

PRODUCT CATALOG



MAIN INDEX

Contents	Pages
Table of Contents-cum-Selection Guide	8-15
Icon Glossary	16
Carbide Drills	17-44
Carbide Reamers	45-53
Carbide End Mills	54-123
HSS Tool Bits, End Mills & Centre Drills	124-140
HSS Punches	144-160
Carbide Custom Tools & Tools Reconditioning	161-164
Forms & Conversion Tables	165-168



Carbide High Performance Drills (CTHS, CTHL series)

**Newly Developed High Wear Resistance
NOVA coating**

Stable Low Thrust Point Form

Edge Chamfer to provide longer cutting edge life

**Best suited for Drilling
Alloy Steel, SS, Titanium & Ni alloys**

Details on Pg. 28-31



Carbide High Performance Drills (C3HS, C3HL Series)

**Newly Developed High Wear Resistance
NOVA coating**

Edge Honing to provide sturdy drill point

Edge Chamfer to provide longer cutting edge life

New chip Curling design for faster chip breakage

**Best suited for Drilling
Alloy Steel, SS, Titanium & Ni alloys**

Details on Pg.24-27



“Carbide End Mills 301 or 302 Series
especially designed for
Hard Machining up to 60HRc

Use our
401 or 402 series
for machining up to 70HRc”

Details on Pg. 74-75 & 69-70



“Wood machining tools to
cater to ever so growing
needs of the
Wood Routing industry

Details on Pg. 98-105



“Use **High Feed Cutters** or
407 Series for
Roughing operations
on your Hard-die materials
before you use
RIGPL 402 or **302 series**
to finish them”

Details on Pg. 73



“**HSS M2, M35**
or
PM Grade Punches
to cater to Die-Mold, Press Tools,
Rivet & Fastener Industry”

Details on Pg. 144-160



Description	Page No
"GRADE CHART of HSS CUTTING TOOLS"	125
"HSS Square Tools Bits (Inch Sizes)"	126
"HSS Square Tools Bits (Metric Sizes)"	127
"HSS Rectangular (Flat) Tools Bits (Inch Sizes)"	128
"HSS Rectangular (Flat) Tools Bits (Metric Sizes)"	129
"HSS Round Tool Bits (Inch Sizes)"	130
"HSS Round Tool Bits (Metric Sizes)"	131
"HSS Parting Blades Cut-Off Blades"	132
"HSS Parallel Shank End Mills (Imperial Sizes)"	138
"HSS Parallel Shank End Mills (Metric Sizes)"	139
"HSS CENTRE DRILLS Type 'A'"	140
"Geometry & Instructions"	133-137



Series	Description	BODY/TIP DIA "P" (0.1 mm increments)	Page	Materials available	Drawing
P101	HSS Straight Punches	1.1-25	144	1X & ASP	
P102	HSS Tapered Head Punches	3.0-12	146	1X & ASP	
P103	HSS Straight Punches For Medium Load	2.1-25	147	1X & ASP	
P104	HSS Straight Punches For Heavy Load	2.1-25	148	1X & ASP	
P105	HSS Mini Straight Punches	1-3	149	1X & ASP	
P106	HSS Shoulder Punches	2-24.9	150	1X & ASP	
P107	HSS Shoulder Punches For Heavy Load	2-24.9	151	1X & ASP	
P108	HSS Shoulder Punches Short Type	2-9.9	152	1X & ASP	
P109	HSS Tapped Punches	2-24.9	153	1X & ASP	
P110	HSS Block Punches	-	154	1X	
P111	HSS Block Punches Tapped	-	156	1X	
P112	HSS Straight Button Dies	-	158	1X	
P113	HSS Headed Button Dies	-	159	1X	
	Variations available in punches	-	160	-	



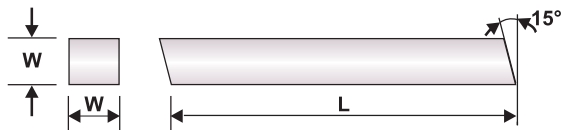
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"HSS Square Tools Bits (Inch Sizes)"	126
"HSS Square Tools Bits (Metric Sizes)"	127
"HSS Rectangular (Flat) Tools Bits (Inch Sizes)"	128
"HSS Rectangular (Flat) Tools Bits (Metric Sizes)"	129
"HSS Round Tool Bits (Inch Sizes)"	130
"HSS Round Tool Bits (Metric Sizes)"	131
"HSS Parting Blades Cut-Off Blades"	132
"HSS Parallel Shank End Mills (Imperial Sizes)"	138
"HSS Parallel Shank End Mills (Metric Sizes)"	139
"HSS CENTRE DRILLS Type 'A'"	140
"Geometry & Instructions"	133-137



GRADE	Description	HRC	END-USE
ROHIT-1X	AISI M2; HS 6 - 5 - 2	62-65	Recommended for use on non-ferrous metals like Aluminium, Copper and other free cutting metals like mild steel, EN-1A or soft materials
ROHIT-2X 5%Co.	AISI M35; HS 6 - 5 - 2 - 5	63-66	Exceptionally good toughness and red hardness, most suitable for heavy work on difficult materials and an ideal general purpose tool bit for machine shops. As a single point cutting tool, this quality is used to bring about the best advantage with tools which have to take deep cuts at high speeds. These tools are recommended for free cutting materials where high production is required.
"ROHIT SPECIAL - 8%Co."	AISI M-42; HS 2 - 9 - 1 - 8	65-68	Recommended for use in cutting high alloy steel in annealed condition. This tool has a very long cutting life.
ROHIT-3X 10%Co.	AISI T-42; HS 10 - 4 - 3 - 10	65-67	"This quality of tool bit retains its hardness even at very high temperatures and is recommended where the generation of heat is very high and the tool should not get blunt at high temperatures. This type is recommended for use in cutting of high alloy steels and stainless steels, such as EN-8M, EN-31, SS-304 etc. As the cutting life of the tool is longer than any quality of tool bit, it is recommended for use in automats (TRAUB M/C) where continuous processes are involved with multi-tools."
ROHIT-3X EC500	AISI T42 CRYOGENICALLY TREATED	65-67	Manufactured from High Speed Steel containing 10% Cobalt are cryogenically treated by cooling down tool bits at a pre-determined rate to liquid nitrogen temperature levels of 77° K resulting in a thermally stabilized material with a coherent, improved micro-structure that exhibits outstanding wear resistance and improved performance.



Tolerance (Width/Thickness)	h12
Tolerance (Length)	+/- 1.0mm
End Bevel	15°
Optional Bevel	0°/ 10°



ROHIT Square Tool Bits are available in ROHIT - 1X, 2X, SPECIAL, 3X, EC-500 grades

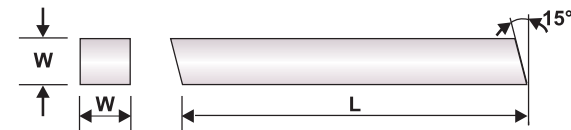
Note: Intermediate Sizes are available on request.

Packing: Plastic or Cardboard Boxes

Width (W) (Inches)	Width (W) (Inches)	Length (L) (Inches)	Width (W) (Inches)	Width (W) (Inches)	Length (L) (Inches)
1/8	1/8	2-1/2	3/4	3/4	6
1/8	1/8	3	3/4	3/4	8
1/8	1/8	4	1	1	4
3/16	3/16	2-1/2	1	1	5
3/16	3/16	3	1	1	6
3/16	3/16	4	1	1	8
3/16	3/16	6	1-1/4	1-1/4	6
1/4	1/4	2-1/2	1-1/4	1-1/4	8
1/4	1/4	3	1-1/2	1-1/2	6
1/4	1/4	4	1-1/2	1-1/2	8
1/4	1/4	6			
1/4	1/4	8			
5/16	5/16	3			
5/16	5/16	4			
5/16	5/16	6			
5/16	5/16	8			
3/8	3/8	3			
3/8	3/8	4			
3/8	3/8	6			
3/8	3/8	8			
3/8	3/8	10			
1/2	1/2	3			
1/2	1/2	4			
1/2	1/2	6			
1/2	1/2	8			
1/2	1/2	10			
5/8	5/8	4			
5/8	5/8	6			
5/8	5/8	8			
3/4	3/4	4			



Tolerance (Width/Thickness)	h12
Tolerance (Length)	+/- 1.0mm
End Bevel	15°
Optional Bevel	0°/ 10°



ROHIT Square Tool Bits are available in ROHIT - 1X, 2X, SPECIAL, 3X, EC-500 grades

Note: Intermediate Sizes are available on request.

Packing: Plastic or Cardboard Boxes

Width (W) (mm)	Width (W) (mm)	Length (L) (mm)	Width (W) (mm)	Width (W) (mm)	Length (L) (mm)
3	3	63	16	16	200
3	3	75	19	19	100
3	3	100	19	19	150
4	4	63	19	19	200
4	4	75	20	20	100
4	4	100	20	20	150
5	5	75	20	20	200
5	5	100	25	25	150
5	5	150	25	25	200
6	6	63			
6	6	75			
6	6	100			
6	6	150			
6	6	200			
8	8	75			
8	8	100			
8	8	150			
8	8	200			
10	10	75			
10	10	100			
10	10	150			
10	10	200			
10	10	250			
12	12	75			
12	12	100			
12	12	150			
12	12	200			
12	12	250			
16	16	100			
16	16	150			

HSS Rectangular (Flat) Tools Bits | (Inch Sizes)



Tolerance (Width/Thickness)	h12		
Tolerance (Length)	+/- 1.0mm		
End Bevel	0°		
Optional Bevel	As per Requirement		

ROHIT Flat Tool Bits are available in ROHIT - 1X, 2X & 3X grades

Note: Intermediate Sizes are available on request.

Packing: Plastic or Cardboard Boxes

Thickness (T) (inches)	Width (W) (inches)	Length (L) (inches)	Thickness (T) (inches)	Width (W) (inches)	Length (L) (inches)
1/8	3/8	8	5/16	3/4	8
1/8	1/2	6	3/8	1/2	4
1/8	1/2	8	3/8	1/2	6
1/8	5/8	6	3/8	1/2	8
1/8	5/8	8	3/8	5/8	6
1/8	3/4	6	3/8	5/8	8
1/8	3/4	8	3/8	3/4	6
1/8	1	6	3/8	3/4	8
1/8	1	8	3/8	1	6
5/32	3/8	8	3/8	1	8
5/32	5/8	6	3/8	1-1/4	6
5/32	3/4	6	3/8	1-1/4	8
5/32	3/4	8	3/8	1-1/2	6
3/16	3/8	8	3/8	1-1/2	8
3/16	1/2	6	1/2	5/8	6
3/16	1/2	8	1/2	5/8	8
3/16	3/4	6	1/2	3/4	6
3/16	3/4	8	1/2	3/4	8
3/16	1	6	1/2	1	6
3/8	1	8	1/2	1	8
1/4	1/2	4	1/2	1-1/4	6
1/4	1/2	6	1/2	1-1/4	8
1/4	1/2	8	1/2	1-1/2	6
1/4	5/8	6	1/2	1-1/2	8
1/4	5/8	8	5/8	3/4	6
1/4	3/4	6	5/8	3/4	8
1/4	3/4	8	5/8	1	6
1/4	1	6	5/8	1	8
1/4	1	8	3/4	1	6
5/16	3/4	6	3/4	1	8

HSS Rectangular (Flat) Tools Bits | (Metric Sizes)



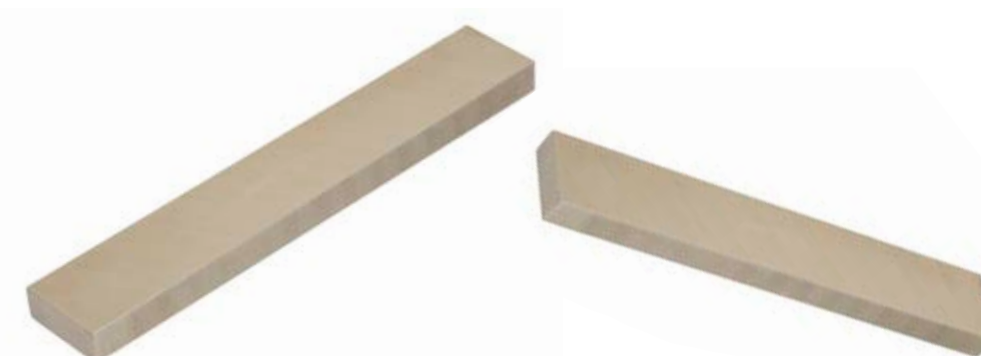
Tolerance (Width/Thickness)	h12		
Tolerance (Length)	+/- 1.0mm		
End Bevel	0°		
Optional Bevel	As per Requirement		

ROHIT Flat Tool Bits are available in ROHIT - 1X, 2X & 3X grades

Note: Intermediate Sizes are available on request.

Packing: Plastic or Cardboard Boxes

Thickness (T) (mm)	Width (W) (mm)	Length (L) (mm)	Thickness (T) (mm)	Width (W) (mm)	Length (L) (mm)
2	12	200	6	12	150
2	19.05	200	6	12	200
2.5	12	200	6	16	150
2.5	19.05	200	6	16	200
3	12	150	6	25	150
3	12	200	6	25	200
3	16	150	8	20	63
3	16	200	12	16	150
3	25	150	12	16	200
3	25	200	12	25	150
4	16	150	12	25	200
5	16	150	16	25	150
5	16	200	16	25	200
5	25	150	20	25	150
5	25	200	20	25	200
6	12	100			



HSS Round Tool Bits | (Inch Sizes)



Tolerance (Diameter)	h8		
Tolerance (Length)	+/- 1.0mm		
End Bevel	0°		

ROHIT Round Tool Bits are available in ROHIT - 1X, 2X, SPECIAL & 3X

Note: Intermediate Sizes & ASP grade rounds are available on request.

Packing: Plastic or Cardboard Boxes

Diameter(d) (inches)	Length(L) (inches)	Diameter(d) (inches)	Length(L) (inches)
1/8	3	5/8	8
1/8	4	3/4	4
5/32	3	3/4	6
5/32	4	3/4	8
3/16	3	7/8	4
3/16	4	7/8	6
3/16	6	7/8	8
7/32	3	1	4
7/32	4	1	6
7/32	6	1	8
1/4	3		
1/4	4		
1/4	6		
1/4	8		
5/16	3		
5/16	4		
5/16	6		
5/16	8		
3/8	3		
3/8	4		
3/8	6		
3/8	8		
3/8	10		
1/2	3		
1/2	4		
1/2	6		
1/2	8		
1/2	10		
5/8	4		
5/8	6		

HSS Round Tool Bits | (Metric Sizes)



Tolerance (Diameter)	h8		
Tolerance (Length)	+/- 1.0mm		
End Bevel	0°		

ROHIT Round Tool Bits are available in ROHIT - 1X, 2X, SPECIAL & 3X

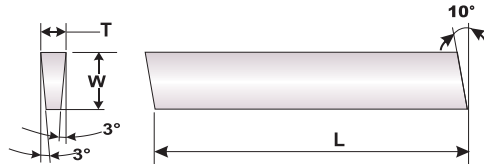
Note: Intermediate Sizes & ASP grade rounds are available on request.

Packing: Plastic or Cardboard Boxes

Diameter(d) (mm)	Length(L) (mm)	Diameter(d) (mm)	Length(L) (mm)	Diameter(d) (mm)	Length(L) (mm)
2.0	75	7.0	200	16.0	100
2.0	100	8.0	75	16.0	150
3.0	75	8.0	100	16.0	200
3.0	100	8.0	150	19.0	100
4.0	75	8.0	200	19.0	150
4.0	100	9.0	75	19.0	200
4.0	150	9.0	100	20.0	100
4.5	75	9.0	150	20.0	150
4.5	100	9.0	200	20.0	200
4.5	150	9.0	250	25.0	100
5.0	75	10.0	75	25.0	150
5.0	100	10.0	100	25.0	200
5.0	150	10.0	150		
5.5	75	11.0	75		
5.5	100	11.0	100		
5.5	150	11.0	150		
6.0	75	12.0	75		
6.0	100	12.0	100		
6.0	150	12.0	150		
6.0	200	12.0	200		
6.5	100	12.0	250		
6.5	150	13.0	75		
6.5	200	13.0	100		
7.0	75	13.0	150		
7.0	100	14.0	75		
7.0	150	14.0	100		
		14.0	150		
		14.0	200		



Tolerance (Width/Thickness)	H12
Tolerance (Length)	+/- 1.0mm
End Bevel	0°
Optional Bevel	As Per Requirement



ROHIT Parting Tool Bits are available in ROHIT - 1X, 2X, SPECIAL & 3X

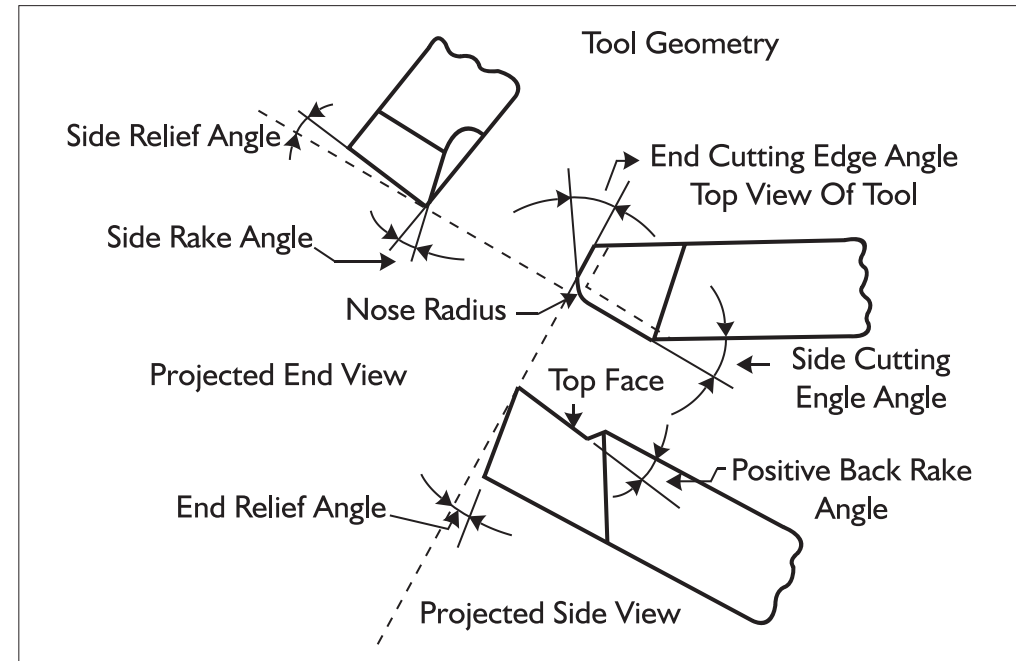
Note: Intermediate Sizes are available on request.

Packing: Plastic or Cardboard Boxes

Thickness (T) in mm	Width (W) in mm	Length (L) in mm
1.5	12.7	101.6
1.75	12.7	101.6
1.75	15.875	127
2	12	100
2	12.7	101.6
2	15.875	127
2	16	125
2.38	12.7	101.6
2.38	15.875	127
2.5	16	160
3	16	160
3.17	19.05	152.4
3.17	22.22	152.4
4	21	150
4.76	25.4	152.4
5	21	150



TOOL GEOMETRY



MACHINING INSTRUCTIONS

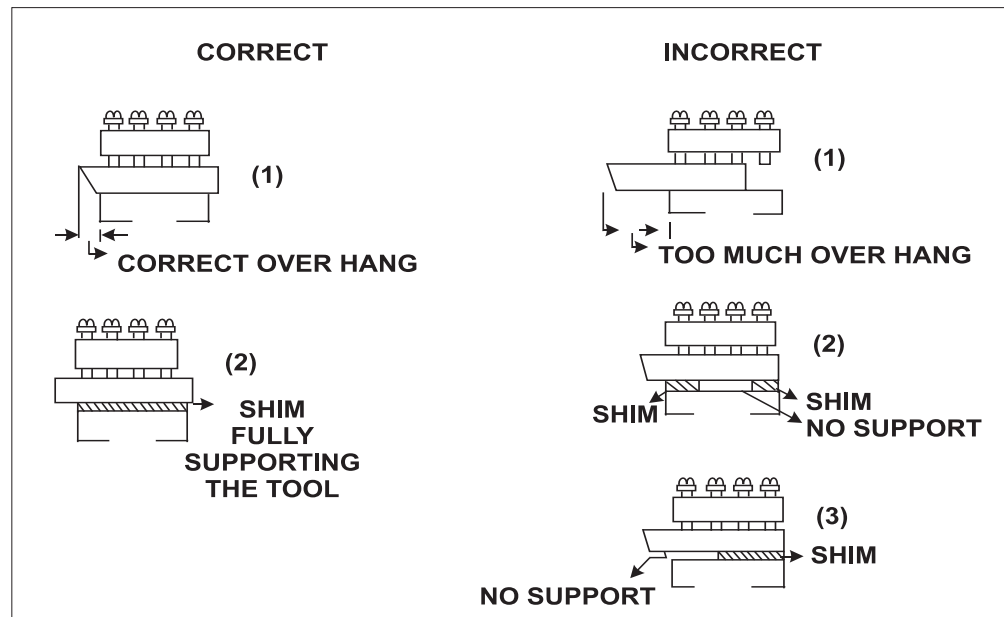
- The tool must be kept sharp.
- Tool overhang should be kept to a minimum less than 1:1 ratio of overhang to the shank section, to avoid vibrations.
- The finishing point of the tool must be set on the centre line of the work piece.
- Re-grind at the appropriate time to minimise cutting forces. Worn out edges need a higher force.
- Use positive rake angles. Do not use a negative rake angle unless called for.
- The machine must be kept rigid.
- The machine should be of adequate power.
- The work piece and tool should be well clamped.
- The depth of cut should be deep enough to avoid glazing.
- The feed should be positive to avoid work hardening.
- Minimum chip colourisation is desirable.



TOOL CLAMPING

- Tool bits should be fitted in the tool post or tool holder with a minimum of overhang as in figure (in the ratio of 1:1 of the tool size or less).
- The base of the tool bit should be flush with the tool post.
- When shims are used they should cover the entire length of the tool bit that rests on the tool post.
- It is not advisable to use a bent shim.

HOW TO CLAMP THE TOOL



Recommended angles for High Speed Steel single point tools



Material	Side Relief angle degrees	End Relief angle degrees	Back Rake angle degrees	Side Rake angle degrees
High Speed, Alloy & High Carbon Tool Steels & Stainless Steel	7 to 9	6 to 8	5 to 7	8 to 10
SAE Steels:				
1020, 1035, 1040	8 to 10	8 to 10	10 to 12	10 to 12
1045, 1095	7 to 9	8 to 10	10 to 12	10 to 12
11,121,120	7 to 9	7 to 9	12 to 14	12 to 14
1314, 1315	7 to 9	7 to 9	12 to 14	14 to 16
1335	7 to 9	7 to 9	12 to 14	14 to 16
23,152,320	7 to 9	7 to 9	8 to 10	10 to 12
233,023,352,340	7 to 9	7 to 9	8 to 10	10 to 12
23,452,350	7 to 9	7 to 9	6 to 8	8 to 10
311,531,203,130	7 to 9	7 to 9	8 to 10	10 to 12
31,353,140	7 to 9	7 to 9	8 to 10	8 to 10
325,041,404,340	7 to 9	7 to 9	6 to 8	8 to 10
61,406,145	7 to 9	7 to 9	6 to 8	8 to 10
Aluminium	12 to 14	8 to 10	30 to 35	14 to 16
Bakelite	10 to 12	8 to 10	0	0
Brass, Free Cutting	10 to 12	8 to 10	0	1 to 3
Red, Yellow, Bronze Cast & Bronze Commercial	8 to 10	8 to 10	0	-2 to -4
Bronze Free Cutting	8 to 10	8 to 10	0	2 to 4
Hard Phosphor Bronze	8 to 10	6 to 8	0	0
Cast Iron, Grey	8 to 10	6 to 8	3 to 5	10 to 12
Copper	12 to 14	12 to 14	14 to 16	18 to 20
Copper Alloys :				
Hard	8 to 10	6 to 8	0	0
Soft	10 to 12	8 to 10	0 to 2	0
Fibre	14 to 16	12 to 14	0 to 2	0
Fernico	14 to 16	10 to 12	14 to 16	10 to 12
Nickel Iron	14 to 16	10 to 12	6 to 8	12 to 14
Micarta	14 to 16	10 to 12	14 to 16	10 to 12
Monel & Nickel	14 to 16	12 to 14	8 to 10	12 to 14
Nickel, Silver	10 to 12	10 to 12	8 to 10	0 to -2
Rubber, Hard	18 to 20	14 to 16	0 to -2	0 to -2



RECOMMENDED CUTTING SPEEDS METRE PER MINUTE

Material	10% Cobalt T42	8% Cobalt M42	5% Cobalt M35	M2
Mild Steel, Wrought Iron, Soft Brass, Copper, Bronze and Aluminium with tensile strength of less than 25 tons per square inch.	79-50	70-45	60-40	59-36
Steel & Steel Castings such as slightly hard Mild Steel, Soft Cut Iron & other metals like hard Brass, Copper & Aluminium with tensile strength upto 38 tons per square inch.	39-26	36-24	33-32	30-21
Steel & Steel Castings such as Carbon Steel, medium hard cast Iron & other metals like hard Brass, Copper, Bronze & Aluminium with a tensile strength upto 45 tons per square inch.	29-21	26-18	24-16	22-15
Steel & Steel Castings such as Oil Hardened Steel, Chrome Steel, Hard Cut Iron, etc. With a tensile strength upto 50 tons per square inch.	22-16	21-15	20-14	18-23
Steel & Steel Castings including annealed High Speed Steel, with a tensile strength upto 65 tons per square inch.	15-13	15-12	14-11	10-Dec

RECOMMENDED DEPTH OF CUT

OPERATION	DEPTH OF CUT mm
Rough turning	Depth of cut = machining allowance
Semi finish turning	0.50 to 0.20mm
Finish turning	0.40 to 0.10mm

RECOMMENDED FEED

Surface Finish μ	Work Material	Range of Cutting Speed m/min.	Nose Radius in mm		
			0.5	1	2
10	Carbon steel & Alloy steel	<50	0.3-0.5	0.45-0.6	0.55-0.7
		>50	0.4-0.55	0.55-0.65	0.65-0.7
	Cut Iron Bronze & Aluminium Alloys	All range	0.25-0.4	0.40-0.5	0.5-0.6
5	Carbon steels & Alloy steels	<50	0.18-0.25	0.25-0.3	0.3-0.4
		>50	0.25-0.3	0.3-0.35	0.35-0.5
	Cast Iron, Bronze & Aluminium Alloys	All range	0.15-0.25	0.25-0.4	0.4-0.6
2.5	Carbon steel & Alloy steel	<50	0.1	0.11-0.15	0.15-0.22
		50- 100	0.11-0.16	0.16-0.25	0.25-0.35
		>100	0.16-0.2	0.2-0.25	0.25-0.35
	Cast Iron, Bronze & Aluminium Alloys	All range	0.1-0.15	0.15-0.2	0.2-0.35



INDICATIONS	CAUSES	REMEDIES
Chipping	Too Keen a cutting edge. Chatter. Incorrect tool material. Too much relief. Lack of rigidity. Improper grinding.	Select Correct tool geometry. Prevent Chattering (See Chatter Below). Select suitable grade/quality. Reduce relief. Clamp rigidity. Use suitable grade of wheel for Grinding. Grind to give satisfactory finish to the cutting faces.
Cracking or Breaking	Feed too heavy. Worn out cutting edges Improperly applied coolant. Too much rake or relief. Too much over hang. Lack of rigidity. Too much variation in depth of cut for the size of Tool bit. Improper clamping.	Reduce feed to recommended range. Re-grind the cutting edges. Apply copious flow of coolant. Grind to recommended rake/relief angles. Reduce overhang to the minimum possible extent. Clamp both the work & the tool rigidly. Minimize variation in depth of cut. Tool post or Tool holder worn out replace it. The tool must be supported at the bottom with a perfect flat (Parallel) plate shown & should be clamped rigidly. Check the work-clamping.
Chatter	Tool not in centre. Insufficient relief or clearance. Too much rake angle. Nose radius too large. Insufficient H.P.	Reset. Grind with adequate relief. Grind to recommended rake angle. Reduce the nose radius on the tool. Reduce depth of cut & feed.
Tom Finish	Speed too low. Dull tool. Improper grinding.	Increase speed as recommended. Re-sharpen the tool. Grind the tool to required angles with a suitable grade of wheel to give good finish on the cutting faces
Flank wear	Speed too high. Feed too light. Improper grinding.	Reduce speed as recommended. Increase suitably. See grinding.
Crater wear	Speed too high. Feed too high. Tool of incorrect grade.	Reduce speed. Reduce feed. Select tool material of better hot Hardness.
Glaze	Speed too low. Tool finish rough. Tool little rake.	Use recommended speed. Grind tool with finer grit wheel give finer wheel and give finer finish on the cutting faces. Provide adequate rake.

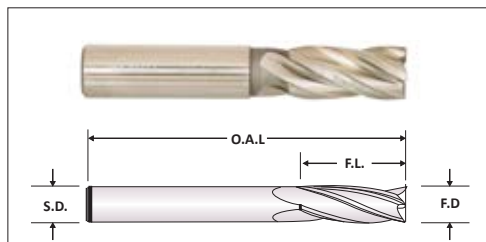
HSS Parallel Shank End Mills | (Imperial Sizes)



ROHIT PARALLEL SHANK ENDMILLS are available in ROHIT - 1X & 2X GRADES, AISI M42 (8% Cobalt) or ROHIT Special Grade also manufactured on order basis.

Note: Intermediate sizes available only on request as per company MOQ, Specifications Conform to BS122: Part1: 1953, All dimensions are in inches.

Packing: Single piece plastic boxes



TOLERANCE

F.D. < 3/4"	(+ 0.005" / - 0.000)
F.D. > 3/4"	(+ 0.010" / - 0.000)

F.D.	Flute Diameter
S.D.	Shank Diameter
C.E.L	Cutting Edge Length / Flute Length
O.A.L	Overall Length

F.D. (inches)	C.E.L (inches)	S.D. (inches)	O.A.L (inches)	No. of Flute
1/8	3/8	1/4	1-7/8	4
5/32	3/8	1/4	1-7/8	4
3/16	1/2	1/4	2	4
7/32	1/2	1/4	2	4
1/4	5/8	1/4	2-1/8	4
5/16	3/4	3/8	2-1/2	4
3/8	7/8	3/8	2-5/8	4
7/16	7/8	1/2	2-5/8	4
1/2	1	1/2	2-3/4	4
9/16	1-1/8	1/2	2-7/8	4
5/8	1-1/4	5/8	3-1/4	4
11/16	1-3/8	5/8	3-3/8	4
3/4	1-1/2	5/8	3-1/2	4
13/16	1-5/8	3/4	3-5/8	4
7/8	1-5/8	3/4	3-5/8	6
1	1-3/4	3/4	3-3/4	6
1-1/8	1-7/8	1	4-1/8	6
1-1/4	2	1	4-1/4	6

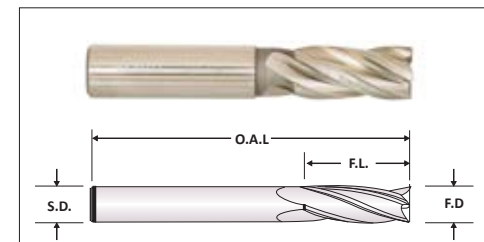
HSS Parallel Shank End Mills | (Metric Sizes)



ROHIT PARALLEL SHANK ENDMILLS are available in ROHIT - 1X & 2X GRADES, AISI M42 (8% Cobalt) or ROHIT Special Grade also manufactured on order basis.

Note: Intermediate sizes available only on request as per company MOQ, Specifications Conform to IS6353:1991.

Packing: Single piece plastic boxes.



TOLERANCE

F.D.	j.s.14
S.D.	h8

F.D.	Flute Diameter
S.D.	Shank Diameter
C.E.L	Cutting Edge Length / Flute Length
O.A.L	Overall Length

F.D. (mm)	C.E.L (mm)	S.D. (mm)	O.A.L (mm)	No. of Flute
2	8	4	42	4
3	10	4	42	4
4	11	4	43	4
4	16	6	52	4
5	13	5	47	4
5	16	6	52	4
6	16	6	52	4
7	16	8	52	4
8	19	8	59	4
9	19	10	59	4
10	22	10	67	4
11	22	12	67	4
12	26	12	76	4
13	26	12	76	4
14	26	12	76	4
14	32	16	88	4
15	32	12	88	4
15	32	16	88	4
16	32	16	88	4
17	32	16	88	4
18	32	16	88	4
19	38	16	101	6

F.D. (mm)	C.E.L (mm)	S.D. (mm)	O.A.L (mm)	No. of Flute
20	38	20	101	6
21	38	20	101	6
22	38	20	101	6
23	45	25	116	6
24	45	25	116	6
25	45	25	116	6
26	45	25	116	6
27	45	25	116	6
28	45	25	116	6
29	53	25	140	6
30	53	25	140	6

HSS CENTRE DRILLS | Type 'A'



ROHIT PARALLEL SHANK ENDMILLS are available in ROHIT - 1X & 2X GRADES, AISI M42 (8% Cobalt) or ROHIT Special Grade also manufactured on order basis.

Note: Type "A" Centre Drill for centre holes without protecting chamfer.

Packing: Single piece plastic boxes.

Specifications conform to

IS 6708: 1977

ISO 866: 1975

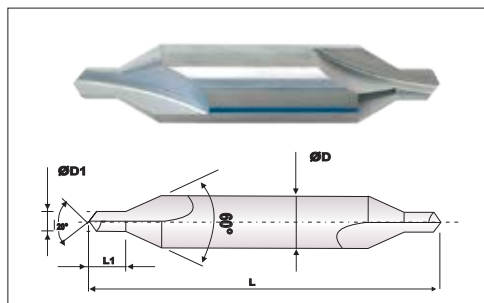
DIN 333: 1986

Dimensions in mm

HSS CENTRE DRILLS | Type 'A'

Pilot Dia (D1)	Body Dia (D)	Pilot Length (L1)	OAL (L)
1.25	3.15	1.8	31.5
1.6	4	2.4	35.5
2	5	2.9	40
2.5	6.3	3.6	45
3.15	8	4.4	50
4	10	5.6	56
5	12.5	6.9	63
6.3	16	8.6	71
8	20	10.8	80
10	25	13.5	100

Note: Type "A" Centre Drill for centre holes without protecting chamfer.



TOLERANCE

Pilot Dia (D1)

K12

Body Dia (D)

h9

INDEX-HSS PUNCHES



Series	Description	Page No
P101	HSS Straight Punches	144
P102	HSS Tapered Head Punches	146
P103	HSS Straight Punches For Medium Load	147
P104	HSS Straight Punches For Heavy Load	148
P105	HSS Mini Straight Punches	149
P106	HSS Shoulder Punches	150
P107	HSS Shoulder Punches For Heavy Load	151
P108	HSS Shoulder Punches Short Type	152
P109	HSS Tapped Punches	153
P110	HSS Block Punches	154
P111	HSS Block Punches Tapped	156
P112	HSS Straight Button Dies	158
P113	HSS Headed Button Dies	159
	Variations available in punches	160

Code	GRADE	Description	HRC
1X	ROHIT-1X	AISI M2; HS 6 - 5 - 2	60-63
AS	ROHIT-ASP	ASP-2030; HS 6 - 5 - 3 - 8	64-66



HOW TO ORDER



S.No.	For Series P101-P105	Types / Size	Example
1	Select Series	P101 - P105	P103
2	Select HSS Grade	1X / AS	1X
3	Select Head Diameter ("H")	9mm	09
4	Select Body Diameter ("P")	5.5mm	0550
5	Select OAL (Overall Length - "L")	80mm	080
Ordering Code			P103-1X-09-0550-080

S.No.	For Series P106-P108	Types / Size	Example
1	Select Series	P106 - P109	P106
2	Select HSS Grade	1X / AS	1X
3	Select Head Diameter ("H")	15mm	15
4	Select TIP Diameter ("P")	10.9mm	1090
5	Select OAL (Overall Length - "L")	100mm	100
6	Select TIP Length ("B")	13mm	13
Ordering Code			P106-1X-15-1090-100-13

S.No.	For Series P109	Types / Size	Example
1	Select Series	P109	P109
2	Select HSS Grade	1X / AS	AS
3	Select Body Diameter ("D")	10mm	10
4	Select TIP Diameter ("P")	5.5mm	0550
5	Select OAL (Overall Length - "L")	100mm	100
6	Select TIP Length ("B")	13mm	13
7	Tap Size ("M")	M5	M5
Ordering Code			P109-AS-10-0550-100-13-M5

S.No.	For Series P110	Types / Size	Example
1	Select Series	P110	P110
2	Select HSS Grade	1X	1X
3	Select Head Width ("H")	20	20
4	Select Head Height ("V")	8	08
5	Select TIP Width ("W")	6	0600
6	Select TIP Height ("P")	5.5	0550
7	Select TIP Length ("B")	13	13
8	Select OAL (Overall Length - "L")	70mm	070
Ordering Code			P110-1X-20-08-0600-0550-13-070

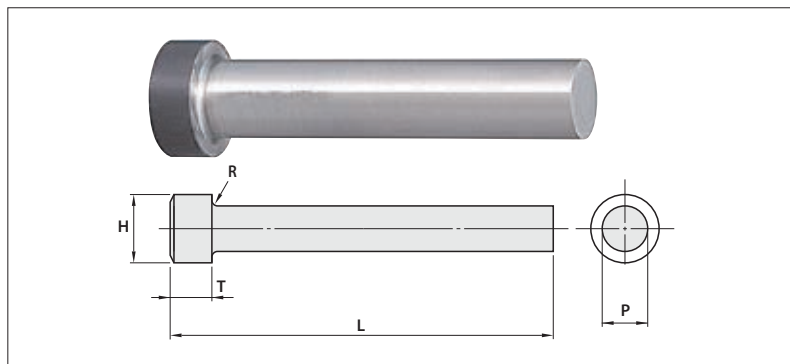
HOW TO ORDER



S.No.	For Series P111	Types / Size	Example
1	Select Series	P111	P111
2	Select HSS Grade	1X	1X
3	Select Head Width ("H")	20	20
4	Select Head Height ("V")	8	08
5	Select TIP Width ("W")	6	0600
6	Select TIP Height ("P")	4	0400
7	Select TIP Length ("B")	19	19
8	Select OAL (Overall Length - "L")	80mm	080
9	Tap Size ("M")	M6	M6
Ordering Code			P111-1X-20-08-0600-0400-19-080-M6

S.No.	For Series P112	Types / Size	Example
1	Select Series	P112	P112
2	Select HSS Grade	1X	1X
3	Select Body Diameter ("D")	10mm	10
4	Select TIP Diameter ("P")	5.5	0550
5	Select OAL (Overall Length - "L")	30mm	030
Ordering Code			P112-1X-10-0550-030

S.No.	For Series P113	Types / Size	Example
1	Select Series	P113	P113
2	Select HSS Grade	1X	1X
3	Select Head Diameter ("H")	13mm	13
4	Select TIP Diameter ("P")	5.5	0550
5	Select OAL (Overall Length - "L")	40mm	040
Ordering Code			P113-1X-13-0550-040



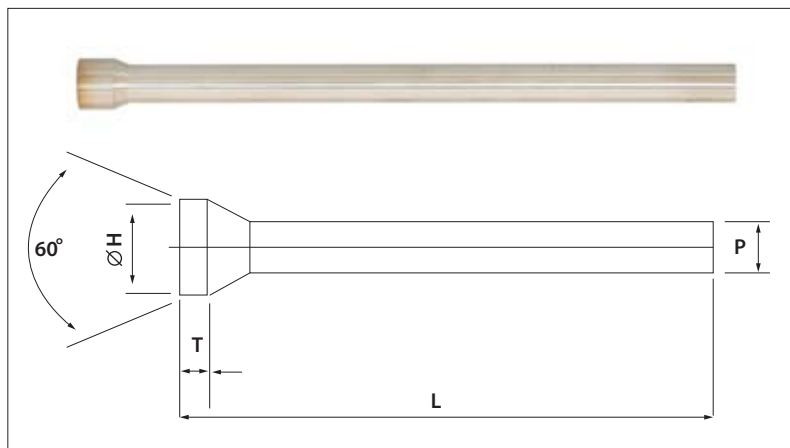
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
T	+/-0.3

HEAD DIA "H" (mm)	BODY DIA "P" (0.1 mm increments) min. "P" max.	OVERALL LENGTH "L" (mm)						
3	1.1~2.0	50	70	75				
3.5	2.1~2.5	50	70	75				
4	2.5~3.0	50	70	75				
4.5	3.1~3.5	50	70	75				
5	3.6~4.0	50	70	75	80	100	125	
5.5	4.1~4.5	50	70	75	80	100	125	
6	4.6~5.0	50	70	75	80	100	125	
6.5	5.1~5.5	50	70	75	80	100	125	150
7	5.6~6.0	50	70	75	80	100	125	150
7.5	6.1~6.5	50	70	75	80	100	125	150
8	6.6~7.0	50	70	75	80	100	125	150
8.5	7.1~7.5	50	70	75	80	100	125	150
9	7.6~8.0	50	70	75	80	100	125	150
9.5	8.1~8.5	50	70	75	80	100	125	150
10	8.6~9.0	50	70	75	80	100	125	150
10.5	9.1~9.5		70	75	80	100	125	150
11	9.6~10.0		70	75	80	100	125	150
11.5	10.1~10.5		70	75	80	100	125	150



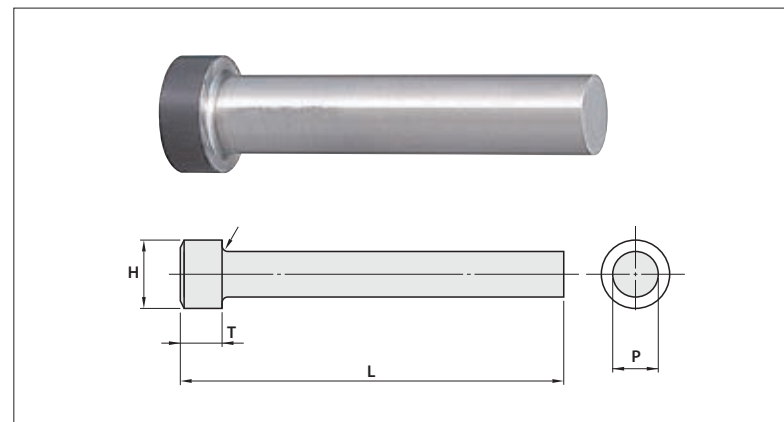
- Head Length "T" of 50mm Punch - 3mm
- Head Length "T" of above 50mm Length Punches - 5mm
- Note: These are company standard punches available in stock or cut to lengths in ROHIT-1X grade only
- *Sizes below 4mm : No Head Annealing is done

HEAD DIA "H" (mm)	BODY DIA "P" (0.1 mm increments) min. "P" max.	OVERALL LENGTH "L" (mm)						
12	10.6~11.0	70	75	80	100	125	150	
12.5	11.1~11.5	70	75	80	100	125	150	
13	11.6~12.0	70	75	80	100	125	150	
13.5	12.1~12.5	70	75	80	100	125	150	
14	12.6~13.0	70	75	80	100	125	150	
14.5	13.1~13.5	70	75	80	100	125	150	
15	13.6~14.0	70	75	80	100	125	150	
16	14.1~15	70	75	80	100	125	150	
17	15.1~16	70	75	80	100	125	150	
18	16.1~17	70	75	80	100	125	150	
19	17.1~18	70	75	80	100	125	150	
20	18.1~19	70	75	80	100	125	150	
21	19.1~20	70	75	80	100	125	150	
22	20.1~21	70	75	80	100	125	150	
23	21.1~22	70	75	80	100	125	150	
24	22.1~23	70	75	80	100	125	150	
25	23.1~24	70	75	80	100	125	150	
26	24.1~25	70	75	80	100	125	150	



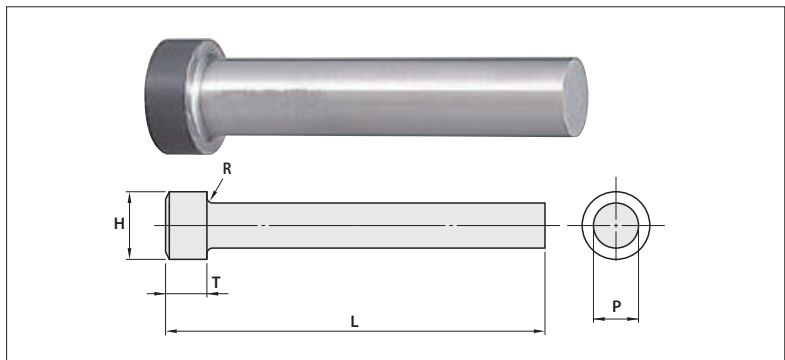
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
T	+/-0.3

HEAD DIA "H" (mm)	BODY DIA "P" (0.1 mm increments) min. "P" max.	OVERALL LENGTH "L" (mm)				HEAD LENGTH "T" (mm)
4.5	3.0~3.5	50	70	75		
5	3.5~4.0	50	70	75		
5.5	4.0~4.5	50	70	75	80	100
6	4.5~5.0	50	70	75	80	100
6.5	5.0~5.5	50	70	75	80	100
7	5.5~6.0	50	70	75	80	100
8	6.0~6.5	50	70	75	80	100
9	6.5~7.0	50	70	75	80	100
10	7.0~8.0	50	70	75	80	100
11	8.0~9.0		70	75	80	100
12	9.0~10.0		70	75	80	100
13	10.0~11.0		70	75	80	100
14	11.0~12.0		70	75	80	100



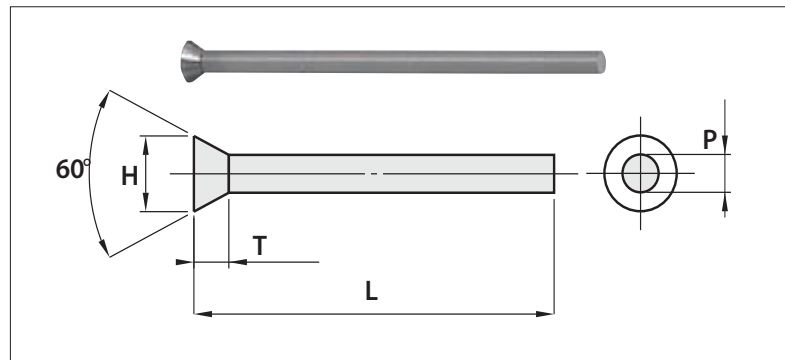
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02

HEAD DIA "H" (mm)	BODY DIA "P" (0.1 mm increments) min. "P" max.	OVERALL LENGTH "L" (mm)			
5	2.1~3.0	50	70	80	
6	3.1~4.0	50	70	80	
7	4.1~5.0	50	70	80	
8	5.1~6.0	50	70	80	
9	6.1~7.0	50	70	80	100
10	7.1~8.0	50	70	80	100
11	8.1~9.0	50	70	80	100
12	9.1~10.0	50	70	80	100 120
13	10.1~11.0	50	70	80	100 120
14	11.1~12.0	50	70	80	100 120
15	12.1~13.0	50	70	80	100 120
16	13.1~14.0		70	80	100 120
17	14.1~15.0		70	80	100 120
18	15.1~16.0		70	80	100 120
19	16.1~17.0		70	80	100 120
20	17.1~18.0		70	80	100 120
21	18.1~19.0		70	80	100 120
22	19.1~20.0		70	80	100 120
23	20.1~21.0		70	80	100 120
24	21.1~22.0		70	80	100 120
25	22.1~23.0		70	80	100 120
26	23.1~24.0		70	80	100 120
27	24.1~25.0		70	80	100 120



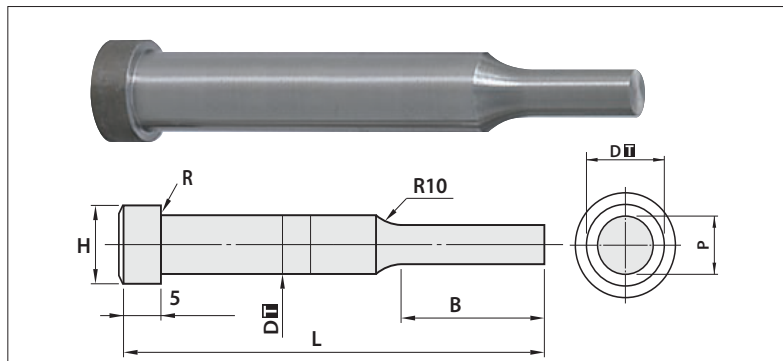
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02

HEAD DIA "H" (mm)	BODY DIA "P" (0.1 mm increments) min. "P" max.	OVERALL LENGTH "L" (mm)				
6	2.1~3.0	50	70	80		
7	3.1~4.0	50	70	80		
8	4.1~5.0	50	70	80		
9	5.1~6.0	50	70	80		
10	6.1~7.0	50	70	80	100	
11	7.1~8.0	50	70	80	100	
12	8.1~9.0	50	70	80	100	
13	9.1~10.0	50	70	80	100	120
14	10.1~11.0	50	70	80	100	120
15	11.1~12.0	50	70	80	100	120
16	12.1~13.0	50	70	80	100	120
17	13.1~14.0		70	80	100	120
18	14.1~15.0		70	80	100	120
19	15.1~16.0		70	80	100	120
20	16.1~17.0		70	80	100	120
21	17.1~18.0		70	80	100	120
22	18.1~19.0		70	80	100	120
23	19.1~20.0		70	80	100	120
24	20.1~21.0		70	80	100	120
25	21.1~22.0		70	80	100	120
26	22.1~23.0		70	80	100	120
27	23.1~24.0		70	80	100	120
28	24.1~25.0		70	80	100	120



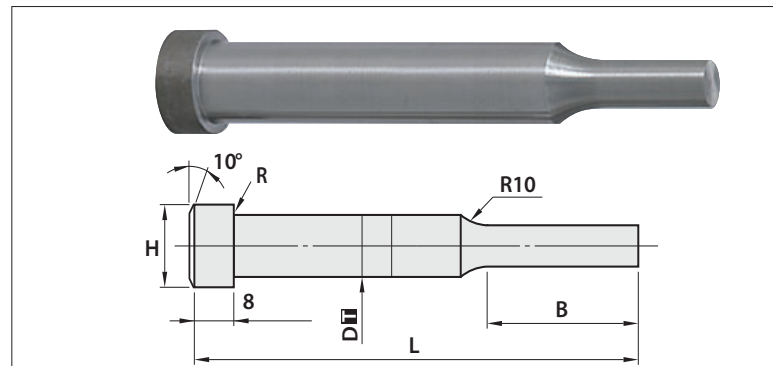
Tolerance	
H	+/-0.2
L	+/-0.5
P	0, -0.02

HEAD DIA "H" (mm)	BODY DIA "P" (mm)	OVERALL LENGTH "L" (mm)
1.8	1	25mm 35mm 40mm 50mm
2	1.1	
2.1	1.2	
2.3	1.3	
2.6	1.4	
2.8	1.5	
2.9	1.6	
3.1	1.7	
3.3	1.8	
3.4	1.9	
3.6	2	
3.8	2.1	
3.9	2.2	
4.1	2.3	
4.4	2.4	
4.5	2.5	
4.7	2.6	
4.9	2.7	
5.1	2.8	
5.2	2.9	
5.4	3	



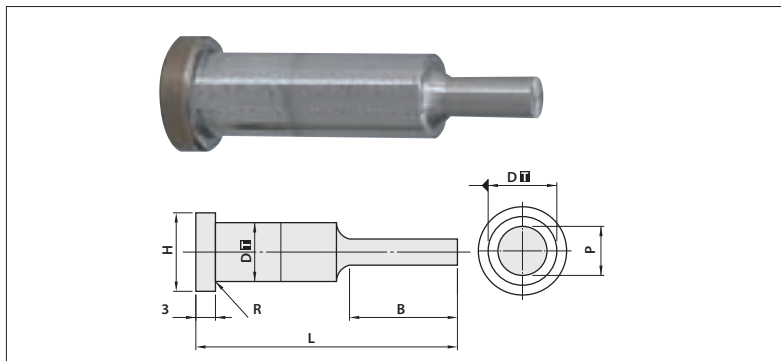
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
D	0, -0.05
B	0, +0.5

HEAD DIA "H" (mm)	BODY DIA "D" (mm)	BODY LENGTH "B" (mm)	OVERALL LENGTH "L" (mm)				TIP DIA "P" (0.1 mm increments) min. "P" max.
6	4	8	50	70	80		2.0~3.9
7	5		50	70	80	100	2.0~4.9
8	6		50	70	80	100	2.0~5.9
10	8		50	70	80	100	3.0~7.9
12	10	13	50	70	80	100	3.0~9.9
15	13		50	70	80	100	6.0~12.9
18	16			70	80	100	10.0~15.9
22	20			70	80	100	13.0~19.9
27	25	19		70	80	100	18.0~24.9
6	4		50	70	80		2.0~3.9
7	5		50	70	80	100	2.0~4.9
8	6		50	70	80	100	2.0~5.9
10	8	19	50	70	80	100	3.0~7.9
12	10		50	70	80	100	3.0~9.9
15	13		50	70	80	100	6.0~12.9
18	16			70	80	100	10.0~15.9
22	20	25		70	80	100	13.0~19.9
27	25			70	80	100	18.0~24.9
18	16	40		70	80	100	10.0~15.9
22	20			70	80	100	13.0~19.9
27	25			70	80	100	18.0~24.9



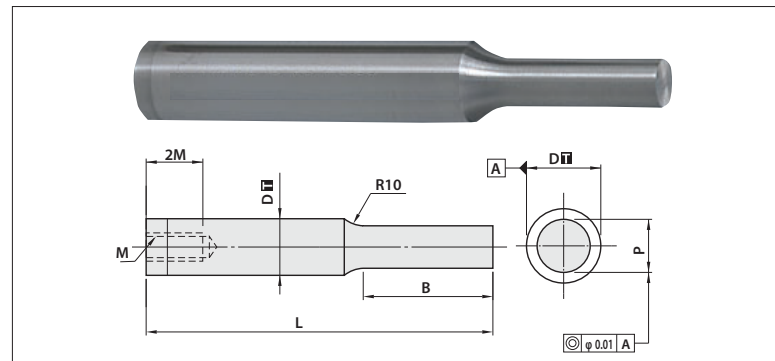
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
D	0, -0.05
B	0, +0.5

HEAD DIA "H" (mm)	BODY DIA "D" (mm)	BODY LENGTH "B" (mm)	OVERALL LENGTH "L" (mm)				TIP DIA "P" (0.1 mm increments) min. "P" max.
10	5	8	50	70	80	100	2.00~4.9
11	6		50	70	80	100	2.00~5.9
13	8			70	80	100	3.00~7.9
15	10			70	80	100	3.00~9.9
18	13	13		70	80	100	6.00~12.9
21	16			70	80	100	10.00~15.9
25	20			70	80	100	13.00~19.9
30	25			70	80	100	18.00~24.9
10	5	13		70	80	100	2.00~4.9
11	6			70	80	100	2.00~5.9
13	8			70	80	100	3.00~7.9
15	10			70	80	100	3.00~9.9
18	13	19		70	80	100	6.00~12.9
21	16			70	80	100	10.00~15.9
25	20			70	80	100	13.00~19.9
30	25			70	80	100	18.00~24.9



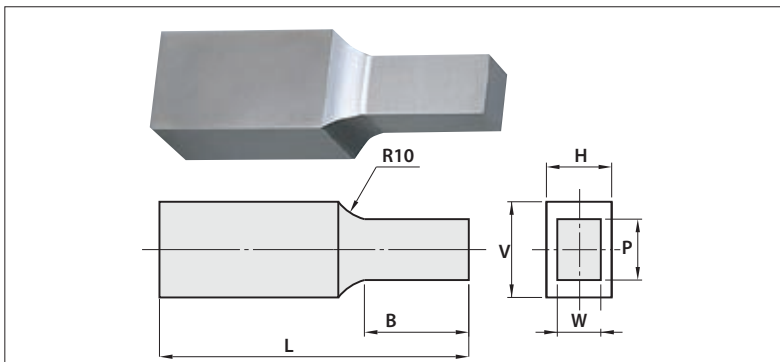
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
D	0, -0.05
B	0, +0.5

HEAD DIA "H" (mm)	BODY DIA "D" (mm)	TIP LENGTH "B" (mm)	OVERALL LENGTH "L" (mm)				TIP DIA "P" (0.1 mm increments) min. "P" max.
7	4	8	25	30	35	40	2.0~3.9
8	5		25	30	35	40	2.0~4.9
9	6		25	30	35	40	2.50~5.9
11	8		25	30	35	40	5.0~7.9
13	10		25	30	35	40	7.0~9.9
7	4	13		30	35	40	2.0~3.9
8	5			30	35	40	2.0~4.9
9	6			30	35	40	2.50~5.9
11	8			30	35	40	5.0~7.9
13	10			30	35	40	7.0~9.9



Tolerance	
D	0, -0.02
L	+/-0.5
P	0, -0.02
B	0, +0.5

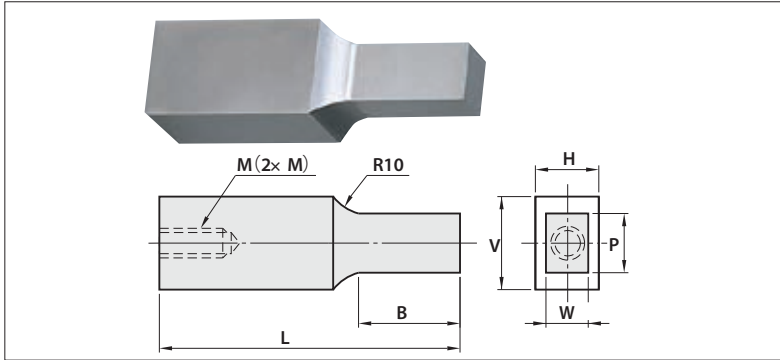
BODY DIA "D" (mm)	TIP LENGTH "B" (mm)	TAP SIZE "M"	OVERALL LENGTH "L" (mm)				TIP DIA "P" (0.1 mm increments) min. "P" max.
5	8	3	50	70	80	100	2.0~4.9
6		3	50	70	80	100	2.0~5.9
8		4	50	70	80	100	3.0~7.9
10	13	5	50	70	80	100	3.0~9.9
13		6		70	80	100	6.0~12.9
16		6		70	80	100	10.0~15.9
20	19	6		70	80	100	13.0~19.9
25		6		70	80	100	18.0~24.9
5		3	50	70	80	100	2.0~4.9
6	13	3	50	70	80	100	2.0~5.9
8		4	50	70	80	100	3.0~7.9
10		5	50	70	80	100	3.0~9.9
13	19	6		70	80	100	6.0~12.9
16		6		70	80	100	10.0~15.9
20		6		70	80	100	13.0~19.9
25	25	6		70	80	100	18.0~24.9
5		3		70	80	100	2.0~4.9
6		3		70	80	100	2.0~5.9
8	30	4		70	80	100	3.0~7.9
10		5		70	80	100	3.0~9.9
13		6		70	80	100	6.0~12.9
16	40	6		70	80	100	10.0~15.9
20		6		70	80	100	13.0~19.9
25		6		70	80	100	18.0~24.9



Tolerance	
B	0, +0.5
P, H, V, W	+/-0.02
L	+/-0.5



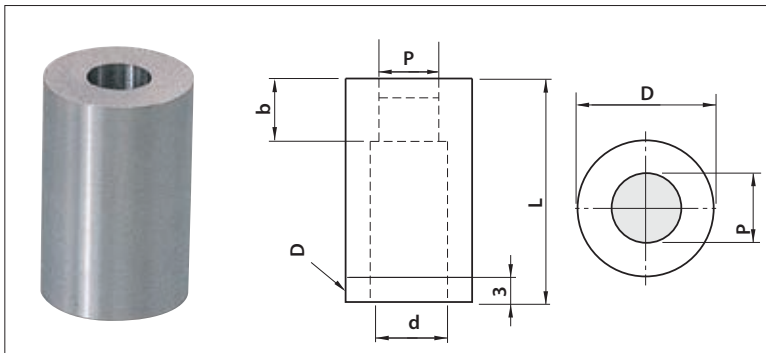
HEAD WIDTH “H” (mm)	TIP WIDTH “W” (0.1 mm increments) min. “W” max	HEAD HEIGHT “V” mm										OAL “L” (mm)	TIP LENGTH “B” (mm)	
		8	10	13	16	20	22	25		28	30		S	L
		TIP HEIGHT “P” min~max (0.1 mm increments)												
		3.0~8.0	3.0~10.0	4.0~13.0	5.0~16.0	6.0~20.0	7.0~22.0	8.0~25.0		8.0~28.0	10.0~30.0			
8	3.0~8.0	○	○	○	○	○	○	○		○	○	70	8	13
10	3.0~10.0	○	○	○	○	○	○	○		○	○		8	13
13	4.0~13.0	○	○	○	○	○	○	○		○	○		13	19
16	5.0~16.0	○	○	○	○	○	○	○		○	○	80	13	19
20	6.0~20.0	○	○	○	○	○	○	○		○	○		19	25
22	7.0~22.0	○	○	○	○	○	○	○		○	○		19	25
25	8.0~25.0	○	○	○	○	○	○	○		○	○	100	19	25
28	8.0~28.0	○	○	○	○	○	○	○		○	○		19	25
30	10.0~30.0	○	○	○	○	○	○	○		○	○		19	25



Tolerance	
B	0, +0.5
P, H, V, W	+/-0.02
L	+/-0.5

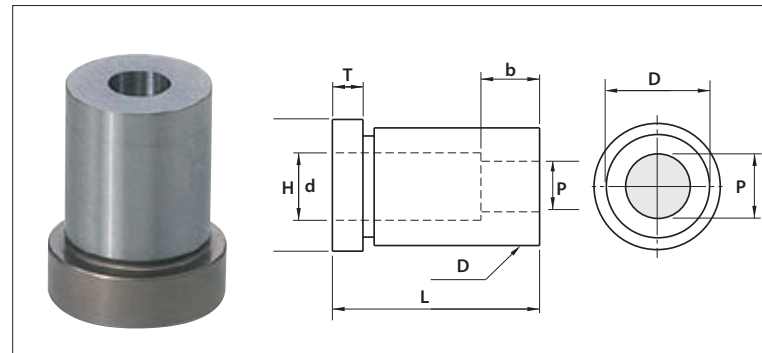


HEAD WIDTH "H" (mm)	TIP WIDTH "W" (0.1 mm increments) min. "W" max	HEAD HEIGHT "V" mm										OAL "L" (mm)	TIP LENGTH "B" (mm)		TIP SIZE "M"
		8	10	13	16	20	22	25	28	30	S		L		
		TIP HEIGHT "P" min~max (0.1 mm increments)													
		2.0~8.0	2.0~10.0	4.0~13.0	5.0~16.0	6.0~20.0	7.0~22.0	8.0~25.0		8.0~28.0	10.0~30.0				
8	2.0~8.0	○	○	○	○	○	○	○		○	○	70	8	13	4
10	2.0~10.0	○	○	○	○	○	○	○		○	○		8	13	
13	4.0~13.0	○	○	○	○	○	○	○		○	○		13	19	
16	5.0~16.0	○	○	○	○	○	○	○		○	○	80	13	19	6
20	6.0~20.0	○	○	○	○	○	○	○		○	○		19	25	
22	7.0~22.0	○	○	○	○	○	○	○		○	○		19	25	
25	8.0~25.0	○	○	○	○	○	○	○		○	○	100	19	25	8
28	8.0~28.0	○	○	○	○	○	○	○		○	○		19	25	
30	10.0~30.0	○	○	○	○	○	○	○		○	○		19	25	



Tolerance	
b	0, +0.5
D, P, d	+/-0.02
L	+/-0.5

BODY DIA "D" (mm)	OVERALL LENGTH "L" (mm)					TIP DIA "P" (0.1 mm increments) min. "P" max.	"b" (mm)	"d" (mm)
6	20	25	30	35		2.0~3.0	3	3.4
8	20	25	30	35	40	2.0~4.0	4	4.4
10	20	25	30	35	40	2.0~6.0	6	6.4
13	20	25	30	35	40	3.0~8.0	8	8.4
16	20	25	30	35	40	5.0~10.0		10.6
20	20	25	30	35	40	7.0~12.0		12.6
22	20	25	30	35	40	8.0~14.0		14.6
25	20	25	30	35	40	10.0~16.0		16.6



Tolerance	
b, T	0, +0.5
D, P, d	+/-0.02
L	+/-0.5
H	0, -0.2

HEAD DIA "H" (mm)	BODY DIA "D" (mm)	OVERALL LENGTH "L" (mm)					TIP DIA "P" (0.1 mm increments) min. "P" max.	"b" (mm)	"d" (mm)	5
9	6	20	25	30	35		2.0~3.0	3	3.4	
11	8	20	25	30	35	40	2.0~4.0	4	4.4	
13	10	20	25	30	35	40	2.0~6.0	6	6.4	
16	13	20	25	30	35	40	3.0~8.0	8	8.4	
19	16	20	25	30	35	40	5.0~10.0		10.6	
23	20	20	25	30	35	40	7.0~12.0		12.6	
25	22	20	25	30	35	40	8.0~14.0		14.6	
28	25	20	25	30	35	40	10.0~16.0		16.6	



KEY FLAT SHANK SHOULDER PUNCHES

- The below variation is available for punches P106, P107 & P108 series



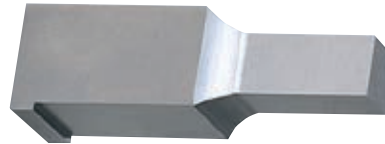
PUNCHES WITH KEY GROOVES

- The below variation is available for punches P109 where instead of TAP, keyway is provided



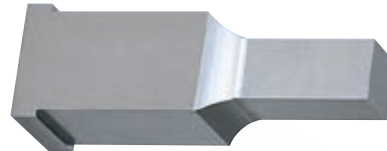
SINGLE FLANGE BLOCK PUNCHES

- The below variation is available for punches P110 & P111 series



DOUBLE FLANGE BLOCK PUNCHES

- The below variation is available for punches P110 & P111 series



HEXAGONAL PUNCHES

- This variation is provided for following series P103, P104, P106, P107, P108 and P109

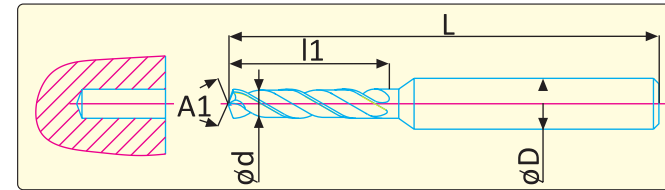


- Fill in information requested on drawing.
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- E-mail to RIGPL at : sales@rigpl.com
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STEP DRILL

NOTE: Specify TOLERANCES for ALL Length(s) and Diameter(s).

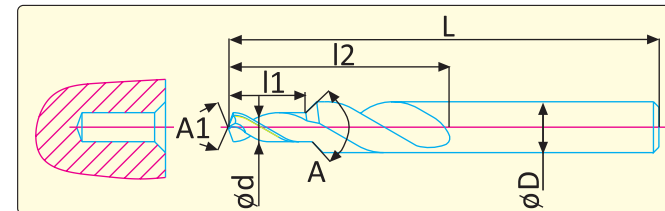


od :

l1 :

A° :

ød1 :

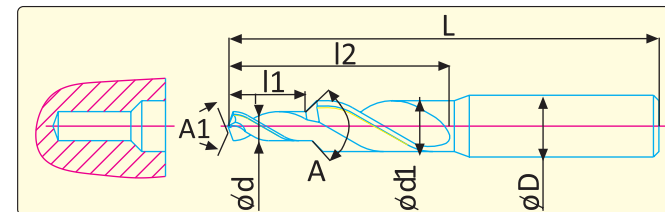


l2 :

A1° :

øD :

L :



No. of flute :

Helix :

Coating :

Quantity, pcs :

Customer Name:

Phone:

*Work Material Machined:

Hardness:

Dealer:

Quantities: (6 Piece Minimum)

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