MP SPADE DRILL

The Highest Leader of Cutting Tools





●MP Spade drill Features

▶Drilling diameter:
Φ9.5(0.374″)~Φ114.3(4.5″)

▶Drilling depth:
2D~30D(Max.)

▶Stable drilling

▶Compatible with
AMEC's T-A drill

▶Insert:
Various insert grades
and four coatings

▶Drill:
①Chip Flute:
Straight flute type,
Helical flute type
②Shank:
Flanged shank,
Lathe shank

●MP 스페이드 드릴 특징

▶가공직경: Φ9.5~Φ114

▶가공깊이: 2D~30D(최대)

▶안정된 드릴링

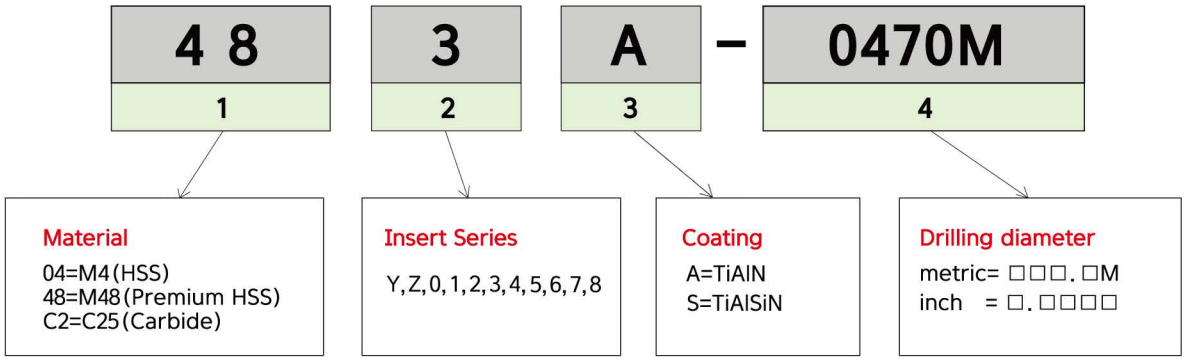
▶AMEC의 T-A 드릴과 호환

Korea Technics Ltd.
HIGH SPEED CUTTING TOOLS

Construction system of MPD's Code no.

MP Spade-drill Insert Series

Series	Y 9.5mm~ 0.3740"~	Z 11.11mm~ 0.4375"~	0 13.0mm~ 0.5118"~	1 17.86mm~ 0.7031"~	2 24.5mm~ 0.9646"~	3 36.5mm~ 1.3976"~	4 48.0mm~ 1.8898"~	5 63.5mm~ 2.2500"~	6 76.99mm~ 3.0313"~	7 89.69mm~ 3.5313"~	8 102.0mm~ 4.0157"~
48 (M48) Premium HSS	 TiAlN	 TiAlN	 TiAlN	 TiAlN	 TiAlN	 TiAlN	 TiAlN				
04 (M4) HSS								 TiAlN	 TiAlN	 TiAlN	 TiAlN
C2 (C25) Carbide			 TiAlSiN	 TiAlSiN	 TiAlSiN	 TiAlSiN					



MP Spade-drill Holder

A. Flute type



MPS – Straight flute



MPH – Helical flute

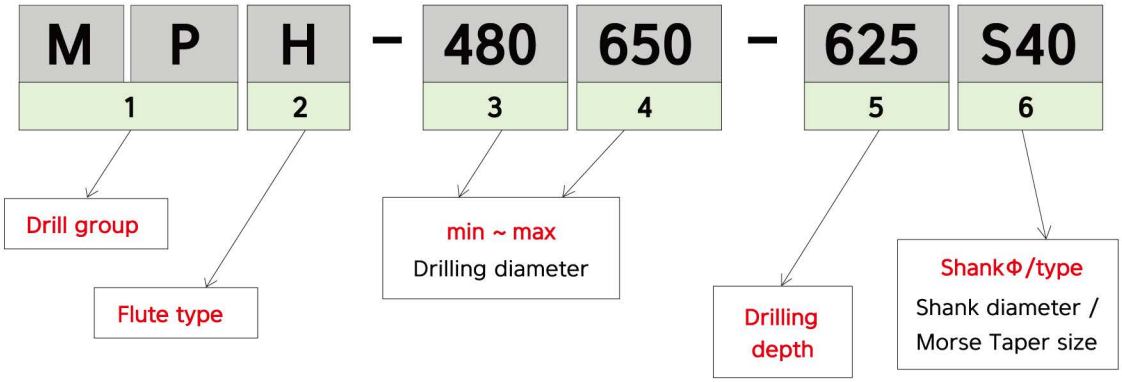
B. Shank type



Flanged shank



Lathe shank
(Morse taper)



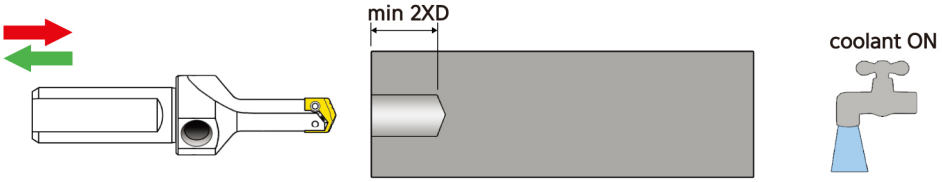
Deep Hole Drilling Guidelines(깊은홀가공방법)

For Lengths greater than 9XD (including Extended, Long, XL, 3XL, and Special Length)

STEP 1

Pilot Hole
100%RPM
100%mm/rev

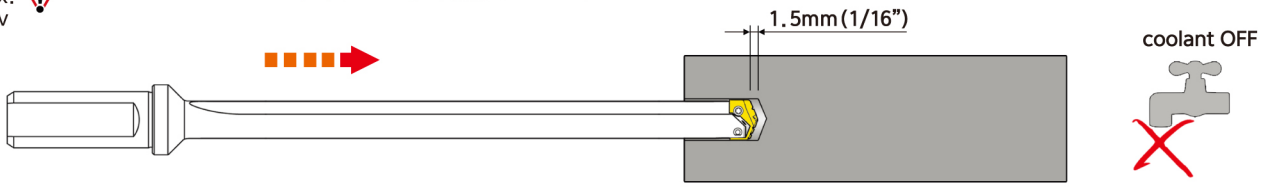
Establish the pilot hole using the same diameter short drill to a depth of 2XD minimum.
Utilise a pilot drill with the same or larger included point angle.
최소 2D까지 같은 홀 크기의 짧은 드릴로 초기 구멍을 작업합니다.
포인트 앵글을 포함한 것보다 같거나 더 큰 초기 가공홀 드릴을 이용합니다.



STEP 2

Feed-in
50RPM max. ⚠
300mm/rev

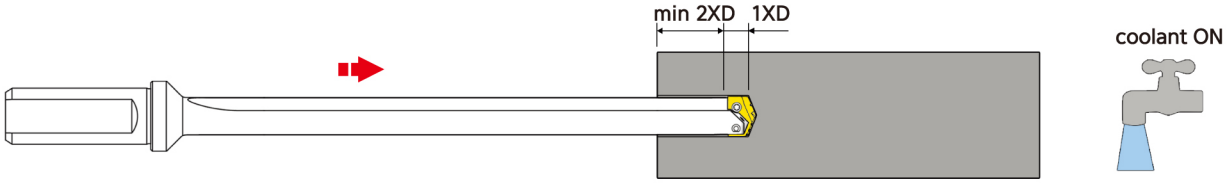
Feed the longer drill within 1.5mm(1/16") short of the established pilot hole bottom at a maximum of 50RPM and 300 mm/min (12 IPM) feed rate.
깊은 홀 드릴을 초기 가공홀 깊이(STEP1)보다 1.5mm(1/16") 이내로 더 가공합니다.
주의! 50RPM, 이송값은 300mm/min



STEP 3

Deep Hole Transition Drilling
50%RPM
75%mm/rev

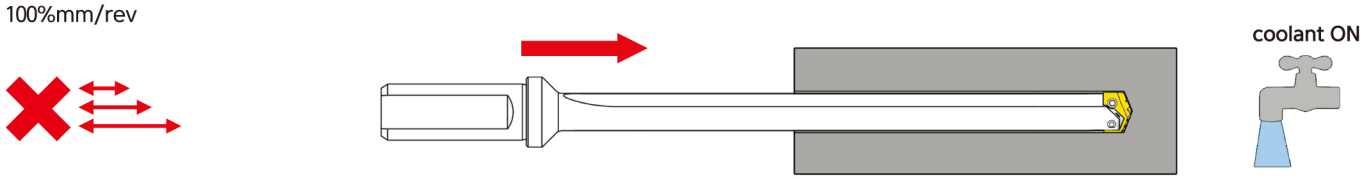
Drill additional 1XD past the bottom of the pilot hole at 50% reduction of recommended speed and 25% reduction of recommended feed. Minimum of 1 second dwell is required to meet full speed before feeding. 추천 절삭값의 RPM 50%, 이송값 25%를 감소시켜 추가로 1D를 더 가공합니다.
이송 전, 추천 절삭값으로 속도를 올리기 위해 최소 1초 동안 머물러 작업합니다.



STEP 4-1

Deep Hole Drilling – Blind
100%RPM
100%mm/rev

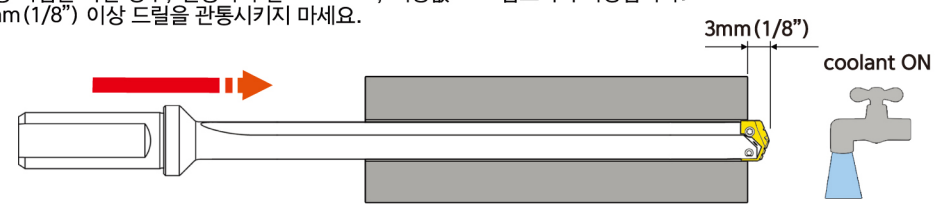
Drill to full depth at recommended speed and feed for longer drill according to Allied speed and feed charts. *No peck cycle recommended.*
깊은 홀 드릴을 추천 절삭조건으로 원하는 깊이까지 가공합니다.
peck cycle(스텝 이송 가공)은 권장하지 않습니다.



STEP 4-2

Deep Hole Drilling – at Breakout
50%RPM
75%mm/rev

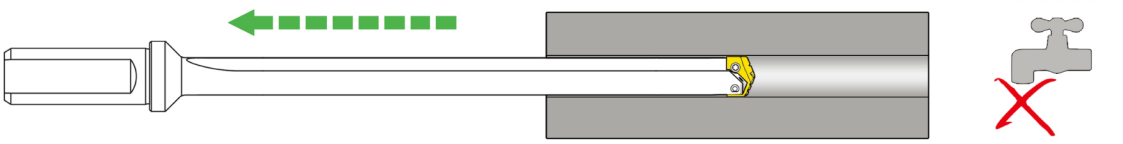
For through holes only: Reduce speed by 50% and feed by 25% prior to breakout.
Do not break out more than 3mm(1/8") past the full diameter of the drill.
관통 작업을 하실 경우, 관통하기 전 RPM 50%, 이송값 25% 감소시켜 가공합니다.
3mm(1/8") 이상 드릴을 관통시키지 마세요.



STEP 5

Drill Retract
50RPM max. ⚠

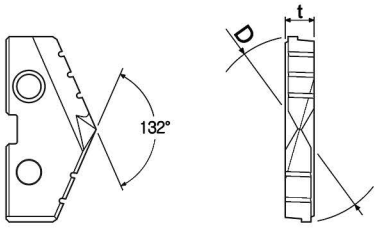
Reduce speed to a **Maximum of 50 RPM** before retracting from the hole.
가공을 마치고 제자리로 돌아오기 전에 RPM 50(최대)까지 줄인 후 후진 이송한다.



MP Spade drill
MPD Inserts

◆M48 (Premium HSS) : Φ9.5~Φ65.09(0.3740″~2.5625″)
고경도합금 및 경도 350~500Bhn(HRC37~49)의 재질에 사용.
For use in high temperature alloys and materials with 350~500 Brinell.

◆C25 (Carbide) : Φ13.0~Φ47.63(0.5118″~1.8750″)
일반탄소강 및 합금강 및 난삭재에 사용.
For use in Carbon steels, Alloy steels and Hard to machine materials.
(Titanium and Stainless steels)





• Series Y, Z, 0

Series Min. to Max. (mm/inch)	D			t	Code No.	
	Inch		Metric	Metric (Inch)	M48(premium HSS) TiAlN coated	C25(carbide) TiAlSiN coated
	Fraction	Decimal	mm			
Y 9.50 (.3740″) to 11.00 (.4331)		.3740″	9.50	2.38 (3/32″)	48YA-0095M	
	3/8 ″	.3750″	9.53		48YA-03750	
		.3860″	9.80		48YA-03860	
	25/64″	.3906″	9.92		48YA-03906	
		.3937″	10.00		48YA-0100M	
	2/5 ″	.4016″	10.20		48YA-04016	
	13/32″	.4063″	10.32		48YA-04063	
		.4134″	10.50		48YA-0105M	
	27/64″	.4219″	10.72		48YA-04219	
		.4252″	10.80		48YA-04252	
		.4331″	11.00		48YA-0110M	
Z 11.11 (.4375″) to 12.70 (.5000)	7/16″	.4375″	11.11	2.38 (3/32″)	48ZA-04375	
		.4528″	11.50		48ZA-0115M	
	29/64″	.4531″	11.51		48ZA-04531	
	15/32″	.4688″	11.91		48ZA-04688	
		.4724″	12.00		48ZA-0120M	
	31/64″	.4844″	12.30		48ZA-04844	
		.4921″	12.50		48ZA-0125M	
	1/2 ″	.5000″	12.70		48ZA-05000	
0 13.00 (.5118″) to 17.50 (.6890″)		.5118″	13.00	3.18 (1/8″)	480A-0130M	C20S-0130M
	33/64″	.5156″	13.10		480A-05156	C20S-05156
	17/32″	.5313″	13.49		480A-05313	C20S-05313
		.5315″	13.50		480A-0135M	C20S-0135M
	35/64″	.5469″	13.89		480A-05469	C20S-05469
		.5512″	14.00		480A-0140M	C20S-0140M
	9/16″	.5625″	14.29		480A-05625	C20S-05625
		.5709″	14.50		480A-0145M	C20S-0145M
	37/64″	.5781″	14.68		480A-05781	C20S-05781
		.5906″	15.00		480A-0150M	C20S-0150M
	19/32″	.5938″	15.08		480A-05938	C20S-05469
	39/64″	.6094″	15.48		480A-06094	C20S-06094
		.6102″	15.50		480A-0155M	C20S-0155M
	5/8 ″	.6250″	15.88		480A-06250	C20S-06250
		.6299″	16.00		480A-0160M	C20S-0160M
	41/64″	.6406″	16.27		480A-06406	C20S-06406
		.6496″	16.50		480A-0165M	C20S-0165M
	21/32″	.6563″	16.67		480A-06563	C20S-06563
		.6693″	17.00		480A-0170M	C20S-0170M
	43/64″	.6719″	17.07		480A-06719	C20S-06719
	11/16″	.6875″	17.46		480A-06875	C20S-06875
		.6890″	17.50		480A-0175M	C20S-0175M

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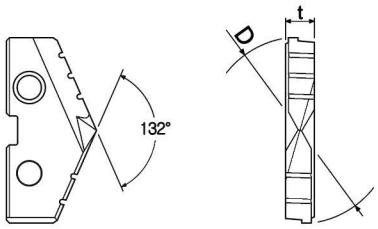



• Series 1

Series Min. to Max. (mm/inch)	D			t	Code No.	
	Inch		Metric	Metric (Inch)	M48(premium HSS) TiAlN coated	C25(carbide) TiAlSiN coated
	Fraction	Decimal	mm			
1 17.86 (.7031″) to 24.00 (.9449″)	45/64″	.7031″	17.86	4.00 (5/32″)	481A-07031	C21S-07031
		.7087″	18.00		481A-0180M	C21S0180M
	23/32″	.7188″	18.26		481A-07188	C21S-07188
		.7283″	18.50		481A-0185M	C21S-0185M
	47/64″	.7344″	18.65		481A-07344	C21S-07344
		.7480″	19.00		481A-0190M	C21S-0190M
	3/4″	.7500″	19.05		481A-07500	C21S-07500
	49/64″	.7656″	19.45		481A-07656	C21S-07656
		.7677″	19.50		481A-0195M	C21S-0195M
	25/32″	.7813″	19.84		481A-07813	C21S-07813
		.7874″	20.00		481A-0200M	C21S-0200M
	51/64″	.7969″	20.24		481A-07969	C21S-07969
		.8071″	20.50		481A-0205M	C21S-0205M
	13/16″	.8125″	20.64		481A-08125	C21S-08125
		.8268″	21.00		481A-0210M	C21S-0210M
	27/32″	.8438″	21.43		481A-08438	C21S-08438
	55/64″	.8594″	21.83		481A-08594	C21S-08594
		.8661″	22.00		481A-0220M	C21S-0220M
	7/8 ″	.8750″	22.23		481A-08750	C21S-08750
	57/64″	.8906″	22.62		481A-08906	C21S-08906
		.9055″	23.00		481A-0230M	C21S-0230M
	29/32″	.9063″	23.02		481A-09063	C21S-0235M
	59/64″	.9219″	23.42		481A-09219	C21S-09219
	15/16″	.9375″	23.81		481A-09375	C21S-09375
		.9449″	24.00		481A-0240M	C21S-0240M

인서트 명칭 및 기능 The name and funcion of the part of Insert



WEB THINNING&EDGE
절삭 시 추력을 감소시켜주고
칩 배출 공간을 형성시킨다.
During cutting, making the space for the chips evacuation

OD MARGIN (LAND)
가공된 구멍을 다듬질 한다.
To trim the hole processed

OD CLEARANCE
효과적인 열 방출을 도와준다.
Efficient ejection of heat

KEY WAY
Holder의 Pin으로 축방향에
대칭이 되도록 Insert를 잡아준다.
To fix the inserts symmetric to axis



CUTTING EDGE
칩의 폭을 줄여주는 실제
절삭이 이루어지는 부분.
Cutting edge

CHIP SPLITTERS
칩의 폭을 줄여주는
Chip divider의 역할을 한다.
Chip breaker for efficient chips evacuation

RAKE SURFACE
실제 절삭이 일어나는 부분으로
칩을 끊어주는 역할을 한다.
The part of cutting and the part of chip breaker

CORNER CHAMFER
마모를 줄여주어 공구 수명을
향상시킨다.
To reduce wear and improve the tool life

PRIMARY, SECONDARY CLEARANCE SURFACE
Rake surface와 더불어 절삭인선을 형성시켜주며
열 방출을 도와준다.
With cutting edge to make a hole and efficient ejection of heat

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MPD Inserts

M48 Premium HSS
& C25 Carbide

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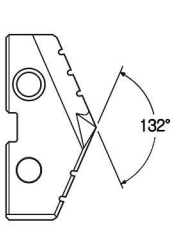

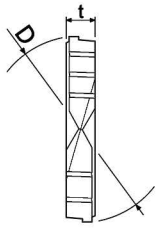





• Series 2

Series Min. to Max. (mm/inch)	D Inch Fraction	D Inch Decimal	D Metric mm	t Metric (Inch)	Code No. M48(premium HSS) TiAlN coated	Code No. C25(carbide) TiAlSiN coated
		.9646″	24.50		482A-0245M	C22S-0245M
	31/32″	.9688″	24.61		482A-09688	C22S-09688
	63/64″	.9843″	25.00		482A-0250M	C22S-0250M
	1 ″	1.0000″	25.40		482A-10000	C22S-10000
		1.0039″	25.50		482A-0255M	C22S-0255M
	1-1/64″	1.0156″	25.80		482A-10156	C22S-10156
		1.0236″	26.00		482A-0260M	C22S-0260M
	1-1/32″	1.0313″	26.19		482A-10313	C22S-10313
		1.0433″	26.50		482A-0265M	C22S-0265M
	1-3/64″	1.0469″	26.59		482A-10469	C22S-10469
	1-1/16″	1.0625″	26.99		482A-10625	C22S-10625
		1.0630″	27.00		482A-0270M	C22S-0270M
	1-1/12″	1.0827″	27.50		482A-0275M	C22S-0275M
	1-3/32″	1.0938″	27.78		482A-10938	C22S-10938
		1.1024″	28.00		482A-0280M	C22S-0280M
2	1-7/64″	1.1094″	28.18		482A-11094	C22S-11094
24.50	1-5/41″	1.1220″	28.50		482A-0285M	C22S-0285M
(.9646″)	1-1/8 ″	1.1250″	28.58		482A-11250	C22S-11250
to		1.1417″	29.00	4.76	482A-0290M	C22S-0290M
35.00	1-5/32″	1.1563″	29.37	(3/16″)	482A-11563	C22S-11563
(1.3780″)	1-5/31″	1.1614″	29.50		482A-0295M	C22S-0295M
		1.1811″	30.00		482A-0300M	C22S-0300M
	1-3/16″	1.1875″	30.16		482A-11875	C22S-11875
	1-1/5 ″	1.2008″	30.50		482A-0305M	C22S-0305M
	1-7/32″	1.2188″	30.96		482A-12188	C22S-12188
		1.2205″	31.00		482A-0310M	C22S-0310M
	1-6/25″	1.2402″	31.50		482A-0315M	C22S-0315M
	1-1/4 ″	1.2500″	31.75		482A-12500	C22S-12500
		1.2598″	32.00		482A-0320M	C22S-0320M
	1-9/32″	1.2813″	32.54		482A-12813	C22S-12813
		1.2992″	33.00		482A-0330M	C22S-0330M
	1-5/16″	1.3125″	33.34		482A-13125	C22S-13125
		1.3187″	33.50		482A-0335M	C22S-0335M
		1.3386″	34.00		482A-0340M	C22S-0340M
	1-11/32″	1.3438″	34.13		482A-13438	C22S-13438
		1.3583″	34.50		482A-0345M	C22S-0345M
	1-3/8 ″	1.3750″	34.93		482A-13750	C22S-13750
		1.3780″	35.00		482A-0350M	C22S-0350M

인서트 재종 Insert Materials

HSS (M04) Standard	Premium HSS (M48)	Carbide (C25)
■ 일반강 및 주철에 사용 Applied for steels and cast Iron ■ Φ63.5mm ~ Φ114.3mm	■ 고경도합금 및 경도 재질에 350~500Bhn (HRC37~49)의 사용 Applied for high temp Alloy and 350~500Bhn (HRC37~49) and harder ■ Φ9.5mm ~ Φ65.09mm	■ 일반탄소강, 합금강 및 난삭재에 사용 Applied for Carbon Steel, Alloy Steel and Hard to Machine Material (Titanium and Stainless Steel) ■ Φ33.0mm ~ Φ47.63mm

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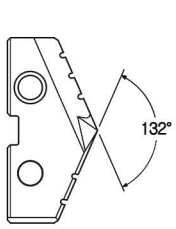
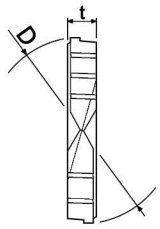
일반탄소강 및 합금강 및 난삭재에 사용.
For use in Carbon steels, Alloy steels and Hard to machine materials.
(Titanium and Stainless steels)









• Series 3

Series Min. to Max. (mm/inch)	D			t	Code No.	
	Inch		Metric	Metric (Inch)	M48(premium HSS) TiAlN coated	C25(carbide) TiAlSiN coated
	Fraction	Decimal	mm			
3 35.50 (1.3976″) to 47.63 (1.8750″)		1.3976″	35.50	6.35 (1/4″)	483A-0355M	C23S-0355M
	1-13/32″	1.4063″	35.72		483A-14063	C23S-14063
		1.4173″	36.00		483A-0360M	C23S-0360M
	1-7/16″	1.4375″	36.51		483A-14375	C23S-14375
		1.4567″	37.00		483A-0370M	C23S-0370M
	1-15/32″	1.4688″	37.31		483A-14688	C23S-14688
		1.4961″	38.00		483A-0380M	C23S-0380M
	1-1/2 ″	1.5000″	38.10		483A-15000	C23S-15000
	1-17/32″	1.5313″	38.89		483A-15313	C23S-15313
	1-53/99″	1.5354″	39.00		483A-0390M	C23S-0390M
	1-9/16″	1.5625″	39.69		483A-15625	C23S-15625
		1.5748″	40.00		483A-0400M	C23S-0400M
	1-19/32″	1.5938″	40.48		483A-15938	C23S-15938
		1.6142″	41.00		483A-0410M	C23S-0410M
	1-5/8 ″	1.6250″	41.28		483A-16250	C23S-16250
		1.6535″	42.00		483A-0420M	C23S-0420M
	1-21/32″	1.6563″	42.07		483A-16563	C23S-16563
	1-11/16″	1.6875″	42.86		483A-16875	C23S-16875
		1.6929″	43.00		483A-0430M	C23S-0430M
	1-23/32″	1.7188″	43.66		483A-17188	C23S-17188
		1.7323″	44.00		483A-0440M	C23S-0440M
	1-3/4 ″	1.7500″	44.45		483A-17500	C23S-17500
		1.7717″	45.00		483A-0450M	C23S-0450M
	1-25/32″	1.7813″	45.24		483A-17813	C23S-17813
		1.8110″	46.00		483A-0460M	C23S-0460M
	1-13/16″	1.8125″	46.04		483A-18125	C23S-18125
	1-27/32″	1.8438″	46.83		483A-18438	C23S-18438
		1.8504″	47.00		483A-0470M	C23S-0470M
	1-7/8 ″	1.8750″	47.63		483A-18750	C23S-18750

인서트 코팅 Insert Coatings

TiAlN



- 고속 가공시 발생하는 마모 저항에 탁월한 성능
  Excellent choice for wear resistance over low surface speeds
- 산화 저항 우수
  Excellent oxidation resistance
- 800℃까지 작업가능
  Maximum working temperature 800℃
- 경도 HV3,500
  Hardness HV3,500
  Color : Violet / Black

TiAlSiN

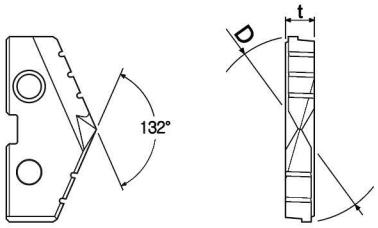


- 작업시 발생하는 열 저항이 TiN, TiCN 보다 우수
  First choice for increased heat resistance over TiN, TiCN
- 타 코팅보다 우수한 공구 수명과 시장 진입의 우수성
  Allows for improved tool life and higher penetration rates of the market
- TiAlN 코팅보다 20%이상 공구수명 연장
  Over 20% increased tool life over TiAlN
  Color : Copper /Bronze

MP Spade drill
MPD Inserts

M48 Premium HSS TiAlN Coated

◆M48 (Premium HSS) : Φ9.5~Φ65.09(0.3740″~2.5625″)
고경도합금 및 경도 350~500Bhn(HRC37~49)의 재질에 사용.
For use in high temperature alloys and materials with 350~500 Brinell.

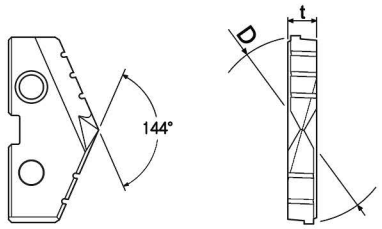




• Series 4

Series Min. to Max. (mm/inch)	D			t	Code No.	
	Inch		Metric	Metric (Inch)	M48(premium HSS) TiAlN coated	
	Fraction	Decimal	mm			
		1.8898″	48.00		484A-0480M	
	1-29/32″	1.9063″	48.42		484A-19063	
		1.9291″	49.00		484A-0490M	
	1-15/16″	1.9375″	49.21		484A-19375	
		1.9685″	50.00		484A-0500M	
	1-31/32″	1.9688″	50.01		484A-19688	
	2 ″	2.0000″	50.80		484A-20000	
		2.0078″	51.00		484A-0510M	
	2-1/32″	2.0313″	51.19		484A-20313	
	2-1/21″	2.0472″	52.00		484A-20472	
	2-1/16″	2.0625″	52.39		484A-20625	
		2.0866″	53.00		484A-0530M	
	2-3/32″	2.0938″	53.18		484A-20938	
	2-1/8 ″	2.1250″	53.98		484A-21250	
		2.1260″	54.00		484A-0540M	
	2-5/32″	2.1563″	54.79		484A-21563	
		2.1654″	55.00		484A-0550M	
	2-3/16″	2.1875″	55.56		484A-21875	
		2.2047″	56.00		484A-0560M	
	2-7/32″	2.2188″	56.36	7.94	484A-22188	
		2.2441″	57.00	(5/16″)	484A-0570M	
	2-1/4 ″	2.2500″	57.15		484A-22500	
	2-9/32″	2.2813″	57.94		484A-22813	
		2.2835″	58.00		484A-0580M	
	2-5/16″	2.3125″	58.74		484A-23125	
		2.3228″	59.00		484A-0590M	
	2-11/32″	2.3438″	59.53		484A-23438	
		2.3662″	60.00		484A-0600M	
	2-3/8 ″	2.3750″	60.33		484A-23750	
		2.4016″	61.00		484A-0610M	
	2-5/47″	2.1063″	61.12		484A-24063	
	2-7/16″	2.4375″	61.91		484A-24375	
		2.4409″	62.00		484A-0620M	
	2-15/32″	2.4688″	62.71		484A-24688	
		2.4803″	63.00		484A-0630M	
	2-1/2 ″	2.5000″	63.50		484A-0635M	
		2.5197″	64.00		484A-0640M	
	2-17/32″	2.5313″	64.29		484A-25313	
		2.5591″	65.00		484A-0650M	
	2-9/16″	2.5625″	65.09		484A-25625	
4 48.00 (1.8898″) to 65.09 (2.5625″)						

◆M4 (HSS) : Φ63.5~Φ114.3(2.2500˝~4.5000˝)
일반강 및 주철에 사용
For general use in steels and cast irons.





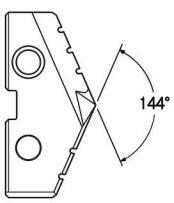
• Series 5, 6

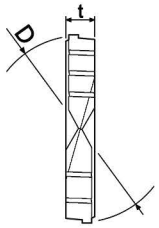
Series Min. to Max. (mm/inch)	D			t	Code No.	
	Inch		Metric	Metric (Inch)	M4 (HSS) TiAlN coated	
	Fraction	Decimal	mm			
5 63.50 (2.2500″) to 76.20 (3.0000″)	2-1/4 ″	2.2500″	63.50	11.11 (7/16″)	045A-0635M	
		2.5197″	64.00		045A-0640M	
	2-17/32″	2.5313″	64.29		045A-25313	
	2-9/16″	2.5625″	65.09		045A-25625	
	2-19/32″	2.5938″	65.88		045A-25938	
		2.5984″	66.00		045A-0660M	
	2-5/8 ″	2.6250″	66.68		045A-26250	
	2-21/32″	2.6563″	67.47		045A-26563	
		2.6772″	68.00		045A-0680M	
	2-11/16″	2.6875″	68.26		045A-26875	
	2-23/32″	2.7188″	69.05		045A-27188	
	2-3/4 ″	2.7500″	69.85		045A-27500	
		2.7559″	70.00		045A-0700M	
	2-25/32″	2.7813″	70.64		045A-27813	
	2-13/16″	2.8125″	71.44		045A-28125	
		2.8346″	72.00		045A-0720M	
	2-27/32″	2.8438″	72.23		045A-28438	
	2-7/8 ″	2.8750″	73.03		045A-28750	
	2-29/32″	2.9063″	73.82		045A-29063	
		2.9134″	74.00		045A-0740M	
	2-15/16″	2.9375″	74.61		045A-29375	
	2-31/32″	2.9688″	75.41		045A-29688	
		2.9921″	76.00		045A-0760M	
	3 ″	3.0000″	76.20		045A-30000	
6 76.99 (3.0313″) to 88.90 (3.5000″)	3-1/32″	3.0313″	76.99	11.11 (7/16″)	046A-30313	
	3-1/16″	3.0625″	77.79		046A-30625	
		3.0709″	78.00		046A-0780M	
	3-3/32″	3.0938″	78.58		046A-30938	
	3-1/8 ″	3.1250″	79.38		046A-31250	
		3.1496″	80.00		046A-0800M	
	3-5/32″	3.1563″	80.17		046A-31563	
	3-3/16″	3.1875″	80.96		046A-31875	
	3-7/32″	3.2188″	81.76		046A-32188	
		3.2283″	82.00		046A-0820M	
	3-1/4 ″	3.2500″	82.55		046A-32500	
	3-9/32″	3.2813″	83.34		046A-32813	
		3.3071″	84.00		046A-0840M	
	3-5/16″	3.3125″	84.14		046A-33125	
	3-11/32″	3.3438″	84.93		046A-33438	
	3-3/8 ″	3.3750″	85.73		046A-33750	
		3.3858″	86.00		046A-0860M	
	3-13/32″	3.4063″	86.52		046A-34063	
	3-7/16″	3.4375″	87.31		046A-34375	
		3.4646″	88.00		046A-0880M	
	3-15/32″	3.4688″	88.11		046A-34688	
	3-1/2 ″	3.5000″	88.90		046A-35000	

MP Spade drill
MPD Inserts

M4 HSS
TiAlN Coated

◆M4 (HSS) : Φ63.5~Φ114.3(2.2500″~4.5000″)
일반강 및 주철에 사용
For general use in steels and cast irons.





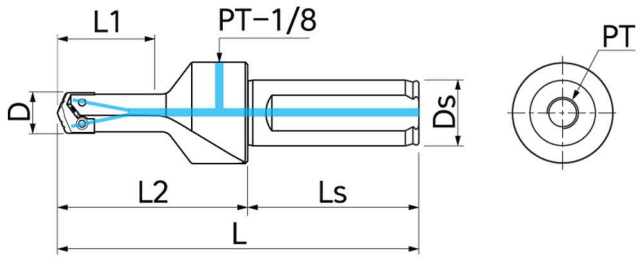


• Series 7, 8

Series Min. to Max. (mm/inch)	D			t	Code No.	
	Inch		Metric	Metric (Inch)	M4 (HSS) TiAlN coated	
	Fraction	Decimal	mm			
7 89.69 (3.5313″) to 101.60 (4.0000″)	3-17/32″	3.5313″	89.69	11.11 (7/16″)	047A-35313	
		3.5433″	90.00		047A-0900M	
	3-9/16″	3.5625″	90.49		047A-35625	
	3-19/32″	3.5938″	91.28		047A-35938	
		3.6221″	92.00		047A-0920M	
	3-5/8 ″	3.6250″	92.08		047A-36250	
	3-21/32″	3.6563″	92.87		047A-36563	
	3-11/16″	3.6875″	93.66		047A-36875	
		3.7008″	94.00		047A-0940M	
	3-23/32″	3.7188″	94.46		047A-37188	
	3-3/4 ″	3.7500″	95.25		047A-37500	
		3.7795″	96.00		047A-0960M	
	3-25/32″	3.7813″	96.04		047A-37813	
	3-13/16″	3.8125″	96.84		047A-38125	
	3-27/32″	3.8438″	97.63		047A-38438	
		3.8583″	98.00		047A-0980M	
	3-7/8 ″	3.8750″	98.43		047A-38750	
	3-29/32″	3.9063″	99.22		047A-39063	
		3.9370″	100.00		047A-1000M	
	3-15/16″	3.9375″	100.01		047A-39375	
	3-31/32″	3.9688″	100.81		047A-39688	
	4 ″	4.0000″	101.60		047A-40000	
8 102.00 (4.0157″) to 114.30 (4.5000″)	4-1/64″	4.0157″	102.00	11.11 (7/16″)	048A-40157	
	4-1/16″	4.0625″	103.19		048A-40625	
	4-7/74″	4.0945″	104.00		048A-1040M	
	4-1/8 ″	4.1250″	104.78		048A-41250	
		4.1732″	106.00		048A-1060M	
	4-3/16″	4.1875″	106.36		048A-41875	
	4-1/4 ″	4.2500″	107.95		048A-42500	
		4.2520″	108.00		048A-1080M	
	4-5/16″	4.3125″	109.54		048A-43125	
		4.3307″	110.00		048A-1100M	
	4-3/8 ″	4.3750″	111.13		048A-43750	
		4.4094″	112.00		048A-1120M	
	4-7/16″	4.4375″	112.71		048A-44375	
		4.4482″	114.00		048A-1140M	
	4-1/2 ″	4.5000″	114.30		048A-45000	

MP Spade drill
Flanged Straight Shank Holder

◆Holder Length = STUB (스터브: 가장 짧은 길이)
- ●깊은 홀을 가공하기 전, 기초홀 드릴로 사용합니다.
  Use it as a base hole drill before processing a deep hole.
- ●스터브 길이에는 측면에 절삭유 유입이 가능합니다.
  Stub length include additional side coolant port.



• Series Y, Z, 0, 1, 2

Series	Code No.	Length	Dimension(Metric/Inch)						
			D	L1	L2	L	Ds	Ls	PT
Y	MPS-095110-020S16	Stub	9.5~11.0 (.3740"~.4331")	19.9 (0.7835")	50 (1.9685")	98 (3.8583")	16 (0.6299")	48 (1.8898")	1/16"
Z	MPS-115125-020S16	Stub	11.11~12.7 (.4375"~.5000")	19.9 (0.7835")	50 (1.9685")	98 (3.8583")	16 (0.6299")	48 (1.8898")	1/16"
0	MPS-130175-022S20	Stub	13.0~17.5 (.5118"~.6890")	22.2 (0.8740")	50 (1.9685")	100 (3.9370")	20 (0.7874")	50 (1.9685")	1/8"
0.5	MPS-155175-022S20	Stub	15.5~17.5 (.6102"~.6890")	22 (0.8740")	50 (1.9685")	100 (3.9370")	20 (0.7874")	50 (1.9685")	1/8"
1	MPS-180240-048S25	Stub	17.86~24.0 (.7031"~.9449")	48 (1.8740")	79 (3.1102")	135 (5.3150")	25 (0.9843")	56 (2.2047")	1/8"
1.5	MPS-220240-048S25	Stub	21.83~24.0 (.8594"~.9449")	48 (1.8740")	79 (3.1102")	135 (5.3150")	25 (0.9843")	56 (2.2047")	1/8"
2	MPS-250350-057S32	Stub	24.5~35.0 (.9646"~1.3780")	57.2 (2.2520")	92 (3.6220")	152 (5.9842")	32 (1.2598")	60 (2.3622")	1/4"
2.5	MPS-300350-057S32	Stub	30.0~35.0 (1.1811"~1.3780")	57.2 (2.2520")	92 (3.6220")	152 (5.9842")	32 (1.2598")	60 (2.3622")	1/4"

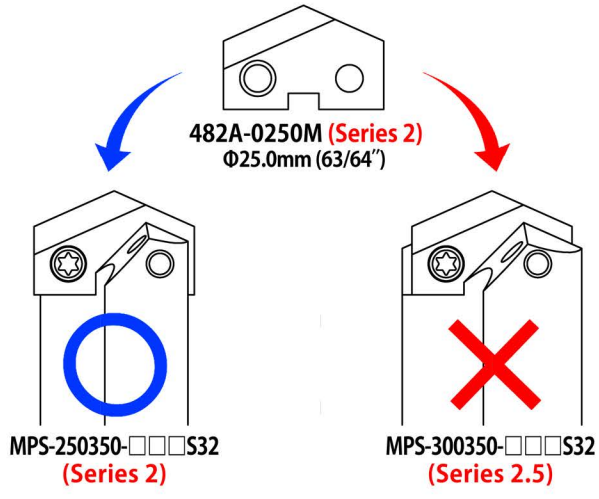
인서트 선택시 주의사항 Precautions for insert selection

●인서트 인경 > 드릴홀더 직경 ●Insert Outer diameter > Holder body diameter

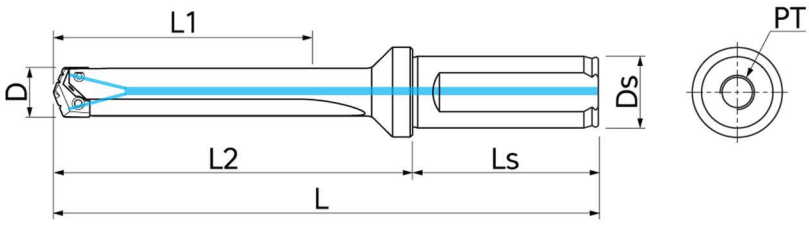
■ 드릴홀더 시리즈 중 '0, 1, 2 시리즈'는, 안정적인 드릴링을 위해 인경 크기별로 두 종류로 나뉘어 있습니다. (※0과 0.5, 1과 1.5, 2와 2.5)
드릴홀더 '0, 1, 2 시리즈'는 해당 시리즈의 '인서트'를 모두 사용 가능하지만,
드릴홀더 '0.5, 1.5, 2.5 시리즈'는 '인서트' 선택에 제한이 있으니 반드시 확인하여 주십시오.
예) ①MPS-250350-□□□S25(2시리즈):
▶2시리즈의 모든 인서트 Φ24.5~Φ35.0(0.9646"~1.3780") 사용가능.
②MPS-300350-□□□S25(2.5시리즈):
▶2시리즈 중 일부 인서트 Φ30.0~Φ35.0(1.1811"~1.3780")만 사용가능.

'Series 0, 1, 2 of drill holders' are divided into two types by diameter size for stable drilling. (※0 and 0.5, 1 and 1.5, 2 and 2.5)
'Series 0, 1, 2 of drill holders' can use all the inserts in each series, but please make sure that the 'Series 0.5, 1.5, 2.5 of drill holders' has a larger insert diameter than the drill holder's body diameter.
Example) ①MPS-250350-□□□S25 (2 Series of Drill Holder):
▶All inserts of "Insert Series 2" can be used.
Φ24.5~Φ35.0(0.9646"~1.3780")
②MPS-300350-□□□S25 (2.5 Series of Drill Holder):
▶Only a part of the insert series 2 can be used.
Φ30.0~Φ35.0(1.1811"~1.3780")

■ 드릴홀더 시리즈 중 '5, 6 시리즈' 와 '7, 8 시리즈'는 같은 드릴홀더를 사용합니다.
'5,6 series' and '7,8 series' use the same drill holder.



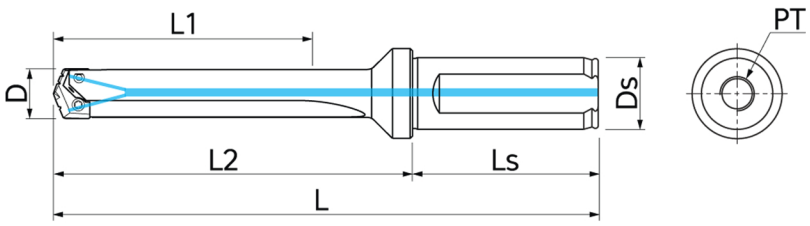
MP Spade drill
Flanged Straight Shank Holder



• Series Y, Z, 0, 1, 2

Series	Order No.	Length	Dimension(Metric/Inch)						
			D	L1	L2	L	Ds	Ls	PT
Y	MPS-095110-032S20	Short	9.5~11.0 (.3740"~ .4331")	31.8 (1.2520")	64 (2.5197")	114 (4.4882")	20 (0.7874")	50 (1.9685")	1/8"
	MPS-095110-222S20	XL (extra long)		222 (8.7401")	254 (10.0000")	304 (11.9685")	20 (0.7874")	50 (1.9685")	1/8"
	MPS-095110-290S20	3XL (3extra long)		290 (11.4173")	322 (12.6771")	372 (14.6456")	20 (0.7874")	50 (1.9685")	1/8"
Z	MPS-115125-032S20	Short	11.11~12.7 (.4375"~ .5000")	32 (1.2520")	64 (2.5197")	114 (4.4882")	20 (0.7874")	50 (1.9685")	1/8"
	MPS-115125-222S20	XL (extra long)		222 (8.7401")	254 (10.0000")	304 (11.9685")	20 (0.7874")	50 (1.9685")	1/8"
	MPS-115125-290S20	3XL (3extra long)		290 (11.4173")	322 (12.6771")	372 (14.6456")	20 (0.7874")	50 (1.9685")	1/8"
0	MPS-130175-035S20	Short	13.0~17.5 (.5118"~ .6890")	35 (1.3740")	66 (2.5984")	116 (4.5669")	20 (0.7874")	50 (1.9685")	1/8"
	MPS-130175-295S20	XL (extra long)		295 (11.6142")	327 (12.8740")	377 (14.8425")	20 (0.7874")	50 (1.9685")	1/8"
	MPS-130175-387S20	3XL (extra long)		387 (15.2362")	419 (16.4960")	469 (18.4645")	20 (0.7874")	50 (1.9685")	1/8"
0.5	MPS-155175-035S20	Short	15.5~17.5 (.6102"~ .6890")	35 (1.3740")	66 (2.5984")	116 (4.5669")	20 (0.7874")	50 (1.9685")	1/8"
	MPS-155175-295S20	XL (extra long)		295 (11.6142")	327 (12.8740")	377 (14.8425")	20 (0.7874")	50 (1.9685")	1/8"
	MPS-155175-387S20	3XL (3extra long)		387 (15.2362")	419 (16.4960")	469 (18.4645")	20 (0.7874")	50 (1.9685")	1/8"
1	MPS-180240-067S25	Short	17.86~24.0 (.7031"~ .9449")	67 (2.6260")	111 (4.3701")	167 (6.5748")	25 (0.9843")	56 (2.2047")	1/8"
	MPS-180240-457S25	XL (extra long)		457 (17.9921")	498 (19.6063")	554 (21.8110")	25 (0.9843")	56 (2.2047")	1/8"
	MPS-180240-569S25	3XL (3extra long)		569 (22.4015")	606 (23.8582")	662 (26.0629")	25 (0.9843")	56 (2.2047")	1/8"
1.5	MPS-220240-067S25	Short	21.83~24.0 (.8594"~ .9449")	67 (2.6260")	111 (4.3701")	167 (6.5748")	25 (0.9843")	56 (2.2047")	1/8"
	MPS-220240-457S25	XL (extra long)		457 (17.9921")	498 (19.6063")	554 (21.8110")	25 (0.9843")	56 (2.2047")	1/8"
	MPS-220240-569S25	3XL (3extra long)		569 (22.4015")	606 (23.8582")	662 (26.0629")	25 (0.9843")	56 (2.2047")	1/8"
2	MPS-250350-086S32	Short	24.5~35.0 (.9646"~ 1.3780")	86 (3.3740")	132 (5.1968")	192 (7.5590")	32 (1.2598")	60 (2.3622")	1/4"
	MPS-250350-511S32	XL (extra long)		511 (20.1181")	558 (21.9685")	618 (24.3307")	32 (1.2598")	60 (2.3622")	1/4"
	MPS-250350-692S32	3XL (extra long)		692 (27.2440")	739 (29.0944")	799 (31.4566")	32 (1.2598")	60 (2.3622")	1/4"
2.5	MPS-300350-086S32	Short	30.0~35.0 (1.1811"~ 1.3780")	86 (3.3740")	132 (5.1968")	192 (7.5590")	32 (1.2598")	60 (2.3622")	1/4"
	MPS-300350-511S32	XL (extra long)		511 (20.1181")	558 (21.9685")	618 (24.3307")	32 (1.2598")	60 (2.3622")	1/4"
	MPS-300350-692S32	3XL (3extra long)		692 (27.2440")	739 (29.0944")	799 (31.4566")	32 (1.2598")	60 (2.3622")	1/4"

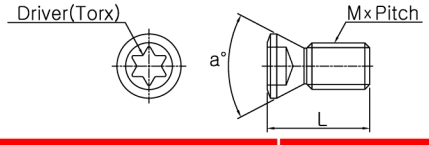
MP Spade drill
Flanged Straight Shank Holder



• Series 3, 4, 5, 6, 7, 8

Series	Order No.	Length	Dimension(Metric/Inch)						
			D	L1	L2	L	Ds	Ls	PT
3	MPS-360470-121S40	Short	35.5~47.63 (1.3976"~ 1.8750")	121 (4.7520")	178 (7.0079")	248 (9.7638")	40 (1.5748")	70 (2.7559")	1/4"
	MPS-360470-349S40	Extended		349 (13.7519")	406 (15.9842")	476 (18.7401")	40 (1.5748")	70 (2.7559")	1/4"
	MPS-360470-611S40	XL (extra long)		559 (22.0000")	616 (24.2519")	686 (27.0078")	40 (1.5748")	70 (2.7559")	1/4"
4	MPS-480650-130S40	Short	48.0~65.09 (1.8898"~ 2.5625")	130 (5.1260")	184 (7.2441")	254 (10.0000")	40 (1.5748")	70 (2.7559")	1/4"
	MPS-480650-422S40	Extended		422 (16.6260")	476 (18.7401")	546 (21.4960")	40 (1.5748")	70 (2.7559")	1/4"
	MPS-480650-625S40	XL (extra long)		625 (24.6063")	680 (26.7716")	750 (29.5275")	40 (1.5748")	70 (2.7559")	1/4"
5 · 6	MPS-640880-172S50	Short	63.5~88.9 (2.2500"~ 3.5000")	172 (6.7520")	238 (9.3701")	318 (12.5197")	50 (1.9685")	80 (3.1496")	1/2"
	MPS-640880-273S50	Standard		273 (10.7480")	339 (13.3464")	419 (16.4960")	50 (1.9685")	80 (3.1496")	1/2"
	MPS-640880-434S50	Extended		464 (18.2519")	530 (20.8661")	610 (24.0157")	50 (1.9685")	80 (3.1496")	1/2"
7 · 8	MPS-9001140-172S50	Short	88.69~114.3 (3.5313"~ 4.5000")	172 (6.7520")	272 (10.7086")	352 (13.8582")	50 (1.9685")	80 (3.1496")	1/2"
	MPS-9001140-273S50	Standard		273 (10.7480")	374 (14.7244")	454 (17.8740")	50 (1.9685")	80 (3.1496")	1/2"
	MPS-9001140-556S50	Extended		556 (21.8740")	657 (25.8661")	737 (29.0157")	50 (1.9685")	80 (3.1496")	1/2"

MP 인서트 스크류 Clamping screw for MP-Inserts



Series	Drill Range	Screw / Dimension(Metric)				Driver
		Order No.	M x Pitch	L	a°	
Y	9.5mm ~ 11.0mm	TSB-MP20040	M2.0 X 0.4	4.0	55	TXL-7
Z	11.11mm ~ 12.7mm	TSB-MP20050	M2.0 X 0.4	5.0	55	TXL-7
0	13.0mm ~ 17.5mm	TSB-MP25060	M2.5 X 0.45	6.0	55	TXL-8
1	17.86mm ~ 24.0mm	TSB-MP30070	M3.0 X 0.5	7.0	55	TXL-9
2	24.5mm ~ 35.0mm	TSB-MP40095	M4.0 X 0.7	9.5	55	TXL-15
3~4	35.5mm ~ 65.09mm	TSB-MP50150	M5.0 X 0.8	15.0	55	TXL-20
5~8	63.5mm ~ 114.3mm	TSB-MP60190	M6.0 X 1.0	19.0	55	TXL-25

MP Spade drill
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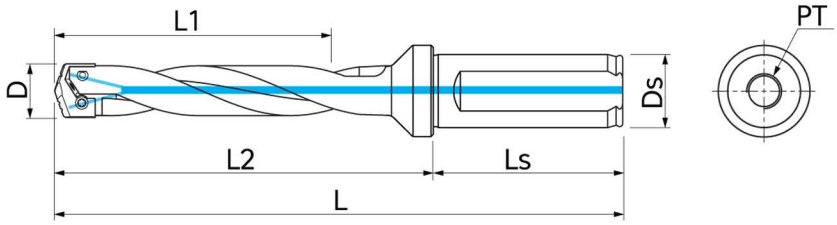
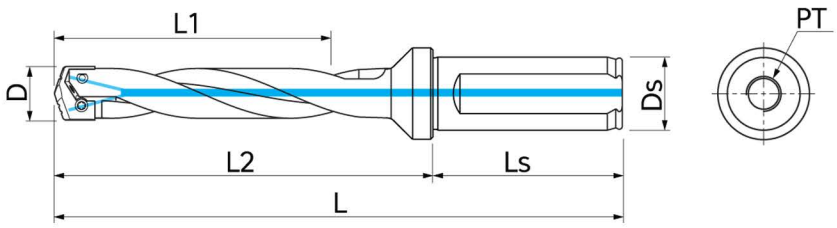
MPH
Helical Flute



• Series Y, Z, 0, 1

Series	Code No.	Length	Dimension (Metric/Inch)						
			D	L1	L2	L	Ds	Ls	PT
Y	MPH-095110-060S20	Standard	9.5~11.0 (.3740"~ .4331")	60.3 (2.3740")	92 (3.6220")	140 (5.5118")	20 (0.7874")	48 (1.8898")	1/8"
	MPH-095110-111S20	Extended		111.1 (4.3740")	143 (5.6299")	193 (7.5984")	20 (0.7874")	50 (1.9685")	1/8"
Z	MPH-115125-060S20	Standard	11.11~12.7 (.4375"~ .5000")	60.3 (2.3740")	92 (3.6220")	142 (5.5905")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-115125-111S20	Extended		111.1 (4.3740")	143 (5.6299")	193 (7.5984")	20 (0.7874")	50 (1.9685")	1/8"
0	MPH-130175-064S20	Standard	13.0~17.5 (.5118"~ .6890")	63.5 (2.5000")	95 (3.7402")	145 (5.7087")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-130175-114S20	Extended		114.3 (4.5000")	146 (5.7480")	196 (7.7165")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-130175-178S20	Long		177.8 (7.0000")	209 (8.2283")	259 (10.1968")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-130175-295S20	XL (extra long)		295 (11.6142")	327 (12.8740")	377 (14.8425")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-130175-387S20	3XL (3extra long)		387 (15.2362")	419 (16.4960")	469 (18.4645")	20 (0.7874")	50 (1.9685")	1/8"
0.5	MPH-155175-064S20	Standard	15.5~17.5 (.6102"~ .6890")	63.5 (2.5000")	95 (3.7402")	145 (5.7087")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-155175-114S20	Extended		114.3 (4.5000")	146 (5.7480")	196 (7.7165")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-155175-178S20	Long		177.8 (7.0000")	209 (8.2283")	259 (10.1968")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-155175-295S20	XL (extra long)		295 (11.6142")	327 (12.8740")	377 (14.8425")	20 (0.7874")	50 (1.9685")	1/8"
	MPH-155175-387S20	3XL (3extra long)		387 (15.2362")	419 (16.4960")	469 (18.4645")	20 (0.7874")	50 (1.9685")	1/8"
1	MPH-180240-118S25	Intermediate	17.86~24.0 (.7031"~ .9449")	117.5 (4.6260")	158 (6.2205")	214 (8.4252")	25 (0.9843")	56 (2.2047")	1/8"
	MPH-180240-168S25	Standard		168.3 (6.6260")	209 (8.2283")	265 (10.4331")	25 (0.9843")	56 (2.2047")	1/8"
	MPH-180240-270S25	Extended		269.9 (10.6260")	311 (12.2441")	367 (14.4488")	25 (0.9843")	56 (2.2047")	1/8"
	MPH-180240-457S25	XL (extra long)		457 (17.9921")	498 (19.6063")	554 (21.8110")	25 (0.9843")	56 (2.2047")	1/8"
	MPH-180240-569S25	3XL (3extra long)		569 (22.4015")	606 (23.8582")	662 (26.0629")	25 (0.9843")	56 (2.2047")	1/8"
1.5	MPH-220240-118S25	Intermediate	21.83~24.0 (.8594"~ .9449")	117.5 (4.6260")	158 (6.2205")	214 (8.4252")	25 (0.9843")	56 (2.2047")	1/8"
	MPH-220240-168S25	Standard		168.3 (6.6260")	209 (8.2283")	265 (10.4331")	25 (0.9843")	56 (2.2047")	1/8"
	MPH-220240-270S25	Extended		269.9 (10.6260")	311 (12.2441")	367 (14.4488")	25 (0.9843")	56 (2.2047")	1/8"
	MPH-220240-457S25	XL (extra long)		457 (17.9921")	498 (19.6063")	554 (21.8110")	25 (0.9843")	56 (2.2047")	1/8"
	MPH-220240-567S25	3XL (3extra long)		569 (22.4015")	606 (23.8582")	662 (26.0629")	25 (0.9843")	56 (2.2047")	1/8"

MP Spade drill
Flanged Straight Shank Holder



• Series 2, 3, 4, 5, 6, 7, 8

Series	Code No.	Length	Dimension (Metric/Inch)						
			D	L1	L2	L	Ds	Ls	PT
2	MPH-250350-137S32	Intermediate	24.5~35.0 (.9646″~ 1.3780″)	136.5 (5.3740″)	183 (7.2047″)	243 (9.5669″)	32 (1.2598″)	60 (2.3622″)	1/4″
	MPH-250350-187S32	Standard		187.3 (7.3740″)	234 (9.2126″)	294 (11.5748″)	32 (1.2598″)	60 (2.3622″)	1/4″
	MPH-250350-289S32	Extended		288.9 (11.3740″)	335 (13.1890″)	395 (15.5512″)	32 (1.2598″)	60 (2.3622″)	1/4″
	MPH-250350-511S32	XL (extra long)		511 (20.1181″)	558 (21.9685″)	618 (24.3307″)	32 (1.2598″)	60 (2.3622″)	1/4″
	MPH-250350-692S32	3XL (3extra long)		692 (27.2440″)	739 (29.0944″)	799 (31.4566″)	32 (1.2598″)	60 (2.3622″)	1/4″
2.5	MPH-300350-137S32	Intermediate	30.0~35.0 (1.1811″~ 1.3780″)	136.5 (5.3740″)	183 (7.2047″)	243 (9.5669″)	32 (1.2598″)	60 (2.3622″)	1/4″
	MPH-300350-187S32	Standard		187.3 (7.3740″)	234 (9.2126″)	294 (11.5748″)	32 (1.2598″)	60 (2.3622″)	1/4″
	MPH-300350-289S32	Extended		288.9 (11.3740″)	335 (13.1890″)	395 (15.5512″)	32 (1.2598″)	60 (2.3622″)	1/4″
	MPH-300350-511S32	XL (extra long)		511 (20.1181″)	558 (21.9685″)	618 (24.3307″)	32 (1.2598″)	60 (2.3622″)	1/4″
	MPH-300350-692S32	3XL (3extra long)		692 (27.2440″)	739 (29.0944″)	799 (31.4566″)	32 (1.2598″)	60 (2.3622″)	1/4″
3	MPH-360470-165S40	Intermediate	35.5~47.63 (1.3976″~ 1.8750″)	165.1 (6.5000″)	222 (8.7401″)	292 (11.4960″)	40 (1.5748″)	70 (2.7559″)	1/4″
	MPH-360470-210S40	Standard		209.6 (20.1181″)	267 (21.9685″)	337 (24.3307″)	40 (1.5748″)	70 (2.7559″)	1/4″
	MPH-360470-349S40	Extended		349.0 (13.7401″)	406 (15.9842″)	476 (18.7401″)	40 (1.5748″)	70 (2.7559″)	1/4″
	MPH-360470-559S40	XL (extra long)		559 (22.0000″)	616 (24.2519″)	686 (27.0078″)	40 (1.5748″)	70 (2.7559″)	1/4″
4	MPH-480650-232S40	Standard	48.0~65.09 (1.8898″~ 2.5625″)	232 (9.1260″)	286 (11.2598″)	356 (14.0157″)	40 (1.5748″)	70 (2.7559″)	1/4″
	MPH-480650-422S40	Extended		422.0 (16.6141″)	476 (18.7401″)	546 (21.4960″)	40 (1.5748″)	70 (2.7559″)	1/4″
	MPH-480650-625S40	XL (extra long)		625.0 (24.6063″)	680 (26.7716″)	750 (29.5275″)	40 (1.5748″)	70 (2.7559″)	1/4″
5 · 6	MPH-640880-172S50	Short	63.5~88.9 (2.2500″~ 3.5000″)	171.9 (6.7677″)	222 (8.7401″)	302 (11.8897″)	50 (1.9685″)	80 (3.1496″)	1/2″
	MPH-640880-274S50	Standard		274 (10.7677″)	324 (12.7559″)	404 (15.9055″)	50 (1.9685″)	80 (3.1496″)	1/2″
	MPH-640880-464S50	Extended		464 (18.2677″)	514 (20.2362″)	594 (23.3858″)	50 (1.9685″)	80 (3.1496″)	1/2″
7 · 8	MPH-9001140-212S50	Short	88.69~114.3 (3.5313″~ 4.5000″)	172.0 (6.7716″)	232 (9.1338″)	312 (12.2834″)	50 (1.9685″)	80 (3.1496″)	1/2″
	MPH-9001140-273S50	Standard		273.0 (10.7480″)	333 (13.1102″)	413 (16.2598″)	50 (1.9685″)	80 (3.1496″)	1/2″
	MPH-9001140-556S50	Extended		556.0 (21.8897″)	616 (24.2519″)	696 (27.4015″)	50 (1.9685″)	80 (3.1496″)	1/2″

Recommended cutting values for MPD

ISO	Material 재질구분	Hardness 경도(HB)	HSS Grade	Vc(m/min)				Feed 이송(mm/rev)						
				TiN	TiCN	TiAlN	TiAlSiN	Φ9.5~Φ12.5	Φ13~Φ17.5	Φ18~Φ24	Φ25~Φ35	Φ36~Φ47	Φ48~Φ65	Φ65~Φ114
P	Free machining steel 쾌삭강(-0.2%) 1118, 1215, 12L14, etc.	100-150	M04	62	79	84	97	-	-	-	-	-	0.56	0.71
		150-200	M04	56	71	80	88	-	-	-	-	-	0.56	0.71
		200-250	M04	20	65	72	83	-	-	-	-	-	0.56	0.71
	Low carbon steel 저탄소강(-0.25%) 1010, 1020, 1025, 1522, 1144, etc.	85-125	M04	52	66	75	86	-	-	-	-	-	0.56	0.68
		125-175	M04	50	63	72	81	-	-	-	-	-	0.56	0.68
		175-225	M04	48	58	69	77	-	-	-	-	-	0.52	0.60
		225-275	M04	44	55	65	71	-	-	-	-	-	0.52	0.60
	Midium carbon steel 중탄소강(-0.25%) 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	M04	50	63	73	81	-	-	-	-	-	0.56	0.68
		175-225	M04	47	59	69	77	-	-	-	-	-	0.52	0.60
		225-275	M04	44	56	64	71	-	-	-	-	-	0.50	0.58
		275-325	M48	41	52	59	65	0.10	0.17	0.22	0.30	0.40	0.46	-
	Alloy Steel 합급강 4140, 5140, 8640, etc	125-175	M04	46	59	64	71	-	-	-	-	-	0.47	0.54
		175-225	M04	43	55	59	66	-	-	-	-	-	0.46	0.54
		225-275	M04	40	52	55	62	-	-	-	-	-	0.46	0.54
		275-325	M48	37	47	52	57	0.10	0.15	0.22	0.29	0.37	0.42	0.50
		325-375	M48	34	44	47	52	0.08	0.14	0.21	0.28	0.36	0.40	-
	High Strength Alloy 고경도 합금강 4340, 4330V, 300M, etc	225-300	M48	24	30	34	36	0.12	0.17	0.22	0.24	0.35	0.42	-
		300-350	M48	18	24	26	28	0.10	0.17	0.22	0.24	0.35	0.42	-
		350-400	M48	15	20	21	23	0.08	0.15	0.20	0.22	0.30	0.37	-
	Structural Steel 구조용강 A36, A285, A516, ect	100-150	M04	43	55	61	69	-	-	-	-	-	0.52	0.65
		150-250	M04	37	47	52	55	-	-	-	-	-	0.46	0.59
		250-350	M48	30	40	43	46	0.10	0.20	0.22	0.24	0.34	0.41	-
	Tool Steel 공구강 H-13, H-21, A-4, O-2, S-3, etc.	150-200	M48	24	34	32	36	0.10	0.15	0.20	0.25	0.29	0.37	-
		200-250	M48	18	26	27	29	0.09	0.15	0.19	0.25	0.28	0.36	-
M	Stainless steel 400 series 스테인레스강 416, 420, etc.	185-275	M48	23	29	32	34	0.13	0.18	0.21	0.26	0.35	0.40	-
		275-350	M48	18	24	27	29	0.12	0.17	0.19	0.24	0.29	0.35	-
	Stainless steel 300 series 스테인레스강 304, 316, 17-4PH, etc.	135-185	M48	23	29	32	34	0.08	0.17	0.19	0.26	0.34	0.39	-
		185-275	M48	18	24	27	29	0.07	0.14	0.17	0.24	0.29	0.35	-
K	Grey, Nodular cast iron 회주철, 구상흑연주철 A48-76, GR30/GR45, A536-72, A22-76	120-150	M04	52	67	76	82	-	-	-	-	-	0.68	0.74
		150-200	M04	46	59	69	77	-	-	-	-	-	0.63	0.68
		200-220	M04	40	52	59	66	-	-	-	-	-	0.52	0.58
		220-260	M48	34	44	50	55	0.12	0.17	0.22	0.29	0.35	0.42	-
		260-320	M48	27	37	41	45	0.10	0.14	0.17	0.22	0.28	0.35	-
N	Aluminum 알루미늄 2014, 6061, 7075, etc.	30	M04	183	229	259	270 ⚠	-	-	-	-	-	0.64	0.64
		180	M04	91	122	137	190 ⚠	-	-	-	-	-	0.62	0.64
S	High Temp Alloy 내열합금강 Hastlloy B, Inconel 600, etc.	140-220	M48	9 ⚠	11 ⚠	12 ⚠	13 ⚠	0.09	0.17	0.20	0.24	0.27	0.33	-
		220-310	M48	8	9	11	12	0.08	0.14	0.17	0.19	0.24	0.28	-

인서트의 외경이 드릴 몸통부위 보다 최소 0.3 mm(0.012″)이상 커야 함.
Check that the insert outer diameter is a minimum 0.3 mm(0.012″) larger than the holder body diameter.

상기표의 추천 Speed와 Feed는 이상적인 조건이며 장비의 상태와 작업 여건에 따라 Speed와 Feed는 줄여서 작업을 하십시오.
"The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be condidered only as good starting points"
초기 작업시 Speed는 약20%, Feed는 약10% 줄여서 작업조건을 설정 하시기를 바랍니다.
When initial operation, speed and feed reductions(20% reduction in speed and 10% reduction in feed) are recommended.

Recommended cutting values for MPD

ISO	Material 재질구분	Hardness 경도(HB)	Carbide Grade	Vc(m/min)	Feed 이송(mm/rev)						
				TiAlSiN	Φ9.5~Φ12.5	Φ13~Φ17.5	Φ18~Φ24	Φ25~Φ35	Φ36~Φ47	Φ48~Φ65	Φ65~Φ114
P	Free machining steel 쾌삭강(-0.2%) 1118, 1215, 12L14, etc.	100-150	C25	128	-	0.30	0.38	0.45	0.53	-	-
		150-200	C25	110	-	0.28	0.35	0.40	0.48	-	-
		200-250	C25	104	-	0.25	0.33	0.38	0.43	-	-
	Low carbon steel 저탄소강(-0.25%) 1010, 1020, 1025, 1522, 1144, etc.	85-125	C25	119	-	0.25	0.33	0.43	0.48	-	-
		125-175	C25	104	-	0.25	0.33	0.10	0.45	-	-
		175-225	C25	95	-	0.23	0.30	0.38	0.43	-	-
		225-275	C25	83	-	0.23	0.30	0.38	0.43	-	-
	Midium carbon steel 중탄소강(-0.25%) 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	C25	104	-	0.25	0.33	0.43	0.45	-	-
		175-225	C25	95	-	0.23	0.33	0.38	0.43	-	-
		225-275	C25	83	-	0.23	0.30	0.38	0.43	-	-
		275-325	C25	70	-	0.23	0.30	0.35	0.40	-	-
	Alloy Steel 합급강 4140, 5140, 8640, etc	125-175	C25	99	-	0.25	0.33	0.40	0.45	-	-
		175-225	C25	92	-	0.23	0.30	0.38	0.43	-	-
		225-275	C25	83	-	0.23	0.30	0.38	0.43	-	-
		275-325	C25	76	-	0.20	0.28	0.35	0.40	-	-
		325-375	C25	67	-	0.18	0.25	0.33	0.38	-	-
	High Strength Alloy 고경도 합금강 4340, 4330V, 300M, etc	225-300	C25	61	-	0.23	0.25	0.30	0.38	-	-
		300-350	C25	55	-	0.20	0.23	0.28	0.35	-	-
		350-400	C25	49	-	0.18	0.20	0.25	0.30	-	-
	Structural Steel 구조용강 A36, A285, A516, ect	100-150	C25	95	-	0.28	0.35	0.40	0.45	-	-
		150-250	C25	76	-	0.25	0.30	0.35	0.40	-	-
		250-350	C25	70	-	0.23	0.28	0.25	0.35	-	-
	Tool Steel 공구강 H-13, H-21, A-4, O-2, S-3, etc.	150-200	C25	67	-	0.18	0.23	0.28	0.33	-	-
		200-250	C25	52	-	0.15	0.23	0.28	0.33	-	-
M	Stainless steel 400 series 스테인레스강 416, 420, etc.	185-275	C25	64	-	0.22	0.29	0.35	0.40	-	-
		275-350	C25	49	-	0.19	0.27	0.30	0.35	-	-
	Stainless steel 300 series 스테인레스강 304, 316, 17-4PH, etc.	135-185	C25	64	-	0.17	0.22	0.26	0.30	-	-
		185-275	C25	49	-	0.14	0.20	0.22	0.25	-	-
K	Grey, Nodular cast iron 회주철, 구상흑연주철 A48-76, GR30/GR45, A536-72, A22-76	120-150	C25	141	-	0.30	0.38	0.48	0.58	-	-
		150-200	C25	122	-	0.28	0.33	0.43	0.53	-	-
		200-220	C25	110	-	0.23	0.30	0.38	0.45	-	-
		220-260	C25	95	-	0.20	0.28	0.33	0.38	-	-
		260-320	C25	83	-	0.18	0.25	0.28	0.33	-	-
N	Aluminum 알루미늄 2014, 6061, 7075, etc.	30	C25	460	-	0.38	0.45	0.50	0.55	-	-
		180	C25	305	-	0.33	0.40	0.45	0.50	-	-
S	High Temp Alloy 내열합금강 Hastlloy B, Inconel 600, etc.	140-220	C25	32	-	0.18	0.23	0.28	0.33	-	-
		220-310	C25	26	-	0.15	0.15	0.25	0.30	-	-

Deep Hole Drill in Speed & Feed Adujstment

Holder	Extended	Long	XL	3XL
Speed	0.90	0.85	0.80	0.75
Feed	-	0.95	0.90	0.90

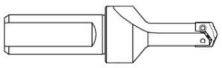
Recommended Speed and Feed Example:
"If the recommended speed and feed is 30M/min and 0.50mm/rev for a standard length holder, then the speed and feed using a 3XL holder in the same application would be 22.5M/min and 0.45mm/rev"

ex) 30 X 0.75=22.5M/min, 0.50 X 0.90=0.45mm/rev

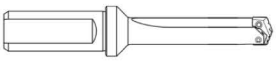
[MPD Insert series]

Insert Series	Drill diameter		Material(Coated)	
	mm	Inch	HSS	Carbide
Y Series	9.50~11.00	0.3740"~0.4331"	M48(TiAlN)	
Z Series	11.11~12.70	0.4375"~0.2000"	M48(TiAlN)	
0 Series	13.00~17.50	0.5118"~0.6890"	M48(TiAlN)	C25(TiAlSiN)
1 Series	17.86~24.00	0.7031"~0.9449"	M48(TiAlN)	C25(TiAlSiN)
2 Series	24.50~35.00	0.9688"~1.3780"	M48(TiAlN)	C25(TiAlSiN)
3 Series	35.50~47.63	1.4063"~1.8750"	M48(TiAlN)	C25(TiAlSiN)
4 Series	48.00~65.09	1.8898"~2.5625"	M48(TiAlN)	
5 Series	63.50~76.20	2.5000"~3.3071"	M4(TiAlN)	
6 Series	76.99~88.90	3.0313"~3.5000"	M4(TiAlN)	
7 Series	89.69~101.60	3.5313"~4.0000"	M4(TiAlN)	
8 Series	102.00~114.30	4.0157"~4.5000"	M4(TiAlN)	

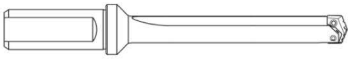
[MPD Holder Length Options]



Stub(Extra short) Length 1.5~2.5D | Series: MPH-None. / MPS-Y,Z,0,1,2



Short Length ~3.5D(max.) | Series: MPH-5,6,7,8 / MPS-ALL



Intermediate Length ~6.5D(max.) | Series: MPH-1,2,3 / MPS-None.



Standard Length ~9.0D(max.) | Series: MPH-1,2,3 / MPS-None.



Extended Length ~12.0D(max.) | Series: MPH-ALL / MPS-3,4,5,6,7,8



Long Length ~15.0D(max.) | Series: MPH-0,1 / MPS-None.



XL(Extra long) Length~25.0D(max.) | Series: MPH-0,1,2,3,4 / MPS-Y,Z,0,1,2,3,4



3XL(Extra long) Length~30.0D(max.) | Series: MPH-0,1,2 / MPS-Y,Z,0,1,2

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