

Description	Page No.
HSS Materials Specification	117
HSS Square Tool Bits (inch series)	118
HSS Square Tool Bits (metric series)	119
HSS Flat Tool Bits (inch series)	120
HSS Flat Tool Bits (metric series)	121
HSS Round Tool Bits (inch series)	122
HSS Round Tool Bits (metric series)	123
HSS Parting Blades	124
HSS Parallel Shank End Mills (Inch Sizes)	130
HSS Parallel Shank End Mills (Metric Sizes)	131
HSS Centre Drills (TYPE A & B)	132
Technical Information	125-129



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.
ROHIT-4X	SUPER COBALT Especially Designed	64-66	Especially DESIGNED & Manufactured for PART-ING & TURNING application of materials like EN-8D, HDS, SS-202, SS-316 ON AUTOMATS or TRAUBS or LATHES

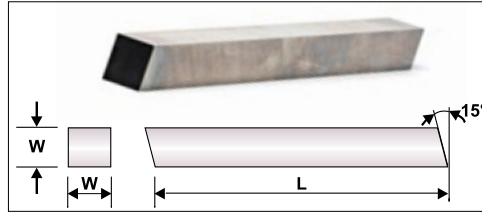
HSS Square Tools Bits | (Inch Sizes)



ROHIT SQUARE TOOL BITS are available in ROHIT - 1X, 2X, SPECIAL, 3X, EC-500 & 4X GRADES

NOTE: Intermediate Sizes are available on request.

PACKING: Plastic or Cardboard Boxes



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

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			
1/4	1/4	2+1/2			
1/4	1/4	3			
1/4	1/4	4			
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			

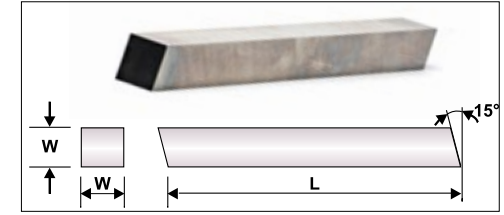
HSS Square Tools Bits | (Metric Sizes)



ROHIT SQUARE TOOL BITS are available in ROHIT - 1X, 2X, SPECIAL, 3X, EC-500 & 4X GRADES

NOTE: Intermediate Sizes are available on request.

PACKING: Plastic or Cardboard Boxes



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

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	20	20	100
4	4	63	20	20	150
4	4	75	20	20	200
4	4	100	25	25	150
5	5	75	25	25	200
5	5	100	1	1	8
5	5	150			
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			

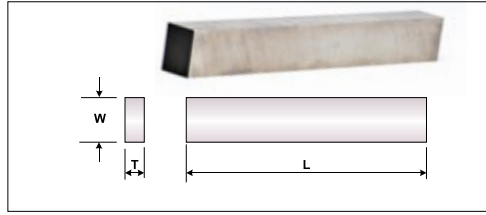
HSS Rectangular (Flat) Tools Bits | (Inch Sizes)



ROHIT FLAT TOOL BITS are available in ROHIT - 1X, 2X, 3X & EC-500 GRADES

NOTE: Intermediate Sizes are available on request.

PACKING: Plastic or Cardboard Boxes



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

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

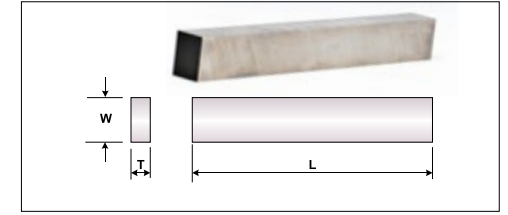
HSS Rectangular (Flat) Tools Bits | (Metric Sizes)



ROHIT FLAT TOOL BITS are available in ROHIT - 1X, 2X, 3X & EC-500 GRADES

NOTE: Intermediate Sizes are available on request.

PACKING: Plastic or Cardboard Boxes



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

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

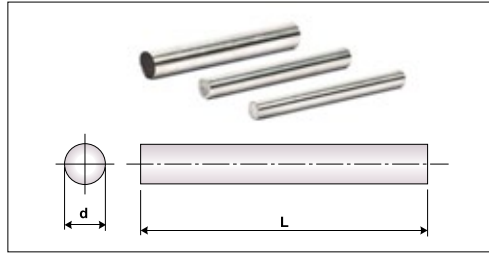
HSS Round Tool Bits | (Inch Sizes)



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



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

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		

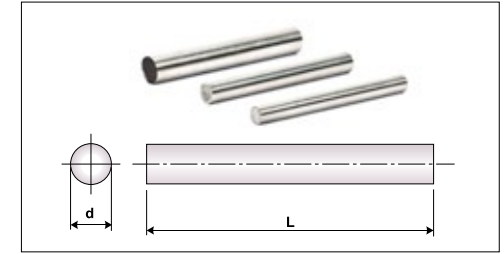
HSS Round Tool Bits | (Metric Sizes)



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



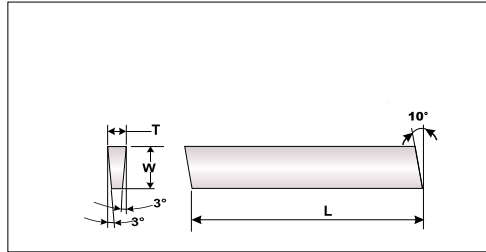
Tolerance (Diameter)	h8
Tolerance (Length)	+/- 1.0mm
End Bevel	0°

Diameter(d) (mm)	Length(L) (mm)	Diameter(d) (mm)	Length(L) (mm)
6.50	100	13.00	100
6.50	150	13.00	150
6.50	200	14.00	75
7.00	75	14.00	100
7.00	100	14.00	150
7.00	150	14.00	200
7.00	200	16.00	100
8.00	75	16.00	150
8.00	100	16.00	200
8.00	150	19.00	100
8.00	200	19.00	150
9.00	75	19.00	200
9.00	100	20.00	100
9.00	150	20.00	150
9.00	200	20.00	200
9.00	250	25.00	100
10.00	75	25.00	150
10.00	100	25.00	200
10.00	150		
10.00	200		
10.00	250		
11.00	75		
11.00	100		
11.00	150		
12.00	75		
12.00	100		
12.00	150		
12.00	200		
12.00	250		
13.00	75		

ROHIT PARTING TOOL BITS are available in ROHIT - 1X, 2X, SPECIAL & 3X

NOTE: Intermediate Sizes are available on request.

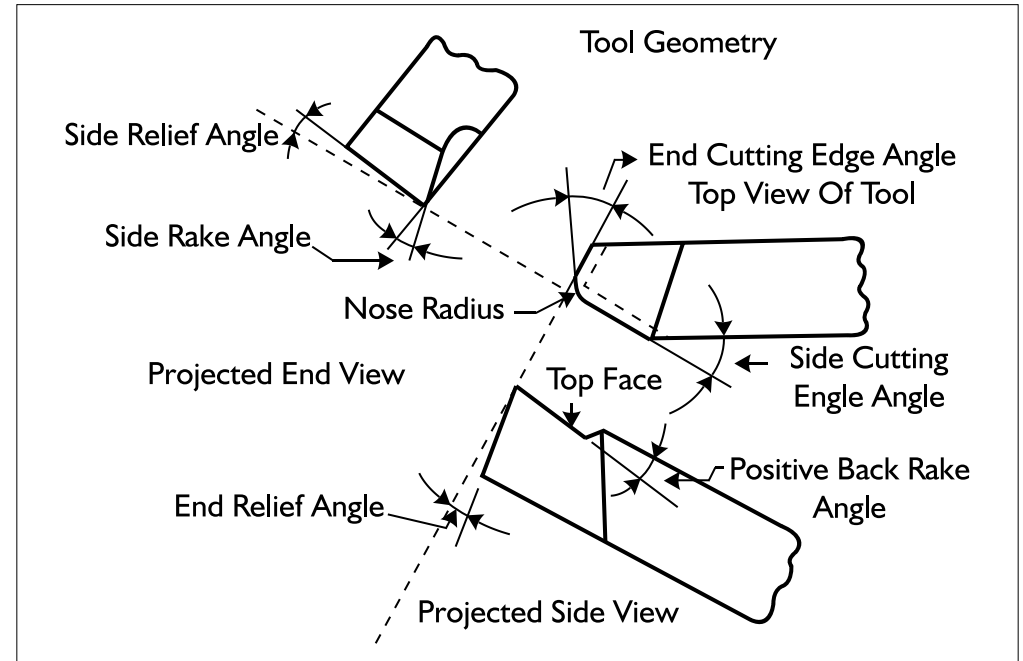
PACKING: Plastic or Cardboard Boxes



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

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



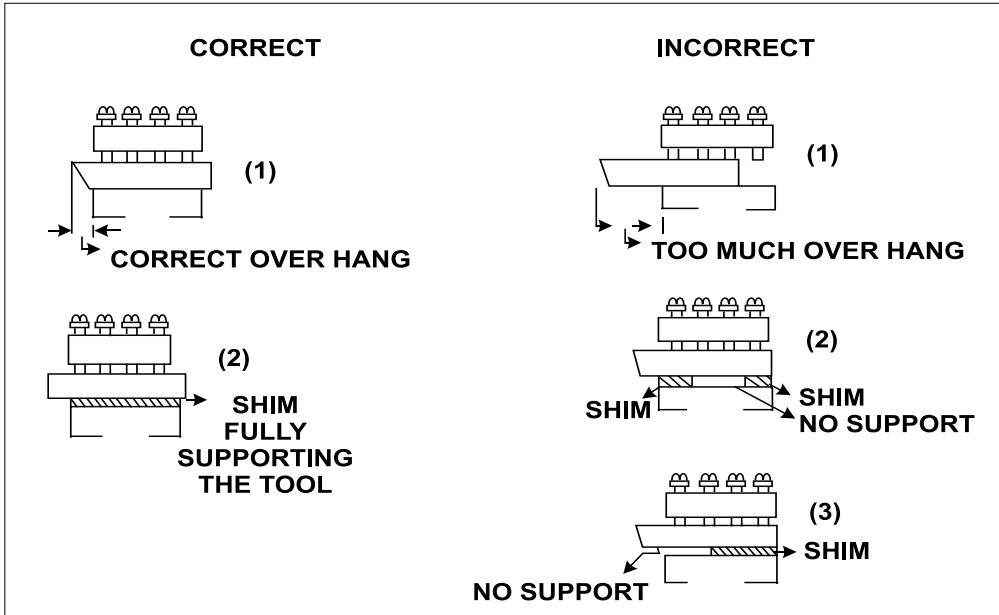
MACHINING INSTRUCTIONS

- 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



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



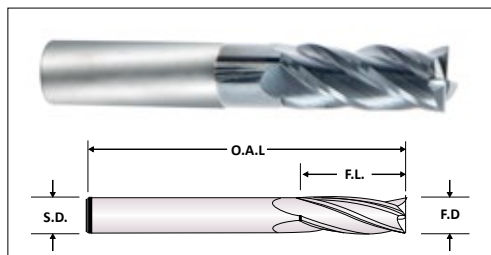
INDICATIONS	CAUSES	REMEDIES
Chipping	Too Keen a cutting edge. Chatter. Incorrect tool material. Too much relief. Lack of rigidity. Improper grinding.	Select Correct tool geometry. Prevent Chattering (See Chatter Below). Select suitable grade/quality. Reduce relief. Clamp rigidity. Use suitable grade of wheel for Grinding. Grind to give satisfactory finish to the cutting faces.
Cracking or Breaking	Feed to 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 to 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.



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

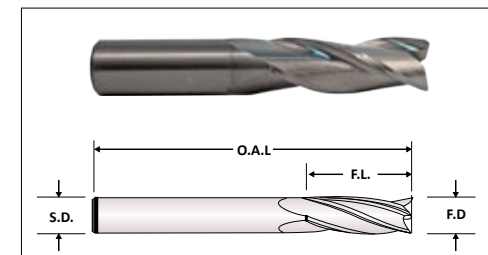
F.D. (inches)	C.E.L. (inches)	S.D. (inches)	O.A.L. (inches)	No. of Flute
1/8	3/8	1/4	1-7/8	4
5/32	3/8	1/4	1-7/8	4
3/16	1/2	1/4	2	4
7/32	1/2	1/4	2	4
1/4	5/8	1/4	2-1/8	4
5/16	3/4	3/8	2-1/2	4
3/8	7/8	3/8	2-5/8	4
7/16	7/8	1/2	2-5/8	4
1/2	1	1/2	2-3/4	4
9/16	1-1/8	1/2	2-7/8	4
5/8	1-1/4	5/8	3-1/4	4
11/16	1-3/8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



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

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

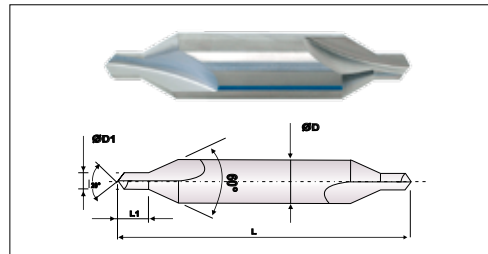
ISO 866: 1975

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



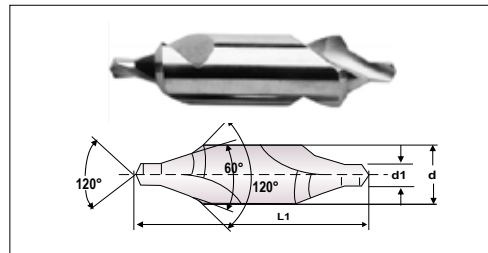
TOLERANCE

Pilot Dia (D1)	K12
Body Dia (D)	h9

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

HSS CENTRE DRILLS | Type 'B'

Pilot Dia (D1)	Body Dia (D)	Pilot Length (L1)	OAL (L1)
1.6	6.3	2.4	44
2	8	2.9	50
2.5	10	3.6	56
3.15	11.2	4.4	60
4	14	5.6	67
5	18	6.9	75
6.3	20	8.6	80
8	25	10.8	100



Series	Description	Page No
P101	HSS Straight Punches	136
P102	HSS Tapered Head Punches	138
P103	HSS Straight Punches For Medium Load	139
P104	HSS Straight Punches For Heavy Load	140
P105	HSS Mini Straight Punches	141
P106	HSS Shoulder Punches	142
P107	HSS Shoulder Punches For Heavy Load	143
P108	HSS Shoulder Punches Short Type	144
P109	HSS Tapped Punches	145
P110	HSS Block Punches	146
P111	HSS Block Punches Tapped	148
P112	HSS Straight Button Dies	150
P113	HSS Headed Button Dies	151
	Variations available in punches	152

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

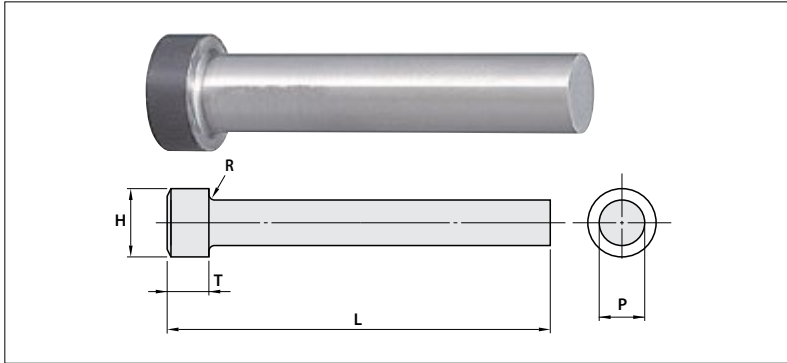
HOW TO ORDER



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



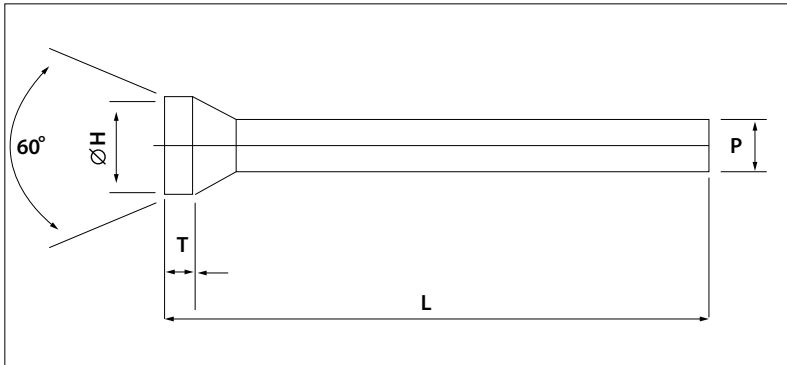
Tolerance

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)						
		50	70	75	80	100	125	
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

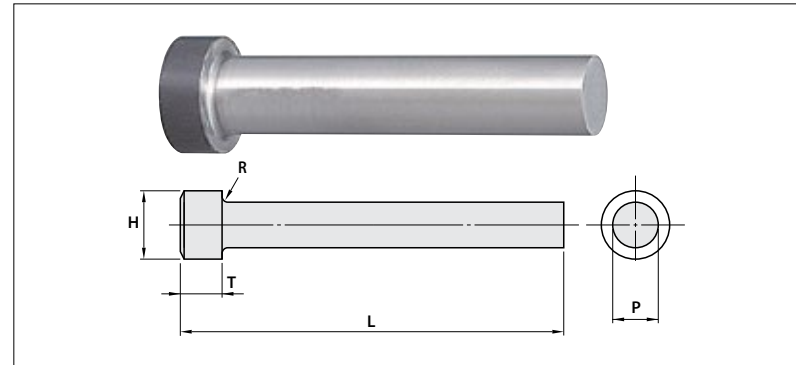
- Head Length "T" of 50mm Punch - 3mm
- Head Length "T" of above 50mm Length Punches - 5mm
- NOTE: These are company standard punches available in stock or cut to lengths in ROHIT-1X grade only
- *Sizes below 4mm : No Head Annealing is done

HEAD DIA "H" (mm)	BODY DIA "P" (0.1 mm increments) min. "P" max.	OVERALL LENGTH "L" (mm)						
		70	75	80	100	125	150	
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	



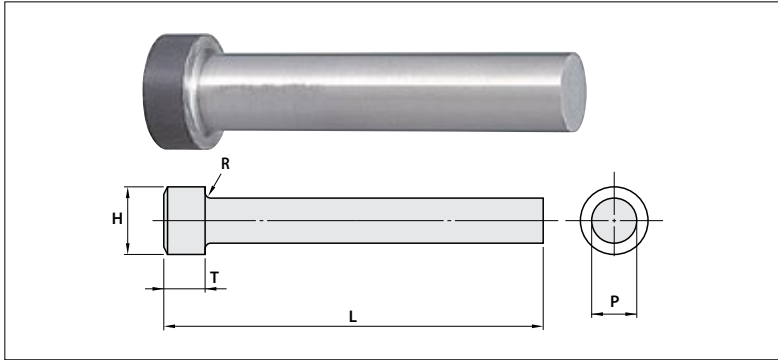
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
T	+/-0.3

HEAD DIA "H" (mm)	BODY DIA "P" (0.1 mm increments) min. "P" max.	OVERALL LENGTH "L" (mm)					HEAD LENGTH "T" (mm)
		50	70	75	80	100	
4.5	3.0~3.5	50	70	75			0.5
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	



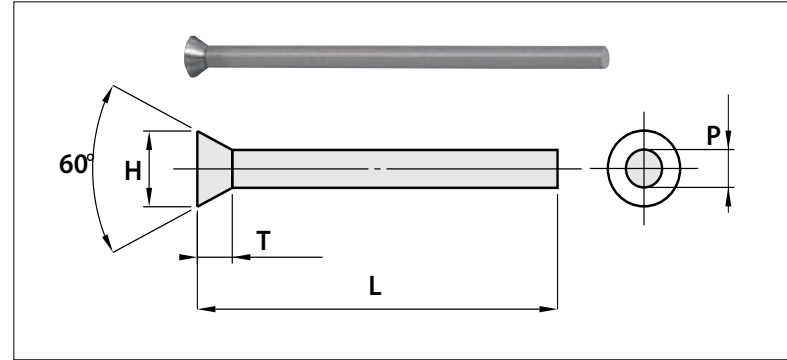
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02

HEAD DIA "H" (mm)	BODY DIA "P" (0.1 mm increments) min. "P" max.	OVERALL LENGTH "L" (mm)				
		50	70	80	100	120
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



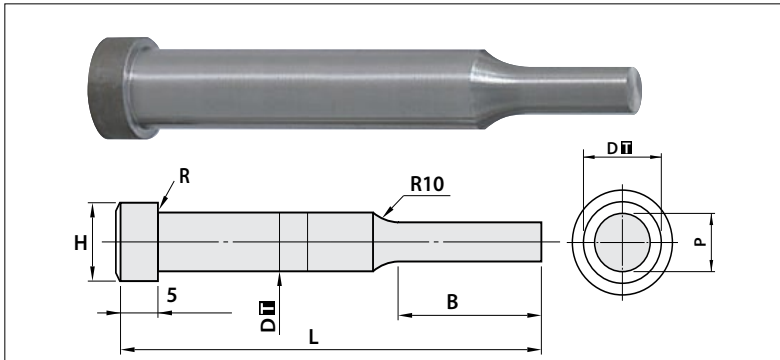
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02

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



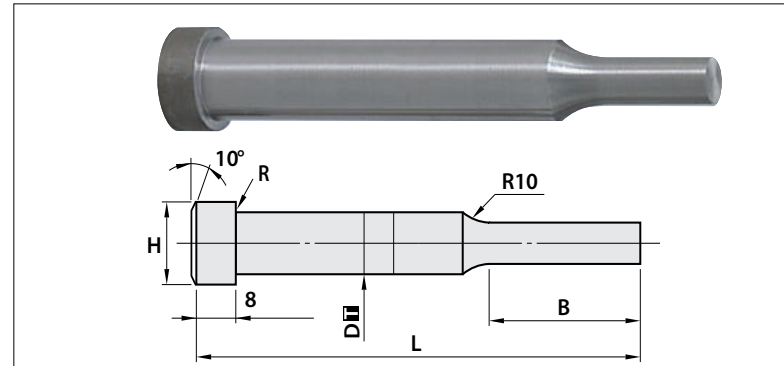
Tolerance	
H	+/-0.2
L	+/-0.5
P	0, -0.02

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	



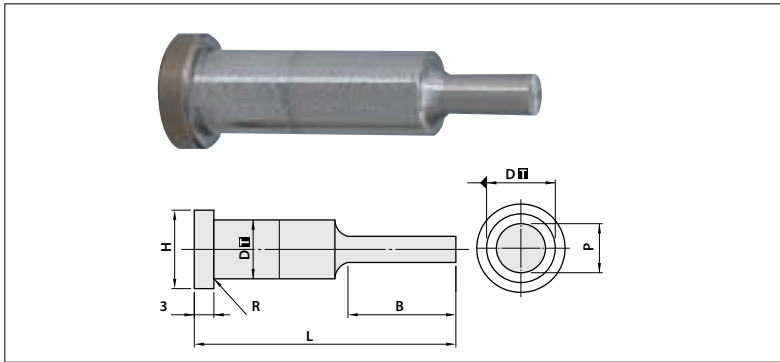
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
D	0, -0.05
B	0, +0.5

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.
			50	70	80	100	
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	13	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		70	80	100		10.0~15.9
22	20		70	80	100		13.0~19.9
27	25	40	70	80	100		18.0~24.9
27	25		70	80	100		18.0~24.9



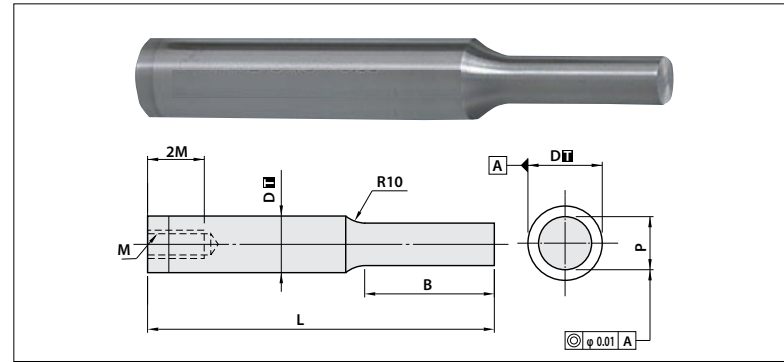
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
D	0, -0.05
B	0, +0.5

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.
			50	70	80	100	
10	5	8	50	70	80	100	2.00~4.9
11	6		50	70	80	100	2.00~5.9
13	8	13	70	80	100	120	3.00~7.9
15	10		70	80	100	120	3.00~9.9
18	13		70	80	100	120	6.00~12.9
21	16		70	80	100	120	10.00~15.9
25	20	19	70	80	100	120	13.00~19.9
30	25		70	80	100	120	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	19	70	80	100	120	3.00~7.9
15	10		70	80	100	120	3.00~9.9
18	13		70	80	100	120	6.00~12.9
21	16		70	80	100	120	10.00~15.9
25	20	25	70	80	100	120	13.00~19.9
30	25		70	80	100	120	18.00~24.9



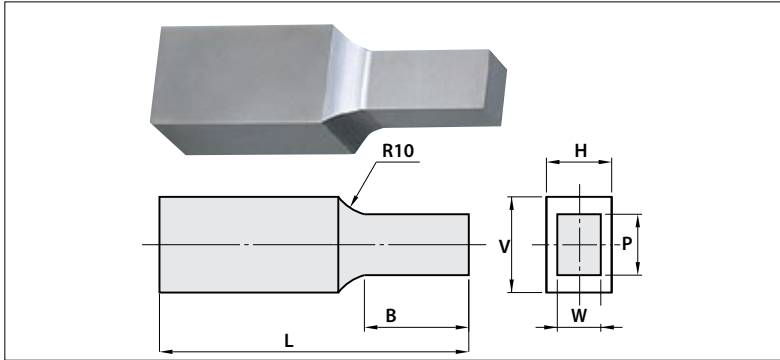
Tolerance	
H	0, -0.2
L	+/-0.5
P	0, -0.02
D	0, -0.05
B	0, +0.5

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	13	25	30	35	40	7.0~9.9
7	4		30	35	40	40	2.0~3.9
8	5		30	35	40	40	2.0~4.9
9	6		30	35	40	40	2.50~5.9
11	8		30	35	40	40	5.0~7.9
13	10	30	35	40	40	7.0~9.9	



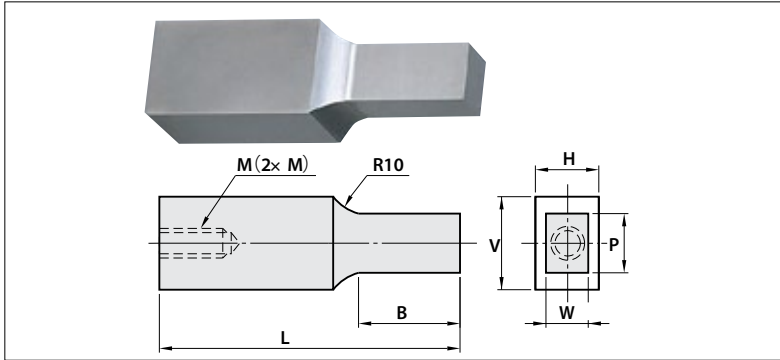
Tolerance	
D	0, -0.02
L	+/-0.5
P	0, -0.02
B	0, +0.5

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



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

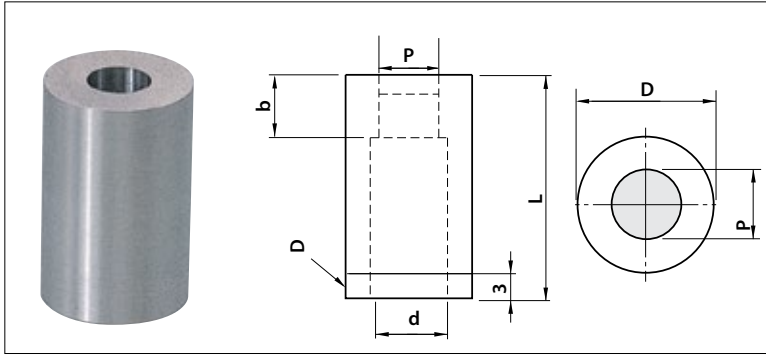
HEAD WIDTH "H" (mm)	TIP WIDTH "W" (0.1 mm increments) min. "W" max	HEAD HEIGHT "V" mm										OAL "L" (mm)	TIP LENGTH "B" (mm)		
		8	10	13	16	20	22	25			28		30	S	L
		TIP HEIGHT "P" min~max (0.1 mm increments)													
		3.0~8.0	3.0~10.0	4.0~13.0	5.0~16.0	6.0~20.0	7.0~22.0	8.0~25.0			8.0~28.0	10.0~30.0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



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

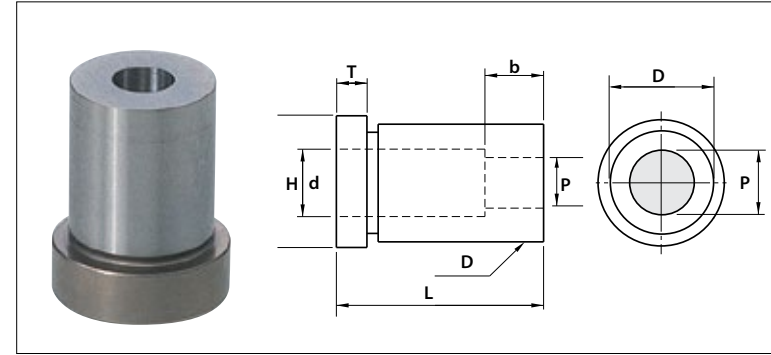


HEAD WIDTH "H" (mm)	TIP WIDTH "W" (0.1 mm increments) min. "W" max	HEAD HEIGHT "V" mm										OAL "L" (mm)	TIP LENGTH "B" (mm)		TIP SIZE "M"
		8	10	13	16	20	22	25	28	30	S		L		
		TIP HEIGHT "P" min~max (0.1 mm increments)													
		2.0~8.0	2.0~10.0	4.0~13.0	5.0~16.0	6.0~20.0	7.0~22.0	8.0~25.0		8.0~28.0	10.0~30.0				
8	2.0~8.0	o	o	o	o	o	o	o		o	o	70	8	13	4
10	2.0~10.0	o	o	o	o	o	o	o		o	o	80	8	13	6
13	4.0~13.0	o	o	o	o	o	o	o		o	o		13	19	
16	5.0~16.0	o	o	o	o	o	o	o		o	o		13	19	
20	6.0~20.0	o	o	o	o	o	o	o		o	o	100	19	25	8
22	7.0~22.0	o	o	o	o	o	o	o		o	o		19	25	
25	8.0~25.0	o	o	o	o	o	o	o		o	o		19	25	
28	8.0~28.0	o	o	o	o	o	o	o		o	o		19	25	
30	10.0~30.0	o	o	o	o	o	o	o		o	o		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)
	20	25	30	35	40			
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		8.4
16	20	25	30	35	40	5.0~10.0		10.6
20	20	25	30	35	40	7.0~12.0	8	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)
		20	25	30	35	40			
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		8.4
19	16	20	25	30	35	40	5.0~10.0		10.6
23	20	20	25	30	35	40	7.0~12.0	8	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



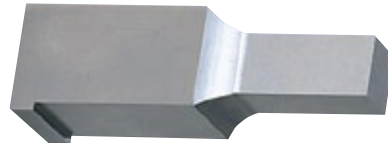
PUNCHES WITH KEY GROOVES

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



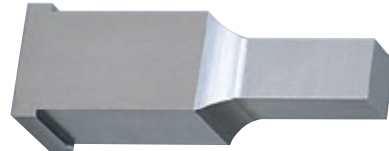
SINGLE FLANGE BLOCK PUNCHES

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



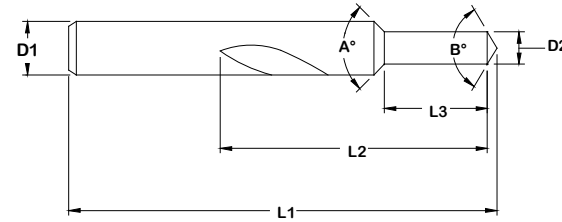
DOUBLE FLANGE BLOCK PUNCHES

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



- Fill in information requested on drawing. (*Required Fields)
- E-mail to RIGPL at : sales@rigpl.com
- Fax to : +91-11-25920493

Request Approval Drawing



A= _____
 B= _____
 D1= _____
 D2= _____
 L1= _____
 L2= _____
 L3= _____

***Material**

- Solid Carbide
- Carbide Coolant Thru

***Number of Flutes**

- Two
- Three

***Coating**

- TiN
- AC-S-X
- TiAlN
- None
- Other _____

Note:
 This information enables us to engineer and manufacture a tool for your specific requirements.

Customer Name: _____
 Phone: _____
 *Work Material Machined: _____
 Hardness: _____
 Dealer: _____
 Quantities: (6 Piece Minimum) _____

ROHIT INDUSTRIES GROUP PVT. LTD.

Reg. Off.: UG-10, Shivlok House No. 2, Karampura Commerical Complex , N. Delhi 15,
 Ph.: 91-11-41427321, 25920492, 41021800, 25429804 • Fax : 91-11-25920493, 25431800
 Plant: Plot No. 655-656, M.I.E, Part-A, Bahadurgarh, Haryana - 124507, Ph.: 91-85869-23422/23

Email: sales@rigpl.com • Visit us at: www.rigpl.com