



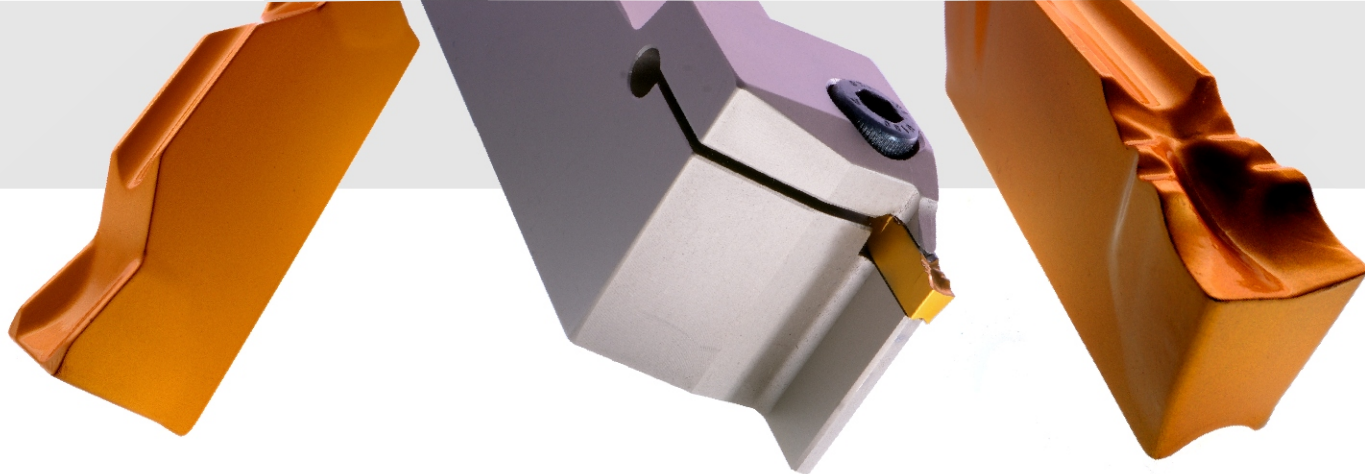
New

D-CUT

PARTING • GROOVING



Smart Indian Choice

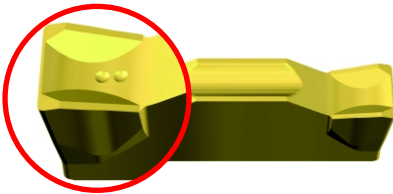


D-CUT — SMART SOLUTIONS FOR PARTING AND GROOVING

The new D-CUT program from Duracarb is a double edge insert solution for parting and grooving. The unique prismatic top and bottom design of the inserts and corresponding seating design in the holder ensures proper seating and alignment of the insert resulting in a rigid and secure clamping.

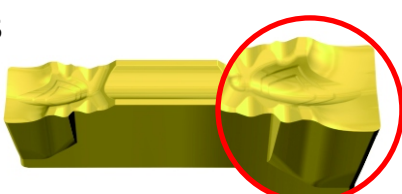
Dedicated D-CUT tool holders are available for groove depths up to 9mm and 16mm, in popular square shank sizes of 16x16, 20x20 and 25x25.

D-CUT insert grades and geometries are suitable for machining a variety of materials like steel, stainless steel, cast iron, high temperature alloys, brass and aluminium.



DDM

- For hard materials and tough applications.
- For general applications on steel, alloy steel and stainless steel.
- Medium-to-high feeds.



DDL

- For soft materials, parting of tubes, small diameters and thin-walled parts.
- Low forces and smaller burrs.
- Superior straightness.
- Low-to-medium feeds.

WORKPIECE MATERIAL

CUTTING CONDITION	ALLOY STEEL	AUSTENITIC STAINLESS	CAST IRON	NON-FERROUS	HIGH-TEMP ALLOYS
HIGH FEED	DDM	DDM	DDM	DDM BRASS	DDM
↕	↕	↕	↕	↕	↕
LOW FEED	DDL	DDL	DDM	DDL ALUMINIUM	DDL TITANIUM

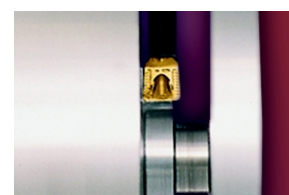
GRADES

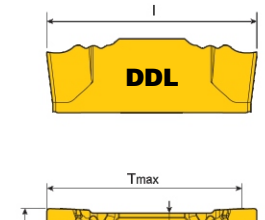
DC154 for medium cutting and semi-roughing of steel and stainless steel. ● Toughness enhanced grade ● TiCN. ● PVD coating.

DP5320 for semi-roughing and medium cutting on all kinds of materials. ● High mechanical shock resistance. ● TiAlN coated on sub-micron substrate.

FEED GUIDELINE IN A TYPICAL GROOVING OPERATION

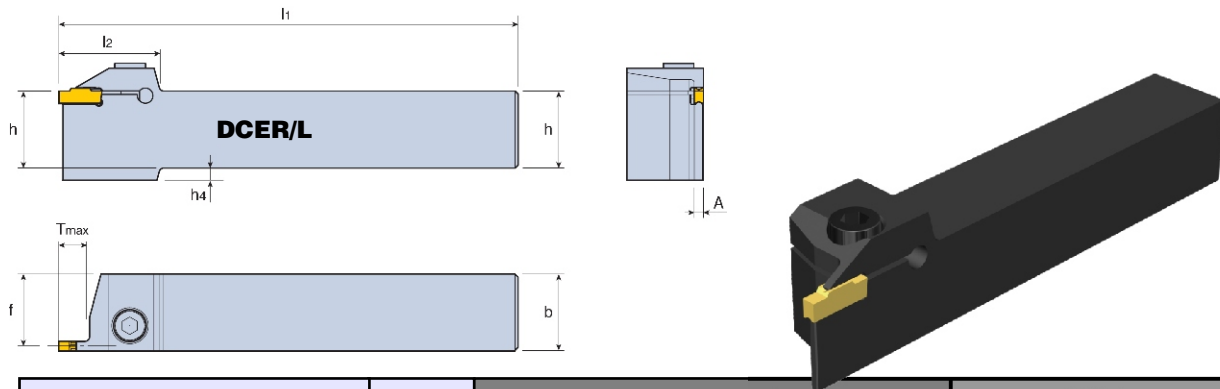
INSERT WIDTH(mm)	CHIPBREAKER DDL	CHIPBREAKER DDM
	FEED (mm/rev)	
2	0.04~0.12	0.05~0.18
3	0.04~0.16	0.07~0.25
4	0.04~0.18	0.09~0.35





INSERT	DESIGNATION	SEAT SIZE	DIMENSION (mm)							GRADE	
			W ±0.05	r	M	l	h	Tmax	DP5320	DC154	
	DDL 2	2	2.0	0.20	1.7	14.0	4.0	13	●	●	
	DDL 3	3	3.0	0.20	2.4	14.0	4.0	13	●	●	
	DDL 4	4	4.0	0.30	3.0	14.0	4.0	13	●	●	

INSERT	DESIGNATION	SEAT SIZE	DIMENSION (mm)							GRADE	
			W +0.05	r	M	l	h	Tmax	DP5320	DC154	
	DDM 2	2	2.0	0.20	1.7	14.0	4.0	13	●	●	
	DDM 3	3	3.0	0.20	2.4	14.0	4.0	13	●	●	
	DDM 4	4	4.0	0.30	3.0	14.0	4.0	13	●	●	



DESIGNATION		INSERT SEAT SIZE	DIMENSION(mm)							SPARES	
			h	b	l1	l2	A	h4	Tmax	SCREW	WRENCH
DCER/ L	16T09-2	2	16	16	110	33	1.8	4	9.0	DS M6X1X20-SH	DHLW-5
	20T09-2	2	20	20	125	33	1.8	—	9.0	DS M6X1X20-SH	DHLW-5
	25T09-2	2	25	25	150	33	1.8	—	9.0	DS M6X1X25-SH	DHLW-5
	16T16-2	2	16	16	110	35	1.8	4	16.0	DS M6X1X20-SH	DHLW-5
	20T16-2	2	20	20	125	35	1.8	—	16.0	DS M6X1X20-SH	DHLW-5
	25T16-2	2	25	25	150	35	1.8	—	16.0	DS M6X1X25-SH	DHLW-5
	16T09-3	3	16	16	110	33	2.4	4	9.0	DS M6X1X20-SH	DHLW-5
	20T09-3	3	20	20	125	33	2.4	—	9.0	DS M6X1X20-SH	DHLW-5
	25T09-3	3	25	25	150	33	2.4	—	9.0	DS M6X1X25-SH	DHLW-5
	16T16-3	3	16	16	110	35	2.4	4	16.0	DS M6X1X20-SH	DHLW-5
	20T16-3	3	20	20	125	35	2.4	—	16.0	DS M6X1X20-SH	DHLW-5
	25T16-3	3	25	25	150	35	2.4	—	16.0	DS M6X1X25-SH	DHLW-5
	16T09-4	4	16	16	110	33	3.0	4	9.0	DS M6X1X20-SH	DHLW-5
	20T09-4	4	20	20	125	33	3.0	—	9.0	DS M6X1X20-SH	DHLW-5
	25T09-4	4	25	25	150	33	3.0	—	9.0	DS M6X1X25-SH	DHLW-5
	16T16-4	4	16	16	110	35	3.0	4	16.0	DS M6X1X20-SH	DHLW-5
	20T16-4	4	20	20	125	35	3.0	—	16.0	DS M6X1X20-SH	DHLW-5
	25T16-4	4	25	25	150	35	3.0	—	16.0	DS M6X1X25-SH	DHLW-5

RECOMMENDED CUTTING CONDITIONS

ISO	MATERIAL	CONDITION	TENSILE STRENGTH N/mm ²	HARDNESS HB	CUTTING SPEED Vc(m/min)
P	Non alloy steel, cast steel, free cutting steel.	<0.25%C Annealed.	420	125	140-250
		>=0.25%C Annealed.	650	190	130-220
		<0.55%C Quenched and tempered.	850	250	90-200
		>=0.55%C Annealed.	750	220	100-220
		Quenched and tempered.	1000	300	70-170
	Low alloy steel and cast steel (less than 5% of alloying elements).	Annealed.	600	200	90-120
			930	275	80-170
		Quenched and tempered.	1000	300	70-130
			1200	350	50-120
	High alloy steel, cast steel and tool steel.	Annealed.	680	200	60-140
		Quenched and tempered.	1100	325	50-70
M	Stainless steel and cast steel.	Ferritic/ martensitic.	680	200	70-170
		Martensitic.	820	240	60-150
		Austenitic.	600	180	90-180
K	Gray cast iron (GG).	Ferritic.		160	100-230
		Pearlitic.		250	90-180
	Cast iron nodular (GGG).	Ferritic.		180	190-300
		Pearlitic.		260	120-220
	Malleable cast iron.	Ferritic.		130	120-250
		Pearlitic.		230	100-210
S	High temp alloys	Fe based.	Annealed.	200	40-70
			Cured.	280	30-50
		Ni or Co based.	Annealed.	250	30-40
			Cured.	350	15-25
			Cast.	320	15-30
	Titanium, Ti alloys.				90-190
		Alpha+beta alloys cured.			30-60

PRACTICAL TROUBLE SHOOTING

- **REDUCE BURR:** ● Ensure centre height of cutting edge within +/-0.1mm. ● Use Narrow and sharp geometry insert.
- **IMPROVE FLATNESS:** ● Minimise tool holder overhang ● Check alignment and perpendicularity of tool to machine spindle axis ● Optimise work piece holding.
- **IMPROVE SURFACE FINISH:** ● Increase cutting speed. ● Ensure optimum chip control. ● Eliminate chatter.
- **IMPROVE CHIP CONTROL:** ● Choose recommended chip breaker ● Check alignment and perpendicularity of tool to machine spindle axis. ● Increase feed. ● Increase coolant flow. ● Minimise tool holder overhang. ● Use correct parameters.
- **PREVENT CHIPPING OF CUTTING EDGE:** ● Use recommended grade and geometry. ● Reduce feed at end of cut. ● Eliminate chatter. ● Increase speed. ● Eliminate built-up edge. ● Ensure rigid setup.
- **PREVENT/REDUCE BUILT-UP EDGE:** ● Use recommended grade and geometry. ● Increase speed. ● Reduce feed. ● Increase coolant flow/concentration.

WHEN
COST SOUNDS LIKE A
FOUR-LETTER
WORD...
TURN TO OUR TOOLS!



Member IMC Group
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Smart Indian Choice

D Mill

D Drill

D Cut

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