

NPA



Member IMC Group

IT.TE.DI.

New Product Announcement

NEW-419 • 11/2025

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MILLING

CBN Milling

Ideal for roughing and intense machining operations

Diameter Range

Ø 50-200 mm

APMX (Depth of Cut Max)

3.5 mm

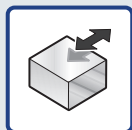
Geometries

Steel cutter body
Fixed pocket
Solid inserts

Materials

Contact IT.TE.DI. for applications and grades

- Gray Cast Iron
- Hardened Materials
- Super Alloys*



Face
Milling

CBN

Solid
Inserts

10

Effective
Edges

AHB

TOOLING & MACHINERY

COMPLETE METALWORKING SOLUTIONS

(800) 991-4225

ISO Certified

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TEDI PENTACUT



NEW from IT.TE.DI. - TediPentaCut CBN Roughing Face Mill

- » For severe machining applications
- » Ideal for gray cast iron & hardened materials
- » Specialized solutions for super alloys
- » Superior metal removal rates
- » Fixed pocket inserts
- » High rigidity

See it in
action! »

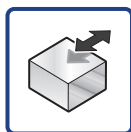
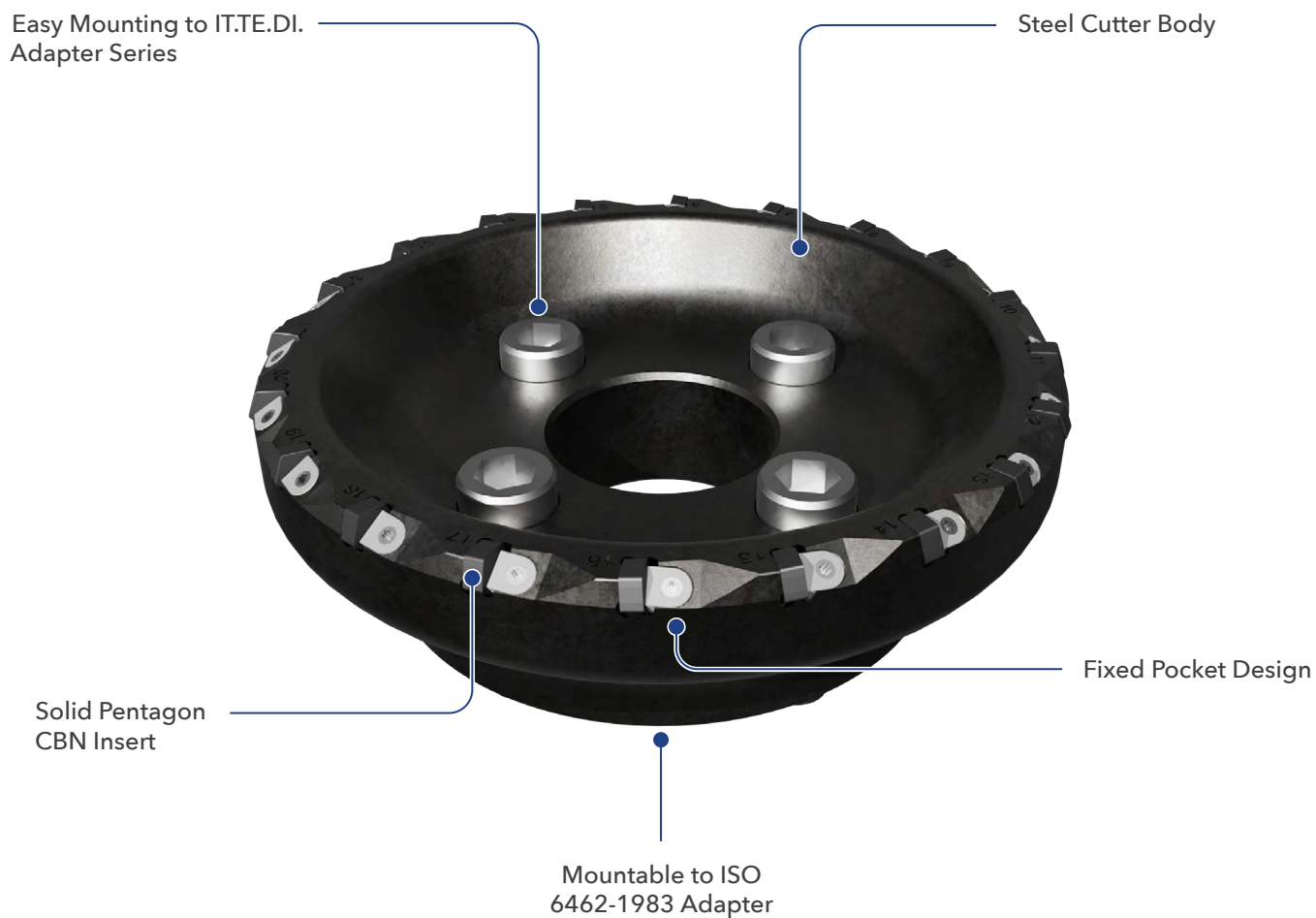


IT.TE.DI. North America products are
presented by Ingersoll Cutting Tools

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Overview: TediPentaCut



Face
Milling



Solid
Inserts

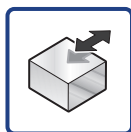
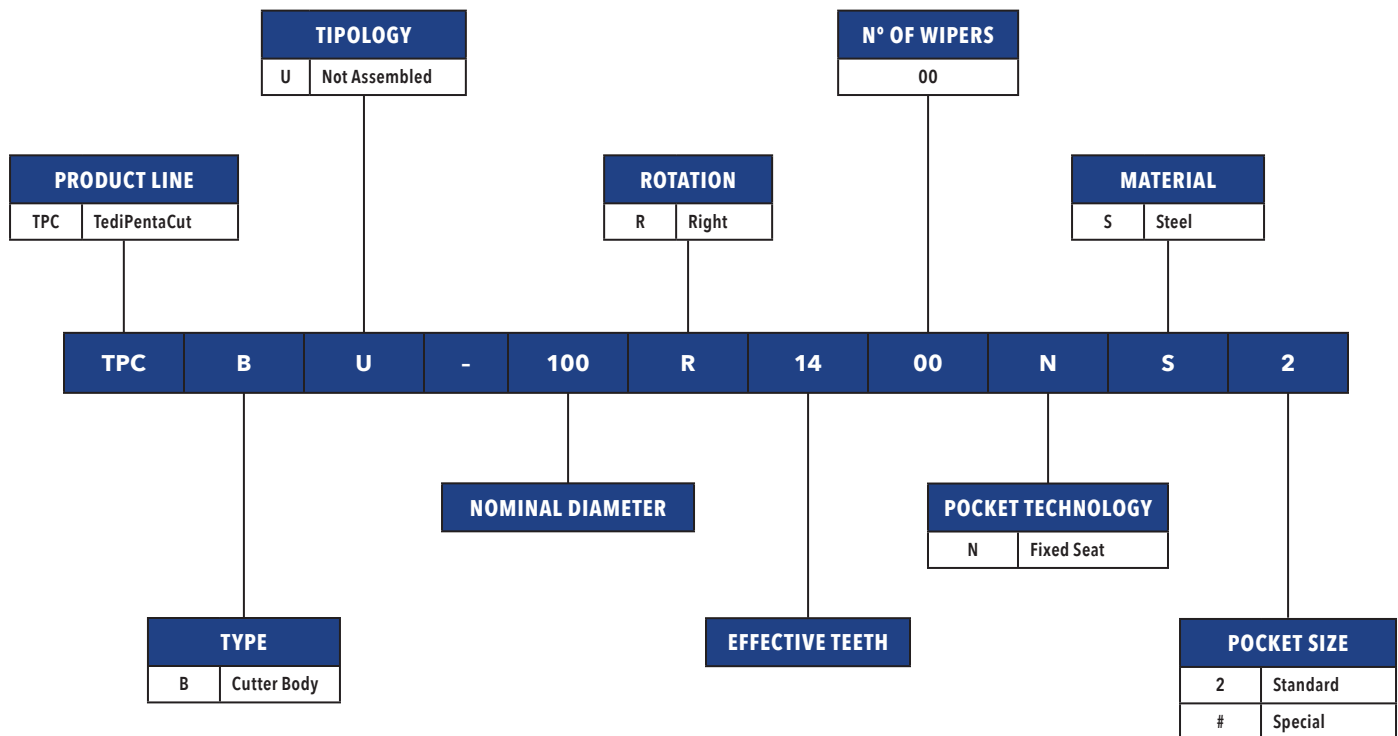


ISO
Materials



Effective
Edges on a
Pentagon
Insert

Codify: TediPentaCut - Cutter Body



Face
Milling



Solid
Inserts

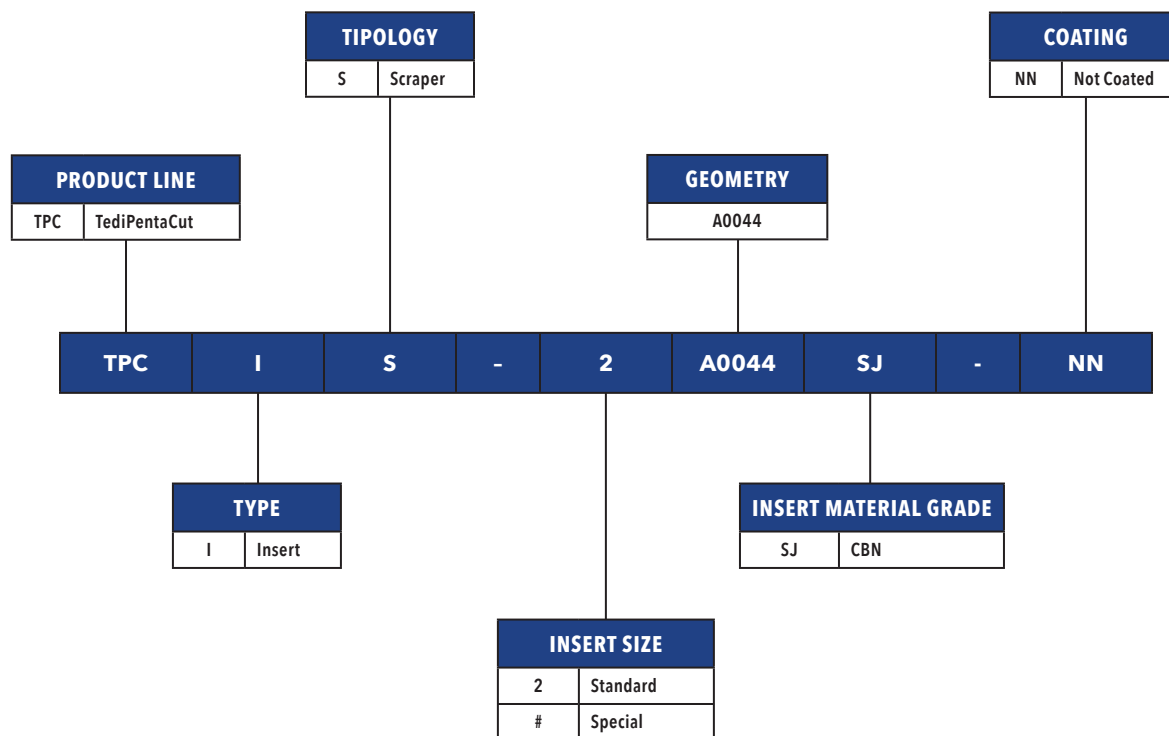


ISO
Materials



Effective
Edges on a
Pentagon
Insert

Codify: TediPentaCut - Inserts



Face
Milling



Solid
Inserts



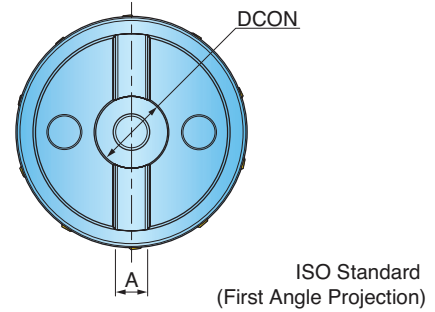
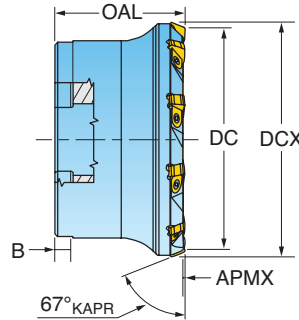
ISO
Materials



Effective
Edges on a
Pentagon
Insert

Series TPC

CUTTER BODY



Drag track measurement (A,B) according to ISO 6462-1983

Description	DCON	Adapter	DC	DCX	ZEFF	OAL	Pocket Size	APMX	Material	Weight	Item	Availability
METRIC												
TPCBU-050R0500NS2	22	A	50	54.63	5	40	2	3.5	Steel	0.52	2773424	▲
TPCBU-063R0600NS2	22	B	63	67.63	6	40	2	3.5	Steel	0.75	2773425	▲
TPCBU-080R0800NS2	27	A	80	84.63	8	50	2	3.5	Steel	1.36	2772439	▲
TPCBU-100R1000NS2	32	A	100	104.63	10	58	2	3.5	Steel	2.67	2773426	▲
TPCBU-125R1200NS2	40	A	125	129.63	12	63	2	3.5	Steel	4.15	2773427	○
TPCBU-160R1600NS2	40	C	160	164.63	16	63	2	3.5	Steel	5.3	2773428	▲
TPCBU-200R2000NS2	60	C	200	204.63	20	63	2	3.5	Steel	7.8	2773691	○

ORDER EXAMPLE

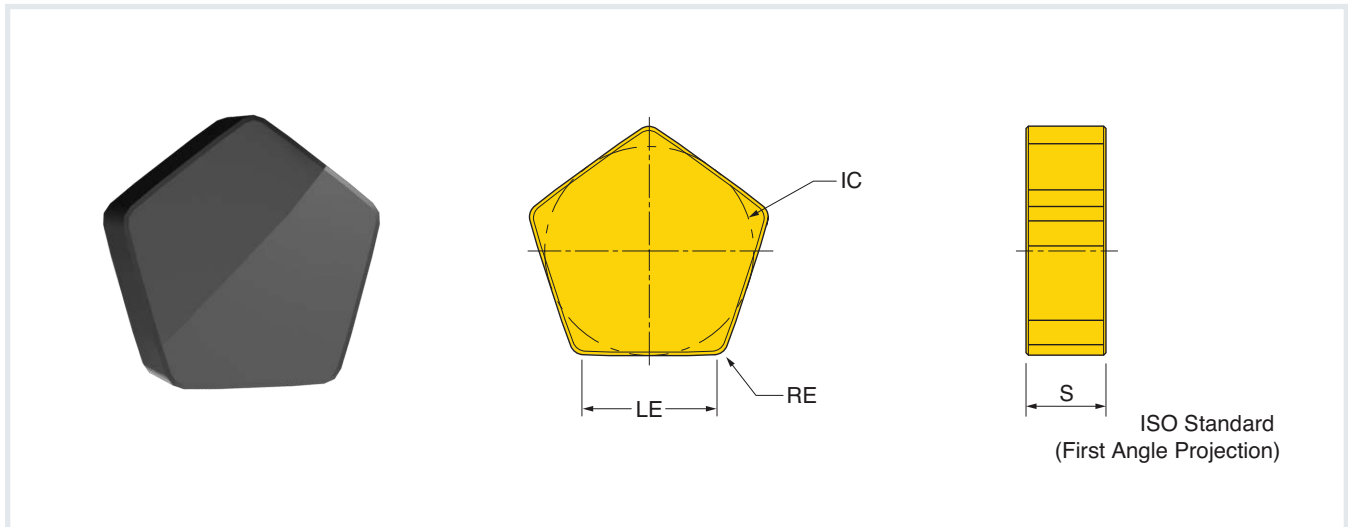
To order a cutter body refer to the code: TPCBU-050R0500NS2 or to the Item: 2773424

** Standard pocket and insert sizes guarantees listed diameters DC and DCX.

Milling // **NEW-419** • ingersoll-imc.com

Series TPC

SCRAPER INSERT



Description	Insert Size	Geometry	IC	S	LE	RE	NOI	Grade	Availability
METRIC									
TPCIS-2-A0044SJ-NN	2	A0044	9.525	4.76	5.748	0.8	10	SJ	▲
TPCIS-#-A00#XX-XX	#	Special					10		○

ORDER EXAMPLE

To order inserts refer to the code: TPCIS-2-A0044SJ-NN

▲ Immediate availability ○ Availability on request

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Series TPC

SPARE PARTS



Series Components														
Cutter Body		1. Insert		2. Clamping Wedge			3. Grub Screw			4. Arbor Mounting Bolts				
														
Item	Code	Item	QTY	Item	Code	QTY	Item	Code	QTY	Item	Code	QTY	Thread	Torque
2773424	TPCBU-050R0500NS2	SEE PAGE 6	5	2772326	RSFTA1300	5	4360307	RSRGR5M50	5	4300266	VC004762110025	1	M10	60Nm
2773425	TPCBU-063R0600NS2		6			6			6	4300269	VC004762110040	1	M10	60Nm
2772439	TPCBU-080R0800NS2		8			8			8	2773622	VC00TED112030	1	M12	70Nm
2773426	TPCBU-100R1000NS2		10			10			10	4360939	VC00TED116040	1	M16	95Nm
2773427	TPCBU-125R1200NS2		12			12			12	2766320	VC00TED120040	1	M20	125Nm
2773428	TPCBU-160R1600NS2		16			16			16	4300298	VC004762112045	4	M12	100Nm
2773691	TPCBU-200R2000NS2		20			20			20	4300341	VC004762116050	4	M16	250Nm

Series TPC

TECHNICAL



ASSEMBLY - INSERTS TO CUTTER

STEP A	STEP B	STEP C
Adjust the grub screw #3 into wedge #2, and put them into their seat. Then, partially tighten (1-2 threads).	Place the insert #1 and lock grub screw #3 at 4 Nm.	Repeat the procedure for all scraper inserts.

ASSEMBLY - CUTTER TO ADAPTER

Step A:

Align the milling cutter arbor with the body using the drive keys.

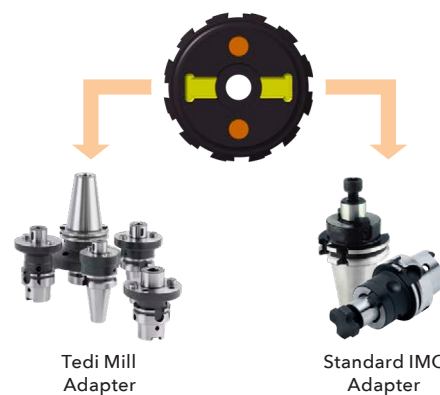
Step B:

Screw in the supplied bolt #4 using the appropriate tightening torque within the spare parts table on page 7.

TOOL HOLDING

Choose an adapter based on CNC machine spindle and the cutter body's "DCON" size and "ADAPTER"

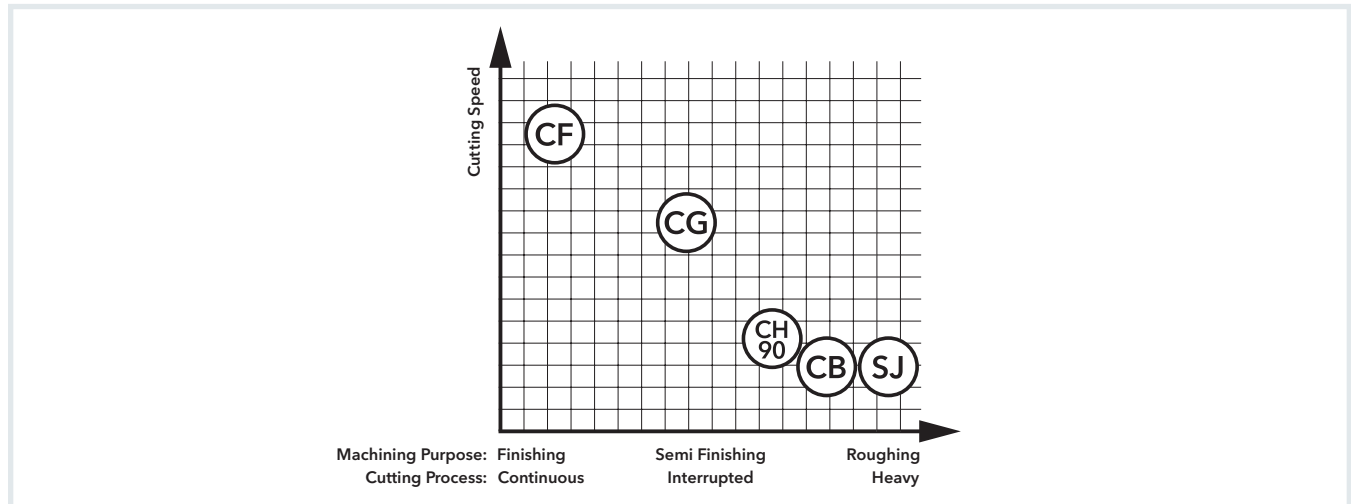
TediPentaCut Mills are best suited for use with IT.TE.DI. Tool Holding Adapters but can be used with standard adapters (ISO 3937).



Scan to learn
more about
our adapters

Grades of CBN

COMPARATIVE TABLE FOR SELECTION OF CBN GRADES



GRADE LEVEL	GRADE CBN %	APPLICATION
Low	CF	Ideal for finishing hard steels and cast irons. Recommended for not particularly severe operations.
Middle	CG	Finishing and semi-finishing of hardened steels and cast irons. Balanced for cutting speed and operation severity. Suitable for difficult machinings.
High	CH 90	Ideal for finishing applications with heavy interruptions on hardened steels and hard cast irons. Suitable for extremely severe machinings.
	CB	
	SJ	Ideal for roughing cast irons. Suitable for severe machinings.

Formulas and Abbreviations - Metric



Formulas and Abbreviations			Calculation
$\emptyset$	Cutter diameter	[mm]	$V_c = \frac{\emptyset * \pi * n}{1000}$
a_p	Axial cutting depth	[mm]	
a_e	Depth of pass	[mm]	$n = \frac{V_c * 1000}{\emptyset * \pi}$
V_c	Cutting speed	[m/min]	
n	Number of RPM	[min ⁻¹]	$V_f = f_z * n * z$
z	Number of cutting edges		
f_z	Tooth feed	[mm]	$f_z = \frac{V_f}{n * z}$
V_f	Feed	[mm/min]	
Lm	Working path	[mm]	$T_c = \frac{Lm}{V_f}$
T_c	Cutting time	[min]	
Q	Volume of chip removed	[cm ³ /min]	$Q = \frac{a_p * a_e * V_f}{1000}$
K_c	Specific cutting force	[N/min ²]	
P	Power required	[kW]	$P = \frac{a_p * a_e * V_f * K_c}{60 * 10^6 * \eta}$
η	Efficiency factor		

ISO Materials - Metric

ISO		Material		Condition	Sharp Grade	Vc (m/min)	Fz (mm/z)
K	K1	Gray Cast Iron (GG)	K1.1	Ferritic/Pearlitic	CBN	1000÷2000	0.05÷0.25
			K1.2	Pearlitic/Martensitic			
H	H1	Hardened Steel	H1.1	Hardened 55 HRC		150÷300	0.05÷0.25
			H1.2	Hardened 60 HRC			
S		Super Alloys	Contact IT.TE.DI for applications and grades				

Formulas and Abbreviations - Inch



Formulas and Abbreviations			Calculation
$\emptyset$	Cutter diameter	[in]	$V_c = \frac{\emptyset * \pi * \eta}{12}$
a_p	Axial cutting depth	[in]	
a_e	Depth of pass	[in]	$n = \frac{V_c * 12}{\emptyset * \pi}$
V_c	Cutting speed	[sfm]	
n	Number of RPM	[min-1]	$V_f = f_z * \eta * z$
z	Number of cutting edges		
f_z	Tooth feed	[in]	$f_z = \frac{V_f}{\eta * z}$
V_f	Feed	[in/min]	
Lm	Working path	[in]	$T_c = \frac{Lm}{V_f}$
T_c	Cutting time	[min]	
Q	Volume of chip removed	[in3 /min]	$Q = a_p * a_e * V_f$
K_c	Specific cutting force	[lb/in2]	
P	Power required	[HP]	$P = \frac{a_p * a_e * V_f * K_c}{396000 * \eta}$
η	Efficiency factor		

ISO Materials - Inch

ISO		Material		Condition	Sharp Grade	Vc (m/min)	Fz (mm/z)
K	K1	Gray Cast Iron (GG)	K1.1	Ferritic/Pearlitic	CBN	3,200 - 6,500	0.002 - 0.010
			K1.2	Pearlitic/Martensitic			
H	H1	Hardened Steel	H1.1	Hardened 55 HRC		500 - 1,000	0.002 - 0.010
			H1.2	Hardened 60 HRC			
S		Super Alloys	Contact IT.TE.DI for applications and grades				

ISO Materials Chart



CLASSIFICATION OF WORKPIECE MATERIALS

USA	DEU	GB	FR	SWE	ITA	SP	JP	RU	UE
ALSi SAE UNS ASTM AA	WERKSTOFF DIN	BS	AFNOR	SS	UNI	UNE	JIS	GOST	EN
K1.1									
A48-25 B Class 25 No 25 B	0.6015	EN-GJL-150 GG 15 EN-JL 1020	Grade 150	Ft 15 D R 15 D	01 15-00	G 14 G 15	FG 15	FC 15 FC 150	SCh 15
A48-30 B Class 30 No 30 B	0.6020	EN-GJL-200 GG 20 EN-JL 1030	Grade 200	Ft 20 D	01 20-00	G 20 Gh 190	FG 20	FC 20 FC 200	SCh 20
A48-20 B Class 20 No 20 B	0.6010	EN-GJL-100 GG 10 EN-JL 1010		Ft 10 D	01 10-00	G 10	FG 10	FC 10 FC 100	SCh 10
K1.2									
A48-45 B Class 45 No 45 B	0.6030	EN-GJL-300 GG 30 EN-JL 1050	Grade 300	Ft 30 D	01 30-00	G 30	FG 30	FC 30 FC 300	SCh 30
A48-50 B Class 50 No 50 B	0.6035	EN-GJL-350 GG 35 EN-JL 1060	Grade 350	Ft 35 D	01 35-00	G 35	FG 35	FC 35 FC350	SCh 35
A48-60 B Class 60 No 60 B	0.6040	EN-JLZ GG 40	Grade 400	Ft 40 D	01 40-00				SCh 40
A48-40 B Class 40 No 40 B	0.6025	EN-GJL-250 GG 25 EN-JL 140	Grade 260	Ft 25 D	01 25-00	G 25	FG 25	FC 25	SCh 25

ISO Materials Chart



CLASSIFICATION OF WORKPIECE MATERIALS

USA	DEU	GB	FR	SWE	ITA	SP	JP	RU	UE
ALSI SAE UNS ASTM AA	WERKSTOFF DIN	BS	AFNOR	SS	UNI	UNE	JIS	GOST	EN
H1.1									
W1 T72301	1.2762 1.1625	75CrMoNiW6-7 C80W2	BW 18				F.520 U F.5107 C 80	SK 75 SK 85 SK 85 M SK 5 SK 5 M SK 6	
W110 T72301	1.1545 1.6746	C105U C 105 W 1 C 105 U 32NiCrMo14-5		C 105 E 2 U Y1 105 C105E2U 35 NCD 14	1880	C 100 KU	F.515 F.516	SK 105 SK 3 TC 105	
W210 T72302	1.2833	100V1	BW2	C 105 E 2 UV 1 Y1 105 V 100 V 2		102 V 2 KU		SKS 43	
6145 6150 6150H G61500 H61500	1.8159	51CrV4 50CrV4	735 A 50 735 A 51 735 H 51 735 M 50 En 47	50CrV4RR 50CV4 51CV4	2230	50CrV4	F.143 F.143.A 51 CrV 4 F.1430	SUP 10 SUP 10-CSP SUP 10 M	50 ChFA 50ChGFA
P20 T51620	1.2330	35CrMo4	708 A 37	34 CD 4	2234	35 CrMo 4			
	1.8721	26MnCr6-3							
	1.2083 1.2083 ESR	X40Cr14 X 42 Cr 13		X40Cr14 Z 40 C 14	2314	X 41 Cr 13 KU	F.5263 X 40 Cr 13	SUS 420 J 2	
300M 4340M K44220	1.6928	41SiNiCrMo V7-6							
								30ChGSA	
H1.2									
A2 T30102	1.2363	X100CrMoV5 X100CrMoV5-1	BA 2	X 100 CrMoV 5 Z 100 CDW 5	2260	X 100 CrMoV 5 1 KU	F.536 F.5227 X 100 CrMoV 5	SKD 12	
D2 T30402	1.2379	X153CrMoV12 X155CrVMo12-1	BD 2	X 160 CrMoV12 Z 160 CDV 12	2310	X 155 CrMoV 12 1 KU	F.520.A	SKD 10 SKD 11	
D3 T30402	1.2080	X210Cr12	BD 3	X200Cr12 Z200C12		X 205 Cr 12 KU	F.521 F.5212 X 210 Cr 12	SKD 1	
L3 T61203	1.2067	102Cr6 100 Cr 6	BL 3	100Cr6RR 100 C 6 100Cr6 Y 100 C 6		102 Cr 6 KU	F.5230 100 Cr 6	SUJ 2	
M1 H41 T11301 T20841	1.3346	HS2-9-1 S 2-9-1	BM 1	HS 2-8-1 Z 85 DCWV 08-04-02-01					
T1 T12001	1.3355	HS18-0-1 S 18-0-1	BT 1	18-0-1 HS 18-0-1 Z 80 WCV 18-04-01	2750	HS 18-0-1	F.5520 HS 18-0-1	SKH 2	R18
O2 T31502	1.2842	90MnCrV8	BO 2	90MnV8		90MoVCr 8 KU	90MnCrV8 F.5229		90MnCrV8
H13 T20813	1.2344	X40CrMoV5-1	BH 13	X 40 CrMoV 5 Z 40 CDV 5	2242	X 40 CrMoV 5 1 1 KU	F.5318 X 40 CrMoSiV5	SKD 61	4Ch5MF1S
440C S44004 S44025	1.4125	X105CrMo17		Z 100 CD 17 Cl Z 100 CD 17				SUS 440 C	95Ch18 110Ch18M-SChD