
16.00		3586	3586	3586	3586
16.67	21/32	4128	4128	-	4128
17.00		4128	4128	-	4128
17.46	11/16	4128	4128	-	4128
18.00		4423	4423	-	4423
18.26	23/32	4699	4699	-	4699
19.00		4699	4699	-	4699
19.05	3/4	4699	4699	-	4699
20.00		5240	5240	-	5240
20.64	13/16	5335	5335	-	5335
21.00		5929	5929	-	5929
22.00		5929	5929	-	5929
22.22	7/8	5929	5929	-	5929
23.00		6921	6921	-	6921
23.81	15/16	7667	7667	-	7667
24.00		7667	7667	-	7667
25.00		7685	7685	-	7685
25.40	1	7825	7825	-	7825
26.00		9496	9496	-	9496
26.99	1.1/16	10860	10860	-	10860
27.00		10860	10860	-	10860
28.00		10860	10860	-	10860
28.57	1.1/8	10860	10860	-	10860
29.00		11521	11521	-	11521
30.00		12432	12432	-	12432
30.16	1.3/16	12432	12432	-	12432
31.00		13729	13729	-	13729
31.75	1.1/4	13729	13729	-	13729
32.00		13729	13729	-	13729
33.00		15591	15591	-	15591
33.34	1.5/16	15591	15591	-	15591
34.00		17515	17515	-	17515
34.92	1.3/8	19166	19166	-	19166
35.00		19166	19166	-	19166
36.00		19166	19166	-	19166
36.51	1.7/16	19306	19306	-	19306

HSS PARALLEL HAND REAMERS, HSS LONG FLUTED MACHINE REAMERS AND HSS TAPER SHANK CHUCKING REAMERS

SIZE		HAND REAMERS IS : 5444	LONG FLUTED MACHINE REAMERS IS:5445	CHUCKING REAMERS TAPER SHANK IS:5447
MM	INCH			
37.00		21037	21037	21037
38.00		21037	21037	21037
38.10	1.1/2	21037	21037	21037
39.00		23248	23248	23248
39.69	1.9/16	25411	25411	25411
40.00		25411	25411	25411
41.00		25627	25627	25627
41.27	1.5/8	30202	30202	30202
42.00		30202	30202	30202
42.86	1.11/16	30202	30202	30202
43.00		30202	30202	30202
44.00		30202	30202	30202
44.45	1.3/4	30202	30202	30202
45.00		35394	35394	35394
46.00		35394	35394	35394
47.00		38216	38216	38216
47.62	1.7/8	41044	41044	41044
48.00		41044	41044	41044
49.00		41044	41044	41044
49.21	1.15/16	41044	41044	41044
50.00		41044	41044	41044
50.80	2	41044	41044	41044
51.00		41044	41044	41044
52.00		48923	48923	-
52.39	2.1/16	48923	48923	-
53.00		48923	48923	-
53.97	2.1/8	48923	48923	-
54.00		48923	48923	-
55.00		56808	56808	-
55.56	2.3/16	56808	56808	-
56.00		56808	56808	-
57.00		56808	56808	-
57.15	2.1/4	56808	56808	-
58.00		60782	60782	-
58.74	2.5/16	60782	60782	-
59.00		60782	60782	-
60.00		72115	72115	-
60.32	2.3/8	72115	72115	-
61.00		72115	72115	-
61.91	2.7/16	72115	72115	-
62.00		72115	72115	-
63.00		72115	72115	-
63.50	2.1/2	72115	72115	-
64.00		72115	72115	-
65.00		-	87070	-
65.09	2.9/16	87070	87070	-
66.00		-	90008	-
66.67	2.5/8	90008	90008	-
67.00		90008	90008	-
68.00		-	96492	-
68.26	2.11/16	96492	96492	-
69.00		-	96492	-
69.85	2.3/4	96492	96492	-
70.00		-	96492	-
71.00		96492	96492	-
71.44	2.13/16	101381	101381	-
72.00		-	117877	-
73.00		-	117877	-
73.02	2.7/8	117877	117877	-
74.00		-	117877	-
74.61	2.15/16	117877	117877	-
75.00		-	123781	-
76.00		-	123781	-
76.20	3	123781	123781	-

ITEM MARKED ★ ARE EX-STOCK ITEMS. ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS 50000/- NETT OR MOQ OF 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES :

For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.

**HSS TAPER SHANK EXTRA LONG
MACHINE REAMERS**

SIZE MM	PRICE (Rs.) EACH
8 x 125 x 200	2777
8 x 175 x 250	2969
8 x 200 x 300	3256
9 x 125 x 200	2711
9 x 175 x 250	3121
9 x 225 x 300	4083
10 x 125 x 200	3489
10 x 175 x 250	3721
10 x 200 x 300	3950
10 x 300 x 400	4222
12 x 160 x 250	4134
12 x 200 x 300	4357
13 x 200 x 300	4983
14 x 160 x 250	4644
14 x 200 x 300	5454
15 x 200 x 300	5538
15 x 300 x 400	6197
16 x 200 x 300	5538
16 x 300 x 400	6197
17 x 200 x 300	6250
18 x 200 x 300	6869
19 x 200 x 300	7296
20 x 200 x 300	8098
20 x 300 x 400	9147
22 x 200 x 300	9194
25 x 200 x 325	11938
25 x 275 x 400	13407
26 x 275 x 400	16578
28 x 275 x 400	19041

**HSS TAPER SHANK EXTRA LONG
MACHINE REAMERS**

SIZE INCH MM MM	PRICE (Rs.) EACH
5/16 x 125 x 200	2777
5/16 x 175 x 250	2969
5/16 x 200 x 300	3256
3/8 x 125 x 200	3489
3/8 x 175 x 250	3721
3/8 x 200 x 300	3950
7/16 x 160 x 250	4134
7/16 x 200 x 300	4357
1/2 x 125 x 200	4665
1/2 x 200 x 300	4713
9/16 x 200 x 300	5538
9/16 x 250 x 350	5869
5/8 x 200 x 300	5538
5/8 x 250 x 350	5926
5/8 x 300 x 400	6197
11/16 x 200 x 300	6875
3/4 x 200 x 300	7296
3/4 x 300 x 400	7767
13/16 x 200 x 300	9194
7/8 x 200 x 300	10893
7/8 x 300 x 400	11127
1 x 200 x 325	11938
1 x 275 x 400	13407
1.1/8 x 275 x 400	20370

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES :

For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.

**HSS TAPER PIN REAMERS (TAPER 1:50)
HAND IS 5881 - 1984, MACHINE IS : 5918 - 1984**

NOMINAL DIA MM	PRICE (Rs.) EACH	NOMINAL DIA MM	PRICE (Rs.) EACH
3	3118	16	7063
4	3118	20	10986
5	3118	25	11658
6	3118	30	15686
8	4222	32	17235
10	4682	40	30819
12	5653	50	53415
14	6346		

**HSS TAPER PIN REAMERS (TAPER 1:48)
HAND/MACHINE - BS : 122 : 12 : 1964**

NOMINAL DIA INCH	PRICE (Rs.) EACH	NOMINAL DIA INCH	PRICE (Rs.) EACH
3/16	2906	13/32	4544
7/32	2906	7/16	4679
1/4	2906	1/2	5289
9/32	3180	9/16	6114
5/16	3520	5/8	6803
11/32	3973	3/4	8573
3/8	4014	7/8	10579

ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 35,000/- NETT MOQ OF 15 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

R.H. Cutting with straight flutes will be supplied as standard for hand taper pin reamer.

R.H. Cutting with L.H. helical flutes will be supplied as standard for Machine Taper Pin Reamer.

HSS MACHINE JIG REAMERS IS : 11002-1989

SIZE MM	PRICE (Rs.) EACH	SIZE MM	PRICE (Rs.) EACH
10	3103	33	18953
11	3103	35	21826
12	3555	36	23415
13	4224	39	25035
14	4224	40	28779
15	4645	41	28779
16	4645	43	32152
17	5362	44	35328
19	6007	45	38363
20	6551	46	38363
22	7557	47	41824
23	7557	48	45486
24	9732	49	45486
25	10546	50	50569
27	11788	-	-
28	12810	-	-
30	13941	-	-
32	16140	-	-

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES :

For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.

HSS SOCKET REAMERS :
PARALLEL SHANK - IS : 5882 / TAPER SHANK - IS 5907.
***TYPE 'A' (ROUGHING), TYPE 'B' (PRE - FINISHING) ,**
TYPE 'C' (FINISHING)

MORSE TAPER NO	PARALLEL SHANK PRICE (Rs) EACH	TAPER SHANK PRICE (Rs) EACH
0	3334	3958
1	3670	4174
2	5111	6196
3	7425	9289
4	12284	14632
5	25035	26893
6	44178	61598

* Type required to be specified in order.

HSS MACHINE BRIDGE REAMERS - IS 5919

SIZE MM	PRICE (Rs.) EACH	SIZE MM	PRICE (Rs.) EACH	SIZE MM	PRICE (Rs.) EACH
11	3688	20	8304	31	15876
11.5	4309	21	9226	32	15876
12	4309	21.5	9226	33	17081
13	4699	22	9226	35	18323
13.5	4699	23	10063	36	19556
14	4699	23.5	10063	37	20845
15	5454	25.0	10944	40	33144
17	6728	27	12336	43	39228
17.5	6728	28	13351	49	53354
19	7557	30	14413	-	-

HSS MACHINE BRIDGE REAMERS BS: 122 (Part 2) : 1964

SIZE INCH	PRICE (Rs.) EACH	SIZE INCH	PRICE (Rs.) EACH	SIZE INCH	PRICE (Rs.) EACH
7/16	3688	13/16	8027	1.3/16	13837
1/2	3988	7/8	9226	1.1/4	15435
9/16	4699	15/16	10063	1.5/16	16339
5/8	5454	1	10944	1.3/8	17515
11/16	6728	1.1/16	11908	1.7/16	18721
3/4	7557	1.1/8	12794	1.1/2	20845

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES :

For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.

HSS SHELL REAMERS IS : 5926 : 1970
(WITH 1: 30 TAPER HOLE)

SIZE MM	PRICE (Rs.) EACH	SIZE MM	PRICE (Rs.) EACH	SIZE MM	PRICE (Rs.) EACH
21	4784	42	9039	66	20467
22	4784	43	9039	67	22455
23	4784	44	9169	68	22455
24	4784	45	9564	70	22455
25	4784	46	9564	72	24970
26	5071	47	10018	73	24970
27	5071	49	10288	76	27401
28	5439	50	10708	79	30741
30	5726	52	11859	80	33695
32	5995	54	11859	82	33695
33	6294	56	13013	85	36344
35	6623	57	13013	89	38930
36	6899	58	14589	91	46045
38	7265	60	14589	92	46045
39	7627	62	17628	95	48132
40	7627	63	17628	98	55568
41	7966	65	20467	99	61512
				100	61512

HSS COUNTERSINKS WITH TAPER SHANK
BS: 122 (PART 2): 1964 (INCLUDED ANGLE 60 OR 90)

BODY DIA INCH	PRICE (Rs.) EACH	BODY DIA INCH	PRICE (Rs.) EACH	BODY DIA INCH	PRICE (Rs.) EACH
1/2★	2550	1.1/8★	7879	2	23675
5/8★	3387	1.1/4	9915	2.1/4	26840
3/4	3836	1.3/8	11593	2.1/2	33309
7/8	4844	1.1/2	13739	2.3/4	39315
1★	6096	1.3/4	20316	3	47547

HSS TAPER SHANK COUNTERBORES IS : 5710 - 1988

CUTTER DIA MM	PRICE (Rs.) EACH	CUTTER DIA MM	PRICE (Rs.) EACH
13.5	3851	34	18283
14.5	4328	36	19871
16.5	4970	37	20707
17.5	5346	39	22435
19.5	6313	41	24329
20.0	6616	43	25154
22.0	7574	46	28636
23.0	8693	48	31088
25.0	10524	51	35090
26.0	11662	53	38123
28.0	13024	55	41966
29.0	13729	57	46106
31.0	14967	59	51090
33.0	17148	61	56921

Counterbores will be supplied without pilots and grub screws. Pilot holes and grub screw holes, will however, be provided.

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES :

For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.



**HSS TAPER SHANK COUNTER BORES
BS : 122 (PART 2) : 1964**

CONTERBORE DIA INCH	PRICE (Rs.) EACH	CONTERBORE DIA INCH	PRICE (Rs.) EACH
1/2	3398	1.1/8	13024
9/16	4224	1.1/4	14967
5/8	4716	1.3/8	18283
11/16	5346	1.1/2	21238
3/4	6007	1.5/8	24343
13/16	6659	1.3/4	27580
7/8	7574	1.7/8	30636
15/16	8900	2	33826
1	10524	-	-

IMPORTANT NOTES :

- Counterbores upto and including 1/2" dia. Are supplied without integrated pilots, the diameter of which should be specified at the time of order.
- Counterbores above 1/2" dia. Will be provided with pilot holes and grub screw holes. The pilots & grub screws will not be supplied by us.
- For non listed intermediate sizes, the higher price of the nearest listed size (INCH or MM) will be applicable.

HSS CYLINDRICAL CUTTER IS : 6309

DIA MM	BORE MM	WIDTH MM	PRICE (Rs.) EACH	DIA MM	BORE MM	WIDTH MM	PRICE (Rs.) EACH
40	16	20	3490	80	32	80	16929
40	16	32	4364	80	32	100	19489
40	16	50	5430	100	40	40	14069
40	16	70	7281	100	40	70	21308
50	22	25	4471	100	40	90	26400
50	22	40	5294	100	40	110	37089
50	22	63	6953	100	40	125	45179
50	22	80	9000	125	50	50	31757
63	27	32	6369	125	50	80	45048
63	27	50	8029	125	50	110	60625
63	27	70	10570	125	50	125	67820
63	27	90	12407	125	50	140	75435
80	32	36	9000	160	60	125	112846
80	32	63	14306	-	-	-	-

HSS HELICAL CYLINDRICAL CUTTERS BS: 122 (PART 1) : 1953

PRICE (Rs.) EACH

LENGTH OF CUTTER INCH	DIAMETER OF CUTTER		
	3	4	5
2	15881	23317	38887
3	20103	31190	52385
4	27032	39721	65925
5	39055	57462	79256
6	49523	67617	92920

IMPORTANT NOTE

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

**HSS HIGH POWER CYLINDRICAL CUTTERS
BS: 122 (PART 1) : 1953**

PRICE (Rs.) EACH

LENGTH OF CUTTER INCH	DIAMETER OF CUTTER				
	2.1/2	3	3.1/2	4	4.1/2
1	5690	7177	7953	10055	14499
2	8426	11045	13262	17605	24347
3	11211	15001	18516	25132	34391
4	13967	19067	23837	32031	45048
5	16841	26814	35057	44472	55460
6	19708	39842	41715	51991	65911
7	22485	39842	48456	61983	77177
8	26329	45510	55199	70604	86967

IMPORTANT NOTE

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS SIDE & FACE CUTTERS - IS : 6308 - 1982

PRICE (Rs.) EACH

DIA MM	BORE MM	WIDTH MM	STRAIGHT TEETH TYPE "B"	STAGGERED TEETH TYPE "A"
50	16	5	4092	5090
		6	4251	5294
		8	4364	5441
		10	4635	5792
63	22	6	5013	6479
		8	5294	7068
		10	5761	7281
		12	6009	7845
		14	6190	8417
		16	6493	9079
80	27	18	6925	9348
		6	5488	6890
		8	6083	7495
		10	6493	8578
		12	6925	9079
		14	7364	9740
100	32	16	7705	9938
		18	8578	11255
		20	8949	11805
		6	7845	9514
100	★★	8	8388	10182
		10	9272	10912
100	32	12	9938	12130
		14	10529	12407
		16	11255	13386
		18	12004	13761
		20	12926	14531
		22	13531	16616
		25	14703	18117
125	★★	6	10998	13646
		8	11805	14702
		10	12648	17109
125	32	12	14414	17764
		14	15613	18976
		16	16277	19708
		18	17455	22479
		20	18074	24250
		22	19960	26353
		25	21826	27404
28	24578	31373		



HSS SIDE & FACE CUTTERS - IS : 6308 - 1982

PRICE (Rs.) EACH				
DIA MM	BORE MM	WIDTH MM	STRAIGHT TEETH TYPE "B"	STAGGERED TEETH TYPE "A"
150	★★	6	13386	17213
		8	14562	18622
		10	15798	20067
		12	18297	23112
		14	19568	24578
		16	20853	26067
		18	23414	28914
		20	23414	28914
		22	25994	32036
		25	28498	35283
		28	30876	38688
		32	33184	42208
160	★★	6	18214	20343
		8	19361	21628
		10	20509	22907
		12	21633	24157
160	40	14	22773	25450
		16	24115	26724
		18	25823	29568
		20	27114	29568
		22	28713	32776
		25	30991	38004
		28	33184	39575
		32	36122	43147
200	★★	6	23837	26440
		8	25721	28474
		10	27838	31292
		12	32176	35378
		14	34271	37854
200	40	16	36391	40373
		18	40609	45778
		20	41052	47172
		22	44828	51313
		25	49047	56348
		28	51638	59845
		32	57396	67076
225	★★	8	33518	36658
		10	36484	39489
		12	42475	46352
		14	45533	50116
		16	48643	53839
		18	54875	62396
		20	54875	62396
		22	60580	69092
		25	66341	75566
		28	72234	81676
32	78116	87753		
250	★★	10	42185	45322
		12	49344	54037
		14	53422	58228
		16	57358	62396
		18	64833	72181
		20	64833	72181
		22	71748	79967
		25	79105	87104
		28	85991	96379
		32	92804	105690

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 3 NOS. PER SIZE WHICHEVER IS HIGHER.

IMPORTANT NOTE

★★ BORE REQUIRED FOR THESE SIZES TO BE SPECIFIED WHILE ORDERING.

**HSS STRAIGHT TEETH SIDE & FACE CUTTERS
BS : 122 (PART 1) : 1953**

WIDTH OF CUTTER EDGE & BOSS INCH	DIAMETER OF CUTTER				
	2-1/2"	3"	3-1/2"	4"	5"
	PRICE (Rs) EACH				
1/4	5013	5556	6602	7825	10998
5/16	5251	5837	6976	8388	11805
3/8	5488	6191	7419	8949	12648
7/16	5737	6479	7858	9514	13531
1/2	5982	6820	8243	9938	14414
5/8	6414	7480	9136	11255	16277
3/4	6852	8029	10007	12407	18074
7/8	7311	8936	10789	13531	19960
1	7825	9655	11869	14702	21826
1.1/4	8795	10662	13426	16711	25208
1.1/2	9799	12184	15128	18406	28678

**HSS STRAIGHT TEETH SIDE & FACE CUTTERS
BS : 122 (PART 1) : 1953**

WIDTH OF CUTTER EDGE & BOSS INCH	DIAMETER OF CUTTER				
	6"	7"	8"	9"	10"
	PRICE (Rs) EACH				
1/4	13386	19851	23837	30705	-
5/16	14562	21480	25721	33516	-
3/8	15798	23110	27838	36484	42185
7/16	17045	24655	30001	39325	45336
1/2	18297	26629	32175	42476	49343
5/8	20843	29814	36391	48643	57358
3/4	23414	33063	40610	53893	64833
7/8	25993	36350	44830	60580	71750
1	28497	39598	49047	66340	79106
1.1/4	33184	46068	57386	78116	92804
1.1/2	37854	52622	65726	89924	107612
1.3/4	-	-	-	110276	130683

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 3 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

★★ BORE REQUIRED FOR THESE SIZES TO BE SPECIFIED WHILE ORDERING.

IMPORTANT NOTE :

Cutter of width of 3/4" and above will be supplied with Left hand Helical Flutes.

**HSS STAGGERED TEETH SIDE & FACE CUTTERS
BS : 122 (PART 1) 1953**

WIDTH OF CUTTER EDGE & BOSS INCH	DIAMETER OF CUTTER					
	3"	4"	5"	6"	7"	8"
	PRICE (Rs) EACH					
1/4	6976	9514	13646	17213	22486	26474
5/16	7419	10182	14703	18622	25808	28474
3/8	8289	10789	17109	20067	27839	31292
7/16	8426	11448	17411	21565	29232	33338
1/2	8578	12128	17764	23112	30555	35378
5/8	9602	13386	19708	26067	35836	40373
3/4	10201	15276	22486	28914	40086	45915
7/8	11125	16616	26067	32036	44104	51313
1	12004	18115	27404	35259	48044	56333

HSS STAGGERED TEETH SIDE & FACE CUTTERS
BS : 122 (PART 1) : 1953

WIDTH OF CUTTER EDGE & BOSS INCH	DIAMETER OF CUTTER	
	9"	10"
	PRICE (Rs) EACH	
5/16	36658	41989
3/8	39489	45322
7/16	43459	47407
1/2	46412	54037
5/8	53839	62396
3/4	62396	72181
7/8	69092	79989
1	71727	87104
1.1/4	87753	105690
1.1/2	100304	121439
1.3/4	122345	145932

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 3 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES :

★★ BORE REQUIRED FOR THESE SIZES TO BE SPECIFIED WHILE ORDERING.

HSS SINGLE ANGLE CUTTERS IS : 6324 - 1971

DIA MM	BORE MM	WIDTH MM	ANGLE DEGREES	PRICE (Rs) EACH
50	16	12	60, 65, 70, 75, 80 & 85	3865
63	22	18	60, 65, 70, 75, 80 & 85	5761
63	22	26	70, 75 & 80	6851
80	22	32	70, 75 & 80	9000
100	27	36	70, 75 & 80	13503

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 15 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS SINGLE ANGLE CUTTERS - BS : 122 (PART 1) : 1953

WIDTH OF CUTTER INCH	ANGLE DEGREES	PRICE (Rs) EACH	
		DIAMETER OF CUTTER	
		2.3/4"	3"
5/16	30	4791	5295
7/16	30, 40	5251	5991
1/2	45, 50, 60, 70, 80	5556	6272
5/8	50, 60, 70, 80	6190	6976

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 15 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS DOUBLE ANGLE CUTTERS BS : 122 (PART 1) : 1953

★ Angle in degrees

DIA INCH	BORE INCH	WIDTH INCH	PRICE (Rs) EACH
2.3/4	1	5/8	5556
3	1.1/4	3/4	6976

★ Angle required to be specified at the time of order.

HSS EQUAL ANGLE CUTTER - BS : 122 (PART 1) : 1953

WIDTH OF CUTTER INCH	INCLUDED ANGLE IN DEGREES	DIAMETER OF CUTTER	
		2.3/4"	3"
		PRICE (Rs) EACH	
5/16	30, 40	4791	5295
7/16	30, 40	5013	5556
1/2	45, 60, 90	5013	5556
5/8	60, 90	5556	6082

HSS EQUAL ANGLE CUTTERS - IS : 6326

DIA MM	BORE MM	WIDTH MM	ANGLE DEGREES	PRICE (Rs) EACH
56	16	10	45	4251
63	22	12		4791
80	22	16		6082
100	27	18	8841	
56	16	12	60	4447
63	22	16		5295
80	22	20		6603
100	27	25	10344	
56	16	14	90	4791
63	22	18		5556
80	22	22		7178
100	27	28	11211	

HSS DOUBLE (Unequal) ANGLE CUTTER - IS 6325

DIA MM	BORE MM	WIDTH MM	ANGLE DEGREES	PRICE (Rs) EACH
50	16	12	55 X 12	4251
			60 X 15	4251
			65 X 15	4251
			70 X 15	4251
			75 X 15	4251
			80 X 15	4251
50	16	14	90 X 20	4636
50	16	16	100 X 25	5013
63	22	18	55 X 12	5820
			60 X 15	5820
			63 X 15	5820
			70 X 15	5820
			75 X 15	5820
			80 X 15	5820
63	22	20	90 X 20	6095
63	22	22	100 X 25	6589
80	22	32	65 X 15	9000
			70 X 15	9000
			75 X 15	9000
100	27	36	70 X 15	13503
			75 X 15	13503
			80 X 15	13503

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 20 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS CONVEX CUTTERS IS : 6323 : 1982

DIA MM	BORE MM	WIDTH MM	RADIUS MM	PRICE (Rs) EACH
50	22	3	1.6	5106
50	22	4	2	5106
56	22	5	2.5	6042
56	22	6	3	6042
63	22	8	4	6414
63	22	10	5	7068
70	22	12	6	7619
70	22	16	8	8388
90	27	18	9	11211
90	27	20	10	11805
90	27	22	11	13008
90	27	24	12	13941
100	27	28	14	17780
110	32	32	16	22486
110	32	36	18	29685
125	40	40	20	32919

HSS CONCAVE CUTTERS IS : 6322 : 1982

DIA MM	BORE MM	WIDTH MM	RADIUS MM	PRICE (Rs) EACH
56	22	8	1.6	6414
56	22	9	2	6738
56	22	10	2.5	6933
63	22	12	3	7533
63	22	16	4	7750
63	22	20	5	9092
70	22	24	6	10837
70	22	28	7	11372
80	27	32	8	14864
90	27	36	9	17764
90	27	40	10	19708
100	27	42	11	22984
100	27	44	12	23758
100	27	46	12.5	24221
100	27	50	14	26652
110	32	56	16	36687
125	32	62	18	49980
125	32	70	20	52622

HSS CONVEX / CONCAVE CUTTERS : BS : 122 (PART 1) : 1953

DIA OF CUTTER INCH	DIA OF CURCLE INCH	DIA OF BORE INCH	CONVEX CUTTER		CONCAVE CUTTER	
			WIDTH OF CONVEX CUTTER INCH	PRICE (Rs) EACH	WIDTH OF CONCAVE CUTTER INCH	PRICE (Rs) EACH
2.1/4	1/8	1	1/8	5430	5/16	6414
	3/16		3/16	5792	3/8	6650
	1/4		1/4	6054	1/2	7085
2.1/2	5/16	1	5/16	6414	5/8	7762
	3/8		3/8	6834	3/4	8417
	7/16		7/16	7081	7/8	9092
	1/2		1/2	7626	1	9696
2.3/4	9/16	1	9/16	7762	1.3/16	11372
	5/8		5/8	8426	1.3/16	11661
3	11/16	1	11/16	8576	1.3/8	8576
	3/4		3/4	8990	1.3/8	8990
3.1/4	13/16	1	13/16	11085	1.9/16	16929
	7/8		7/8	11805	1.9/16	17213
3.1/2	15/16	1	15/16	13223	1.3/4	20142
	1		1	13829	1.3/4	20428
4	1.1/8	1.1/4	1.1/8	17780	1.15/16	24974
	1.1/4		1.1/4	19568	2.1/8	26652
4.1/4	1.3/8	1.1/4	1.3/8	26934	2.5/16	35123
	1.1/2		1.1/2	29136	2.1/2	40247

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS SINGLE / DOUBLE CORNER ROUNDING CUTTERS BS : 122 (PART 1) : 1953

DIA OF CUTTER INCH	CORNER RADIUS INCH	DIA OF BORE INCH	SINGLE CUTTER		DOUBLE CUTTER	
			WIDTH OF CUTTER INCH	PRICE (Rs) EACH	WIDTH OF CUTTER INCH	PRICE (Rs) EACH
2.1/4	1/16	1	5/16	5690	7/16	8043
	3/32		5/16	5690	7/16	8043
	1/8		5/16	5690	7/16	8043
2.1/2	5/32	1	7/16	6414	5/8	9048
	3/16		7/16	6414	5/8	9048
	7/32		1/2	6780	3/4	9696
	1/4		1/2	6780	3/4	9696
2.3/4	9/32	1	5/8	7953	15/16	11535
	5/16		5/8	7953	15/16	11535
3	11/32	1	11/16	9425	1.1/16	13434
	3/8		11/16	9425	1.1/16	13434
3.1/4	13/32	1	3/4	10672	1.3/16	15422
	7/16		3/4	10672	1.3/16	15422
3.1/2	15/32	1	7/8	12685	1.3/8	18622
	1/2		7/8	12685	1.3/8	18622
	9/16		1	13967	1.5/8	20830
	5/8		1	13967	1.5/8	20830
3.3/4	11/16	1	1.1/8	20547	1.7/8	29429
	3/4		1.1/8	20547	1.7/8	29429

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 35,000 / - NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS SINGLE CORNER ROUNDING CUTTERS IS : 6314 - 1982

DIA MM	BORE MM	WIDTH MM	RADIUS MM	PRICE (Rs) EACH
56	22	4	1.6	5430
56	22	5	2.5	5430
63	22	6	3	6272
63	22	8	4	6563
63	22	10	5	6993
70	22	12	6	7480
70	22	14	7	7858
80	27	16	8	9740
90	27	18	9	11759
90	27	20	10	12775
100	27	22	12	20712
100	27	22	12.5	20712
100	27	25	14	21937
110	32	28	16	23573
125	32	31	18	30143
125	32	35	20	32049

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

**HSS PARALLEL SHANK END MILL IS : 6353
(STANDARD SERIES)**

DIA MM	PRICE (Rs.) EACH	IS : 6353 - 1971		IS : 6353 - 1991	
		CEL (MM)	OAL (MM)	CEL (MM)	OAL (MM)
3★	838	10	42	8★	40
3.5	838	-	-	10	42
4★	838	11	43	11★	43
5★	838	13	47	13★	47
6★	937	16	52	13★	57
7★	1054	-	-	16★	60
8★	1054	-	-	19★	63
9★	1054	-	-	19★	69
10★	1054	22	67	22★	72
11★	1054	22	67	22★	79
12★	1089	26	76	26★	83
13	1230	26	76	26	83
14	1350	26	76	26★	83
16★	1577	32	88	32★	92
17	1724	32	88	32	92
18★	1917	32	88	32★	92
19	1917	32	88	32	92
20★	2119	38	101	38★	104
21	2378	38	101	38	104
22★	2404	38	101	38★	104
24	2606	38	101	45	121
25★	2803	45	116	45★	121
26	2907	45	116	45	121
27	3419	45	116	45	121
28	3990	45	116	45	121
29	3990	45	116	45	121
30★	4391	45	116	45★	121
32★	4789	63	140	53★	133
33	5306	63	140	53	133
35	5783	70	160	53	133
36	6306	70	160	53	133
37	6796	70	160	53	133
38	7245	70	160	63	155
39	7683	70	160	63	155
40	8160	70	160	63	155
41	8160	70	160	63	155
43	9289	80	180	63	155
45	10407	80	180	63	155
46	10407	90	200	63	155
49	11446	90	200	75	177
50	12593	90	200	75	177
51	12593	90	200	75	177
53	15501	90	200	75	177
54	18364	100	220	75	177
56	22082	100	220	75	177
57	25683	100	220	75	177
59	25683	100	220	75	177
61	27421	110	250	90	192
63	28545	110	250	90	192

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/- NETT MOQ OR 5 NOS. PER SIZE. WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES :

1. For non-listed intermediates sizes, the higher price of the nearest listed size will be applicable.
2. LH End Mill Dia 17 mm & above on special request - 25 % extra
3. Long series End Mills, if required, can be supplied at 30 % extra subject to the order value being minimum Rs. 50,000/-NETT, per size or minimum 5 Nos. per size whichever is higher.

**HSS TAPER SHANK END MILLS IS : 6354
(STANDARD SERIES)**

DIA MM	PRICE (Rs) EACH	IS:6354-1971 TANGED END		IS:6354-1991 TAPPED END		MT No.
		CEL (MM)	OAL (MM)	CEL (MM)	OAL (MM)	
6	1395	16	90	13	83	1
7	1395	-	-	16	86	1
8	1395	19	93	19	89	1
9	1510	-	-	19	89	1
10	1510	22	96	22	92	1
11	1660	-	-	22	92	1
12	1660	26	100	26	96	1
12★	2168	26	118	26	111	1
14	2293	26	100	26	96	2
14★	2442	26	118	26	111	1
16	2444	32	124	32	117	2
18	2984	32	124	32	117	2
20	3444	38	130	38	123	2
20★	3764	38	150	38	140	3
22	3615	38	130	38	123	2
22★	3945	-	-	38	140	3
25	4260	45	157	45	147	3
26	5305	45	157	45	147	3
28	5932	45	157	45	147	3
30	6524	53	165	45	147	3
32	6925	53	165	53	155	3
32★	6925	53	183	53	178	4
33	8373	53	165	53	155	3
33★	9184	-	-	53	178	4
35	9184	53	165	53	155	3
35★	9184	-	-	53	178	4
36	9979	70	210	53	155	3
36★	10886	-	-	53	178	4
38	10977	63	203	63	188	4
38★	12762	-	-	63	221	5
40	12762	63	203	63	188	4
40★	12762	63	203	63	221	5
41	12762	63	203	63	188	4
41★	14032	-	-	63	221	5
43	14032	63	203	63	188	4
43★	14032	-	-	63	221	5
44	14660	63	203	63	188	4
44★	14660	-	-	63	221	5
45	15766	63	203	63	188	4
45★	15766	-	-	63	221	5
46	16137	63	203	63	188	4
46★	16714	-	-	63	221	5
48	16714	63	203	75	200	4
48★	18795	-	-	75	233	5
50	18795	75	215	75	200	4
50★	18795	75	250	75	233	5
51	18795	75	250	75	200	4
51★	26335	-	-	75	233	5
53	26336	75	250	75	200	4
53★	33280	-	-	75	233	5
56	33278	75	250	75	200	4
56★	33278	-	-	75	233	5
60	34926	-	-	75	200	4
60★	34926	75	250	75	233	5
63	41879	90	265	90	248	5

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

★ These sizes will be supplied with the smaller MT Shank unless otherwise specified.

IMPORTANT NOTES :

THE FOLLOWING IF REQUIRED, CAN BE SUPPLIED SUBJECT TO THE ORDER VALUE BEING Rs. 50,000/-NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

1. Standard Series Type 'B' Tapped End as per IS:6354 - 1971at the same rate.
2. Long Series End Mill, Tanged End or Tapped End if required can be supplied at 30 % extra subject to the order value being minimum Rs. 50,000/- per size or minimum 5 Nos. each whichever is higher.
3. For non-listed intermediates sizes, the higher price of the nearest listed size will be applicable subject to order value being minimum. Rs.50,000/- per size or minimum 5 Nos. each whichever is higher.
4. Left Hand Cutter at 25 % extra.
Dia 6.0 mm to 12.0 mm in Tapped End & Tanged End Not Possible

HSS END MILLS
BS : 122 (PART 1) 1953

DIA INCH	PARALLEL SHANK PRICE (Rs.) EACH	TAPER SHANK PRICE (Rs.) EACH
1/8	838	1304
5/32	838	1304
3/16	838	1304
7/32	838	1304
1/4★	937	1304
9/32	1054	1334
5/16★	1054	1334
3/8★	1054	1450
7/16	1054	1469
1/2★	1089	1660
9/16	1350	2293
5/8★	1577	2444
11/16	1763	2755
3/4★	1917	2908
13/16	2119	3305
7/8	2404	3619
15/16	-	3929
1★	2803	4226
1.1/8	3990	5894
1.1/4	4789	6925
1.3/8	5783	9184
1.1/2	6772	10977
1.5/8	8160	12762
1.3/4	10407	14660
1.7/8	11473	16714
2	12565	18795
2.1/16	15501	-
2.1/8	18364	26047
2.3/16	22082	-
2.1/4	23892	33276
2.5/16	25683	-
2.3/8	27421	36314
2.1/2	30918	41879

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/- NETT MOQ OR 5 NOS. PER SIZE. WHICHEVER IS HIGHER.

IMPORTANT NOTES :

1. Taper Shank End Mills with Tapped End for size 9/16" and over, if required, can be supplied at the same rate as the Tanged End.
2. Intermediate sizes (non-listed) price of the next larger listed size.
3. Left Hand Cutter at 25 % extra. in case of Taper Shank End Mill Dia 11/16" & above with MOQ.
4. For M35 = 40% & M42 = 80% extra

HSS PARALLEL SHANK SLOT MILLING CUTTERS
IS : 6352 (SHORT SERIES)

DIA MM	PRICE (Rs) EACH	IS:6352-1971		IS:6352-1991	
		CEL (MM)	OAL (MM)	CEL (MM)	OAL (MM)
3	1017	6	40	5	37
3.5	1017	6	40	6	38
4	1017	6	40	7	39
5	1017	8	45	8	42
6★	1089	8	45	8★	52
7	1089	10	50	10	54
8★	1089	10	50	11★	55
9	1089	10	50	11	61
10	1130	12	56	13	63
11	1130	12	56	13	70
12	1232	16	63	16	73
14	1577	16	63	16	73
16	1774	18	70	19	79
18	2184	18	70	19	79
20	2184	20	80	22	88
22	2547	22	90	22	88
25	3021	25	100	26	102
28	5005	25	100	26	102
32	5243	28	110	32	112
35	6306	32	118	32	112
36	6772	32	118	32	112
38	7302	36	125	38	130
40	7816	36	125	38	130
41	8840	-	-	38	130
42	8840	-	-	38	130
43	9828	-	-	38	130
44	9828	-	-	38	130
45	9828	-	-	38	130
46	10912	-	-	38	130
47	10912	-	-	38	130
48	10912	-	-	45	147
49	11966	-	-	45	147
50	11966	-	-	45	147

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/- NETT MOQ OR 5 NOS. PER SIZE. WHICHEVER IS HIGHER.

IS : 6352 - 1971 1) TYPE 'A' - FLATE FACE HELICAL FLUTED
IS : 6352 - 1991 1) TYPE 'A' - FLATE FACE HELICAL FLUTED

IMPORTANT NOTES :

1. Type 'A' will be supplied unless otherwise specified.
2. Other Type if required can be supplied at the same rate.
3. Left Hand Cutter at 25 % extra.
4. Standard Series Slot Milling Cutter if required can be supplied a 30 % extra, subject to the order value being minimum Rs. 50,000/- NETT. Or 5 Nos. per size whichever is higher.
5. For M35 = 40% & M42 = 80% extra

HSS TAPER SHANK SLOT MILLING CUTTERS
IS : 6388 (SHORT SERIES)

DIA MM	PRICE (Rs.) EACH	IS : 6388 - 1971			IS : 6388 - 1991		MT NO.
		CEL MM	(TANGED END)	(TAPPED END)	(TAPPED END)		
			OAL MM	OAL MM	CEL MM	OAL MM	
6	1554	-	-	-	8	78	1
7	1554	16	90	-	10	80	1
8	1709	16	90	-	11	81	1
9	1709	16	90	-	11	81	1
10	1745	16	90	-	13	83	1
11	1745	16	90	-	13	83	1
12	1948	16	90	-	16	86	1
12★	2279	-	-	-	16	101	2
14	2444	16	90	-	16	86	1
14★	2537	-	-	-	16	101	2
16	2537	18	110	100	19	104	2
18	2908	18	110	100	19	104	2
20	2908	20	114	104	22	107	2
20★	3597	20	-	-	22	124	3
22	3613	22	118	108	22	107	2
22★	4305	-	-	-	22	124	3
25	4303	25	143	130	26	128	3
26	5937	25	143	130	26	128	3
28	6289	25	143	130	26	128	3
32	7539	28	148	135	32	134	3
32★	9089	-	-	-	32	157	4
35	9770	32	179	164	32	134	3
35★	11313	-	-	-	32	157	4
36	11394	32	179	164	32	134	3
36★	11394	-	-	-	32	157	4
38	11394	36	186	171	38	163	4
38★	15684	-	-	-	38	196	5
40	13004	36	186	171	38	163	4
40★	17305	-	-	-	38	196	5

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

★ These sizes will be supplied with the smaller MT Shank unless otherwise specified.

IS : 6352 - 1971 1) TYPE 'A' & 'D' - FLATE FACE HELICAL FLUTED
2) TYPE 'B' & 'F' - FLATE FACE STRIGHT FLUTED

IS : 6352 - 1991 1) TYPE 'D' - FLATE FACE HELICAL FLUTED

IMPORTANT NOTES :

1. Type 'A' (IS:6388 - 1971) and Type 'D' (IS:6388 - 1991) will be supplied Unless otherwise specified.
2. Other Type if required can be supplied at the same rate.
3. For non-listed intermediates sizes, the higher price of the nearest listed size will be applicable.
4. Left Hand Cutter at 25 % extra from Dia 14.0 mm & above only.
5. Standard Series Slot Milling Cutters if required can be supplied at 30 % extra.

HSS SLOT DRILLS
BS : 122 (PART 1) : 1953

DIA INCH	PARALLEL SHANK PRICE (Rs.) EACH	TAPER SHANK PRICE (Rs.) EACH
1/8	1017	1398
5/32	1017	1398
3/16	1017	1398
7/32	1085	1531
1/4	1089	1610
5/16	1089	1709
3/8	1089	1709
7/16	1112	1745
1/2	1232	1948
9/16	1577	2444
5/8	1774	2537
11/16	2006	2757
3/4	2184	2908
13/16	2547	3613
7/8	2547	3613
1	3021	4303
1.1/8	4301	6289
1.1/4	5243	7539
1.3/8	6306	9770
1.1/2	7302	11394
1.5/8	9040	-
1.3/4	9828	-
1.7/8	10912	-
2	11965	-

- 1) Straight flute, Flat Faced, will be supplied unless otherwise specified.
- 2) Spiral Fluted, Flate faced same rate. 3) Left hand Cutter 25 % extra.

HSS TAPER SHANK T-SLOT CUTTERS -
BS : 122 (PART 1) : 1953

NOMINAL SIZE OF BOLT INCH	DIA OF CUTTER INCH	WIDTH OF CUTTER INCH	MT SHANK NO.	TAPPED END PRICE (Rs.) EACH
1/4	37/64	1/4	2	5484
5/16	45/64	5/16	2	6184
3/8	53/64	23/64	2	6762
7/16	61/64	27/64	2	7166
1/2	1.5/64	15/32	2	8656
5/8	1.21/64	37/64	3	14013
3/4	1.33/64	11/16	3	17399
7/8	1.45/64	51/64	3	20520
1	1.61/64	29/32	4	25411
1.1/8	2.1/8	1.1/16	4	32802
1.1/4	2.5/16	1.3/16	4	39019
1.3/8	2.1/2	1.5/16	5	48163
1.1/2	2.3/4	1.7/16	5	61664

HSS TAPER SHANK T - SLOT CUTTERS
(STAGGERED TEETH) IS : 2668 : 1992

NOMINAL OF T-SLOT MM	DIA OF CUTTER MM	WIDTH MM	PRICE (Rs.) EACH
10★	18	8	6827
12★	21	9	7460
14★	25	11	14338
18★	32	14	17951
22	40	18	24048
28	50	22	31014
36	60	28	55889
42	72	35	67824

★ These sizes will be supplied with the smaller MT Shank unless otherwise specified.

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra



HSS WOODRUFF KEYSLOT CUTTERS - IS 2669 - 1971
(Straight Teeth Type)

DIA MM	WIDTH MM	NOM SIZE OF KEY MM	PRICE (Rs) EACH
16.5	5	5 x 6.5	2497
19.5	5	5 x 7.5	2839
	6	6 x 7.5	2839
22.5	5	5 x 9	3230
	6	6 x 9	3230
	8	8 x 9	3230
28.5	6	6 x 11	5240
	8	8 x 11	5240
	10	10 x 11	5240
32.5	7	7 x 13	6196
	8	8 x 13	6196
	10	10 x 13	6196
45.5	10	10 x 16	10524

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 15 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS CUTTER FOR WOODRUFF KEYSEATS - BS : 122 (PART 1) 1953

B. S. Cutter & KEY No.	PRICE (Rs.) EACH	B. S. Cutter & KEY No.	PRICE (Rs.) EACH	B. S. Cutter & KEY No.	PRICE (Rs.) EACH
606	3115	609	5470	1011	7879
607	3657	809	5470	1211	7879
807	3657	1009	5510	812	8900
608	4423	810	6472	1012	8900
808	4423	1010	6472	1212	8900
1008	4423	1210	6472		

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 15 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS FACE CUTTERS :
(As per Table No 19 of BSS : 122 : 1938)

DIAMETER OF CUTTER INCH	OVERALL LENGTH OF CUTTER INCH	DIAMETER OF BORE INCH	PRICE (Rs.) EACH
1.3/4	1.1/4	3/4	5691
2	1.1/4	3/4	6563
2.1/2	1.1/4	3/4	8289
3	1.11/16	1.1/8	11869
4	1.3/4	1.1/8	19851
5	2	1.1/2	33388

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS KEYWAY MILLING CUTTERS FORM RELIEVED
IS : 6355 (STRAIGHT TEETH TYPE)

DIA MM (js 16)	BORE MM (H7)	WIDTH MM (d9)	PRICE (Rs) EACH
50	16	5	3711
		6	4013
		8	4259
		10	4447
63	22	6	4358
		8	4557
		10	5013
		12	5442
		14	5761
		16	6190
80	27	18	6653
		6	6095
		8	6495
		10	6933
		12	7762
		14	8388
100	32	16	8912
		18	9413
		20	10007
		6	7178
		8	7704
		10	8388
125	32	12	9134
		14	9827
		16	10575
		18	11191
		20	11435
		22	12775
160	40	25	13646
		8	10998
		10	12029
		12	13120
		14	14460
		16	15422
200	40	18	16711
		20	17697
		22	18850
		25	20636
		32	22370
		10	19819
200	40	12	20867
		14	22234
		16	23806
		18	25335
		20	27032
		22	28784
		25	31248
		28	32993
		32	37338
		12	30688
		14	32420
		16	34478
18	36907		
20	39509		
22	42453		
25	45766		
28	49597		
32	55206		
36	60809		
40	66583		

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 15 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS SLOTTING CUTTERS - BS : 122 (PART 1) : 1953 (STRAIGHT TEETH)

WIDTH OF CUTTER INCH	DIAMETER OF CUTTER PRICE (Rs.) EACH					
	2.1/2"	3"	3.1/2"	4"	5"	6"
1/4	3017	3448	4301	5186	8289	10709
5/16	3270	3711	4722	5792	9079	11870
3/8	3490	3993	5106	6322	9876	13017
7/16	3691	4364	5489	7363	10709	14179
1/2	3899	4585	5885	7419	11538	15362
5/8	4364	5162	6701	9275	13120	17692
3/4	4672	5624	7281	9413	14414	19619
7/8	5000	6209	7858	10837	15733	21565
1	5295	6851	8426	11158	17045	23577

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 15 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS SHELL END MILLS - IS : 6257 - 1982

DIA MM (js 16)	BORE (H7)	WIDTH (js 16)	PRICE (Rs.) EACH
40	16	32	6603
50	22	36	8029
63	27	40	10570
80	27	45	15613
100	32	50	23837
125	40	56	39967
160	50	63	75435

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS SHELL END MILL - BS : 122 (PART 1) : 1953

DIA OF CUTTER INCH	LENGTH OF CUTTER INCH	DIA OF BORE INCH	PRICE (Rs.) EACH
1.1/4	1	1/2	4542
1.1/2	1.1/8	1/2	5556
1.3/4	1.1/4	3/4	6602
2	1.3/8	3/4	7506
2.1/4	1.1/2	1	9050
2.1/2	1.5/8	1	10526
2.3/4	1.5/8	1	11966
3	1.3/4	1.1/4	13930
3.1/2	1.7/8	1.1/4	17370
4	2.1/4	1.1/2	25545
4.1/2	2.1/4	1.1/2	30628
5	2.1/4	1.1/2	39967
5.1/2	2.1/4	2	46753
6	2.1/4	2	53922

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS HAND AND SHORT MACHINE TAPS (COARSE PITCH) - NON SERIAL IS 6175: 1992 :PART I ,PART II & PART III AND HSS NUT TAPS - IS : 6175 - 1991 (PART V) (6H TOLERANCE)

NOM DIA X PITCH	PRICE Rs. / EACH						
	PART I STR FLUTES	PART II STR FLUTES SPIRAL POINT*		PART III STR FLUTES SPIRAL POINT* SPIRAL FLUTES			NUT TAPS
M2.0x0.40	601						
M2.2x0.45	601						
M2.3x0.40	601						
M2.5x0.45	601						
M3x0.5		364	460	497	398	501	586
M3.5x0.6		364	460	497	398	501	586
M4x0.7		364	460	497	398	501	586
M4.5x0.75		393	484	528	422	528	593
M5x0.8		392	484	528	422	528	593
M6x1.0		392	484	528	432	544	597
M8x1.25		463	562	613	488	620	704
M10x1.5		568	699	760	573	765	836
M12x1.75					887	1071	1200
M14x2.00					1258	1555	1832
M16x2.00					1258	1555	1832
M18x2.5					2037	2453	2788
M20x2.5					2597	3108	3743
M22x2.5					2781	3313	3890
M24x3.0					3056	3689	4221
M25x3.0					3781		
M27x3.0					4698		
M30x3.5					5260		
M33x3.5					6400		
M36x4.0					8902		
M39x4.0					10449		
M42x4.5					12193		
M45x4.5					16406		
M48x5.00					17491		
M52x5.0					21960		
M56x5.5					31250		
M60x5.5					32935		
M64x6.0					34639		
M68x6.0					43224		

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/-NETT OR MOQ OF 5 NOS. PER SIZE. WHICHEVER IS HIGHER.

NOTES :

- Sizes upto M 10 will be supplied as per Part II unless otherwise specified.
- A Set Consist of Taper, Second & Bottoming.
- Serial Taps can be supplied at the same price.
- Left Hand Taps at 25% Extra.
- For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES : (NUT TAPS - MOQ)

UPTO M10 (50 NOS EACH) OVER M10 - M28 (25 NOS EACH) OVER M28 - M35 (15 NOS EACH) OVER M35 (10 NOS EACH)

HSS HAND AND SHORT MACHINE TAPS (FINE PITCH) - NON SERIAL IS 6175 : 1992 : (6H TOL) PART II & PART III (6H-TOL) AND HSS NUT TAPS - IS : 6175 - 1991 (PART V)

PRICE Rs. / EACH

NOM DIA X PITCH	PART II			PART III			NUT TAPS
	STR FLUTES	SPIRAL POINT*	SPIRAL FLUTES	STR FLUTES	SPIRAL POINT*	SPIRAL FLUTES	
M3.0x0.35	538	724					
M3.5x0.35	538	724					
M4x0.5	538	655					
M4.5x0.5	528	655					
M5x0.5	528	638					
M6x0.75	534	724	686	590	643	762	940
M7x0.75	618	724	815	618	736		1195
M8x0.75							
M8x1.0	559	668	732	618	676	812	1083
M9x1.0							
M10x1.0	636	767	880	712	769	972	1427
M10x1.25	636	767	880	712	769	972	1427
M12x1.0							2241
M12x1.25				1035	1176	1389	2241
M12x1.5				1035	1176	1389	2241
M14x1.0							3341
M14x1.25				1323	1582	1907	3341
M14x1.5				1277	1582	1850	3341
M16x1.0							3341
M16x1.5				1277	1582	1857	3341
M18x1.0							4963
M18x1.5				2316	2597	3111	4963
M18x2.0				2316	2597	3111	4963
M20x1.5				2891	3252	3976	6363
M20x2.0				2891	3252	3976	6363
M22x1.5				3131	3562	4358	6753
M22x2.0				3131	3562	4358	6753
M24x1.5				3497	3922	4834	8032
M24x2.0				3497	3922	4834	8032
M25x1.5				3746			9032
M25x2.0				3746			
M26x1.5				3906			
M26x2.0				3906			
M27x1.5				5245			11380
M27x2.0				5245			
M28x1.5				5245			14171
M28x2.0				5245			
M30x1.5				5901			14171
M30x2.0				5901			14171
M30x3.0				5901			
M32x1.5				6254			
M32x2.0				6254			
M33x1.5				7204			
M33x2.0				7204			15715
M33x3.0				7204			

HSS HAND & SHORT MACHINE TAPS (FINE PITCH) NON SERIAL IS : 6175 : 1992 : PART III (6H-TOL)

PRICE Rs. / EACH

NOM DIA X PITCH	STRAIGHT FLUTES
M35x1.5	9988
M36x1.5	9988
M36x2.0	9988
M36x3.0	9988
M39x1.5	12440
M39x2.0	12440
M39x3.0	12440
M42x1.5	13781
M42x2.0	13781
M42x3.0	13781
M42x4.0	13781
M45x1.5	19178
M45x2.0	19178
M45x3.0	19178
M45x4.0	19178
M48x1.5	19918
M48x2.0	19918
M48x3.0	19918
M48x4.0	19918
M50x1.5	22046
M50x2.0	22046
M50x3.0	22046
M52x1.5	24805
M52x2.0	24805
M52x3.0	24805
M52x4.0	24805
M56x1.5	34019
M56x2.0	34019
M56x3.0	34019
M56x4.0	34019
M60x1.5	35980
M60x2.0	35980
M60x3.0	36635
M60x4.0	36635
M64x1.5	38464
M64x2.0	38464
M64x3.0	38989
M64x4.0	38989
M68x1.5	48672
M68x2.0	48672
M68x3.0	49063
M68x4.0	49063
M72x6.0	58321
M76x6.0	71185
M80x6.0	86156
M85x6.0	106043
M90x6.0	132498
M95x6.0	166768
M100x6.0	206035

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/-NETT OR MOQ OF 5 NOS. PER SIZE. WHICHEVER IS HIGHER.

NOTES :

- Sizes upto M 10 will be supplied as per Part II unless otherwise specified.
- Serial Taps can be supplied at the same price.
- A Set Consist of Taper & Bottoming.
- Left Hand Taps at **25% Extra**.
- For **M35 = 40% & M42 = 80% extra**

NOTE: (NUT TAPS - MOQ)

- UPTO M10 - (50 NOS EACH)
OVER M10 - M28 (25 NOS EACH)
OVER M28 - M35 (15 NOS EACH)
OVER M35 (10 NOS EACH)

**HSS LONG SHANK MACHINE TAPS (COARSE PITCH)
IS 6175 : 1991 : PART IV (6H - TOL)**

PRICE Rs. / EACH			
NOM DIA X PITCH	STR FLUTES TYPE 'A', 'C', 'D'	SPIRAL POINT TYPE 'B'	SPIRAL FLUTES TYPE 'C'
M3x0.5	798	921	935
M4x0.7	798	921	935
M5x0.8	577	676	704
M6x1.0	617	726	763
M8x1.25	668	798	825
M10x1.5	847	972	1034
M12x1.75	1183	1374	1506
M14x2.0	1703	1981	2281
M16x2.0	1703	1981	2281
M18x2.5	2632	3042	3430
M20x2.5	3270	3757	4086
M22x2.5	3632	4221	4115
M24x3.0	4010	4685	5109
M27x3.0	5842		
M30x3.5	6627		
M33x3.5	7815		
M36x4.0	10532		
M39x4.0	12321		
M42x4.5	14424		
M45x4.5	18927		
M48x5.0	21211		
M52x5.0	24533		
M56x5.5	32528		
M60x5.5	37267		
M64x6.0	42043		
M68x6.0	58596		

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/-NETT OR MOQ OF 5 NOS. PER SIZE. WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

**IMPORTANT NOTES :
MACHINE TAPS**

Type 'A' - 5 Deg Taper angle with Longer taper lead
Type 'B' - 10 Deg Taper angle with Spiral point
Type 'C' - 20 Deg Taper angle with Shorter taper lead
Type 'D' - 10 Deg Taper angle without Spiral point

**HSS LONG SHANK MACH. TAPS TO DIN - 2183
BSW / UNC / BSF / UN / NF (TYPE A, B & C)**

SIZE INCH	PRICE (Rs.) EACH TYPE 'A' & 'C'	PRICE (Rs.) EACH TYPE 'B'
1/8	564	659
3/16	620	707
1/4	629	748
5/16	730	847
3/8	878	1105
7/16	1044	1235
1/2	1238	1426
5/8	1815	2097
3/4	2379	3252
7/8	3813	4261
1	4776	5039
1.1/8	6365	6815
1.1/4	7675	8290
1.1/2	11962	12504
1.3/8	11962	12504
1.5/8	14291	14852
1.3/4	16597	17194
1.7/8	20278	20822
2	23971	24494

**HSS LONG SHANK MACHINE TAPS (FINE PITCH)
IS 6175 : 1991 : PART IV : (6H -TOL)**

PRICE Rs. / EACH

NOM DIA X PITCH	STRAIGHT FLUTES TYPE 'A', 'C', 'D'	SPIRAL POINT TYPE 'B'
M3x0.35	1083	1163
M3.5x0.35	1083	1163
M4x0.5	1083	1163
M4.5x0.5	701	823
M5x0.5	701	823
M6x0.75	701	823
M7x0.75	802	929
M8x1.0	737	879
M10x1.0	887	1027
M10x1.25	902	1044
M12x1.25	1285	1484
M12x1.5	1285	1484
M14x1.25	1681	1988
M14x1.5	1681	1988
M16x1.5	1646	2025
M18x1.5	2895	3514
M18x2.0	2895	3514
M20x1.5	3785	4469
M20x2.0	3785	4469
M22x1.5	3925	4641
M22x2.0	3925	4641
M24x1.5	4386	5174
M24x2.0	4386	5174
M25x1.5	5584	6599
M25x2.0	5584	6599
M26x1.5	5708	6738
M26x2.0	5708	6738
M27x1.5	6879	7863
M27x2.0	6879	7863
M28x1.5	7478	8527
M28x2.0	7478	8527
M30x1.5	7741	
M30x2.0	7741	
M30x3.0	7741	
M32x1.5	8502	
M32x2.0	8502	
M33x1.5	9363	
M33x2.0	9363	
M33x3.0	9363	
M35x1.5	13088	
M36x1.5	13088	
M36x2.0	13088	
M36x3.0	13088	
M39x1.5	16092	
M39x2.0	16092	
M39x3.0	16092	
M40x1.5	17205	
M40x2.0	17205	
M40x3.0	17205	
M42x1.5	17718	
M42x2.0	17718	
M42x3.0	17718	
M42x4.0	17718	
M45x1.5	24701	
M45x2.0	24701	
M45x3.0	24701	
M45x4.0	24701	
M48x1.5	26036	

HSS LONG SHANK MACHINE TAPS (FINE PITCH)
IS 6175 : 1991 : PART IV : (6H -TOL)
PRICE Rs. / EACH

NOM DIA X PITCH	STRAIGHT FLUTES TYPE 'A', 'C', 'D'
M48x2.0	26036
M48x3.0	26036
M48x4.0	26036
M50x1.5	30093
M50x2.0	30093
M50x3.0	30093
M52x1.5	32187
M52x2.0	32187
M52x3.0	32187
M52x4.0	32187

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/- NETT OR MOQ OF 5 NOS. PER SIZE. WHICHEVER IS HIGHER.

HSS PIPE TAPS
NPS NPT NPSF - BS : 949 - 1969
BSP BS : 949 - 1957
BSPT BS : 949 PART III - 1982

PRICE Rs. / EACH

TAP SIZE	PRICE Rs. / EACH					
	PARALLEL THREAD			TAPER THREAD		
INCH	BSP	NPS	NPSF	BSPT	NPT	NPTF
1/16					743	743
1/8	607	690	836	776	801	955
1/4	948	1195	1474	1390	1458	1800
3/8	1397	1469	1820	1838	1925	2179
1/2	2036	2188	2647	2642	2773	3141
5/8	2304	-	-	-	-	-
3/4	3281	3442	4233	4293	4356	5034
7/8	4093	-	-	-	-	-
1	5157	5746	7027	6673	6850	7830
1.1/4	7745	9053	-	9782	9904	11535
1.1/2	9665	11187	-	11997	12790	-
1.3/4	14784	-	-	-	-	-
2	17349	19992	-	21076	22150	-
2.1/4	30008	-	-	-	-	-
2.1/2	43296	-	-	63194	64183	-
2.3/4	48319	-	-	-	-	-
3	56096	-	-	82682	83354	-
3.1/2	73008	-	-	108986	109173	-
4	91771	-	-	137379	139920	-

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/- NETT OR MOQ OF 5 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra
IMPORTANT NOTES :
BSP(P), BSP(T), NPS NPT NPSF NPTF
A set consists of 2 Taps (Taper & Bottoming)
we can also supply BSP (P) Taps to new BS 949:Part - III- 1982 (G Series) at the same rate as per order.

HSS HAND TAPS BA - BS : 949 : 1969 AND HSS NUT TAPS BA - BA : 949 : 1969

PRICE (Rs) EACH

SIZE BA	PRICE (Rs) EACH		
	STRAIGHT FLUTES	SPIRAL POINT	NUT TAPS
0	448	561	915
1	448	561	915
2	381	510	794
3	381	510	794
4 ★	381	510	794
5	381	510	878
6	422	548	973

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/- NETT OR MOQ OF 50 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS GROUND THREAD TAPS : STANDARD HAND & SHORT MACHINE TAPS : B.S.B.(BRITISH STANDARD BRASS) WHITWORTH FORM B.S.CY.(BRITISH STANDARD CYCLE) 60° THREAD FORM B.S. 949 - 1969

B. S. CY SIZE INCH	TPI	PRICE (Rs) EACH	
		STR. FLUTES	SPIRAL POINTED
3/16	32	428	524
1/4	26	462	534
5/16	26	577	657
3/8	26	701	801
7/16	26	880	1057
1/2	26	1090	1271
9/16	26	1744	1927
1	24	3633	-
1.370	24	7679	-

B. S. B SIZE INCH	TPI	PRICE (Rs) EACH	
		STR. FLUTES	SPIRAL POINTED
1/4	26	449	527
5/16	26	594	678
3/8	26	678	778
7/16	26	900	1071
1/2	26	1109	1291
9/16	26	1730	1905
5/8	26	1730	-
3/4	26	2352	-
1	26	3620	-

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 15 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

HSS GROUND THREAD TAPS : STANDARD HAND & SHORT MACHINE TAPS : B.S. CON (BRITISH STANDARD CONDUIT) WHITWORTH FORM B.S. : 949 --1969 (ZONE - 3)

B. S. CON SIZE INCH	TPI	PRICE (Rs) EACH	
		STR. FLUTES	SPIRAL POINTED
1/2	18	1164	1164
-	-	-	-
5/8	18	1780	-
3/4	16	2473	-
1	16	3856	-
1.1/4	16	5599	-
-	-	-	-
1.1/2	14	8955	-
2	14	15656	-

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NET OR 10 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

PRICES FOR LPG CYLINDER 3/4 NGT TAPS :		EACH (Rs.)
1. 3/4" - 14 NGT tap interrupted 5 flutes to our Drg.No. M22 - 531		5558
2. 3/4" - 14 NGT tap interrupted 5 flutes to our Drg.No. M22 - 574		6119
3. 3/4" - 14 NGT tap interrupted 5 flutes to our Drg.No. M22 - 535		5312
4. 3/4" - 14 NGT tap NON-interrupted 4 flutes to our Drg.No. M22 - 535		4248

PRICES FOR LPG CYLINDER BSGT TAPS :		EACH (Rs.)
0.715" x 14 TPI - BSGT Tap Interrupted 5 flutes to our Drg. No. SKT-012		6239
0.715" x 14 TPI - BSGT Tap NON-Interrupted 4 flutes to our Drg. No. SKT-012		5443

IMPORTANT NOTE :
ALL NGT & BSGT TAPS ARE SUBJECT TO ORDER VALUE BEING MINIMUM OF Rs. 50,000/- NETT. OR 15 NOS. PER SIZE WHICHEVER IS HIGHER.

Prices for all TiN and TiAlN Taps will be given on specific request.

**HSS HAND TAPS BSW ,BSF,UNC,UNF AND
HSS NUT TAPS BS : 949 : 1969**

SIZE INCH	PRICE (Rs) EACH			
	STRAIGHT FLUTES	SPIRAL POINT	SPIRAL FLUTES	NUT TAPS
1/8	382	456		
3/16	382	469		823
1/4	396	476	554	933
5/16	448	555	614	1168
3/8	545	668	761	1540
7/16	697	860	1000	1909
1/2	882	1059	1221	2652
9/16	1277	1557	1878	2652
5/8	1277	1557	1878	3442
11/16				3614
3/4	2021	2420	2862	4248
7/8	2788	3358	3910	5819
1	3526	4074	4676	7568
1.1/8	4774			10191
1.1/4	5739			12632
1.3/8	7412			15033
1.1/2	8898			18014
1.5/8 (BSF ONLY)	10484			20275
1.3/4	12332			25340
2	17489			36113
2.1/4	26072			
2.1/2	34306			
2.3/4	42796			
3	57464			

ITEM MARKED ★ ARE EX-STOCK ITEMS ALL REMAINING ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF RS. 50,000/- NETT OR MOQ OF 50 NOS. PER SIZE. WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra

IMPORTANT NOTES :

A Set Consist of Taper, Second & Bottoming.

**HSS NIB TAPS (CORSE PITCH)
TO OUR STANDARD**

NOM DIA X PITCH	STRIGHT FLUTES PRICE (Rs.) EACH
M4x0.7	538
M5x0.8	577
M6x1.0	643
M8x1.25	672
M10x1.5	846
M12x1.75	991
M14x2.0	1720
M16x2.0	1720
M18x2.5	2833
M20x2.5	3788
1/8" BSW	576
5/32" BSW	588
3/16" BSW	588
1/4" BSW	600
5/16" BSW	672
3/8" BSW	846
7/16" BSW	1187
1/2" BSW	1187
9/16" BSW	1720
5/8" BSW	1720

ALL ABOVE ITEMS WILL ATTRACT MINIMUM ORDER VALUE OF Rs. 50,000/- NETT OR 25 NOS. PER SIZE WHICHEVER IS HIGHER.

For M35 = 40% & M42 = 80% extra



**HSS (M42) NINJA SERIES TAPS
TO IS : 6175 - PART - II & PART - III**

Price (Rs.) Each

	NOM DIA X PITCH	IS 6175 - PART II & III					
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves	
Bright / Steam Tempered	M3 X 0.5	841	943	700			
	M4 X 0.7	841	943	700			
	M5 X 0.8	879	995	738			
	M6 X 1.0	879	995	738			
	M8 X 1.25	735	1427	813			
	M10 X 1.25						
	M10 X 1.5	1215	1398	1012			
	M12 X 1.75	1906	2200	1613			
	M14 X 1.5	2609	2995	2172			
	M14 X 2.0	2595	2962	2156			
	M16 X 1.5	3796	2986	2170			
	M16 X 2.0	2595	2962	2156			
	Tin- Coating	NOM DIA X PITCH	IS 6175 - PART II & III				
		M3 X 0.5	923	1037	765		
		M4 X 0.7	923	1037	765		
		M5 X 0.8	964	1093	808		
M6 X 1.0		964	1093	808			
M8 X 1.25		1078	1232	894			
M10 X 1.25							
M10 X 1.5		1333	1532	1108			
M12 X 1.75		2087	2407	1768			
M14 X 1.5		2859	3408	2381			
M14 X 2.0		2843	3248	2365			
M16 X 1.5	2854	3611	2377				
M16 X 2.0	2843	3248	2365				
TiCN / Ti(AIN)	NOM DIA X PITCH	IS 6175 - PART II & III					
	M3 X 0.5	1004	1130	831			
	M4 X 0.7	1004	1130	831			
	M5 X 0.8	1048	1188	877			
	M6 X 1.0	1048	1188	877			
	M8 X 1.25	1172	1342	971			
	M10 X 1.25						
	M10 X 1.5	1446	1665	1205			
	M12 X 1.75	2271	2615	1921			
	M14 X 1.5	3106	3693	2585			
M14 X 2.0	3090	3534	2568				
M16 X 1.5	3102	3896	2583				
M16 X 2.0	3090	3534	2568				

HSS PARALLEL SHANK END MILL IS : 6353

DIA (MM)	PANTHER PRICE (Rs.) EACH	NINJA PRICE (Rs.) EACH	IS : 6353 - 1991	
			CEL (MM)	OAL (MM)
3 ★	1133	1509	8 ★	40
4 ★	1133	1509	11 ★	43
5 ★	1133	1509	13 ★	47
6 ★	1265	1686	13 ★	57
7 ★	1422	1896	16 ★	60
8 ★	1422	1896	19 ★	63
9 ★	1422	1896	19 ★	69
10 ★	1422	1896	22 ★	72
11 ★	1422	1896	22 ★	79
12 ★	1469	1960	26 ★	83
14	1822	2429	26 ★	83
16 ★	2128	2837	32 ★	92
18 ★	2587	3450	32 ★	92
20 ★	2861	3815	38 ★	104
22 ★	3245	4328	38 ★	104
25 ★	3784	5047	45 ★	121
28	5387	7182	45	121
32 ★	6465	8621	53 ★	133
36	8514	11351	53	133

HSS - E PANTHER SERIES TAPS TO IS 6175 - PART - II PART - IV AND DIN-371 Price (Rs.) Each

HSS - E PANTHER SERIES TAPS TO IS 6175 PART - III, DIN-374 AND DIN-376 Price (Rs.) Each

Bright / Steam Tempered	NOM DIA X PITCH	IS 6175 - PART II & DIN 371				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M3x0.5	629	704	523		
	M4x0.7	629	704	523	1100	1214
	M5x0.8	656	743	551	1100	1214
	M6x1.0	656	743	551	1100	1214
	M8x1.0	873	1065	726	1527	1594
	M8x1.25	735	840	607	1271	1330
	M10x1.25	1052	1206	879	1555	1625
	M10x1.5	906	1044	755	1555	1625
	M12X1.75					
	M14X2.0					
	M16X1.5					
	M16X2.0					

Tin Coating	NOM DIA X PITCH	IS 6175 - PART II & DIN 371				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M3x0.5	689	774	570		
	M4x0.7	689	774	570	1186	1297
	M5x0.8	719	816	602	1186	1297
	M6x1.0	719	816	602	1186	1297
	M8x1.0	941	1147	783	1625	1694
	M8x1.25	805	919	668	1371	1428
	M10x1.25	1154	1323	960	1674	1745
	M10x1.5	995	1144	827	1636	1745
	M12X1.75					
	M14X2.0					
	M16X1.5					
	M16X2.0					

Ticn / Ti (Al) N	NOM DIA X PITCH	IS 6175 - PART II & DIN 371				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M3x0.5	748	843	620		
	M4x0.7	748	843	620	1275	1386
	M5x0.8	782	887	654	1275	1386
	M6x1.0	782	887	654	1275	1386
	M8x1.0	1012	1225	842	1725	1794
	M8x1.25	875	1000	724	1469	1529
	M10x1.25	1255	1438	1046	1795	1865
	M10x1.5	1079	1242	899	1794	1865
	M12X1.75					
	M14X2.0					
	M16X1.5					
	M16X2.0					

Bright / Steam Tempered	NOM DIA X PITCH	IS 6175 - PART IV				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M6X1.0	1044		869		
	M8X1.0			928		
	M8X1.25	1110		928		
	M10X1.25					
	M10X1.5	1353		1129		
	M12X1.75	1965		1621		
	M14X2.0					
	M16X1.5					
	M16X2.0					

Tin Coating	NOM DIA X PITCH	IS 6175 - PART IV				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M6X1.0	1144		953		
	M8X1.0					
	M8X1.25	1215		1013		
	M10X1.25					
	M10X1.5	1481		1238		
	M12X1.75	2150		1773		
	M14X2.0					
	M16X1.5					
	M16X2.0					

Ticn / Ti (Al) N	NOM DIA X PITCH	IS 6175 - PART IV				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M6X1.0	1242		1035		
	M8X1.0					
	M8X1.25	1322		1102		
	M10X1.25					
	M10X1.5	1610		1347		
	M12X1.75	2337		1928		
	M14X2.0					
	M16X1.5					
	M16X2.0					

* MINIMUM ORDER VALUE OF RS. 50,000/- NETT OR MOQ10NOS. PER SIZE. WHICHEVER IS HIGHER.

Bright / Steam Tempered	NOM DIA X PITCH	IS 6175 - PART III				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M3x0.5					
	M4x0.7					
	M5x0.8					
	M6x1.0					
	M8x1.0					
	M8x1.25					
	M10x1.25					
	M10x1.5					
	M12X1.75	1423	1640	1204		2678
	M14X2.0	1936	2210	1609		3704
	M16X1.5	1944	2229	1621		3965
	M16X2.0	1936	2210	1609		3965
	M18X2.5	2809	3210	2335		
	M20X1.5	4707	6119	4226		
	M20X2.5	3702	4230	3077		7416

Tin Coating	NOM DIA X PITCH	IS 6175 - PART III				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M3x0.5					
	M4x0.7					
	M5x0.8					
	M6x1.0					
	M8x1.0					
	M8x1.25					
	M10x1.25					
	M10x1.5					
	M12X1.75	1557	1796	1319		2813
	M14X2.0	2121	2423	1765		3946
	M16X1.5	2130	2696	1773		4208
	M16X2.0	2121	2423	1765		4208
	M18X2.5	2989	3390	2514		
	M20X1.5	5335	6791	4750		
	M20X2.5	3944	4476	3321		7672

Ticn / Ti (Al) N	NOM DIA X PITCH	IS 6175 - PART III				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M3x0.5					
	M4x0.7					
	M5x0.8					
	M6x1.0					
	M8x1.0					
	M8x1.25					
	M10x1.25					
	M10x1.5					
	M12X1.75	1694	1950	1433		3029
	M14X2.0	2306	2637	1918		4189
	M16X1.5	2315	2907	1928		4451
	M16X2.0	2306	2637	1918		4451
	M18X2.5	3166	3570	2692		
	M20X1.5	5963	7463	5272		
	M20X2.5	4187	4718	3564		7929

Bright / Steam Tempered	NOM DIA X PITCH	DIN 374 / DIN-376				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M6X1.0					
	M8X1.0	1187	1595	1022	1887	
	M8X1.25					
	M10X1.25	1487	1820	1215	2308	
	M10X1.5					
	M12X1.75	1965	2636	1621		3429
	M14X2.0	2697	3611	2222		4707
	M16X1.5	2831	3718	2327		
	M16X2.0	2697	3611	2222		4707
	M18X2.5	4370	5682	3816		
	M20X1.5					
	M20X2.5	5375	6986	4687		

Tin Coating	NOM DIA X PITCH	DIN 374 / DIN-376				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M6X1.0					
	M8X1.0	1293	1716	1109	2022	2107
	M8X1.25					
	M10X1.25	1619	1969	1322	2470	2578
	M10X1.5					
	M12X1.75	2150	2850	1773		3724
	M14X2.0	2852	3768	2380		4879
	M16X1.5	3052	3804	2520		5592
	M16X2.0	2852	3768	2380		4879
	M18X2.5	4550	5860	3994		
	M20X1.5					
	M20X2.5	5618	7229	3681		

Ticn / Ti (Al) N	NOM DIA X PITCH	DIN 374 / DIN-376				
		SPPT	Spiral	Cast Iron	Fluteless	Fluteless Oil Grooves
	M6X1.0					
	M8X1.0	1398	1837	1197	2158	2242
	M8X1.25					
	M10X1.25	1746	2122	1429	2633	2738
	M10X1.5					
	M12X1.75	2337	3063	1928		4018
	M14X2.0	3010	3927	2537		5048
	M16X1.5	3302	3909	2731		5880
	M16X2.0	3010	3927	2537		5048
	M18X2.5	4728	6040	4172		
	M20X1.5					
	M20X2.5	5861	7474	5173		

* MINIMUM ORDER VALUE OF RS. 50,000/- NETT OR MOQ10NOS. PER SIZE. WHICHEVER IS HIGHER.

MASONRY DRILLS - CARBIDE TIPPED
(GROUND FLUTED & BRIGHT PLATED)
TO OUR STANDARD

SIZE		FLUTE LENGTH	OVER ALL LENGTH	PRICE (Rs) EACH	
MM	INCH			Standard	Deluxe
3	1/8 ★	40	76	66	75
4	5/32	45	85	79	89
5	3/16★	45	87	89	98
5.5	7/32★	45	87	106	117
6	15/64	60	107	117	129
6.5	1/4★	60	107	106	117
7	9/32	60	107	206	224
8	5/16	80	120	181	200
9	11/32	80	120	239	263
10	3/8★	80	120	212	235
11	7/16	115	160	299	329
12	15/32	115	160	265	292
13	1/2	115	160	265	292

ITEMS MARKED ★ ARE EX-STOCK.



HSS HATHYAR TOOL BITS (BLANKS)

SIZE IN INCH		CORRESPONDING SIZE MM				PRICE (Rs.) EACH			
		HATHYAR 500		HATHYAR 600		HATHYAR 900		HATHYAR 1000	
3/16 x 3	5 x 75	131	131	336					
3/16 x 4	5 x 100	171	171	493					
3/16 x 6	5 x 150	266	266	1044					
1/4 x 3	6 x 75	149	149	450					
1/4 x 4	6 x 100	173	173	601 ★	607 ★				
1/4 x 6	6 x 150	251	251 ★	977 ★	985 ★				
1/4 x 8	6 x 200	360	360	1668					
5/16 x 3	8 x 75	166	166	581					
5/16 x 4	8 x 100	211	211	794					
5/16 x 6	8 x 150	355	355	1280 ★	1292 ★				
5/16 x 8	8 x 200	451	451	1820					
3/8 x 3		207	207 ★	682 ★	726 ★				
3/8 x 4		251	251 ★	905 ★	977 ★				
3/8 x 6		390	390 ★	1457 ★	1542 ★				
3/8 x 8		534	534 ★	2083 ★	2207 ★				
3/8 x 10		688	688	2754					
	10x 75		230	753					
	10x 100		274	1013					
	10x 150		424	1585					
	10x 200		591	2229					
	10x 250		749	2943					
1/2 x 3	12x 75	311	311	1118					
1/2 x 4	12x 100	390	390 ★	1460 ★	1551 ★				
1/2 x 6	12x 150	598	598	2300 ★	2398 ★				
1/2 x 8	12x 200	788	788	3211 ★	3343 ★				
1/2 x 10	12x 250	1197	1197	4424					
5/8 x 4	16x 100	619	619	2342					
5/8 x 6	16x 150	916	916	3613	3814				
5/8 x 8	16x 200	1239	1239	5072					
3/4 x 4		859	859	3386					
3/4 x 6		1256	1256	4979	5296				
3/4 x 8		1716	1716	6826					
	20x 100		937	3708					
	20x 150		1367	5555					
	20x 200		1869	7399					
1 x 6	25x 150	2116	2116	8353					
1 x 8	25x 200	2875	2875	11108					

Prices of HSS M35 (5% Cobalt) and HSS M42 (8% Cobalt) will be given on only request.

1. Item marked ★ are Ex-Stock, other sizes against specific orders.
2. Quantity to be ordered in multiple of 10 only for sizes upto and including 1/2" square.
3. Minimum order value of Rs. 50,000/- Nett or MOQ 20 Nos. per size whichever is higher

DECIMAL EQUIVALENTS

FRACTIONS OF AN INCH EXPRESSED AS MILLIMETERS

Fractional Inch	MM	Fractional Inch	MM	Fractional Inch	MM	Fractional Inch	MM
1/64	0.3969	1.1/64	25.797	2.1/64	51.197	3.1/64	76.597
1/32	0.7938	1.1/32	26.194	2.1/32	51.594	3.1/32	76.994
3/64	1.1906	1.3/64	26.591	2.3/64	51.991	3.3/64	77.391
1/16	1.5875	1.1/16	26.988	2.1/16	52.388	3.1/16	77.788
5/64	1.9844	1.5/64	27.384	2.5/64	52.784	3.5/64	78.184
3/32	2.3813	1.3/32	27.781	2.3/32	53.181	3.3/32	78.581
7/64	2.7781	1.7/64	28.178	2.7/64	53.578	3.7/64	78.978
1/8	3.1750	1.1/8	28.575	2.1/8	53.975	3.1/8	79.375
9/64	3.5719	1.9/64	28.972	2.9/64	54.372	3.9/64	79.772
5/32	3.9688	1.5/32	29.369	2.5/32	54.769	3.5/32	80.169
11/64	4.3656	1.11/64	29.766	2.11/64	55.166	3.11/64	80.566
3/16	4.7625	1.3/16	30.163	2.3/16	55.563	3.3/16	80.963
13/64	5.1594	1.13/64	30.559	2.13/64	55.959	3.13/64	81.359
7/32	5.5563	1.7/32	30.956	2.7/32	56.356	3.7/32	81.756
15/64	5.9531	1.15/64	31.353	2.15/64	56.753	3.15/64	82.153
1/4	6.3500	1.1/4	31.750	2.1/4	57.150	3.1/4	82.550
17/64	6.7469	1.17/64	32.147	2.17/64	57.547	3.17/64	82.947
9/32	7.1438	1.9/32	32.544	2.9/32	57.944	3.9/32	83.34
19/64	7.5406	1.19/64	32.941	2.19/64	58.341	3.19/64	83.741
5/16	7.9375	1.5/16	33.338	2.5/16	58.738	3.5/16	84.138
21/64	8.3344	1.21/64	33.734	2.21/64	59.134	3.21/64	84.534
11/32	8.7313	1.11/32	34.131	2.11/32	59.531	3.11/32	84.931
23/64	9.1281	1.23/64	34.528	2.23/64	59.928	3.23/64	85.328
3/8	9.5250	1.3/8	34.925	2.3/8	60.325	3.3/8	85.725
25/64	9.9219	1.25/64	35.322	2.25/64	60.722	3.25/64	86.122
13/32	10.3188	1.13/32	35.719	2.13/32	61.119	3.13/32	86.519
27/64	10.7156	1.27/64	36.116	2.27/64	61.516	3.27/64	86.916
7/16	11.1125	1.7/16	36.513	2.7/16	61.913	3.7/16	87.313
29/64	11.5094	1.29/64	36.909	2.29/64	62.309	3.29/64	87.709
15/32	11.9063	1.15/32	37.306	2.15/32	62.706	3.15/32	88.106
31/64	12.3031	1.31/64	37.703	2.31/64	63.103	3.31/64	88.503
1/2	12.7000	1.1/2	38.100	2.1/2	63.500	3.1/2	88.900
33/64	13.0969	1.33/64	38.497	2.33/64	63.897	3.33/64	89.297
17/32	13.4938	1.17/32	38.894	2.17/32	64.294	3.17/32	89.694
35/64	13.8906	1.35/64	39.291	2.35/64	64.691	3.35/64	90.091
9/16	14.2875	1.9/16	39.291	2.35/64	64.691	3.35/64	90.091
37/64	14.6844	1.37/64	40.084	2.37/64	65.484	3.37/64	90.884
19/32	15.0813	1.19/32	40.481	2.19/32	65.881	3.19/32	90.281
39/64	15.4781	1.39/64	40.878	2.39/64	66.278	3.39/64	91.678
5/8	15.8750	1.5/8	41.275	2.5/8	66.675	3.5/8	92.075
41/64	16.2719	1.41/64	41.672	2.41/64	67.072	3.41/64	92.472
21/32	16.6688	1.21/32	42.069	2.21/32	67.469	3.21/32	92.869
43/64	17.0656	1.43/64	42.466	2.43/64	67.866	3.43/64	93.266
11/16	17.4625	1.11/16	42.863	2.11/16	68.263	3.11/16	93.663
45/64	17.8594	1.45/64	43.259	2.45/64	68.659	3.45/64	94.059
23/32	18.2563	1.23/32	43.656	2.23/32	69.056	3.23/32	94.456
47/64	18.6531	1.47/64	44.053	2.47/64	69.453	3.47/64	94.853
3/4	19.0500	1.3/4	44.450	2.3/4	69.850	3.3/4	95.250
49/64	19.4469	1.49/64	44.847	2.49/64	70.247	3.49/64	95.647
25/32	19.8438	1.25/32	45.244	2.25/32	70.644	3.25/32	96.044
51/64	20.2406	1.51/64	45.641	2.51/64	71.041	3.51/64	96.441
13/16	20.6375	1.13/16	46.038	2.13/16	71.438	3.13/16	96.838
53/64	21.0344	1.53/64	46.434	2.53/64	71.834	3.53/64	97.234
27/32	21.4313	1.27/32	46.831	2.27/32	72.231	3.27/32	97.631
55/64	21.8281	1.55/64	47.228	2.55/64	72.628	3.55/64	98.028
7/8	22.2250	1.7/8	47.625	2.7/8	73.025	3.7/8	98.425
57/64	22.6219	1.57/64	48.022	2.57/64	73.422	3.57/64	98.822
29/32	23.0188	1.29/32	48.419	2.29/32	73.819	3.29/32	99.219
59/64	23.4156	1.59/64	48.816	2.59/64	74.216	3.59/64	99.616
15/16	23.8125	1.15/16	49.213	2.15/16	74.613	3.15/16	100.013
61/64	24.2094	1.61/64	49.609	2.61/64	75.009	3.61/64	100.409
31/32	24.6063	1.31/32	50.006	2.31/32	75.406	3.31/32	100.806
63/64	25.0031	1.63/64	50.403	2.63/64	75.803	3.63/64	101.203
1	25.4000	2	50.800	3	76.200	4	101.600



DRILLS FOR USE PRIOR TO TAPPING

Metric 60° INC ANGLE

Nom Dia	Pitch	Drill Dia	Nom Dia	Pitch	Drill Dia	Nom Dia	Pitch	Drill Dia	Nom Dia	Pitch	Drill Dia
2.0	0.40	1.60	11.0	1.50	9.50	24.00	2.00	22.00	39.00	2.00	37.00
2.2	0.45	1.75	12.0	1.00	11.00	24.00	3.00	21.00	39.00	3.00	36.00
2.5	0.35	2.15	12.0	1.25	10.80	25.00	1.00	24.00	39.00	4.00	35.00
2.5	0.45	2.05	12.0	1.50	10.50	25.00	1.50	23.50	40.00	1.50	35.80
3.0	0.35	2.65	12.0	1.75	10.20	25.00	2.00	23.00	40.00	2.00	38.00
3.0	0.50	2.50	14.0	1.00	13.00	28.00	1.50	24.50	40.00	3.00	37.00
3.5	0.35	3.15	14.0	1.25	12.80	27.00	1.00	26.00	42.00	1.50	40.50
3.5	0.60	2.90	14.0	1.50	12.50	27.00	1.50	25.50	42.00	2.00	40.00
4.0	0.50	3.50	14.0	2.00	12.00	27.00	2.00	25.00	42.00	3.00	39.00
4.0	0.70	3.30	15.0	1.00	14.00	27.00	3.00	24.00	42.00	4.00	38.00
4.5	0.50	4.00	15.0	1.50	13.50	28.00	1.00	27.00	42.00	4.50	37.50
4.5	0.75	3.70	16.0	1.00	15.00	28.00	1.50	26.50	45.00	1.50	43.50
5.0	0.50	4.50	16.0	1.50	14.50	28.00	2.00	26.00	45.00	2.00	43.00
5.0	0.80	4.20	16.0	2.00	14.00	30.00	1.00	29.00	45.00	3.00	42.00
5.5	0.50	5.00	17.0	1.00	16.00	30.00	1.50	28.50	45.00	4.00	41.00
6.0	0.75	5.20	17.0	1.50	15.50	30.00	2.00	28.00	45.00	4.50	40.50
6.0	1.00	5.00	18.0	1.00	17.00	30.00	3.00	27.00	48.00	1.50	46.50
7.0	0.75	6.20	18.0	1.50	16.50	30.00	3.50	26.50	48.00	2.00	46.00
7.0	1.00	6.00	18.0	2.00	16.00	32.00	1.50	30.50	48.00	3.00	45.00
8.0	0.75	7.20	18.0	2.50	15.50	32.00	2.00	30.00	48.00	4.00	44.00
8.0	1.00	7.00	20.0	1.00	19.00	33.00	1.50	31.50	48.00	5.00	43.00
8.0	1.25	6.80	20.0	1.50	18.50	33.00	2.00	31.00	50.00	1.50	48.00
9.0	0.75	8.20	20.0	2.00	18.00	33.00	3.00	30.00	50.00	2.00	48.00
9.0	1.00	8.00	20.0	2.50	17.50	33.00	3.50	29.50	50.00	3.00	47.00
9.0	1.25	7.80	22.0	1.00	21.00	35.00	1.50	33.50	52.00	1.50	50.50
10.0	0.75	9.20	22.0	1.50	20.50	36.00	1.50	34.50	52.00	2.00	50.00
10.0	1.00	9.00	22.0	2.00	20.00	36.00	2.00	34.00	52.00	3.00	49.00
10.0	1.25	8.80	22.0	2.50	19.50	36.00	3.00	33.00	52.00	4.00	48.00
10.0	1.50	8.50	24.0	1.00	23.00	36.00	4.00	32.00	52.00	5.00	47.00
11.0	0.75	10.20	24.0	1.50	22.50	38.00	1.50	36.50	56.00	5.50	50.50
11.0	1.00	10.00	-	-	-	39.00	1.50	37.50	-	-	-

AMERICAN NATIONAL THREADS

BRITISH ASSOCIATION

Size	N.C.		N.F.		U.N.C.		U.N.F.	
	TPI	Drill Size in m	TPI	Drill Size in m	TPI	Drill Size in m	TPI	Drill Size in m
0	-	-	80	1.25	-	-	-	-
2	56	1.85	64	1.90	-	-	-	-
4	40	2.35	48	2.40	40	2.35	-	-
6	32	2.85	40	2.95	32	2.85	-	-
8	32	3.50	36	3.50	32	3.50	-	-
10	24	3.90	32	4.10	24	3.90	32	4.10
12	24	4.50	28	4.70	-	-	-	-

Size mm	Dia	Pitch	Drill Size
1	5.3	0.90	4.50
2	4.7	0.81	4.00
3	4.1	0.73	3.40
4	3.6	0.66	3.00
5	3.2	0.59	2.65
6	2.8	0.53	2.30

DRILLS FOR USE PRIOR TO TAPPING

BRITISH STANDARD WHITWORTH FORM THREADS

55° INC ANGLE

Nom Dia	B.S.W		B.S.F		B.S.P (Parallel)		B.S.P (Taper)	
	Inch	TPI	D Size	TPI	Drill Size	TPI	Drill Size	TPI
1/8	40	2.55	-	-	28	8.80	28	8.40
3/16	24	3.70	-	-	32	5/32	-	-
7/32	-	-	28	-	-	4.60	-	-
1/4	20	5.10	-	-	26	5.30	19	11.20
9/32	-	-	26	-	-	6.11	-	-
5/16	18	6.50	-	-	22	6.80	-	-
3/8	16	5/16	20	-	19	8.30	19	15.25
7/16	14	9.30	-	-	18	9.70	-	-
1/2	12	10.50	16	-	14	7/16	14	3/4
9/16	12	12.10	16	-	14	1/2	-	23/32
5/8	11	13.50	14	-	14	14.00	-	-
11/16	11	15.00	14	-	14	15.50	-	-
3/4	10	11/64	12	-	14	16.75	14	24.50
7/8	9	19.25	11	-	14	25/32	14	28.25
1	8	22.00	10	-	11	22.75	11	30.75
1 1/8	7	24.75	9	-	11	25.50	-	-
1 1/4	7	1.3/32	9	-	11	1.1/8	11	39.50
1 3/8	-	-	8	-	11	31.50	-	-
1 1/2	6	33.5	8	-	11	1.23/64	11	56.00
1 5/8	-	-	8	-	11	37.90	-	-
1 3/4	5	39.00	7	-	11	41.00	11	51.00
2	4.5	44.5	7	-	11	47.00	11	2.1/4
2 1/4	4	51.00	6	-	11	53.00	11	63.26
2 1/2	4	57.00	6	-	11	58.00	11	72.73
2 3/4	3.5	62.14	6	-	11	63.35	11	79.08
3	3.5	68.30	5	-	11	69.50	11	85.43
3 1/2	-	-	-	-	11	-	11	97.88
4	-	-	-	-	11	-	11	110.58

AMERICAN NATIONAL FORM THREADS

60° INC ANGLE

Nom Dia	NC & U.N.C		NE & U.N.F		N.P.T & N.P.S		
	Fractional Inch	TPI	Drill Size in mm	TPI	Drill Size in mm	Drill Size mm	
						TPI	Tapping with Reamer
1/4	20	5.10	28	5.50	18	10.70	11.10
5/16	18	6.60	24	6.90	-	-	-
3/8	16	8.00	24	8.50	18	14.25	14.50
7/16	14	9.40	20	9.90	-	-	-
1/2	13	10.80	20	11.50	14	17.50	18.00
9/16	12	12.20	18	12.90	-	-	-
5/8	11	13.50	18	14.50	-	-	-
3/4	10	16.50	16	17.50	-	-	-
7/8	9	19.50	14	20.40	14	22.75	23.25
1	8	22.25	12	23.25	11.5	28.50	29.00
1 1/4	7	28.00	12	29.50	11.5	37.50	38.00
1 1/2	6	34.00	12	36.00	11.5	43.5	44

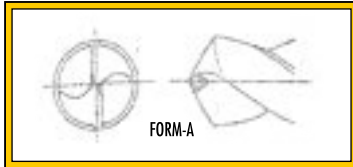
HARDNESS CONVERSION CHART

VHN	BHN	HRA	HRB	HRC
940	-	85.6	-	68
920	-	85.3	-	67.5
900	-	85	-	67
880	*767	84.7	-	66.4
860	*757	84.4	-	65.9
840	*745	84.1	-	65.3
820	*733	83.8	-	64.7
800	*722	83.4	-	64
780	*710	83	-	63.3
760	*698	82.6	-	62.5
740	*684	82.2	-	61.8
720	*670	81.6	-	61
700	*656	81.3	-	60.1
690	*647	81.1	-	59.7
680	*638	80.8	-	59.2
670	*630	80.6	-	58.8
660	620	80.3	-	58.3
650	611	80	-	57.8
640	601	79.8	-	57.3
630	591	79.5	-	56.8
620	582	79.2	-	56.3
610	573	78.9	-	55.7
600	564	78.6	-	55.2
590	554	78.4	-	54.7
580	545	78	-	54.1
570	535	77.8	-	53.6
560	525	77.4	-	53
550	517	77	-	52.3
540	507	76.7	-	51.7
530	497	76.4	-	51.1
520	488	76.1	-	50.5
510	479	75.7	-	49.8
500	471	75.3	-	49.1
490	460	74.9	-	48.4
480	452	74.5	-	47.7
470	442	74.1	-	46.9
460	433	73.6	-	46.1
450	425	73.3	-	45.3
440	415	72.8	-	44.5
430	405	72.3	-	43.6
420	397	71.8	-	42.7
410	388	71.4	-	41.8
400	379	70.8	-	40.8
390	369	70.3	-	39.8
380	360	69.8	*110	38.8
370	350	69.2	-	37.7
360	341	68.7	*109	36.6
350	331	68.1	-	35.5
340	322	67.8	*108	34.4
330	313	67	-	33.3
320	303	66.4	*107	32.2
310	294	65.8	-	31
300	284	65.2	*105.5	29.8
295	280	64.8	-	29.2
290	275	64.5	*104.5	28.5
285	270	64.2	-	27.8
280	265	63.8	*103.5	27.1
275	261	63.5	-	26.4
270	256	63.1	*102	25.6
265	252	62.7	-	24.8
260	247	62.4	*101	24
255	243	62	-	23.1
250	238	61.6	99.5	22.2
245	233	61.2	-	21.3
240	228	60.7	98.1	20.3
230	219	-	96.7	*18
220	209	-	95	*15.7
210	200	-	93.4	*13.4
200	190	-	91.5	*11
190	181	-	89.5	*8.5
180	171	-	87.1	*6
170	162	-	85	*3
160	152	-	81.7	0
150	143	-	78.7	-
140	133	-	75	-
130	124	-	71.2	-
120	114	-	66.7	-
110	105	-	62.3	-
100	95	-	56.2	-

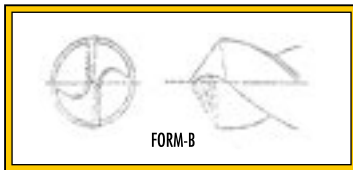
* values beyond range only for information

VHN	Vicker's Hardness Number / Diamond Pyramid.
BHN	Brinell Hardness Number (w-ball) 10 mm/3000 Kgs
HRA	Rockwell A Scale - Diamond

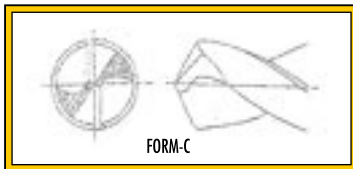
POINT ENHANCEMENT



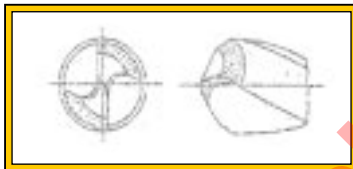
FORM A
Web thinning (thinned chisel)
Improves penetration
Ideal for long series



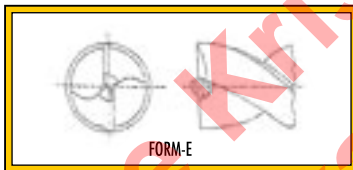
FORM B
Web thinned + Lips corrected
Optimized to heavy duty.
Ideal for deep hole drilling.



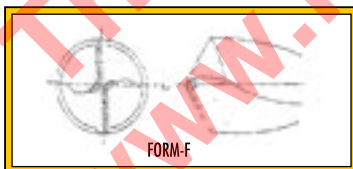
FORM C
Split point
Eases chip removal & penetration.
Ideal for crank shaft drilling.



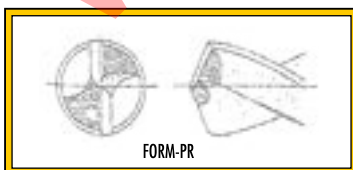
FORM D
Cast iron point
90 peripheral point + web thinning
Ideal for cast iron and abrasive plastics.



FORM E
Brad point
flat point + central drill
Ideal for sheet metal drilling.

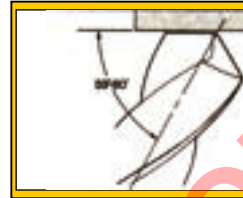


FORM 4F
Fusion of form A & B (Four faces)
A high performing point for long chips
Ideal for stainless & high nickel.

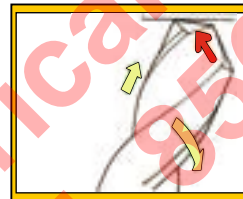


FORM R
Helical thinning
curls and breaks the chips.
Ideal for long chip type.

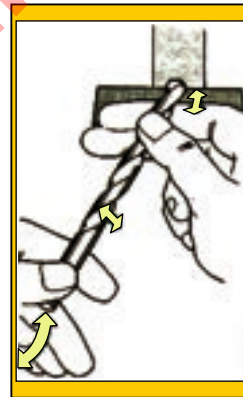
POINT GRINDING TECHNIQUES



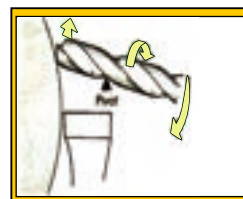
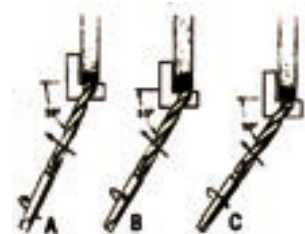
STEP - 1
Keep the cutting lip parallel to the grinding face
With an angle of 59° to the axis of drill body.



STEP - 2
Start grinding from the lip down to heelside.
Simultaneously rotate the drill clockwise.



STEP - 3
Gradually co-ordinate these three movements :
- Clockwise rotation of the drill point.
- Downward movement of shank-end of drill.
- Left swing movement of the shank-end.
59° to 55° and 50° by the end of grinding.



← SIDE VIEW of the point grinding



ITM Quick Guidelines for drilling different materials

Material	Character	Point angle	Helix / Flute	Modification	Coolant	Speed		Feed	Remarks / Recommendations
						m/min	mm/rev.		
Carbon & Alloy Steels	Normalised / Fuged / Cast	118°	Standard	None	Soluble Oil	15 to 24	0.1 to 0.5	0.1 to 0.5	Feed range for 5 mm to 25 mm dia. Double point angle. Only carbide drills works on this.
		118°							
Cast Iron	Grey / S.C. Iron / Malleable / Cast	90° / 118°	Standard	Web thinned	Compressed Air	24 to 30	0.1 to 0.5	0.1 to 0.5	Apply feed before contact No use of punch / no interruption. Blued rigid / donot use punch. Feedrange for 5 mm to 25 mm dia.
		118°							
Manganese Steels	Tough	130°	Slow	Web thinned	Dry	3 to 3.5	0.04 to 0.1	0.04 to 0.1	Apply feed before contact No use of punch / no interruption. Blued rigid / donot use punch. Feedrange for 5 mm to 25 mm dia.
		135°							
Stainless Steel	Austenitic / Martensitic	118°	Quick / Standard	Web thinned	Sulf / CI Sol Oil / Soluble Oil	6 to 12	0.15 to 0.6	0.1 to 0.5	Apply feed before contact No use of punch / no interruption. Blued rigid / donot use punch. Feedrange for 5 mm to 25 mm dia.
		118°							
Monel metal	Work hardening	110° to 115°	Standard	Split	Soluble Oil	6 to 15	0.15 to 0.6	0.15 to 0.6	Use Thick web / Short / Rigid Drill
		110° to 115°							
High Nickel / Nimonic (rotary drill) / Copper (stationary drill)	Soft / Hard	100° / 130°	Quick / Wide / Standard	None	Soluble Oil	30 to 46	0.1 to 0.5	0.1 to 0.5	Point angle as per chip behaviour.
		130°							
Bronze / Brass	Cast & neval / yellow brass / Hard type	118°	Slow / Wide / Standard	Ground lip / None	Soluble Oil	30 to 60	0.1 to 0.5	0.1 to 0.5	Short chips / Lip grd. For large size Continuous long chips type
		130°							
Magnesium & Alloys	Freecutting	118°	Standard	None	Soluble Oil	60 to 90	0.1 to 0.5	0.1 to 0.5	Dia cast alloys.
		118°							
Aluminium	Long chip / Short chip	130° / 100°	Quick / Standard	None	Paraffin / Lard Oil / Kerosene	30 to 60	0.1 to 0.5	0.1 to 0.5	Pure aluminium Alloys and high silicon grades, M35.
		130°							
Titanium	Poor conductivity	118° to 140°	Web thinned	Copious Sol. Oil	None	4.5 to 9	0.05 to 0.3	0.05 to 0.3	Thick web / obtuse angle to larger.
		118° to 140°							
Plastics	Thermoplastics / Thermosetting	130° to 140° / 60° to 90°	Quick / Slow	None	Soap Soln. / Dry	6 to 45	0.2 to 0.5	0.1 to 0.5	Speed / Feed by material (PVC/CA) Powdery abrasive metall. (Backelite)
		130° to 140°							
Granite / Concrete	Mesonary	Std	Standard	None	Dry	21 to 30	0.2 to 0.5	0.2 to 0.5	Use Masonary Drills / Carbide Tip.
		Std							

* Only popular material addressed in this chart, others may be related according to characteristics.

TROUBLE SHOOTING (DRILLS)

PROBLEM	CAUSES	REMEDIES
1. Oversize hole	1. Unequal lip angles 2. Unequal lip lengths	Regrind drill point to correct angle with proper relief
2. Irregular & poor finish	1. Loose hold. 2. Chocking of chips 3. Excessive feed rate	Check the holder and run-out Increase the force & volume of coolant. Decrease the feed rate.
3. Bucking of the drill	Axial deflection of drill	Use correct guide bushes.
4. Chattering of drill	1. Hard/tough workpiece 2. Torsional deflection	Use a shorter drill with thick web to improve sturdiness
5. Breaking of the drill	1. Poor rigidity of fixture. 2. Improper speed and feed. 3. Insufficient chip removal 4. Excessive web-thickness	Use rigid fixture and chucks. Select speed and feed as per job. Remove the chips frequently Web thinning & proper point grinding.
6. Breakage in deep hole	1. Blockage of chips 2. Non-uniform back-taper 3. Runout on OD	Try wood-pecking system. Check back taper uniformity Check concentricity
7. Rubbing	1. Improper Point relief 2. Non-uniform back taper	Regrind drill-point with proper relief. Check for negative back-taper on body.
8. Burning / Land washes off	1. Insufficient coolant flow 2. Inappropriate coolant 3. Hard work-piece	Ensure proper coolant flow Use proper coolant recommended. Select the right drill suitable for job.
9. Splitting of drills	1. Axial play in spindle 2. Springy clamping of job 3. Excessive feed	Correct the spindle play. Ensure rigid clamping. Reduce the feed.
10. Tang breakage	1. Slipping chuck 2. Defect in inner surface of Morse taper	Modify the inner surface of the holder or change the holder.

TROUBLE SHOOTING (TAPS)

PROBLEM	CAUSES	REMEDIES
1. Tap breakage	1. Incorrect tap 2. Incorrect chamfer symmetry 3. Small hole 4. Hits at bottom of hole 5. Tool hardness, geometry 6. Blunt tap	- Choose suitable type tap - Ensure proper centre align - Select proper hole size - Use slipping clutch / shorten - Check the hardness of job - Regrind the tap
2. Poor tap life chipping / wear	1. Surface hardening of hole 2. Chip congestion 3. Thread surface 4. Ineffective coolant supply 5. High cutting speed 6. Smaller hole size 7. Cold welding/irregular job micro	- Work hardening material, Lower speed - Check speed. Use alternate type - Ensure proper geometry - Improper the efficiency of coolant - Lower the existing speed - Refer the chart for correct hole size - Improper lubrication & speed
3. Larger Thread (Oversize cutting)	1. Incorrect type of tap 2. Smaller hole size 3. Improper alignment 4. Spindle restriction 5. Built up edges 6. High speed	- Use specified tap for application - Use the recommended hole size - Check the alignment & eccentricity - Check the spindle condition / run out - Improper lubrication - Lower the speed
4. Smaller thread (undersize cutting)	1. Incorrect tap selection 2. Inaccurate setup 3. Rigid spindle 4. Tolerance	- Check the correctness of tap used - Recheck the alignment - Ensure spindle movement smooth - Ensure geometrical tolerances
5. Bell mouth Hole	1. Incorrect starting pressure	- Use a spindle with axial float
6. Unsatisfactory finish (Poor finish)	1. Blunt tap 2. Badly reground 3. Coolant improper quality / qty.	- Resharpen the tap. - Grind properly. - Use ample supply of right lubricant

SPEED & FEEDS FOR H.S.S. DRILLS

Work-Pieces Material	Drill Diameter mm									
	1	2	5	8	12	16	25	40	63	
Steel	f	HAND	0.05	0.12	0.2	0.25	0.3	0.4	0.5	
*45 Kg mm2	n	12000	6000	2400	1500	1000	750	480	300	
Steel	f	HAND	0.05	0.12	0.2	0.25	0.3	0.4	0.5	
*45-70 Kg mm2	n	10000	5000	2100	1300	850	640	410	260	
Steel	f	HAND	0.04	0.1	0.15	0.2	0.25	0.3	0.4	
*above 70 Kg mm2	n	8000	4000	1600	995	680	500	318	200	
AlloySteel	f	HAND	HAND	0.06	0.1	0.15	0.2	0.3	0.3	
*above 100 Kg mm2	n	3650	1840	735	465	305	230	145	90	
Cast Iron	f	HAND	0.07	0.12	0.2	0.3	0.4	0.5	0.6	
*above 18 Kg mm2	n	8000	4000	1600	1000	680	500	320	200	
Cast Iron	f	HAND	HAND	0.1	0.2	0.3	0.4	0.5	0.6	
*above 18-30 Kg mm2	n	3180	1600	635	400	265	200	130	80	
Mang Steel	f	HAND	HAND	0.05	0.08	0.1	0.1	0.15	0.2	
*above 15%	n	1300	650	255	160	110	80	50	32	
Stainless Steel	f	HAND	HAND	0.05	0.1	0.12	0.15	0.2	0.3	
Brass - Brittle	f	2800	1400	570	360	240	180	110	70	
Bass - Ductile	f	HAND	0.08	0.02	0.25	0.3	0.4	0.5	0.6	
Copper & Zine alloy	n	28000	14000	5700	3600	2400	1800	1100	700	
Aluminium Long	f	17500	8700	3500	2200	1500	1100	700	440	
Aluminium Short	f	HAND	0.04	0.14	0.18	0.22	0.25	0.3	0.45	
Chipped	f	16000	8000	3200	2000	1325	1000	650	400	
Aluminium Short Chipped	f	HAND	0.05	0.14	0.2	0.25	0.3	0.4	0.5	
	n	32000	16000	6350	4000	2650	2000	1280	800	
	f	HAND	0.06	0.16	0.25	0.35	0.4	0.5	0.65	
	n	38000	19000	7600	4800	3200	2400	1520	1000	

ENHANCEMENT (METALLURGICAL)

SURFACE TREATMENTS :

STEAM TEMPERING : Gives a strongly adhering blue oxide surface that acts to retain cutting fluid and prevent chips welding to cutting edges. More effective on drills and taps.

NITRIDING : This process can increase the surface wear resistance. Particularly useful on taps and drills used on abrasive material like cast iron and backlite.

SURFACE COATING :

TIN - TITANIUM NITRIDE : (GOLDEN COLOUR) :

Ceramic coating applied by physical vapour deposition (PVD) gives high hardness and low friction properties, improve the performance and considerably longer life to HSS tools. Mainly for drills and taps. Hardness : 2300 HV.

TIAlN - TITANIUM ALUMINIUM NITRIDE : (VIOLET COLOUR)

Multi-layer PVD coating improves tool life substantially. Higher toughness and oxidation stability permits dry machining. Ideal for drills and taps used at higher speeds and feeds. (hardness : 3300 HV)

TiCN - TITANIUM CARBO-NITRIDE : (BLUISH GREY)

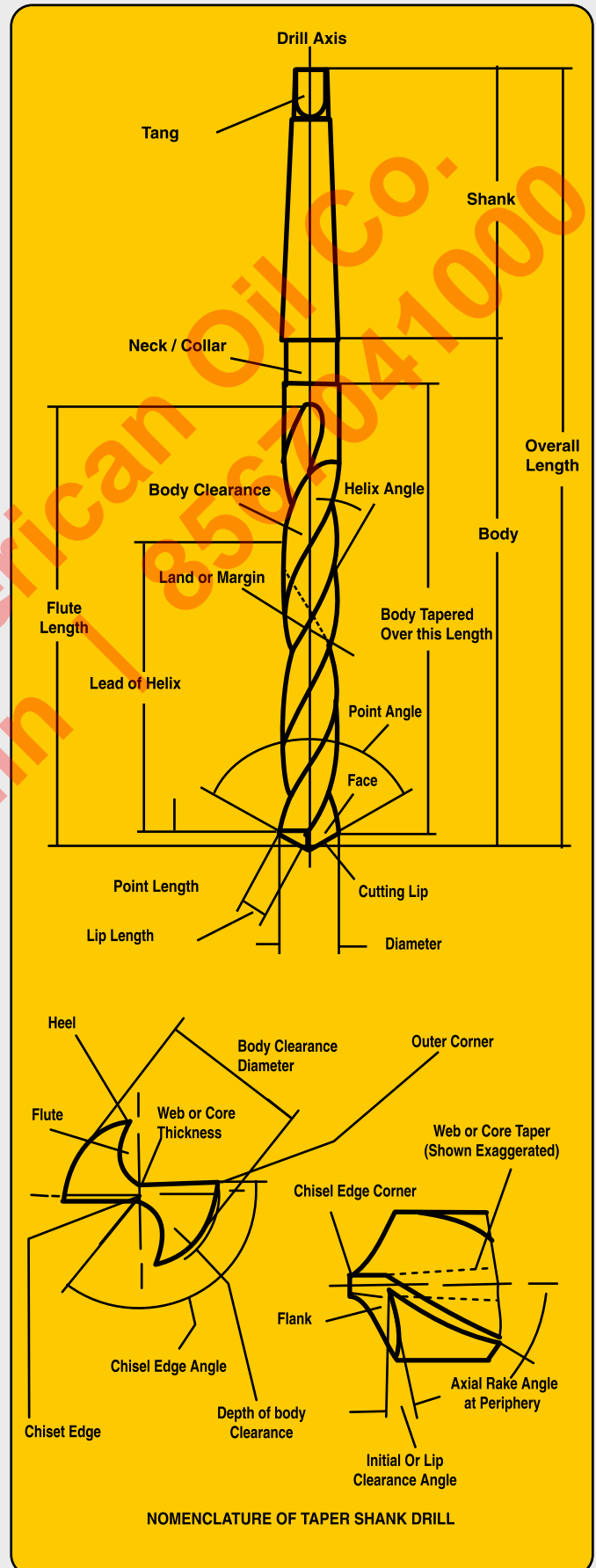
This coating is harder than TiN with lower coefficient of friction. Ideal for milling cutters. (hardness : 3000 HV) (other coatings : Titanium Diboride-TiB₂, Chromium nitride-CrN, Zirconium nitride-ZrN, Diamond like coat-DLC, Tungsten carbide - WC/C, Aluminium chromium nitride-AiCrN, Diamond coating - crystalline & multi layers)

THERMAL TREATMENTS :

CRYOGENIC TEMPERING : Sub zero treatment of tools at very low temperatures (-190°C) using liquid nitrogen, enhances the properties in micro levels. This considerably improves the endurance and performance of tool.

CHOICE OF HSS GRADES :

- M2 -Molybdenum grade - Popular for all general purpose-%6W:5Mo:2V (6:5:2)
 - M35 -5% Cobalt grade - For tougher application & RED hardness - %6W:5Mo:2V:5Co (6:5:2:5)
 - M42 -8% Cobalt grade - Better than M35 -%2W:10Mo:1V : 8Co (2:10:1:8)
 - T42 -10% Cobalt grade - For Tool Bits -%10W:4Mo:3V 10Co (10:4:3:10)
- (*Only popular grades addressed here)



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QUALITY POLICY

We at ITM are committed to manufacture Quality Cutting Tools by continual improvements in process, by adapting our skills, knowledge, innovation & creativity and by implementation of quality systems through involvement of all employees.

We shall strive to achieve Customers' satisfaction through continual improvements in

**TIMELY DELIVERY OF QUALITY
PRODUCTS AND SERVICES."**

VEDANT BIRLA

(Chairman & Managing Director)

Dealer