HPMT

THE FUTURE OF PRECISION MACHINING

FLAT DRILL

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

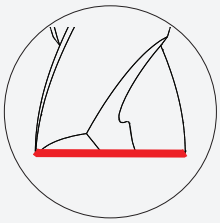
FLAT DRILL

W15

01

180° Point Angle Design

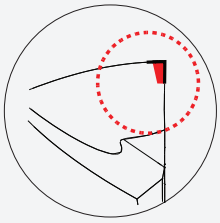
- Revolutionized Drilling Strategy
- Minimize the usage of pilot hole



02

Unique Edge Protection Design

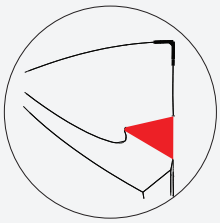
- Enhance resistance to chipping
- Controlled burr formation on workpiece



03

Highly Treated Gash Surface

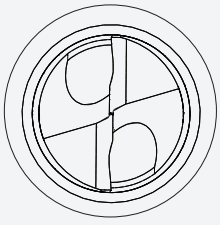
- Reduce friction during machining operation
- Lower machining load
- Reduce build up edge on tool

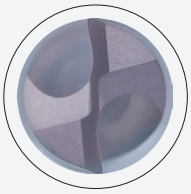


04

Optimized Flute Design

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





05

Superior Coating to Reduce Friction

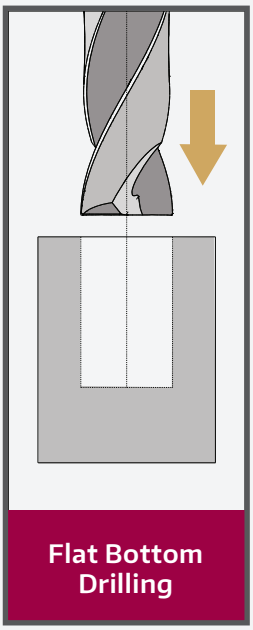
- Increase hardness and abrasive wear resistance
- Higher thermal resistance
- Smoother chip evacuation

06

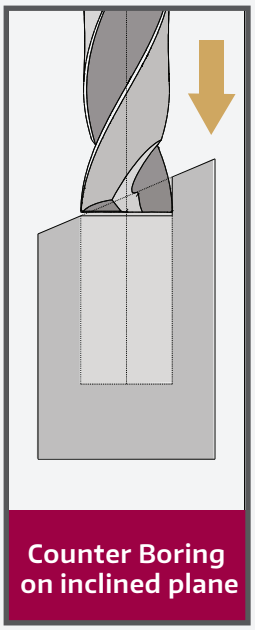
Suitable for materials < HRC 40

P K M N

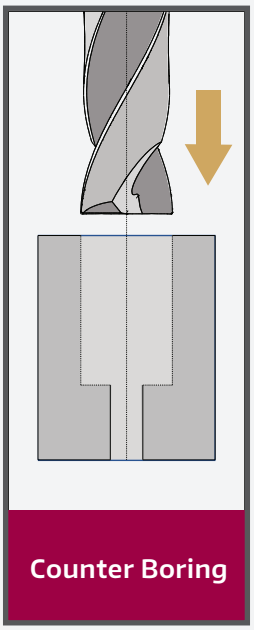
FLAT DRILL APPLICATIONS



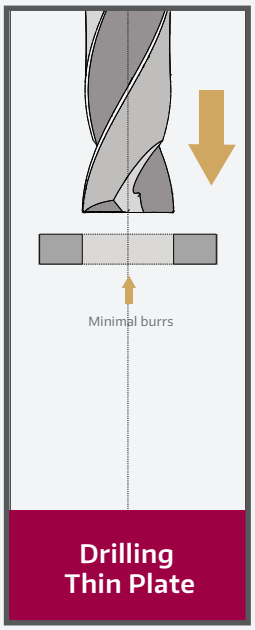
Flat Bottom Drilling



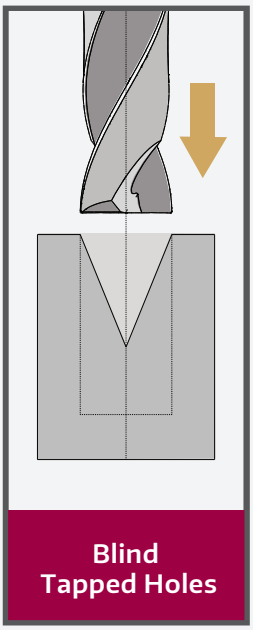
Counter Boring on inclined plane



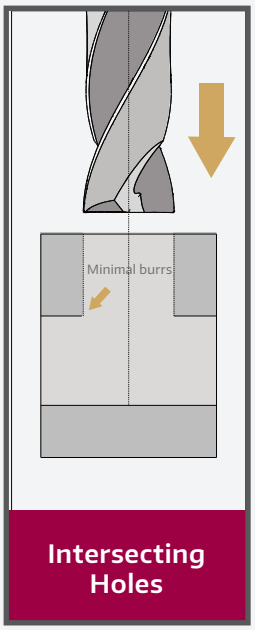
Counter Boring



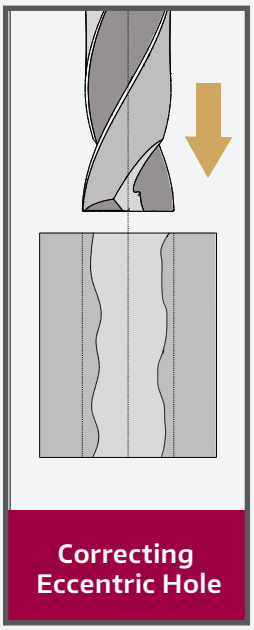
Drilling Thin Plate



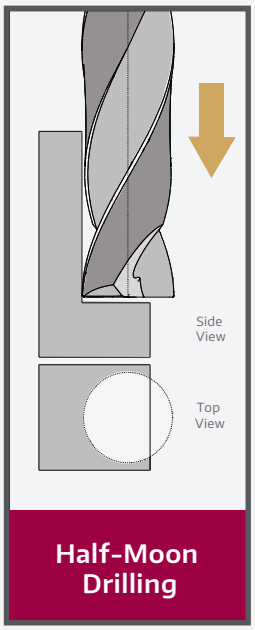
Blind Tapped Holes



Intersecting Holes



Correcting Eccentric Hole



Half-Moon Drilling

W15 180° Point Angle – 2 x Ø

EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					W15 *
= * + Ø data	D (h7)	l 1	l2	L	d2 (h6)	T8090
0100	1	5	6	50	3	o
0110	1.1	5	6	50	3	o
0120	1.2	6	7	50	3	o
0130	1.3	6	7	50	3	o
0140	1.4	7	8	50	3	o
0150	1.5	7	8	50	3	o
0160	1.6	8	9	50	3	o
0170	1.7	8	9	50	3	o
0180	1.8	8	9	50	3	o
0190	1.9	9	10	50	3	o
0200	2	9	10	50	3	o
0210	2.1	11	12	50	4	o
0220	2.2	11	12	50	4	o
0230	2.3	11	12	50	4	o
0240	2.4	11	12	50	4	o
0250	2.5	12	13	50	4	o
0260	2.6	12	13	50	4	o
0270	2.7	12	13	50	4	o
0280	2.8	14	15	50	4	o
0290	2.9	14	15	50	4	o
0300	3	16	18	60	6	o
0330	3.3	16	18	60	6	o
0350	3.5	16	18	60	6	o
0400	4	18	20	60	6	o
0420	4.2	21	23	60	6	o
0450	4.5	21	23	60	6	o
0500	5	24	26	60	6	o
0530	5.3	24	26	60	6	o

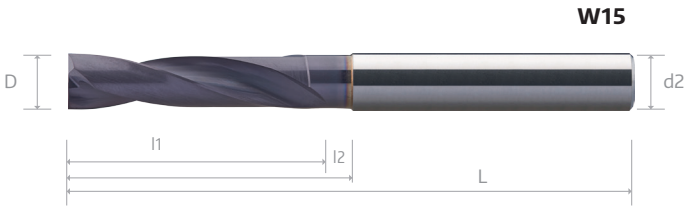
cont'd ▶

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 Parameter: 5

W15 180° Point Angle – 2 x Ø

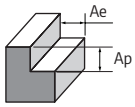


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					W15 *
= * + Ø data	D (h7)	l 1	l2	L	d2 (h6)	T8090
0550	5.5	24	26	60	6	o
0600	6	27	30	60	6	o
0650	6.5	30	33	75	8	o
0680	6.8	30	33	75	8	o
0700	7	33	36	75	8	o
0750	7.5	33	36	75	8	o
0780	7.8	37	40	75	8	o
0800	8	37	40	75	8	o
0850	8.5	40	43	90	10	o
0900	9	40	43	90	10	o
0950	9.5	40	43	90	10	o
1000	10	45	48	90	10	o
1020	10.2	48	51	100	12	o
1050	10.5	48	51	100	12	o
1080	10.8	50	53	100	12	o
1100	11	50	53	100	12	o
1150	11.5	54	58	100	12	o
1200	12	54	58	100	12	o
1400	14	63	70	125	14	o
1500	15	72	80	125	16	o
1550	15.5	72	80	125	16	o
1600	16	72	80	125	16	o
1700	17	81	90	150	18	o
1750	17.5	81	90	150	18	o
1800	18	81	90	150	18	o
2000	20	90	100	150	20	o

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 Parameter: 5



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		0.056		0.054		0.047		0.022		0.048		0.044		0.063		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	68	0.148	58	0.142	32	0.123	30	0.058	60	0.125	25	0.120	145	0.167	100	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.

P M K N

Recommended Cutting Data
Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.

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, Shah Alam, Selangor Darul Ehsan, Malaysia

Scope: 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 2018-09-04 until 2021-08-14.

2018-09-14

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

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Precisely Right.

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THE FUTURE OF PRECISION MACHINING

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