



HSS DRILLS & END MILLS

PRECISION ENGINEERED

HITTCO TOOLS LIMITED

EXCLUSIVE TOOL DESIGN CONCEPT

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TECHNICAL DETAILS, RANGE OF APPLICATION & INDEX

Tool	Manufacturing Standards	Tool Material	Cutting Direction	Tool Type	Flute Form	Point Angle (Degree)	Dia. Tol.
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M2	Right hand	N Normal helix	Standard	118	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M2	Right hand	N Slow helix	Wide	118	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M2	Right hand	W Quick- helix	Wide	130	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M2	Right hand	W Quick- helix	Wide	130	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M2	Right hand	> N More than normal helix	Wide Parabolic	130 split- point	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M2	Left hand	N Normal helix	Standard	118	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M35 Co-5%	Right hand	N Normal helix	Heavy Web	135 split- point	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M35 Co-5%	Right hand	> N More than Normal helix	Wide Parabolic	130 split- point	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M42 Co-8%	Right hand	N Normal helix	Heavy Web	135 split- point	h8
Jobber Drills	IS:5101-1991 DIN 338 ISO 235-1975 BS:328(Part-1)	HSS-M2	Right hand	N Normal helix	Standard	118	h8

TECHNICAL DETAILS, RANGE OF APPLICATION & INDEX

Tool	Dia. Range	Range of applications Nos.	Page
Bright, Steam Tempered 2.50	0.25-16mm 1/64"-5/8" wg-1 to wg-80 Letter A-Z	For portable and machine drilling. Designed to perform in a wide range of materials in Iron and Steel families.	1-5
Bright	1.00-16.00mm 3/64"-5/8"	Slow helix angle and wider flutes construction reduces grabbing on entrance and helps in better chip ejection. Ideal for drilling brass, plastics and shallow holes in aluminum.	6-7
Bright	1.00-16.00mm 3/64"-5/8"	High (Quick) helix angle and wide flutes promote better chip ejection. Ideal for drilling low tensile "strength materials such as aluminum, zinc and soft steels.	8-9
Bright	1.50-16.00mm 1/16"-5/8"	135 deg. Split-point is self centering which reduces thrust. Heavy duty construction is ideal for drilling high tensile strength steels.	10-12
Bright	2.50-16.00mm 7/64"-5/8"	A robust tool for drilling in difficult conditions when swarf congestion prevents sufficient flow of coolant. Ideal for drilling steel and cast iron.	13-14
Bright	0.40-06.40mm 1/64"-1/4" WG 1 to 78 Letter A to E	Left hand helix drills are suitable for automats and other similar machines where spindles rotate counter clockwise.	15-17
Bright	2.00-16.00mm 7/64"-5/8"	Heavy duty web construction gives more rigidity for drilling in tough conditions. Suited for drilling high alloyed steels. 135 deg. Split-point is self centering which reduces thrust.	18-20
Bright Straw-gold	3.00-16.00mm 1/8"- 5/8"	High heat resistant drill with wide chip space. Suitable for drilling alloyed and unalloyed steels and castings. Particularly suitable for drilling hot and cold rolled steels, bearing steels and high alloyed steels.	21-22
Bright Straw-gold	2.00-16.00mm 3/32"- 5/8"	Made of heat resistant 8% cobalt steel. This drill with 135 deg. Split point is self centering which reduces thrust which makes it ideal for drilling in tough, high tensile strength materials.	23-24
Bright Steam tempered	1.00-16.00mm 3/64"- 5/8" wg 1 to 60 Letter A to Z	Short flute and overall length provides increased rigidity. This type of construction is also suitable for portable drilling of sheet metals and body work. Suited for drilling in wide range of low tensile strength materials.	25-26

TECHNICAL DETAILS, RANGE OF APPLICATION & INDEX

Tool	Manufacturing Standards	Tool Material	Cutting Direction	Tool Type	Flute Form	Point Angle (Degree)	Dia. Tol.
Stub Drills	IS:5100-1969 DIN:1897 ISO 235-1975 BS:328(Part-1)	HSS-M35 Co-5%	Right hand	N Normal helix	Standard	135 Split-point	h8
Stub Drills	IS:5100-1969 DIN:1897 ISO 235-1975 BS:328(Part-1)	HSS-M35 Co-5%	Right hand	>N More than Normal helix	Wide Parabolic	130 Split-point	h8
Stub Drills	IS:5100-1969 DIN:1897 ISO 235-1975 BS:328(Part-1)	HSS-M42 Co-8%	Right hand	N Normal helix	Heavy Web	135 Split-point	h8
Stub Drills	IS:5100-1969 DIN 1897 ISO 235-1975 BS:328(Part-1)	HSS-M42 Co-8%	Right hand	N Normal helix	Wide Parabolic	130 Split-point	h8
Stub Drills	IS:5362-1969 DIN:1897	HSS-M2	Left hand	N Normal helix	Standard	118	h8
Doube-ended Drills	HITTCO	HSS-M2	Right hand	N Normal helix	Standard	135 Split-point	h8
Spotting Drills	HITTCO	HSS-M2	Right hand	N Normal helix	Standard	90 OR 120	h8
Centre Drills	IS:6708-1977 IS:6709-1977 BS:328(Part-2)	HSS-M2	Right hand	N Normal helix	Standard	60 included	h9
Special Drills for Ball Pen Refill Types	HITTCO	HSS-M2 HSS-M42	Right hand	N Normal helix	Standard	118	h8
Capillary Drills	HITTCO	HSS-M2 HSS-M42	Right hand	N Normal helix	Standard	118	h8
Long Series Drills	IS:5102-1969 DIN:340 BS:328(Part-1) ISO:494-1975	HSS-M2	Right hand	N Normal helix	Standard	118	h8

TECHNICAL DETAILS, RANGE OF APPLICATION & INDEX

Tool	Dia. Range	Range of applications Nos.	Page
Bright Straw-gold	2.00-16.00mm 3/32"- 5/8"	This is an high heat resistant drill to stub lengths for use in automatics and capstan lathes. Suited for drilling materials such as stainless steel, austenitic steels etc. 135 deg. split-point reduces thrust which improves drill performance.	27-28
Bright Straw-gold	3.00-16.00mm 1/8"- 5/8"	Suited for drilling difficult materials like stainless steels etc. Parabolic flute design enables closer hole tolerance due to improved chip and coolant flow.	29-30
Bright	2.00-16.00mm 3/32"- 5/8"	A very robust, rigid high heat resistant drill of alloyed CoMo. Suited for application in medium and high strength alloys. like Inconel, stainless steel and heat resistant steels.	31-32
Bright Straw-gold	3.00 - 16.00mm 1/8"- 5/8"	The parabolic flute design provides superior performance in wide range of materials and applications. This flute form produces closer tolerance holes due to improved chip and coolant flow. Suited for medium & high strength alloys-Inconel, stainless steel etc."	33-34
Bright	1.00 - 6.40mm 3/64"- 1/4"	These drills are suitable for applications where shorter, more rigid length is required in a left hand rotation.	35
Bright	2.50 -10.20mm 7/64"- 3/8"	Double ended drill is designed for use in hand drilling machines for the drilling of car/bus/truck bodies or thin sheet metals and rivet holes. 135° self centering Split-point helps in easy penetration.	36
Bright	3.00 -16.00mm 1/4"- 5/8"	These drills are designed to provide accurate spot location before drilling. Short flute/overall lengths with no body clearance permits chucking close to the point to produce a true start or location. For difficult to drill mats. like SS & Inconel etc HSS-M35/42 is suited.	37
Bright	1.00 -10.00mm 1/8"- 3/4" BS1 to BS 7	Center drills are meant to create a conical hole for between centers manufacturing processes (typically on lathe or cylindrical grinder)	38
Bright	0.50 - 1.40mm (cutting dia)	These drills are made for Ball Pen refill tip manufacturers. These drills are used on Swiss machining centers PM-20 and LX-24. HSS-m2 grade drills are suited for drilling brass tips and HSS-M42 grade drills are suitable for drilling tips made of harder materials.	39-40
Bright	0.36 - 0.68mm (cutting dia)	For drilling capillary holes. Used by ball pen industry	41
Bright	0.60 - 16.00mm 1/32"- 5/8" WG 1 to 60 Letter A to Z	Designed for general purpose drilling where a length longer than Jobber length is to be drilled. Performs under variety of normal conditions in broad range of materials in iron and steel families.	42-45

TECHNICAL DETAILS, RANGE OF APPLICATION & INDEX

Tool	Manufacturing Standards	Tool Material	Cutting Direction	Tool Type	Flute Form	Point Angle (Degree)	Dia. Tol.
Long Series Drills	IS:5102-1969 DIN:340 BS:328(Part-1) ISO:494-1975	HSS-M2	Right hand	w High-helix	Wide	130	h8
Long Series Drills	IS:5102-1969 DIN:340 BS:328(Part-1) ISO:494-1975	HSS-M35 Co-5%	Right hand	N Normal helix	Heavy Web	135 Split-point	h8
Long Series Drills	IS:5102-1969 DIN:340 BS:328(Part-1) ISO:494-1975	HSS-M35 Co-5%	Right hand	>N More than Normal helix	Wide Parabolic	130 Split-point	h8
Long Series Drills	IS:5102-1969 DIN:340 BS:328(Part-1) ISO:494-1975	HSS-M42 Co-8%	Right hand	>N Normal helix	Heavy Web	135 Split-point	h8
Long Series Drills	IS:5102-1969 DIN:340 BS:328(Part-1) ISO:494-1975	HSS-M42 Co-8%	Right hand	>N More than Normal helix	Wide Parabolic	130 Split-point	h8
Extra-Long Drills	IS:7823-2005 DIN:7823 ISO:3292	HSS-M2	Right hand	>N Normal helix	Standard	118	h8
Extra-Long Drills	IS:7823-2005 DIN:7823 ISO:3292	HSS-M2	Right hand	>N More than Normal helix	Wide Parabolic	130 Split-point	h8
Extra-Long Drills	IS:7823-2005 DIN:7823 ISO:3292	HSS-M35 Co-5%	Right hand	N Normal helix	Standard	118	h8
Extra-Long Drills	IS:7823-2005 DIN:7823 ISO:3292	HSS-M35 Co-5%	Right hand	>N More than Normal helix	Wide Parabolic	130 Split-point	h8
Extra-Long Drills	IS:7823-2005 DIN:7823 ISO:3292	HSS-M42 Co-8%	Right hand	>N More than Normal helix	Wide Parabolic	130 Split-point	h8

TECHNICAL DETAILS, RANGE OF APPLICATION & INDEX

Tool	Dia. Range	Range of applications Nos.	Page
Bright	1.00-16.00mm 3/64"- 5/8"	Manufactured with quick helix angle and wide flutes for improved chip flow. Suited for drilling deep holes or for use with drill bushings in soft materials such as aluminum alloys, "zinc, copper and soft synthetic materials."	46-47
Bright	2.00-16.00mm 3/32"- 5/8"	This is an high heat resistant drill of robust construction which enables drilling of deeper holes in difficult conditions. Suitable for drilling alloyed and un-alloyed steels and castings.	49-51
Bright Straw-gold	3.00-16.00mm 1/8"- 5/8"	This is an high heat resistant drill with wide chip space. Suitable for drilling hot and cold rolled steels, anti-friction "bearing steels, high alloyed steels."	52-53
Bright	2.00-16.00mm 3/32"- 5/8"	Heavy duty construction enables drilling in tough alloy steels, forgings and castings. 135 deg. Split-point is self centering which reduces thrust which improves performance.	54-56
Bright	3.00-16.00mm 1/8"- 5/8"	Parabolic flute form produces closer tolerance holes due to improved chip and coolant flow. Suitable for drilling high alloyed steels, titanium, stainless steels and other difficult to machine materials.	57-59
Bright	0.80-13.00mm 1/32"-1/2"	These drills are used for drilling deep holes. Vibration has to be avoided by carefully studying feeds, speeds and work holding. Wood-pecking and proper flow of coolant are important while drilling deep holes. Suited to perform in a wide range of materials in iron & steel	60
Bright	3.00-13.00mm 1/8"-1/2"	A robust drill for drilling deep holes in difficult conditions such as when swarf congestion prevents flow of coolant to drill point. For use in steel & cast iron. Parabolic flue design provides superior performance due to improved chip & coolant flow.	61
Bright	3.00-13.00mm 1/8"-1/2"	This is an high heat resistant drill. Suitable for machining alloyed & un-alloyed steels & castings. Particularly suitable for drilling hot & cold rolled steels, anti-friction steel, high alloyed steels, case hardening & heat treatable steels.	62
Bright	3.00-13.00mm 1/8"-1/2"	This is an heat resistant drill which has wide chip space for very deep hole drilling in difficult conditions, such as when swarf congestion hinders the flow of coolant to the drill point. Suitable for use in steels & cast steels of high tensile strengths.	63
Bright	3.00-13.00mm 1/8"-1/2"	Parabolic flute form produces closer tolerance holes due to improved chip and coolant flow. Suitable for drilling high alloyed steels, titanium, stainless steels and other difficult to machine materials.	64-67

TECHNICAL DETAILS, RANGE OF APPLICATION & INDEX

Tool	Manufacturing Standards	Tool Material	Cutting Direction	Tool Type	Flute Form	Point Angle (Degree)	Dia. Tol.
Taper Shank Drills	IS:5103-1969 DIN:345 BS:328(Part-1) ISO:235/1-1975	HSS-M2	Right hand	N Normal helix	Standard	118	h8
Taper Shank Drills	IS:5103-1969 DIN:345 BS:328(Part-1) ISO:235/1-1975	HSS-M35 Co-5%	Right hand	N Normal helix	Heavy Web	135 Split-point	h8
Taper Shank Long Series	IS:8305-1976 DIN:341	HSS-M2	Right hand	N Normal helix	Standard	118	h8
Taper Shank Long Series	IS:8305-1976 DIN:341	HSS-M35 Co-5%	Right hand	N Normal helix	Heavy Web	135 Split-point	h8
Taper Shank Extra-Long Drills	IS:7822-1983 DIN:1870	HSS-M2	Right hand	N Normal helix	Standard	118	h8
Taper Shank Extra-Long Drills	IS:7822-1983 DIN:1870	HSS-M35 Co-5%	Right hand	N Normal helix	Heavy Web	135 Split-point	h8
Taper Shank Core Drills	IS:5366-1975 DIN:343	HSS-M2	Right hand	N Normal helix	Standard	120	h8
Subland Drills	IS:12691-1989	HSS-M2 HSS-M35 Co-5%	Right hand	N H S	Standard	118	h8
Step Drills	HITCO	HSS-M2 HSS-M35 Co-5%	Right hand	N H S	Standard	118	h8
Drill Blanks	HITCO	HSS-M2	=	=	=	=	h8

TECHNICAL DETAILS, RANGE OF APPLICATION & INDEX

Tool	Dia. Range	Range of applications Nos.	Page
Bright	3.00-60.00mm 1/8" to 2-5/16"	Manufactured to fit Morse tapered holders. A standard drill for drilling of iron and steel.	68-70
Bright	3.00-16.00mm 1/8"- 5/8"	Heavy duty web construction gives more rigidity for drilling in tough conditions. Suited for drilling high alloyed steels. 135 deg. Split point is self centering which reduces thrust	71-72
Bright	4.76-16.00mm 3/16"- 5/8"	Standard drill for use with drill bushings for deep hole drilling in alloyed and un-alloyed steels.	73-74
Bright	4.76-16.00mm 3/16"- 5/8"	This an high heat resistant drill. Suitable for drilling hot and cold rolled steels, anti-friction steel, high alloyed steels etc.	75-76
Bright	3.00-16.00mm 1/8"- 5/8"	These drills are used for drilling deep holes. Vibration has to be avoided by carefully studying feeds, speeds & work holding. Wood-pecking & proper flow of coolant are important while drilling deep holes. Suited to perform in a wide range of mats in iron & steel families.	77-80
Bright	3.00-16.00mm 1/8"- 5/8"	Heavy duty web construction gives more rigidity for drilling in tough conditions. Suited for drilling high alloyed steels. 135 deg. Split point is self centering which reduces thrust while drilling.	81-84
Bright	5.00-16.00mm 9/32"- 5/8"	Core drills are designed for enlarging punched, drilled or cored holes. Extremely rigid three flute construction corrects the alignment and the concentricity of existing holes. Also finish in the hole is improved creating ideal conditions for reaming where ever required. These drills cannot produce original holes.	85-86
Bright	2.50-12.00mm (minor dia.)	Subland drill is two drills of different diameters that have been combined into one tool but they retain individual characteristics and geometric properties of each other. Subland drill eliminates secondary operations by drilling multi-diameter holes in one production pass.	87
Bright	2.00-16.00mm (Major dia.)	The step drill is a conventional 2-flute drill that has had a second diameter created by grinding down a portion of the larger diameter. Step drill eliminates operations by performing two operations in one production step.	88
Bright	1.00-16.00mm 3/64"- 5/8"	Fully hardened and ground to h8 dia. Tol.	89-90

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Tool Type 'N', Point Angle 118°

Ground Flutes-Bright Finish

MM	INCH	WG	FL in MM	OAL in MM
0.20			3	19
0.25			3	19
0.30			3	19
0.32			4	19
0.34		80	4	19
0.35			4	19
0.37		79	4	19
0.38			4	19
0.40	1/64		5	20
0.41		78	5	20
0.42			5	20
0.45			5	20
0.46		77	5	20
0.48			5	20
0.50			6	22
0.51		76	6	22
0.52			6	22
0.53		75	6	22
0.55			7	24
0.57		74	7	24
0.58			7	24
0.60			7	24
0.61		73	8	26
0.62			8	26
0.64		72	8	26
0.65			8	26
0.66		71	8	26
0.68			9	28
0.70			9	28
0.71		70	9	28
0.72			9	28
0.74		69	9	28
0.75			9	28



MM	INCH	WG	FL in MM	OAL in MM
0.76			10	30
0.79	1/32	68	10	30
0.80			10	30
0.81		67	10	30
0.82			10	30
0.84		66	10	30
0.85			10	30
0.88			11	32
0.89		65	11	32
0.90			11	32
0.91		64	11	32
0.92			11	32
0.94		63	11	32
0.95			11	32
0.97		62	12	34
0.98			12	34
0.99		61	12	34
1.00			12	34
1.02		60	12	34
1.04		59	12	34
1.07		58	14	36
1.09		57	14	36
1.10			14	36
1.18		56	14	36
1.19	3/64		16	38
1.20			16	38
1.25			16	38
1.30			16	38
1.32		55	18	40
1.40		54	18	40
1.50			18	40
1.51		53	20	43
1.59	1/16		20	43

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Tool Type 'N', Point Angle 118°

Ground Flutes-Bright Finish

MM	INCH	WG	FL in MM	OAL in MM
1.60			20	43
1.61		52	20	43
1.70		51	20	43
1.75			20	43
1.78		50	22	46
1.80			22	46
1.85		49	22	46
1.90			22	46
1.93		48	24	49
1.98	5/64		24	49
1.99		47	24	49
2.00			24	49
2.06		46	24	49
2.08		45	24	49
2.10			24	49
2.15			27	53
2.18		44	27	53
2.20			27	53
2.25			27	53
2.26		43	27	53
2.30			27	53
2.35			27	53
2.37		42	30	57
2.38	3/32		30	57
2.40			30	57
2.44		41	30	57
2.49		40	30	57
2.50			30	57
2.53		39	30	57
2.58		38	30	57
2.60			30	57
2.64		37	30	57
2.70			33	61



MM	INCH	WG	FL in MM	OAL in MM
2.71		36	33	61
2.75			33	61
2.78	7/64		33	61
2.79		35	33	61
2.80			33	61
2.82		34	33	61
2.87		33	33	61
2.90			33	61
2.95		32	33	61
3.00			33	61
3.05		31	36	65
3.10			36	65
3.17	1/8		36	65
3.20			36	65
3.25			36	65
3.26		30	36	65
3.30			36	65
3.35			36	65
3.40			39	70
3.45		29	39	70
3.50			39	70
3.57	9/64	28	39	70
3.60			39	70
3.66		27	39	70
3.70			39	70
3.73		26	39	70
3.75			39	70
3.80		25	43	75
3.86		24	43	75
3.90			43	75
3.91		23	43	75
3.97	5/32		43	75
3.99		22	43	75

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Tool Type 'N', Point Angle 118°

Ground Flutes-Bright Finish

MM	INCH	WG	FL in MM	OAL in MM
4.00			43	75
4.04		21	43	75
4.09		20	43	75
4.10			43	75
4.20			43	75
4.22		19	43	75
4.25			43	75
4.30		18	47	80
4.37	11/16		47	80
4.39		17	47	80
4.40			47	80
4.50		16	47	80
4.57		15	47	80
4.60			47	80
4.62		14	47	80
4.70		13	47	80
4.75			47	80
4.76	3/16		52	86
4.80		12	52	86
4.85		11	52	86
4.90			52	86
4.92		10	52	86
4.98		9	52	86
5.00			52	86
5.06		8	52	86
5.10			52	86
5.11		7	52	86
5.16	13/64		52	86
5.18		6	52	86
5.20			52	86
5.22		5	52	86
5.25			52	86
5.30			52	86



MM	INCH	WG	FL in MM	OAL in MM
5.31		4	57	93
5.40			57	93
5.41		3	57	93
5.50			57	93
5.56	7/32		57	93
5.60			57	93
5.61		2	57	93
5.70			57	93
5.75			57	93
5.79		1	57	93
5.80			57	93
5.90			57	93
5.94		A	57	93
5.95	15/64		57	93
6.00			57	93
6.05		B	63	101
6.10			63	101
6.15		C	63	101
6.20			63	101
6.25		D	63	101
6.30			63	101
6.35	1/4	E	63	101
6.40			63	101
6.50			63	101
6.53		F	63	101
6.60			63	101
6.63		G	63	101
6.70			63	101
6.75	17/64	H	69	109
6.80			69	109
6.90		I	69	109
7.00			69	109
7.03		J	69	109

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Tool Type 'N', Point Angle 118°

Ground Flutes-Bright Finish

MM	INCH	WG	FL in MM	OAL in MM
7.10			69	109
7.14	9/32	K	69	109
7.20			69	109
7.25			69	109
7.30			69	109
7.37		L	69	109
7.40			69	109
7.49		M	69	109
7.50			69	109
7.54	19/64		75	117
7.60			75	117
7.67		N	75	117
7.70			75	117
7.75			75	117
7.80			75	117
7.90			75	117
7.94	5/16		75	117
8.00			75	117
8.03		O	75	117
8.10			75	117
8.20		P	75	117
8.25			75	117
8.30			75	117
8.33	21/64		75	117
8.40			75	117
8.43		Q	75	117
8.50			75	117
8.60			81	125
8.61		R	81	125
8.70			81	125
8.75			81	125
8.73	11/32		81	125
8.80			81	125



MM	INCH	WG	FL in MM	OAL in MM
8.84		S	81	125
8.90			81	125
9.00			81	125
9.09		T	81	125
9.10			81	125
9.13	23/64		81	125
9.20			81	125
9.25			81	125
9.30			81	125
9.34		U	81	125
9.40			81	125
9.50			81	125
9.52	3/8		87	133
9.58		V	87	133
9.60			87	133
9.70			87	133
9.75			87	133
9.80		W	87	133
9.90			87	133
9.92	25/64		87	133
10.00			87	133
10.08		X	87	133
10.10			87	133
10.20			87	133
10.25			87	133
10.26		Y	87	133
10.30			87	133
10.32	13/32		87	133
10.40			87	133
10.49		Z	87	133
10.50			87	133
10.60			87	133
10.70			94	142

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Tool Type 'N', Point Angle 118°

Ground Flutes-Bright Finish

MM	INCH	WG	FL in MM	OAL in MM
10.72	27/64		94	142
10.75			94	142
10.80			94	142
10.90			94	142
11.00			94	142
11.10			94	142
11.11	7/16		94	142
11.20			94	142
11.25			94	142
11.30			94	142
11.40			94	142
11.50			94	142
11.51	29/64		94	142
11.60			94	142
11.70			94	142
11.75			94	142
11.80			94	142
11.90			101	151
11.91	15/32		101	151
12.00			101	151
12.10			101	151
12.20			101	151
12.25			101	151
12.30	31/64		101	151
12.40			101	151
12.50			101	151
12.60			101	151
12.70	1/2		101	151
12.75			101	151
12.80			101	151
12.90			101	151
13.00			101	151
13.10	33/64		101	151



MM	INCH	WG	FL in MM	OAL in MM
13.20			101	151
13.25			108	160
13.30			108	160
13.40			108	160
13.49	17/32		108	160
13.50			108	160
13.60			108	160
13.70			108	160
13.75			108	160
13.80			108	160
13.89	35/64		108	160
13.90			108	160
14.00			108	160
14.25			114	169
14.29	9/16		114	169
14.50			114	169
14.68	37/64		114	169
14.75			114	169
15.00			114	169
15.08	19/32		120	178
15.25			120	178
15.50			120	178
15.75			120	178
15.87	5/8		120	178
16.00			120	178

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Slow Helix-Type H

Ground Flutes-Bright Finish

MM	INCH	FL in MM	OAL in MM
1.00		12	34
1.10		14	36
1.19	3/64	16	38
1.20		16	38
1.30		16	38
1.50		18	40
1.59	1/16	20	43
1.60		20	43
1.70		20	43
1.75		22	46
1.80		22	46
1.90		22	46
1.98	5/64	24	49
2.00		24	49
2.10		24	49
2.20		27	53
2.30		27	53
2.38	3/32	30	57
2.40		30	57
2.50		30	57
2.60		30	57
2.70		33	61
2.78	7/64	33	61
2.80		33	61
2.90		33	61
3.00		33	61
3.10		36	65
3.17	1/8	36	65
3.20		36	65
3.30		36	65
3.40		39	70
3.50		39	70
3.60		39	70



MM	INCH	FL in MM	OAL in MM
3.70		39	70
3.75		39	70
3.80		43	75
3.90		43	75
3.97	5/32	43	75
4.00		43	75
4.20		43	75
4.25		43	75
4.37	11/64	47	80
4.50		47	80
4.75		47	80
4.76	3/16	52	86
4.80		52	86
5.00		52	86
5.16	13/64	52	86
5.20		52	86
5.30		52	86
5.50		57	93
5.56	7/32	57	93
5.79		57	93
5.80		57	93
5.95	15/64	57	93
6.00		57	93
6.20		63	101
6.25		63	101
6.35	1/4	63	101
6.50		63	101
6.75	17/64	69	109
6.80		69	109
7.00		69	109
7.14	9/32	69	109
7.20		69	109
7.49		69	109

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Slow Helix-Type H

Ground Flutes-Bright Finish

MM	INCH	FL in MM	OAL in MM
7.50		69	109
7.54	19/64	75	117
7.80		75	117
7.94	5/16	75	117
8.00		75	117
8.20		75	117
8.33	21/64	75	117
8.50		75	117
8.73	11/32	81	125
8.80		81	125
9.00		81	125
9.13	23/64	81	125
9.20		81	125
9.50		81	125
9.52	3/8	87	133
9.80		87	133
9.92	25/64	87	133
10.00		87	133
10.32	13/32	87	133
10.50		87	133
10.72	27/64	94	142
11.00		94	142
11.11	7/16	94	142
11.50		94	142
11.51	29/64	94	142
11.91	15/32	101	151
12.00		101	151
12.30	31/64	101	151
12.50		101	151
12.70	1/2	101	151
13.00		101	151
13.10	33/64	101	151
13.49	17/32	108	160



MM	INCH	FL in MM	OAL in MM
13.50		108	160
13.89	35/64	108	160
14.00		108	160
14.29	9/16	114	169
14.50		114	169
14.68	37/64	114	169
15.00		114	169
15.08	19/32	120	178
15.25		120	178
15.50		120	178
15.87	5/8	120	178
16.00		120	178

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Quick Helix - Type W

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
1.00		12	34
1.19	3/64	16	38
1.20		16	38
1.50		18	40
1.59	1/16	20	43
1.98	5/64	24	49
2.00		24	49
2.38	3/32	30	57
2.50		30	57
2.60		30	57
2.70		33	61
2.78	7/64	33	61
3.00		33	61
3.17	1/8	36	65
3.20		36	65
3.30		36	65
3.40		39	70
3.50		39	70
3.57	9/64	39	70
3.80		43	75
3.90		43	75
3.97	5/32	43	75
4.00		43	75
4.10		43	75
4.20		43	75
4.30		47	80
4.37	11/64	47	80
4.50		47	80
4.76	3/16	52	86
4.80		52	86
5.00		52	86
5.10		52	86
5.16	13/64	52	86



MM	INCH	FL in MM	OAL in MM
5.20		52	86
5.30		52	86
5.50		57	93
5.56	7/32	57	93
5.80		57	93
5.95	15/64	57	93
6.00		57	93
6.10		63	101
6.20		63	101
6.35	1/4	63	101
6.50		63	101
6.75	17/64	69	109
6.80		69	109
7.00		69	109
7.14	9/32	69	109
7.20		69	109
7.50		69	109
7.54	19/64	75	117
7.80		75	117
7.94	5/16	75	117
8.00		75	117
8.20		75	117
8.33	21/64	75	117
8.50		75	117
8.73	11/32	81	125
8.80		81	125
9.00		81	125
9.13	23/64	81	125
9.20		81	125
9.50		81	125
9.52	3/8	87	133
9.80		87	133
9.92	25/64	87	133

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Quick Helix - Type W

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
10.00		87	133
10.32	13/32	87	133
10.50		87	133
10.72	27/64	94	142
10.80		94	142
11.00		94	142
11.11	7/16	94	142
11.20		94	142
11.50		94	142
11.51	29/64	94	142
11.80		94	142
11.91	15/32	101	151
12.00		101	151
12.20		101	151
12.30	31/64	101	151
12.40		101	151
12.50		101	151
12.70	1/2	101	151
12.80		101	151
13.00		101	151
13.10	33/64	101	151
13.20		101	151
13.49	17/32	108	160
13.50		108	160
13.80		108	160
13.89	35/64	108	160
14.00		108	160
14.25		114	169
14.29	9/16	114	169
14.50		114	169
14.68	37/64	114	169
14.75		114	169
15.00		114	169

MM	INCH	FL in MM	OAL in MM
15.08	19/32	120	178
15.25		120	178
15.50		120	178
15.75		120	178
15.87	5/8	120	178
16.00		120	178



RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
1.50		18	40
1.51		20	43
1.59	1/16	20	43
1.60		20	43
1.70		20	43
1.75		22	46
1.80		22	46
1.90		22	46
1.98	5/64	24	49
2.00		24	49
2.10		24	49
2.20		27	53
2.30		27	53
2.38	3/32	30	57
2.44		30	57
2.50		30	57
2.60		30	57
2.70		33	61
2.78	7/64	33	61
2.80		33	61
2.90		33	61
3.00		33	61
3.10		36	65
3.17	1/8	36	65
3.20		36	65
3.30		36	65
3.40		39	70
3.50		39	70
3.57	9/64	39	70
3.60		39	70
3.70		39	70
3.75		39	70
3.80		43	75



MM	INCH	FL in MM	OAL in MM
3.90		43	75
3.97	5/32	43	75
4.00		43	75
4.10		43	75
4.20		43	75
4.25		43	75
4.30		47	80
4.37	11/64	47	80
4.40		47	80
4.50		47	80
4.60		47	80
4.70		47	80
4.75		47	80
4.76	3/16	52	86
4.80		52	86
4.90		52	86
5.00		52	86
5.16	13/64	52	86
5.20		52	86
5.30		52	86
5.40		57	93
5.50		57	93
5.56	7/32	57	93
5.60		57	93
5.70		57	93
5.80		57	93
5.90		57	93
5.95	15/64	57	93
6.00		57	93
6.10		63	101
6.20		63	101
6.25		63	101
6.30		63	101

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
6.35	1/4	63	101
6.40		63	101
6.50		63	101
6.60		63	101
6.70		63	101
6.75	17/64	69	109
6.80		69	109
6.90		69	109
7.00		69	109
7.10		69	109
7.14	9/32	69	109
7.20		69	109
7.30		69	109
7.40		69	109
7.50		69	109
7.54	19/64	75	117
7.60		75	117
7.70		75	117
7.80		75	117
7.90		75	117
7.94	5/16	75	117
8.00		75	117
8.10		75	117
8.20		75	117
8.30		75	117
8.33	21/64	75	117
8.40		75	117
8.50		75	117
8.60		81	125
8.70		81	125
8.73	11/32	81	125
8.80		81	125
8.90		81	125



MM	INCH	FL in MM	OAL in MM
9.00		81	125
9.10		81	125
9.13	23/64	81	125
9.20		81	125
9.30		81	125
9.40		81	125
9.50		81	125
9.52	3/8	87	133
9.60		87	133
9.70		87	133
9.90		87	133
9.92	25/64	87	133
10.00		87	133
10.20		87	133
10.32	13/32	87	133
10.50		87	133
10.72	27/64	94	142
10.80		94	142
11.00		94	142
11.11	7/16	94	142
11.20		94	142
11.50		94	142
11.51	29/64	94	142
11.80		94	142
11.91	15/32	101	151
12.00		101	151
12.20		101	151
12.30	31/64	101	151
12.50		101	151
12.70	1/2	101	151
12.80		101	151
13.00		101	151
13.10	33/64	101	151

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
13.20		101	151
13.49	17/32	108	160
13.50		108	160
13.80		108	160
13.89	35/64	108	160
14.00		108	160
14.25		114	169
14.29	9/16	114	169
14.50		114	169
14.68	37/64	114	169
14.75		114	169
15.00		114	169
15.08	19/32	120	178
15.25		120	178
15.50		120	178
15.75		120	178
15.87	5/8	120	178
16.00		120	178



RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
2.50		30	57
2.60		30	57
2.70		33	61
2.78	7/64	33	61
2.80		33	61
2.90		33	61
3.00		33	61
3.10		36	65
3.17	1/8	36	65
3.20		36	65
3.40		39	70
3.50		39	70
3.57	9/64	39	70
3.60		39	70
3.70		39	70
3.75		39	70
3.80		43	75
3.90		43	75
3.97	5/32	43	75
4.00		43	75
4.10		43	75
4.20		43	75
4.25		43	75
4.30		47	80
4.37	11/64	47	80
4.40		47	80
4.50		47	80
4.60		47	80
4.70		47	80
4.75		47	80
4.76	3/16	52	86
4.80		52	86
4.90		52	86



MM	INCH	FL in MM	OAL in MM
5.00		52	86
5.10		52	86
5.16	13/64	52	86
5.20		52	86
5.30		52	86
5.40		57	93
5.50		57	93
5.56	7/32	57	93
5.60		57	93
5.70		57	93
5.80		57	93
5.90		57	93
5.95	15/64	57	93
6.00		57	93
6.10		63	101
6.20		63	101
6.30		63	101
6.35	1/4	63	101
6.40		63	101
6.50		63	101
6.60		63	101
6.70		63	101
6.75	17/64	69	109
6.80		69	109
6.90		69	109
7.00		69	109
7.10		69	109
7.14	9/32	69	109
7.20		69	109
7.30		69	109
7.40		69	109
7.50		69	109
7.54	19/64	75	117

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
7.60		75	117
7.70		75	117
7.80		75	117
7.94	5/16	75	117
8.00		75	117
8.20		75	117
8.33	21/64	75	117
8.50		75	117
8.73	11/32	81	125
8.80		81	125
9.00		81	125
9.13	23/64	81	125
9.20		81	125
9.50		81	125
9.52	3/8	87	133
9.80		87	133
9.92	25/64	87	133
10.00		87	133
10.20		87	133
10.32	13/32	87	133
10.50		87	133
10.72	27/64	94	142
10.80		94	142
11.00		94	142
11.11	7/16	94	142
11.20		94	142
11.50		94	142
11.51	29/64	94	142
11.80		94	142
11.91	15/32	101	151
12.00		101	151
12.20		101	151
12.30	31/64	101	151



MM	INCH	FL in MM	OAL in MM
12.50		101	151
12.70	1/2	101	151
12.80		101	151
13.00		101	151
13.10	33/64	101	151
13.20		101	151
13.49	17/32	108	160
13.50		108	160
13.80		108	160
13.89	35/64	108	160
14.00		108	160
14.25		114	169
14.29	9/16	114	169
14.50		114	169
14.68	37/64	114	169
14.75		114	169
15.00		114	169
15.08	19/32	120	178
15.25		120	178
15.50		120	178
15.75		120	178
15.87	5/8	120	178
16.00		120	178

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (LH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	WG	FL in MM	OAL in MM
0.40	1/64		5	20
0.41		78	5	20
0.45			5	20
0.46		77	5	20
0.50			6	22
0.51		76	6	22
0.53		75	6	22
0.55			7	24
0.57		74	7	24
0.60			7	24
0.61		73	8	26
0.64		72	8	26
0.65			8	26
0.66		71	8	26
0.70			9	28
0.71		70	9	28
0.74		69	9	28
0.75			9	28
0.79		68	10	30
0.79	1/32		10	30
0.80			10	30
0.81		67	10	30
0.84		66	10	30
0.85			10	30
0.89		65	11	32
0.90			11	32
0.91		64	11	32
0.94		63	11	32
0.95			11	32



MM	INCH	WG	FL in MM	OAL in MM
0.97		62	12	34
0.99		61	12	34
1.00			12	34
1.02		60	12	34
1.04		59	12	34
1.07		58	14	36
1.09		57	14	36
1.10			14	36
1.18		56	14	36
1.19	3/64		16	38
1.20			16	38
1.30			16	38
1.32		55	16	38
1.40		54	18	40
1.50			18	40
1.51		53	20	43
1.59	1/16		20	43
1.60			20	43
1.61		52	20	43
1.70		51	20	43
1.75			20	43
1.78		50	22	46
1.80			22	46
1.85		49	22	46
1.90			22	46
1.93		48	24	49
1.98	5/64		24	49
1.99		47	24	49
2.00			24	49

LH - Left hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (LH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	WG	FL in MM	OAL in MM
2.06		46	24	49
2.08		45	24	49
2.10			24	49
2.15			27	53
2.18		44	27	53
2.20			27	53
2.26		43	27	53
2.30			27	53
2.35			27	53
2.37		42	30	57
2.38	3/32		30	57
2.40			30	57
2.44		41	30	57
2.49		40	30	57
2.50			30	57
2.53		39	30	57
2.58		38	30	57
2.60			30	57
2.64		37	30	57
2.70			33	61
2.71		36	33	61
2.78	7/64		33	61
2.79		35	33	61
2.80			33	61
2.82		34	33	61
2.87		33	33	61
2.90			33	61
2.95		32	33	61
3.00			33	61



MM	INCH	WG	FL in MM	OAL in MM
3.05		31	36	65
3.10			36	65
3.17	1/8		36	65
3.20			36	65
3.26		30	36	65
3.30			36	65
3.35			36	65
3.40			39	70
3.45		29	39	70
3.50			39	70
3.57	9/64	28	39	70
3.60			39	70
3.66		27	39	70
3.70			39	70
3.73		26	39	70
3.75			39	70
3.80		25	43	75
3.86		24	43	75
3.90			43	75
3.91		23	43	75
3.97	5/32		43	75
3.99		22	43	75
4.00			43	75
4.04		21	43	75
4.09		20	43	75
4.10			43	75
4.20			43	75
4.22		19	43	75
4.25			43	75

LH - Left hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (LH)



JOBBER SERIES

Made to IS:5101/1991, ISO 235:1975, BS:328 (Part-1), DIN-338

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	WG	FL in MM	OAL in MM
4.30		18	47	80
4.37	11/64		47	80
4.39		17	47	80
4.40			47	80
4.50		16	47	80
4.57		15	47	80
4.60			47	80
4.62		14	47	80
4.70		13	47	80
4.75			47	80
4.76	3/16		52	86
4.80		12	52	86
4.85		11	52	86
4.90			52	86
4.92		10	52	86
4.98		9	52	86
5.00			52	86
5.06		8	52	86
5.10			52	86
5.11		7	52	86
5.16	13/64		52	86
5.18		6	52	86
5.20			52	86
5.22		5	52	86
5.30			52	86
5.31		4	57	93
5.40			57	93
5.41		3	57	93
5.50			57	93
5.56	7/32		57	93



MM	INCH	WG	FL in MM	OAL in MM
5.60			57	93
5.61		2	57	93
5.70			57	93
5.79		1	57	93
5.80			57	93
5.90			57	93
5.94		A	57	93
5.95	15/64		57	93
6.00			57	93
6.05		B	63	101
6.10			63	101
6.15		C	63	101
6.20			63	101
6.25		D	63	101
6.30			63	101
6.35	1/4	E	63	101
6.40			63	101

LH - Left hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



JOBBER SERIES

As per IS:5101:1991, BS:328 (Part-1)1986, DIN:338

Heavy Web, Point-135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
2.00		24	49
2.10		24	49
2.20		27	53
2.25		27	53
2.30		27	53
2.38	3/32	30	57
2.40		30	57
2.50		30	57
2.60		30	57
2.70		33	61
2.75		33	61
2.78	7/64	33	61
2.80		33	61
2.90		33	61
3.00		33	61
3.10		36	65
3.17	1/8	36	65
3.20		36	65
3.25		36	65
3.30		36	65
3.40		39	70
3.50		39	70
3.57	9/64	39	70
3.60		39	70
3.70		39	70
3.75		39	70
3.80		43	75
3.90		43	75
3.97	5/32	43	75
4.00		43	75



Dia	INCH	FL in MM	OAL in MM
4.10		43	75
4.20		43	75
4.25		43	75
4.30		47	80
4.37	11/64	47	80
4.40		47	80
4.50		47	80
4.60		47	80
4.70		47	80
4.75		47	80
4.76	3/16	52	86
4.80		52	86
4.90		52	86
5.00		52	86
5.10		52	86
5.16	13/64	52	86
5.20		52	86
5.25		52	86
5.30		52	86
5.40		57	93
5.50		57	93
5.56	7/32	57	93
5.60		57	93
5.70		57	93
5.80		57	93
5.90		57	93
5.95	15/64	57	93
6.00		57	93
6.10		63	101
6.20		63	101

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



JOBBER SERIES

As per IS:5101:1991, BS:328 (Part-1)1986, DIN:338

Heavy Web, Point-135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
6.25		63	101
6.30		63	101
6.35	1/4	63	101
6.40		63	101
6.50		63	101
6.60		63	101
6.70		63	101
6.75	17/64	69	109
6.80		69	109
6.90		69	109
7.00		69	109
7.10		69	109
7.14	9/32	69	109
7.20		69	109
7.30		69	109
7.40		69	109
7.50		69	109
7.54	19/64	75	117
7.60		75	117
7.70		75	117
7.80		75	117
7.90		75	117
7.94	5/16	75	117
8.00		75	117
8.10		75	117
8.20		75	117
8.30		75	117
8.33	21/64	75	117
8.40		75	117
8.50		75	117



Dia	INCH	FL in MM	OAL in MM
8.60		81	125
8.70		81	125
8.73	11/32	81	125
8.80		81	125
8.90		81	125
9.00		81	125
9.10		81	125
9.13	23/64	81	125
9.20		81	125
9.30		81	125
9.40		81	125
9.50		81	125
9.52	3/8	87	133
9.60		87	133
9.70		87	133
9.80		87	133
9.90		87	133
9.92	25/64	87	133
10.00		87	133
10.10		87	133
10.20		87	133
10.25		87	133
10.30		87	133
10.32	13/32	87	133
10.40		87	133
10.50		87	133
10.60		87	133
10.70		94	142
10.72	27/64	94	142
10.80		94	142

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



JOBBER SERIES

As per IS:5101:1991, BS:328 (Part-1)1986, DIN:338

Heavy Web, Point-135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
10.90		94	142
11.00		94	142
11.10		94	142
11.11	7/16	94	142
11.20		94	142
11.30		94	142
11.40		94	142
11.50		94	142
11.51	29/64	94	142
11.60		94	142
11.70		94	142
11.80		94	142
11.90		101	151
11.91	15/32	101	151
12.00		101	151
12.10		101	151
12.20		101	151
12.30	31/64	101	151
12.40		101	151
12.50		101	151
12.60		101	151
12.70	1/2	101	151
12.80		101	151
12.90		101	151
13.00		101	151
13.10	33/64	101	151
13.20		101	151
13.30		108	160
13.40		108	160



Dia	INCH	FL in MM	OAL in MM
13.49	17/32	108	160
13.50		108	160
13.60		108	160
13.70		108	160
13.80		108	160
13.89	35/64	108	160
13.90		108	160
14.00		108	160
14.25		114	169
14.29	9/16	114	169
14.50		114	169
14.68	37/64	114	169
14.75		114	169
15.00		114	169
15.08	19/32	120	178
15.25		120	178
15.50		120	178
15.75		120	178
15.87	5/8	120	178
16.00		120	178

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



JOBBER SERIES

As per IS:5101:1991, BS:328 (Part-1)1986, DIN:338

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
3.00		33	61
3.10		36	65
3.17	1/8	36	65
3.30		36	65
3.40		39	70
3.50		39	70
3.57	9/64	39	70
3.60		39	70
3.70		39	70
3.80		43	75
3.97	5/32	43	75
4.10		43	75
4.20		43	75
4.30		47	80
4.40		47	80
4.50		47	80
4.60		47	80
4.70		47	80
4.76	3/16	52	86
4.80		52	86
4.90		52	86
5.00		52	86
5.10		52	86
5.16	13/64	52	86
5.20		52	86
5.30		52	86
5.40		57	93
5.50		57	93
5.56	7/32	57	93
5.60		57	93
5.70		57	93
5.80		57	93
5.90		57	93



Dia	INCH	FL in MM	OAL in MM
5.95	15/64	57	93
6.00		57	93
6.10		63	101
6.20		63	101
6.30		63	101
6.35	1/4	63	101
6.40		63	101
6.50		63	101
6.60		63	101
6.70		63	101
6.75	17/64	69	109
6.80		69	109
6.90		69	109
7.00		69	109
7.10		69	109
7.14	9/64	69	109
7.20		69	109
7.30		69	109
7.40		69	109
7.50		69	109
7.54	19/64	75	117
7.60		75	117
7.70		75	117
7.80		75	117
7.90		75	117
7.94	5/16	75	117
8.00		75	117
8.10		75	117
8.20		75	117
8.30		75	117
8.33	21/64	75	117
8.40		75	117
8.50		75	117

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



JOBBER SERIES

As per IS:5101:1991, BS:328 (Part-1)1986, DIN:338

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
8.60		81	125
8.70		81	125
8.73	11/32	81	125
8.90		81	125
9.00		81	125
9.10		81	125
9.13	23/64	81	125
9.20		81	125
9.30		81	125
9.40		81	125
9.50		81	125
9.52	3/8	87	133
9.60		87	133
9.70		87	133
9.80		87	133
9.90		87	133
9.92	25/64	87	133
10.00		87	133
10.20		87	133
10.32	13/32	87	133
10.50		87	133
10.72	27/64	94	142
10.80		94	142
11.00		94	142
11.11	7/16	94	142
11.20		94	142
11.50		94	142
11.51	29/64	94	142
11.80		94	142
11.91	15/32	101	151
12.00		101	151
12.20		101	151
12.30	31/64	101	151



Dia	INCH	FL in MM	OAL in MM
12.50		101	151
12.70	1/2	101	151
13.00		101	151
13.10	33/64	101	151
13.49	17/32	108	160
13.50		108	160
13.89	35/64	108	160
14.00		108	160
14.29	9/16	114	169
14.50		114	169
14.68	37/64	114	169
15.00		114	169
15.08	19/32	120	178
15.25		120	178
15.50		120	178
15.87	5/8	120	178
16.00		120	178

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



JOBBER SERIES

As per IS:5101:1991, BS:328 (Part-1)1986, DIN:338

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
2.00		24	49
2.10		24	49
2.20		27	53
2.30		27	53
2.38	3/32	30	57
2.40		30	57
2.50		30	57
2.60		30	57
2.70		33	61
2.78	7/64	33	61
2.80		33	61
2.90		33	61
3.00		33	61
3.10		36	65
3.17	1/8	36	65
3.20		36	65
3.30		36	65
3.40		39	70
3.50		39	70
3.60		39	70
3.70		39	70
3.75		39	70
3.80		43	75
3.90		43	75
3.97	5/32	43	75
4.00		43	75
4.10		43	75
4.20		43	75
4.30		47	80
4.37	11/64	47	80
4.40		47	80
4.50		47	80
4.60		47	80
4.70		47	80
4.76	3/16	52	86



Dia	INCH	FL in MM	OAL in MM
4.80		52	86
4.90		52	86
5.00		52	86
5.10		52	86
5.16	13/64	52	86
5.20		52	86
5.30		52	86
5.40		57	93
5.50		57	93
5.56	7/32	57	93
5.60		57	93
5.70		57	93
5.80		57	93
5.90		57	93
5.95	15/64	57	93
6.00		57	93
6.10		63	101
6.20		63	101
6.30		63	101
6.35	1/4	63	101
6.40		63	101
6.50		63	101
6.60		63	101
6.70		63	101
6.75	17/64	69	109
6.80		69	109
6.90		69	109
7.00		69	109
7.10		69	109
7.14	9/32	69	109
7.20		69	109
7.30		69	109
7.40		69	109
7.50		69	109
7.54	19/64	75	117

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



JOBBER SERIES

As per IS:5101:1991, BS:328 (Part-1)1986, DIN:338

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
7.60		75	117
7.70		75	117
7.80		75	117
7.90		75	117
7.94	5/16	75	117
8.00		75	117
8.10		75	117
8.20		75	117
8.30		75	117
8.33	21/64	75	117
8.40		75	117
8.50		75	117
8.60		81	125
8.70		81	125
8.73	11/32	81	125
8.80		81	125
8.90		81	125
9.00		81	125
9.10		81	125
9.13	23/64	81	125
9.20		81	125
9.30		81	125
9.40		81	125
9.50		81	125
9.52	3/8	87	133
9.60		87	133
9.70		87	133
9.80		87	133
9.90		87	133
9.92	25/64	87	133
10.00		87	133
10.20		87	133
10.32	13/32	87	133
10.50		87	133
10.72	27/64	94	142



Dia	INCH	FL in MM	OAL in MM
10.80		94	142
11.00		94	142
11.11	7/16	94	142
11.20		94	142
11.50		94	142
11.51	29/64	94	142
11.80		94	142
11.91	15/32	101	151
12.00		101	151
12.20		101	151
12.30	31/64	101	151
12.50		101	151
12.70	1/2	101	151
12.80		101	151
13.00		101	151
13.10	33/64	101	151
13.20		101	151
13.40		108	160
13.49	17/32	108	160
13.50		108	160
13.80		108	160
13.89	35/64	108	160
14.00		108	160
14.25		114	169
14.29	9/16	114	169
14.50		114	169
14.68	37/64	114	169
14.75		114	169
15.00		114	169
15.08	19/32	120	178
15.25		120	178
15.50		120	178
15.75		120	178
15.87	5/8	120	178
16.00		120	178

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS Parallel Shank Twist Drills (RH)



STUB SERIES

Made to IS 5100:1991, ISO 235:1975

BS:328 (Part-1)1986, DIN 1897

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
1.00		6	26
1.19	3/64	8	30
1.20		8	30
1.50		9	32
1.59	1/16	10	34
1.80		11	36
1.98	5/64	12	38
2.00		12	38
2.10		12	38
2.20		13	40
2.25		13	40
2.30		13	40
2.38	3/32	14	43
2.40		14	43
2.50		14	43
2.60		14	43
2.70		16	46
2.75		16	46
2.78	7/64	16	46
2.80		16	46
2.90		16	46
3.00		16	46
3.10		18	49
3.17	1/8	18	49
3.20		18	49
3.25		18	49
3.30		18	49
3.40		20	52
3.50		20	52
3.57	9/64	20	52
3.60		20	52
3.70		20	52
3.75		20	52



Dia	INCH	FL in MM	OAL in MM
3.80		22	55
3.90		22	55
3.97	5/32	22	55
4.00		22	55
4.10		22	55
4.20		22	55
4.25		22	55
4.30		24	58
4.37	11/64	24	58
4.40		24	58
4.50		24	58
4.60		24	58
4.70		24	58
4.75		24	58
4.76	3/16	26	62
4.80		26	62
4.90		26	62
5.00		26	62
5.10		26	62
5.16	13/64	26	62
5.20		26	62
5.25		26	62
5.30		26	62
5.40		28	66
5.50		28	66
5.56	7/32	28	66
5.60		28	66
5.70		28	66
5.75		28	66
5.80		28	66
5.90		28	66
5.95	15/64	28	66
6.00		28	66

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS Parallel Shank Twist Drills (RH)



STUB SERIES

Made to IS 5100:1991, ISO 235:1975

BS:328 (Part-1)1986, DIN 1897

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
6.20		31	70
6.25		31	70
6.35	1/4	31	70
6.50		31	70
6.75	17/64	34	74
6.80		34	74
7.00		34	74
7.14	9/32	34	74
7.20		34	74
7.50		34	74
7.54	19/64	37	79
7.80		37	79
7.94	5/16	37	79
8.00		37	79
8.20		37	79
8.33	21/64	37	79
8.50		37	79
8.73	11/32	40	84
8.80		40	84
9.00		40	84
9.13	23/64	40	84
9.20		40	84
9.50		40	84
9.52	3/8	43	89
9.80		43	89
9.92	25/64	43	89
10.00		43	89
10.20		43	89
10.32	13/32	43	89
10.50		43	89
10.72	27/64	47	95
10.80		47	95
11.00		47	95



Dia	INCH	FL in MM	OAL in MM
11.11	7/16	47	95
11.20		47	95
11.50		47	95
11.51	29/64	47	95
11.80		47	95
11.91	15/32	51	102
12.00		51	102
12.20		51	102
12.30	31/64	51	102
12.50		51	102
12.70	1/2	51	102
12.80		51	102
13.00		51	102
13.10	33/64	51	102
13.20		51	102
13.49	17/32	54	107
13.50		54	107
13.80		54	107
13.89	35/64	54	107
14.00		54	107
14.25		56	111
14.29	9/16	56	111
14.50		56	111
14.68	37/64	56	111
14.75		56	111
15.00		56	111
15.08	19/32	58	115
15.25		58	115
15.50		58	115
15.75		58	115
15.87	5/8	58	115
16.00		58	115

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



STUB SERIES

IS:5100-1991, BS:328 (Part-1)-1986, DIN:1897

Heavy Web, POINT-135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
2.00		12	38
2.10		12	38
2.20		13	40
2.30		13	40
2.38	3/32	14	43
2.40		14	43
2.50		14	43
2.60		14	43
2.70		16	46
2.78	7/64	16	46
2.80		16	46
2.90		16	46
3.00		16	46
3.10		18	49
3.17	1/8	18	49
3.20		18	49
3.30		18	49
3.40		20	52
3.50		20	52
3.57	9/64	20	52
3.60		20	52
3.70		20	52
3.80		22	55
3.90		22	55
3.97	5/32	22	55
4.00		22	55
4.10		22	55
4.20		22	55
4.30		24	58
4.37	11/64	24	58
4.40		24	58
4.50		24	58
4.60		24	58
4.70		24	58
4.76	3/16	26	62



Dia	INCH	FL in MM	OAL in MM
4.80		26	62
4.90		26	62
5.00		26	62
5.10		26	62
5.16	13/64	26	62
5.20		26	62
5.30		26	62
5.40		28	66
5.50		28	66
5.56	7/32	28	66
5.60		28	66
5.70		28	66
5.80		28	66
5.90		28	66
5.95	15/64	28	66
6.00		28	66
6.10		31	70
6.20		31	70
6.30		31	70
6.35	1/4	31	70
6.40		31	70
6.50		31	70
6.60		31	70
6.70		31	70
6.75	17/64	34	74
6.80		34	74
6.90		34	74
7.00		34	74
7.10		34	74
7.14	9/32	34	74
7.20		34	74
7.30		34	74
7.40		34	74
7.50		34	74
7.54	19/64	37	79

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



STUB SERIES

IS:5100-1991, BS:328 (Part-1)-1986, DIN:1897

Heavy Web, POINT-135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
7.60		37	79
7.70		37	79
7.80		37	79
7.90		37	79
7.94	5/16	37	79
8.00		37	79
8.10		37	79
8.20		37	79
8.30		37	79
8.33	21/64	37	79
8.40		37	79
8.50		37	79
8.60		40	84
8.70		40	84
8.73	11/32	40	84
8.80		40	84
8.90		40	84
9.00		40	84
9.10		40	84
9.13	23/64	40	84
9.20		40	84
9.30		40	84
9.40		40	84
9.50		40	84
9.52	3/8	43	89
9.60		43	89
9.70		43	89
9.80		43	89
9.90		43	89
9.92	25/64	43	89
10.00		43	89
10.20		43	89
10.32	13/32	43	89
10.50		43	89
10.72	27/64	47	95



Dia	INCH	FL in MM	OAL in MM
10.80		47	95
11.00		47	95
11.11	7/16	47	95
11.20		47	95
11.50		47	95
11.51	29/64	47	95
11.80		47	95
11.91	15/32	51	102
12.00		51	102
12.20		51	102
12.30	31/64	51	102
12.50		51	102
12.70	1/2	51	102
12.80		51	102
13.00		51	102
13.10	33/64	51	102
13.20		51	102
13.40		54	107
13.49	17/32	54	107
13.50		54	107
13.80		54	107
13.89	35/64	54	107
14.00		54	107
14.25		56	111
14.29	9/16	56	111
14.50		56	111
14.68	37/64	56	111
14.75		56	111
15.00		56	111
15.08	19/32	58	115
15.25		58	115
15.50		58	115
15.75		58	115
15.87	5/8	58	115
16.00		58	115

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



STUB SERIES

IS:5100-1991, BS:328 (Part-1)-1986, DIN:1897

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
3.00		16	46
3.17	1/8	18	49
3.20		18	49
3.50		20	52
3.57	9/64	20	52
3.80		22	55
3.97	5/32	22	55
4.00		22	55
4.20		22	55
4.37	11/64	24	58
4.50		24	58
4.76	3/16	26	62
4.80		26	62
5.00		26	62
5.16	13/64	26	62
5.20		26	62
5.50		28	66
5.56	7/32	28	66
5.80		28	66
5.95	15/64	28	66
6.00		28	66
6.20		31	70
6.35	1/4	31	70
6.50		31	70
6.75	17/64	34	74
6.80		34	74
7.00		34	74
7.14	9/32	34	74
7.20		34	74
7.50		34	74
7.54	19/64	37	79
7.80		37	79
7.94	5/16	37	79



Dia	INCH	FL in MM	OAL in MM
8.00		37	79
8.20		37	79
8.33	21/64	37	79
8.50		37	79
8.73	11/32	40	84
8.80		40	84
9.00		40	84
9.13	23/64	40	84
9.20		40	84
9.50		40	84
9.52	3/8	43	89
9.80		43	89
9.92	25/64	43	89
10.00		43	89
10.20		43	89
10.32	13/32	43	89
10.50		43	89
10.72	27/64	47	95
10.80		47	95
11.00		47	95
11.11	7/16	47	95
11.20		47	95
11.50		47	95
11.51	29/64	47	95
11.80		47	95
11.91	15/32	51	102
12.00		51	102
12.20		51	102
12.30	31/64	51	102
12.50		51	102
12.70	1/2	51	102
12.80		51	102
13.00		51	102

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



STUB SERIES

IS:5100-1991, BS:328 (Part-1)-1986, DIN:1897

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
13.10	33/64	51	102
13.20		51	102
13.49	17/32	54	107
13.50		54	107
13.80		54	107
13.89	35/64	54	107
14.00		54	107
14.25		56	111
14.29	9/16	56	111
14.50		56	111
14.68	37/64	56	111
14.75		56	111
15.00		56	111
15.08	19/32	58	115
15.25		58	115
15.50		58	115
15.75		58	115
15.87	5/8	58	115
16.00		58	115



RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



STUB SERIES

IS:5100-1991, BS:328 (Part-1)-1986, DIN:1897

Heavy Web, POINT-135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
2.00		12	38
2.10		12	38
2.20		13	40
2.30		13	40
2.38	3/32	14	43
2.40		14	43
2.50		14	43
2.60		14	43
2.70		16	46
2.78	7/64	16	46
2.80		16	46
2.90		16	46
3.00		16	46
3.10		18	49
3.17	1/8	18	49
3.20		18	49
3.30		18	49
3.40		20	52
3.50		20	52
3.60		20	52
3.70		20	52
3.80		22	55
3.90		22	55
3.97	5/32	22	55
4.00		22	55
4.10		22	55
4.20		22	55
4.25		22	55
4.30		24	58
4.37	11/64	24	58
4.40		24	58
4.50		24	58
4.60		24	58
4.70		24	58
4.76	3/16	26	62



Dia	INCH	FL in MM	OAL in MM
4.80		26	62
4.90		26	62
5.00		26	62
5.10		26	62
5.16	13/64	26	62
5.20		26	62
5.30		26	62
5.40		28	66
5.50		28	66
5.60		28	66
5.70		28	66
5.80		28	66
5.90		28	66
5.95	15/64	28	66
6.00		28	66
6.10		31	70
6.20		31	70
6.30		31	70
6.35	1/4	31	70
6.40		31	70
6.50		31	70
6.60		31	70
6.70		31	70
6.75	17/64	34	74
6.80		34	74
6.90		34	74
7.00		34	74
7.10		34	74
7.14	9/32	34	74
7.20		34	74
7.30		34	74
7.40		34	74
7.50		34	74
7.54	19/64	37	79
7.60		37	79

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



STUB SERIES

IS:5100-1991, BS:328 (Part-1)-1986, DIN:1897

Heavy Web, POINT-135°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
7.70		37	79
7.80		37	79
7.90		37	79
7.94	5/16	37	79
8.00		37	79
8.10		37	79
8.20		37	79
8.30		37	79
8.33	21/64	37	79
8.40		37	79
8.50		37	79
8.60		40	84
8.70		40	84
8.73	11/32	40	84
8.80		40	84
8.90		40	84
9.00		40	84
9.10		40	84
9.13	23/64	40	84
9.20		40	84
9.30		40	84
9.40		40	84
9.50		40	84
9.52	3/8	43	89
9.60		43	89
9.70		43	89
9.80		43	89
9.90		43	89
9.92	25/64	43	89
10.00		43	89
10.20		43	89
10.32	13/32	43	89
10.50		43	89
10.72	27/64	47	95
10.80		47	95



Dia	INCH	FL in MM	OAL in MM
11.00		47	95
11.11	7/16	47	95
11.20		47	95
11.50		47	95
11.51	29/64	47	95
11.80		47	95
11.91	15/32	51	102
12.00		51	102
12.20		51	102
12.30	31/64	51	102
12.50		51	102
12.70	1/2	51	102
12.80		51	102
13.00		51	102
13.10	33/64	51	102
13.20		51	102
13.49	17/32	54	107
13.50		54	107
13.80		54	107
13.89	35/64	54	107
14.00		54	107
14.25		56	111
14.29	9/16	56	111
14.50		56	111
14.68	37/64	56	111
14.75		56	111
15.00		56	111
15.08	19/32	58	115
15.25		58	115
15.50		58	115
15.75		58	115
15.87	5/8	58	115
16.00		58	115

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



STUB SERIES - Parabolic

IS:5100-1991, BS:328 (Part-1)-1986, DIN:1897

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
3.00		16	46
3.10		18	49
3.17	1/8	18	49
3.20		18	49
3.30		18	49
3.40		20	52
3.50		20	52
3.57	9/64	20	52
3.60		20	52
3.70		20	52
3.80		22	55
3.90		22	55
3.97	5/32	22	55
4.00		22	55
4.10		22	55
4.20		22	55
4.30		24	58
4.37	11/64	24	58
4.40		24	58
4.50		24	58
4.60		24	58
4.70		24	58
4.76	3/16	26	62
4.80		26	62
4.90		26	62
5.00		26	62
5.10		26	62
5.16	13/64	26	62
5.20		26	62
5.30		26	62
5.40		28	66
5.50		28	66
5.56	7/32	28	66



Dia	INCH	FL in MM	OAL in MM
5.60		28	66
5.70		28	66
5.80		28	66
5.90		28	66
5.95	15/64	28	66
6.00		28	66
6.10		31	70
6.20		31	70
6.30		31	70
6.35	1/4	31	70
6.40		31	70
6.50		31	70
6.60		31	70
6.70		31	70
6.75	17/64	34	74
6.80		34	74
6.90		34	74
7.00		34	74
7.10		34	74
7.14	9/32	34	74
7.20		34	74
7.30		34	74
7.40		34	74
7.50		34	74
7.54	19/64	37	79
7.60		37	79
7.70		37	79
7.80		37	79
7.90		37	79
7.94	5/16	37	79
8.00		37	79
8.10		37	79
8.20		37	79

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



STUB SERIES - Parabolic

IS:5100-1991, BS:328 (Part-1)-1986, DIN:1897

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
8.30		37	79
8.33	21/64	37	79
8.40		37	79
8.50		37	79
8.60		40	84
8.70		40	84
8.73	11/32	40	84
8.80		40	84
8.90		40	84
9.00		40	84
9.10		40	84
9.13	23/64	40	84
9.20		40	84
9.30		40	84
9.40		40	84
9.50		40	84
9.52	3/8	43	89
9.60		43	89
9.70		43	89
9.80		43	89
9.90		43	89
9.92	25/64	43	89
10.00		43	89
10.20		43	89
10.32	13/32	43	89
10.50		43	89
10.72	27/64	47	95
10.80		47	95
11.00		47	95
11.11	7/16	47	95
11.20		47	95
11.50		47	95
11.51	29/64	47	95



Dia	INCH	FL in MM	OAL in MM
11.80		47	95
11.91	15/32	51	102
12.00		51	102
12.20		51	102
12.30	31/64	51	102
12.50		51	102
12.70	1/2	51	102
12.80		51	102
13.00		51	102
13.10	33/64	51	102
13.20		51	102
13.40		54	107
13.49	17/32	54	107
13.50		54	107
13.80		54	107
13.89	35/64	54	107
14.00		54	107
14.25		56	111
14.29	9/16	56	111
14.50		56	111
14.68	37/64	56	111
14.75		56	111
15.00		56	111
15.08	19/32	58	115
15.25		58	115
15.50		58	115
15.75		58	115
15.87	5/8	58	115
16.00		58	115

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered), Straw Gold

HSS Parallel Shank Twist Drills (LH)



STUB SERIES

Made to IS 5362:1991, ISO 235:1975

BS:328 (Part-1)1986, DIN 1897

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
1.00		6	26
1.10		7	28
1.19	3/64	8	30
1.20		8	30
1.30		8	30
1.40		9	32
1.50		9	32
1.59	1/16	10	34
1.60		10	34
1.70		10	34
1.80		11	36
1.90		11	36
1.98	5/64	12	38
2.00		12	38
2.10		12	38
2.20		13	40
2.30		13	40
2.38	3/32	14	43
2.40		14	43
2.50		14	43
2.60		14	43
2.70		16	46
2.78	7/64	16	46
2.80		16	46
2.90		16	46
3.00		16	46
3.10		18	49
3.17	1/8	18	49
3.20		18	49
3.30		18	49
3.40		20	52
3.50		20	52
3.57	9/64	20	52
3.60		20	52
3.70		20	52



Dia	INCH	FL in MM	OAL in MM
3.80		22	55
3.90		22	55
3.97	5/32	22	55
4.00		22	55
4.10		22	55
4.20		22	55
4.30		24	58
4.37	11/64	24	58
4.40		24	58
4.50		24	58
4.60		24	58
4.70		24	58
4.76	3/16	26	62
4.80		26	62
4.90		26	62
5.00		26	62
5.10		26	62
5.16	13/64	26	62
5.20		26	62
5.30		26	62
5.40		28	66
5.50		28	66
5.56	7/32	28	66
5.60		28	66
5.70		28	66
5.80		28	66
5.90		28	66
5.95	15/64	28	66
6.00		28	66
6.10		31	70
6.20		31	70
6.30		31	70
6.35	1/4	31	70
6.40		31	70

LH - Left hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



DOUBLE ENDED DRILLS

Tool Type 'N', 135° Split Point

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
2.50		10	43
2.78	7/64"	11	46
2.80		11	46
3.00		11	46
3.17	1/8"	13	49
3.20		13	49
3.30		13	49
3.50		13	52
3.57	9/64"	13	52
3.80		14	55
3.97	5/32"	14	55
4.00		14	55
4.10		14	55
4.20		14	55
4.25		14	55
4.50		16	58
4.75		16	58
4.76	3/16"	17	62
4.80		17	62
5.00		17	62
5.10		17	62



Dia	INCH	FL in MM	OAL in MM
5.50		19	66
5.56	7/32"	19	66
5.80		19	66
5.95	15/64"	19	66
6.00		19	66
6.20		21	70
6.35	1/4"	21	70
6.50		21	70
6.80		24	74
7.00		24	74
7.14	9/32"	24	74
7.20		24	74
7.50		24	74
7.94	5/16"	25	79
8.00		25	79
8.50		25	79
9.00		25	84
9.50		25	84
9.52	3/8"	25	89
10.00		25	89
10.20		25	89

LH - Left hand cutting

Other Finish available - Blue (Steam Tempered)

Parallel Shank Twist Drills (RH)



SPOTTING DRILLS

(Short length)

Tool Type 'N', Point Angle 90° or 120°

Ground Flutes - Bright Finish

Dia	INCH	FL in MM	OAL in MM
3.00		12	46
3.50		12	52
4.00		12	55
5.00		14	62
5.60		16	66
6.00		16	66
6.35	1/4	17	70
6.50		17	70
7.00		19	74
8.00		21	79
9.00		22	84
9.52	3/8	25	89
10.00		25	89
10.80		28	95
11.00		28	95
11.55		28	95
12.00		30	102
12.30	31/64	30	102
12.70	1/2	30	102
13.00		30	102
14.00		33.5	107
15.00		33.5	111
15.87	5/8	37.5	115
16.00		37.5	115

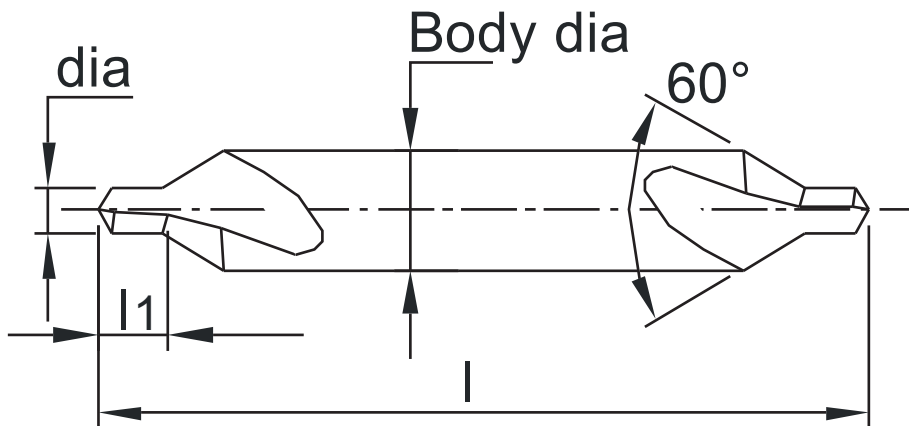


RH-Right hand cutting

Also available in 5%-Co. and 8% Co.

Other Finishes available - TiN

HSS CENTRE DRILLS



	Pilot Drill Dia in MM	Body Dia in MM	OAL in MM
TYPE-A As per IS: 6708-1977			
	1.00	3.15	33.5
	1.25	3.15	33.5
	1.60	4	37.5
	2.00	5	42
	2.50	6.3	47
	3.15	8	52
	4.00	10	59
	5.00	12.5	66
	6.30	16	74
	8.00	20	83

	Pilot Drill Dia in MM	Body Dia in MM	OAL in MM
TYPE-B As per IS: 6709-1977			
	1.00	4	37.5
	1.25	5	42
	1.60	6.3	47
	2.00	8	52
	2.50	10	59
	3.15	11.2	63
	4.00	14	70
	5.00	18	78
	6.30	20	83

No. B.S.	Pilot Drill Dia in MM	Body Dia in MM	OAL in MM
As per BS:328 Part-2 1950			
1	3/64	1/8	1.1/2
2	1/16	3/16	1.3/4
3	3/32	1/4	2
4	1/8	5/16	2.1/4
5	3/16	7/16	2.1/2
6	1/4	5/8	3
7	5/16	3/4	3.1/2

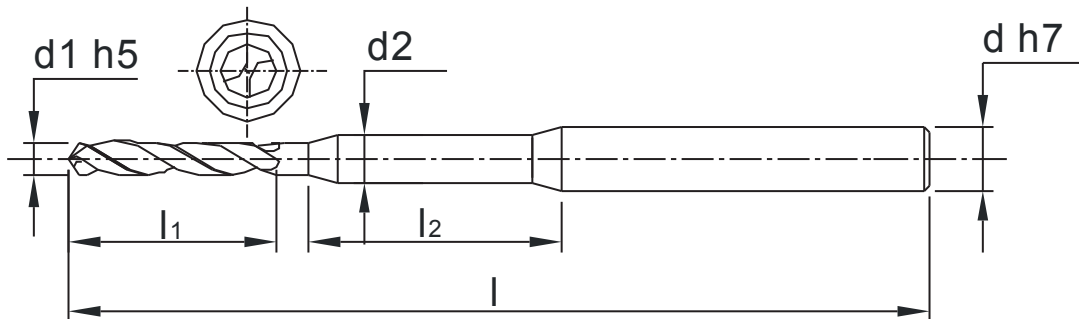
HSS-M2 Re-inforced Shank Twist Drills



CAPILLARY DRILLS

Helix - 20°, Point Angle 118°

Ground Flutes - Bright Finish



Dia (MM)	l ₁	l ₂	d ₁	d	l
0.5	15	15	1.2	1.5	60
0.6	15	15	1.2	1.5	60
0.7	15	15	1.2	1.5	60
0.8	15	15	1.2	1.5	60
0.9	15	15	1.2	1.5	60
1.0	15	15	1.2	1.5	60
1.1	15	15	1.2	1.5	60
1.2	15	15	1.2	1.5	60
1.3	15	15	1.3	1.5	60
1.4	15	15	1.4	1.5	60

These drills are used for drilling refill tips on PM-20 or equivalent machining centres HSS-M42-8% cobalt drills available for harder tip materials like SS and NiSi

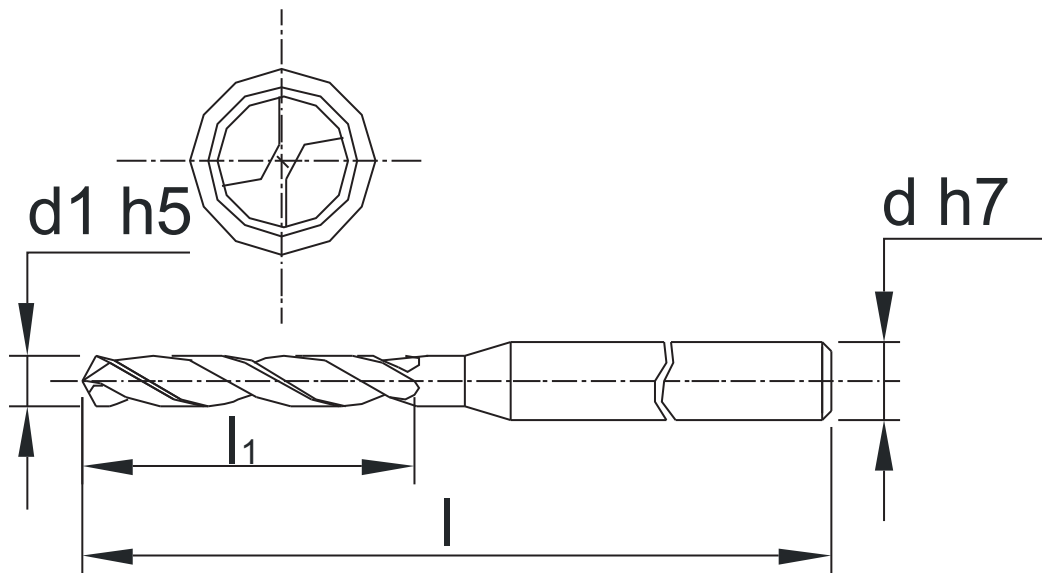
HSS-M2 Re-inforced Shank Twist Drills



CAPILLARY DRILLS

Helix - 20°, Point Angle 118°

Ground Flutes - Bright Finish



Dia (MM)	l_1	d	l
0.50	18	1.5	38
0.60	18	1.5	38
0.70	18	1.5	38
0.80	18	1.5	38
0.90	18	1.5	38

Dia (MM)	l_1	d	l
1.00	18	1.5	38
1.10	18	1.5	38
1.20	18	1.5	38
1.30	18	1.5	38
1.40	18	1.5	38

These drills are used for drilling refill tips on LX-24 or equivalent machining centres HSS-M42-8% cobalt drills available for harder tip materials like SS and NiSi

HSS Parallel Shank Twist Drills (RH)



LONG SERIES

Made to IS 5102:1991, ISO 235:1975, BS:328 (Part-1)1986, DIN 340

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	DG/LG	FL in MM	OAL in MM
0.50			12	32
0.60			17	40
0.70			21	44
0.80			25	50
0.90			29	52
1.00			33	56
1.02		60	33	56
1.04		59	33	56
1.07		58	37	60
1.09		57	37	60
1.10			37	60
1.18		56	41	65
1.19	3/64		41	65
1.20			41	65
1.30			41	65
1.32		55	41	65
1.40		54	45	70
1.50			45	70
1.51		53	50	76
1.59	1/16		50	76
1.60			50	76
1.61		52	50	76
1.70		51	50	76
1.78		50	53	80
1.80			53	80
1.85		49	53	80
1.90			53	80
1.93		48	56	85
1.98	5/64		56	85
1.99		47	56	85
2.00			56	85
2.06		46	56	85



MM	INCH	DG/LG	FL in MM	OAL in MM
2.08		45	56	85
2.10			56	85
2.18		44	59	90
2.20			59	90
2.26		43	59	90
2.30			59	90
2.35			59	90
2.37		42	62	95
2.38	3/32		62	95
2.40			62	95
2.44		41	62	95
2.49		40	62	95
2.50			62	95
2.53		39	62	95
2.58		38	62	95
2.60			62	95
2.64		37	62	95
2.65			62	95
2.70			66	100
2.71		36	66	100
2.78	7/64		66	100
2.79		35	66	100
2.80			66	100
2.82		34	66	100
2.87		33	66	100
2.90			66	100
2.95		32	66	100
3.00			66	100
3.05		31	89	106
3.10			89	106
3.17	1/8		89	106
3.20			89	106

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



LONG SERIES

Made to IS 5102:1991, ISO 235:1975, BS:328 (Part-1)1986, DIN 340

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	DG/LG	FL in MM	OAL in MM
3.26		30	89	106
3.30			89	106
3.35			89	106
3.40			73	112
3.45		29	73	112
3.50			73	112
3.57	9/64	28	73	112
3.60			73	112
3.66		27	73	112
3.70			73	112
3.73		26	73	112
3.75			73	112
3.80		25	78	119
3.86		24	78	119
3.90			78	119
3.91		23	78	119
3.97	5/32		78	119
3.99		22	78	119
4.00			78	119
4.04		21	78	119
4.09		20	78	119
4.10			78	119
4.20			78	119
4.22		19	78	119
4.25			78	119
4.30		18	82	126
4.37	11/64		82	126
4.39		17	82	126
4.40			82	126
4.50		16	82	126
4.57		15	82	126
4.60			82	126
4.62		14	82	126



MM	INCH	DG/LG	FL in MM	OAL in MM
4.70		13	82	126
4.75			82	126
4.76	3/16		87	132
4.80		12	87	132
4.85		11	87	132
4.90			87	132
4.92		10	87	132
4.98		9	87	132
5.00			87	132
5.06		8	87	132
5.10			87	132
5.11		7	87	132
5.16	13/64		87	132
5.18		6	87	132
5.20			87	132
5.22		5	87	132
5.30			87	132
5.31		4	91	139
5.40			91	139
5.41		3	91	139
5.50			91	139
5.56	7/32		91	139
5.60			91	139
5.61		2	91	139
5.70			91	139
5.79		1	91	139
5.80			91	139
5.90			91	139
5.94		A	91	139
5.95	15/64		91	139
6.00			91	139
6.05		B	97	148
6.10			97	148

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



LONG SERIES

Made to IS 5102:1991, ISO 235:1975, BS:328 (Part-1)1986, DIN 340

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	DG/LG	FL in MM	OAL in MM
6.15		C	97	148
6.20			97	148
6.25		D	97	148
6.30			97	148
6.35	1/4	E	97	148
6.40			97	148
6.50			97	148
6.53		F	97	148
6.60			97	148
6.63		G	97	148
6.70			97	148
6.75	17/64	H	102	156
6.80			102	156
6.90		I	102	156
7.00			102	156
7.03		J	102	156
7.10			102	156
7.14	9/32	K	102	156
7.20			102	156
7.30			102	156
7.37		L	102	156
7.40			102	156
7.49		M	102	156
7.50			102	156
7.54	19/64		109	165
7.60			109	165
7.67		N	109	165
7.70			109	165
7.80			109	165
7.90			109	165
7.94	5/16		109	165
8.00			109	165



MM	INCH	DG/LG	FL in MM	OAL in MM
8.03		O	109	165
8.10			109	165
8.20		P	109	165
8.30			109	165
8.33	21/64		109	165
8.40			109	165
8.43		Q	109	165
8.50			109	165
8.60			115	175
8.61		R	115	175
8.70			115	175
8.73	11/32		115	175
8.80			115	175
8.84		S	115	175
8.90			115	175
9.00			115	175
9.09		T	115	175
9.10			115	175
9.13	23/64		115	175
9.20			115	175
9.30			115	175
9.34		U	115	175
9.40			115	175
9.50			115	175
9.52	3/8		121	184
9.58		V	121	184
9.60			121	184
9.70			121	184
9.80		W	121	184
9.90			121	184
9.92	25/64		121	184
10.00			121	184

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



LONG SERIES

Made to IS 5102:1991, ISO 235:1975, BS:328 (Part-1)1986, DIN 340

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	DG/LG	FL in MM	OAL in MM
10.08		X	121	184
10.10			121	184
10.20			121	184
10.26		Y	121	184
10.30			121	184
10.32	13/32		121	184
10.40			121	184
10.49		Z	121	184
10.50			121	184
10.60			121	184
10.70			128	195
10.72	27/64		128	195
10.80			128	195
10.90			128	195
11.00			128	195
11.10			128	195
11.11	7/16		128	195
11.20			128	195
11.30			128	195
11.40			128	195
11.50			128	195
11.51	29/64		128	195
11.60			128	195
11.70			128	195
11.80			128	195
11.90			134	205
11.91	15/32		134	205
12.00			134	205
12.10			134	205
12.20			134	205
12.30	31/64		134	205



MM	INCH	DG/LG	FL in MM	OAL in MM
12.40			134	205
12.50			134	205
12.60			134	205
12.70	1/2		134	205
12.80			134	205
12.90			134	205
13.00			134	205
13.10	33/64		134	205
13.20			134	205
13.30			140	214
13.40			140	214
13.49	17/32		140	214
13.50			140	214
13.60			140	214
13.70			140	214
13.80			140	214
13.89	35/64		140	214
13.90			140	214
14.00			140	214
14.25			144	220
14.29	9/16		144	220
14.50			144	220
14.68	37/64		144	220
14.75			144	220
15.00			144	220
15.08	19/32		148	227
15.25			148	227
15.50			148	227
15.75			148	227
15.87	5/8		148	227
16.00			148	227

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



LONG SERIES

Made to IS 5102:1991, ISO 235:1975, BS:328 (Part-1)1986, DIN 340

Quick Helix - Type W

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
1.00		33	56
1.10		37	60
1.19	3/64	41	65
1.20		41	65
1.30		41	65
1.40		45	70
1.50		45	70
1.59	1/16	50	76
1.60		50	76
1.70		50	76
1.80		53	80
1.90		53	80
1.98	5/64	56	85
2.00		56	85
2.10		56	85
2.20		59	90
2.30		59	90
2.38	3/32	62	95
2.40		62	95
2.50		62	95
2.60		62	95
2.70		66	100
2.78	7/64	66	100
2.80		66	100
2.90		66	100
3.00		66	100
3.10		89	106
3.17	1/8	89	106
3.20		89	106
3.30		89	106
3.40		73	112
3.50		73	112
3.57	9/64	73	112



MM	INCH	FL in MM	OAL in MM
3.60		73	112
3.70		73	112
3.75		73	112
3.80		78	119
3.90		78	119
3.97	5/32	78	119
4.00		78	119
4.10		78	119
4.20		78	119
4.25		78	119
4.30		82	126
4.37	11/64	82	126
4.40		82	126
4.50		82	126
4.60		82	126
4.70		82	126
4.75		82	126
4.76	3/16	87	132
4.80		87	132
4.90		87	132
5.00		87	132
5.10		87	132
5.16	13/64	87	132
5.20		87	132
5.30		87	132
5.40		91	139
5.50		91	139
5.56	7/32	91	139
5.60		91	139
5.70		91	139
5.80		91	139
5.90		91	139
5.95	15/64	91	139

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



LONG SERIES

Made to IS 5102:1991, ISO 235:1975, BS:328 (Part-1)1986, DIN 340

Quick Helix - Type W

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
6.00		91	139
6.10		97	148
6.20		97	148
6.30		97	148
6.35	1/4	97	148
6.40		97	148
6.50		97	148
6.60		97	148
6.70		97	148
6.75	17/64	102	156
6.80		102	156
6.90		102	156
7.00		102	156
7.10		102	156
7.14	9/32	102	156
7.20		102	156
7.30		102	156
7.40		102	156
7.50		102	156
7.54	19/64	109	165
7.60		109	165
7.70		109	165
7.80		109	165



MM	INCH	FL in MM	OAL in MM
7.90		109	165
7.94	5/16	109	165
8.00		109	165
8.10		109	165
8.30		109	165
8.33	21/64	109	165
8.40		109	165
8.50		109	165
8.60		115	175
8.70		115	175
8.73	11/32	115	175
8.80		115	175
8.90		115	175
9.00		115	175
9.10		115	175
9.13	23/64	115	175
9.20		115	175
9.30		115	175
9.40		115	175
9.50		115	175
9.52	3/8	121	184
9.60		121	184
9.70		121	184

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



LONG SERIES

Made to IS 5102:1991, ISO 235:1975, BS:328 (Part-1)1986, DIN 340

Quick Helix - Type W

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
9.80		121	184
9.90		121	184
9.92	25/64	121	184
10.00		121	184
10.20		121	184
10.32	13/32	121	184
10.72	27/64	128	195
10.80		128	195
11.00		128	195
11.11	7/16	128	195
11.20		128	195
11.50		128	195
11.51	29/64	128	195
11.80		128	195
11.91	15/32	134	205
12.00		134	205
12.20		134	205
12.30	31/64	134	205
12.40		134	205
12.50		134	205
12.70	1/2	134	205
12.80		134	205
12.90		134	205



MM	INCH	FL in MM	OAL in MM
13.00		134	205
13.10	33/64	134	205
13.20		134	205
13.49	17/32	140	214
13.50		140	214
13.80		140	214
13.89	35/64	140	214
14.00		140	214
14.25		144	220
14.29	9/16	144	220
14.50		144	220
14.68	37/64	144	220
14.75		144	220
15.00		144	220
15.08	19/2	148	227
15.25		148	227
15.50		148	227
15.75		148	227
15.87	5/8	148	227
16.00		148	227

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Heavy Web, Point Angle 135° - Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
2.00		56	85
2.10		56	85
2.20		59	90
2.30		59	90
2.35		59	90
2.38	3/32	62	95
2.40		62	95
2.50		62	95
2.60		62	95
2.70		66	100
2.78	7/64	66	100
2.80		66	100
2.90		66	100
3.00		66	100
3.10		89	106
3.17	1/8	89	106
3.20		89	106
3.30		89	106
3.40		73	112
3.50		73	112
3.57	9/64	73	112
3.60		73	112
3.70		73	112
3.75		73	112



MM	INCH	FL in MM	OAL in MM
3.80		78	119
3.90		78	119
3.97	5/32	78	119
4.00		78	119
4.10		78	119
4.20		78	119
4.25		78	119
4.30		82	126
4.37	11/64	82	126
4.40		82	126
4.50		82	126
4.60		82	126
4.70		82	126
4.75		82	126
4.76	3/16	87	132
4.80		87	132
4.90		87	132
5.00		87	132
5.10		87	132
5.16	13/64	87	132
5.20		87	132
5.30		87	132
5.40		91	139
5.50		91	139

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt)

Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
5.56	7/32	91	139
5.60		91	139
5.70		91	139
5.80		91	139
5.90		91	139
5.95	15/64	91	139
6.00		91	139
6.10		97	148
6.20		97	148
6.25		97	148
6.30		97	148
6.35	1/4	97	148
6.40		97	148
6.50		97	148
6.60		97	148
6.70		97	148
6.75	17/64	102	156
6.80		102	156
6.90		102	156
7.00		102	156
7.10		102	156
7.14	9/32	102	156
7.20		102	156
7.30		102	156



MM	INCH	FL in MM	OAL in MM
7.40		102	156
7.50		102	156
7.54	19/64	109	165
7.60		109	165
7.70		109	165
7.80		109	165
7.90		109	165
7.94	5/16	109	165
8.00		109	165
8.10		109	165
8.20		109	165
8.30		109	165
8.33	21/64	109	165
8.40		109	165
8.50		109	165
8.60		115	175
8.70		115	175
8.73	11/32	115	175
8.80		115	175
8.90		115	175
9.00		115	175
9.10		115	175
9.13	23/64	115	175
9.20		115	175

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
9.30		115	175
9.40		115	175
9.50		115	175
9.52	3/8	121	184
9.60		121	184
9.70		121	184
9.80		121	184
9.90		121	184
9.92	25/64	121	184
10.00		121	184
10.20		121	184
10.32	13/32	121	184
10.50		121	184
10.72	27/64	128	195
10.80		128	195
11.00		128	195
11.11	7/16	128	195
11.20		128	195
11.50		128	195
11.51	29/64	128	195
11.80		128	195
11.91	15/32	134	205
12.00		134	205
12.20		134	205
12.30	31/64	134	205



MM	INCH	FL in MM	OAL in MM
12.50		134	205
12.70	1/2	134	205
12.80		134	205
13.00		134	205
13.10	33/64	134	205
13.20		134	205
13.40		140	214
13.49	17/32	140	214
13.50		140	214
13.80		140	214
13.89	35/64	140	214
14.00		140	214
14.25		144	220
14.29	9/16	144	220
14.50		144	220
14.68	37/64	144	220
14.75		144	220
15.00		144	220
15.08	19/32	148	227
15.25		148	227
15.50		148	227
15.75		148	227
15.87	5/8	148	227
16.00		148	227

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt)

Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Parabolic Flutes - Point 130° Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
3.00		66	100
3.10		89	106
3.17	1/8	89	106
3.20		89	106
3.30		89	106
3.40		73	112
3.50		73	112
3.57	9/64	73	112
3.60		73	112
3.70		73	112
3.75		73	112
3.80		78	119
3.90		78	119
3.97	5/32	78	119
4.00		78	119
4.10		78	119
4.20		78	119
4.25		78	119
4.30		82	126
4.37	11/64	82	126
4.40		82	126
4.50		82	126
4.60		82	126
4.70		82	126
4.75		82	126
4.76	3/16	87	132
4.80		87	132
4.90		87	132
5.00		87	132
5.10		87	132
5.16	13/64	87	132
5.20		87	132
5.30		87	132



MM	INCH	FL in MM	OAL in MM
5.40		91	139
5.50		91	139
5.56	7/32	91	139
5.60		91	139
5.70		91	139
5.80		91	139
5.90		91	139
5.95	15/64	91	139
6.00		91	139
6.10		97	148
6.20		97	148
6.25		97	148
6.30		97	148
6.35	1/4	97	148
6.40		97	148
6.50		97	148
6.60		97	148
6.70		97	148
6.75	17/64	102	156
6.80		102	156
6.90		102	156
7.00		102	156
7.10		102	156
7.14	9/32	102	156
7.20		102	156
7.30		102	156
7.40		102	156
7.50		102	156
7.54	19/64	109	165
7.60		109	165
7.70		109	165
7.80		109	165
7.90		109	165

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt)

Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Parabolic Flutes - Point 130° Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
7.94	5/16	109	165
8.00		109	165
8.10		109	165
8.20		109	165
8.30		109	165
8.33	21/4	109	165
8.40		109	165
8.50		109	165
8.60		115	175
8.70		115	175
8.73	11/32	115	175
8.80		115	175
8.90		115	175
9.00		115	175
9.10		115	175
9.13	23/64	115	175
9.20		115	175
9.30		115	175
9.40		115	175
9.50		115	175
9.52	3/8	121	184
9.60		121	184
9.70		121	184
9.80		121	184
9.90		121	184
9.92	25/64	121	184
10.00		121	184
10.20		121	184
10.32	13/32	121	184
10.50		121	184
10.72	27/64	128	195
10.80		128	195
11.00		128	195



MM	INCH	FL in MM	OAL in MM
11.11	7/16	128	195
11.20		128	195
11.50		128	195
11.51	29/64	128	195
11.80		128	195
11.91	15/32	134	205
12.00		134	205
12.20		134	205
12.30	31/64	134	205
12.50		134	205
12.60		134	205
12.70	1/2	134	205
12.80		134	205
13.00		134	205
13.10	33/64	134	205
13.20		134	205
13.49	17/32	140	214
13.50		140	214
13.80		140	214
13.89	35/64	140	214
14.00		140	214
14.25		144	220
14.29	9/16	144	220
14.50		144	220
14.68	37/64	144	220
14.75		144	220
15.00		144	220
15.08	19/32	148	227
15.25		148	227
15.50		148	227
15.75		148	227
15.87	5/8	148	227
16.00		148	227

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M42 (8% cobalt)

Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Heavy Web, Point Angle 135° - Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
2.00		56	85
2.10		56	85
2.20		59	90
2.30		59	90
2.38	3/32	62	95
2.40		62	95
2.50		62	95
2.60		62	95
2.65		62	95
2.70		66	100
2.78	7/64	66	100
2.80		66	100
2.90		66	100
3.00		66	100
3.10		89	106
3.17	1/8	89	106
3.20		89	106
3.30		89	106
3.40		73	112
3.50		73	112
3.57	9/64	73	112
3.60		73	112
3.70		73	112
3.75		73	112



MM	INCH	FL in MM	OAL in MM
3.80		78	119
3.90		78	119
3.97	5/32	78	119
4.00		78	119
4.10		78	119
4.20		78	119
4.25		78	119
4.30		82	126
4.37	11/64	82	126
4.40		82	126
4.50		82	126
4.60		82	126
4.70		82	126
4.75		82	126
4.76	3/16	87	132
4.80		87	132
4.90		87	132
5.00		87	132
5.10		87	132
5.16	13/64	87	132
5.20		87	132
5.30		87	132
5.40		91	139
5.50		91	139

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
5.56	7/32	91	139
5.60		91	139
5.70		91	139
5.80		91	139
5.90		91	139
5.95	15/64	91	139
6.00		91	139
6.10		97	148
6.20		97	148
6.25		97	148
6.30		97	148
6.35	1/4	97	148
6.40		97	148
6.50		97	148
6.60		97	148
6.70		97	148
6.75	17/64	102	156
6.80		102	156
6.90		102	156
7.00		102	156
7.10		102	156
7.14	9/32	102	156
7.20		102	156
7.30		102	156



MM	INCH	FL in MM	OAL in MM
7.40		102	156
7.50		102	156
7.54	19/64	109	165
7.60		109	165
7.70		109	165
7.80		109	165
7.90		109	165
7.94	5/16	109	165
8.00		109	165
8.10		109	165
8.20		109	165
8.30		109	165
8.33	21/64	109	165
8.40		109	165
8.50		109	165
8.60		115	175
8.70		115	175
8.73	11/32	115	175
8.80		115	175
8.90		115	175
9.00		115	175
9.10		115	175
9.13	23/64	115	175
9.20		115	175

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
9.30		115	175
9.40		115	175
9.50		115	175
9.52	3/8	121	184
9.60		121	184
9.70		121	184
9.80		121	184
9.90		121	184
9.92	25/64	121	184
10.00		121	184
10.20		121	184
10.32	13/32	121	184
10.50		121	184
10.72	27/64	128	195
10.80		128	195
11.00		128	195
11.11	7/16	128	195
11.20		128	195
11.50		128	195
11.51	29/64	128	195
11.80		128	195
11.91	15/32	134	205
12.00		134	205
12.20		134	205



MM	INCH	FL in MM	OAL in MM
12.30	31/64	134	205
12.50		134	205
12.70	1/2	134	205
12.80		134	205
13.00		134	205
13.10	33/64	134	205
13.20		134	205
13.49	17/32	140	214
13.50		140	214
13.80		140	214
13.89	35/64	140	214
14.00		140	214
14.25		144	220
14.29	9/16	144	220
14.50		144	220
14.68	37/64	144	220
14.75		144	220
15.00		144	220
15.08	19/32	148	227
15.25		148	227
15.50		148	227
15.75		148	227
15.87	5/8	148	227
16.00		148	227

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M42 (8% cobalt)

Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Parabolic Flutes - Point 130° Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
3.00		66	100
3.05		89	106
3.10		89	106
3.17	1/8	89	106
3.20		89	106
3.26		89	106
3.30		89	106
3.35		89	106
3.40		73	112
3.45		73	112
3.50		73	112
3.57	9/64	73	112
3.60		73	112
3.66		73	112
3.70		73	112
3.73		73	112
3.75		73	112
3.80		78	119
3.86		78	119
3.90		78	119
3.91		78	119
3.97	5/32	78	119
3.99		78	119
4.00		78	119
4.04		78	119
4.09		78	119
4.10		78	119
4.20		78	119
4.22		78	119
4.25		78	119
4.30		82	126
4.37	11/64	82	126
4.39		82	126



MM	INCH	FL in MM	OAL in MM
4.40		82	126
4.50		82	126
4.57		82	126
4.60		82	126
4.62		82	126
4.70		82	126
4.75		82	126
4.76	3/16	87	132
4.80		87	132
4.85		87	132
4.90		87	132
4.92		87	132
4.98		87	132
5.00		87	132
5.06		87	132
5.10		87	132
5.11		87	132
5.16	13/64	87	132
5.18		87	132
5.20		87	132
5.22		87	132
5.30		87	132
5.31		91	139
5.40		91	139
5.41		91	139
5.50		91	139
5.56	7/32	91	139
5.60		91	139
5.61		91	139
5.70		91	139
5.79		91	139
5.80		91	139
5.90		91	139

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M42 (8% cobalt)

Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Parabolic Flutes - Point 130°- Web thinned

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
5.94		91	139
5.95	15/64	91	139
6.00		91	139
6.04		97	148
6.10		97	148
6.15		97	148
6.20		97	148
6.25		97	148
6.30		97	148
6.35	1/4	97	148
6.40		97	148
6.50		97	148
6.53		97	148
6.60		97	148
6.63		97	148
6.70		97	148
6.75	17/64	102	156
6.80		102	156
6.90		102	156
7.00		102	156
7.03		102	156
7.10		102	156
7.14	9/32	102	156
7.20		102	156
7.30		102	156
7.37		102	156
7.40		102	156
7.49		102	156
7.50		102	156
7.54	19/64	109	165
7.60		109	165
7.67		109	165
7.70		109	165



MM	INCH	FL in MM	OAL in MM
7.80		109	165
7.90		109	165
7.94	5/16	109	165
8.00		109	165
8.03		109	165
8.10		109	165
8.20		109	165
8.30		109	165
8.33	21/64	109	165
8.40		109	165
8.43		109	165
8.50		109	165
8.60		115	175
8.61		115	175
8.70		115	175
8.73	11/32	115	175
8.80		115	175
8.84		115	175
8.90		115	175
9.00		115	175
9.09		115	175
9.10		115	175
9.13	23/64	115	175
9.20		115	175
9.30		115	175
9.34		115	175
9.40		115	175
9.50		115	175
9.52	3/8	121	184
9.58		121	184
9.60		121	184
9.70		121	184
9.80		121	184

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M42 (8% cobalt)

Parallel Shank Twist Drills (RH)

LONG SERIES

IS:5102-1969, BS:328 (Part-1)1986, DIN 340

Parabolic Flutes - Point 130° Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
9.90		121	184
9.92	25/64	121	184
10.00		121	184
10.08		121	184
10.10		121	184
10.20		121	184
10.26		121	184
10.30		121	184
10.32	13/32	121	184
10.40		121	184
10.49		121	184
10.50		121	184
10.60		121	184
10.70		128	195
10.72	27/64	128	195
10.80		128	195
10.90		128	195
11.00		128	195
11.10		128	195
11.11	7/16	128	195
11.20		128	195
11.30		128	195
11.40		128	195
11.50		128	195
11.51	29/64	128	195
11.60		128	195
11.70		128	195
11.80		128	195
11.90		134	205
11.91	15/32	134	205
12.00		134	205
12.10		134	205



MM	INCH	FL in MM	OAL in MM
12.20		134	205
12.30	31/64	134	205
12.40		134	205
12.50		134	205
12.60		134	205
12.70	1/2	134	205
12.80		134	205
12.90		134	205
13.00		134	205
13.10	33/64	134	205
13.20		134	205
13.30		140	214
13.40		140	214
13.49	17/32	140	214
13.50		140	214
13.60		140	214
13.70		140	214
13.80		140	214
13.89	35/64	140	214
13.90		140	214
14.00		140	214
14.25		144	220
14.29	9/16	144	220
14.50		144	220
14.68	37/64	144	220
14.75		144	220
15.00		144	220
15.08	19/32	148	227
15.25		148	227
15.50		148	227
15.75		148	227
15.87	5/8	148	227
16.00		148	227

RH - Right hand cutting

Other Finishes available - TiN, Blue (Steam Tempered)

HSS Parallel Shank Twist Drills (RH)



EXTRA-LONG SERIES

Geometry as per IS:7823-2005

Tool type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL	OAL	FL	OAL	FL	OAL	FL	OAL	FL	OAL	FL	OAL	FL	OAL	FL	OAL	FL	OAL
0.80	1/32	66	100	80	125														
1.00		66	100	80	125	100	150												
1.20	3/64	66	100	80	125	100	150												
1.50	1/16	66	100	80	125	100	150												
2.00	5/64			80	125	100	150	125	175	150	200								
2.50	3/32			80	125	100	150	125	175	150	200								
2.80	7/64					100	150	125	175	150	200								
3.00	1/8					100	150	125	175	150	200	175	225	200	250	250	300		
3.50	9/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
4.00	5/32					100	150	125	175	150	200	175	225	200	250	250	300	300	350
4.50	11/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
5.00	3/16					100	150	125	175	150	200	175	225	200	250	250	300	300	350
5.50	7/32					100	150	125	175	150	200	175	225	200	250	250	300	300	350
6.00	15/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
6.50	1/4									150	200			200	250	250	300	300	350
7.00										150	200			200	250	250	300	300	350
7.50	9/32									150	200			200	250	250	300	300	350
8.00	5/16									150	200			200	250	250	300	300	350
8.50										150	200			200	250	250	300	300	350



9.00	11/32									150	200			200	250	250	300	300	350
9.50	3/8									150	200			200	250	250	300	300	350
10.00										150	200			200	250	250	300	300	350
10.50	13/32									150	200			200	250	250	300	300	350
11.00	7/16													200	250	250	300	300	350
11.50														200	250	250	300	300	350
12.00	15/32													200	250	250	300	300	350
12.50	1/2													200	250	250	300	300	350
13.00														200	250	250	300	300	350

Other Finishes available - TiN, Blue (Steam Tempered)

Also tool type 'W' (quick)-Point angle 130°

HSS Parallel Shank Twist Drills (RH)



EXTRA-LONG SERIES

Parabolic Flutes

Point Angle 130°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL	OALF	LC	AL	FL	OAL	FL	OAL	FL	OAL	FL	OAL	FL	OALF	LC	AL	FL	OAL
3.0	1/8					100	150	125	175	150	200	175	225	200	250	250	300		
3.5	9/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
4.0	5/32					100	150	125	175	150	200	175	225	200	250	250	300	300	350
4.5	11/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
5.0	3/16					100	150	125	175	150	200	175	225	200	250	250	300	300	350
5.5	7/32					100	150	125	175	150	200	175	225	200	250	250	300	300	350
6.0	15/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
6.5	1/4									150	200			200	250	250	300	300	350
7.0										150	200			200	250	250	300	300	350
7.5	9/32									150	200			200	250	250	300	300	350
8.0	5/16									150	200			200	250	250	300	300	350
8.5										150	200			200	250	250	300	300	350
9.0	11/32									150	200			200	250	250	300	300	350
9.5	3/8									150	200			200	250	250	300	300	350
10.0										150	200			200	250	250	300	300	350
10.5	13/32									150	200			200	250	250	300	300	350
11.0	7/16													200	250	250	300	300	350
11.5														200	250	250	300	300	350



12.0	15/32													200	250	250	300	300	350
12.5	1/2													200	250	250	300	300	350
13.0														200	250	250	300	300	350

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



EXTRA-LONG SERIES

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL	OALF	LO	AL	FL	OAL	FL	OAL	FL	OAL	FL	OAL	FL	OALF	LO	AL	FL	OAL
0.8	1/32	66	100	80	125														
1.0		66	100	80	125	100	150												
1.2	3/64	66	100	80	125	100	150												
1.5	1/16	66	100	80	125	100	150												
2.0	5/64			80	125	100	150	125	175	150	200								
2.5	3/32			80	125	100	150	125	175	150	200								
2.8	7/64					100	150	125	175	150	200								
3.0	1/8					100	150	125	175	150	200	175	225	200	250	250	300		
3.5	9/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
4.0	5/32					100	150	125	175	150	200	175	225	200	250	250	300	300	350
4.5	11/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
5.0	3/16					100	150	125	175	150	200	175	225	200	250	250	300	300	350
5.5	7/32					100	150	125	175	150	200	175	225	200	250	250	300	300	350
6.0	15/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
6.5	1/4									150	200			200	250	250	300	300	350
7.0										150	200			200	250	250	300	300	350
7.5	9/32									150	200			200	250	250	300	300	350
8.0	5/16									150	200			200	250	250	300	300	350
8.5										150	200			200	250	250	300	300	350



9.0	11/32									150	200			200	250	250	300	300	350
9.5	3/8									150	200			200	250	250	300	300	350
10.0										150	200			200	250	250	300	300	350
10.5	13/32									150	200			200	250	250	300	300	350
11.0	7/16													200	250	250	300	300	350
11.5														200	250	250	300	300	350
12.0	15/32													200	250	250	300	300	350
12.5	1/2													200	250	250	300	300	350
13.0														200	250	250	300	300	350

Other Finishes available - TiN, Blue (Steam Tempered)

Also tool type 'W' (quick)-Point angle 130°

HSS-M35 (5% cobalt) Parallel Shank Twist Drills (RH)



EXTRA-LONG SERIES

Parabolic Flutes

Point Angle 130°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL	OALF	LC	AL	FL	OAL	FL	OAL	FL	OAL	FL	OAL	FL	OALF	LC	AL	FL	OAL
3.0	1/8					100	150	125	175	150	200	175	225	200	250	250	300		
3.5	9/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
4.0	5/32					100	150	125	175	150	200	175	225	200	250	250	300	300	350
4.5	11/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
5.0	3/16					100	150	125	175	150	200	175	225	200	250	250	300	300	350
5.5	7/32					100	150	125	175	150	200	175	225	200	250	250	300	300	350
6.0	15/64					100	150	125	175	150	200	175	225	200	250	250	300	300	350
6.5	1/4									150	200			200	250	250	300	300	350
7.0										150	200			200	250	250	300	300	350
7.5	9/32									150	200			200	250	250	300	300	350
8.0	5/16									150	200			200	250	250	300	300	350
8.5										150	200			200	250	250	300	300	350
9.0	11/32									150	200			200	250	250	300	300	350
9.5	3/8									150	200			200	250	250	300	300	350
10.0										150	200			200	250	250	300	300	350
10.5	13/32									150	200			200	250	250	300	300	350
11.0	7/16													200	250	250	300	300	350
11.5														200	250	250	300	300	350
12.0	15/32													200	250	250	300	300	350



12.5	1/2													200	250	250	300	300	350
13.0														200	250	250	300	300	350

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



EXTRA-LONG SERIES

Tool Type 'N', Point Angle 118°

Ground Flutes-Bright Finish

MM	INCH	FL in MM	OAL in MM
2.00	5/64	80	125
2.00	5/64	100	150
2.00	5/64	125	175
2.00	5/64	150	200
2.50	5/32	80	125
2.50	5/32	100	150
2.50	5/32	125	175
2.50	5/32	150	200
2.80	7/64	100	150
2.80	7/64	125	175
2.80	7/64	150	200
3.00	1/8	100	150
3.00	1/8	125	175
3.00	1/8	150	200
3.00	1/8	175	225
3.00	1/8	200	250
3.00	1/8	250	300
3.50	9/64	100	150
3.50	9/64	125	175
3.50	9/64	150	200
3.50	9/64	175	225
3.50	9/64	200	250
3.50	9/64	250	300
3.50	9/64	300	350
4.00	5/32	100	150
4.00	5/32	125	175
4.00	5/32	150	200



MM	INCH	FL in MM	OAL in MM
4.00	5/32	175	225
4.00	5/32	200	250
4.00	5/32	250	300
4.00	5/32	300	350
4.50	11/64	100	150
4.50	11/64	125	175
4.50	11/64	150	200
4.50	11/64	175	225
4.50	11/64	200	250
4.50	11/64	250	300
4.50	11/64	300	350
5.00	3/16	100	150
5.00	3/16	125	175
5.00	3/16	150	200
5.00	3/16	175	225
5.00	3/16	200	250
5.00	3/16	250	300
5.00	3/16	300	350
5.50	7/32	100	150
5.50	7/32	125	175
5.50	7/32	150	200
5.50	7/32	175	225
5.50	7/32	200	250
5.50	7/32	250	300
5.50	7/32	300	350
6.00	15/64	100	150
6.00	15/64	125	175

Other Finish available - TiN, Blue (Steam Tempered)
135° - split point available

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



EXTRA-LONG SERIES

Tool Type 'N', Point Angle 118°

Ground Flutes-Bright Finish

MM	INCH	FL in MM	OAL in MM
6.00	15/64	150	200
6.00	15/64	175	225
6.00	15/64	200	250
6.00	15/64	250	300
6.00	15/64	300	350
6.50	1/4	150	200
6.50	1/4	200	250
6.50	1/4	250	300
6.50	1/4	300	350
7.00		150	200
7.00		200	250
7.00		250	300
7.00		300	350
7.50	9/32	150	200
7.50	9/32	200	250
7.50	9/32	250	300
7.50	9/32	300	350
8.00	5/16	150	200
8.00	5/16	200	250
8.00	5/16	250	300
8.00	5/16	300	350
8.50		150	200
8.50		200	250
8.50		250	300
8.50		300	350
9.00	11/32	150	200



MM	INCH	FL in MM	OAL in MM
9.00	11/32	250	300
9.00	11/32	300	350
9.50	3/8	150	200
9.50	3/8	200	250
9.50	3/8	250	300
9.50	3/8	300	350
10.00		150	200
10.00		200	250
10.00		250	300
10.00		300	350
10.50	13/32	150	200
10.50	13/32	200	250
10.50	13/32	250	300
10.50	13/32	300	350
11.00	7/16	200	250
11.00	7/16	250	300
11.00	7/16	300	350
11.50		200	250
11.50		250	300
11.50		300	350
12.00	15/32	200	250
12.00	15/32	250	300
12.00	15/32	300	350
12.50	1/2	200	250
12.50	1/2	250	300
12.50	1/2	300	350

Other Finish available - TiN, Blue (Steam Tempered)
135° - split point available

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



EXTRA LONG SERIES

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
3.00	1/8	100	150
3.00	1/8	125	175
3.00	1/8	150	200
3.00	1/8	175	225
3.00	1/8	200	250
3.00	1/8	250	300
3.50	9/64	100	150
3.50	9/64	125	175
3.50	9/64	150	200
3.50	9/64	175	225
3.50	9/64	200	250
3.50	9/64	250	300
3.50	9/64	300	350
4.00	5/32	100	150
4.00	5/32	125	175
4.00	5/32	150	200
4.00	5/32	175	225
4.00	5/32	200	250
4.00	5/32	250	300
4.00	5/32	300	350
4.50	11/64	100	150
4.50	11/64	125	175
4.50	11/64	150	200
4.50	11/64	175	225
4.50	11/64	200	250



MM	INCH	FL in MM	OAL in MM
4.50	11/64	250	300
4.50	11/64	300	350
5.00	3/16	100	150
5.00	3/16	125	175
5.00	3/16	150	200
5.00	3/16	175	225
5.00	3/16	200	250
5.00	3/16	250	300
5.00	3/16	300	350
5.50	7/32	100	150
5.50	7/32	125	175
5.50	7/32	150	200
5.50	7/32	175	225
5.50	7/32	200	250
5.50	7/32	250	300
5.50	7/32	300	350
6.00	15/64	100	150
6.00	15/64	125	175
6.00	15/64	150	200
6.00	15/64	175	225
6.00	15/64	200	250
6.00	15/64	250	300
6.00	15/64	300	350
6.50	1/4	150	200
6.50	1/4	200	250

Other Finish available - TiN, Blue (Steam Tempered)

HSS-M42 (8% cobalt) Parallel Shank Twist Drills (RH)



EXTRA LONG SERIES

Parabolic Flutes - Point Angle 130°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM
6.50	1/4	250	300
6.50	1/4	300	350
7.00		150	200
7.00		200	250
7.00		250	300
7.00		300	350
7.50	9/32	150	200
7.50	9/32	200	250
7.50	9/32	250	300
7.50	9/32	300	350
8.00	5/16	150	200
8.00	5/16	200	250
8.00	5/16	250	300
8.00	5/16	300	350
8.50		150	200
8.50		200	250
8.50		250	300
8.50		300	350
9.00	11/32	150	200
9.00	11/32	200	250
9.00	11/32	250	300
9.00	11/32	300	350
9.50	3/8	150	200



MM	INCH	FL in MM	OAL in MM
9.50	3/8	200	250
9.50	3/8	250	300
9.50	3/8	300	350
10.00		150	200
10.00		200	250
10.00		250	300
10.00		300	350
10.50	13/32	150	200
10.50	13/32	200	250
10.50	13/32	250	300
10.50	13/32	300	350
11.00	7/16	200	250
11.00	7/16	250	300
11.00	7/16	300	350
11.50		200	250
11.50		250	300
11.50		300	350
12.00	15/32	200	250
12.00	15/32	250	300
12.00	15/32	300	350
12.50	1/2	200	250
12.50	1/2	250	300
12.50	1/2	300	350

Other Finish available - TiN, Blue (Steam Tempered)

HSS TAPER SHANK TWIST DRILLS



TAPER SHANK STANDARD SERIES

Made to IS:5103-1969, ISO 235:1975, BS:328 (Part-1)1986, DIN:345

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	DG/LG
3.00		33	114	1
3.10		36	117	1
3.17	1/8	36	117	1
3.20		36	117	1
3.30		36	117	1
3.40		39	120	1
3.50		39	120	1
3.75	9/64	39	120	1
3.70		39	120	1
3.75		39	120	1
3.80		43	124	1
3.90		43	124	1
3.97	5/32	43	124	1
4.00		43	124	1
4.10		43	124	1
4.20		43	124	1
4.25		43	124	1
4.30		47	128	1
4.37	11/64	47	128	1
4.40		47	128	1
4.50		47	128	1
4.60		47	128	1
4.76	3/16	52	133	1
4.80		52	133	1
4.90		52	133	1
5.00		52	133	1
5.10		52	133	1
5.16	13/64	52	133	1
5.20		52	133	1
5.25		52	133	1
5.30		52	133	1



MM	INCH	FL in MM	OAL in MM	DG/LG
5.40		57	138	1
5.50		57	138	1
5.56	7/32	57	138	1
5.60		57	138	1
5.70		57	138	1
5.75		57	138	1
5.80		57	138	1
5.90		57	138	1
5.95	15/64	57	138	1
6.00		57	138	1
6.10		63	144	1
6.20		63	144	1
6.25		63	144	1
6.30		63	144	1
6.35	1/4	63	144	1
6.40		63	144	1
6.50		63	144	1
6.60		63	144	1
6.70		63	144	1
6.75	17/64	69	150	1
6.80		69	150	1
6.90		69	150	1
7.00		69	150	1
7.50		69	150	1
7.54	19/64	75	156	1
7.60		75	156	1
7.70		75	156	1
7.80		75	156	1
7.90		75	156	1
7.94	5/16	75	156	1
8.00		75	156	1

Other Finish available - TiN, Blue (Steam Tempered)
Also tool type 'H' (slow) & type 'W' (quick)

HSS TAPER SHANK TWIST DRILLS



TAPER SHANK STANDARD SERIES

Made to IS:5103-1969, ISO 235:1975, BS:328 (Part-1)1986, DIN:345

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	DG/LG
8.10		75	156	1
8.20		75	156	1
8.30		75	156	1
8.33	21/64	75	156	1
8.40		75	156	1
8.50		75	156	1
8.60		81	162	1
8.70		81	162	1
8.73	11/32	81	162	1
8.80		81	162	1
8.90		81	162	1
9.00		81	162	1
9.10		81	162	1
9.13	23/64	81	162	1
9.20		81	162	1
9.30		81	162	1
9.40		81	162	1
9.50		81	162	1
9.53	3/8	87	168	1
9.60		87	168	1
9.70		87	168	1
9.80		87	168	1
9.90		87	168	1
9.92	25/64	87	168	1
10.00		87	168	1
10.10		87	168	1
10.20		87	168	1
10.25		87	168	1
10.30		87	168	1
10.32	13/32	87	168	1
10.40		87	168	1



MM	INCH	FL in MM	OAL in MM	DG/LG
10.50		87	168	1
10.60		94	175	1
10.70		94	175	1
10.80		94	175	1
10.80		94	175	1
10.90		94	175	1
11.00		94	175	1
11.10		94	175	1
11.20		94	175	1
11.30		94	175	1
11.40		94	175	1
11.50		94	175	1
11.51	29/64	94	175	1
11.60		94	175	1
11.70		94	175	1
11.80		94	175	1
11.90		101	182	1
12.00		101	182	1
12.10		101	182	1
12.20		101	182	1
12.30	31/64	101	182	1
12.40		101	182	1
12.50		101	182	1
12.60		101	182	1
12.70	1/2	101	182	1
12.80		101	182	1
12.90		101	182	1
13.00		101	182	1
13.10	33/64	101	182	1
13.20		101	182	1
13.30		108	189	1

Other Finish available - TiN, Blue (Steam Tempered)
Also tool type 'H' (slow) & type 'W' (quick)

HSS TAPER SHANK TWIST DRILLS



TAPER SHANK STANDARD SERIES

Made to IS:5103-1969, ISO 235:1975, BS:328 (Part-1)1986, DIN:345

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	DG/LG
13.40		108	189	1
13.49	17/32	108	189	1
13.50		108	189	1
13.60		108	189	1
13.70		108	189	1
13.80		108	189	1
13.89	35/64	108	189	1
13.90		108	189	1
14.00		108	189	1
14.25		114	212	2
14.29	9/16	114	212	2
14.50		114	212	2
14.68	37/64	114	212	2
14.75		114	212	2
15.00		114	212	2
15.08	19/32	120	218	2
15.25		120	218	2
15.48	39/64	120	218	2
15.50		120	218	2
15.75		120	218	2
15.88	5/8	120	218	2
16.00		120	218	2
16.25		125	223	2
16.27	11/16	125	223	2
16.50		125	223	2
16.67	21/32	125	223	2
16.75		125	223	2
17.00		125	223	2
17.07	43/64	130	228	2
17.25		130	228	2
17.46	11/64	130	228	2



Other Finish available - TiN, Blue (Steam Tempered)
Also tool type 'H' (slow) & type 'W' (quick)

HSS-M35 (5% cobalt) Taper Shank Twist Drills (RH)



TAPER SHANK STANDARD SERIES

IS:5103-1969, BS:328 (Part-1)1986, ISO 235:1975, DIN 345

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	DG/LG
3.00		33	114	1
3.17	1/8	36	117	1
3.20		36	117	1
3.50		39	120	1
3.55	9/64	39	120	1
3.80		43	124	1
3.97	5/32	43	124	1
4.00		43	124	1
4.20		43	124	1
4.37	11/64	47	128	1
4.50		47	128	1
4.76	3/16	52	133	1
4.80		52	133	1
5.00		52	133	1
5.16	13/64	52	133	1
5.20		52	133	1
5.50		57	138	1
5.56	7/32	57	138	1
5.80		57	138	1
5.95	15/64	57	138	1
6.00		57	138	1
6.20		63	144	1
6.35	1/4	63	144	1
6.50		63	144	1
6.75	17/64	69	150	1
6.80		69	150	1
7.00		69	150	1



MM	INCH	FL in MM	OAL in MM	DG/LG
7.50		69	150	1
7.54	19/64	75	156	1
7.80		75	156	1
7.94	5/16	75	156	1
8.00		75	156	1
8.20		75	156	1
8.33	21/64	75	156	1
8.50		75	156	1
8.73	11/32	81	162	1
8.80		81	162	1
9.00		81	162	1
9.13	23/64	81	162	1
9.20		81	162	1
9.50		81	162	1
9.53	3/8	87	168	1
9.80		87	168	1
9.92	25/64	87	168	1
10.00		87	168	1
10.20		87	168	1
10.32	13/32	87	168	1
10.50		87	168	1
10.80		94	175	1
11.00		94	175	1
11.20		94	175	1
11.50		94	175	1
11.51	29/64	94	175	1
11.80		94	175	1

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Taper Shank Twist Drills (RH)



TAPER SHANK STANDARD SERIES

IS:5103-1969, BS:328 (Part-1)1986, ISO 235:1975, DIN 345

Heavy Web, Point Angle 135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	DG/LG
12.00		101	182	1
12.20		101	182	1
12.30	31/64	101	182	1
12.50		101	182	1
12.70	1/2	101	182	1
12.80		101	182	1
13.00		101	182	1
13.10	33/64	101	182	1
13.20		101	182	1
13.40		108	189	1
13.49	17/32	108	189	1
13.50		108	189	1
13.80		108	189	1
13.89	35/64	108	189	1
14.00		108	189	1



MM	INCH	FL in MM	OAL in MM	DG/LG
14.25		114	212	2
14.29	9/16	114	212	2
14.50		114	212	2
14.68	37/64	114	212	2
14.75		114	212	2
15.00		114	212	2
15.08	19/32	120	218	2
15.25		120	218	2
15.48	39/64	120	218	2
15.50		120	218	2
15.75		120	218	2
15.88	5/8	120	218	2
16.00		120	218	2

Other Finishes available - TiN, Blue (Steam Tempered)

HSS TAPER SHANK TWIST DRILLS



TAPER SHANK LONG SERIES DRILLS

Made to IS:8305-1976, DIN:341

Tool Type 'N', Point Angle 118°

Ground Flute - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
4.76	3/16	74	155	1
5.00		74	155	1
5.10		74	155	1
5.16	13/64	74	155	1
5.20		74	155	1
5.30		74	155	1
5.40		80	161	1
5.50		80	161	1
5.56	7/32	80	161	1
5.60		80	161	1
5.70		80	161	1
5.80		80	161	1
5.90		80	161	1
5.95	15/64	80	161	1
6.00		80	161	1
6.10		86	167	1
6.20		86	167	1
6.30		86	167	1
6.35	1/4	86	167	1
6.40		86	167	1
6.50		86	167	1
6.60		86	167	1
6.70		86	167	1
6.75	17/64	93	174	1
6.80		93	174	1
6.90		93	174	1
7.00		93	174	1
7.10		93	174	1
7.14	9/32	93	174	1
7.20		93	174	1
7.30		93	174	1
7.40		93	174	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
7.50		93	174	1
7.54	19/64	100	181	1
7.60		100	181	1
7.70		100	181	1
7.80		100	181	1
7.90		100	181	1
7.94	5/16	100	181	1
8.00		100	181	1
8.10		100	181	1
8.20		100	181	1
8.30		100	181	1
8.33	21/64	100	181	1
8.40		100	181	1
8.50		100	181	1
8.60		107	188	1
8.70		107	188	1
8.73	11/32	107	188	1
8.80		107	188	1
8.90		107	188	1
9.00		107	188	1
9.10		107	188	1
9.13	23/64	107	188	1
9.20		107	188	1
9.30		107	188	1
9.40		107	188	1
9.50		107	188	1
9.52	3/8	116	197	1
9.60		116	197	1
9.70		116	197	1
9.80		116	197	1
9.90		116	197	1
9.92	25/64	116	197	1

Other Finishes available - TiN, Blue (Steam Tempered)

HSS TAPER SHANK TWIST DRILLS (RH)



TAPER SHANK LONG SERIES DRILLS

Made to IS:8305-1976, DIN:341

Tool Type 'N', Point Angle 118°

Ground Flute - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
10.00		116	197	1
10.10		116	197	1
10.20		116	197	1
10.30		116	197	1
10.32	13/32	116	197	1
10.40		116	197	1
10.50		116	197	1
10.60		116	197	1
10.70		125	206	1
10.72	27/64	125	206	1
10.80		125	206	1
10.90		125	206	1
11.00		125	206	1
11.10		125	206	1
11.11	7/16	125	206	1
11.20		125	206	1
11.30		125	206	1
11.40		125	206	1
11.50		125	206	1
11.51	29/64	125	206	1
11.60		125	206	1
11.70		125	206	1
11.80		125	206	1
11.90		134	215	1
11.91	15/32	134	215	1
12.00		134	215	1
12.10		134	215	1
12.20		134	215	1
12.30	31/64	134	215	1
12.40		134	215	1
12.50		134	215	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
12.60		134	215	1
12.70	1/2	134	215	1
12.80		134	215	1
12.90		134	215	1
13.00		134	215	1
13.10	33/64	134	215	1
13.20		134	215	1
13.30		142	223	1
13.40		142	223	1
13.49	17/32	142	223	1
13.50		142	223	1
13.60		142	223	1
13.70		142	223	1
13.80		142	223	1
13.89	35/64	142	223	1
13.90		142	223	1
14.00		142	223	1
14.25		147	245	2
14.29	9/16	147	245	2
14.50		147	245	2
14.68	37/64	147	245	2
14.75		147	245	2
15.00		147	245	2
15.08	19/32	153	251	2
15.25		153	251	2
15.48		153	251	2
15.50		153	251	2
15.75		153	251	2
15.87	5/8	153	251	2
16.00		153	251	2

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Taper Shank Twist Drills (RH)



TAPER SHANK LONG SERIES

IS:8305:1976, DIN:341

Heavy Web - 135° Split Point

Ground Flutes-Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
4.76	3/16	74	155	1
5.00		74	155	1
5.10		74	155	1
5.16	13/64	74	155	1
5.20		74	155	1
5.30		74	155	1
5.40		80	161	1
5.50		80	161	1
5.56	7/32	80	161	1
5.60		80	161	1
5.70		80	161	1
5.80		80	161	1
5.90		80	161	1
5.95	15/64	80	161	1
6.00		80	161	1
6.10		86	167	1
6.20		86	167	1
6.30		86	167	1
6.35	1/4	86	167	1
6.40		86	167	1
6.50		86	167	1
6.60		86	167	1
6.70		86	167	1
6.75	17/64	93	174	1
6.80		93	174	1
6.90		93	174	1
7.00		93	174	1
7.10		93	174	1
7.14	9/32	93	174	1
7.20		93	174	1
7.30		93	174	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
7.40		93	174	1
7.50		93	174	1
7.54	19/64	100	181	1
7.60		100	181	1
7.70		100	181	1
7.80		100	181	1
7.90		100	181	1
7.94	5/16	100	181	1
8.00		100	181	1
8.10		100	181	1
8.20		100	181	1
8.30		100	181	1
8.33	21/64	100	181	1
8.40		100	181	1
8.50		100	181	1
8.60		107	188	1
8.70		107	188	1
8.73	11/32	107	188	1
8.80		107	188	1
8.90		107	188	1
9.00		107	188	1
9.10		107	188	1
9.13	23/64	107	188	1
9.20		107	188	1
9.30		107	188	1
9.40		107	188	1
9.50		107	188	1
9.52	3/8	116	197	1
9.60		116	197	1
9.70		116	197	1
9.80		116	197	1

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Taper Shank Twist Drills (RH)



TAPER SHANK LONG SERIES
IS:8305:1976, DIN:341
Heavy Web - 135° Split Point
Ground Flutes-Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
9.90		116	197	1
9.92	25/64	116	197	1
10.00		116	197	1
10.10		116	197	1
10.20		116	197	1
10.30		116	197	1
10.32	13/32	116	197	1
10.40		116	197	1
10.50		116	197	1
10.60		116	197	1
10.70		125	206	1
10.72	27/64	125	206	1
10.80		125	206	1
10.90		125	206	1
11.00		125	206	1
11.10		125	206	1
11.11	7/16	125	206	1
11.20		125	206	1
11.30		125	206	1
11.40		125	206	1
11.50		125	206	1
11.51	29/64	125	206	1
11.60		125	206	1
11.70		125	206	1
11.80		125	206	1
11.90		134	215	1
11.91	15/32	134	215	1
12.00		134	215	1
12.20		134	215	1
12.30	31/64	134	215	1
12.40		134	215	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
12.50		134	215	1
12.60		134	215	1
12.70	1/2	134	215	1
12.80		134	215	1
12.90		134	215	1
13.00		134	215	1
13.10	33/64	134	215	1
13.20		134	215	1
13.30		142	223	1
13.40		142	223	1
13.49	17/32	142	223	1
13.50		142	223	1
13.60		142	223	1
13.70		142	223	1
13.80		142	223	1
13.89	35/64	142	223	1
13.90		142	223	1
14.00		142	223	1
14.25		147	245	2
14.29	9/16	147	245	2
14.50		147	245	2
14.68	37/64	147	245	2
14.75		147	245	2
15.00		147	245	2
15.08	19/32	153	251	2
15.25		153	251	2
15.48		153	251	2
15.50		153	251	2
15.75		153	251	2
15.87	5/8	153	251	2
16.00		153	251	2

Other Finishes available - TiN, Blue (Steam Tempered)

HSS TAPER SHANK TWIST DRILLS (RH)



TAPER SHANK EXTRA LONG SERIES

Geometry as per IS:7822:2005, ISO:3291-1975, DIN:1870

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
3.00	1/8	120	200	1
3.00	1/8	145	225	1
3.00	1/8	170	250	1
3.00	1/8	195	275	1
3.00	1/8	220	300	1
3.00	1/8	245	325	1
3.50		120	200	1
3.50		145	225	1
3.50		170	250	1
3.50		195	275	1
3.50		220	300	1
3.50		245	325	1
4.00	5/32	120	200	1
4.00	5/32	145	225	1
4.00	5/32	170	250	1
4.00	5/32	195	275	1
4.00	5/32	220	300	1
4.00	5/32	245	325	1
4.50		120	200	1
4.50		145	225	1
4.50		170	250	1
4.50		195	275	1
4.50		220	300	1
4.50		245	325	1
5.00	3/16	120	200	1
5.00	3/16	145	225	1
5.00	3/16	170	250	1
5.00	3/16	195	275	1
5.00	3/16	220	300	1
5.00	3/16	245	325	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
5.50	7/32	120	200	1
5.50	7/32	145	225	1
5.50	7/32	170	250	1
5.50	7/32	195	275	1
5.50	7/32	220	300	1
5.50	7/32	245	325	1
6.00		120	200	1
6.00		145	225	1
6.00		170	250	1
6.00		195	275	1
6.00		220	300	1
6.00		245	325	1
6.50	1/4	120	200	1
6.50	1/4	145	225	1
6.50	1/4	170	250	1
6.50	1/4	195	275	1
6.50	1/4	220	300	1
6.50	1/4	235	315	1
6.50	1/4	245	325	1
7.00		120	200	1
7.00		145	225	1
7.00		170	250	1
7.00		195	275	1
7.00		220	300	1
7.00		235	315	1
7.00		245	325	1
7.50		120	200	1
7.50		145	225	1
7.50		170	250	1
7.50		195	275	1

Other Finishes available - TiN, Blue (Steam Tempered)

HSS TAPER SHANK TWIST DRILLS (RH)



TAPER SHANK EXTRA LONG SERIES

Geometry as per IS:7822:2005, ISO:3291-1975, DIN:1870

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
7.50		220	300	1
7.50		235	315	1
7.50		245	325	1
8.00	5/16	120	200	1
8.00	5/16	145	225	1
8.00	5/16	170	250	1
8.00	5/16	195	275	1
8.00	5/16	220	300	1
8.00	5/16	235	315	1
8.00	5/16	245	325	1
8.50		120	200	1
8.50		145	225	1
8.50		170	250	1
8.50		195	275	1
8.50		220	300	1
8.50		235	315	1
8.50		245	325	1
9.00		120	200	1
9.00		145	225	1
9.00		170	250	1
9.00		195	275	1
9.00		220	300	1
9.00		235	315	1
9.00		245	325	1
9.50	3/8	120	200	1
9.50	3/8	145	225	1
9.50	3/8	170	250	1
9.50	3/8	195	275	1
9.50	3/8	220	300	1
9.50	3/8	235	315	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
9.50	3/8	245	325	1
10.00		120	200	1
10.00		145	225	1
10.00		170	250	1
10.00		195	275	1
10.00		220	300	1
10.00		235	315	1
10.00		245	325	1
10.00		270	350	1
10.00		295	375	1
10.00		300	400	1
10.50		120	200	1
10.50		145	225	1
10.50		170	250	1
10.50		195	275	1
10.50		220	300	1
10.50		235	315	1
10.50		245	325	1
10.50		270	350	1
10.50		295	375	1
10.50		300	400	1
11.00		120	200	1
11.00		145	225	1
11.00		170	250	1
11.00		195	275	1
11.00		220	300	1
11.00		235	315	1
11.00		245	325	1
11.00		270	350	1
11.00		295	375	1

Other Finishes available - TiN, Blue (Steam Tempered)

HSS TAPER SHANK TWIST DRILLS (RH)



TAPER SHANK EXTRA LONG SERIES

Geometry as per IS:7822:2005, ISO:3291-1975, DIN:1870

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
11.00		300	400	1
11.50	7/16	120	200	1
11.50	7/16	145	225	1
11.50	7/16	170	250	1
11.50	7/16	195	275	1
11.50	7/16	220	300	1
11.50	7/16	235	315	1
11.50	7/16	245	325	1
11.50	7/16	270	350	1
11.50	7/16	295	375	1
11.50	7/16	300	400	1
12.00		145	225	1
12.00		170	250	1
12.00		195	275	1
12.00		220	300	1
12.00		235	315	1
12.00		245	325	1
12.00		270	350	1
12.00		295	375	1
12.00		300	400	1
12.50	1/2	145	225	1
12.50	1/2	170	250	1
12.50	1/2	195	275	1
12.50	1/2	220	300	1
12.50	1/2	235	315	1
12.50	1/2	245	325	1
12.50	1/2	270	350	1
12.50	1/2	295	375	1
12.50	1/2	300	400	1
13.00		170	250	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
13.00		195	275	1
13.00		220	300	1
13.00		235	315	1
13.00		245	325	1
13.00		270	350	1
13.00		295	375	1
13.00		300	400	1
13.50		170	250	1
13.50		195	275	1
13.50		220	300	1
13.50		235	315	1
13.50		245	325	1
13.50		270	350	1
13.50		295	375	1
13.50		300	400	1
14.00		170	250	1
14.00		195	275	1
14.00		220	300	1
14.00		235	315	1
14.00		245	325	1
14.00		270	350	1
14.00		295	375	1
14.00		300	400	1
14.50	9/16	150	250	2
14.50	9/16	175	275	2
14.50	9/16	200	300	2
14.50	9/16	215	315	2
14.50	9/16	225	325	2
14.50	9/16	250	350	2
14.50	9/16	275	375	2

Other Finishes available - TiN, Blue (Steam Tempered)

HSS TAPER SHANK TWIST DRILLS (RH)



TAPER SHANK EXTRA LONG SERIES

Geometry as per IS:7822:2005, ISO:3291-1975, DIN:1870

Tool Type 'N', Point Angle 118°

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
14.50	9/16	300	400	2
14.50	9/16	300	425	2
14.50	9/16	300	450	2
14.50	9/16	300	475	2
14.50	9/16	300	500	2
15.00		150	250	2
15.00		175	275	2
15.00		200	300	2
15.00		215	315	2
15.00		225	325	2
15.00		250	350	2
15.00		275	375	2
15.00		300	400	2
15.00		300	425	2
15.00		300	450	2
15.00		300	475	2
15.00		300	500	2
15.50		150	250	2
15.50		175	275	2
15.50		200	300	2
15.50		215	315	2
15.50		225	325	2
15.50		250	350	2
15.50		275	375	2
15.50		300	400	2
15.50		300	425	2
15.50		300	450	2
15.50		300	475	2
15.50		300	500	2
16.00	5/8	150	250	2



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
16.00	5/8	175	275	2
16.00	5/8	200	300	2
16.00	5/8	215	315	2
16.00	5/8	225	325	2
16.00	5/8	250	350	2
16.00	5/8	275	375	2
16.00	5/8	300	400	2
16.00	5/8	300	425	2
16.00	5/8	300	450	2
16.00	5/8	300	475	2
16.00	5/8	300	500	2

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Taper Shank Twist Drills (RH)



TAPER SHANK EXTRA LONG SERIES

Geometry will be maintained as per IS:7822-2005

Heavy Web, POINT-135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
3.00	1/8	120	200	1
3.00	1/8	145	225	1
3.00	1/8	170	250	1
3.00	1/8	195	275	1
3.00	1/8	220	300	1
3.00	1/8	245	325	1
3.50		120	200	1
3.50		145	225	1
3.50		170	250	1
3.50		195	275	1
3.50		220	300	1
3.50		245	325	1
4.00	5/32	120	200	1
4.00	5/32	145	225	1
4.00	5/32	170	250	1
4.00	5/32	195	275	1
4.00	5/32	220	300	1
4.00	5/32	245	325	1
4.50		120	200	1
4.50		145	225	1
4.50		170	250	1
4.50		195	275	1
4.50		220	300	1
4.50		245	325	1
5.00	3/16	120	200	1
5.00	3/16	145	225	1
5.00	3/16	170	250	1
5.00	3/16	195	275	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
5.00	3/16	220	300	1
5.00	3/16	245	325	1
5.50	7/32	120	200	1
5.50	7/32	145	225	1
5.50	7/32	170	250	1
5.50	7/32	195	275	1
5.50	7/32	220	300	1
5.50	7/32	245	325	1
6.00		120	200	1
6.00		145	225	1
6.00		170	250	1
6.00		195	275	1
6.00		220	300	1
6.00		235	315	1
6.00		245	325	1
6.50	1/4	120	200	1
6.50	1/4	145	225	1
6.50	1/4	170	250	1
6.50	1/4	195	275	1
6.50	1/4	220	300	1
6.50	1/4	235	315	1
6.50	1/4	245	325	1
7.00		120	200	1
7.00		145	225	1
7.00		170	250	1
7.00		195	275	1
7.00		220	300	1
7.00		235	315	1

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Taper Shank Twist Drills (RH)



TAPER SHANK EXTRA LONG SERIES

Geometry will be maintained as per IS:7822-2005

Heavy Web, POINT-135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
7.00		245	325	1
7.50		120	200	1
7.50		145	225	1
7.50		170	250	1
7.50		195	275	1
7.50		220	300	1
7.50		235	315	1
7.50		245	325	1
8.00	5/16	120	200	1
8.00	5/16	145	225	1
8.00	5/16	170	250	1
8.00	5/16	195	275	1
8.00	5/16	220	300	1
8.00	5/16	235	315	1
8.00	5/16	245	325	1
8.50		120	200	1
8.50		145	225	1
8.50		170	250	1
8.50		195	275	1
8.50		220	300	1
8.50		235	315	1
8.50		245	325	1
9.00		120	200	1
9.00		145	225	1
9.00		170	250	1
9.00		195	275	1
9.00		220	300	1
9.00		235	315	1
9.00		245	325	1
9.50	3/8	120	200	1
9.50	3/8	145	225	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
9.50	3/8	170	250	1
9.50	3/8	195	275	1
9.50	3/8	220	300	1
9.50	3/8	235	315	1
9.50	3/8	245	325	1
10.00		120	200	1
10.00		145	225	1
10.00		170	250	1
10.00		195	275	1
10.00		220	300	1
10.00		235	315	1
10.00		245	325	1
10.00		270	350	1
10.00		295	375	1
10.00		300	400	1
10.50		120	200	1
10.50		145	225	1
10.50		170	250	1
10.50		195	275	1
10.50		220	300	1
10.50		235	315	1
10.50		245	325	1
10.50		270	350	1
10.50		295	375	1
10.50		300	400	1
11.00		120	200	1
11.00		145	225	1
11.00		170	250	1
11.00		195	275	1
11.00		220	300	1
11.00		235	315	1

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Taper Shank Twist Drills (RH)



TAPER SHANK EXTRA LONG SERIES

Geometry will be maintained as per IS:7822-2005

Heavy Web, POINT-135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
11.00		245	325	1
11.00		270	350	1
11.00		295	375	1
11.00		300	400	1
11.50	7/16	120	200	1
11.50	7/16	145	225	1
11.50	7/16	170	250	1
11.50	7/16	195	275	1
11.50	7/16	220	300	1
11.50	7/16	235	315	1
11.50	7/16	245	325	1
11.50	7/16	270	350	1
11.50	7/16	295	375	1
11.50	7/16	300	400	1
12.00		145	225	1
12.00		170	250	1
12.00		195	275	1
12.00		220	300	1
12.00		235	315	1
12.00		245	325	1
12.00		270	350	1
12.00		295	375	1
12.00		300	400	1
12.50	1/2	145	225	1
12.50	1/2	170	250	1
12.50	1/2	195	275	1
12.50	1/2	220	300	1
12.50	1/2	235	315	1
12.50	1/2	245	325	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
12.50	1/2	270	350	1
12.50	1/2	295	375	1
12.50	1/2	300	400	1
13.00		170	250	1
13.00		195	275	1
13.00		220	300	1
13.00		235	315	1
13.00		245	325	1
13.00		270	350	1
13.00		295	375	1
13.00		300	400	1
13.50		170	250	1
13.50		195	275	1
13.50		220	300	1
13.50		235	315	1
13.50		245	325	1
13.50		270	350	1
13.50		295	375	1
13.50		300	400	1
14.00		170	250	1
14.00		195	275	1
14.00		220	300	1
14.00		235	315	1
14.00		245	325	1
14.00		270	350	1
14.00		295	375	1
14.00		300	400	1
14.50	9/16	150	250	2
14.50	9/16	175	275	2

Other Finishes available - TiN, Blue (Steam Tempered)

HSS-M35 (5% cobalt) Taper Shank Twist Drills (RH)



TAPER SHANK EXTRA LONG SERIES

Geometry will be maintained as per IS:7822-2005

Heavy Web, POINT-135°- Split Point

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
14.50	9/16	200	300	2
14.50	9/16	215	315	2
14.50	9/16	225	325	2
14.50	9/16	250	350	2
14.50	9/16	275	375	2
14.50	9/16	300	400	2
14.50	9/16	300	425	2
14.50	9/16	300	450	2
14.50	9/16	300	475	2
14.50	9/16	300	500	2
15.00		150	250	2
15.00		175	275	2
15.00		200	300	2
15.00		215	315	2
15.00		225	325	2
15.00		250	350	2
15.00		275	375	2
15.00		300	400	2
15.00		300	425	2
15.00		300	450	2
15.00		300	475	2
15.00		300	500	2
15.50		150	250	2
15.50		175	275	2
15.50		200	300	2
15.50		215	315	2
15.50		225	325	2
15.50		250	350	2
15.50		275	375	2



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
15.50		300	400	2
15.50		300	425	2
15.50		300	450	2
15.50		300	475	2
15.50		300	500	2
16.00	5/8	150	250	2
16.00	5/8	175	275	2
16.00	5/8	200	300	2
16.00	5/8	215	315	2
16.00	5/8	225	325	2
16.00	5/8	250	350	2
16.00	5/8	275	375	2
16.00	5/8	300	400	2
16.00	5/8	300	425	2
16.00	5/8	300	450	2
16.00	5/8	300	475	2
16.00	5/8	300	500	2

Other Finishes available - TiN, Blue (Steam Tempered)

HSS TAPER SHANK TWIST DRILLS (RH)



TAPER SHANK CORE DRILLS

Made to IS:5366-1978, DIN:343, BS:328 (Part-1)1959

Tool Type 'N', Point Angle 120°

Ground Flutes - Bright Finish

MM	INCH	FL in MM	OAL in MM	MT SHANK NO
5.00		52	133	1
5.10		52	133	1
6.00		57	138	1
7.00		69	150	1
7.14	9/32	69	150	1
7.50		69	150	1
7.80		75	156	1
7.90		75	156	1
7.94	5/16	75	156	1
8.00		75	156	1
8.10		75	156	1
8.20		75	156	1
8.30		75	156	1
8.33	21/64	75	156	1
8.40		75	156	1
8.50		75	156	1
8.60		81	162	1
8.70		81	162	1
8.73	11/32	81	162	1
8.80		81	162	1
8.90		81	162	1
9.00		81	162	1
9.10		81	162	1
9.13	23/64	81	162	1
9.20		81	162	1
9.30		81	162	1
9.40		81	162	1
9.50		81	162	1



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
9.52	3/8	87	168	1
9.60		87	168	1
9.70		87	168	1
9.80		87	168	1
9.90		87	168	1
9.92	25/64	87	168	1
10.00		87	168	1
10.10		87	168	1
10.20		87	168	1
10.30		87	168	1
10.32	13/32	87	168	1
10.40		87	168	1
10.50		87	168	1
10.60		87	168	1
10.70		94	175	1
10.72	27/64	94	175	1
10.80		94	175	1
10.90		94	175	1
11.00		94	175	1
11.10		94	175	1
11.11	7/16	94	175	1
11.20		94	175	1
11.30		94	175	1
11.40		94	175	1
11.50		94	175	1
11.51	29/64	94	175	1
11.60		94	175	1
11.70		94	175	1

Also available in 5%-Co. and 8%-Co.

HSS TAPER SHANK TWIST DRILLS (RH)



TAPER SHANK CORE DRILLS

Made to IS:5366-1978, DIN:343, BS:328 (Part-1)1959

Tool Type 'N', Point Angle 120°

Ground Flutes - Bright Finish

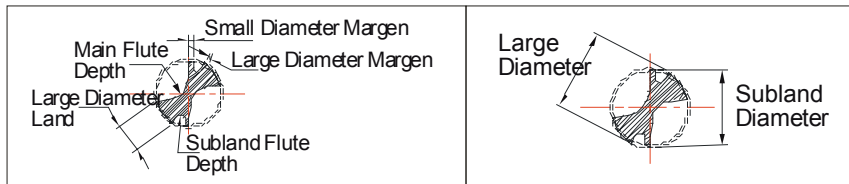
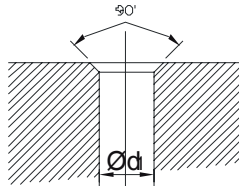
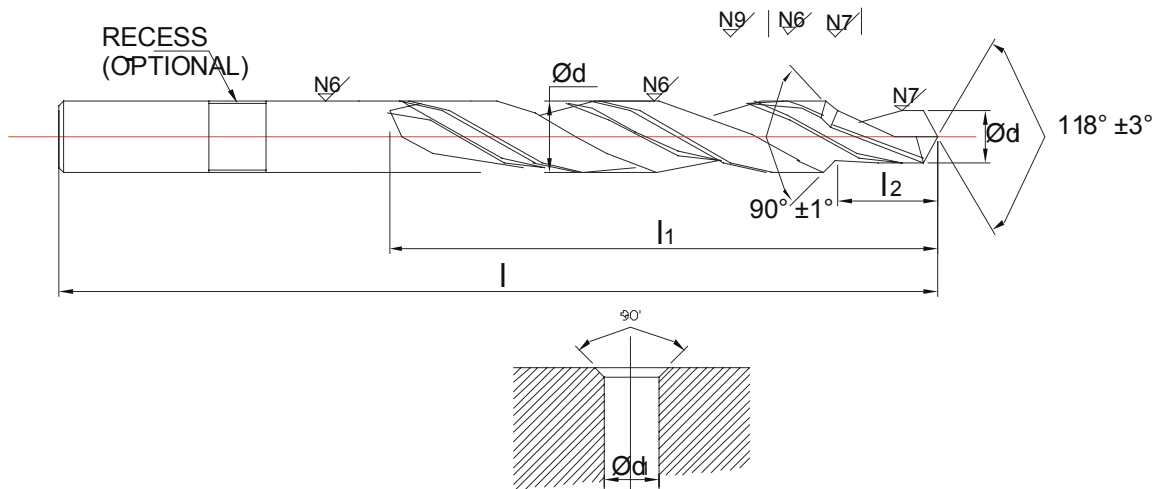
MM	INCH	FL in MM	OAL in MM	MT SHANK NO
11.80		94	175	1
11.90		101	182	1
11.91	15/32	101	182	1
12.00		101	182	1
12.10		101	182	1
12.20		101	182	1
12.30	31/64	101	182	1
12.40		101	182	1
12.50		101	182	1
12.60		101	182	1
12.70	1/2	101	182	1
12.80		101	182	1
12.90		101	182	1
13.00		101	182	1
13.10	33/64	101	182	1
13.20		101	182	1
13.30		101	182	1
13.40		101	182	1
13.49	17/32	101	182	1
13.50		101	182	1
13.60		101	182	1
13.70		108	189	1
13.80		108	189	1
13.89	35/64	108	189	1
13.90		108	189	1
14.00		108	189	1
14.25		114	212	2
14.29	9/16	114	212	2



MM	INCH	FL in MM	OAL in MM	MT SHANK NO
14.50		114	212	2
14.68	37/64	114	212	2
14.75		114	212	2
15.00		114	212	2
15.08	19/32	120	218	2
15.25		120	218	2
15.50		120	218	2
15.75		120	218	2
15.87	5/8	120	218	2
16.00		120	218	2

Also available in 5%-Co. and 8%-Co.

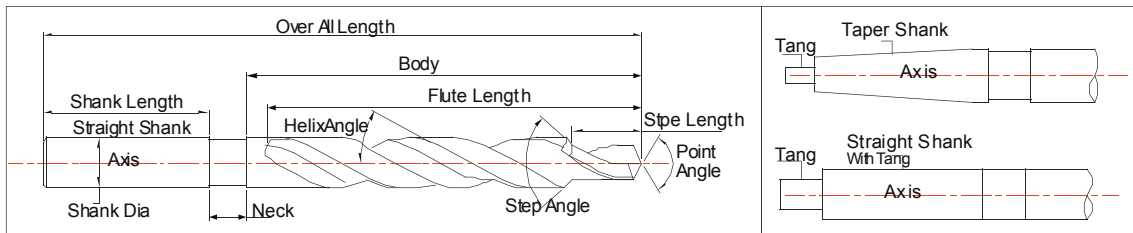
SUBLAND TWIST DRILLS



Thread		d(h8)	d1(h8)	LL	1L	2
Nominal Dia.	Pitch					
M3	0.5	3.4	2.5	70	39	8.8
M4	0.7	4.5	3.3	80	47	11.4
M5	0.8	5.5	4.2	93	57	13.6
M6	1	6.6	5	101	63	16.5
M8	1.25	9	6.8	125	81	21
M10	1.5	11	8.5	142	94	25.5
M12	1.75	14	10.2	160	108	30
M14	2	15.5	12.0	178	120	34.5

Available in HSS Grades M-2 & M-35

STEP DRILLS



Description:

The step drill is a conventional 2-flute drill that has had a second diameter created by grinding down a portion of the larger diameter. Greater step lengths and diameter differentials are possible with this tool style. More than two diameters are possible on step drills.

Applications:

The 2 flute step drill eliminates operations by performing two operations in one production step; "such as drill to drill, drill to chamfer etc. Double or triple margins in step drills construction" facilitates more accurate holding in a collet when recreating the smaller diameter.

Limitations:

The step drill is not practical with a small diameter less than 35% of the large diameter. "If the percentage of the diameter differential is greater than 45%, select" Subland construction.

Range:

2.00 mm to 16.00 mm-greater diameter.

Material:

Step drills are supplied in HSS-M2 and HSS-M35 grades depending on application requirements.

Surface finish:

Ground-bright. TiN coated and blue steam finish on request.

Drill Shank:

Parallel and morse taper shank.

HSS DRILL BLANKS



Fully Hardened and Ground
Dia tol. h8

Diameter		Length
MM	INCH	MM
1.00		34
1.10		36
1.19	3/64	38
1.20		38
1.30		38
1.40		40
1.50		40
1.59	1/16	43
1.60		43
1.70		43
1.80		46
1.90		46
1.98	5/64	49
2.00		49
2.10		49
2.20		53
2.30		53
2.38	3/32	57
2.40		57
2.50		57
2.60		57
2.70		61
2.80		61
2.90		61
3.00		61
3.10		65
3.17	1/8	65
3.20		65
3.30		65
3.40		70



Diameter		Length
MM	INCH	MM
3.50		70
3.60		70
3.70		70
3.80		75
3.90		75
3.97	5/32	75
4.00		75
4.10		75
4.20		75
4.30		80
4.39	11/64	80
4.40		80
4.50		80
4.60		80
4.70		80
4.76	3/16	86
7.80		86
4.90		86
5.00		86
5.10		86
5.16	13/64	86
5.20		86
5.30		86
5.40		93
5.50		93
5.56	7/32	93
5.60		93
5.70		93
5.80		93
5.90		93



Diameter		Length
MM	INCH	MM
5.95	15/64	93
6.00		93
6.10		101
6.20		101
6.30		101
6.35	1/4	101
6.40		101
6.50		101
6.60		101
6.70		101
6.75	17/64	109
6.80		109
6.90		109
7.00		109
7.10		109
7.14	9/32	109
7.20		109
7.30		109
7.40		109
7.50		109
7.54	19/64	117
7.60		117
7.70		117
7.80		117
7.90		117
7.94	5/16	117
8.00		117
8.10		117
8.20		117
8.30		117

HSS DRILL BLANKS



Fully Hardened and Ground
Dia tol. h8

Diameter		Length
MM	INCH	MM
8.33	21/64	117
8.40		117
8.50		117
8.60		125
8.70		125
8.73	11/32	125
8.80		125
8.90		125
9.00		125
9.10		125
9.13	23/64	125
9.20		125
9.30		125
9.40		125
9.50		125
9.52	3/8	133
9.60		133
9.70		133
9.80		133
9.90		133
9.92	25/64	133
10.00		133
10.10		133
10.20		133
10.30		133
10.32	13/32	133
10.40		133
10.50		133
10.60		133
10.70		142



Diameter		Length
MM	INCH	MM
10.72	27/64	142
10.80		142
10.90		142
11.00		142
11.10		142
11.11	7/16	142
11.20		142
11.30		142
11.40		142
11.50		142
11.51	29/64	142
11.61		142
11.70		142
11.80		142
11.90		151
11.91	15/32	151
12.00		151
12.10		151
12.20		151
12.30	31/64	151
12.40		151
12.50		151
12.60		151
12.70	1/2	151
12.80		151
12.90		151
13.00		151
13.10	33/64	151
13.20		151
13.30		160



Diameter		Length
MM	INCH	MM
13.40		160
13.49		160
13.50	17/32	160
13.60		160
13.70		160
13.80		160
13.89		160
13.90	35/64	160
14.00		160
14.10		169
14.20		169
14.30	9/16	169
14.30		169
14.40		169
14.50		169
14.60		169
14.70	37/64	169
14.80		169
14.90		169
15.00		178
15.10		178
15.20		178
15.30		178
15.40		178
15.50	39/64	178
15.60		178
15.70		178
15.80		178
15.90	5/8	178
16.00		178

HSS 2FL M2/M42 END MILLS AS PER IS 6353-1991

DIAS	H.DIAC	EL	OAL
3	4	8	40
3.5	4	10	42
4	4	11	43
4.5	5	11	45
5	5	13	57
5.5	6	13	57
6	6	13	57
6.5	8	16	60
7	8	16	60
7.5	8	60	60
8	8	19	63
8.5	10	19	69
9	10	19	69
9.5	10	19	69
10	10	22	72
10.5	12	22	79
11	12	22	79
11.5	12	22	79
12	12	26	83
14	12	26	83
16	16	2	92
18	16	32	92
20	20	38	104
22	20	38	104
25	25	45	121

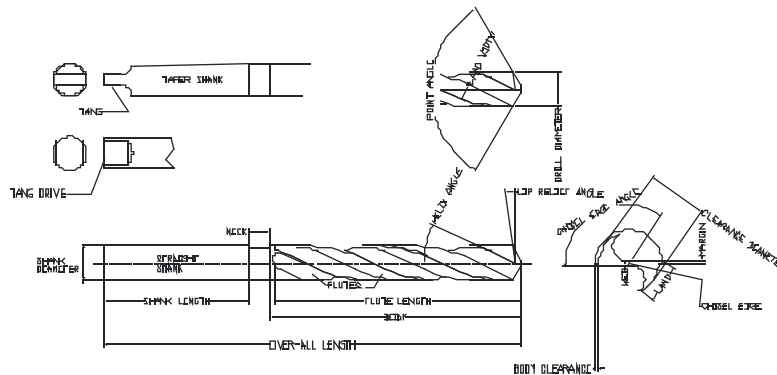


HSS 4FL M2/M42 END MILLS AS PER IS 6353-1991

DIAS	H.DIAC	EL	OAL
3	4	8	40
3.5	4	10	42
4	4	11	43
4.5	5	11	45
5	5	13	57
5.5	6	13	57
6	6	13	57
6.5	8	16	60
7	8	16	60
7.5	8	60	60
8	8	19	63
8.5	10	19	69
9	10	19	69
9.5	10	19	69
10	10	22	72
10.5	12	22	79
11	12	22	79
11.5	12	22	79
12	12	26	83
14	12	26	83
16	16	2	92
18	16	32	92
20	20	38	104
22	20	38	104
25	25	45	121



NOMENCLATURE OF TWIST DRILLS AND OTHER TERMS RELATING TO DRILLING



Illustrations of Terms applying to Twist Drills

AXIS: The imaginary straight line, which forms the longitudinal centerline of the drill.

BACK TAPER: A slight decrease in diameter from front to back in the body of the drill.

BODY: The portion of the drill extending from the shank or the neck to the outer corners of the cutting lips.

BODY DIAMETER CLEARANCE: That portion of the land that has been cut away so it will not rub against the walls of the hole.

BUILT-UP EDGE: An adhering deposit of nascent material on the cutting lip or point of a drill.

CAM RELIEF: The relief from the cutting edge to the back of the land produced by a cam actuated cutting tools or grinding wheel on a relieving machine.

CHIP BREAKER: Nicks or grooves or special flute shapes designed to reduce the size of the chips. There may be steps or grooves in the cutting lip or in the leading face of the land at or adjacent to the cutting lips.

CHIP PACKING: The failure of chips to pass through the flute during the cutting action

CHIPPING: The breakdown of cutting lip or margin by loss of fragments broken away during the cutting action.

Chisel Edge: The edge at the end if the web that connects the cutting lips

Chisel Edge Angle: The angle included between the chisel edge and the cutting lip as viewed from the end of the drill.

NOMENCLATURE OF TWIST DRILLS AND OTHER TERMS RELATING TO DRILLING



Clearance: The space provided to eliminate undesirable contact between the drill and the work piece.

Clearance Diameter: The diameter over the cut away portion of the drill lands

Crankshaft or deep hole drills: Drills designed for drilling oil holes in crankshafts, connecting rods and similar deep holes.
They are generally made with heavy webs and higher helix angles than normal.

Double Margin Drill: A drill whose body diameter clearance is produced to leave two margins on each land and is normally made with margins on the leading edge and on the heel of the land.

Drift: A flat tapered bar for forcing a taper shank out of its socket

Drift Slot: A slot through a socket at the small end of the tapered hole to receive a drift forcing a taper shank out of the socket.

Drill Diameter: The diameter over the margins of the drill measured at the point

Exposed Length: The distance the large end of a shank projects from the drive socket or large end of the taper ring gage

External Center: The conical point on the shank end of the drill, and the point end on some sizes of core drills.

Flat Drill: A drill whose flutes are produced by two parallel or tapered flats

Flutes: Helical or straight grooves cut or formed in the body of the drill to provide cutting lips to permit removal of chips and to allow cutting fluid to reach the cutting lips.

Flute Length: The length from the outer corners of the cutting lips to the extreme back end of the flutes. It includes the sweep of the tool used to generate the flutes and therefore does not indicate the usable length of the flutes.

Gage Line: The axial position on a taper where the diameter is equal to the basic large end diameter of the specified taper.

Galling: An adhering deposit of nascent work material on the margin adjacent to the leading edge at end near the point of a drill.

NOMENCLATURE OF TWIST DRILLS AND OTHER TERMS RELATING TO DRILLING



Guide: A cylindrical portion, following the cutting portion of the flutes, acting as a guide to keep the drill in proper alignment. The guide portion may be fluted, grooved or solid.

Gun Drill: special purpose flute drills with one or more flutes used for deep hole drilling. They are usually provided with coolant passages through the body. They may be either solid or tipped.

Half-round Drill: A drill with a transverse cross section of approximately half a circle and having one cutting lip.

Hand of cut: Rotational direction of the drill

Heel: The trailing edge of the land

Helical Flutes: Flutes which are formed in a helical path around the axis

Helix Angle: The angle made by the leading edge of the land with a plane containing the axis of the drill.

Land: The peripheral portion of the body between adjacent flutes

Land Clearance: See preferred term body diameter clearance

Land Width: The distance between the leading edge and the heel of the land measured at a right angle of the leading edge.

Lead: The axial advance of a leading edge of the land in one turn around the circumference.

Lips: The cutting edges of a two flute drill extending from the chisel edge to the periphery. The cutting edges extending from the bottom of the chamfer to the periphery.

Lip Relief: The axial relief on the drill point.

Lip Relief Angle: The axial relief angle at the outer corner of the lip. It is measured by projection into a plane tangent to the periphery at the outer corner of the lip.

Margin: The cylindrical portion of the land which is not cut away to provide clearance.

Multiple Margin Drill: A drill whose body diameter clearance is produced to leave more than one margin in each land.

NOMENCLATURE OF TWIST DRILLS AND OTHER TERMS RELATING TO DRILLING



Neck: The section of reduced diameter between the body and the shank of a drill.

Notches: See chip breakers.

Oil Grooves: Longitudinal straight or helical grooves in the shank or grooves in the lands of a drill to carry cutting fluid to the cutting lips.

Oil Holes or tubes: Longitudinal straight or helical grooves in the shank in the lands of a drill to carry cutting fluids to the cutting lips.

Overall Length: The length from the extreme end of the shank to the outer corner of the cutting lips. It does not include the conical shank end often used on straight shank drills nor does it include the conical cutting point used on both straight and taper shank drills.

Core Drills: For drills with an external center on the cutting end same as for two flute drills for those with internal centers on the cutting end, the overall length is from the extreme ends of the tool.

Periphery: the outside circumference of the drill.

Peripheral Rake Angle: The angle between the leading edge of the land and an axial plane at the drill point.

Pilot: A cylindrical portion of the drill body proceeding the cutting lips. It may be solid grooved or fluted.

Point Angle: The angle included between the cutting lips projected upon a plane parallel to the drill axis and parallel to the two cutting lips.

Rake Angle: See peripheral angle

Relative Lip Height: The difference indicator reading between the cutting lips of the drill. It is measured at a right angle to the cutting lip at a specific distance from the axis of the tool to the cutting lip at a specific distance from the axis of the tool.

Relief: the result of the removal of the tool material behind or adjacent to the cutting lip and leading edge of the land to provide clearance and prevent rubbing.

Shank: the part of the drill by which it is held and driven

NOMENCLATURE OF TWIST DRILLS AND OTHER TERMS RELATING TO DRILLING



Neck: The section of reduced diameter between the body and the shank of a drill.

Notches: See chip breakers.

Oil Grooves: Longitudinal straight or helical grooves in the shank or grooves in the lands of a drill to carry cutting fluid to the cutting lips.

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Core Drills: For drills with an external center on the cutting end same as for two flute drills for those with internal centers on the cutting end, the overall length is from the extreme ends of the tool.

Periphery: the outside circumference of the drill.

Peripheral Rake Angle: The angle between the leading edge of the land and an axial plane at the drill point.

Pilot: A cylindrical portion of the drill body proceeding the cutting lips. It may be solid grooved or fluted.

Point Angle: The angle included between the cutting lips projected upon a plane parallel to the drill axis and parallel to the two cutting lips.

Rake Angle: See peripheral angle

Relative Lip Height: The difference indicator reading between the cutting lips of the drill. It is measured at a right angle to the cutting lip at a specific distance from the axis of the tool to the cutting lip at a specific distance from the axis of the tool.

Relief: the result of the removal of the tool material behind or adjacent to the cutting lip and leading edge of the land to provide clearance and prevent rubbing.

Shank: the part of the drill by which it is held and driven

NOMENCLATURE OF TWIST DRILLS AND OTHER TERMS RELATING TO DRILLING



Sleeve: a tapered shell designed to fit into a specified socket and to receive a taper shank smaller than the socket.

Socket: The tapered hole in a spindle, adapter or sleeve designed to receive hold and drive a tapered shank.

Spade Drill: a removable cutting drill tip usually attached to a special holder designed for this purpose. Generally used for drilling or enlarging cored holes

Spiral Angle: see helix angle

Spiral Flutes: see helical flutes

Step Drill: a multiple diameter drill with one set of drill lands which are ground to different diameters.

Straight Flutes: flutes which form lands lying in an axial plane

Subland Drill: a type of multiple diameter drill which has independent set of lands in the same body section of each diameter.

Tang: The flattened end of a taper shank intended to fit into a driving slot in a socket

Tang Drive: Two opposite parallel driving flats on the extreme end of a straight shank

Taper Drill: a drill with part or all of its cutting flute length ground with a specific taper to produce tapered holes. They are used for drilling the original hole or enlarging an existing hole

Taper Square Shank: A taper shank whose cross section is a square.

Web: The central portion of the body that joins the lands. The extreme end of the web forms the chisel edge on a two fluted drill.

Web Thickness: the thickness of the web at the point unless another specific location is indicated.

Web Thinning: the operation of reducing the web thickness at the point to reduce the drilling thrust.

PERIPHERAL SPEEDS FOR HSS TWIST DRILL



(FERROUS MA TERIALS)

TYPE OF STEEL	CUTTING SPEED	
B.S. 970 EN. Series No.	Feet / min.	Meters / min.
NON-ALLOY STEELS		
(a) Up to 0.40% Carbon content 2,3,4,5,6,7,8,32	80 – 100	24 – 30
(b) 0.40% to 0.70% Carbon content 9,10,43	60 – 80	18 – 24
(c) Over 0.70% Carbon content 42, 44	40 – 60	18 – 24
ALLOY STEELS		
(a) Tensile up to 60 Tons/inch ² (94.5 Kgs./mm ²), 11(T), 12, 13, 15-2114, 15, 16 (RST), 17(RST), 18, 19(RST), 20(T), 21, 22, 23(ST), 24(ST), 25(T), 27(T), 29(RST), 31, 33, 34, 35, 37, 38, 39, 40(RST), 41, 51, 52, 53, 100(RST), 110(RST), 111(RST), 160(RST)	50 – 70	
(b) Tensile up to 60-80 Tons/inch ² (994.5 to 126Kgs./mm ²), 11(V), 16(UV), 17(UV), 18(UVW), 19(UV), 20(V), 23(UV), 24(UVWX), 27(UVW), 28(UVW), 29(UVW), 40(U), 100(UV), 100(UVW), 111(V), 160(U)	30 – 50	9 - 15
(c) Tensile Over 80 Tons/inch ² (126 Kgs./mm ²) 19(W), 24(YZ), 25(YZ), 26(YZ), 28(Y), 29(Z)	15-30	4.5-9
MARTENSITIC STAINLESS STEEL (MAGNETIC)		
56, 57	40 – 60	12 – 18
AUSTENSITIC STAINLESS STEEL (NON MAGNETIC)		
54, 55, 58	20 – 40	6 - 12
12/14% MANGANESE STEEL	10 – 12	3.0 – 3.5
GREY CAST IRON	80 – 100	24 – 30
ALLOYED CAST IRON	50 - 70	15 - 21

(NON-FERROUS MA TERIALS)

Aluminum and Aluminum Alloys	100 – 200	30 – 60
Brass	100 – 150	30 – 46
Brass, Lead	100 – 200	30 – 61
Bronze, Ordinary	100 – 200	30 – 60
Bronze, High Tensile	70 – 100	21 – 30
Copper	100 – 150	30 – 46
Magnesium and Magnesium Alloys	200 – 300	60 – 90
Monel Metal	20 – 50	6 – 15
Nickel	30 – 50	9 – 15
Nimonic Alloys	10 – 20	3 – 6
Zinc Base Alloys (mazac)	150 – 250	45 – 75

The peripheral speeds in these two tables are on suggested basis.

TABLE OF CUTTING SPEEDS



(Metric Size Drills)

Ft./min .5	06	0	70	80	100
M/min.	15	18	21	24	30
Drill Dia	REVOLUTIONS PER MINUTE				
0.50	9,695	11,634	13,573	15,512	19,390
1.00	4,847	5,817	6,786	7,756	9,695
1.50	3,237	3,884	4,532	5,179	6,474
2.00	2,427	2,912	3,397	3,883	4,854
2.50	1,941	2,329	2,717	3,105	3,882
3.00	1,617	1,940	2,264	2,587	3,234
4.00	1,213	1,455	1,698	1,940	2,425
5.00	970	1,164	1,359	1,553	1,941
6.00	808	970	1,132	1,294	1,617
7.00	693	832	970	1,109	1,386
8.00	606	728	849	970	1,213
9.00	539	647	755	862	1,078
10.00	485	582	679	776	970
11.00	441	529	617	706	882
12.00	404	485	566	647	808
13.00	373	448	522	597	746
14.00	346	416	485	554	693
15.00	323	388	453	517	647
16.00	303	364	424	485	606
17.00	285	342	399	456	571
18.00	269	323	377	431	539
19.00	255	306	357	408	511
20.00	242	291	340	388	485
21.00	231	277	323	370	462
22.00	220	265	309	353	441
23.00	211	253	295	337	422
24.00	202	242	283	323	404
25.00	194	233	272	310	388

(Fractional Size Drills)

Ft./min .5	06	0	70	80	100
M/min.	15	18	21	24	30
Drill Dia	REVOLUTIONS PER MINUTE				
1/64"	12,224	14,656	17,088	19,520	24,448
1/32"	6,112	7,328	8,544	9,760	12,224
3/64"	4,064	4,896	5,696	6,528	8,160
1/16"	3,056	3,664	4,272	4,880	6,112
5/64"	2,448	2,928	3,424	3,904	4,896
3/32"	2,032	2,448	2,848	3,264	4,080
1/8"	1,528	1,832	2,136	2,440	3,056
5/32"	1,224	1,464	1,712	1,952	2,448
3/16"	1,016	1,224	1,424	1,632	2,040
7/32"	872	1,048	1,224	1,400	1,744
1/4"	764	916	1,068	1,220	1,528
5/16"	612	732	856	976	1,224
3/8"	508	612	712	816	1,020
7/16"	436	524	612	700	872
1/2"	382	458	534	670	764
9/16"	340	408	476	544	680
5/8"	306	366	428	488	612
11/16"	278	334	388	444	556
3/4"	254	306	356	408	510
13/16"	234	282	330	376	470
7/8"	218	262	306	350	436
15/16"	204	244	286	326	408
1"	191	229	267	305	382

TABLE OF CUTTING SPEEDS



(Number Size Drills)

Ft./min .5	06	0	70	80	100
M/min.	15	18	21	24	30
Drill Dia	REVOLUTIONS PER MINUTE				
1	838	1,005	1,173	1,340	1,675
2	864	1,037	1,210	1,382	1,728
4	914	1,097	1,280	1,462	1,828
6	936	1,123	1,310	1,498	1,872
8	960	1,151	1,343	1,535	1,919
10	987	1,184	1,382	1,579	1,974
12	1,010	1,213	1,415	1,617	2,021
14	1,050	1,259	1,469	1,679	2,099
16	1,079	1,295	1,511	1,726	2,158
18	1,130	1,356	1,582	1,808	2,260
20	1,186	1,423	1,600	1,898	2,372
22	1,217	1,460	1,703	1,946	2,433
24	1,257	1,508	1,759	2,010	2,513
26	1,299	1,559	1,819	2,078	2,598
28	1,360	1,631	1,903	2,175	2,719
30	1,487	1,784	2,081	2,378	2,973
32	1,647	1,976	2,305	2,634	3,293
34	1,721	2,065	2,409	2,753	3,442
36	1,794	2,152	2,511	2,870	3,587
38	1,882	2,258	2,634	3,010	3,763

Ft./min .5	06	0	70	80	100
M/min.	15	18	21	24	30
Drill Dia	REVOLUTIONS PER MINUTE				
40	1,949	2,339	2,729	3,118	3,898
42	2,043	2,451	2,860	3,268	4,085
44	2,221	2,665	3,109	3,554	4,442
46	2,358	2,830	3,301	3,773	4,716
48	2,513	3,016	3,518	4,021	5,026
50	2,729	3,609	3,820	4,366	5,457
52	3,008	4,211	4,211	4,812	6,015
54	3,473	4,167	4,862	5,556	6,945
58	4,547	5,456	6,367	7,275	9,095
60	4,775	5,729	6,684	7,639	9,549
62	5,025	6,030	7,035	8,040	10,050
64	5,305	6,366	7,427	8,488	10,610
66	5,790	6,948	8,106	9,264	11,580
68	6,160	7,392	8,624	9,856	12,320
70	6,820	8,184	9,548	10,912	13,640
72	7,640	9,168	10,696	12,224	15,280
74	8,510	10,212	11,914	13,616	17,020
76	9,550	11,460	13,370	15,280	19,100
78	11,935	14,322	16,709	19,096	23,870
80	14,510	16,980	19,810	22,640	28,300

DRILLING SPEEDS FOR THERMOPLASTICS				Cutting Speed in M/Min	
				Shallow	Deep Holes
*This table applies when using drills upto 12 MM dia. Above this diameter standard helix drills can usually be used.	Material	Type of Helix	Included Point Angle	Holes Upto 3 times drill dia	6 times drill dia
	Cellulose Acetate	Quick	140°	45	30
	Cellulose Nitrate	Standard	130°	45	24
	Polystyrene	Quick	140°	6	6
	High Impact Polystyrene	Quick	140°	45	27
	Perspex	Slow	60°	27	6
	Ethyl Cellulose	Quick	140°	18	6
	Nylon	Quick	140°	45	30
	Vulcanised Fibre	Quick	118°	60	45
	P.V.C	Quick	140°	6	6
	P.V.C With filler	Quick	140°	45	30

FEEDS FOR HSS TWIST DRILLS



GENERAL PURPOSE

Drill Diameter r inch	Feed/Rev inch
1/16 – 3/32	0.0015 – 0.0025
1/8 – 5/32	0.002 – 0.004
3/16 – 7/32	0.003 – 0.006
1/4 – 5/16	0.004 – 0.008
3/8 – 7/16	0.006 – 0.010
1/2 – 9/16	0.008 – 0.012
5/8 – 11/16	0.009 – 0.013
3/4 – 13/16	0.010 – 0.014
7/8 – 15/16	0.011 – 0.015
1 – 1 1/8	0.012 – 0.016
1 1/4 – 1 1/2	0.014 – 0.018
Over 1 1/2	0.016 – 0.020*

Drill Diameter r mm	Feed/Rev mm
1.6 – 3.0	0.04 – 0.06
3.0 – 4.0	0.05 – 0.10
4.0 – 5.5	0.075 – 0.15
5.5 – 8.0	0.10 – 0.20
8.0 – 11.0	0.15 – 0.25
11.0 – 14.5	0.20 – 0.30
14.5 – 17.5	0.23 – 0.33
17.5 – 20.5	0.25 – 0.36
20.5 – 24.0	0.28 – 0.38
24.0 – 28.5	0.30 – 0.40
28.5 – 38.0	0.35 – 0.45
Over 38.0	0.40 – 0.50*

*Or greater according to the work

AUSTENITIC STAINLESS STEEL AND NIMONIC ALLOYS

Drill Diameter r inch	Feed/Rev inch
1/16 – 3/32	0.002 – 0.0035
1/8 – 5/32	0.0025 – 0.006
3/16 – 7/32	0.004 – 0.009
1/4 – 5/16	0.005 – 0.012
3/8 – 7/16	0.0075 – 0.015
1/2 – 9/16	0.010 – 0.018
5/8 – 11/16	0.011 – 0.020
3/4 – 13/16	0.0125 – 0.021
7/8 – 15/16	0.0135 – 0.022
1 – 1 1/8	0.015 – 0.024
1 1/4 – 1 1/2	0.0175 – 0.027
Over 1 1/2	0.002 – 0.030

Drill Diameter r mm	Feed/Rev mm
1.6 – 3.0	0.05 – 0.09
3.0 – 4.0	0.06 – 0.15
4.0 – 5.5	0.10 – 0.23
5.5 – 8.0	0.125 – 0.30
8.0 – 11.0	0.19 – 0.38
11.0 – 14.5	0.25 – 0.45
14.5 – 17.5	0.28 – 0.50
17.5 – 20.5	0.31 – 0.53
20.5 – 24.0	0.34 – 0.56
24.0 – 28.5	0.38 – 0.60
28.5 – 38.0	0.44 – 0.68
Over 38.0	0.50 – 0.75

Note: On new work, commence at the slowest appropriate speed and lightest feed and gradually increase until optimum output per grind is obtained.

CONVERSION CHART



DECIMAL EQUIVALENTS FRACTIONAL, WIRE, LETTER AND METRIC SIZES

Decimal Equiv.	Inch	WG/LG	M
0.0098			0.250
0.0100		87	0.254
0.0105		86	0.267
0.0110		85	0.280
0.0115		84	0.292
0.0118			0.300
0.0120		83	0.305
0.0125		82	0.318
0.0130		81	0.330
0.0135		80	0.343
0.0145		79	0.368
0.0156	1/64		0.397
0.0160		78	0.406
0.0180		77	0.457
0.0197			0.500
0.0200		76	0.508
0.0210		75	0.533
0.0225		74	0.572
0.0240		73	0.610
0.0250		72	0.635
0.0260		71	0.660
0.0280		70	0.711
0.0292		69	0.742
0.0310		68	0.787
0.0312	1/32		0.794
0.0320		67	0.813
0.0330		66	0.838
0.0350		65	0.889
0.0360		64	0.914
0.0370		63	0.940
0.0380		62	0.965
0.0390		61	0.991
0.0394			1.000
0.0400		60	1.016
0.0410		59	1.041
0.0420		58	1.067
0.0430		57	1.092
0.0465		56	1.181
0.0469	3/64	56	1.191
0.0520		55	1.321

Decimal Equiv.	Inch	WG/LG	MM
0.0550		54	1.397
0.0591			1.500
0.0595		53	1.511
0.0625	1/16		1.588
0.0635		52	1.613
0.0670		51	1.702
0.0700		50	1.778
0.0730		49	1.854
0.0760		48	1.930
0.0781	5/64		1.984
0.0785		47	1.994
0.0787			2.000
0.0810		46	2.057
0.0820		45	2.083
0.0860		44	2.184
0.0890		43	2.261
0.0935		42	2.375
0.0938	3/32		2.381
0.0960		41	2.438
0.0980		40	2.489
0.0984			2.500
0.0995		39	2.527
0.1015		38	2.578
0.1040		37	2.642
0.1065		36	2.705
0.1094	7/64		2.778
0.1100		35	2.794
0.1110		34	2.819
0.1130		33	2.870
0.1160		32	2.946
0.1181			3.000
0.1200		31	3.048
0.1250	1/8		3.175
0.1285		30	3.264
0.1360		29	3.454
0.1378			3.500
0.1405		28	3.569
0.1406	9/64		3.572
0.1440		27	3.658
0.1470		26	3.734

Decimal Equiv.	Inch	WG/LG	M
0.1495		25	3.797
0.1520		24	3.861
0.1540		23	3.912
0.1562	5/32		
0.1570		22	3.988
0.1575			4.000
0.1590		21	4.039
0.1610		20	4.089
0.1660		19	4.216
0.1695		18	4.305
0.1719	11/64		4.366
0.1730		17	4.394
0.1770		16	4.496
0.1772			4.500
0.1800		15	4.572
0.1820		14	4.623
0.1850		13	4.700
0.1875	3/16		4.763
0.1890		12	4.800
0.1910		11	4.851
0.1935		10	4.915
0.1960		9	4.978
0.1969			5.000
0.1990		8	5.055
0.2010		7	5.105
0.2031	13/64		5.159
0.2040		6	5.182
0.2090		5	5.220
0.2130		4	5.309
0.2165		3	5.410
0.2188	7/32		5.556
0.2210		2	5.613
0.2280		1	5.791
0.2340		A	5.944
0.2344	15/64		5.953
0.2362			6.000
0.2380		B	6.045
0.2420		C	6.147
0.2460		D	6.248
0.2500	1/4	E	6.350

CONVERSION CHART



DECIMAL EQUIVALENTS FRACTIONAL, WIRE, LETTER AND METRIC SIZES

Decimal Equiv.	Inch	WG/LG	MM
0.2559			6.500
0.2570		F	6.528
0.2610		G	6.629
0.2656	17/64		6.747
0.2660		H	6.756
0.2720		I	6.909
0.2756			7.000
0.2770		J	7.036
0.2810		K	7.137
0.2812	9/32		7.144
0.2900		L	7.366
0.2950		M	7.493
0.2953			7.500
0.2969	19/64		7.541
0.3020		N	7.671
0.3125	5/16		7.938
0.3150			8.000
0.3160		O	80.260
0.3230		P	8.204
0.3281	21/64		8.334
0.3320		Q	8.433
0.3346			8.500
0.3390		R	8.611
0.3438	11/32		8.731
0.3480		S	8.839
0.3543			9.000
0.3580		T	9.093
0.3594	23/64		9.128
0.3680		U	9.347
0.3740			9.500
0.3750	3/8		9.525
0.3770		V	9.576
0.3860		W	9.804
0.3906	25/64		9.922
0.3937			10.000
0.3970		X	10.084
0.4040		Y	10.262
0.4130		Z	10.490
0.4134			10.500
0.4062	13/32		10.716

Decimal Equiv.	Inch	WG/LG	MM
0.4219	27/64		10.716
0.4331			11.000
0.4375	7/16		11.113
0.4528			11.500
0.4531	29/64		11.509
0.4688	15/32		11.906
0.4724			12.000
0.4844	31/64		12.303
0.4921			12.500
0.5000	1/2		12.700
0.5118			13.000
0.5560	33/64		13.097
0.5312	17/32		13.494
0.5315			13.500
0.5469	35/64		13.891
0.5512			14.000
0.5625	9/16		14.288
0.5709			14.500
0.5781	37/64		14.684
0.5906			15.000
0.5938	19/32		15.081
0.6094	39/64		15.478
0.6102			15.500
0.6250	5/8		15.875
0.6299			16.000
0.6406	41/64		16.272
0.6496			16.500
0.6562	21/32		16.669
0.6693			17.000
0.6719	43/64		17.066
0.6875	11/16		17.463
0.6890			17.500
0.7031	45/64		17.859
0.7087			18.000
0.7188	23/32		18.256
0.7283			18.500
0.7344	47/64		18.653
0.7480			19.000
0.7500	3/4		19.050
0.7656	49/64		19.447

Decimal Equiv.	inch	WG/LG	MM
0.7677			19.500
0.7813	25/32		1.000
0.7874			20.000
0.7969	51/64		20.241
0.8125	13/16		20.638
0.8268			21.000
0.8281	53/64		21.034
0.8438	27/32		21.431
0.8594	55/64		21.828
0.8661			22.000
0.8750	7/8		22.225
0.8906	57/64		22.621
0.9055			23.000
0.9063	29/32		23.019
0.9219	59/64		23.416
0.9375	15/16		23.813
0.9449			24.000
0.9531	61/64		24.209
0.9688	31/32		24.606
0.9843			25.000
0.9844	63/64		25.003
1.0000	1		25.400



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