

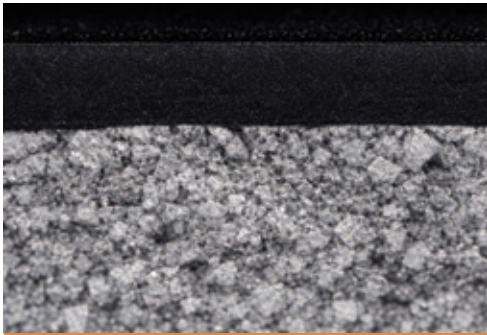


INDEXABLE MILLING

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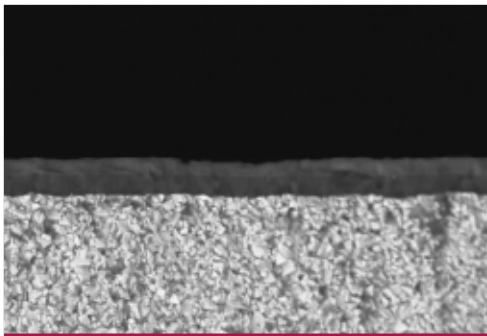
INDEXABLE MILLING

Coating Grades Description



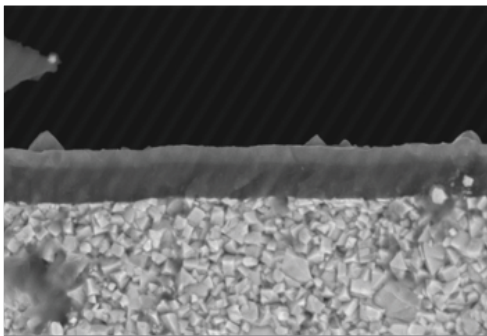
HPU2500: THE ALL ROUND UNIVERSAL CUTTING

A fine-grain carbide substrate paired with AlTiN coating for reliable, all-round performance. Handles chip adhesion well and holds up across a wide range of steels and cast materials. The safe, go-to choice when you need one grade that performs consistently across varying jobs.



HPS2500: BEST FOR HEAT RESISTANT CUTTING

Built for the heat that stainless steel and superalloys generate at the cutting edge. A specially formulated substrate combined with AlTiSiN coating resists high thermal stress, keeping the edge sharp and stable even as temperatures climb. The right choice whenever heat, not wear, is what's wearing your tools out.



HPH1500: BUILT FOR HIGH HARDNESS CUTTING

Designed for roughing operations on hardened steels and high-hardness alloys, where the repeated impact loading of each pass puts extra stress on the cutting edge. A tough, cobalt-enriched substrate resists chipping under that loading, while a multi-layer coating protects against heat buildup from heavy chip loads. Built to survive aggressive roughing passes on hard material without breaking down.

INDEXABLE MILLING

Shoulder Milling Insert Geometries



Geometry	F	M
Shoulder Milling Insert		
Edge Profile		
Application	Optimized for finishing applications. First choice for M, S and N material groups.	Suitable for roughing applications. First choice for P, K and H material groups.

XDKX



True 90° Shoulder Accuracy

- Delivers precise vertical walls and flat shoulders, reducing the need for secondary finishing.

Excellent Ramp-Down Capability

- Optimized geometry allows smooth ramping and helical entry for flexible machining strategies.

Secure Insert Clamping

- Rigid pocket and secure clamping provide stable, vibration-resistant cutting.

Reliable Cutting Performance

- Consistent tool life and surface finishing across a wide range of materials and machining conditions.

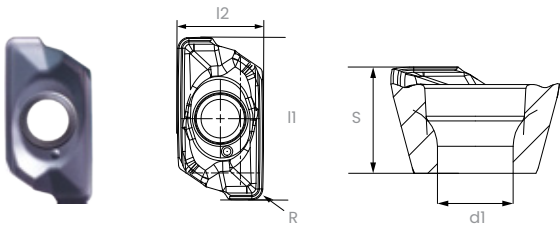


XDKX

Shoulder
Milling

XDKX

Optimum Shoulder Milling



Order Number	I1	I2	S	d1	R	Ap Max	HPU2500
XDKX 12T308-F PDSR HPU2500	12.18	6.4	4	2.9	0.8	9	●
XDKX 12T308-M PDSR HPU2500	12.18	6.4	4	2.9	0.8	9	●

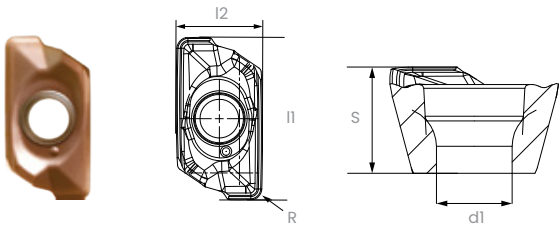
● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

Material Group | Materialgruppe | Groupe Matière | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○	○	○	○	○	○	○	○				

XDKX

NiTiCo 45 Shoulder Milling



Order Number	l1	l2	S	d1	R	Ap Max	HPS2500
XDKX 12T308-F PDSR HPS2500	12.18	6.4	4	2.9	0.8	9	●
XDKX 12T308-M PDSR HPS2500	12.18	6.4	4	2.9	0.8	9	●

● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

Material Group | Materialgruppe | Groupe Matière | Gruppo Materiali | 材质主类

N01

N02

N03

K01

K02

P01

P02

P03

M01

M02

S01

S02

S03

H01

H02

O01

O02

INDEXABLE MILLING

Recommended Cutting Data



Shoulder Milling Insert M PDSR HPU2500, HPS2500

Material Group	P			M		K	
Working Material	Carbon Steel	Alloy Steel	Prehardened Steel	Stainless Steel	Stainless Steel	Grey Cast Iron	Ductile Cast Iron
Properties	-	520 < Rm < 1200	35 ≤ HRC < 45	High Machinability	Low Machinability	-	-
Coolant	Dry Preferred			Wet Preferred		Dry Preferred	
Ap (mm)	3	3	3	3	3	3	3
Ae (mm)	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D
Vc	270	170	120	220	160	240	200
Fz	0.17	0.15	0.13	0.15	0.12	0.17	0.15

Material Group	N			S			H	
Working Material	Wrought Aluminium	Cast Aluminium	Copper Alloy	Titanium Alloy	Nickel Alloy	Cobalt Alloy	Hardened Steel	Hardened Steel
Properties	Si < 9%	Si ≥ 9%	-	-	-	-	45 ≤ HRC < 52	52 ≤ HRC < 68
Coolant	Wet Preferred			Wet Preferred			Dry Preferred	
Ap (mm)	3	3	3	3	3	3	2	2
Ae (mm)	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D
Vc	400	400	400	55	40	40	50	40
Fz	0.18	0.18	0.18	0.12	0.12	0.12	0.08	0.08

Note: For extended tool life, reduce the recommended cutting speed by 30%

Shoulder Milling Insert F PDSR HPU2500, HPS2500

Material Group	P			M		K	
Working Material	Carbon Steel	Alloy Steel	Prehardened Steel	Stainless Steel	Stainless Steel	Grey Cast Iron	Ductile Cast Iron
Properties	-	520 < Rm < 1200	35 ≤ HRC < 45	High Machinability	Low Machinability	-	-
Coolant	Dry Preferred			Wet Preferred		Dry Preferred	
Ap (mm)	3	3	3	3	3	3	3
Ae (mm)	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D
Vc	270	170	120	220	160	240	200
Fz	0.14	0.12	0.10	0.12	0.10	0.14	0.12

Material Group	N			S			H	
Working Material	Wrought Aluminium	Cast Aluminium	Copper Alloy	Titanium Alloy	Nickel Alloy	Cobalt Alloy	Hardened Steel	Hardened Steel
Properties	Si < 9%	Si ≥ 9%	-	-	-	-	45 ≤ HRC < 52	52 ≤ HRC < 68
Coolant	Wet Preferred			Wet Preferred			Dry Preferred	
Ap (mm)	3	3	3	3	3	3	2	2
Ae (mm)	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D	0.80 × D
Vc	400	400	400	55	40	40	50	40
Fz	0.16	0.16	0.16	0.10	0.10	0.10	0.06	0.06

Note: For extended tool life, reduce the recommended cutting speed by 30%

INDEXABLE MILLING

High Feed Milling Insert Geometries



Geometry	M	R
High Feed Milling Insert		
Edge Profile		
Explanation	Suitable for soft material machining. First choice for P, M,S and N material groups.	Suitable for high-alloy steels and hardened steels from 40–65 HRC. First choice for H and K material groups

XDKX



High Feed Geometry for Maximum Productivity

- A small entering angle thins the chip, so feed per tooth can run far above conventional milling at the same cutting load.

Excellent Ramp-Down Capability

- Optimized geometry allows smooth ramping and helical entry for flexible machining strategies.

Large Insert Seating Contact Area

- Robust seating surface provides high stability under extreme feed rates and cutting loads.

Axial Cutting Force for Long Reach

- The shallow entering angle directs load into the spindle rather than against the tool, so deep cavities can be machined at long overhang with less deflection.

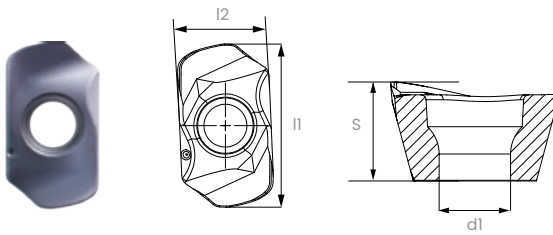


XDKX

High Feed
Milling

XDKX

Optimum High Feed Milling



Order Number	I1	I2	S	d1	RP	UTCN	Ap Max	HPU2500
XDKX 12T3HF-M ZDSR HPU2500	11.03	6.1	3.8	2.9	1.74	0.35	1.5	●

* RP (Programming Radius)

* UTCN (Uncut Thickness)

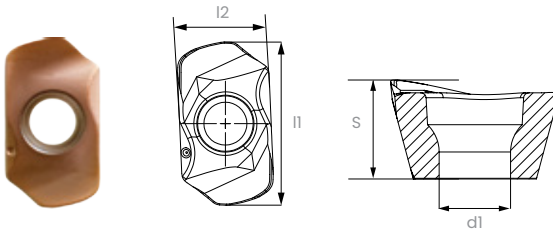
● Ex Stock	ab Lager	De Stock	Da Magazzino	有库存
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无库存

Material Group | Materialgruppe | Groupe Matière | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
○	○	○	○	○	○	○	○	○	○	○	○	○				

XDKX

NiTiCo 45 High Feed Milling



Order Number	I1	I2	S	d1	RP	UTCN	Ap Max	HPS2500
XDKX 12T3HF-M ZDSR HPS2500	11.03	6.1	3.8	2.9	1.74	0.35	1.5	●

* RP (Programming Radius)

* UTCN (Uncut Thickness)

● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

Material Group | Materialgruppe | Groupe Matière | Gruppo Materiali | 材质主类

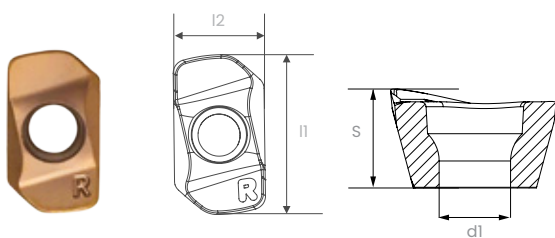
N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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XDKX

DM70X High Feed Milling

HPMT



Order Number	I1	I2	S	d1	RP	UTCN	Ap Max	HPH1500
XDKX 12T3HF-R ZDSR HPH1500	11.03	6.1	3.8	2.9	1.30	0.28	0.5	●

* RP (Programming Radius)

* UTCN (Uncut Thickness)

● Ex Stock	ab Lager	De Stock	Da Magazzino	有库存
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无库存

Material Group | Materialgruppe | Groupe Matière | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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●

INDEXABLE MILLING

Recommended Cutting Data



High Feed Milling Insert M ZDSR HPU2500, HPS2500

Material Group	P			M		K	
Working Material	Carbon Steel	Alloy Steel	Prehardened Steel	Stainless Steel	Stainless Steel	Grey Cast Iron	Ductile Cast Iron
Properties	-	520 < Rm < 1200	35 ≤ HRC < 45	High Machinability	Low Machinability	-	-
Coolant	Dry Preferred			Wet Preferred		Dry Preferred	
Ap (mm)	1	0.8	0.6	0.8	0.6	0.8	0.8
Ae (mm)	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D
Vc	270	170	120	220	160	240	200
Fz	1.50	1.30	1.10	0.70	0.60	1.30	1.10

Material Group	N			S			H	
Working Material	Wrought Aluminium	Cast Aluminium	Copper Alloy	Titanium Alloy	Nickel Alloy	Cobalt Alloy	Hardened Steel	Hardened Steel
Properties	Si < 9%	Si ≥ 9%	-	-	-	-	45 ≤ HRC < 52	52 ≤ HRC < 68
Coolant	Wet Preferred			Wet Preferred			Dry Preferred	
Ap (mm)	1	1	1	1	0.8	0.8	0.5	0.4
Ae (mm)	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D
Vc	400	400	400	55	40	40	50	40
Fz	1.00	1.00	1.00	0.70	0.60	0.60	0.60	0.50

Note: For extended tool life, reduce the recommended cutting speed by 30%

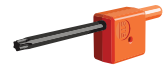
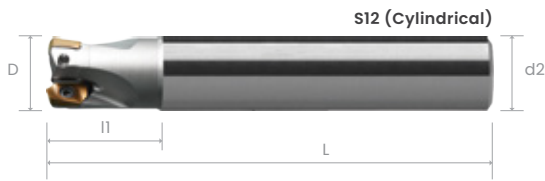
High Feed Milling Insert R ZDSR HPH1500

Material Group	P		K		H	
Working Material	Alloy Steel	Prehardened Steel	Grey Cast Iron	Ductile Cast Iron	Hardened Steel	Hardened Steel
Properties	520 < Rm < 1200	35 ≤ HRC < 45	-	-	45 ≤ HRC < 52	52 ≤ HRC < 68
Coolant	Dry Preferred		Dry Preferred		Dry Preferred	
Ap (mm)	0.5	0.5	0.5	0.5	0.5	0.4
Ae (mm)	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D	0.60 × D
Vc	170	120	240	200	50	40
Fz	1.50	1.30	1.50	1.30	1.00	0.70

Note: For extended tool life, reduce the recommended cutting speed by 30%

S12

Cutter Bodies – Cylindrical Shank



Screw	Screwdriver
H2506-TX08	HFD-TX08

Order Number	D	l1	L	d2	Z	Availability	Insert
S12 1000 080 Z1	10	20	80	10	1	○	XDKX 12T
S12 1200 090 Z1	12	24	90	12	1	○	
S12 1400 090 Z1	14	28	90	14	1	○	
S12 1600 090 Z2	16	32	90	16	2	●	
S12 1800 090 Z2	18	36	90	18	2	○	
S12 2000 100 Z2	20	40	100	20	2	○	
S12 2000 100 Z3			100	20	3	●	
S12 2200 100 Z3	22	44	100	22	3	○	
S12 2500 110 Z3	25	50	110	25	3	●	
S12 2500 110 Z4			110	25	4	●	
S12 2800 120 Z4	28	56	120	28	4	○	
S12 3200 130 Z4	32	64	130	32	4	●	
S12 3200 130 Z5			130	32	5	●	
S12 3500 130 Z5	35	70	130	35	5	●	
S12 1600 160 Z2	16	48	160	16	2	●	
S12 1700 160 Z2	17		160	17	2	●	
S12 2000 200 Z3	20	60	200	20	3	●	
S12 2100 200 Z3	21		200	21	3	●	
S12 2500 200 Z4	25	75	200	25	4	●	
S12 3200 200 Z5	32	96	200	32	5	●	

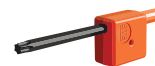
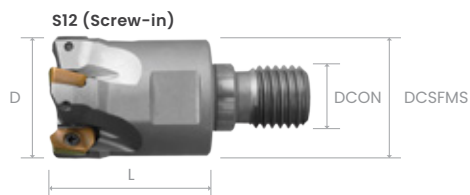
● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

Material Group | Materialgruppe | Groupe Matière | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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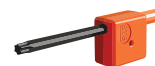
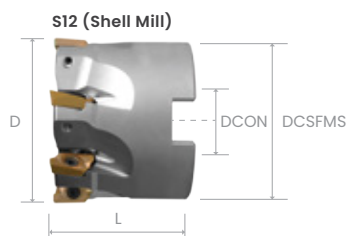
S12

Cutter Bodies – Screw-in and Shell Mill



Screw	Screwdriver
H2506-TX08	HFD-TX08

Order Number	D	DCON	TDZ	L	DCSFMS	Z	Availability	Insert
S12 1600 M08 Z2	16	8.5	M08	23	14	2	●	XDKX 12T
S12 2000 M10 Z3	20	10.5	M10	28	18	3	●	
S12 2500 M12 Z4	25	12.5	M12	30	21	4	●	
S12 3200 M16 Z5	32	17	M16	40	30	5	●	
S12 4000 M16 Z6	40		M16	40	35	6	●	



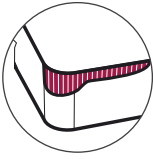
Screw	Screwdriver
H2506-TX08	HFD-TX08

Order Number	D	DCON	L	DCSFMS	Z	Availability	Insert
S12 3200 16 Z5	32	16	35	30	5	●	XDKX 12T
S12 3500 16 Z5	35		35	30	5	○	
S12 4000 16 Z6	40		40	35	6	●	
S12 5000 22 Z7	50	22	40	47	7	●	
S12 6300 22 Z8	63		40	50	8	●	
S12 8000 27 Z10	80	27	50	58	10	○	

● Ex Stock	ab Lager	De Stock	Da Magazzino	有存库
○ Upon Request	auf Anfrage	à la demande	Su ordinazione	无存库

Material Group | Materialgruppe | Groupe Matière | Gruppo Materiali | 材质主类

N01	N02	N03	K01	K02	P01	P02	P03	M01	M02	S01	S02	S03	H01	H02	O01	O02
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Flank Wear

Occurs from abrasion by hard particles, reducing the tool's flank surface.

Solutions :

Lower cutting speed or use a harder grade.

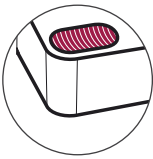


Plastic Deformation

Tool material yields under excessive thermal and mechanical stress.

Solutions :

Opt for a harder grade, reduce cutting speed, or lower feed rate.

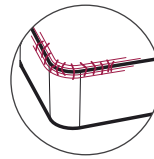


Crater Wear

Affects the tool's rake face, caused by high-speed abrasion and diffusion between the tool and workpiece.

Solutions :

Decrease cutting speed, improve coolant flow, or switch to a harder grade.

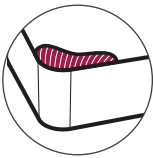


Thermal Cracks

Caused by rapid temperature changes during interrupted cuts, worsened by improper coolant use.

Solutions :

Use a tougher grade, direct coolant properly, reduce speed, or turn off coolant.

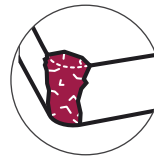


Built-up Edge (BUE)

Material from the workpiece sticks to the cutting tool due to pressure welding, common with sticky materials at low speeds.

Solutions :

Adjust cutting speed to the optimal range, alter feed rate, or select a sharper chipbreaker.

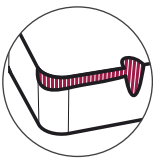


Edge Chipping / Breakage

Results from excessive mechanical stress, possible from high feed rates, deep cuts, or improper tool setup.

Solutions :

Ensure parameters are correct, check toolholder and shim, use the appropriate tool. If breakage persists, retry with a new edge and diagnose before failure.



Notch Wear

Localized damage along the depth-of-cut line from adhesive and abrasive wear, typical in machining stainless steels and superalloys.

Solutions :

Vary depth of cut, use conical passes, or choose a harder grade or sharper chipbreaker.

Frequently Asked Questions



WHY IS HPMT EXPANDING INTO THE CARBIDE INSERTS BUSINESS?

We are expanding to offer you a complete range of tooling solutions. As tools get larger, using indexable carbide inserts becomes more efficient and sustainable. A wider range of products allows us to offer more tailored and innovative solutions to meet your specific needs. It also enables us to achieve economies of scope in production, R&D, sales, and marketing, which can improve our efficiency and lead to better pricing and service for you.

WHAT ADVANTAGES DO I GAIN FROM SOURCING TOOLS FROM A SINGLE SUPPLIER LIKE HPMT?

By consolidating your tooling needs with us, you streamline the procurement process and cut down on administrative tasks, which enhances supplier communication. Increased efficiency and potential cost savings arise from bulk purchasing and streamlined logistics. Consolidating services under one roof reduces complexity and improves the management of your supply chain.

WILL THE QUALITY OF HPMT'S CARBIDE INSERTS MATCH YOUR SOLID CARBIDE TOOLS?

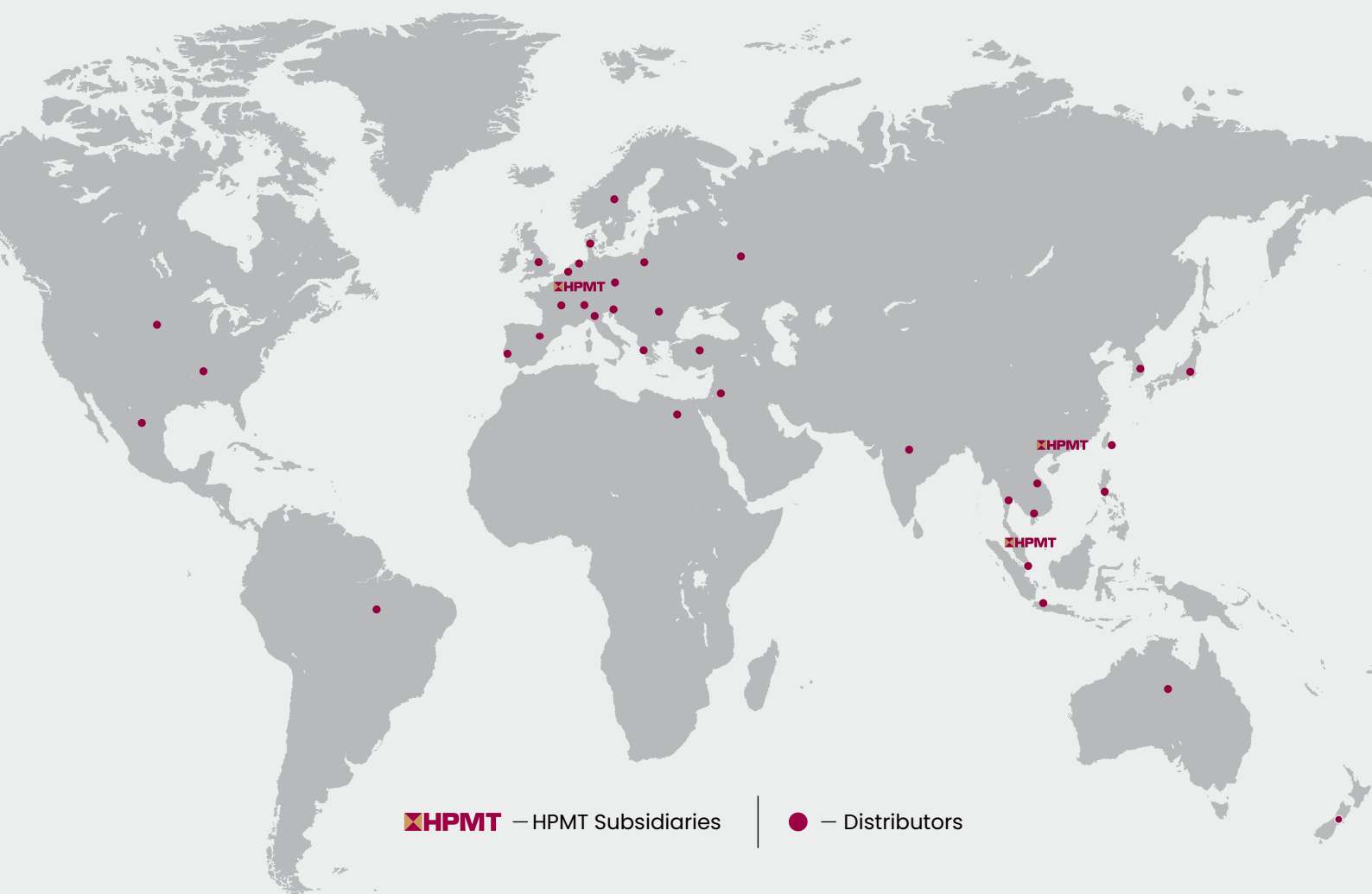
Absolutely. We are committed to delivering the same high-quality standards across all our products. Our carbide inserts undergo rigorous testing to ensure they meet the performance and reliability you expect from HPMT.

HOW WILL HPMT SUPPORT ME DURING THIS TRANSITION TO INCLUDE CARBIDE INSERTS?

We are here to provide full support, including technical assistance, product training, and after-sales service, to ensure you seamlessly integrate our carbide inserts into your operations.

DOES THIS MOVE MEAN HPMT IS SHIFTING FOCUS AWAY FROM SOLID CARBIDE TOOLS?

Not at all. We remain dedicated to our solid carbide tools while enhancing our offerings to include carbide inserts. Our goal is to provide a comprehensive tooling solution that covers all your machining needs.



 — HPMT Subsidiaries

 — Distributors



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