

NEW

VMD DRILL

**Stronger
More stable
More durable**

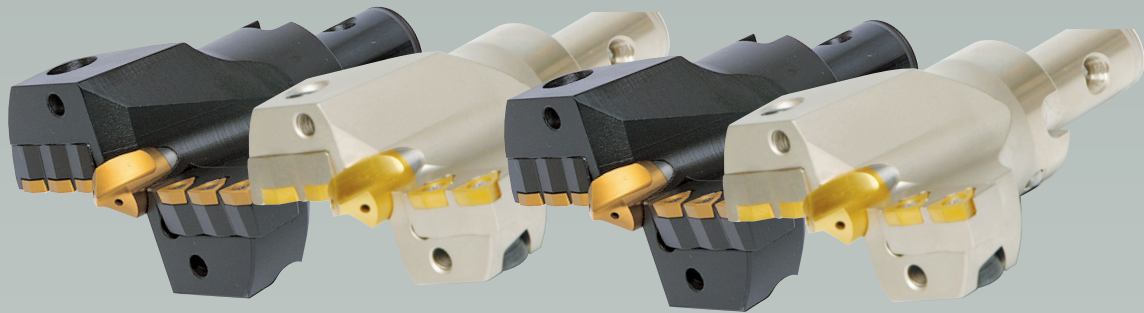


VMD Drill Characteristic

- The drill body treated by forging was much solid and much stronger in impact.
- The especially treated surface of body make the inner-abrasion much better and the life make much longer.
- As this drill was designed more stably, this drill is steady of drilling and is good of economical efficiency.
- Drilling diameters are from 45mm to 180mm and the drilling depth is freely adjustable by using the MX modular system.
- As this drill is VMC(Cartridge) type, the drilling diameters are adjustable.
- We can supply to customers promptly by keeping stable stocks.

※ 범용선반 가공시, 가공직경 $\phi 40$ 이상은 TSD나, MXD 사용을 권장함.

Construction system of MAX Drill's Code no.



▶ Adjustment Type

VMD - 125130

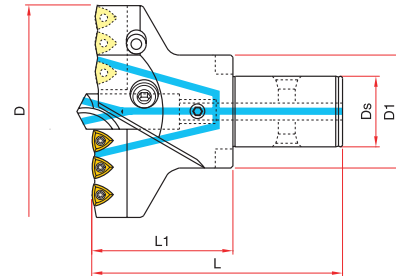
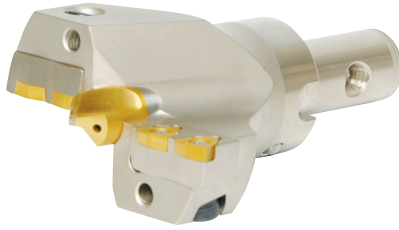
드릴종류
Drill group

가공직경: $\phi 125 \sim \phi 130$ (조절타입)
Drilling diameter: $\phi 125 \sim \phi 130$ (Adjustable)



[MX MODULAR SYSTEM으로 체결강성이 뛰어납니다.]

- 바디표면을 특수표면처리하여 내마모성 및 수명이 길어졌습니다.
- 더욱 안정된 설계로 제작되어 MXD보다 드릴링이 안정되어 경제성이 뛰어납니다.
- MX Modular system으로 원하는 가공길이 조절 가능.



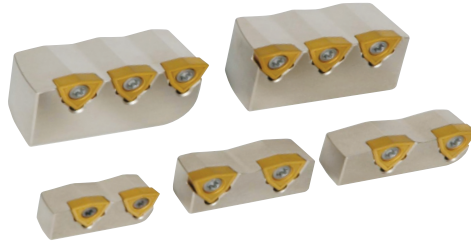
● MX MODULAR SHANK Type

CODE NO	D	Ds	D1	L1	L	Pilot drill	Cartridge	Insert	Screw	Driver
VMD-045050	45- 50	13	28	50	85	PLD-1035	VMC-045050N/T	WC..030204	TSB-22045	TXL-6
VMD-050055	50- 55	13	28	50	85	TiN-H	VMC-050055N/T	WC..030204	TSB-22045	TXL-6
VMD-055060	55- 60	16	32	60	100	PLD-1238	VMC-055060N/T	WC..040204	TSB-25055	TXL-6
VMD-060065	60- 65	16	32	60	100	TiN-H	VMC-060065N/T	WC..050308	TSB-30070	TXL-6
VMD-065070	65- 70	16	32	60	100		VMC-065070N/T			
VMD-070075	70- 75	22	40	70	115		VMC-070075N/T			
VMD-075080	75- 80	22	40	70	115	PLD-1645	VMC-075080N/T			TXL-15
VMD-080085	80- 85	22	40	70	115	TiN-H	VMC-080085N/T	WC..06T308	TSB-35090	TXL-15
VMD-085090	85- 90	27	48	70	120		VMC-085090N/T			
VMD-090095	90- 95	27	48	70	120		VMC-090095N/T			
VMD-095100	95-100	27	48	70	120		VMC-095100N/T			
VMD-100105	100-105	32	58	80	130	PLD-2045	VMC-100105N/T	WC..050308	TSB-30070	TXL-8
VMD-105110	105-110	32	58	80	130	TiN-H	VMC-105110N/T			
VMD-110115	110-115	32	58	80	130		VMC-110115N/T			
VMD-115120	115-120	40	70	90	145		VMC-115120N/T			
VMD-120125	120-125	40	70	90	145	PLD-2556	VMC-120125N/T	WC..06T308	TSB-35090	TXL-15
VMD-125130	125-130	40	70	90	145	TiN-H	VMC-125130N/T			
VMD-130135	130-135	40	70	90	145		VMC-130135N/T			
VMD-135140	135-140	40	70	90	145		VMC-135140N/T			
VMD-140150	140-150	50	80	100	160		VMC-140150N/T			
VMD-150160	150-160	50	80	100	160		VMC-150160N/T			
VMD-160170	160-170	50	80	100	160	PLD-3068	VMC-160170N/T	WC..080408	TSB-40110	TXL-15
VMD-170180	170-180	50	80	100	160	TiN-H	VMC-170180N/T			

●V-MAX 드릴 헤드는 최대직경으로 공급됩니다. (Drill head is supplied with Max. diameter)



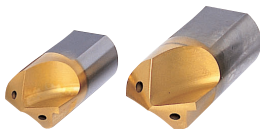
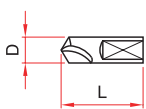
- VMD 카트리지는 드릴바디의 수명을 연장시키고 바깥쪽 카트리지 단면을 밀링 작업으로 직경을 (5mm) 조절할 수 있습니다.
- Please shorten the length of outer cartridge if smaller diameter is needed.
(EX:Ø77=by 1.5mm cutting MDC-075080T)



CARTRIDGE

DRILLING RANGE	INNER	OUTER	INSERT	NO.OF INSERT	SCREW	DRIVER
45- 50	VMC-045050N	VMC-045050T	WC..030204	2	TSB-22045	TXL-6
50- 55	VMC-050055N	VMC-050055T				
55- 60	VMC-055060N	VMC-055060T	WC..040204	2	TSB-25055	TXL-8
60- 65	VMC-060065N	VMC-060065T				
65- 70	VMC-065070N	VMC-065070T	WC..050308	2	TSB-30070	
70- 75	VMC-070075N	VMC-070075T				
75- 80	VMC-075080N	VMC-075080T				
80- 85	VMC-080085N	VMC-080085T	WC..06T308	2	TSB-35090	TXL-15
85- 90	VMC-085090N	VMC-085090T				
90- 95	VMC-090095N	VMC-090095T				
95-100	VMC-095100N	VMC-095100T				
100-105	VMC-100105N	VMC-100105T	WC..050308	3	TSB-30070	TXL-8
105-110	VMC-105110N	VMC-105110T	WC..06T308	3	TSB-35090	TXL-15
110-115	VMC-110115N	VMC-110115T				
115-120	VMC-115120N	VMC-115120T				
120-125	VMC-120125N	VMC-120125T				
125-130	VMC-125130N	VMC-125130T				
130-135	VMC-130135N	VMC-130135T				
135-140	VMC-135140N	VMC-135140T				
140-150	VMC-140150N	VMC-140150T	WC..080408	3	TSB-40110	
150-160	VMC-150160N	VMC-150160T				
160-170	VMC-160170N	VMC-160170T				
170-180	VMC-170180N	VMC-170180T				

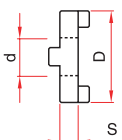
PILOT DRILL



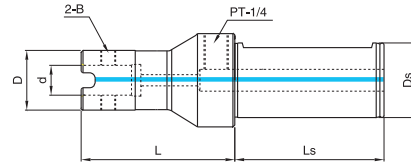
CODE NO.	D	L
PLD-V1035 TiN-H	10	35
PLD-V1238 TiN-H	12	38
PLD-V1645 TiN-H	16	45
PLD-2045 TiN-H	20	
PLD-2556 TiN-H	25	56
PLD-3068 TiN-H	30	68

●EX : PLD-2556 TiN-H(25TiN coated oil hole)

DRIVE RING

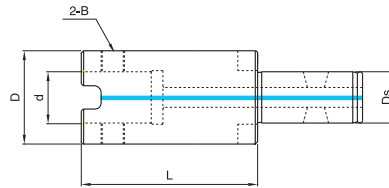


CODE NO.	D	d	S
DVR-281310	28	13	10
DVR-321610	32	16	
DVR-402212	40	22	12
DVR-482712	48	27	
DVR-583214	58	32	14
DVR-704014	70	40	
DVR-805016	80	50	16



● MX CYLINDRICAL SHANK Type

CODE NO.	Ds	d	L	D	Ls	B	DRIVE RING
MXA-3213115	32	13	115	28	70	MTB-08115	DVR-281310
MXA-3213200	32	13	200	28			
MXA-3213300	32	13	300	28			
MXA-4016125	40	16	125	32	80	MTB-10145	DVR-321610
MXA-4016200	40	16	200	32			
MXA-4016300	40	16	300	32			
MXA-4022148	40	22	148	40		MTB-12175	DVR-402212
MXA-4022200	40	22	200	40			
MXA-4022300	40	22	300	40			
MXA-4027168	40	27	168	48		MTB-12195	DVR-482712
MXA-4027300	40	27	300	48			
MXA-4032186	40	32	186	58	80	MTB-16260	DVR-583214
MXA-4032300	40	32	300	58			
MXA-W5040186	50	40	186	70			DVR-704014
MXA-W5040300	50	40	300	70			
MXA-W5050184	50	50	184	80			DVR-805016
MXA-W5050300	50	50	300	80			



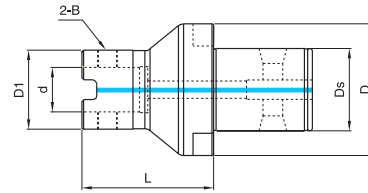
● MX EXTENSION

CODE NO.	D	d	L	Ds	B	DRIVE RING
MXB-2813115	28	13	115	13	MTB-08115	DVR-281310
MXB-2813150	28	13	150	13		
MXB-2813200	28	13	200	13		
MXB-2813300	28	13	300	13	MTB-08115	DVR-321610
MXB-3216115	32	16	115	16		
MXB-3216200	32	16	200	16		
MXB-3216300	32	16	300	16	MTB-10145	DVR-402212
MXB-4022113	40	22	113	22		
MXB-4022200	40	22	200	22		
MXB-4022300	40	22	300	22	MTB-12175	DVR-482712
MXB-4827113	48	27	113	27		
MXB-4827200	48	27	200	27		
MXB-4827300	48	27	300	27	MTB-12195	DVR-583214
MXB-5832186	58	32	186	32		
MXB-5832300	58	32	300	32	MTB-16260	DVR-704014
MXB-7040186	70	40	186	40		
MXB-7040300	70	40	300	40		
MXB-7040500	70	40	500	40		
MXB-8050204	80	50	204	50		DVR-805016
MXB-8050300	80	50	300	50		
MXB-8050500	80	50	500	50		

●MX MODULAR SYSTEM 은 사용자의 편의를 위하여 다양한 길이와 강성을 유지하기 위해 EXTENSION 및 REDUCER 또는 MAS403/BT, DIN2080/NT, DIN228/MT, DIN69871/SK 타입의 각종 아바를 조립하여 강성 및 가공조건을 만족시켜 드립니다.

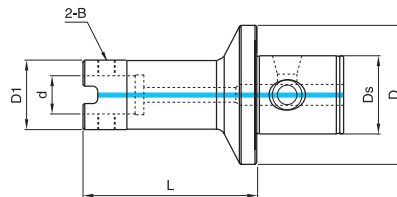
MX HOLDER

MXR/MXE



● MX REDUCER

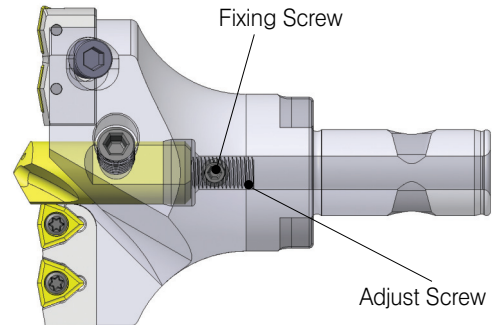
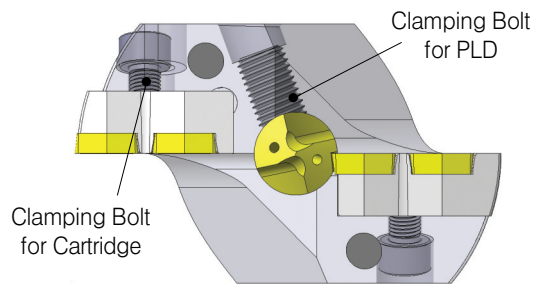
CODE NO.	Ds	d	L	D	D1	B	D1/DRIVE RING	D/DRIVE RING
MXR-1613100	16	13	100	32	28	MTB-08115	DVR-281310	DVR-321610
MXR-2216100	22	16	100	40	32	MTB-08115	DVR-321610	DVR-402212
MXR-2722100	27	22	100	48	40	MTB-10145	DVR-402212	DVR-482712
MXR-3213100	32	13	100	58	28	MTB-08115	DVR-281310	DVR-583214
MXR-3216100	32	16	100	58	32	MTB-08115	DVR-321610	DVR-583214
MXR-3222100	32	22	100	58	40	MTB-10145	DVR-402212	DVR-583214
MXR-3227100	32	27	100	58	48	MTB-12175	DVR-482712	DVR-583214
MXR-4032100	40	32	100	70	58	MTB-12195	DVR-583214	DVR-704014
MXR-5013080	50	13	80	80	28	MTB-08115	DVR-281310	DVR-805016
MXR-5016080	50	16	80	80	32	MTB-08115	DVR-321610	DVR-805016
MXR-5022080	50	22	80	80	40	MTB-10145	DVR-402212	DVR-805016
MXR-5027080	50	27	80	80	48	MTB-12175	DVR-482712	DVR-805016
MXR-5032080	50	32	80	80	58	MTB-12195	DVR-583214	DVR-805016
MXR-5040150	50	40	150	80	70	MTB-16260	DVR-704014	DVR-805016



● MX + EXT ADAPTOR

CODE NO.	Ds	d	L	D	D1	B	D1/DRIVE RING
MXE-3613100	36	13	100	63	28	MTB-08115	DVR-281310
MXE-3616100	36	16	100	63	32	MTB-08115	DVR-321610
MXE-3622100	36	22	100	63	40	MTB-10145	DVR-402212
MXE-3627100	36	27	100	63	48	MTB-12175	DVR-482712
MXE-3632100	36	32	100	63	58	MTB-12195	DVR-583214
MXE-4513100	45	13	100	80	28	MTB-08115	DVR-281310
MXE-4516100	45	16	100	80	32	MTB-10145	DVR-321610
MXE-4522100	45	22	100	80	40	MTB-12175	DVR-402212
MXE-4527100	45	27	100	80	48	MTB-12195	DVR-482712
MXE-4532100	45	32	100	80	58	MTB-16260	DVR-583214

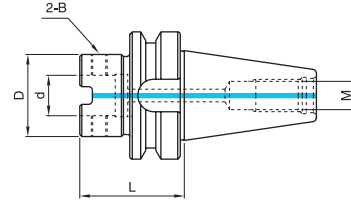
●EXT MODULAR SYSTEM은 BT, NT, MT, SK샙크의 ETA홀더에 조립하여 사용할 수 있는 모듈시스템입니다. MX 드릴 직경에 길이가 6배 이상 돌출 될 경우 익스텐션에 레듀사를 적절히 조립하면 떨림없이 가공할 수 있으며 드릴강성을 높일 수 있습니다. MXE 레듀사는 EXT 모듈타입의 아바와 호환성을 이룹니다.



CODE NO.	Cartridge	Clamping Bolt for Cartridge	PILOT Drill	Clamping Bolt for PLD	Adjust Screw	Fixing Screw
VMD-045050	VMC-045050N/T	M0410BH-W	PLD-1035TIN-H	M0610SS	M0610SS-H	M0408SS
VMD-050055	VMC-050055N/T					
VMD-055060	VMC-055060N/T	M0512BH-W	PLD-1238TIN-H	M0812SS	M0815SS-H	
VMD-060065	VMC-060065N/T					
VMD-065070	VMC-065070N/T			M0815SS		
VMD-070075	VMC-070075N/T					
VMD-075080	VMC-075080N/T	M0612HC-W	PLD-1645TIN-H	M1020SS	M1016SS-H	M0610SS
VMD-080085	VMC-080085N/T	M0614HC-W				
VMD-085090	VMC-085090N/T	M0616HC-W		M1020SS	M1018SS-H	
VMD-090095	VMC-090095N/T					
VMD-095100	VMC-095100N/T					
VMD-100105	VMC-100105N/T	M0818HC-W	PLD-2045TIN-H	M1220SS	M1220SS-H	
VMD-105100	VMC-105110N/T					
VMD-110115	VMC-110115N/T			M1225SS		
VMD-115120	VMC-115120N/T	M0820HC-W			PLD-2556TIN-H	
VMD-120125	VMC-120125N/T	M0825HC-W				
VMD-125130	VMC-125130N/T					
VMD-130135	VMC-130135N/T					
VMD-135140	VMC-135140N/T					
VMD-140150	VMC-140150N/T					
VMD-150160	VMC-150160N/T					
VMD-160170	VMC-160170N/T		PLD-3068TIN-H	M1625SS		
VMD-170180	VMC-170180N/T					

MX HOLDER

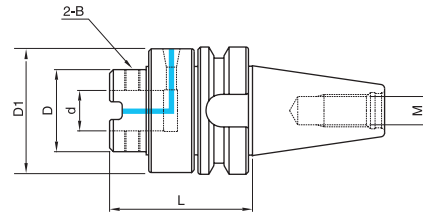
BT-MXA/BT-OMX/BT-OAX



● MAS403/BT MX MODULAR Type

CODE NO.	d	L	D	M	B
BT40-MXA-32060	32	60	58	M16	MTB-12195
BT50-MXA-32070	32	70	58	M24	MTB-12195
BT50-MXA-50080	50	80	80	M24	MTB-16260

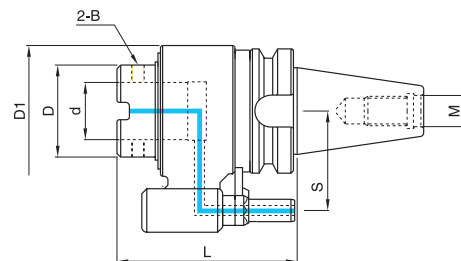
●스핀들 내부의 절삭유 공급이 가능한 장비에서 효율적으로 사용할 수 있습니다.



● MAS403/BT MX MODULAR OIL FEED Type

CODE NO.	d	L	D	D1	M	B
BT40-OMX-32095	32	95	65	88	M16	MTB-10145
BT50-OMX-32100	32	100	65	98	M24	MTB-12175
BT50-OMX-50110	50	110	80	115	M24	MTB-16225

●Manual type Internal Oil hole Holder. 수동 내부 급유형 절삭유 공급 장치입니다.



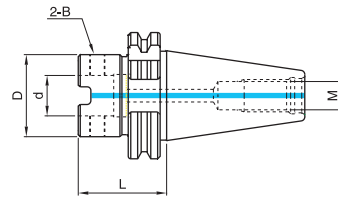
● MAS403/BT MX MODULAR AUTO MATIC Type

CODE NO.	d	L	D	D1	S	M	B
BT40-OAX-32120	32	120	65	80	65	M16	MTB-10145
BT50-OAX-32145	32	145	65	98	80	M24	MTB-12175
BT50-OAX-50150	50	150	80	98	80	M24	MTB-16225

● Automatic type Internal Oil hole Holder. 자동공구 교환이 가능한 내부 급유형 절삭유 공급 장치입니다.

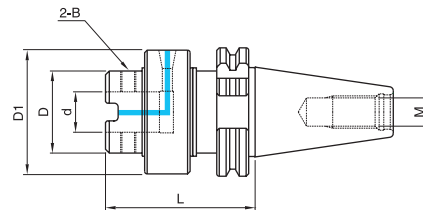
MX HOLDER

SK-MXA/SK-OMX



● DIN69871-AD MX MODULAR Type

CODE NO.	d	L	D	M	B
SK40-MXA-32065	32	65	58	M16	MTB-12195
SK50-MXA-32070	32	70	58	M24	
SK50-MXA-50070	50	70	80	M24	MTB-16260



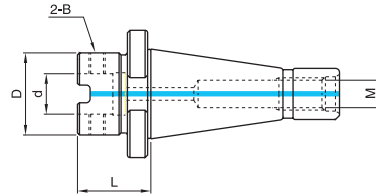
● DIN69871-AD MX MODULAR OIL FEED Type

CODE NO.	d	L	D	D1	M	B
SK40-OMX-32100	32	100	65	88	M16	MTB-12195
SK50-OMX-32100	32	100	65	98	M24	
SK50-OMX-50110	50	110	80	115	M24	MTB-16260

MX HOLDER

NT-MXA/NT-OMX

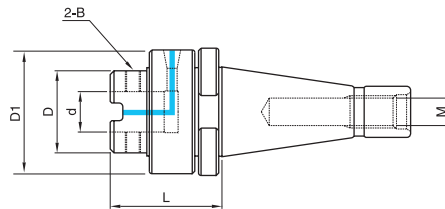
●MX MODULAR HOLDER 은 가공 장비에 절삭유 공급장치가 장착 되지 않았거나 툴장이 짧아 외부 절삭유 공급할 경우 MXA type 의 베이직홀더를 사용하십시오. 스피들 내부로 절삭유가 공급되면 최상의 조건으로 드릴 작업을 할 수 있습니다.



● DIN2080 MX MODULAR Type

CODE NO.	d	L	D	M	B
NT40-MXA-32050	32	50	58	5/8-11 UNC	MTB-12195
NT50-MXA-32050	32	50	58	1"-8 UNC	
NT50-MXA-50080	50	80	80	1"-8 UNC	MTB-16260
NT40-MXA-32050M	32	50	58	M16	MTB-12195
NT50-MXA-32050M	32	50	58	M24	
NT50-MXA-50080M	50	80	80	M24	MTB-16260

●MX MODULAR BASIC HOLDER 은 간이형 오일홀 공급 장치입니다. MXD , TSD , TMD 외 깊은 홀을 드릴링 할 때 사용되는 홀더입니다.

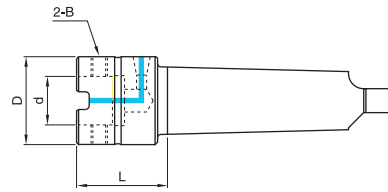


● DIN2080 MX MODULAR OIL FEED Type

CODE NO.	d	L	D	D1	M	B
NT40-OMX-32080	32	80	65	88	5/8-11 UNC	MTB-12195
NT50-OMX-32080	32	80	65	98	1"-8 UNC	
NT50-OMX-50085	50	85	80	115	1"-8 UNC	MTB-16260
NT40-OMX-32080M	32	80	65	88	M16	MTB-12195
NT50-OMX-32080M	32	80	65	98	M24	
NT50-OMX-50085M	50	85	80	115	M24	MTB-16260

MX HOLDER

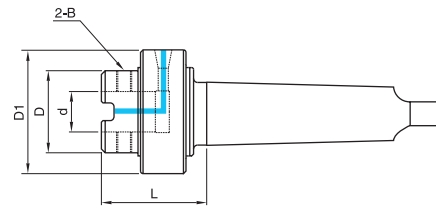
MT-MXA/MT-OMX



● DIN228B/ MX MODULAR Type

CODE NO.	d	L	D	B
MT4-MXA-32060	32	60	58	MTB-12195
MT5-MXA-32060	32	60	58	
MT5-MXA-50080	50	80	80	MTB-16260
MT6-MXA-32065	32	65	58	MTB-12195
MT6-MXA-50080	50	80	80	MTB-16260

●코터홀이 있는 경우 별도 지정해 주시기 바랍니다.



● DIN228B/MX MODULAR OIL FEED Type

CODE NO.	d	L	D	D1	B
MT4-OMX-32075	32	75	65	88	MTB-12195
MT5-OMX-32075	32	75	65	88	
MT5-OMX-50085	50	85	80	115	MTB-16260
MT6-OMX-32075	32	75	65	88	MTB-12195
MT6-OMX-50085	50	85	80	115	MTB-16260

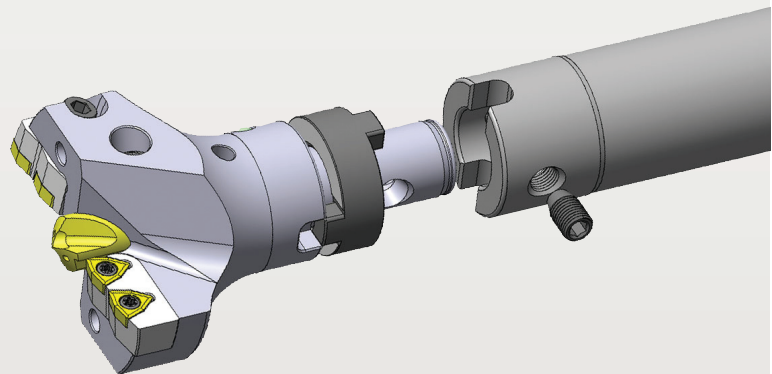
●코터홀이 있는 경우 별도 지정해 주시기 바랍니다.



새로워진 V-MAX Drill! Improved V-MAX Drill!

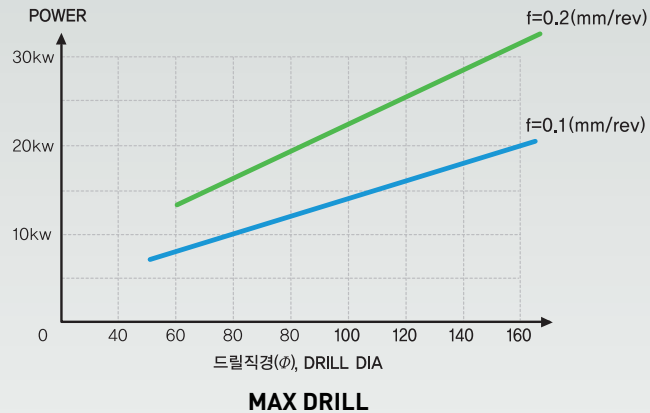
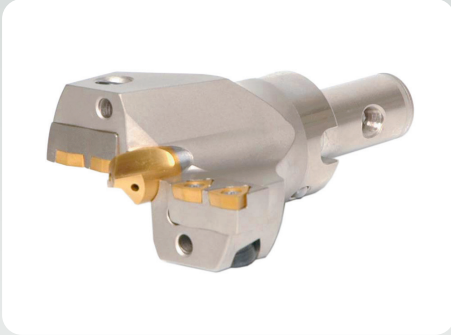


- The drill body treated by forging was much solidier and much stronger in impact.
드릴바디를 단조처리하여 더욱 단단하고 충격에 강하다.
- The especially treated surface of body make the inner-abrasion much better and the life make much longer.
바디표면을 특수표면처리하여 내마모성 및 수명이 길어졌다!
- As this drill was designed more stably, this drill is steady of drilling and is good of economical efficiency.
더욱 안정된 설계로 제작되어 MXD보다 드릴링이 안정되어 경제성이 뛰어나다!
- Drilling diameters are from 45mm to 180mm and the drilling depth is freely adjustable by using the MX modular system.
가공직경 Ø45~Ø180이며, 가공깊이는 MX Modular sytem으로 자유롭게 조절할 수 있다!
- As this drill is Cartridge(VMC) type, the drilling diameters are adjustable.
카트리지(VMC) 타입으로 드릴바디의 수명을 연장시키고 가공직경을 조절할 수 있다!
- We can supply to customers promptly by keeping stable stocks.
안정된 재고관리로 원하시는 제품을 신속히 사용할 수 있다!

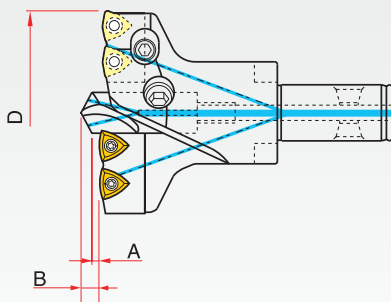


- The connecting strength by the MX moduler system is excellent and the drilling depth is freely adjustable by connecting MXB, MXR and MXA.
- MX 모듈러 시스템에 의한 체결방식으로 체결강성이 뛰어나며, 가공깊이를 MXB, MXR, MXA등으로 연결하여 가공깊이를 자유롭게 조절할 수 있습니다.

POWER REQUIRMENTS



Pilot Drill 높이

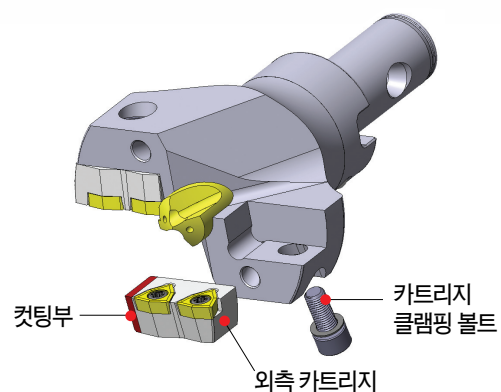


드릴경 D	2~4 x D		4~6 x D		6~8 x D	
	A	B	A	B	A	B
45-55	1.6	4.0	1.8	4.2	2.0	4.4
55-75	1.8	5.4	2.0	5.6	2.2	5.8
75-100	2.2	6.5	2.5	6.8	2.8	7.1
100-120	2.4	7.7	2.8	8.1	3.2	8.5
120-170	3.2	9.9	3.6	10.3	4.0	10.7
170-180	3.5	12.2	3.9	12.6	4.3	13.0

The diameter adjusting procedures of VMD(MXD)

VMD(MXD) 가공직경 조절방법

- 1) Loosen the clamping bolt of the outer cartridge and remove it from the drill body.
외측카트리지를, 카트리지 클램핑 볼트를 풀어 바디에서 이탈시킨다.
- 2) Cut off the inside part, the contacted side of the outer cartridge by milling after calculating the drilling diameter.
외측카트리지의 측면 밀착부를, 가공하려는 직경을 계산하여 밀링작업한다.
- 3) Slick the sharp corner of the cut cartridge.
컷팅된 외측카트리지의 날카로운 모서리면을 모따기 처리한다.



- 4) Adhere the cartridge closely to the drill body not happen gap and fix the cartridge with bolt tightly.
외측카트리지를 틈이 발생되지 않도록 바디에 밀착시키면서 카트리지 클램핑 볼트로 단단히 고정한다.

Example If you set VMD-135140 to $\phi 136$
VMD-135140을 $\phi 136$ 로 셋팅한다면

The standard drill diameter is $\phi 140$ so $\phi 140 - \phi 136 = 4 \Rightarrow 4 \div 2 = 2$ [calculation by semidiameter], 2mm is cut off.

기본 직경은 $\phi 140$ 이므로, $\phi 140 - \phi 136 = 4 \Rightarrow 4 \div 2 = 2$ (반지름으로 계산, 2mm를 컷팅한다.

▶VMD, MXD 절삭조건표 (Recommended cutting values for VMD, MXD)

	재질구분	Vc (m/min)	이송 (mm/rev)						
			φ45~φ55	φ55~φ60	φ60~φ75	φ75~φ100	φ100~φ105	φ105~φ150	φ150~φ180
Steel 강	탄소강 (~0.25%) (Low-alloy steel)	120~180	0.06~0.10	0.07~0.11	0.08~0.12	0.1~0.14	0.14~0.2	0.08~0.12	0.1~0.14
	탄소강 (0.25%~) (High-alloy steel)	110~170	0.06~0.1	0.07~0.11	0.08~0.12	0.1~0.14	0.12~0.18	0.08~0.12	0.1~0.14
	합금강 (~HB300) (Low-alloy steel)	90~130	0.06~0.1	0.07~0.11	0.08~0.12	0.1~0.14	0.12~0.18	0.08~0.12	0.1~0.14
	합금강 (HB300~) (High-alloy steel)	60~100	0.05~0.07	0.05~0.07	0.06~0.08	0.06~0.1	0.09~0.13	0.06~0.08	0.06~0.1
Stainless steel 스테인레스강	Stainless steel 스테인레스강	60~110	0.04~0.07	0.04~0.11	0.06~0.12	0.08~0.14	0.1~0.18	0.06~0.12	0.08~0.14
Cast iron 주철	회주철 Grey cast iron	120~180	0.07~0.13	0.07~0.15	0.08~0.16	0.1~0.18	0.12~0.22	0.08~0.16	0.1~0.18
	구상흑연주철 Cast iron with nodular cast iron	100~180	0.04~0.13	0.07~0.15	0.08~0.16	0.1~0.25	0.12~0.26	0.08~0.16	0.1~0.25
Nonferrous metals 비철금속	알루미늄 단조강 Aluminium forging alloys	180~280	0.04~0.06	0.07~0.12	0.08~0.13	0.09~0.15	0.12~0.2	0.08~0.13	0.09~0.15
	알루미늄 주물강 Aluminium cast alloys	120~270	0.04~0.06	0.06~0.12	0.08~0.13	0.09~0.15	0.12~0.2	0.08~0.13	0.09~0.15