reamtech®
Precision Tools

Excellence In Finish Bores

Introduction

Reamtech Precision Tools is a young professionally managed organization focused on providing Optimal Solutions in Machining Finish Bores. Started in the year 2013, Reamtech has been steadily growing in providing Cost effective Solutions to the metal working Industry. Proven PCD Multi-Step Reamers for all Non Ferrous Applications auguments to Reamtech's Product Range

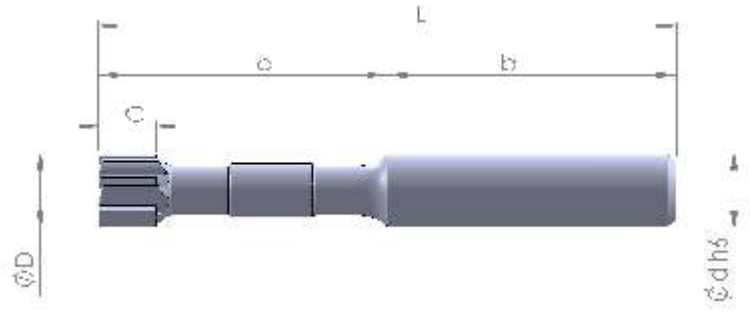
Reamtech Precision Tools is managed by well qualified and well trained professionals with decades of experience in the tooling field. This ensures that the solution provided is usually works right first time.

Being a young organization Reamtech can assure a very fast response time. Hence there will be no production stoppages for want of Reamtech tools.

The Product Range

- ✓ Fixed Size Brazed Cylindrical Shank Reamers Dia 5.5 to 90 mm IT7-IT9
- ✓ Size Adjustable Brazed Cylindrical Shank Reamers. Dia 5.5 to 60 mm. IT5- IT7
- ✓ Solid Carbide Shank Reamers. Dia 2.5 to 12 mm. IT7-IT9
- ✓ Special Reamers and Brazed Cutters. Dia 5.5 to 90 mm. IT7-IT9
- ✓ Special PCD Reamers. Dia 5.5 to 110 mm IT7-IT9
- ✓ PCD Milling Cutters. Dia 32 to 300 mm
- ✓ PCD Single Point Tools and Inserts
- ✓ Custom Built Adaptors and Adjustable Adaptors for Runout Compensation
- ✓ Complete Projects and Tooled Up Solutions

SIZE ADJUSTABLE MONOBLOCK REAMER
SHORT SERIES Ø5.5-23.50MM



						OREDER CODE		GRADE			
						Through Hole	Blind Hole	STEEL/ ALLOY STEEL	CAST IRON/SG IRON	NON FERROUS	STAINLESS STEEL
ØD H7	Ødxb	L	a	C	Z			P	K	N	S
5.5-7.5	12 X 45	85	40	10	4	RM2012P	RM2012R	RGC	RGS	RGP	RGT
7.6-8.9	12 X 45	85	40	10	4	RM2012P	RM2012R	RGC	RGS	RGP	RGT
9.00-11.4	12 X 45	95	50	10	6	RM2012P	RM2012R	RGC	RGS	RGP	RGT
11.5-13.4	12 X 45	95	50	10	6	RM2012P	RM2012R	RGC	RGS	RGP	RGT
13.5-15.4	12 X 45	95	50	10	6	RM2012P	RM2012R	RGC	RGS	RGP	RGT
15.4-17.4	16 X 50	100	50	10	6	RM2012P	RM2012R	RGC	RGS	RGP	RGT
17.5-19.4	16 X 50	100	50	10	6	RM2012P	RM2012R	RGC	RGS	RGP	RGT
19.5-21.4	20 X 55	120	55	10	6	RM2012P	RM2012R	RGC	RGS	RGP	RGT
21.5-23.5	20 X 60	120	60	10	6	RM2012P	RM2012R	RGC	RGS	RGP	RGT

For Ordering Please Specify Order Code + Diameter+ Grade

For Example: Ordering code for Dia 6.25 H7 Reamer through hole reaming in Steel Material will be RM2012P 6250 RGC

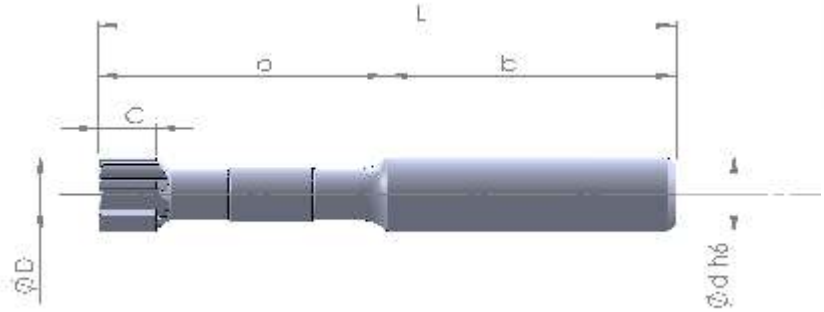
SIZE ADJUSTABLE MONOBLOCK REAMER
LONG SERIES Ø5.5-23.50MM

						OREDER CODE		GRADE			
						Through Hole	Blind Hole	STEEL/ ALLOY STEEL	CAST IRON/SG IRON	NON FERROUS	STAINLESS STEEL
ØD H7	Ødxb	L	a	C	Z			P	K	N	S
5.5-7.5	12 X 45	105	60	10	4	RM2012Q	RM2012S	RGC	RGS	RGP	RGT
7.6-8.9	12 X 45	120	75	10	4	RM2012Q	RM2012S	RGC	RGS	RGP	RGT
9.00-11.4	12 X 45	120	75	10	6	RM2012Q	RM2012S	RGC	RGS	RGP	RGT
11.5-13.4	12 X 45	120	75	10	6	RM2012Q	RM2012S	RGC	RGS	RGP	RGT
13.5-15.4	12 X 45	130	85	10	6	RM2012Q	RM2012S	RGC	RGS	RGP	RGT
15.4-17.4	16 X 50	135	85	10	6	RM2012Q	RM2012S	RGC	RGS	RGP	RGT
17.5-19.4	16 X 50	140	90	10	6	RM2012Q	RM2012S	RGC	RGS	RGP	RGT
19.5-21.4	20 X 55	160	105	10	6	RM2012Q	RM2012S	RGC	RGS	RGP	RGT
21.5-23.5	20 X 60	180	120	10	6	RM2012Q	RM2012S	RGC	RGS	RGP	RGT

For Ordering Please Specify Order Code + Diameter+ Grade

For Example: Ordering code for Dia 6.25 H7 Reamer through hole reaming in Steel Material will be RM2012Q 6250 RGC

SOLID MONOBLOCK REAMER
SHORT SERIES Ø5.5-23.50 mm



						OREDER CODE		GRADE			
						Through Hole	Blind Hole	STEEL/ ALLOY STEEL	CAST IRON/SG IRON	NON FERROUS	STAINLESS STEEL
ØD H7	Ødxb	L	a	C	Z			P	K	N	S
5.5-7.5	12 X 45	85	40	10	4	RM2012K	RM2012M	RGC	RGS	RGP	RGT
7.6-8.9	12 X 45	85	40	10	4	RM2012K	RM2012M	RGC	RGS	RGP	RGT
9.00-11.4	12 X 45	95	50	10	6	RM2012K	RM2012M	RGC	RGS	RGP	RGT
11.5-13.4	12 X 45	95	50	10	6	RM2012K	RM2012M	RGC	RGS	RGP	RGT
13.5-15.4	12 X 45	95	50	10	6	RM2012K	RM2012M	RGC	RGS	RGP	RGT
15.4-17.4	16 X 50	100	50	10	6	RM2012K	RM2012M	RGC	RGS	RGP	RGT
17.5-19.4	16 X 50	100	50	10	6	RM2012K	RM2012M	RGC	RGS	RGP	RGT
19.5-21.4	20 X 55	120	55	10	6	RM2012K	RM2012M	RGC	RGS	RGP	RGT
21.5-23.5	20 X 60	120	60	10	6	RM2012K	RM2012M	RGC	RGS	RGP	RGT

For Ordering Please Specify Order Code + Diameter+ Grade

For Example: Ordering code for Dia 6.25 H7 Reamer through hole reaming in Steel Material will be RM2012K 6250 RGC

SOLID MONOBLOCK REAMER
LONG SERIES Ø5.5-23.50 mm

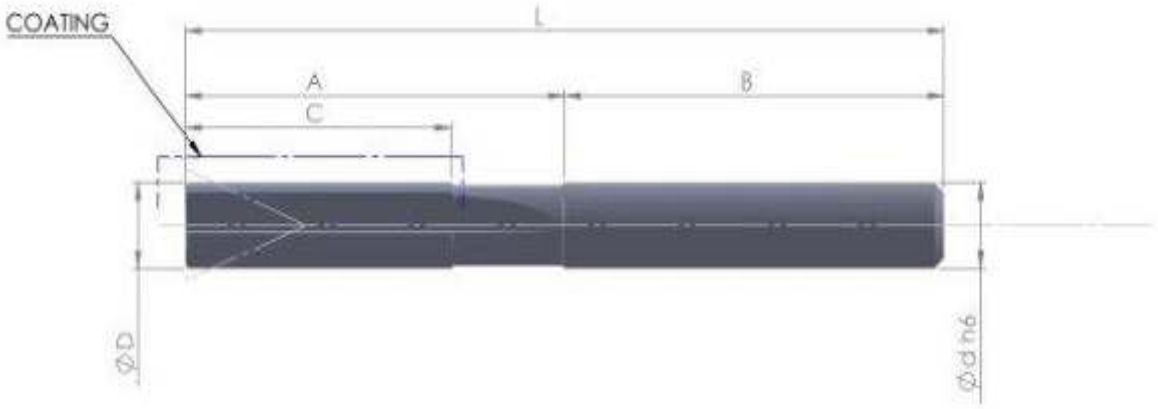
						OREDER CODE		GRADE			
						Through Hole	Blind Hole	STEEL/ ALLOY STEEL	CAST IRON/SG IRON	NON FERROUS	STAINLESS STEEL
ØD H7	Ødxb	L	a	C	Z			P	K	N	S
5.5-7.5	12 X 45	105	60	10	4	RM2012L	RM2012N	RGC	RGS	RGP	RGT
7.6-8.9	12 X 45	120	75	10	4	RM2012L	RM2012N	RGC	RGS	RGP	RGT
9.00-11.4	12 X 45	120	75	10	6	RM2012L	RM2012N	RGC	RGS	RGP	RGT
11.5-13.4	12 X 45	120	75	10	6	RM2012L	RM2012N	RGC	RGS	RGP	RGT
13.5-15.4	12 X 45	130	85	10	6	RM2012L	RM2012N	RGC	RGS	RGP	RGT
15.4-17.4	16 X 50	135	85	10	6	RM2012L	RM2012N	RGC	RGS	RGP	RGT
17.5-19.4	16 X 50	140	90	10	6	RM2012L	RM2012N	RGC	RGS	RGP	RGT
19.5-21.4	20 X 55	160	105	10	6	RM2012L	RM2012N	RGC	RGS	RGP	RGT
21.5-23.5	20 X 60	180	120	10	6	RM2012L	RM2012N	RGC	RGS	RGP	RGT

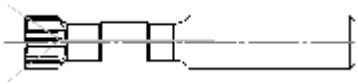
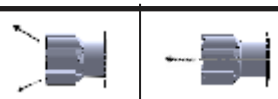
For Ordering Please Specify Order Code + Diameter+ Grade

For Example: Ordering code for Dia 6.25 H7 Reamer through hole reaming in Steel Material will be RM2012L 6250 RGC

SOLID CARBIDE REAMER

Ø2.5-12.4MM



						ORDER CODE		GRADE			
								STEEL/ ALLOY STEEL	CAST IRON/SG IRON	NON FERROUS	STAINLESS STEEL
ØD H7	ØdxB	L	A	C	Z	Through Hole	Blind Hole	P	K	N	S
2.5 -3.5	5 x 40	80	40	25	4	RM2012U	RM2012V	RGF	RGS	RGH	RGT
3.6 - 4.9	6 x 40	80	40	25	4	RM2012U	RM2012V	RGF	RGS	RGH	RGT
5.0 - 6.4	6 x 40	80	50	30	6	RM2012U	RM2012V	RGF	RGS	RGH	RGT
6.4 - 7.9	8 x 45	95	50	30	6	RM2012U	RM2012V	RGF	RGS	RGH	RGT
8.0 - 9.4	10 x 45	90	50	30	6	RM2012U	RM2012V	RGF	RGS	RGH	RGT
9.5 - 10.9	10 x 45	90	50	30	6	RM2012U	RM2012V	RGF	RGS	RGH	RGT
11.0 - 12.4	12 x 45	90	50	30	6	RM2012U	RM2012V	RGF	RGS	RGH	RGT

For Ordering Please Specify Order Code + Diameter+ Grade

For Example: Ordering code for Dia 6.25 H7 Reamer through hole reaming in Steel Material will be RM2012U 6250 RGF

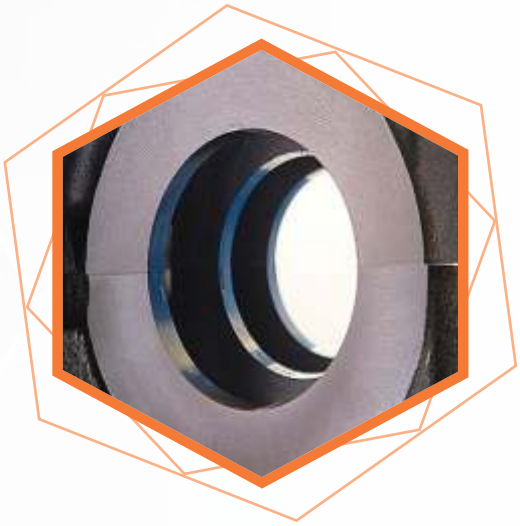
Special Tools

Reamtech Precision Tools Offers Special tools for reaming special bores and Multi-Step Bores (Up to 8 Steps) tailor Made to suit your application requirements. Multi step reamers help in achieving lower cycle times and enhanced Geometrical Accuracies.

Range :

Cutting Diameter : 5.5 mm – 90 mm.

No of Steps : 1-8 Steps



Application Areas:

- All High Precision multi step bores in Steel & cast Iron and Aluminum in the range of IT7 – IT9 class of tolerance
- Applications like CAM Bores, Injector Bores and Spring Seat Bore, Valve seat Valve guide Bores etc.

Runout Compensation Holders

Reamtech Precision Tools Recommend Use of Runout Compensation Holders.

- For High Precision Bores in the range of IT5 - IT7 class of tolerance and
- For Long Bores with Close Geometrical Accuracies

PCD Tools

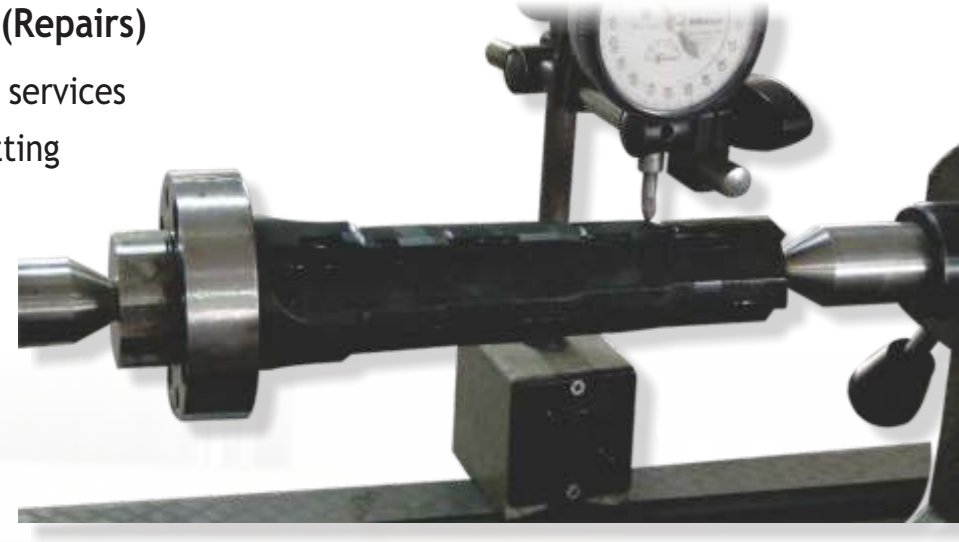
- Poly Crystelline Diamond (PCD) with the characteristic of High Wear Resistance combined with Very Less Affinity for Built up Edge Formation makes it an Ideal Choice for machining Non-Ferrous Material.
- PCD Tools offer Excellent tool life and dimensional Stability of the machined parts.
- PCD Tools Find their most use in Automotive and Aerospace components

Reamtech Precision Tools Offers a wide range of PCD tools for all types of Non-Ferrous components

Reamtech Precesion Tools Is Equipped Latest CNC Machines and Measuring Equipment to provide you with World class PCD tools with tool life 10 Times more than Standard carbide reamers. A Surface quality less than 2 m Ra can achieved esily

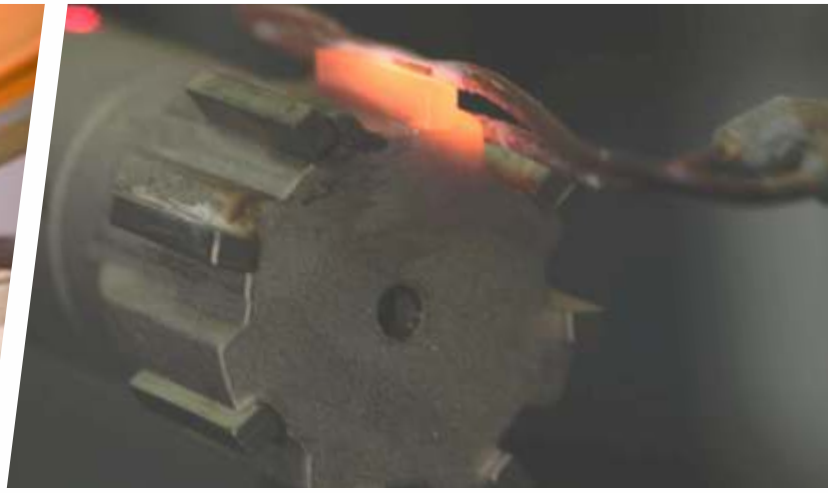
Services

Regrinding and Retipping Services (Repairs)



Reamtech Precision Tools offers repair services to all types of reamers and brazed cutting tools. Carefully executed restoration of cutting edges ensure to enhance the tool life hence bringing down the operational cost of cutting tools.

Repairs are backed with Service warranty for the performance of the l tools



Application Training / Project Solutions

Reamtech Precision Tools offers training to customers on the shop floor on selection, proper utilization and application of the reaming tools.

Training ensures that the errors are Minimised hence lesser chances for accidents and damage of tools.

Reamtech Offers Cost effective Performance oriented Project solutions starting from Process development to Prove-out on the shop-floor.

Proven Application Examples

Injector Bore Reamer

5 Step Reamer with 4 Flutes Diameters 33.35 to 39.0 mm +/- 0.025 Brazed Reamer

Customer benefit: Performed RIGHT FIRST TIME compared to reamers supplied by MNCs.

Resulted in approx. cost savings of Rupees 12,00,000/- Per annum

Brazed Modular Size Adustable Reamer with coating of Dia. 56 mm.

Customer Benefit: Reduction in setup time.

Resulting in approx. saving of 500,000/- per annum.

VSVG Reamer

Dia. 19 mm +/- 0.013 Valve guide Coated Brazed Reamer

Customer benefit: Replaced Solid carbide Reamer resulting in approx. savings of Rupees 800,000/- per annum

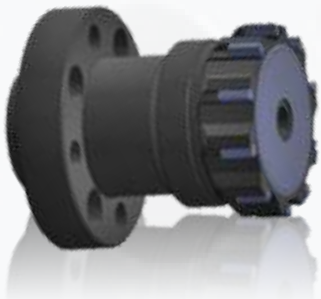
Brazed Solid Reamer

Cermet tip brazed solid reamer of Dia. 47 mm. with special chip breaker

Customer Benefit: Replaced fine boring tool

Cycle time reduction from 85 sec to 10 sec. Reduction in setup time.

Reduction in rejection due to geometrical inaccuracy of fine boring tool. Nullified Chips evacuation time of about 10 sec. Resulting in approx. saving of 600,000/- per annum.



Brazed Size Adjustable Two Step Reamer

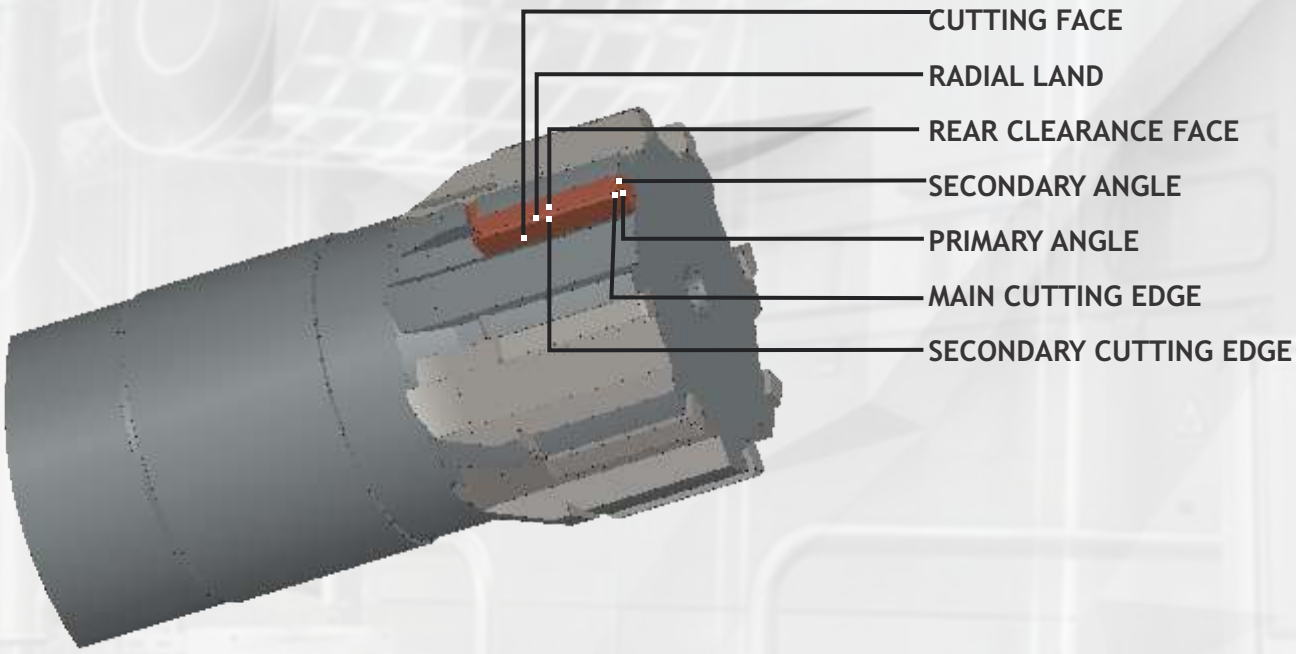
with coating of Dia. 25 and 26 mm.

Customer Benefit: cycle time reduction from 20 sec to 4 sec.

Increased tool life from 500 components to 1000 components.

resulting in approx. saving of 10,000,00/- per annum. with more regrinding and re-tipping.

Tool Geometry Selection



Standard Geometry	Flute Form	Material	Application
RG1	Straight	All Material	For both Through Holes and Blind Holes without Interruption
RG2	Straight	Cast Iron & Stainless Steel	For Short Chipping Materials
RG3	Straight	All Material	End Face cutting / Bottoming Geometry
RG5	Straight	All Material	Hole Mill cum Reamer for Higher Accuracy in Interrupted bores
RG6	Straight	Steel	Chip breaker Geometry for Bores with L/D >10
RG7	Straight	All Material	Hole Mill Cum Reamer For higher Accuracy Standard Bores
RG9	Straight	Steel	Chip Breaker Geometry for Long Chipping Material, through Bores without Interruptions
RG9B	Straight	Steel	Chip Breaker Geometry for Long Chipping Material, through or Blind Bores with Interruptions

Cutting Parameters

Material Group	Materia Description	Cutting Speed vc ft/min (m/min)										Feed fz in/tooth (mm/tooth)				
		Reamers short: / 3xD					Reamers Long: / 5xD					Straight: fluted				left hand spiraled
		RGH	RGC	RGT	RGS	RGP	RGH	RGC	RGT	RGS	RGP	< 12	12-25	25-50	> 50	4.8-12.7
		min-max	min-max	min-max	min-max	min-max	min-max	min-max	min-max	min-max	min-max	min-max	min-max	min-max	min-max	min-max
P1	Non-alloy steels	6-10	100-200	60-140			6-10	80-160	60-120			0.05-0.10	0.07-0.15	0.09-0.20	0.10-0.25	0.07-0.14
P2	Non-alloy steels/low alloy steels	6-10	100-200	60-140			6-10	80-160	60-120			0.05-0.10	0.07-0.15	0.09-0.20	0.10-0.25	0.07-0.14
P3	Lead alloys	15-45	100-200	60-140	102		15-45	80-160	60-120			0.05-0.10	0.07-0.15	0.09-0.20	0.10-0.25	0.07-0.14
P4	Non aaloy/low alloysteels, heat resistant structural, heat treated nittride and tools steels	5-9	80-150	60-110			5-9	80-120	60-90			0.04-0.08	0.06-0.12	0.07-0.16	0.08-0.20	0.06-0.11
P5	High alloy steels	4-7		15-45			4-7		15-45			0.04-0.07	0.05-0.11	0.06-0.14	0.07-0.18	
S1	Titanium Titanium alloys	5-12					5-12					0.05-0.11	0.07-0.17	0.10-0.24	0.11-0.30	
M1	Stainless Steels	5-8		15-40			5-8		15-40			0.04-0.08	0.06-0.12	0.07-0.16	0.08-0.20	0.06-0.12
M2	Stainless Steels	4-6		10-35			4-6		10-35			0.04-0.08	0.06-0.12	0.07-0.16	0.08-0.20	0.06-0.12
M3	Stainless Steels/fire proof steels	4-6		10-35			4-6		10-35			0.04-0.08	0.06-0.12	0.07-0.16	0.08-0.20	0.06-0.12
K1	Grey cast iron	10-25		50-130	80-220		10-25		50-100	80-150		0.06-0.13	0.08-0.20	0.11-0.26	0.12-0.33	0.06-0.12
K2	Alloy grey cast iron	6-12		30-90	40-130		6-12		30-90	40-100		0.06-0.12	0.08-0.18	0.11-0.24	0.12-0.30	0.08-0.18
K3	Ductile cast iron, ferritic	9-18	130-300		130-300		9-18	120-180		120-180		0.06-0.13	0.08-0.20	0.11-0.26	0.12-0.33	0.08-0.20
K4	Ductile cast iron, ferritic/perlic	9-18	100-250		100-250		9-18	100-160		100-160		0.06-0.13	0.08-0.20	0.11-0.26	0.12-0.33	0.08-0.20
K5	Spheriodal graphite cast iron, perlitic malleable iron	8-15	80-180		80-180		8-15	80-150		80-150		0.06-0.12	0.08-0.18	0.11-0.24	0.12-0.30	0.08-0.18
K6	Alloyed spheroidal graphite cast iron	6-12		30-60	50-100		6-12		30-60	50-100		0.06-0.12	0.08-0.18	0.11-0.24	0.12-0.30	0.08-0.18
K7	Vermicular cast iron	6-12		30-70	40-130		6-12		30-70	40-130		0.06-0.12	0.08-0.18	0.11-0.24	0.12-0.30	0.08-0.18
N1	Copper alloy, brass, lead alloy, broze, brass bronze good cut	10-30	100-320	80-200			10-30	100-320	80-150			0.05-0.12	0.07-0.18	0.09-0.24	0.10-0.30	0.07-0.18
N2	Copper alloy, brass bronze average cut	10-20		50-150			10-20		50-150			0.05-0.12	0.07-0.18	0.09-0.24	0.10-0.30	0.07-0.18
N3	Wrought aluminum alloys	10-30					10-30				100-240	0.05-0.12	0.07-0.18	0.09-0.24	0.10-0.30	0.07-0.18
N4	Cast aluminum alloy: si-content<10% magnesium alloy	10-30					10-30				100-300	0.05-0.12	0.07-0.18	0.09-0.24	0.10-0.30	0.07-0.18
N5	Cast aluminum alloy: si-content>10%	8-20				110-440	8-20				100-250	0.05-0.12	0.07-0.18	0.09-0.24	0.10-0.30	0.07-0.18
H1	hardened steels <45HRc									40-60		0.04-0.08	0.06-0.12	0.07-0.16	0.08-0.20	
H2	hardened steels >45HRc, <55HRc									30-50		0.04-0.08	0.06-0.12	0.07-0.16	0.08-0.20	

How to Use Reamtech Reamer

1. Assembling the Reamtech Reamer

I After assembling the reamer into holder, check the tool is tightened fully or not

ii Ensure the taper of the holder is free from Rust and Dent marks. Else ask for new holder

2. Reamtech Runout check procedure

i Required to check the run out as per Reametech standard,

ii Required to measure the runout on the machine and ensure it is as per standard (maximum 8 microns),

iii If the runout is more Please check the bore of the holder for dust and burrs

iv If still not ok use run out compensation holder or stop trial.

3. Checks Before Starting on the Machine

I Machine used for trial is as per enquiry sheet.

ii Required to recheck the component material as per enquiry sheet

iii Check the coolant flow & coolant pressure in the tool.

iv Check the program of reamer as per Reamtech Standard. If not inform to concern person to change the program, (approach before feed start & if through hole reamer should pass maximum 2 to 3mm outside.)

v required to check the pre-hole size as per enquiry sheet or as per requirement, if not change pre-hole size tool.

vi Ensure the Recommended parameter given by Reamtech are set.

vii Visual inspection of pre-hole surface finish because rough surface may cause hard burrs to reamer or surface not cleared by the reamer.

viii Use maximum rapid retraction.

ix Before the cycle start Pl. ensure the Feed & Cutting speed knobs are set to 100%

4. After Machining the First Hole

i In case of multiple holes, stop the operation after completion of one hole & check the quality parameters as per component drawing.

ii If any abnormality in quality of hole , take necessary action to correct i.e. if the Hole size is less then increase the size by using adjustment screw,.

iii Check If quality Parameters are met as per requirements. Observe next 5 components. if any abnormity in the quality parameters is observed then necessary corrective action to be taken before continuing with regular production

Reaming Trouble Shooting

Bore Too Large

		Possible Cause	Remedy
1		• Concentricity error of the reamer in the spindle	• Use Runout compensating holder and correct concentricity
		• Alignment not precise, reamer cuts at the back end	• Correct alignment and use Floating holder
		• Built-up edge	• Reduce cutting speed Vc for uncoated carbide cutting material, • Increase Vc for Cermet and coated cutting material or • increase the oil content of the coolant
		• Reamer too big	• have the reamer reworked

Bore Too Small

2		• Worn reamer	• have the reamer readjusted, replaced or repaired
		• Reaming allowance too small	• Increase reaming allowance
		• Cutting forces too big	• Reduce feed or choose a different cutting geometry (RCG)
		• Reamer too small	• have reamer readjusted, replaced or repaired

Conical Bore - Bellmouth

3		• Faulty alignment	• Correct alignment and use Floating holder ?
		• Misalignment of head - stock in relation to turret	• Correct turret and use Floating holder

Conical Bore - Tapered Bore

4		• Faulty alignment. Cutting edges press at start	• Correct alignment and use DPS Floating holder

Bore Not True (Circularity / Cylindricity issues)

5		• Concentricity error of reamer too large	• Correct concentricity using Runout compensation system
		• Faulty alignment	• Correct alignment and use Floating holder
		• Asymmetrical cutting through uneven entry	• Countersink bore
		• Deformation through clamping of the work piece	• Correct clamping of the work piece
		• Poor pre - machining	• Optimise pre - machining
		• Feed too high	• Reduce feed

Bore shows chatter marks

6		• Cutting speed too high	• Reduce cutting speed
		• L to D ratio too large	• Reduce the entry speed, • Pilot the bore or • Choose a different cutting geometry (RCG)

Poor Surface Finish - Surface Quality Unsatisfactory

7		• Cutting edge build-up	• Reduce cutting speed Vc for uncoated carbide cutting material, • Increase Vc for Cermet and coated cutting material or • Increase oil content of the coolant
		• Cutteing Edge worn	• Have cutting edges resharpened or replace tool
		• Concentricity error of reamer	• Correct concentricity using Runout compensation system
		• Failing or insufficient coolant, • Chips getting jammed	• Use internal coolant supply and • Increase coolant pressure • Use Chip Breaker Geometry
		• Unsuitable coolant	• Increase the oil content of the coolant
		• Wrong cutting data	• use data according to Reamtech Recommendation

Scoring in Bore - (Feed marks)

8		• Cutting Edges defective (breakouts/ micro chipping)	• Replace reamer or have repaired
		• Cutting edge build-ups	• Reduce cutting speed Vc for uncoated carbide cutting material, and • Increase Vc for Cermet and coated cutting material or • Increase oil content of the coolant

Scoring in Bore - (Retraction marks)

9		• Reamer is allowed to travel too far out of the bore	• Only allow the reamer to travel out of the bore 2 mm more than the cutting length at the most ?
		• Material springs back	• Retraction not at Rapid, but with increased (2 times) feed

Application Data Sheet

Please Fill in the Enquiry Sheet to offer you the Right Tool

1. Component Details

Name of the component	
Material Specification	
Strength / Hardness	

2. Bore Details

Diameter* & Tolerance*/ Bore Length*	
Bore type: *	Blind / Through
With Interruptions:	
Length of interruption	
Surface Finish Required *	
Geometrical Accuracy	
Cpk Rdequired	
Cpk Value	Yes / No
Pre Hole Size & Quality *	
Bottom reaming Required	Yes / No

3. Machine Details

Machining Position *	Horizontal / Vertical
Tool type	Rotating / Stationary
Coolant Supply *	Through Tool / External
Coolant type	Emulsion / oil
Spindle Taper :	
Spindle RPM Max : *	

4 Contact Details

Name *	
Designation	
Company*	
Email*	
Phone Number*	

Please E-mail the Filled Enquiry Sheet along with Component Drawing to **info@Reamtechprecisiontools.in**

*** Mandatory Fields**

reamtech®
Precision Tools

#1453/13, Shivani Building, 1st Floor, Veerabhadreshwara Nagar
Natakerappa Industrial Area, Herohalli Village, Near Peenya II Stage
Bengaluru - 560 091

+91 96329 16395 / 99641 97040

info@reamtechprecisiontools.in www.reamtechprecisiontools.in

CERTIFICATE

This is to Certify that

Quality Management System

of

REAMTECH PRECISION TOOLS

SHIVANI BUILDING, #1453/13 1ST FLOOR VEERABHADRESHWARA NAGAR NATAKERAPPA INDUSTRIAL AREAS HEROHALLI VILLAGE NEAR PEENYA 2ND STAGE BANAGLORE-560091, INDIA

has been independently assessed by DBS

and is compliant with the requirement of:

ISO 9001:2015

For the following scope of activities:

DESIGN, DEVELOPMENT, MANUFACTURING, SERVICE & SUPPLY OF EXPANDABLE REAMERS, SOLID REAMERS, SOLID CARBIDE REAMERS AND ALL TYPES OF PCD TOOLS.

Certificate Number: Q-205021081002

Date of Initial Registration:	**10th August 2021**
Date of this Certificate:	**10th August 2021**
Certificate Expiry:	**09th August 2022**
Recertification Due:	**09th August 2024**

This Certificate is property of DBS Certifications and remains valid subject to satisfactory surveillance audits

Head of Certification

IAS ACCREDITED Management Systems Certification Body. MSCB-157

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

Management System Certification DBS CERT

The certificate remains the property of DBS Certifications Private Limited, to whom it must be returned upon request.

DBS CERTIFICATIONS PVT. LTD.

142, IInd Floor, Avtar Enclave, Paschim Vihar, Delhi-110063, (INDIA) info@dbscertification.com, www.dbscertification.com

ACCREDITED BY :

International Accreditation Service (IAS) 3060, Saturn Street Suite 100, Brea, Ca 92821-1732, United States of America