

JIT

CHUCKING SYSTEM

Jul-09



J I T T O O L I N G
just in time

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TOOLING MAKER

JIT TOOLING SYSTEM

ITEM

CNC

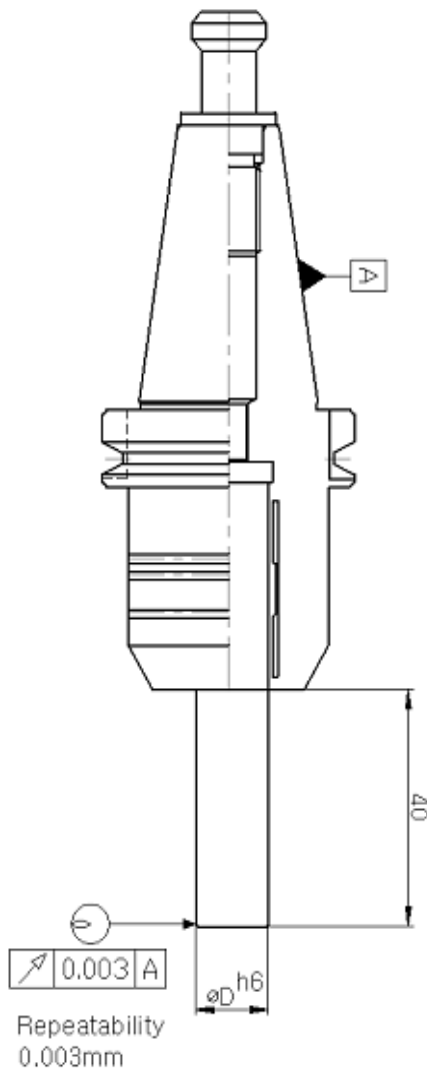
TOOLING

---- 임직원 일동 ----

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HYDRAULIC CHUCK – SANG SU RI TYPE



◎ 특 징 ;

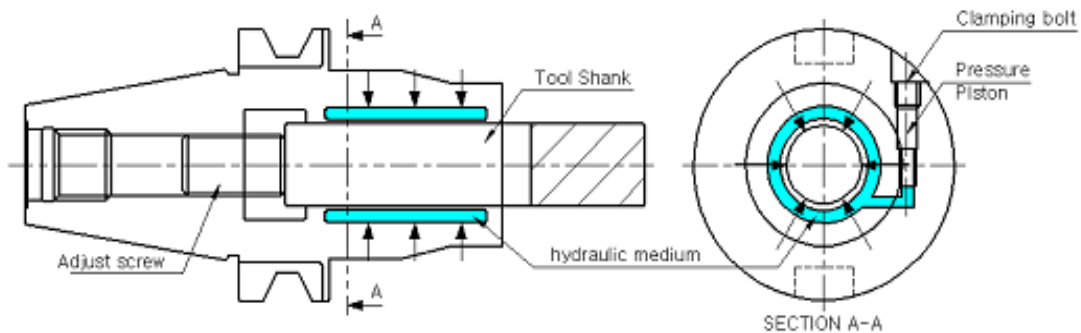
1. : 150% UP (Clamping force $\Phi 20/250\text{KN}$)
가
2. : 0.003 μm
TEST BAR 40mm
3. 15,000rpm (G6.3)
30,000rpm MAX G2.5
(OPTION) – (BODY 가)
4. T- 3
()
5. (Clamping)
6. HOLE SIZE
ISO, BT, SK, HSK, MT, NT, FLANGE TYPE
HOLE SIZE+COLLET(HOLE)

◎ 용 도 ;

1. 가 (가)
2. IT 가 (AL)- 가 (MAX 30,000rpm)
3. 가 가
4. CNC ()
5. ()가 (, ,)
6. FLANGE, TYPE JIG

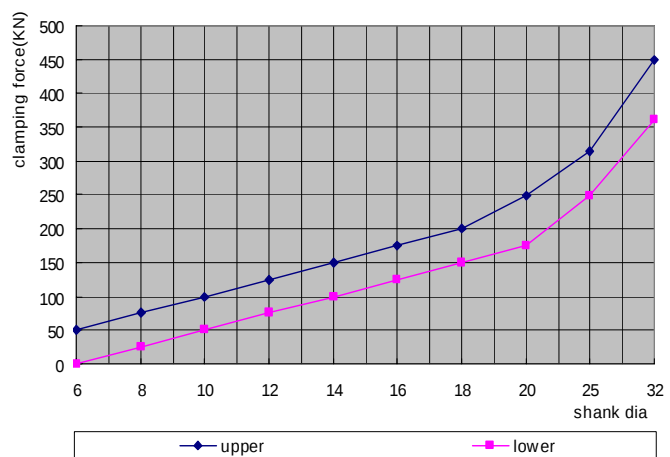
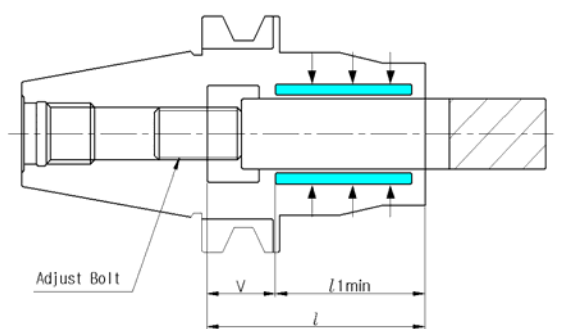
HYDRAULIC CHUCKS의 기본 성능표

1. Construction()

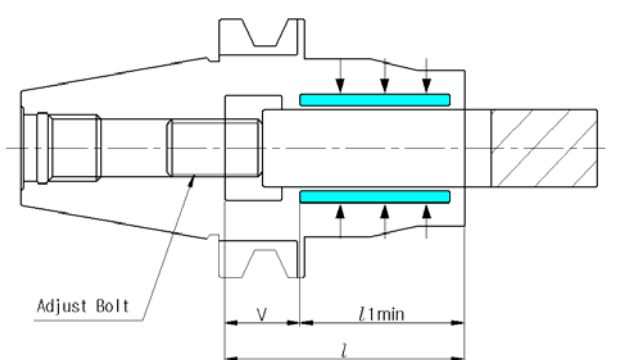


2. Clamping force(Radial, 가)

$$\text{Torque [Nm]} = \frac{\text{Clamping force(KN)} \times \text{Shank dia}[\text{\AA}] \times \text{Coeff frict}[\text{\AA}=0.1-0.15]}{2}$$

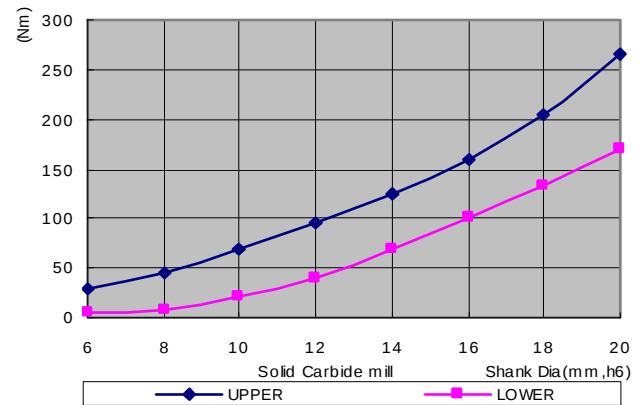
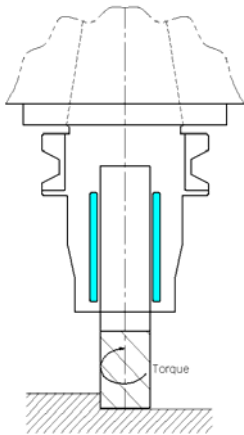


3. Handling()

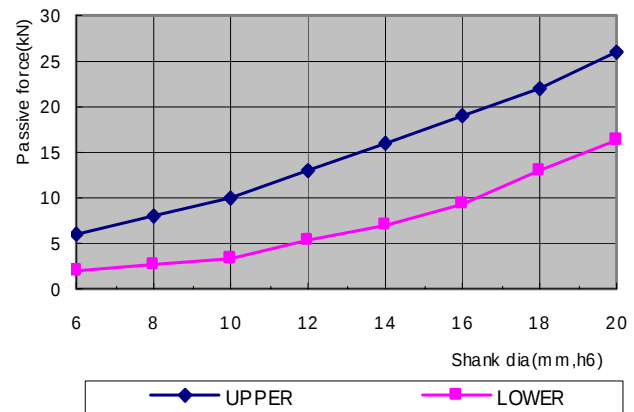
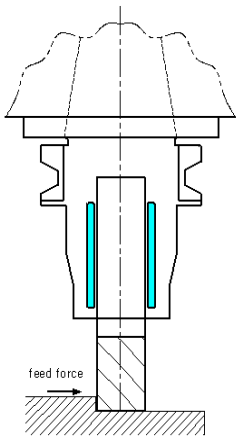


dia	l_1 min	V	Adjust bolt
6	34	10	M5X0.8
8	34	10	M6X1.0
10	36	10	M8X1.0
12	36	10	M10X1
14	38	10	M10X1
16	40	10	M10X1
18	40	10	M10X1
20	42	10	M10X1
25	50	10	M16X1
32	53	10	M16X1

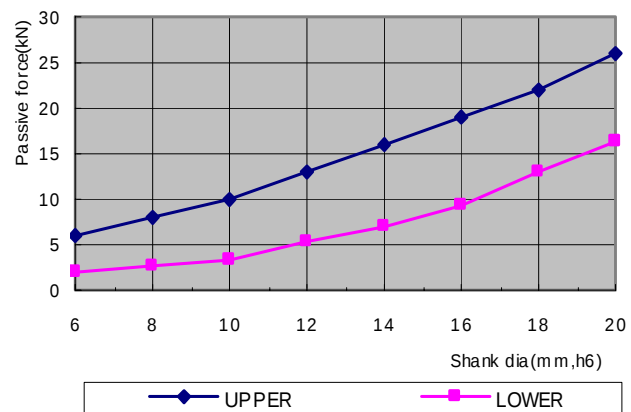
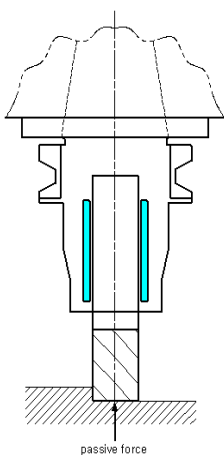
4. Torque()



5. Feed Force()

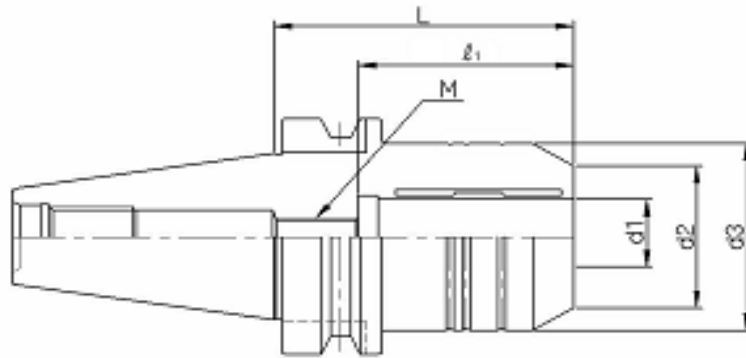


6. Passive Force()



7. Temperature ()

Permissible operating temperature : 15 ~ 70



TAPER	CODE	d1	d2	d3	L	l1(max)	M
BT40	BT40-SHC20-75	20	40	50	75	54	M10
	BT40-SHC20-90	20	40	50	90	54	M10
	BT40-SHC20-120	20	40	50	120	54	M10
SK40	SK40-SHC20-90	20	40	50	90	54	M10
	SK40-SHC20-140	20	40	50	140	54	M10

- 1) UP, 가 DOWN, , 150% UP
- 2) (가)
- 3) RPM 15,000 (G6.3)
- 4) (OPTION)

적용 COLLET(유압척용)



	HOLE SIZE
HK12	¢ 3,4,5,6,7,8
HK20	¢ 3,4,5,6,7,8,9,10,11,12,13,14,15,16,17
HK32	¢ 6,8,10,12,14,16,18,20,25

- 1) 가()
- 2) ()
- 3)

COLLET – CHUCK (ER COLLET TYPE)



◎ 특 징 ;

1. 초정밀급 : 고속가공 대응형

- 1) 나사 및 BODY 전체 정밀연삭가공
- 2) 고속회전 밸런스 보정 (MAX 30,000 rpm)
- 3) 초정밀급 너트 채택 (밸런스 보정품)
- 4) ER COLLET : 초정밀급 (당사공급)

2. 중절삭급 : 강력 절삭형

- 1) 너트 : 중절삭용급 채택 (선택사양)
- 2) TRUST BALL TYPE
- 3) COLLET 체결력 증가
- 4) 당사 제조 너트 채택 (수명연장)

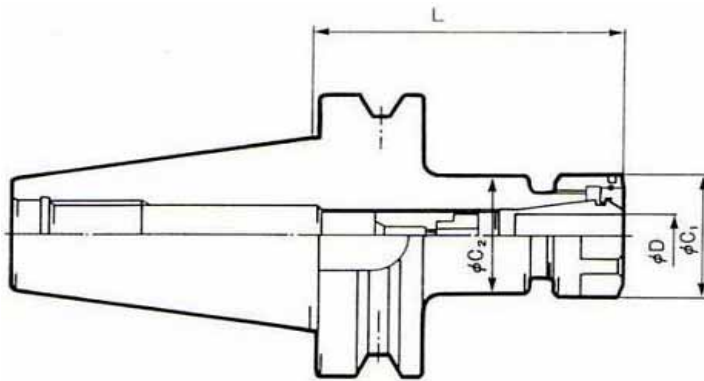
3. 일반급 : 경 절삭형

- 1) 일반적 경절삭 및 종(깊이) 가공용
- 2) 가격 DOWN , 품질 UP
- 3) 다양한 규격 SERIES 생산

◎ 용 도 ;

1. 주로 종(깊이) 가공에 적용되며, 일반적 드릴 링, 탭핑, 선반용 회전공구 등에 사용
2. 초경 소경 드릴 링, 앤드밀, 리밍 센타드릴링, 기타 공구 회전용에 사용
3. 깊은 홈 가공 피삭재 간섭시 LONG TYPE 또는 슬림형으로 간섭 배제용으로 사용
4. 너트 및 ER COLLET 간편교환 (정밀급, 일반급, 강력형)으로 사용 용도에 따라 다양한 선택

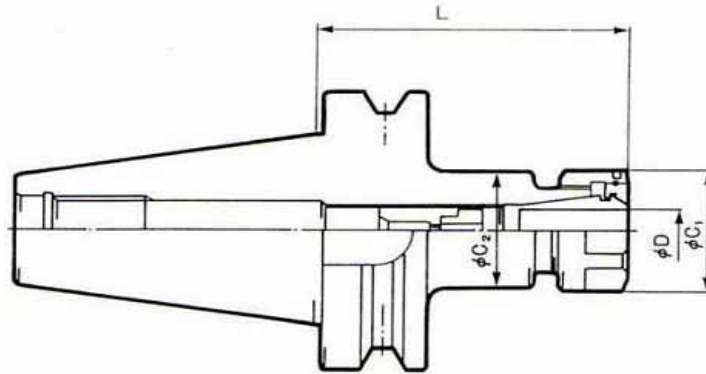
COLLET CHUCK – 일반급(BT MAS-403)



■ 일반급

TAPER NO.	CODE NO.	RANGE	D	L	M	COLLET	NUT	중량(kg)
30	BT30-ER11-70	0.5~7.0	19	70	M6	ER11+ET1-12	UM/ER11	0.5
	BT30-ER11-100	0.5~7.0	19	100	M6	ER11+ET1-12	UM/ER11	0.5
	BT30-ER16-70	0.5~10.0	28	70	M10	ER16+ET1-16	UM/ER16	1.0
	BT30-ER16-100	0.5~10.0	28	100	M10	ER16+ET1-16	UM/ER16	1.1
	BT30-ER20-70	1.0~13.0	34	70	M12	ER20+ET1-20	UM/ER20	1.2
	BT30-ER25-60	1.0~16.0	42	60	M18	ER25+ET1-25	UM/ER25	1.2
	BT30-ER32-60	2.0~20.0	50	60	M18	ER32+ET1-32	UM/ER32	1.4
40	BT40-ER11-70	0.5~7.0	19	70	M6	ER11+ET1-12	UM/ER11	1.0
	BT40-ER11-100	0.5~7.0	19	100	M6	ER11+ET1-12	UM/ER11	1.1
	BT40-ER16-70	0.5~10.0	28	70	M10	ER16+ET1-16	UM/ER16	1.1
	BT40-ER16-100	0.5~10.0	28	100	M10	ER16+ET1-16	UM/ER16	1.2
	BT40-ER16-120	0.5~10.0	28	120	M10	ER16+ET1-16	UM/ER16	1.4
	BT40-ER20-70	1.0~13.0	34	70	M12	ER20+ET1-20	UM/ER20	1.4
	BT40-ER20-100	1.0~13.0	34	100	M12	ER20+ET1-20	UM/ER20	1.8
	BT40-ER20-135	1.0~13.0	34	135	M12	ER20+ET1-20	UM/ER20	2.2
	BT40-ER25-60	1.0~16.0	42	60	M18	ER25+ET1-25	UM/ER25	1.4
	BT40-ER25-100	1.0~16.0	42	100	M18	ER25+ET1-25	UM/ER25	1.8
	BT40-ER25-150	1.0~16.0	42	150	M18	ER25+ET1-25	UM/ER25	2.4
	BT40-ER32-60	2.0~20.0	50	60	M22	ER32+ET1-32	UM/ER32	1.8
	BT40-ER32-100	2.0~20.0	50	100	M22	ER32+ET1-32	UM/ER32	2.2
	BT40-ER32-150	2.0~20.0	50	150	M22	ER32+ET1-32	UM/ER32	2.6
	BT40-ER40-80	3.0~26.0	63	80	M28	ER40+ET1-40	UM/ER40	1.5
	BT40-ER40-150	3.0~26.0	63	150	M28	ER40+ET1-40	UM/ER40	2.8
	BT40-ER50-90	10.0~34.0	78	90	M28	ER50	UM/ER50	1.8
50	BT50-ER16-100	0.5~10.0	28	100	M10	ER16+ET1-16	UM/ER16	4.2
	BT50-ER16-120	0.5~10.0	28	120	M10	ER16+ET1-16	UM/ER16	4.4
	BT50-ER16-165	0.5~10.0	28	165	M10	ER16+ET1-16	UM/ER16	4.6
	BT50-ER20-100	1.0~13.0	34	100	M12	ER20+ET1-20	UM/ER20	4.6
	BT50-ER20-135	1.0~13.0	34	135	M12	ER20+ET1-20	UM/ER20	4.8
	BT50-ER20-165	1.0~13.0	34	165	M12	ER20+ET1-20	UM/ER20	5.0
	BT50-ER25-100	1.0~16.0	42	100	M18	ER25+ET1-25	UM/ER25	4.7
	BT50-ER25-135	1.0~16.0	42	135	M18	ER25+ET1-25	UM/ER25	4.8
	BT50-ER25-165	1.0~16.0	42	165	M18	ER25+ET1-25	UM/ER25	5.0
	BT50-ER32-100	2.0~20.0	50	100	M22	ER32+ET1-32	UM/ER32	5.2
	BT50-ER32-150	2.0~20.0	50	150	M22	ER32+ET1-32	UM/ER32	5.7
	BT50-ER32-180	2.0~20.0	50	180	M22	ER32+ET1-32	UM/ER32	6.0
	BT50-ER40-100	3.0~26.0	63	100	M28	ER40+ET1-40	UM/ER40	5.6
	BT50-ER40-150	3.0~26.0	63	150	M28	ER40+ET1-40	UM/ER40	6.1
	BT50-ER50-100	10.0~34.0	78	100	M36	ER50	UM/ER50	5.8
	BT50-ER50-150	10.0~34.0	78	150	M36	ER50	UM/ER50	6.3

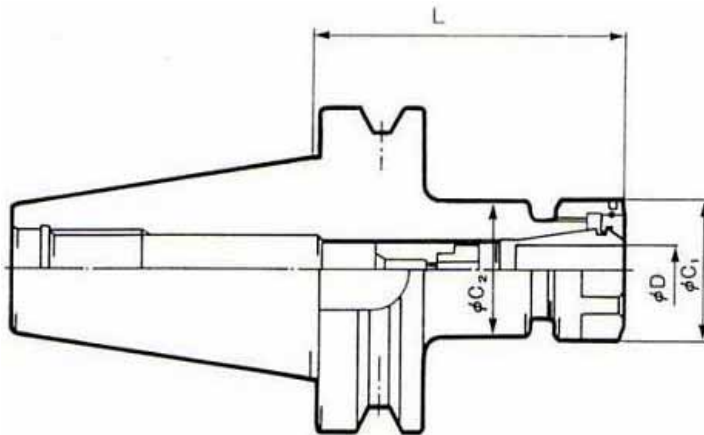
COLLET CHUCK - 정밀급(BT MAS-403)



정밀급

TAPER NO.	CODE NO.	RANGE	D	L	M	COLLET	NUT	중량(kg)
30	BT30-ER11G-70	0.5~7.0	19	70	M6	ER11	UM/ER11G	0.5
	BT30-ER11G-100	0.5~7.0	19	100	M6	ER11	UM/ER11G	0.5
	BT30-ER16G-70	0.5~10.0	28	70	M10	ER16	UM/ER16G	1.0
	BT30-ER16G-100	0.5~10.0	28	100	M10	ER16	UM/ER16G	1.1
	BT30-ER20G-70	1.0~13.0	34	70	M12	ER20	UM/ER20G	1.2
	BT30-ER25G-60	1.0~16.0	42	60	M18	ER25	UM/ER25G	1.2
	BT30-ER32G-60	2.0~20.0	50	60	M18	ER32	UM/ER32G	1.4
40	BT40-ER11G-70	0.5~7.0	19	70	M6	ER11	UM/ER11G	1.0
	BT40-ER11G-100	0.5~7.0	19	100	M6	ER11	UM/ER11G	1.1
	BT40-ER16G-70	0.5~10.0	28	70	M10	ER16	UM/ER16G	1.1
	BT40-ER16G-100	0.5~10.0	28	100	M10	ER16	UM/ER16G	1.2
	BT40-ER16G-120	0.5~10.0	28	120	M10	ER16	UM/ER16G	1.4
	BT40-ER20G-70	1.0~13.0	34	70	M12	ER20	UM/ER20G	1.4
	BT40-ER20G-100	1.0~13.0	34	100	M12	ER20	UM/ER20G	1.8
	BT40-ER20G-135	1.0~13.0	34	135	M12	ER20	UM/ER20G	2.2
	BT40-ER25G-60	1.0~16.0	42	60	M18	ER25	UM/ER25G	1.4
	BT40-ER25G-100	1.0~16.0	42	100	M18	ER25	UM/ER25G	1.8
	BT40-ER25G-150	1.0~16.0	42	150	M18	ER25	UM/ER25G	2.4
	BT40-ER32G-60	2.0~20.0	50	60	M22	ER32	UM/ER32G	1.8
	BT40-ER32G-100	2.0~20.0	50	100	M22	ER32	UM/ER32G	2.2
	BT40-ER32G-150	2.0~20.0	50	150	M22	ER32	UM/ER32G	2.6
	BT40-ER40G-80	3.0~26.0	63	80	M28	ER40	UM/ER40G	1.5
50	BT50-ER16G-100	0.5~10.0	28	100	M10	ER16	UM/ER16G	4.2
	BT50-ER16G-120	0.5~10.0	28	120	M10	ER16	UM/ER16G	4.4
	BT50-ER16G-165	0.5~10.0	28	165	M10	ER16	UM/ER16G	4.6
	BT50-ER20G-100	1.0~13.0	34	100	M12	ER20	UM/ER20G	4.6
	BT50-ER20G-135	1.0~13.0	34	135	M12	ER20	UM/ER20G	4.8
	BT50-ER20G-165	1.0~13.0	34	165	M12	ER20	UM/ER20G	5.0
	BT50-ER25G-100	1.0~16.0	42	100	M18	ER25	UM/ER25G	4.7
	BT50-ER25G-135	1.0~16.0	42	135	M18	ER25	UM/ER25G	4.8
	BT50-ER25G-165	1.0~16.0	42	165	M18	ER25	UM/ER25G	5.0
	BT50-ER32G-100	2.0~20.0	50	100	M22	ER32	UM/ER32G	5.2
	BT50-ER32G-150	2.0~20.0	50	150	M22	ER32	UM/ER32G	5.7
	BT50-ER32G-180	2.0~20.0	50	180	M22	ER32	UM/ER32G	6.0
	BT50-ER40G-100	3.0~26.0	63	100	M28	ER40	UM/ER40G	5.6
	BT50-ER40G-150	3.0~26.0	63	150	M28	ER40	UM/ER40G	6.1
	BT50-ER50G-100	10.0~34.0	78	100	M36	ER50	UM/ER50G	5.8
	BT50-ER50G-150	10.0~34.0	78	150	M36	ER50	UM/ER50G	6.3

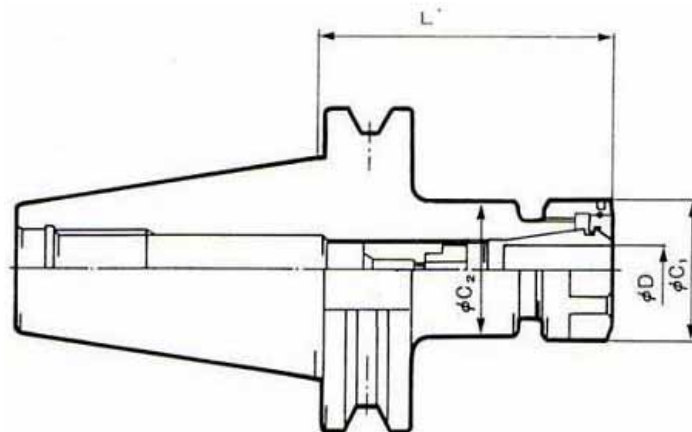
COLLET CHUCK – LONG TYPE (BT MAS-403)



■ 일반급

TAPER NO.	CODE NO.	RANGE	D	L	M	COLLET	NUT
BT30	BT30-ER11-150	0.5~7.0	19	150	M6	ER11	UM/ER11
	BT30-ER16-150	0.5~10.0	28	150	M10	ER16	UM/ER16
	BT30-ER20-150	1.0~13.0	34	150	M12	ER20	UM/ER20
	BT30-ER25-150	1.0~16.0	42	150	M18	ER25	UM/ER25
	BT30-ER32-150	2.0~20.0	50	150	M18	ER32	UM/ER32
BT40	BT40-ER11-200	0.5~7.0	19	200	M6	ER11	UM/ER11
	BT40-ER16-200	0.5~10.0	28	200	M10	ER16	UM/ER16
	BT40-ER20-200	1.0~13.0	34	200	M12	ER20	UM/ER20
	BT40-ER25-200	1.0~16.0	42	200	M18	ER25	UM/ER25
	BT40-ER32-200	2.0~20.0	50	200	M18	ER32	UM/ER32
BT50	BT50-ER16-200	0.5~10.0	28	200	M10	ER16	UM/ER16
	BT50-ER16-250	0.5~10.0	28	250	M10	ER16	UM/ER16
	BT50-ER16-280	0.5~10.0	28	280	M10	ER16	UM/ER16
	BT50-ER20-200	1.0~13.0	34	200	M12	ER20	UM/ER20
	BT50-ER20-250	1.0~13.0	34	250	M12	ER20	UM/ER20
	BT50-ER20-280	1.0~13.0	34	280	M12	ER20	UM/ER20
	BT50-ER25-200	1.0~16.0	42	200	M18	ER25	UM/ER25
	BT50-ER25-250	1.0~16.0	42	250	M18	ER25	UM/ER25
	BT50-ER25-280	1.0~16.0	42	280	M18	ER25	UM/ER25

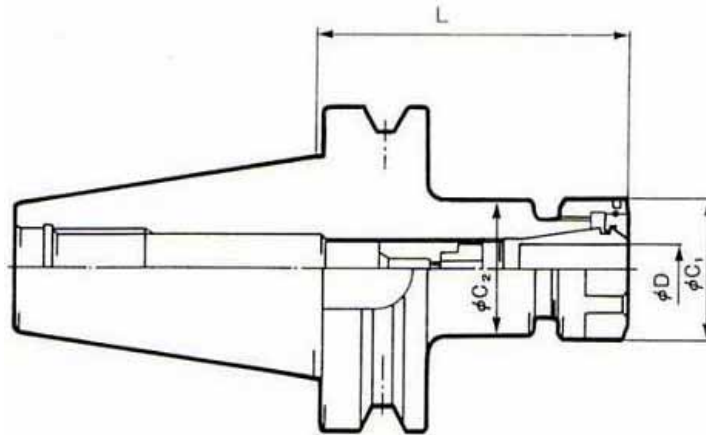
COLLET CHUCK – SK (DIN 69871 FORM A,B)



■ 일반급

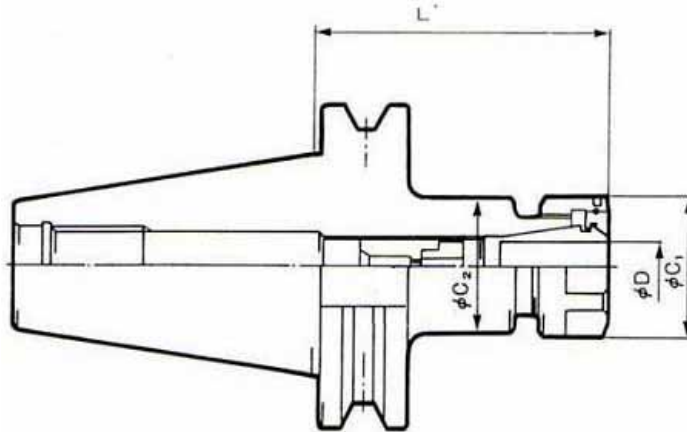
TAPER NO.	CODE NO.	RANGE	L	D	COLLET	NUT
30	SK30-ER11-55	0.5~10.0	55	19	ER11	UM/ER11
	SK30-ER16-65	0.5~10.0	65	28	ER16	UM/ER16
	SK30-ER20-65	1.0~13.0	65	34	ER20	UM/ER20
	SK30-ER25-65	1.0~16.0	65	42	ER25	UM/ER25
	SK30-ER32-65	2.0~20.0	65	50	ER32	UM/ER32
40	SK40-ER11-70	0.5~7.0	70	19	ER11	UM/ER11
	SK40-ER16-65	0.5~10.0	65	28	ER16	UM/ER16
	SK40-ER16-100	0.5~10.0	100	28	ER16	UM/ER16
	SK40-ER20-65	1.0~13.0	65	34	ER20	UM/ER20
	SK40-ER20-100	1.0~13.0	100	34	ER20	UM/ER20
	SK40-ER25-65	1.0~16.0	65	42	ER25	UM/ER25
	SK40-ER25-100	1.0~16.0	100	42	ER25	UM/ER25
	SK40-ER32-65	2.0~20.0	65	50	ER32	UM/ER32
	SK40-ER32-100	2.0~20.0	100	50	ER32	UM/ER32
	SK40-ER40-100	3.0~26.0	100	63	ER40	UM/ER40
50	SK50-ER16-100	0.5~10.0	100	28	ER16	UM/ER16
	SK50-ER16-160	0.5~10.0	160	28	ER16	UM/ER16
	SK50-ER20-100	1.0~13.0	100	34	ER20	UM/ER20
	SK50-ER20-160	1.0~13.0	160	34	ER20	UM/ER20
	SK50-ER25-100	1.0~16.0	100	42	ER25	UM/ER25
	SK50-ER25-150	1.0~16.0	150	42	ER25	UM/ER25
	SK50-ER32-100	2.0~20.0	100	50	ER32	UM/ER32
	SK50-ER32-150	2.0~20.0	150	50	ER32	UM/ER32
	SK50-ER40-100	3.0~26.0	100	63	ER40	UM/ER40
	SK50-ER40-150	3.0~26.0	150	63	ER40	UM/ER40

SYNCHRO TAP CHUCK – STC (BT MAS-403)



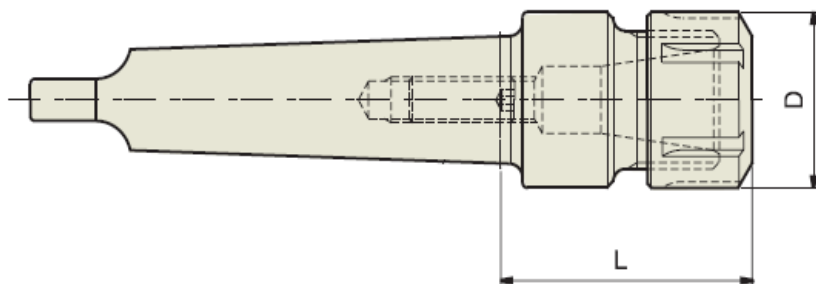
TAPER NO.	CODE NO.	RANGE D	L	C1	C2	COLLET	NUT	중량(kg)
30	BT30-STC16-75	M2.5 ~ M10	75	28	28	STCS16	UM/ER16	0.5
	BT30-STC20-75	M4 ~ M12	75	33	35	STCS20	UM/ER20	0.6
	BT30-STC32-90	M6 ~ M22	90	50	44	STCS32	UM/ER32	0.9
40	BT40-STC16-75	M2.5 ~ M10	75	28	28	STCS16	UM/ER16	1.2
	BT40-STC16-105	M2.5 ~ M10	105	28	28	STCS16	UM/ER16	1.4
	BT40-STC16-150	M2.5 ~ M10	150	28	28	STCS16	UM/ER16	1.4
	BT40-STC20-75	M4 ~ M12	75	35	35	STCS20	UM/ER20	1.2
	BT40-STC20-105	M4 ~ M12	105	35	35	STCS20	UM/ER20	1.4
	BT40-STC20-150	M4 ~ M12	150	35	35	STCS20	UM/ER20	1.4
	BT40-STC32-90	M6 ~ M22	90	50	44	STCS32	UM/ER32	1.4
	BT40-STC32-120	M6 ~ M22	120	50	44	STCS32	UM/ER32	1.8
50	BT40-STC32-180	M6 ~ M22	180	50	44	STCS32	UM/ER32	2.0
	BT50-STC16-90	M2.5 ~ M10	90	28	28	STCS16	UM/ER16	3.8
	BT50-STC16-135	M2.5 ~ M10	135	28	28	STCS16	UM/ER16	4.0
	BT50-STC16-165	M2.5 ~ M10	165	28	28	STCS16	UM/ER16	4.2
	BT50-STC20-90	M4 ~ M12	90	35	35	STCS20	UM/ER20	3.8
	BT50-STC20-135	M4 ~ M12	135	35	35	STCS20	UM/ER20	4.0
	BT50-STC20-165	M4 ~ M12	165	35	35	STCS20	UM/ER20	4.1
	BT50-STC20-200	M4 ~ M12	200	35	35	STCS20	UM/ER20	4.2
	BT50-STC32-105	M6 ~ M22	105	50	44	STCS32	UM/ER32	4.0
	BT50-STC32-135	M6 ~ M22	135	50	44	STCS32	UM/ER32	4.3
	BT50-STC32-165	M6 ~ M22	165	50	44	STCS32	UM/ER32	4.6
	BT50-STC32-200	M6 ~ M22	200	50	44	STCS32	UM/ER32	4.8
	BT50-STC40-105	M12 ~ M33	105	63	63	STCS40	UM/ER40	4.4
	BT50-STC40-165	M12 ~ M33	165	63	63	STCS40	UM/ER40	5.7

SYNCHRO TAP CHUCK – STC (SK DIN 69871-1)



TAPER NO.	CODE NO.	RANGE D	L	C1	C2	COLLET	NUT	중량(kg)
40	SK40-STC16-75	M2.5 ~ M10	75	28	28	STCS16	UM/ER16	1.2
	SK40-STC20-75	M4 ~ M12	75	35	35	STCS20	UM/ER20	1.2
	SK40-STC32-90	M6 ~ M22	90	50	44	STCS32	UM/ER32	1.4
50	SK50-STC16-90	M2.5 ~ M10	90	28	28	STCS16	UM/ER16	3.8
	SK50-STC20-90	M4 ~ M12	90	35	35	STCS20	UM/ER20	3.8
	SK50-STC32-105	M6 ~ M22	105	50	44	STCS32	UM/ER32	4.0

COLLET CHUCK – MT "A", "B" 일반급



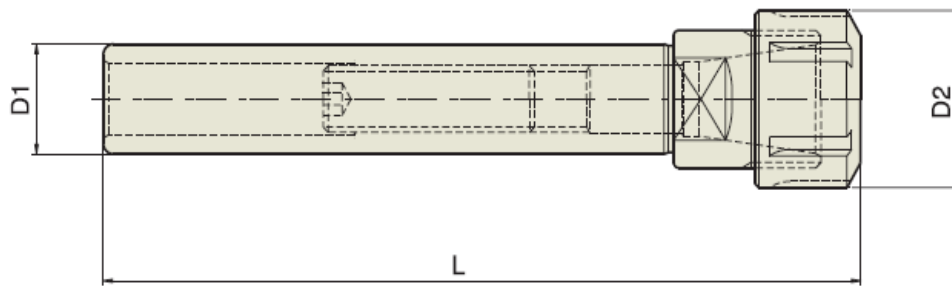
TYPE "A" : TANG TYPE

TYPE "B" : SCREW TYPE

■ 일반급

TAPER NO.	CODE NO.	RANGE	D	L	COLLET	NUT
4	MTA4-ER20-60	1.0~13.0	34	60	ER20+ET1-20	UM/ER20
	MTA4-ER25-60	1.0~16.0	42	60	ER25+ET1-25	UM/ER25
	MTA4-ER32-65	2.0~20.0	50	65	ER32+ET1-32	UM/ER32
	MTB4-ER32-70	2.0~20.0	50	70	ER32+ET1-32	UM/ER32
	MTA4-ER40-80	3.0~30.0	63	80	ER40+ET1-40	UM/ER40
	MTB4-ER40-80	3.0~30.0	63	80	ER40+ET1-40	UM/ER40
5	MTA5-ER32-70	2.0~20.0	50	70	ER32+ET1-32	UM/ER32
	MTB5-ER32-70	2.0~20.0	50	70	ER32+ET1-32	UM/ER32
	MTA5-ER40-80	3.0~30.0	63	80	ER40+ET1-40	UM/ER40
	MTB5-ER40-80	3.0~30.0	63	80	ER40+ET1-40	UM/ER40
	MTA5-ER50-80	6.0~34.0	78	80	ER50	UM/ER50
	MTB5-ER50-80	6.0~34.0	78	80	ER50	UM/ER50

COLLET CHUCK – STRAIGHT SHANK



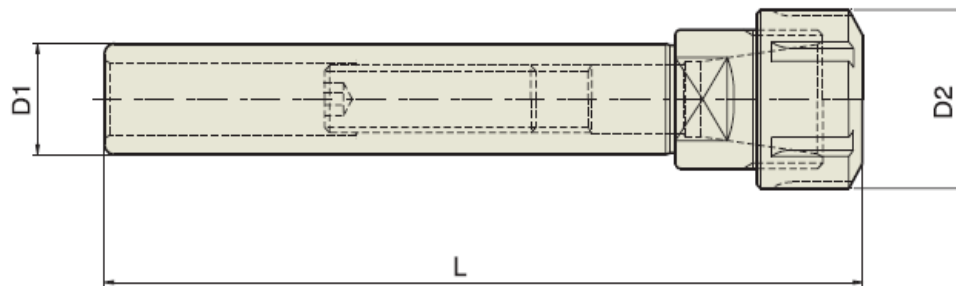
■ 일반급 (M : 밀링용)

TAPER NO.	CODE NO.	RANGE	D1	D2	L	COLLET	NUT
ST16	K16-ER11-120M	0.5~7.0	16	19	120	ER11+ET1-12	UM/ER11
	K16-ER16-140M	0.5~10.0	16	28	140	ER16+ET1-16	UM/ER16
ST20	K20-ER16-140M	0.5~10.0	20	28	140	ER16+ET1-16	UM/ER16
	K20-ER20-140M	1.0~13.0	20	34	140	ER20+ET1-20	UM/ER20
	K20-ER25-150M	1.0~16.0	20	42	150	ER25+ET1-25	UM/ER25
ST25	K25-ER20-140M	1.0~13.0	25	34	140	ER20+ET1-20	UM/ER20
	K25-ER25-150M	1.0~16.0	25	42	150	ER25+ET1-25	UM/ER25
ST32	K32-ER16-140M	0.5~10.0	32	28	140	ER16+ET1-16	UM/ER16
	K32-ER20-140M	1.0~13.0	32	34	140	ER20+ET1-20	UM/ER20
	K32-ER25-150M	1.0~16.0	32	42	150	ER25+ET1-25	UM/ER25
	K32-ER32-165M	2.0~20.0	32	50	165	ER32+ET1-32	UM/ER32

■ 일반급 (T : 선반용)

TAPER NO.	CODE NO.	RANGE	D1	D2	L	COLLET	NUT
ST16	K16-ER11-120M(T)	0.5~7.0	16	19	120	ER11+ET1-12	UM/ER11
	K16-ER16-140M(T)	0.5~10.0	16	28	140	ER16+ET1-16	UM/ER16
ST20	K20-ER16-140M(T)	0.5~10.0	20	28	140	ER16+ET1-16	UM/ER16
	K20-ER20-140M(T)	1.0~13.0	20	34	140	ER20+ET1-20	UM/ER20
	K20-ER25-150M(T)	1.0~16.0	20	42	150	ER25+ET1-25	UM/ER25
ST25	K25-ER20-140M(T)	1.0~13.0	25	34	140	ER20+ET1-20	UM/ER20
	K25-ER25-150M(T)	1.0~16.0	25	42	150	ER25+ET1-25	UM/ER25
ST32	K32-ER16-140M(T)	0.5~10.0	32	28	140	ER16+ET1-16	UM/ER16
	K32-ER20-140M(T)	1.0~13.0	32	34	140	ER20+ET1-20	UM/ER20
	K32-ER25-150M(T)	1.0~16.0	32	42	150	ER25+ET1-25	UM/ER25
	K32-ER32-165M(T)	2.0~20.0	32	50	165	ER32+ET1-32	UM/ER32

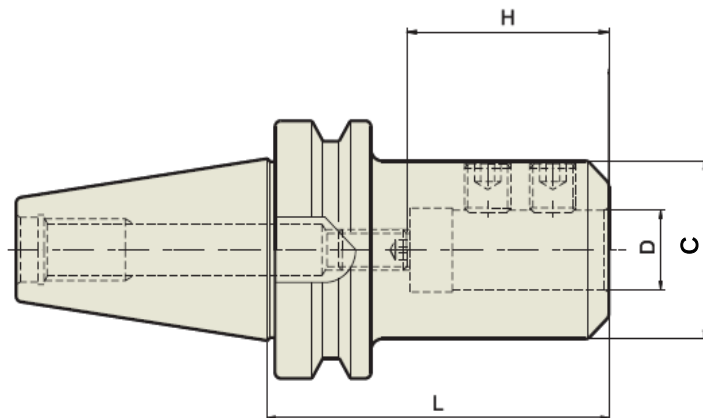
COLLET CHUCK – SLIM LONG TYPE



■ 정밀급 (M : MINI TYPE)

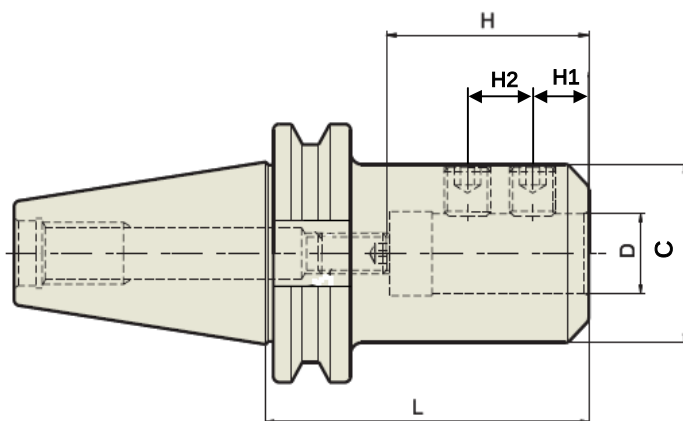
TAPER NO.	CODE NO.	RANGE	D1	D2	L1	L2	NUT
ST16	S16-ER11-150M	0.5~7.0	16	16	150	–	ERM11
	S16-ER11-180M	0.5~7.0	16	16	180	–	ERM11
ST20	S20-ER16-160M	0.5~10.0	20	22	160	–	ERM16
	S20-ER16-200M	0.5~10.0	20	22	200	–	ERM16
	S20-ER16-250M	0.5~10.0	20	22	250	–	ERM16
	S20-ER20-200M	1.0~13.0	20	28	200	–	ERM20
ST25	S25-ER16-200M	0.5~10.0	25	22	200	–	ERM16
	S25-ER16-250M	0.5~10.0	25	22	250	–	ERM16
	S25-ER16-300M	0.5~10.0	25	22	300	–	ERM16
	S25-ER20-160M	1.0~13.0	25	28	160	–	ERM20
	S25-ER20-200M	1.0~13.0	25	28	200	–	ERM20
	S25-ER20-250M	1.0~13.0	25	28	250	–	ERM20
	S25-ER25-200M	1.0~16.0	25	35	200	–	ERM25
ST32	S32-ER20-160M	1.0~13.0	32	28	160	–	ERM20
	S32-ER20-200M	1.0~13.0	32	28	200	–	ERM20
	S32-ER20-250M	1.0~13.0	32	28	250	–	ERM20
	S32-ER25-160M	1.0~16.0	32	35	160	–	ERM25
	S32-ER25-200M	1.0~16.0	32	35	200	–	ERM25
	S32-ER25-250M	1.0~16.0	32	35	250	–	ERM25
ST42	S42-ER25-200M	1.0~16.0	42	35	200	–	ERM25
	S42-ER32-200M	2.0~20.0	42	50	200	–	ER50
	S42-ER32-250M	2.0~20.0	42	50	250	–	ER50

SIDE LOCK ARBOR – SLA (BT MAS-403)



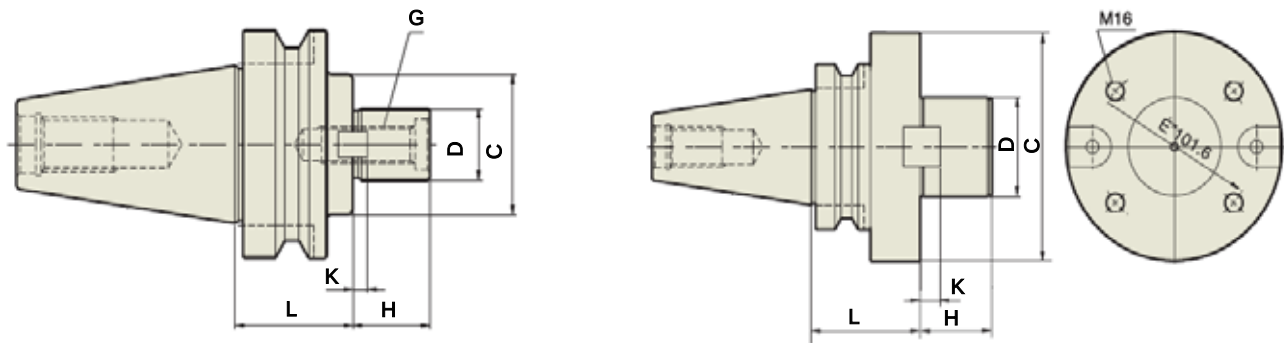
TAPER NO.	CODE NO.	D	L	C	H	
					min	max
30	BT30-SLA 6-60	6	60	25	20	35
	BT30-SLA 8-60	8	60	28	20	35
	BT30-SLA10-60	10	60	35	35	50
	BT30-SLA12-60	12	60	40	35	50
	BT30-SLA16-75	16	75	40	40	55
	BT30-SLA20-75	20	75	50	50	55
	BT30-SLA25-90	25	90	50	55	70
40	BT40-SLA 6-60	6	60	25	20	35
	BT40-SLA 8-60	8	60	28	20	35
	BT40-SLA10-60	10	60	35	35	50
	BT40-SLA12-60	12	60	40	35	50
	BT40-SLA16-90	16	90	40	55	70
	BT40-SLA20-90	20	90	50	55	70
	BT40-SLA25-90	25	90	50	55	70
	BT40-SLA32-90	32	90	60	55	70
50	BT40-SLA40-105	40	105	80	65	80
	BT50-SLA 6-90	6	90	28	20	35
	BT50-SLA 8-90	8	90	28	20	35
	BT50-SLA10-90	10	90	34	35	50
	BT50-SLA12-90	12	90	34	35	50
	BT50-SLA16-105	16	105	42	55	70
	BT50-SLA20-105	20	105	42	55	70
	BT50-SLA25-105	25	105	50	55	70
	BT50-SLA32-105	32	105	50	65	80
	BT50-SLA40-105	40	105	63	65	80

SIDE LOCK ARBOR – SLA (SK DIN 69871-1)



TAPER NO.	CODE NO.	D	L	C	H1	H2
40	SK40-SLA 6-75	6	75	25	18	–
	SK40-SLA 8-75	8	75	28	18	–
	SK40-SLA10-75	10	75	35	20	–
	SK40-SLA12-75	12	75	42	22.5	–
	SK40-SLA16-75	16	75	48	24	–
	SK40-SLA20-75	20	75	52	25	–
	SK40-SLA25-95	25	95	65	24	25
	SK40-SLA32-105	32	105	72	24	28
50	SK50-SLA 6-90	6	90	25	18	–
	SK50-SLA 8-90	8	90	28	18	–
	SK50-SLA10-90	10	90	35	20	–
	SK50-SLA12-90	12	90	42	22.5	–
	SK50-SLA16-90	16	90	48	24	–
	SK50-SLA20-90	20	90	52	25	–
	SK50-SLA25-105	25	105	65	24	25
	SK50-SLA32-120	32	120	72	24	28
	SK50-SLA40-120	40	120	80	30	32

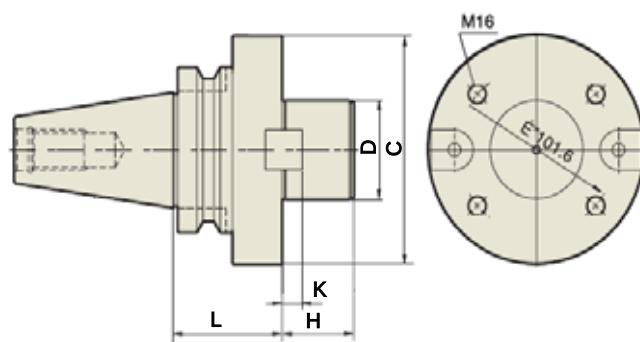
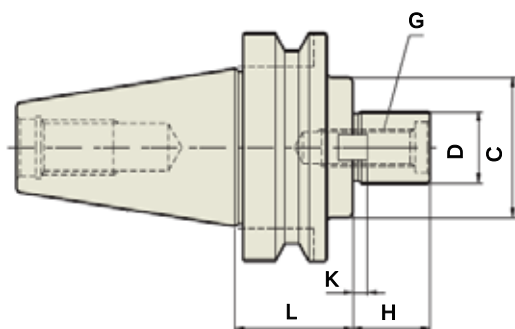
FACE MILL ARBOR – FMA (BT MAS-403)



■ FMA – BT

TAPER NO.	CODE NO.	CUTTER DIA.	D	L	C	H	w	K	G
30	BT30-FMA25.4-45	80	25.4	45	50	22	9.5	5	M12
40	BT40-FMA25.4-45	80	25.4	45	50	22	9.5	5	M12
	BT40-FMA25.4-90	80	25.4	90	50	22	9.5	5	M12
	BT40-FMA31.75-45	100	31.75	45	60	30	12.7	7	M16
	BT40-FMA31.75-75	100	31.75	75	60	30	12.7	7	M16
	BT40-FMA38.1-60	125	38.1	60	80	34	15.9	9	M20
50	BT50-FMA25.4-45	80	25.4	45	50	22	9.5	5	M12
	BT50-FMA25.4-90	80	25.4	90	50	22	9.5	5	M12
	BT50-FMA25.4-150	80	25.4	150	50	22	9.5	5	M12
	BT50-FMA31.75-45	100	31.75	45	60	30	12.7	7	M16
	BT50-FMA31.75-75	100	31.75	75	60	30	12.7	7	M16
	BT50-FMA31.75-105	100	31.75	105	60	30	12.7	7	M16
	BT50-FMA38.1-45	125	38.1	45	80	34	15.9	9	M20
	BT50-FMA38.1-75	125	38.1	75	80	34	15.9	9	M20
	BT50-FMA50.8-45	160	50.8	45	100	36	19.05	10	M24
	BT50-FMA50.8-75	160	50.8	75	100	36	19.05	10	M24
	BT50-FMA47.625-75	200	47.625	75	128	38	25.4	12.5	–

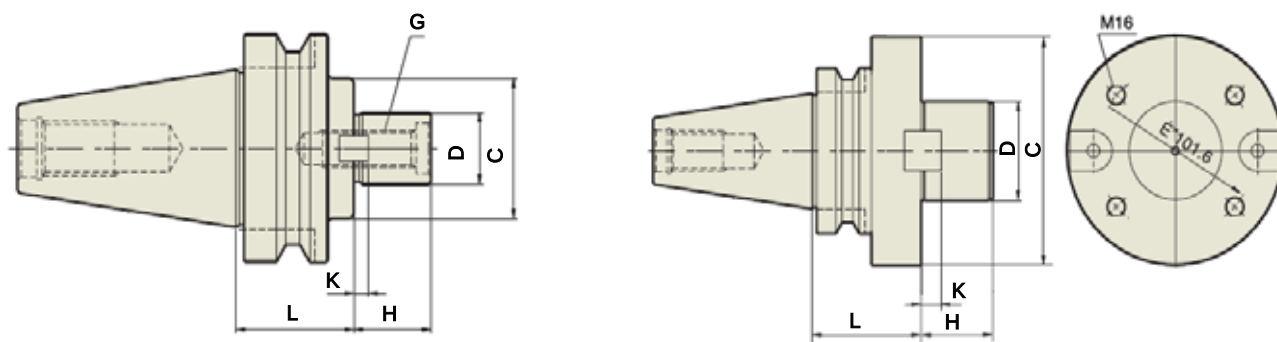
FACE MILL ARBOR – FMA (SK DIN 6987-1)



■ FMA – SK

TAPER NO.	CODE NO.	CUTTER DIA.	D	L	C	H	w	K	G
40	SK40-FMA25.4-45	80	25.4	45	50	22	9.5	5	M12
	SK40-FMA25.4-90	80	25.4	90	50	22	9.5	5	M12
	SK40-FMA31.75-45	100	31.75	45	60	30	12.7	7	M16
	SK40-FMA31.75-75	100	31.75	75	60	30	12.7	7	M16
	SK40-FMA38.1-60	125	38.1	60	80	34	15.9	9	M20
50	SK50-FMA25.4-45	80	25.4	45	50	22	9.5	5	M12
	SK50-FMA25.4-90	80	25.4	90	50	22	9.5	5	M12
	SK50-FMA25.4-150	80	25.4	150	50	22	9.5	5	M12
	SK50-FMA31.75-45	100	31.75	45	60	30	12.7	7	M16
	SK50-FMA31.75-75	100	31.75	75	60	30	12.7	7	M16
	SK50-FMA31.75-105	100	31.75	105	60	30	12.7	7	M16
	SK50-FMA38.1-45	125	38.1	45	80	34	15.9	9	M20
	SK50-FMA38.1-75	125	38.1	75	80	34	15.9	9	M20
	SK50-FMA50.8-50	160	50.8	50	100	36	19.05	10	M24
	SK50-FMA50.8-75	160	50.8	75	100	36	19.05	10	M24
	SK50-FMA47.625-75	200	47.625	75	128	38	25.4	12.5	–

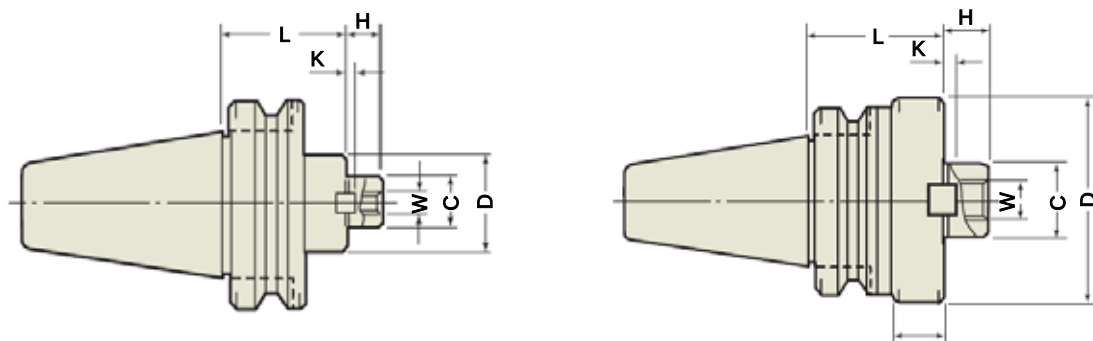
FACE MILL ARBOR – FMB (BT MAS-403)



■ FMB – BT

TAPER NO.	CODE NO.	CUTTER DIA.	D	L	C	H	w	K	G
40	BT40-FMB25.4-60	80	25.4	60	80	26	9.5	5	M12
	BT40-FMB25.4-90	80	25.4	90	80	26	9.5	5	M12
	BT40-FMB27-60	80	27	60	80	26	12	6	M12
	BT40-FMB27-90	80	27	90	80	26	12	6	M12
	BT40-FMB38.1-60	100/125	38.1	60	85	26	15.9	9	M20
	BT40-FMB40-60	100/125	40	60	85	26	16	8.5	M20
50	BT50-FMB25.4-45	80	25.4	45	80	26	9.5	5	M12
	BT50-FMB25.4-90	80	25.4	90	80	26	9.5	5	M12
	BT50-FMB25.4-150	80	25.4	150	80	26	9.5	5	M12
	BT50-FMB27-45	80	27	45	80	26	12	6	M12
	BT50-FMB27-90	80	27	90	80	26	12	6	M12
	BT50-FMB27-150	80	27	150	80	26	12	6	M12
	BT50-FMB38.1-45	100/125	38.1	45	85	26	15.9	9	M20
	BT50-FMB38.1-75	100/125	38.1	75	85	26	15.9	9	M20
	BT50-FMB38.1-105	100/125	38.1	105	85	26	15.9	9	M20
	BT50-FMB38.1F-75	160	38.1	75	110	26	15.9	9	M20
	BT50-FMB40-45	100/125	40	45	85	26	16	8.5	M20
	BT50-FMB40-75	100/125	40	75	85	26	16	8.5	M20
	BT50-FMB40-105	100/125	40	105	85	26	16	8.5	M20
	BT50-FMB40F-75	160	40	75	110	26	16	8.5	M20
	BT50-FMB60-75	200	60	75	140	25	25.4	12.5	–

FACE MILL ARBOR – FMC (BT MAS-403)



■ FMC – BT

TAPER NO.	CODE NO.	CUTTER DIA.	D	L	C	H	w	K	G
30	BT30-FMC22-45	50/63	22	45	48	19	10	5.6	M10
40	BT40-FMC22-45	50/63	22	45	48	19	10	5.6	M10
	BT40-FMC22-90	50/63	22	90	48	19	10	5.6	M10
	BT40-FMC25.4-60	80	25.4	60	70	20	10	6	M12
	BT40-FMC25.4-90	80	25.4	90	70	20	10	6	M12
	BT40-FMC27-60	80	27	60	60	21	12	6.3	M12
	BT40-FMC27-90	80	27	90	60	21	12	6.3	M12
	BT40-FMC32-60	100	32	60	78	24	14	7	M16
	BT40-FMC38.1-60	100	38.1	60	85	22	15.9	7	M16
	BT40-FMC38.1-75	100	38.1	75	85	22	15.9	7	M16
50	BT50-FMC22-60	50/63	22	60	48	19	10	5.6	M10
	BT50-FMC25.4-45	80	25.4	45	70	20	10	6	M12
	BT50-FMC25.4-90	80	25.4	90	70	20	10	6	M12
	BT50-FMC25.4-150	80	25.4	150	70	20	10	6	M12
	BT50-FMC27-45	80	27	45	60	21	12	6.3	M12
	BT50-FMC27-90	80	27	90	60	21	12	6.3	M12
	BT50-FMC27-150	80	27	150	60	21	12	6.3	M12
	BT50-FMC32-45	100	32	45	78	24	14	7	M16
	BT50-FMC32-75	100	32	75	78	24	14	7	M16
	BT50-FMC32-105	100	32	105	78	24	14	7	M16
	BT50-FMC38.1-45	100	38.1	45	85	22	15.9	7	M16
	BT50-FMC38.1-75	100	38.1	75	85	22	15.9	7	M16
	BT50-FMC38.1-105	100	38.1	105	85	22	15.9	7	M16

ER COLLETS



■ ER COLLET

CODE NO.	CLAMPING CAPACITY	CODE NO.	CLAMPING CAPACITY	CODE NO.	CLAMPING CAPACITY
ER11-1.5	1.5~1.0	ER20-13.0	13.0~12.0	ER40-6.0	6.0~5.0
ER11-2.0	2.0~1.5	ER25-3.0	3.0~2.5	ER40-7.0	7.0~6.0
ER11-2.5	2.5~2.0	ER25-3.5	3.5~3.0	ER40-8.0	8.0~7.0
ER11-3.0	3.0~2.5	ER25-4.0	4.0~3.5	ER40-9.0	9.0~8.0
ER11-3.175	3.175~3.0	ER25-5.0	5.0~4.0	ER40-10.0	10.0~9.0
ER11-3.5	3.5~3.0	ER25-6.0	6.0~5.0	ER40-11.0	11.0~10.0
ER11-4.0	4.0~3.5	ER25-7.0	7.0~6.0	ER40-12.0	12.0~11.0
ER11-4.5	4.5~4.0	ER25-8.0	8.0~7.0	ER40-13.0	13.0~12.0
ER11-5.0	5.0~4.5	ER25-9.0	9.0~8.0	ER40-14.0	14.0~13.0
ER11-5.5	5.5~5.0	ER25-10.0	10.0~9.0	ER40-15.0	15.0~14.0
ER11-6.0	6.0~5.5	ER25-11.0	11.0~10.0	ER40-16.0	16.0~15.0
ER11-6.5	6.5~6.0	ER25-12.0	12.0~11.0	ER40-17.0	17.0~16.0
ER11-7.0	7.0~6.5	ER25-13.0	13.0~12.0	ER40-18.0	18.0~17.0
ER16-2.0	2.0~1.5	ER25-14.0	14.0~13.0	ER40-19.0	19.0~18.0
ER16-2.5	2.5~2.0	ER25-15.0	15.0~14.0	ER40-20.0	20.0~19.0
ER16-3.0	3.0~2.5	ER25-16.0	16.0~15.0	ER40-21.0	21.0~20.0
ER16-3.175	3.175~3.0	ER32-3.0	3.0~2.5	ER40-22.0	22.0~21.0
ER16-4.0	4.0~3.5	ER32-3.5	3.5~3.0	ER40-23.0	23.0~22.0
ER16-5.0	5.0~4.0	ER32-4.0	4.0~3.5	ER40-24.0	24.0~23.0
ER16-6.0	6.0~5.0	ER32-5.0	5.0~4.0	ER40-25.0	25.0~24.0
ER16-7.0	7.0~6.0	ER32-6.0	6.0~5.0	ER40-26.0	26.0~25.0
ER16-8.0	8.0~7.0	ER32-7.0	7.0~6.0	ER50-6.0	6.0~5.0
ER16-9.0	9.0~8.0	ER32-8.0	8.0~7.0	ER50-8.0	8.0~6.0
ER16-10.0	10.0~9.0	ER32-9.0	9.0~8.0	ER50-10.0	10.0~8.0
ER20-2.0	2.0~1.5	ER32-10.0	10.0~9.0	ER50-12.0	12.0~10.0
ER20-2.5	2.5~2.0	ER32-11.0	11.0~10.0	ER50-14.0	14.0~12.0
ER20-3.0	3.0~2.5	ER32-12.0	12.0~11.0	ER50-16.0	16.0~14.0
ER20-3.175	3.175~3.0	ER32-13.0	13.0~12.0	ER50-18.0	18.0~16.0
ER20-4.0	4.0~3.5	ER32-14.0	14.0~13.0	ER50-20.0	20.0~18.0
ER20-5.0	5.0~4.0	ER32-15.0	15.0~14.0	ER50-22.0	22.0~20.0
ER20-6.0	6.0~5.0	ER32-16.0	16.0~15.0	ER50-24.0	24.0~22.0
ER20-7.0	7.0~6.0	ER32-17.0	17.0~16.0	ER50-25.0	25.0~23.0
ER20-8.0	8.0~7.0	ER32-18.0	18.0~17.0	ER50-26.0	26.0~24.0
ER20-9.0	9.0~8.0	ER32-19.0	19.0~18.0	ER50-28.0	28.0~26.0
ER20-10.0	10.0~9.0	ER32-20.0	20.0~19.0	ER50-30.0	30.0~28.0
ER20-11.0	11.0~10.0	ER40-4.0	4.0~3.0	ER50-32.0	32.0~30.0
ER20-12.0	12.0~11.0	ER40-5.0	5.0~4.0		

기타 취급 품목

■ 밀링척 [BT40]

■ SK COLLET

■ PS BOLT

■ SPECIAL 사양 제작

END MILL, DRILL, TAP, REAMER

INSERT HOLDER [선반용, 밀링용, 드릴용]

■ 재연마재코팅 서비스 [엔드밀,드릴,탭]

■ CNC 공구연삭기용 COLLET 공급

MAKINO SEIKI CNJ2-30 TOOL G/R COLLET -- 국산화

UNISON TOOL G/R 5C LONG NOSE COLLET -- 국산화

ANCA, ROLLOMATIC TOOL G/R COLLET -- 수입판매

■ WHEEL FALNGE [CNC TOOL G/R용] 주문 제작

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