

PRODUCT NEWS

PN-E-025

NEW PRODUCT



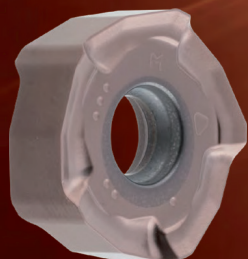
High-Performance Milling with Double-sided 10-edge Inserts

PNS-REBORN

- Coarse Pitch : $\phi 50 \sim 250$
- Fine Pitch : $\phi 50 \sim 250$



Economical Double-Sided Inserts with 10 Cutting Edges
Equipped with Two Different Entry Angles
Suitable for Both Deep Cutting and High-Feed Machining



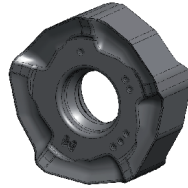
PNS-REBORN

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

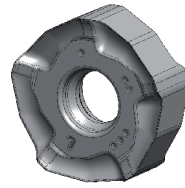
5 inserts available



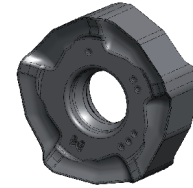
PNMU190720AER-**MM**
DS250



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					⊙	

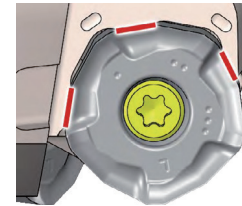
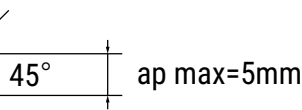
Feature 2 Equipped with Two Different Entry Angles



45°

Large Depth of Cut

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



Rigid Insert Clamping

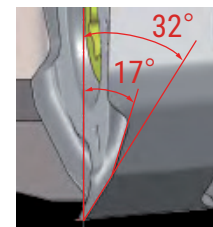
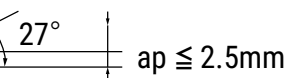
Three-face constraint provides rigidity and stability in heavy cutting.



27°

High-Feed Machining

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

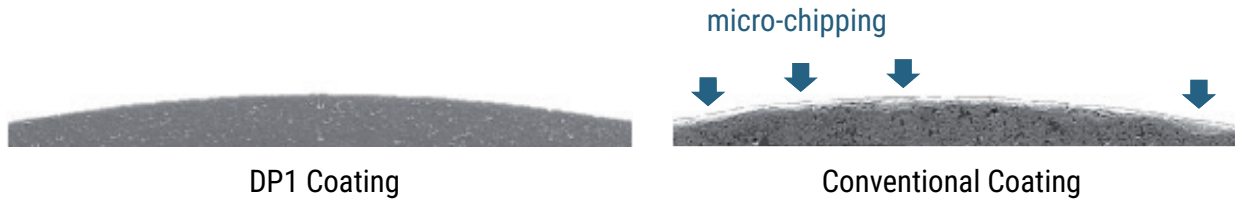


Helical cutting edge

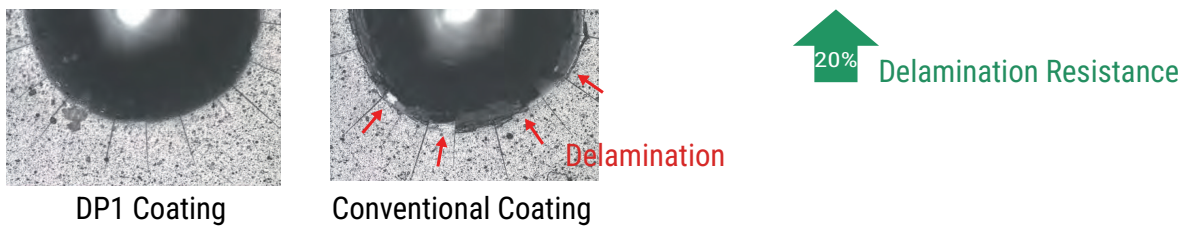
The large axial rake angle allows for smooth machining.

Feature 3 DP117 / DP150 – New PVD Coating Grades

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



2. **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	NEW DP117		NEW DP150			NEW DP150					NEW DP117				NEW DP117			
	DS250			DS250					DH103									

Feature 4 Two Cutter Body Types Available



Coarse Pitch
(\varnothing 100mm / 6 flutes)



Fine Pitch
(\varnothing 100mm / 9 flutes)

PNS-REBORN



PNS
TYPE

Bore Type

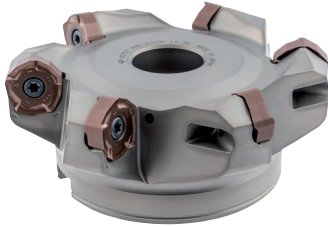


Fig. 1 $\phi Dc \leq 125mm$

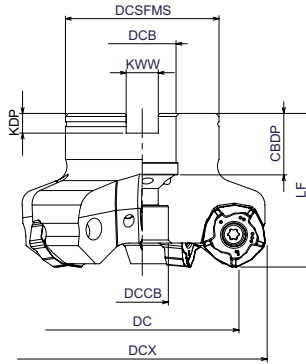


Fig. 2

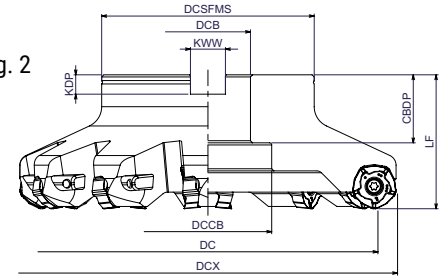
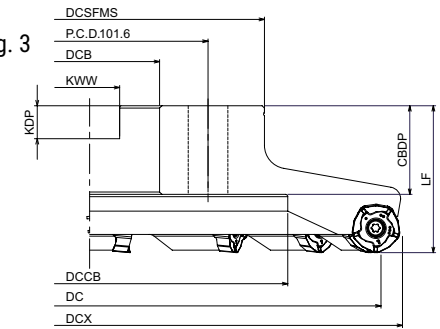


Fig. 3



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



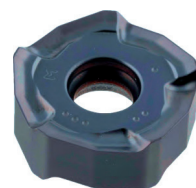
PNMU190720AER-MM



PNMU190720AER-PM



PNMU190720AER-PL



PNMU190720AER-KM

Fig. 1

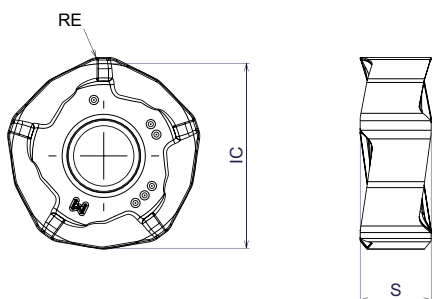
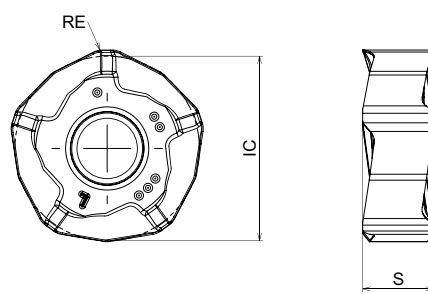


Fig. 2

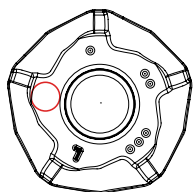


Cat.No.	Tolerance	PVD Coating				Dimensions (mm)			Fig.
		DS250	DP117	DP150	DH103	RE	IC	S	
PNMU190720AER-MM	M	●				2	19.5	7.5	1
PNMU190720AER-PM	M		●						1
PNMU190720AER-PL	M		●	●					2
PNMU190720AER-KM	M				●				1

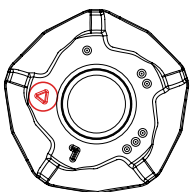
Note) 10 inserts per case.

● : Stocked Items

GRADE MARKINGS

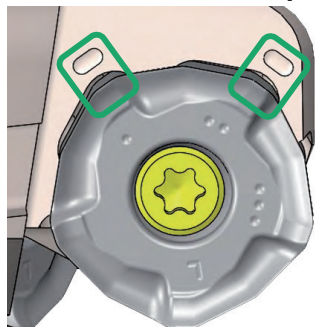


PNMU190720AER-PL DP117

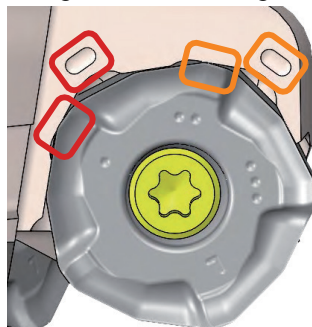


PNMU190720AER-PL DP150

⚠ 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 ($a_p \leq 5$ mm)

Material	Insert	Grade	Vc (m/min)	fz (mm/t)	a_p (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-MM)	DP117 (DP150)	90 – 130	0.25 – 0.3	4.0 – 5.0
Mold Steel 38-43HRC	PNMU190720AER-PL (PNMU190720AER-MM)	DP117	80 – 120	0.2 – 0.25	3.0 – 5.0
Grey Cast Iron 160-260HB	PNMU190720AER-KM (PNMU190720AER-PL) (PNMU190720AER-MM)	DH103 (DP117)	140 – 180	0.35 – 0.4	4.0 – 5.0
Nodular Cast Iron 170-300HB	PNMU190720AER-KM (PNMU190720AER-PL) (PNMU190720AER-MM)	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 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.

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

Material	Insert	Grade	Vc (m/min)	fz (mm/t)	ap (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 ap or rpm and keep feed per tooth.
3. ap should be reduced when using on low rigidity machine.
4. Use air blow.

