



ZIBTR PRO
tehnologija obdelave · vpenjalni sistemi



PNS Video



PNS Katalog

Robustne dvostranske ploščice z 10 rezalnimi robovi

Z dvema različnima vstopnima kotoma za prilagodljivo obdelavo

Primerne za globoko odrezovanje in obdelavo z visokimi pomiki



25-03

PNS - High Performance Milling



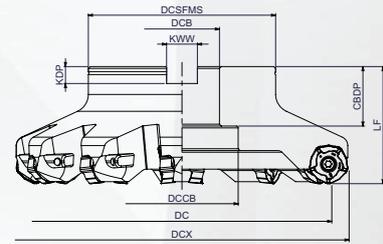
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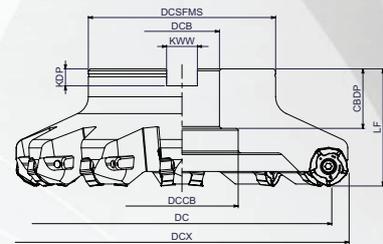
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PNS REBORN - High Performance Milling



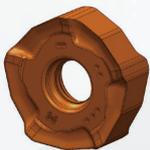
Rezkalne glave s standardnim ozobljenjem:

Držalo	DC	Z	DCX	DCB	LF	Ploščice	Brezplačno držalo ob nakupu ploščic
PNS-3050R-19-22	50	3	68,4	22	50	PNMU 190720...	30 kos
PNS-4063R-19-22	63	4	81,4	22	50		40 kos
PNS-5080R-19-27	80	5	98,3	27	50		40 kos
PNS-6100R-19-32	100	6	118,3	32	50		50 kos
PNS-7125R-19-40	125	7	143,3	40	63		60 kos
PNS-8160R-19-40	160	8	178,4	40	63		70 kos
PNS-10200R-19-60	200	10	218,4	60	63		90 kos
PNS-12250R-19-60	250	12	268,4	60	63		110 kos



Rezkalne glave s finim ozobljenjem:

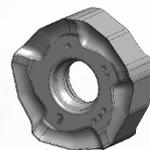
Držalo	DC	Z	DCX	DCB	LF	Ploščice	Brezplačno držalo ob nakupu ploščic
PNS-4050R-19-22	50	4	68,4	22	50	PNMU 190720...	30 kos
PNS-5063R-19-22	63	5	81,4	22	50		40 kos
PNS-7080R-19-27	80	7	98,3	27	50		60 kos
PNS-9100R-19-32	100	9	118,3	32	50		80 kos
PNS-11125R-19-40	125	11	143,3	40	63		100 kos
PNS-12160R-19-40	160	12	178,4	40	63		110 kos
PNS-14200R-19-60	200	14	218,4	60	63		130 kos
PNS-16250R-19-60	250	16	268,4	60	63		150 kos



PNMU190720AER-MM
DS250



PNMU190720AER-PM
DP117



PNMU190720AER-PL
DP117/DP150

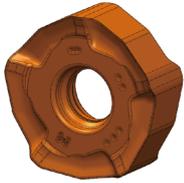


PNMU190720AER-KM
DH103

Cat. No.	Grade	Carbon steel	Alloy steel	Pre-hardened steel	Hardened steel	Cast iron	Stainless steel
PNMU190720AER-MM	DS250	○	◎				◎
PNMU190720AER-PM	DP117			○	◎	○	
PNMU190720AER-PL	DP117			◎	○	○	
PNMU190720AER-PL	DP150	◎	○				○
PNMU190720AER-KM	DH103					◎	

Feature 1 Economical **double-sided** 10-edge Inserts

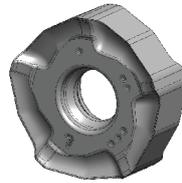
5 inserts available



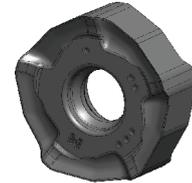
PNMU190720AER-**MM**
DS250



PNMU190720AER-**PM**
DP117



PNMU190720AER-**PL**
DP117/DP150



PNMU190720AER-**KM**
DH103

Cat. No.	Grade	Carbon steel	Alloy steel	Pre-hardened steel	Hardened steel	Cast iron	Stainless steel
PNMU190720AER-MM	DS250	○	◎				◎
PNMU190720AER-PM	DP117			○	◎	○	
PNMU190720AER-PL	DP117			◎	○	○	
PNMU190720AER-PL	DP150	◎	○				○
PNMU190720AER-KM	DH103					◎	

Feature 2 Equipped with Two Different Entry Angles

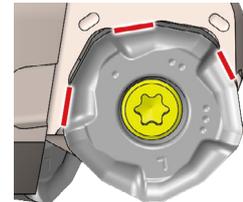


45°

Large Depth of Cut

Enables **large depth of cut** and efficient machining **on high-rigidity machines**.

45° | $ap \text{ max}=5\text{mm}$



Rigid Insert Clamping

Three-face constraint provides rigidity and stability in heavy cutting.

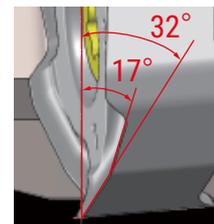


27°

High-Feed Machining

Enables **high-feed machining** at depths of cut below 2.5 mm.

27° | $ap \leq 2.5\text{mm}$

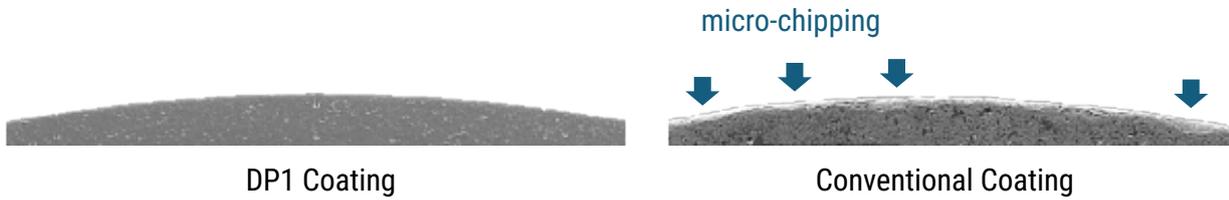


Helical cutting edge

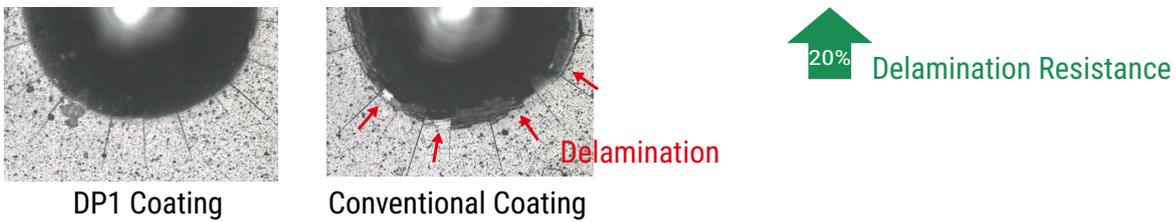
The large axial rake angle allows for smooth machining.

Feature 3 DP117 / DP150 – New PVD Coating Grades

- Improved coating toughness enhances edge stability and **reduces micro-chipping**.



- Stronger coating-substrate adhesion** improves delamination resistance by approx. 20%, ensuring stable, reliable cutting.



Application

ISO	P					M					K				H			
	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	H01	H10	H20	H30
Application Range	<div style="display: flex; justify-content: space-between;"> NEW DP117 </div> <div style="display: flex; justify-content: space-between;"> NEW DP150 </div> <div style="display: flex; justify-content: space-between;"> DS250 </div>					<div style="display: flex; justify-content: space-between;"> NEW DP150 </div> <div style="display: flex; justify-content: space-between;"> DS250 </div>					<div style="display: flex; justify-content: space-between;"> DH103 DP117 </div>				<div style="display: flex; justify-content: space-between;"> NEW DP117 </div>			

Feature 4 Two Cutter Body Types Available



Coarse Pitch
(ø100mm / 6 flutes)



Fine Pitch
(ø100mm / 9 flutes)



PNS
TYPE

Bore Type

P M K H



Fig. 1 $\phi Dc \leq 125mm$

G-Body Through coolant hole

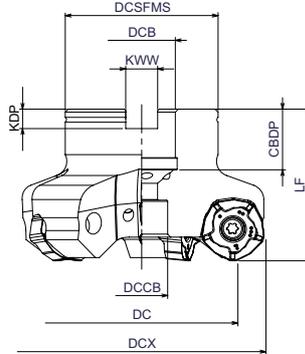


Fig. 2

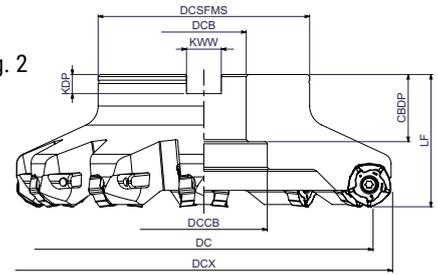
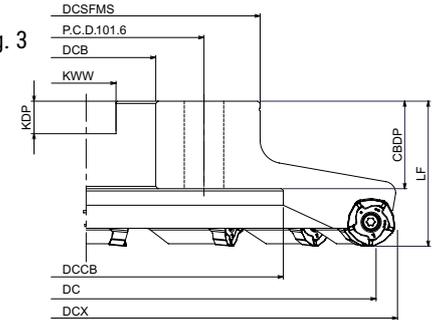


Fig. 3



Cat.No.	Stock	No. of inserts	Dimensions (mm)									Arbor set bolt	Weight (kg)	Fig.	Insert	
			DC	DCX	LF	DCSFMS	DCB	DCCB	KWW	KDP	CBDP					
Coarse Pitch	PNS-3050R-19-22	●	3	50	68.4	50	47	22	17	10.4	6.3	20	M10	0.57	1	PNMU190720AER**
	PNS-4063R-19-22	●	4	63	81.4	50	50	22	17	10.4	6.3	20	M10	0.81	1	
	PNS-5080R-19-27	●	5	80	98.3	50	56	27	20	12.4	7	22	M12×1.75×30★	1.12	1	
	PNS-6100R-19-32	●	6	100	118.3	50	85	32	26	14.4	8	25	M16×2×30★	2.04	1	
	PNS-7125R-19-40	●	7	125	143.3	63	100	40	32	16.4	9	32	M20×2.5×40★	3.81	1	
	PNS-8160R-19-40	●	8	160	178.4	63	100	40	60	16.4	9	32	M20	4.41	2	
	PNS-10200R-19-60	●	10	200	218.4	63	150	60	140	25.7	14	38	M16	6.68	3	
	PNS-12250R-19-60	●	12	250	268.4	63	150	60	170	25.7	14	38	M16	8.75	3	
Fine Pitch	PNS-4050R-19-22	●	4	50	68.4	50	47	22	17	10.4	6.3	20	M10	0.60	1	
	PNS-5063R-19-22	●	5	63	81.4	50	50	22	17	10.4	6.3	20	M10	0.82	1	
	PNS-7080R-19-27	●	7	80	98.3	50	56	27	20	12.4	7	22	M12×1.75×30★	1.11	1	
	PNS-9100R-19-32	●	9	100	118.3	50	85	32	26	14.4	8	25	M16×2×30★	2.09	1	
	PNS-11125R-19-40	●	11	125	143.3	63	100	40	32	16.4	9	32	M20×2.5×40★	3.85	1	
	PNS-12160R-19-40	●	12	160	178.4	63	100	40	60	16.4	9	32	M20	4.53	2	
	PNS-14200R-19-60	●	14	200	218.4	63	150	60	140	25.7	14	38	M16	6.90	3	
	PNS-16250R-19-60	●	16	250	268.4	63	150	60	170	25.7	14	38	M16	9.10	3	

All cutters are supplied without inserts, wrench or moly.

● : Stocked Items

Screw	Torque(N.m)	Wrench
CSW-513H	5.5	A-20

Insert



PNMU190720AER-MM



PNMU190720AER-PM



PNMU190720AER-PL



PNMU190720AER-KM

Fig. 1

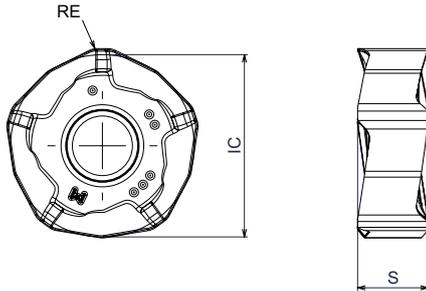
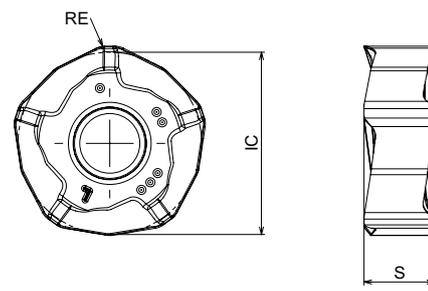


Fig. 2

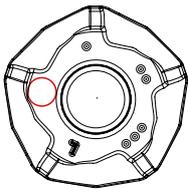


Cat.No.	Tolerance	PVD Coating				Dimensions (mm)			Fig.
		DS250	DP117	DP150	DH103	RE	IC	S	
PNMU190720AER-MM	M	●				2	19.5	7.5	1
PNMU190720AER-PM	M		●						1
PNMU190720AER-PL	M		●	●					2
PNMU190720AER-KM	M				●				1

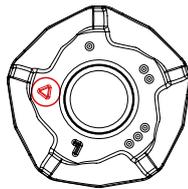
Note) 10 inserts per case.

● : Stocked Items

GRADE MARKINGS

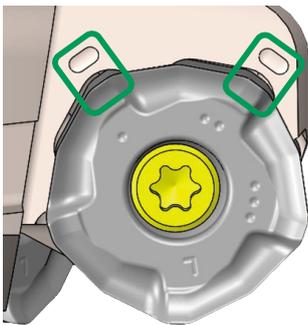


PNMU190720AER-PL DP117

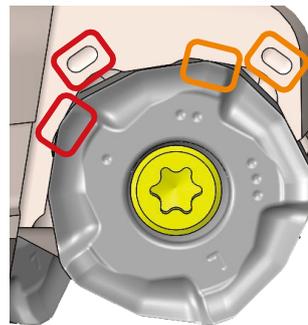


PNMU190720AER-PL DP150

⚠ Ensure correct insert positioning before mounting



Correct – Recommended



Poor contact – Not acceptable

The indication mark on the cutter body and the corner of the insert must be in the same position when mounting the inserts.

■ Recommended Cutting Conditions – 45° Entry Angle ($a_p \leq 5 \text{ mm}$)

Material	Insert	Grade	Vc (m/min)	fz (mm/t)	ap (mm)
Carbon Steel below 250HB	PNMU190720AER-PL (PNMU190720AER-MM)	DP150 (DS250)	140 – 180	0.25 – 0.35	4.0 – 5.0
Cast Steel below 285HB	PNMU190720AER-MM (PNMU190720AER-PL)	DS250 (DP150)	120 – 160	0.25 – 0.3	4.0 – 5.0
Tool & Die Steel below 255HB	PNMU190720AER-MM (PNMU190720AER-PL)	DS250 (DP150)	90 – 130	0.2 – 0.25	3.0 – 5.0
Mold Steel 30-36HRC	PNMU190720AER-PL (PNMU190720AER-PM)	DP117 (DP150)	90 – 130	0.25 – 0.3	4.0 – 5.0
Mold Steel 38-43HRC	PNMU190720AER-PL (PNMU190720AER-PM)	DP117	80 – 120	0.2 – 0.25	3.0 – 5.0
Grey Cast Iron 160-260HB	PNMU190720AER-KM (PNMU190720AER-PL) (PNMU190720AER-PM)	DH103 (DP117)	140 – 180	0.35 – 0.4	4.0 – 5.0
Nodular Cast Iron 170-300HB	PNMU190720AER-KM (PNMU190720AER-PL) (PNMU190720AER-PM)	DH103 (DP117)	120 – 160	0.3 – 0.35	3.0 – 5.0
Austenitic Stainless Steel	PNMU190720AER-MM (PNMU190720AER-PL)	DS250 (DP150)	80 – 120	0.2 – 0.25	3.0 – 5.0
Martensitic Stainless Steel	PNMU190720AER-MM (PNMU190720AER-PL)	DS250 (DP150)	90 – 130	0.25 – 0.3	4.0 – 5.0

Note)

1. Please adjust cutting conditions according to machine rigidity or work rigidity.
2. In case of chatter occurring, recommended to reduce ap or rpm and keep feed per tooth.
3. ap should be reduced when using on low rigidity machine.
4. Use air blow.

■ Recommended Cutting Conditions – 27° Entry Angle ($a_p \leq 2.5$ mm)

Material	Insert	Grade	V_c (m/min)	f_z (mm/t)	a_p (mm)
Carbon Steel below 250HB	PNMU190720AER-PL (PNMU190720AER-MM)	DP150 (DS250)	160 – 200	0.6 – 0.7	1.5 – 2.0
Cast Steel below 285HB	PNMU190720AER-MM (PNMU190720AER-PL)	DS250 (DP150)	140 – 180	0.5 – 0.6	1.5 – 2.0
Tool & Die Steel below 255HB	PNMU190720AER-MM (PNMU190720AER-PL)	DS250 (DP150)	110 – 150	0.4 – 0.5	1.0 – 2.0
Mold Steel 30-36HRC	PNMU190720AER-PL (PNMU190720AER-PM)	DP117 (DP150)	110 – 150	0.5 – 0.6	1.5 – 2.0
Mold Steel 38-43HRC	PNMU190720AER-PL (PNMU190720AER-PM)	DP117	100 – 140	0.4 – 0.5	1.0 – 2.0
Hardened Die Steel 42-52HRC	PNMU190720AER-PM (PNMU190720AER-PL)	DP117	30 – 70	0.15 – 0.2	0.5 – 0.8
Grey Cast Iron 160-260HB	PNMU190720AER-KM (PNMU190720AER-PL) (PNMU190720AER-PM)	DH103 (DP117)	170 – 200	0.7 – 0.8	2.0 – 2.5
Nodular Cast Iron 170-300HB	PNMU190720AER-KM (PNMU190720AER-PL) (PNMU190720AER-PM)	DH103 (DP117)	140 – 180	0.5 – 0.6	1.0 – 2.0
Austenitic Stainless Steel	PNMU190720AER-MM (PNMU190720AER-PL)	DS250 (DP150)	120 – 160	0.5 – 0.6	1.0 – 2.0
Martensitic Stainless Steel	PNMU190720AER-MM (PNMU190720AER-PL)	DS250 (DP150)	140 – 180	0.4 – 0.5	1.0 – 2.0

Note)

1. Please adjust cutting conditions according to machine rigidity or work rigidity.
2. In case of chatter occurring, recommended to reduce a_p or rpm and keep feed per tooth.
3. a_p should be reduced when using on low rigidity machine.
4. Use air blow.

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