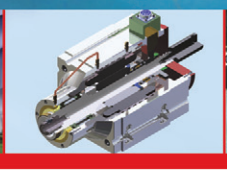
www.timspindle.co.kr

TIM Spindle

Technological Innovation Manufactures



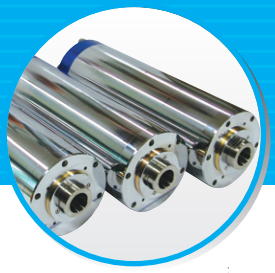






TIM SPINDLE

Technological Innovation Manufactures



TIM HIGH FREQUENCY SPINDLES

고주파 스핀들은 스핀들 내부에 높은 회전수에 맞게 설계된 모터를 내장하고 있는 형태의 스핀들이며 그로인해 고속가공을 좀 더 안정적으로 수행 할 수 있어 반도체 웨이퍼, 정밀유리연삭, 핸드폰 케이스, 정밀자동차 부품, 정밀조각 가공 등에 널리 사용되고 있습니다.
고주파 스핀들은 공구의 장착방법에 따라 분류 할 수 있으며 공구를 스패너 등의 체결공구를 이용하여 교체하는 Manual Tool Change 타입과 공구를 공압 및 유압 실린더를 이용하여 자동으로 교체하는 Automatic Tool Change 타입으로 크게 나누어 사용자의 용도에 맞게 선택 할 수 있도록 카다로그를 제작하였습니다.

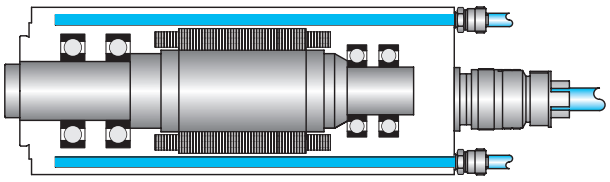
High-frequency spindle has a motor which is designed fit for high spindle speed. Because high-speed machining can be performed in a more stable manner, high-frequency spindle has been widely used in semiconductor waper, precision glass grinding, mobile phone case, precision automotive parts and precision machining.
Depending tool replacement method, high-frequency spindle has been classified into 'Manual Tool Change' in which tools are replaced using replacement tools such as spanner and 'Automatic Tool Change' in which tools are automatically replaced using pneumatic cylinder and hydraulic cylinder for users' convenience.

TIM High Frequency Spindles for Manual Tool Change Type is Characteristics

01 ▸ Liquid cooling

수냉방식으로 모터의 일정온도 유지와 베어링부의 냉각효과를 얻을 수 있어 스핀들의 고정도 유지와 스핀들의 수명을 연장시켜 줍니다.

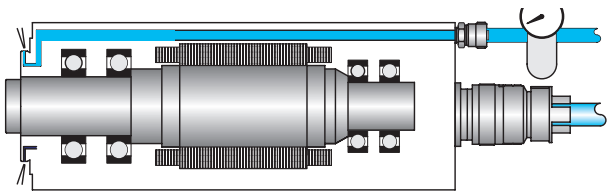
Based on water-cooling method, it keeps the temperature of motor at a certain level and cools bearing unit. As a result, it keeps the spindle highly precise and prolongs its life.



02 ▸ Air purge

팀스핀들의 독특한 에어퍼지 구조로 외부로 부터의 절삭유 및 이물질의 침입을 차단하여 베어링의 수명을 연장시켜 줍니다.

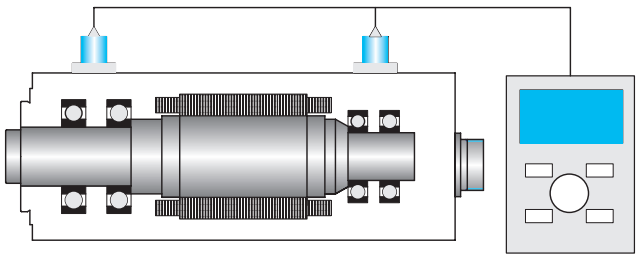
The unique air purge structure of TIM spindle prevents cutting oil and foreign substances from entering inside and extends the life of bearing.



03 ▸ Balancing

바란스 측정장치를 이용하여 조립된 상태에서의 바란스 교정을 통해 스핀들의 진동을 최소화 하여 가공품질 향상에 힘쓰고 있습니다.

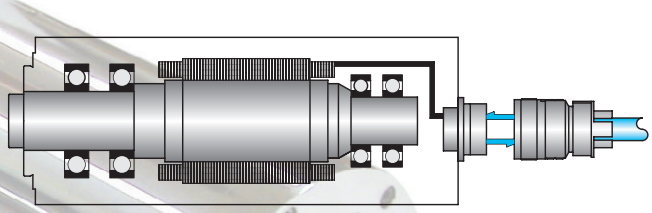
Through balance calibration using a balance meter, spindle vibration is minimized to improve processing quality.

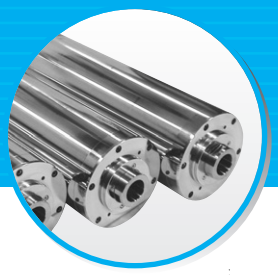


4 ▸ Connecting

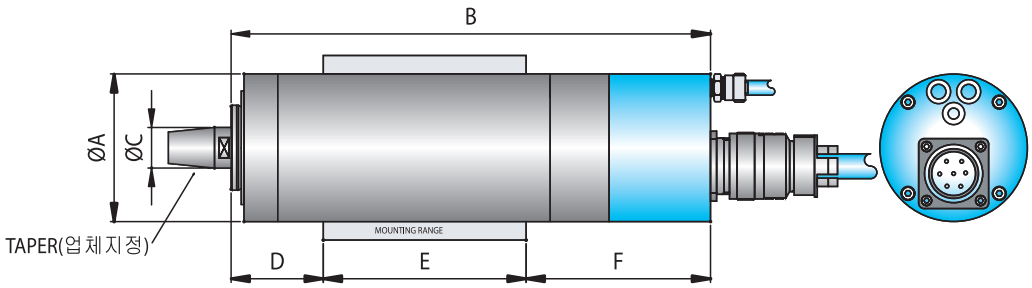
스핀들의 전원 및 센서의 연결은 리드선 방식이 아닌 콘넥터를 이용한 안정적인 결합방식을 사용하여 스핀들의 장착과 분해가 쉽고 안정적입니다.

Spindle power and sensor are connected using a connector instead of lead wire for easy installation and removal of spindle and stability.





THA



휠을 휠후렌지를 이용하여 장착하는 타입
Wheels are installed using wheel flange.

사양 (Specification)

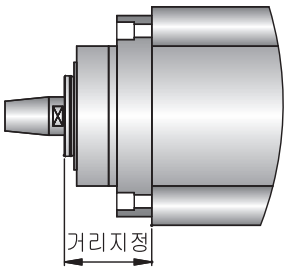
THA A-B	MAX.C	D	E	F	MAX. Torque	kw/rpm	Volt	MAX rpm. Steel/Ceramic	Weight
THA 62-240	18	40	100	100	0.2	1.2/48000	220	30000/48000	6kg
THA 80-260	26	50	110	100	1.3	3.0/42000	220	24000/42000	8kg
THA 90-260	26	50	110	100	0.5	2.2/42000	220	24000/42000	10kg
THA 90-300	32	50	120	130	1.3	3.0/24000	220	20000/30000	12kg
THA 100-300	32	60	130	110	1.7	4.5/24000	380	20000/30000	16kg
THA 120-300	38	60	130	110	6.0	10/18000	380	15000/24000	21kg
THA 140-450	57	100	200	150	12	15/12000	380	12000/18000	45kg

※ 취부 거리는 필요한 경우 변경가능하며 변경시에는 상담하여 주십시오.
※ Mounting distance can be adjusted if necessary. For the adjustment, please contact us in advance.

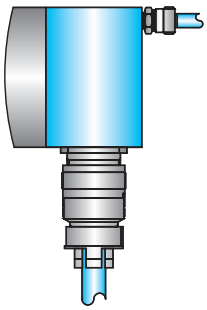
› Option

› 별도 견적 사항 (Separate quote)

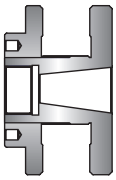
플렌지형 장착가공- FL
Flange-type installation processing - FL

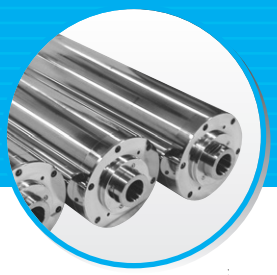


90도 앵글형 콘넥터- CA
90° angle-type connector - CA

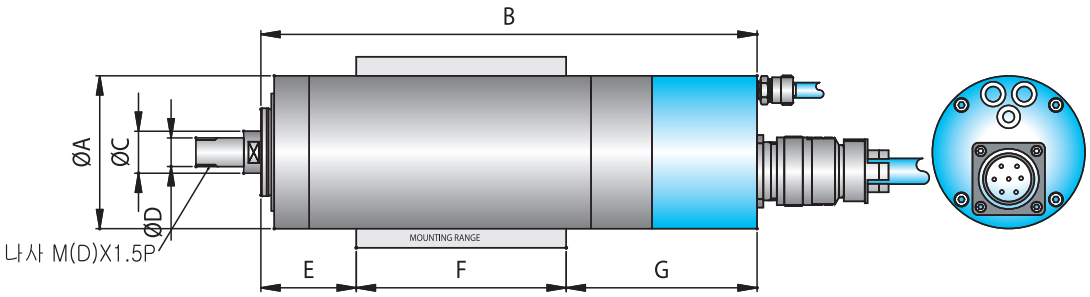


휠 후렌지
Wheel flange





THC



휠을 축에 바로 장착하는 타입
Wheels are directly installed onto axes.

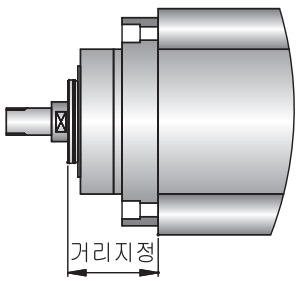
사양 (Specification)

THC A-B	MAX.C	D	E	F	G	MAX. Torque	kw/rpm	Volt	MAX rpm. Steel/Ceramic
THC 62-240	18	12	40	100	100	0.2	1.2/48000	220	30000/48000
THC 80-260	26	20	50	110	110	1.3	3.0/42000	220	24000/42000
THC 90-300	32	20	50	120	120	1.3	3.0/24000	220	20000/30000
THC 100-300	32	20	60	130	130	1.7	4.5/24000	380	20000/30000
THC 120-300	38	25.4	60	130	130	6.0	10/18000	380	15000/24000
THC 140-450	57	40	100	200	200	12	15/12000	380	12000/18000

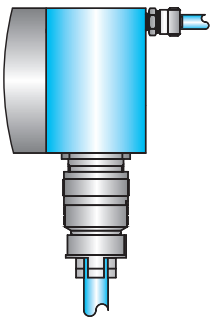
※ 무게는 THA참조하시고 취부 거리는 필요한 경우 변경가능하며 변경시에는 상담하여 주십시오.
※ Mounting distance can be adjusted if necessary. For the adjustment, please contact us in advance.

› Option

플렌지형 장착가공- FL
Flange-type installation processing - FL

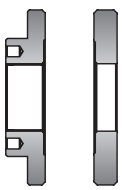


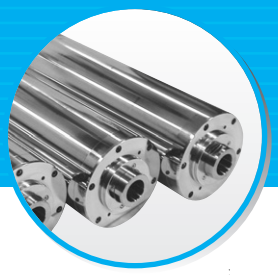
90도 앵글형 콘넥터- CA
90° angle-type connector - CA



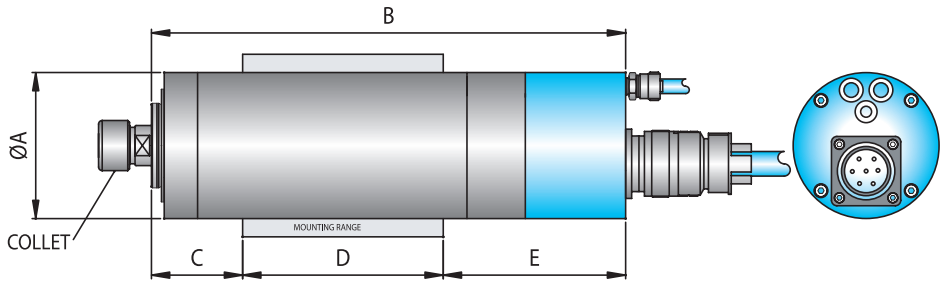
› 별도 견적 사항 (Separate quote)

휠 커버/너트
Wheels Cover / Nut





THR



공구를 콜렛을 이용하여 장착하는 타입
Tools are installed using collet.

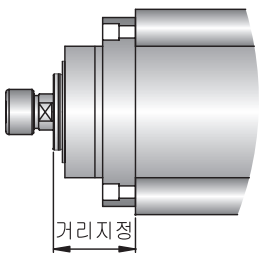
사양 (Specification)

THR A-B	COLLET	C	D	E	MAX. Torque	kw/rpm	Volt	MAX rpm. Steel/Ceramic/Ceramic+Oil
THR 62-240	ER11-Ø6 SK6-Ø6	40	100	100	0.2	1.2/48000	220	30000/48000/-
THR 80-260	ER16-Ø10 SK10-Ø10	50	110	100	1.3	3.0/42000	220	24000/42000/50000
THR 90-260	ER16-Ø10 SK10-Ø10	50	110	100	0.5	2.2/42000	220	24000/42000/50000
THR 90-300	ER25-Ø16 SK16-Ø16	50	120	130	1.3	3.0/24000	220	20000/30000/-
THR 100-300	ER25-Ø16 SK16-Ø16	60	130	110	1.7	4.5/24000	380	20000/30000/40000
THR 120-300	ER32-Ø20 SK16-Ø16	60	130	110	6.0	10/18000	380	15000/24000/30000
THR 140-450	ER40-Ø25 SK25-Ø25	100	200	150	12	15/12000	380	12000/18000/-

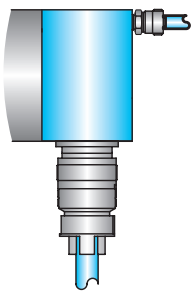
※ 무게는 THA참조하시고 취부 거리는 필요한 경우 변경가능하며 변경시에는 상담하여 주십시오.
※ Mounting distance can be adjusted if necessary. For the adjustment, please contact us in advance.

› Option

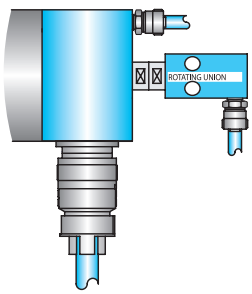
플렌지형 장착가공- FL
Flange-type installation processing - FL

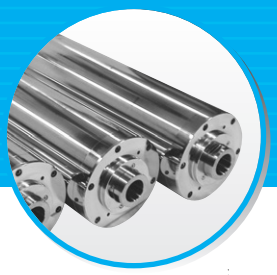


90도 앵글형 콘넥터- CA
90° angle-type connector - CA

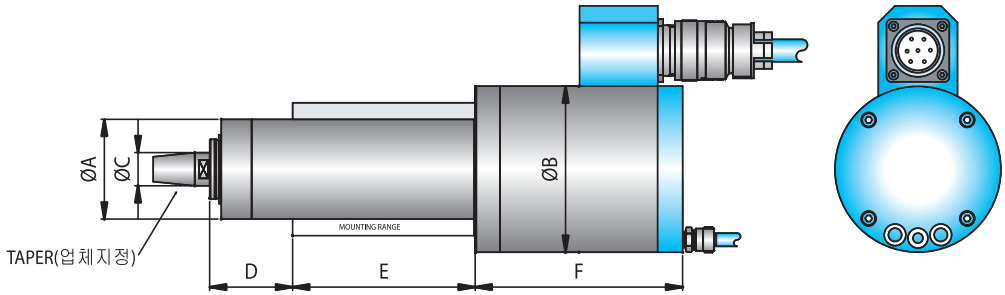


90도 앵글형 콘넥터+로타리유니온- CAR
90°angle-type connector + rotary union - CAR





THW



휠을 휠후렌지를 이용하여 장착하며 가공공간의 활용을 위해 모터부를 뒤에 배치하여 공구부의 스핀들 직경을 최소화 하며 모타의 출력을 유지하는 타입

Wheels are installed using wheel flange. To take advantage of a machining space, it is installed behind a motor. As a result, it minimizes the spindle diameter in the tools and maintains motor output.

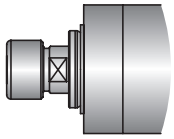
사양 (Specification)

THW A-B	MAX.C	D	E	F	MAX. Torque	kw/rpm	Volt	MAX rpm. Steel/Ceramic	Weight
THW 62-80	18	50	150	150	0.5	1.6/30000	220	24000/30000	9kg
THW 80-120	26	50	150	180	1.2	3.0/24000	220/380	18000/24000	26kg
THW 100-140	32	70	180	250	6.0	10/18000	380	15000/21000	40kg
THW 120-180	38	70	180	250	12	15/12000	380	12000/18000	62kg

※ 취부 거리는 필요한 경우 변경가능하며 변경시에는 상담하여 주십시오.
※ Mounting distance can be adjusted if necessary. For the adjustment, please contact us in advance.

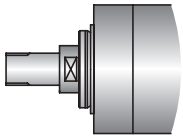
› 적용가능한 Tool 장착방식
Applicable tool installation method

COLLET방식- THR참조
Direct Collet - Refer to THR



THWR

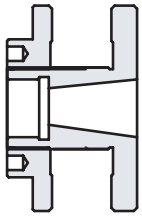
축에 바로 끼우는 방식- THC참조
Direct installation onto the spindle - Refer to THC

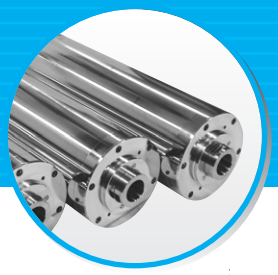


THWC

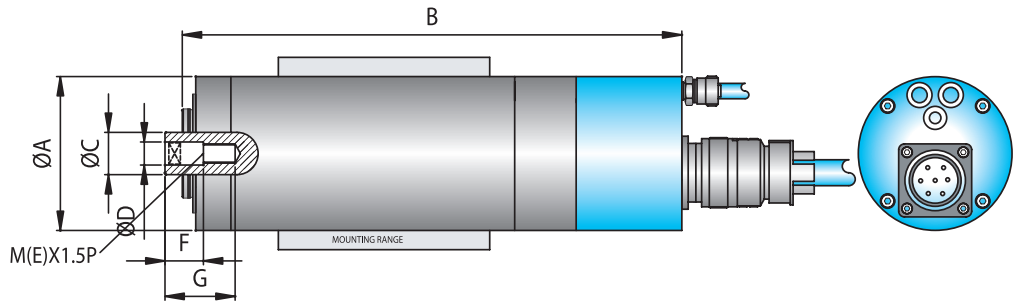
› 별도 견적 사항
(Separate quote)

휠 후렌지- WF
Wheel flange - WF





THP



TOOL HOLDER를 이용하여 축에 나사 결합하는 타입

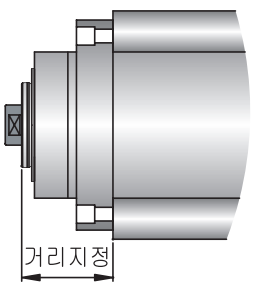
사양 (Specification)

THP A-B	C	D	E	F	G	MAX. Torque	kw/rpm	Volt	MAX rpm. Steel/Ceramic/Ceramic+Oil
THP 62-240	18	12	10	15	35	0.2	1.2/48000	220	30000/48000/-
THP 80-260	27	16	14	24	45	1.3	3.0/42000	220	24000/42000/50000
THP 90-260	27	16	14	24	45	0.5	2.2/42000	220	24000/42000/50000
THP 90-300	32	18	16	28	50	1.3	3.0/24000	220	20000/30000/-
THP 100-300	37	22	20	34	60	1.7	4.5/24000	380	20000/30000/40000
THP 120-300	42	26	24	42	67	6.0	10/18000	380	15000/24000/30000
THP 140-450	53	32	30	46	71	12	15/12000	380	12000/18000/-

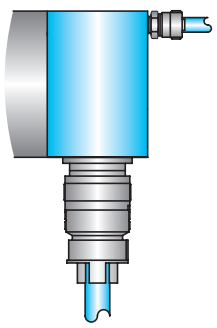
※ 무게와 취부 거리는 THA참조하시고 취부 거리는 필요한 경우 변경가능하며 변경시에는 상담하여 주십시오.
※ Mounting distance can be adjusted if necessary. For the adjustment, please contact us in advance.

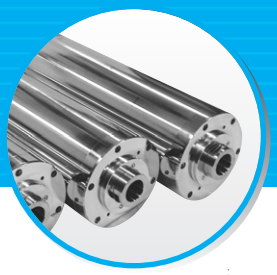
› Option

플렌지형 장착가공- FL
Flange-type installation processing - FL

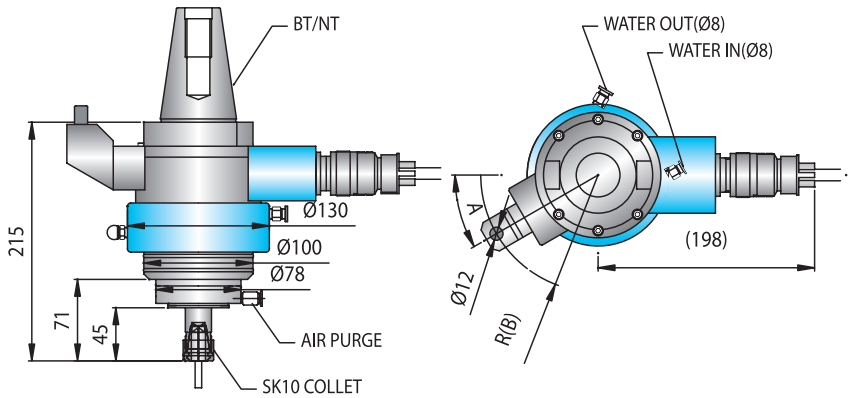


90도 앵글형 콘넥터- CA
90° angle-type connector - CA





THM



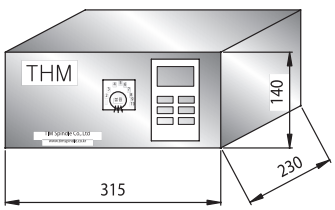
기존 사용중인 기계에 부착하여 고속드릴링 및 엔드밀 가공을 가능하게 하며 기존의 기어식 증속기가 아니라 모터를 사용하기 때문에 가공조도가 좋은점이 특징이며 운전장치를 기본으로 포함합니다.

It can be installed in the existing machine and enables high-speed drilling and end milling. Since a motor is used instead of the conventional gear box, it is good in terms of machining roughness. Operating devices are installed.

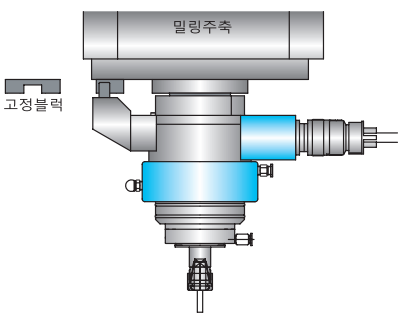
사양 (Specification)

THM NO.	BT/NT no.	A	B	Weight	MAX. Torque	kw/rpm	Volt	MAX rpm. Steel/Ceramic
THM 30	BT30/NT30	0°	R45	9kg	1.0	2.2/24000	220	20000/30000
THM 40	BT40/NT40	0°	R67.5	10kg	1.0	2.2/24000	220	20000/30000
THM 50	BT50/NT50	30°	R107.5	12kg	1.0	2.2/24000	220	20000/30000

› 운전장치

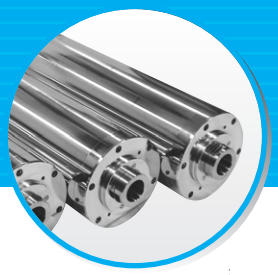


› 스핀들 회전방지 장치 장착 예

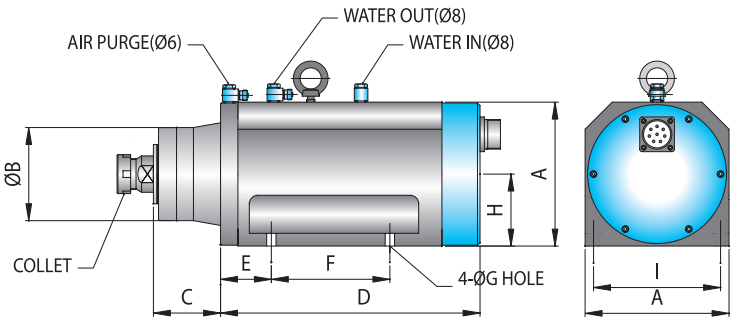


› Option





THMR



스핀들을 별도의 브라켓 설치 없이 바로 베드면에 장착 가능하며 블럭부를 AL소재로 사용하여 무게를 줄였고 다양한 공구취부 형태의 이용이 가능하도록 설계된 스핀들입니다.

Spindle can be directly installed onto the bed surface without separate installation of bracket. The block unit is made of aluminum to reduce weight. Tool mounting is available in diverse shapes.

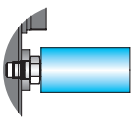
사양 (Specification)

THMR A.	COLLET	B	C	D	E	F	G	H	I	MAX. Torque	kw/rpm	Volt	MAX rpm. Steel/Ceramic
THMR 140	ER25-Ø16 SK16-Ø16	100	25	260	60	120	9	70	100	1.7	4.5/24000	220/380	15000/24000
THMR 170	ER32-Ø20	120	80	310	60	140	11	85	120	6.0	10/18000	220/380	12000/18000
THMR 220	ER40-Ø25 SK25-Ø25	140	100	340	60	140	11	110	140	12	15/12000	220/380	9000/15000

※ 취부 홀 거리는 필요한 경우 변경가능하며 변경시에는 상담하여 주십시오.
※ Mounting hole distance can be adjusted if necessary. For the adjustment, please contact us in advance.

› Option

로타리유니온 – RU

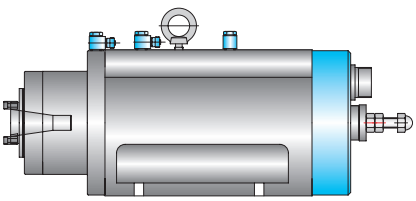


ATC기능 추가 – ATC

	Weight
THMR 140	27kg
THMR 170	37kg
THMR 220	70kg

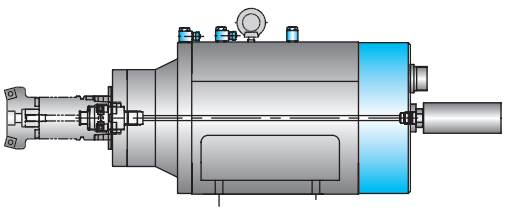
› 적용가능한 Tool 장착방식 (Applicable tool installation method)

Manual Tool Change BT/NT 방식

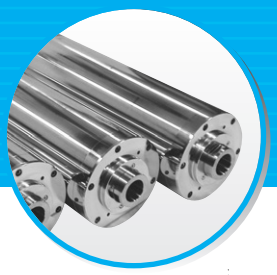


THMR 170-BT30/NT30
THMR 220-BT40/NT40

Manual Tool Change HSK-C 방식

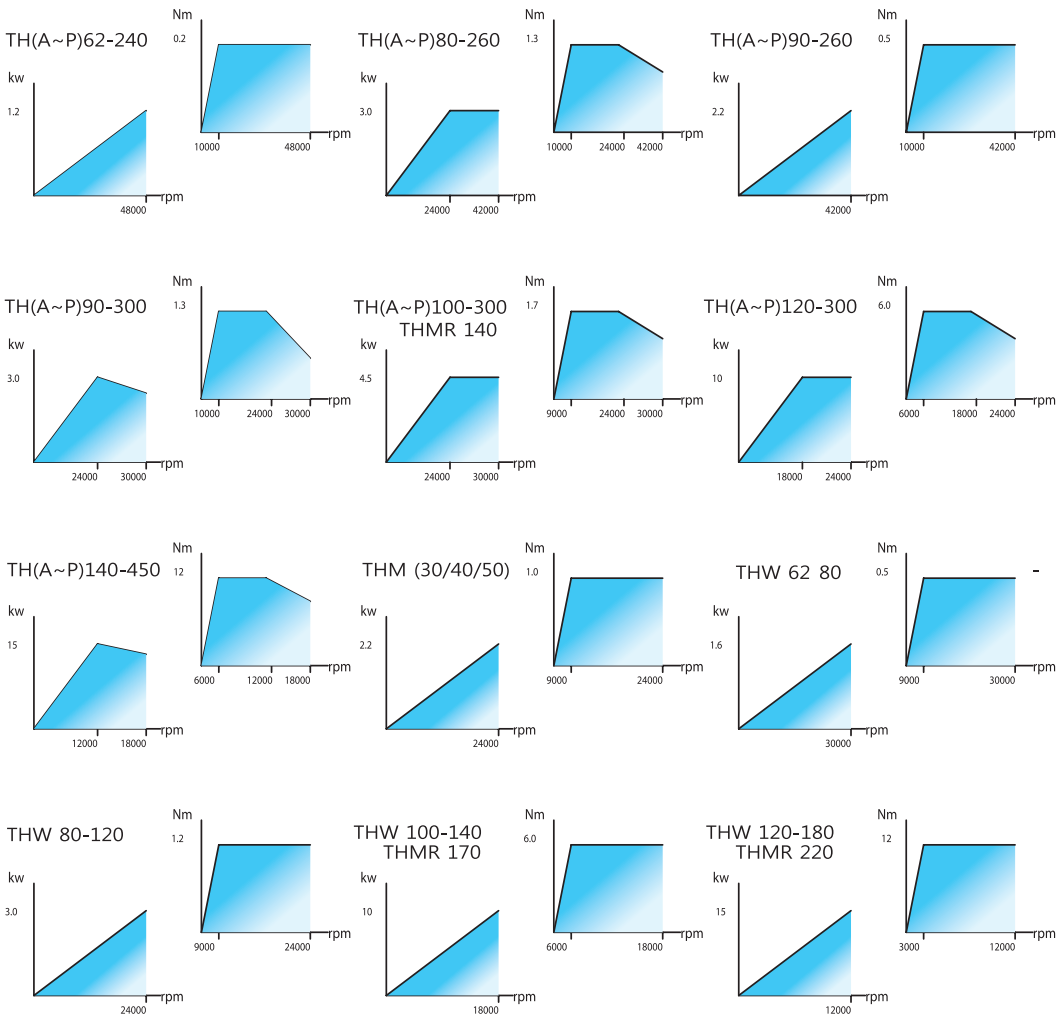


THMR 170-HSK 40C
THMR 220-HSK 63C

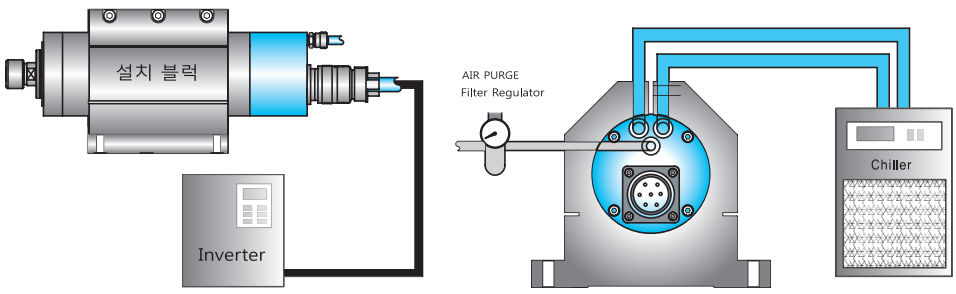


MOTOR 특성(Motor Features)

Power & Toque



주변기기의 설치 (Installation of Peripheral Devices)





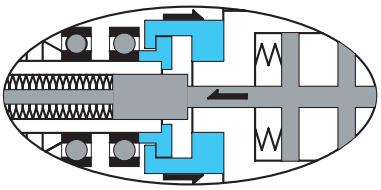
ATC TYPE 특성 (ATC Features)

TIM High Frequency Spindles for Automatic Tool Change Type is Characteristics

01 Clamping systen

스핀들의 공구교체시 실린더의 압력이 베어링에 전달되는 것을 방지하기 위해 축을 잡고 실린더가 작동하도록 되어 있어 공구교체시 베어링에 충격을 주지않습니다.

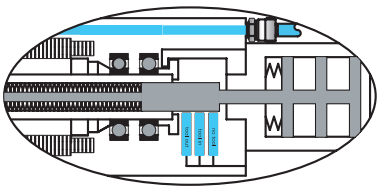
It is designed to prevent cylinder pressure from penetrating into bearing at replacement of spindle tools. No shock will be imposed on bearing at the replacement of tools.



02 Position sensor

3개의 근접센서를 이용하여 공구의 장착상태를 빠짐없이 관찰 할 수 있어 공구교체시의 오작동 및 제품불량을 줄일 수 있습니다.

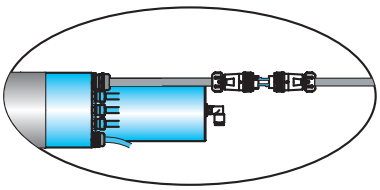
Whether or not tools are tightly installed can be thoroughly observed using three proximity sensors so that malfunction rates at replacement of tools and defect rates can be reduced.



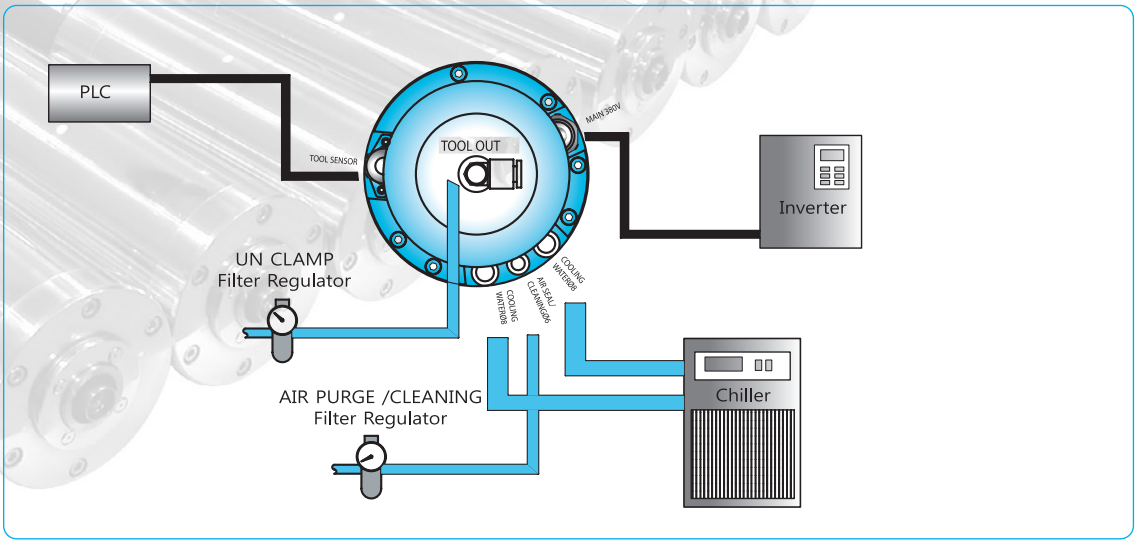
03 Connecting

스핀들의 전원 및 센서의 연결은 리드선 방식이 아닌 콘넥터를 이용한 안정적인 결합방식을 사용하여 스핀들의 장착과 분해가 쉽고 안정적입니다.

Spindle power and sensor are connected using a connector instead of lead wire for easy installation and removal of spindle and stability.



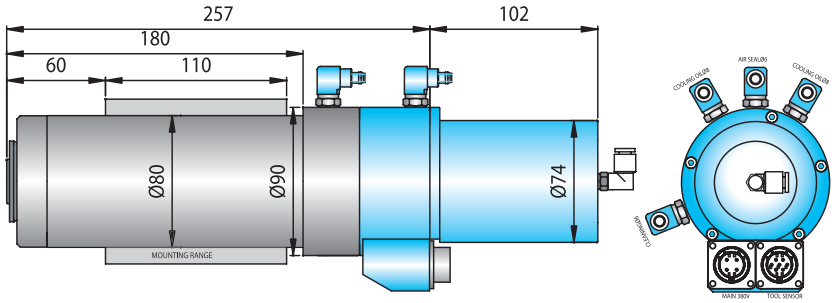
주변기기의 설치 (Installation of Peripheral Devices)

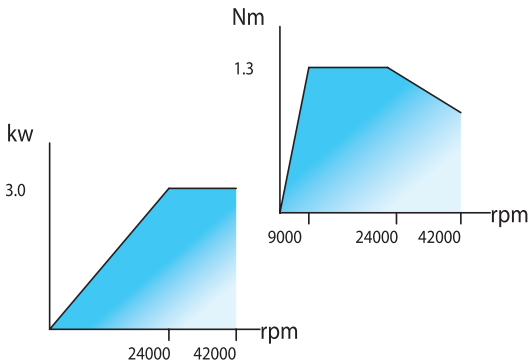




THMS 80 THMS 90

THMS 80 >

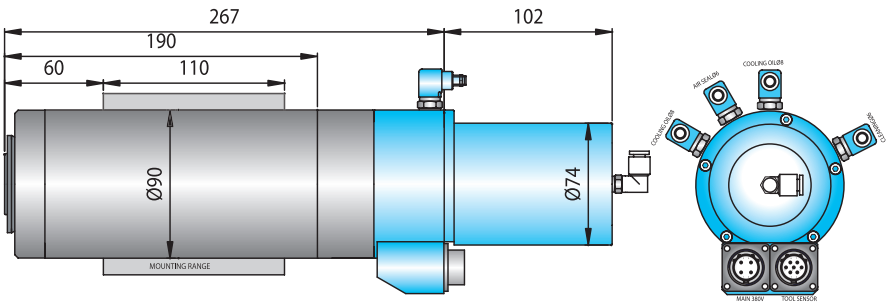


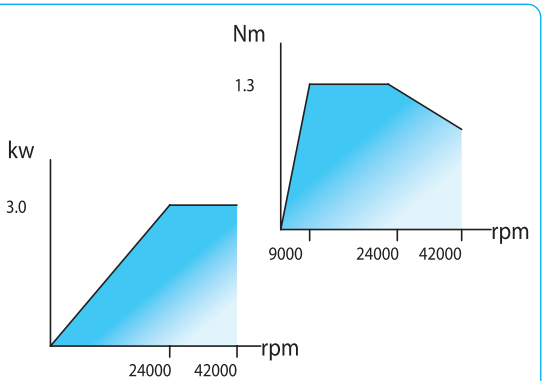


사양 (Specification)

Max. RPM	Steel 24000/Ceramic 42000
TOOL HOLDER	HSK-E25/ISO20, BT20
VOLTAGE	220V/380V
POWER	3.0kw
TORQUE	1.3Nm
TOOLCHANGE	PNEUMATIC 5bar/3Sensor
LUBRICATION	GREASE
WEIGHT	9kg

THMS 90 >





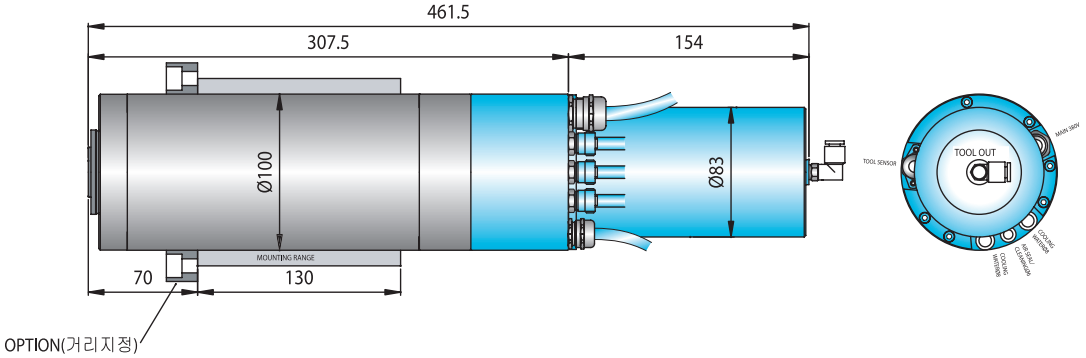
사양 (Specification)

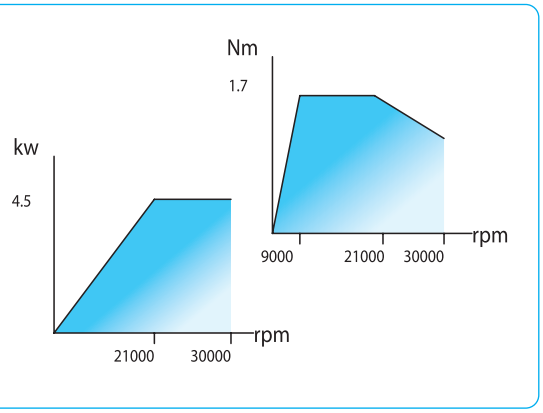
Max. RPM	Steel 21000/Ceramic 40000
TOOL HOLDER	HSK-E32
VOLTAGE	220V/380V
POWER	3.0kw
TORQUE	1.3Nm
TOOLCHANGE	PNEUMATIC 5bar/3Sensor
LUBRICATION	GREASE
WEIGHT	11kg



THMS 100 THMS 120

THMS 100 >

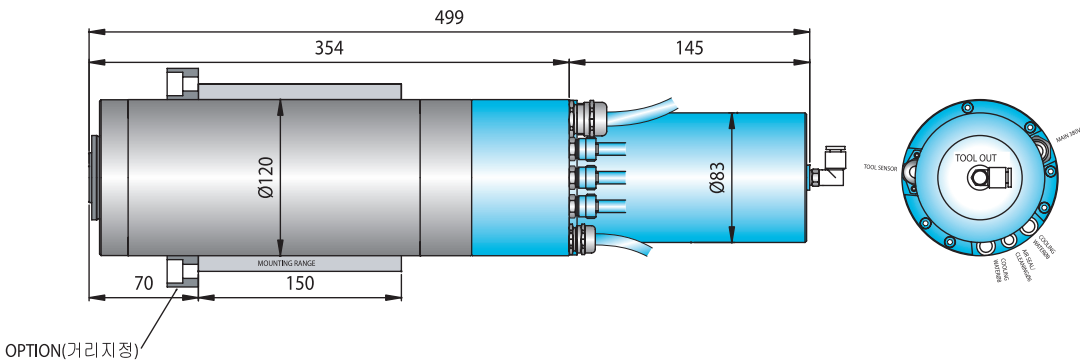


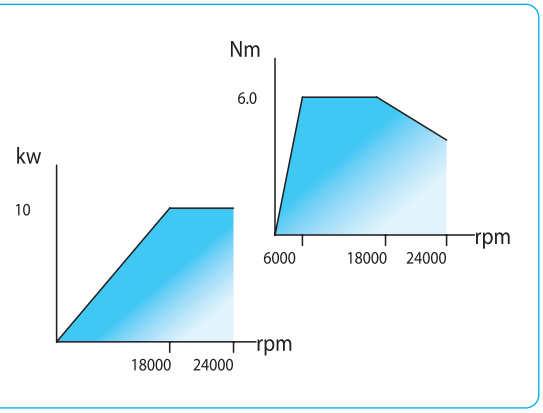


사양 (Specification)

Max. RPM	Steel 18000/Ceramic 30000
TOOL HOLDER	HSK-E32
VOLTAGE	380V
POWER	4.5kw
TORQUE	1.7Nm
TOOLCHANGE	PNEUMATIC 5bar/3Sensor
LUBRICATION	GREASE
WEIGHT	15kg

THMS 120 >





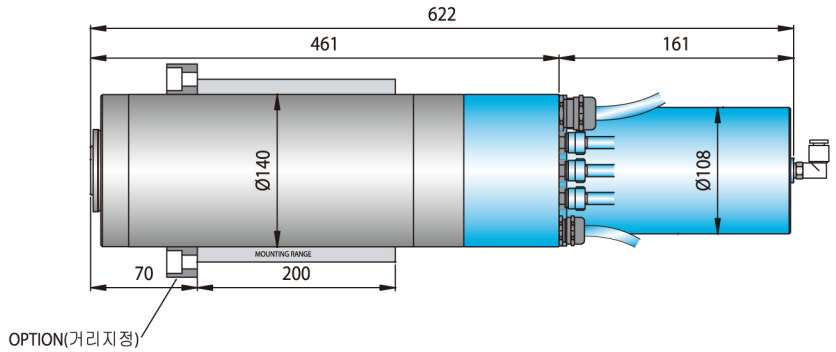
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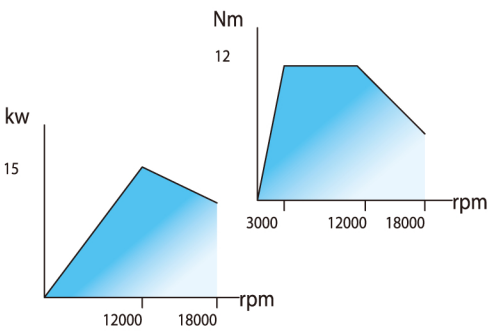
Max. RPM	Steel 15000/Ceramic 24000
TOOL HOLDER	HSK-E40/ISO30, BT30
VOLTAGE	380V
POWER	10kw
TORQUE	6.0Nm
TOOLCHANGE	PNEUMATIC 6bar/3Sensor
LUBRICATION	GREASE
WEIGHT	26kg



THMS 140 THMS 140H

THMS 140 >

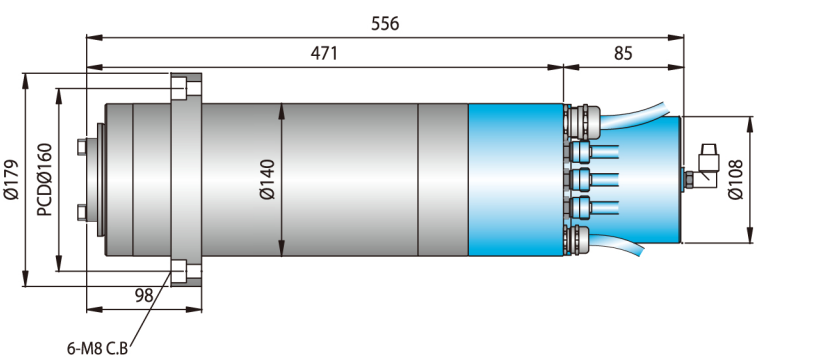


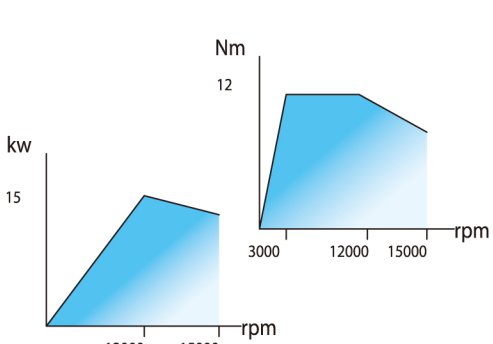


사양 (Specification)

Max. RPM	Steel 12000/Ceramic 18000
TOOL HOLDER	HSK-E63/ISO40, BT40
VOLTAGE	380V
POWER	15kw
TORQUE	12Nm
TOOLCHANGE	PNEUMATIC 8bar/3Sensor
LUBRICATION	GREASE
WEIGHT	55kg

THMS 140H >





사양 (Specification)

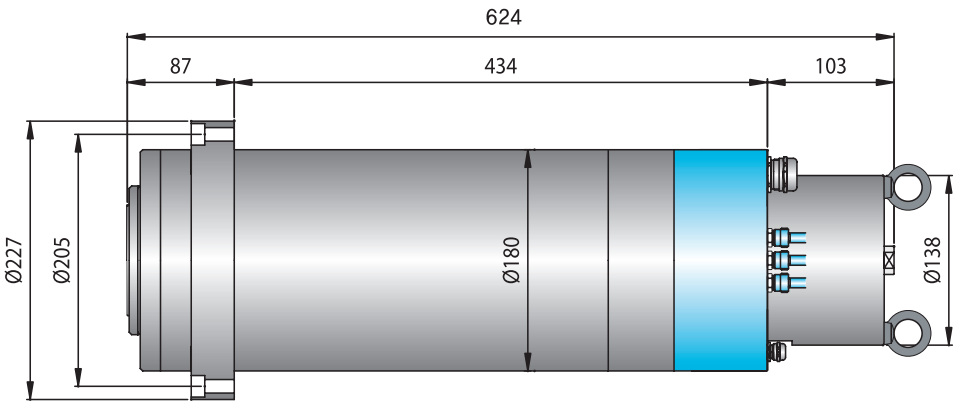
Max. RPM	Steel 10000/Ceramic 15000
TOOL HOLDER	ISO40, BT40
VOLTAGE	380V
POWER	15kw
TORQUE	12Nm
TOOLCHANGE	HYDRAULIC 60bar/3Sensor
LUBRICATION	GREASE
WEIGHT	51kg

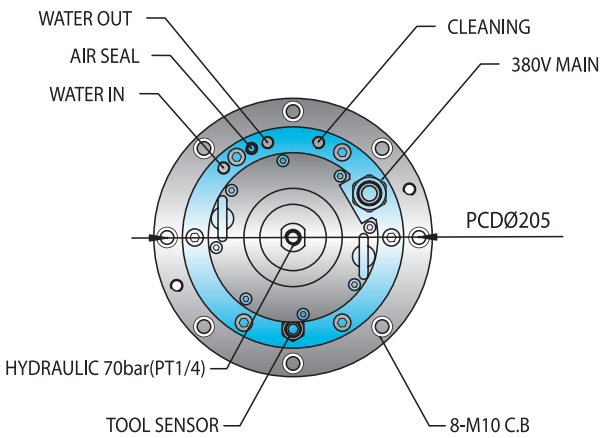


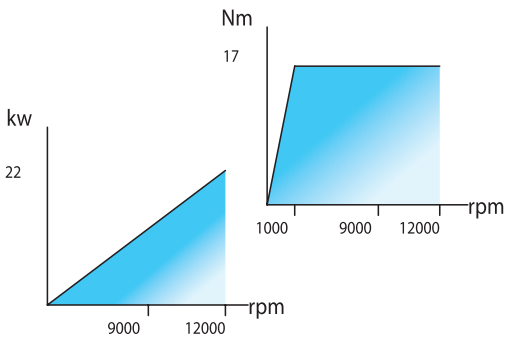
THMS 180

www.timspindle.co.kr

THMS 180 >







사양 (Specification)

Max. RPM	Steel 8000/Ceramic 12000
TOOL HOLDER	ISO50, BT50
VOLTAGE	380V
POWER	22kw
TORQUE	17Nm
TOOLCHANGE	HYDRAULIC 70bar/3Sensor
LUBRICATION	GREASE
WEIGHT	93kg



Technological Innovation Manufactures

TIM SPINDLE
Technological Innovation Manufactures

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