

Flat Drill

With 180° point angle for **P, M, K, N** material groups





FLAT DRILL

EDP No.	Design	Z	Diameter Range	Page	Stock
W15	180° Point Angle - 2 x Ø	2	1.0 - 20.0	3	○

Legend : ● Ex stock ○ Upon Request



Top View



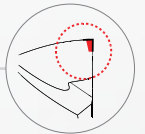
1 180° Point Angle Design

- Revolutionized Drilling Strategy
- Maximize the usage of pilot hole



2 Unique Edge Protection Design

- Enhance resistance to chipping
- Controlled burr formation on workpiece



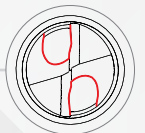
3 Highly Treated Gash Surface

- Reduce friction during machining operation
- Lower machining load
- Reduce build up edge on tool



4 Optimized Flute Design

- High performance with excellent chip evacuation
- Resistance to chip blockage in the flute
- Low vibration machining



5 Superior Coating to Reduce Friction

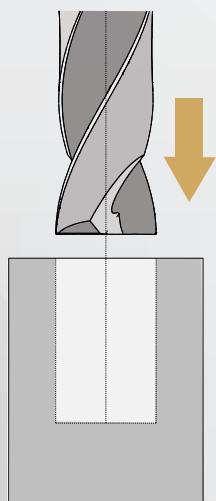
- Increase hardness and abrasive wear resistance
- Higher thermal resistance
- Smoother chip evacuation



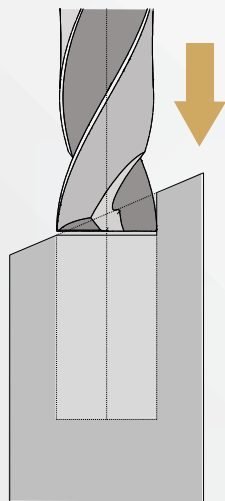
W15

180° Point Angle
2 x Ø

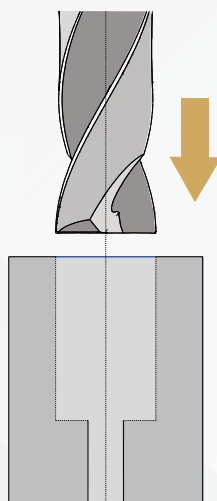
FLAT BOTTOM DRILLING



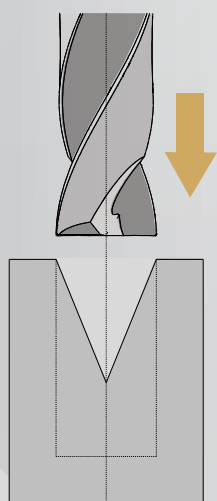
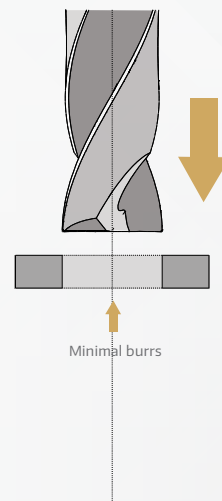
COUNTER BORING ON INCLINED PLANE



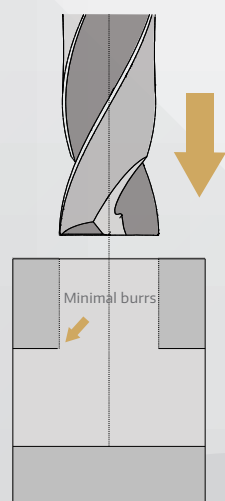
COUNTER BORING



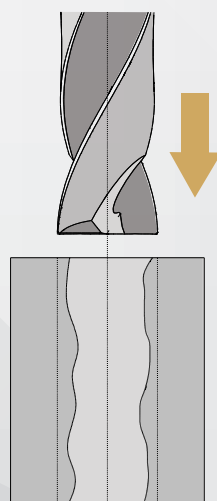
DRILLING THIN PLATE



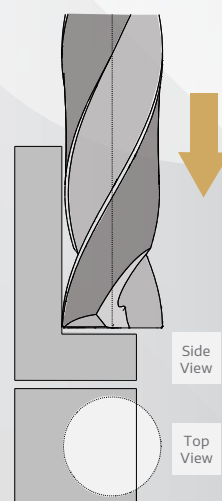
BLIND TAPPED HOLES



INTERSECTING HOLES



CORRECTING ECCENTRIC HOLE

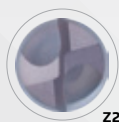


HALF-MOON DRILLING

W15

FLAT DRILL 180° POINT ANGLE - 2 X Ø , 2 FLUTES

HPMT



Z2



W15



Order Number	Dimension (mm)						Stock	Order Number	Dimension (mm)						Stock
	D (h7)	l1	l2	l3	L	d2(h6)			D (h7)	l1	l2	l3	L	d2(h6)	
W15 0100	1	5	6		50	3	•	W15 0650	6.5	30	33		75	8	•
W15 0110	1.1		6		50	3	•	W15 0660	6.6		33		75	8	•
W15 0120	1.2	6	7		50	3	•	W15 0670	6.7		33		75	8	•
W15 0130	1.3		7		50	3	•	W15 0680	6.8		33		75	8	•
W15 0140	1.4	7	8		50	3	•	W15 0690	6.9	33	33		75	8	•
W15 0150	1.5		8		50	3	•	W15 0700	7		36		75	8	•
W15 0160	1.6	8	9		50	3	•	W15 0710	7.1		36		75	8	•
W15 0170	1.7		9		50	3	•	W15 0720	7.2		36		75	8	•
W15 0180	1.8	9	9		50	3	•	W15 0740	7.4		36		75	8	•
W15 0190	1.9		10		50	3	•	W15 0750	7.5	37	36		75	8	•
W15 0200	2	11	10		50	3	•	W15 0760	7.6		36		75	8	•
W15 0210	2.1		12		50	4	•	W15 0770	7.7		36		75	8	•
W15 0220	2.2	12	12		50	4	•	W15 0780	7.8		40		75	8	•
W15 0230	2.3		12		50	4	•	W15 0790	7.9	40	40		75	8	•
W15 0240	2.4	14	12		50	4	•	W15 0800	8		40		75	8	•
W15 0250	2.5		13		50	4	•	W15 0810	8.1		43		90	10	•
W15 0260	2.6	16	13		50	4	•	W15 0820	8.2		43		90	10	•
W15 0270	2.7		13		50	4	•	W15 0830	8.3	45	43		90	10	•
W15 0280	2.8	18	15		50	4	•	W15 0840	8.4		43		90	10	•
W15 0290	2.9		15		50	4	•	W15 0850	8.5		43		90	10	•
W15 0300	3	21	18		60	6	•	W15 0860	8.6		43		90	10	•
W15 0310	3.1		18		60	6	•	W15 0870	8.7	48	43		90	10	•
W15 0320	3.2	24	18		60	6	•	W15 0880	8.8		43		90	10	•
W15 0330	3.3		18		60	6	•	W15 0890	8.9		43		90	10	•
W15 0340	3.4	27	18		60	6	•	W15 0900	9		43		90	10	•
W15 0350	3.5		18		60	6	•	W15 0910	9.1	50	43		90	10	•
W15 0360	3.6	30	18		60	6	•	W15 0920	9.2		43		90	10	•
W15 0370	3.7		18		60	6	•	W15 0930	9.3		43		90	10	•
W15 0380	3.8	33	18		60	6	•	W15 0940	9.4		43		90	10	•
W15 0390	3.9		18		60	6	•	W15 0950	9.5	54	43		90	10	•
W15 0400	4	36	20		60	6	•	W15 0960	9.6		43		90	10	•
W15 0410	4.1		23		60	6	•	W15 0970	9.7		43		90	10	•
W15 0420	4.2	39	23		60	6	•	W15 0980	9.8		43		90	10	•
W15 0430	4.3		23		60	6	•	W15 0990	9.9	63	43		90	10	•
W15 0440	4.4	42	23		60	6	•	W15 1000	10		48		90	10	•
W15 0450	4.5		23		60	6	•	W15 1020	10.2		51		100	12	•
W15 0460	4.6	45	23		60	6	•	W15 1050	10.5		51		100	12	•
W15 0470	4.7		23		60	6	•	W15 1080	10.8	72	53		100	12	•
W15 0480	4.8	48	23		60	6	•	W15 1100	11		53		100	12	•
W15 0490	4.9		23		60	6	•	W15 1150	11.5		58		100	12	•
W15 0500	5	51	26		60	6	•	W15 1200	12		58		100	12	•
W15 0510	5.1		26		60	6	•	W15 1250	12.5	81	70		125	14	•
W15 0520	5.2	54	26		60	6	•	W15 1300	13		70		125	14	•
W15 0530	5.3		26		60	6	•	W15 1350	13.5		70		125	14	•
W15 0540	5.4	57	26		60	6	•	W15 1400	14		70		125	14	•
W15 0550	5.5		26		60	6	•	W15 1450	14.5	90	80		125	16	•
W15 0560	5.6	60	26		60	6	•	W15 1500	15		80		125	16	•
W15 0570	5.7		26		60	6	•	W15 1550	15.5		80		125	16	•
W15 0580	5.8	63	26		60	6	•	W15 1600	16		80		125	16	•
W15 0590	5.9		26		60	6	•	W15 1700	17	90	90		150	18	•
W15 0600	6	66	30		60	6	•	W15 1750	17.5		90		150	18	•
W15 0610	6.1		33		75	8	•	W15 1800	18		90		150	18	•
W15 0620	6.2	69	33		75	8	•	W15 1900	19		100		150	20	•
W15 0630	6.3		33		75	8	•	W15 2000	20		100		150	20	•
W15 0640	6.4		33		75	8	•								

• 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 | Material-Gruppe | Groupe Matiere | Gruppo Materiali | 材质主类

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

Cutting Parameters
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FLAT DRILL

RECOMMENDED CUTTING DATA



180° Point Angle - 2 x Ø, 2 Flute - W15

Drilling	P01		P02		P03		M01		K01		K02		N01		N02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		-		-		Si < 9%		Si ≥ 9%	
D (mm)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)
1	55	0.016	45	0.015	27	0.012	22	0.006	45	0.013	20	0.010	110	0.019	80	0.017
2	63	0.034	55	0.035	32	0.030	26	0.012	55	0.027	23	0.025	130	0.038	90	0.033

Drilling	P01		P02		P03		M01		K01		K02		N01		N02	
Working Material	Carbon Steel		Alloy Steel		Prehardened Steel		Stainless Steel		Grey Cast iron		Ductile Cast Iron		Wrought Aluminium		Cast Aluminium	
Properties	-		520 < Rm < 1200		35 ≤ HRC < 45		High Machinability		-		-		Si < 9%		Si ≥ 9%	
D (mm)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)	Vc (m/min)	Fn (mm/rev)
3	68	0.056	58	0.054	32	0.047	30	0.022	60	0.048	25	0.044	145	0.063	100	0.055
4		0.074		0.072		0.062		0.029		0.064		0.060		0.086		0.072
5		0.091		0.089		0.080		0.035		0.079		0.075		0.108		0.090
6		0.111		0.106		0.094		0.044		0.094		0.086		0.126		0.107
8		0.148		0.142		0.123		0.058		0.125		0.120		0.167		0.144
10		0.182		0.179		0.160		0.070		0.158		0.150		0.211		0.177
12		0.222		0.213		0.178		0.088		0.188		0.171		0.249		0.214
16		0.286		0.283		0.229		0.117		0.250		0.240		0.334		0.282
20		0.364		0.340		0.320		0.140		0.300		0.300		0.422		0.344

Footnote

1. Modify recommended machining cutting parameter based on machine clamping conditions and rigidity of machine.
2. Recommend drilling depth not more than 2 x Ø.
3. Reduce spindle speed and cutting speed by 20% when using non water soluble cutting fluid.
4. When drilling with inclined angle less than 30°, the feed rate reduces 50%.
5. When drilling with inclined angle more than 30°, the feed rate reduces 70% or less and the cutting speed reduces 30% or less depending on the machining condition.
6. Recommend to remove hard surface of the workpiece before using the flat drill.
7. When drilling Stainless Steel or Aluminium, adjust the machining cutting parameter according to machining condition.
8. This cutting tool is a drilling tool, not a milling tool.



Recommended Cutting Data

Note: These recommended cutting data indicators are just for reference. They should be adjusted according to the different cutting condition.

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 053515**

Certificate Holder:



HPMT Industries Sdn. Bhd.

No. 5, Jalan Sungai Kayu Ara 32/39,
Taman Berjaya, Seksyen 32,
40460 Shah Alam, Selangor Darul Ehsan,
Malaysia

Scope:

Design and Manufacturing of Standard and Custom-made Metal
Removing Cutting Tools

Proof has been furnished by means of an audit that the
requirements of ISO 9001:2015 are met.

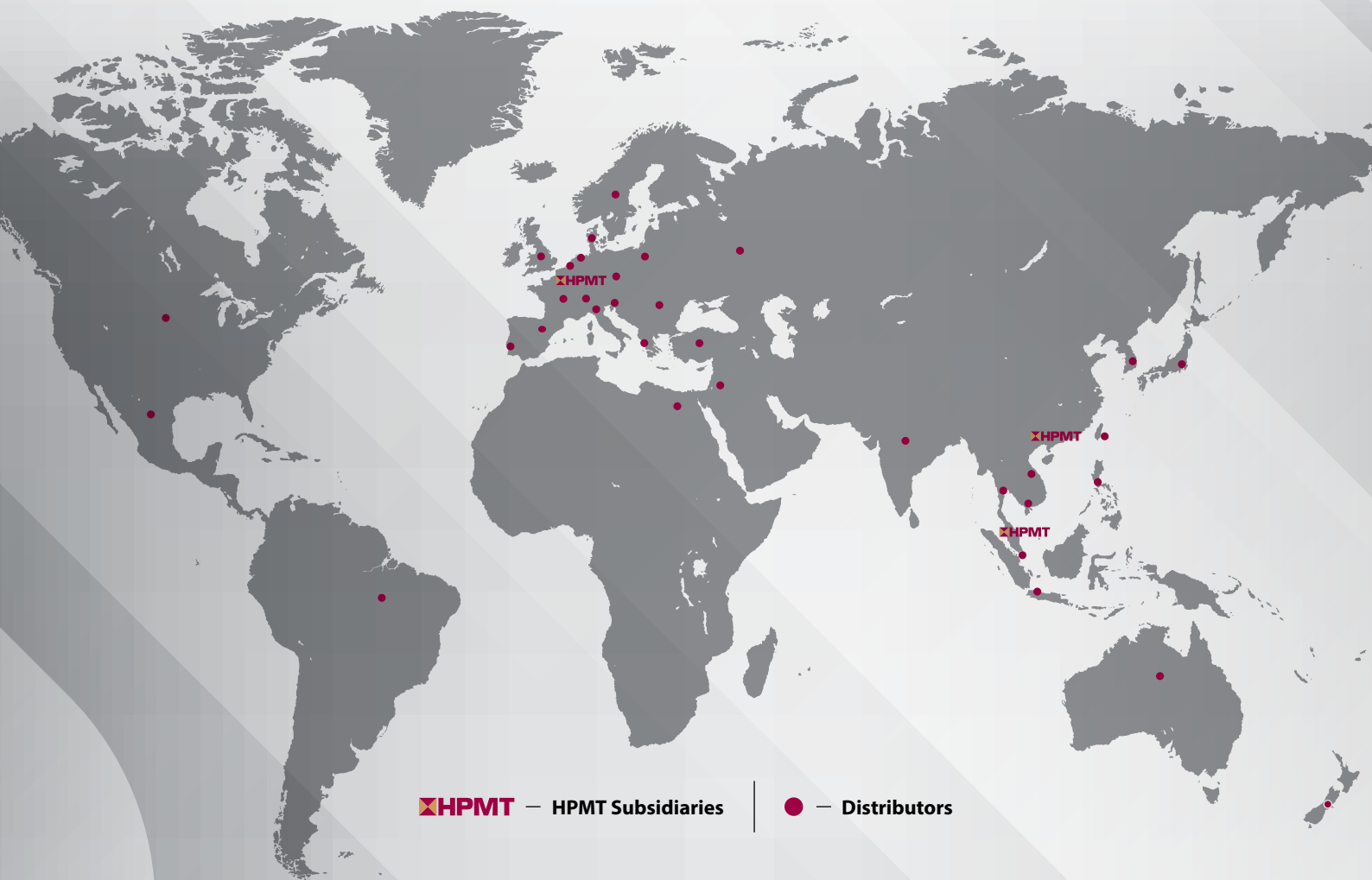
Validity:

The certificate is valid from 2024-08-15 until 2027-08-14.
First certification 2005

2024-08-14



TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln



 — HPMT Subsidiaries

 — Distributors



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