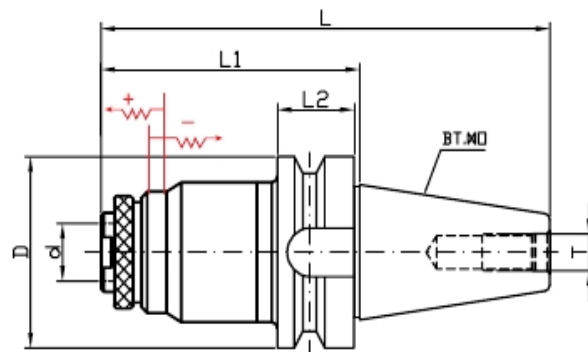


BT 扭力伸缩攻牙刀柄

MAS 403 BT TENSION AND COMPRESSION TAPPING HOLDER



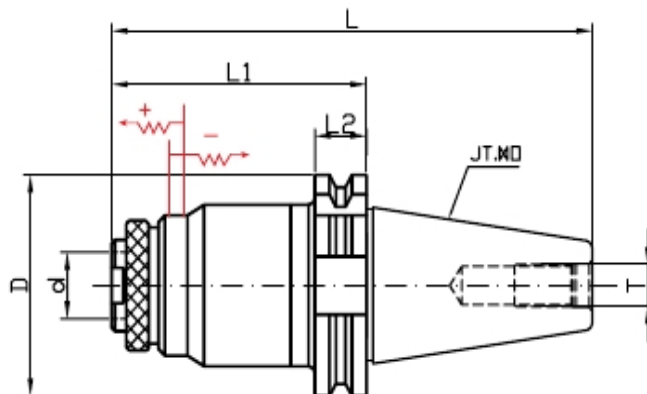
型号/规格 Model	攻牙范围 Clamp Range	D	d	L	L1	L2	T	适用筒夹 Collet
BT30-G0312	M3-M12	46	19	141	87.6	20	M12	G3
BT40-G0312	M3-M12	63	19	153	92.6	25	M16	
BT50-G0312	M3-M12	100	19	199	97.2	35	M24	
BT40-G1224	M12-M24	63	30	200	134.6	25	M16	G12
BT50-G1224	M12-M24	100	30	246	142.2	35	M24	
BT50-G2442	M24-M42	100	45	276	174.2	35	M24	G24

备注:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. 本体规格: JIS MAS 430 BT。 2. 具有扭矩过载保护可防止丝锥断裂。 3. 具有浮动、伸缩、快换等功能。 4. 适合在CNC加工中心、数控铣床等机床设备。 5. 攻丝范围: M3-M42。 | <ol style="list-style-type: none"> 1. Spindle connection standard: JIS MAS 403 BT. 2. Torque overload protection system protects taps from fracture. 3. Have floating, quick change and torque protection functions. 4. Used on CNC lathes, CNC vertical machines etc. 5. Tapping range: M3-M42. |
|--|---|

DIN69871.A 扭力伸缩攻牙刀柄

DIN69871.A TENSION AND COMPRESSION TAPPING HOLDER



型号/规格 Model	攻牙范围 Clamp Range	D	d	L	L1	L2	T	适用筒夹 Collet
DIN69871.A30-G0312	M3-M12	50	19	137	78.5	15.9	M12	G3
DIN69871.A40-G0312	M3-M12	63.55	19	144	83.5	15.9	M16	
DIN69871.A50-G0312	M3-M12	97.50	19	180	88.5	15.9	M24	
DIN69871.A40-G1224	M12-M24	63.55	30	191	125.5	15.9	M16	G12
DIN69871.A50-G1224	M12-M24	97.50	30	227	125.5	15.9	M24	
DIN69871.A50-G2442	M24-M42	97.50	45	257	155.1	15.9	M24	G24

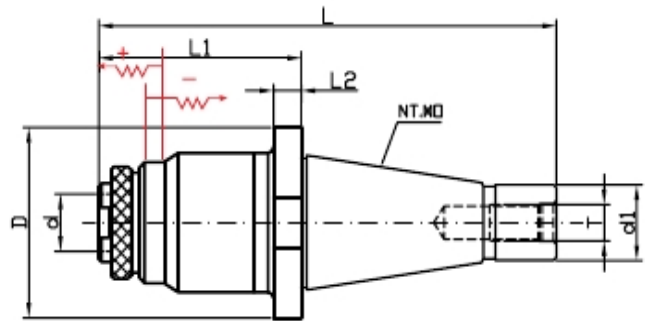
备注:

1. 本体规格: DIN69871.A。
2. 具有扭矩过载保护可防止丝锥断裂。
3. 具有浮动、伸缩、快换等功能。
4. 适合在CNC加工中心、数控铣床等机床设备。
5. 攻丝范围: M3-M42。

1. Spindle connection standard: DIN69871.A.
2. Torque overload protection system protects taps from fracture.
3. Have floating, quick change and torque protection functions.
4. Used on CNC lathes, CNC vertical machines etc.
5. Tapping range: M3-M42.

NT 扭力伸缩攻牙刀柄

NT TENSION AND COMPRESSION TAPPING HOLDER



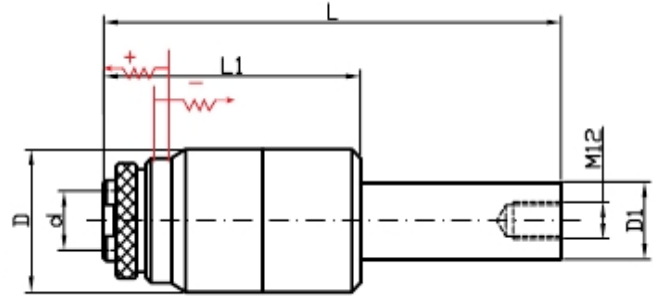
型号/规格 Model	攻牙范围 Clamp Range	D	d	d1	L	L1	L2	T	适用筒夹 Collet
NT30-G0312	M3-M12	50	19	17.4	149	100.6	8	M12	G3
NT40-G0312	M3-M12	63	19	25.3	166	100.6	10	M16	
NT50-G0312	M3-M12	100	19	39.6	201	102.6	12	M24	
NT40-G1224	M12-M24	63	30	25.3	213	147.6	10	M16	G12
NT50-G1224	M12-M24	100	30	39.6	248	149.6	12	M24	
NT50-G2442	M24-M42	100	45	39.6	278	176.6	12	M24	G24

备注:

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. 本体规格: NT / GB3837。 2. 具有扭矩过载保护可防止丝锥断裂。 3. 具有浮动、伸缩、快换等功能。 4. 适合在CNC加工中心、数控铣床等机床设备。 5. 攻丝范围: M3-M42。 | <ol style="list-style-type: none"> 1. Spindle connection standard: NT / GB3837. 2. Torque overload protection system protects fracture. 3. Have floating, quick change and torque protection functions. 4. Used on CNC lathes, CNC vertical machines and CNC vertical lathes. 5. Tapping range: M3-M42. |
|---|--|

直柄扭力伸缩攻牙刀柄

STRAIGHT SHANK TENSION AND COMPRESSION TAPPING HOLDER



型号/规格 Model	攻牙范围 Clamp Range	D	d	L	L1	D1	适用筒夹 Collet
C20-50-G0312	M3-M12	46	19	149	89	20	G3
C20-100-G0312	M3-M12	46	19	189	89	20	
C25-50-G0312	M3-M12	46	19	149	89	25	
C25-100-G0312	M3-M12	46	19	189	89	25	
C25-100-G1224	M12-M24	66	30	220	120	25	G12
C32-100-G1224	M12-M24	66	30	220	120	32	

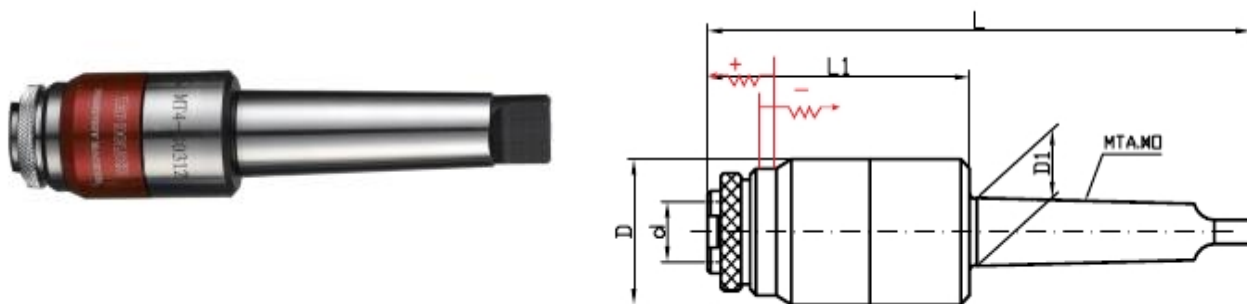
备注:

1. 具有扭矩过载保护可防止丝锥断裂。
2. 具有浮动、伸缩、快换等功能。
3. 适合在CNC加工中心、数控铣床等机床设备。
4. 攻丝范围: M3-M42。

1. Torque overload protection system protects taps from fracture.
2. Have floating, quick change and torque protection functions.
3. Used on CNC lathes, CNC vertical machines etc.
4. Tapping range: M3-M42.

莫氏扁尾扭力伸缩攻牙刀柄

MTA SHANK TENSION AND COMPRESSION TAPPING HOLDER



型号/规格 Model	攻牙范围 Clamp Range	D	d	L	L1	D1	适用筒夹 Collet
MTA2-G0312	M3-M12	46	19	169	89	17.78	G3
MTA3-G0312	M3-M12	46	19	188	89	23.825	
MTA4-G0312	M3-M12	46	19	213	89	31.267	
MTA3-G1224	M12-M24	66	30	219	120	23.825	G12
MTA4-G1224	M12-M24	66	30	244	120	31.267	
MTA5-G2442	M24-M42	92	45	296	140	44.399	G24

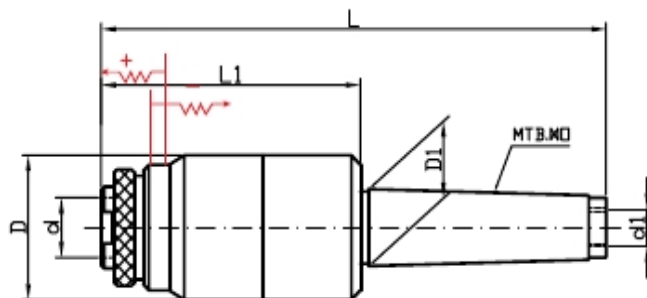
备注:

1. 具有扭矩过载保护可防止丝锥断裂。
2. 具有浮动、伸缩、快换等功能。
3. 适合在CNC加工中心、数控铣床等机床设备。
4. 攻丝范围: M3-M42。

1. Torque overload protection system protects taps from fracture.
2. Have floating, quick change and torque protection functions.
3. Used on CNC lathes, CNC vertical machines etc.
4. Tapping range: M3-M42.

后拉式莫氏扭力伸缩攻牙刀柄

MTB SHANK TENSION AND COMPRESSION TAPPING HOLDER



型号/规格 Model	攻牙范围 Clamp Range	D	d	d1	D1	L	L1	适用筒夹 Collet
MTB3-G0312	M3-M12	46	19	M12	23.825	176	89	G3
MTB4-G0312	M3-M12	46	19	M16	31.267	199	89	
MTB3-G1224	M12-M24	66	30	M12	23.825	206	120	G12
MTB4-G1224	M12-M24	66	30	M16	31.267	229	120	

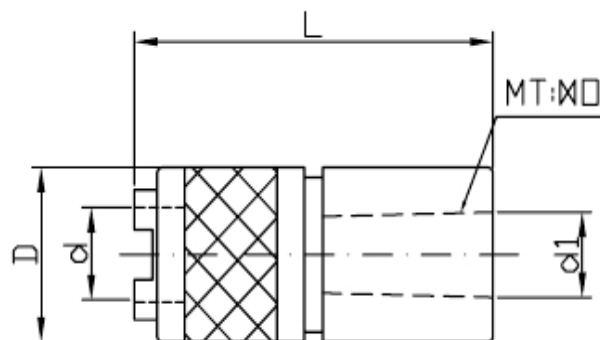
备注:

1. 具有扭矩过载保护可防止丝锥断裂。
2. 具有浮动、伸缩、快换等功能。
3. 适合在CNC加工中心、数控铣床等机床设备。
4. 攻丝范围：M3-M42。

1. Torque overload protection system protects taps from fracture.
2. Have floating, quick change and torque protection functions.
3. Used on CNC lathes, CNC vertical machines etc.
4. Tapping range: M3-M42.

内锥扭力伸缩攻牙刀柄

MORSE HOLE TENSION AND COMPRESSION TAPPING HOLDER



型号/规格 Model	攻牙范围 Clamp Range	D	d	d1	L	适用筒夹 Collet
B12-G0312	M3-M12	35	19	12.065	66	G3 (可置M14 M16)
B16-G0312	M3-M12	35	19	15.73	66	
B18-G0312	M3-M12	35	19	17.78	74	
B18-G1224	M12-M24	52	30	17.78	92	G12 (可置M6-8 M10)
B22-G1224	M12-M24	52	30	21.8	102	
JT2-G0312	M3-M12	35	19	14.19	66	G3 (可置M14 M16)
JT6-G0312	M3-M12	35	19	17.17	66	

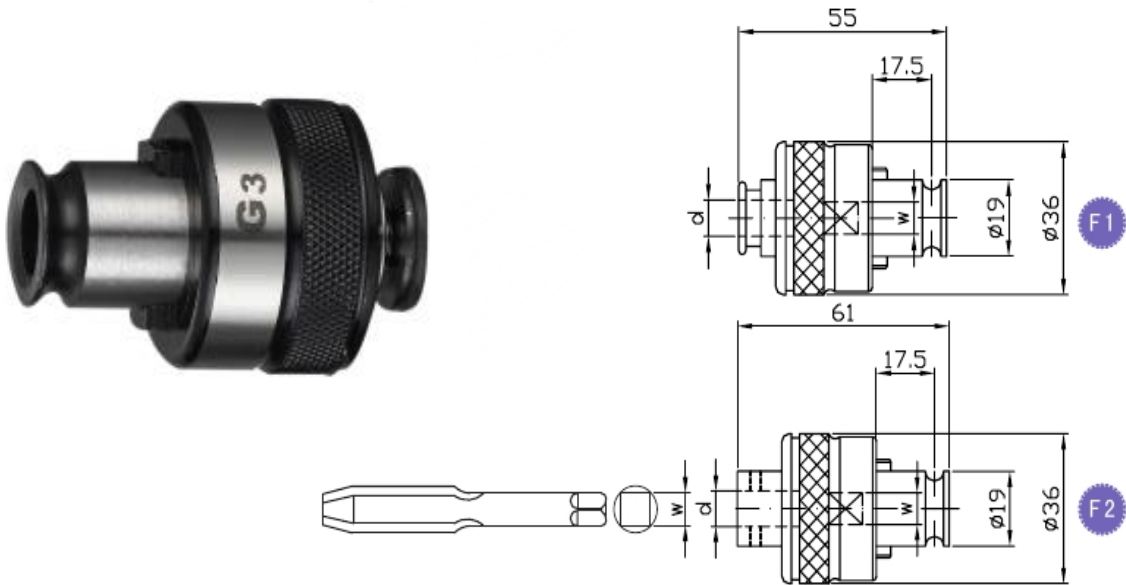
备注:

1. 具有扭矩过载保护可防止丝锥断裂。
2. 具有浮动、伸缩、快换等功能。
3. 适合在CNC加工中心、数控铣床等机床设备。
4. 攻丝范围：M3-M42。

1. Torque overload protection system protects taps from fracture.
2. Have floating, quick change and torque protection functions.
3. Used on CNC lathes, CNC vertical machines etc.
4. Tapping range: M3-M42.

G3 丝攻筒夹 (公制)

G3 TAPPING COLLET (ISO)



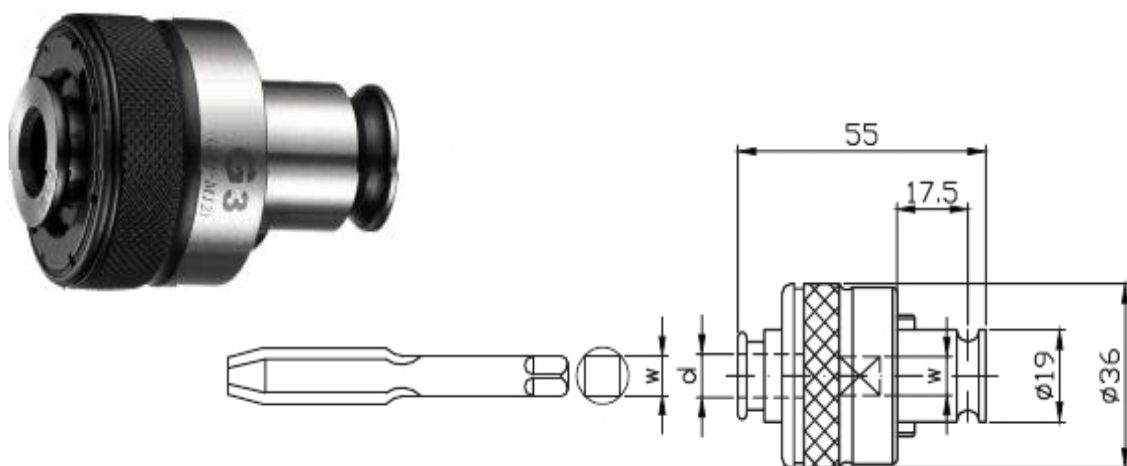
型号/规格 Model	规格 (公制) Specification	d +0.08	W +0.15	图示
G3 (ISO)	M3	3.15	2.5	F1
	M4	4	3.15	
	M5	5	4	
	M6-8	6.3	5	
	M10	8	6.3	
	M12	9	7.1	
	M14	11.2	9	F2
M16	12.5	10		

备注:

- | | |
|---|--|
| <p>1. 本产品具有扭矩过载保护功能、高精度、高感度和使用寿命长。</p> <p>2. 扭矩的变动反应灵敏，可根据各种不同材质而设定相应的扭矩。</p> <p>3. 适用于各种攻牙机器和电动攻牙机，气动攻牙机。</p> <p>4. 目前已与众多攻牙机厂配套使用</p> | <p>1. High precision, long tool-life with torque protection function .</p> <p>2. Torsion reflect sensitive and changes according to material to set up coresponding torque.</p> <p>3. Used for various of tapping machines.</p> <p>4. Widely used by all over the world.</p> |
|---|--|

G3 丝攻筒夹（英制/JIS）

G3 TAPPING COLLET (INCH/JIS)



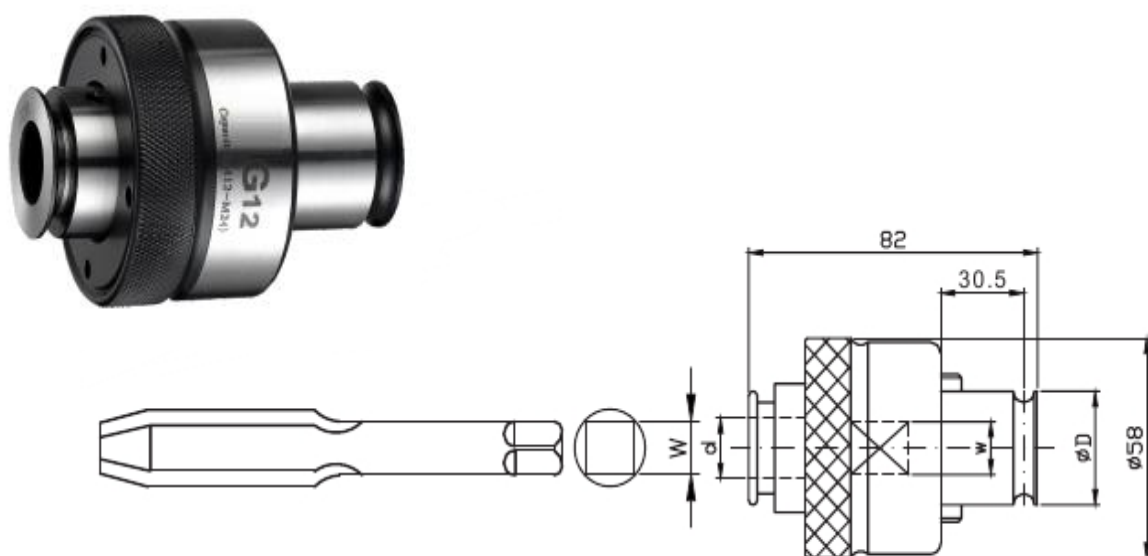
型号/规格 Model	规格(JIS) Specification	规格(英制) Specification	d +0.08	W +0.15
G3 (JIS)	M3	1/8	4	3.2
	M4	5/32	5	4
	M5	3/16	5.5	4.5
	M6	1/4	6	4.5
		5/16	6.1	5
	M10	3/8	7	5.5
		7/16	8	6
	M12		8.5	6.5
	1/2	9	7	

备注：

- | | |
|--|---|
| <p>1. 本产品具有扭矩过载保护功能、高精度、高感度和使用寿命长。</p> <p>2. 扭矩的变动反应灵敏，可根据各种不同材质而设定相应的扭矩。</p> <p>3. 适用于各种攻牙机器人和电动攻牙机，气动攻牙机。</p> <p>4. 目前已与众多攻牙机厂配套使用</p> | <p>1. High precision, long tool-life with torque protection function .</p> <p>2. Torsion reflect sensitive and changes according to material to set up corresponding torque.</p> <p>3. Used for various of tapping machines.</p> <p>4. Widely used by all over the world.</p> |
|--|---|

G12 丝攻筒夹 (公制)

G12 TAPPING COLLET (ISO)



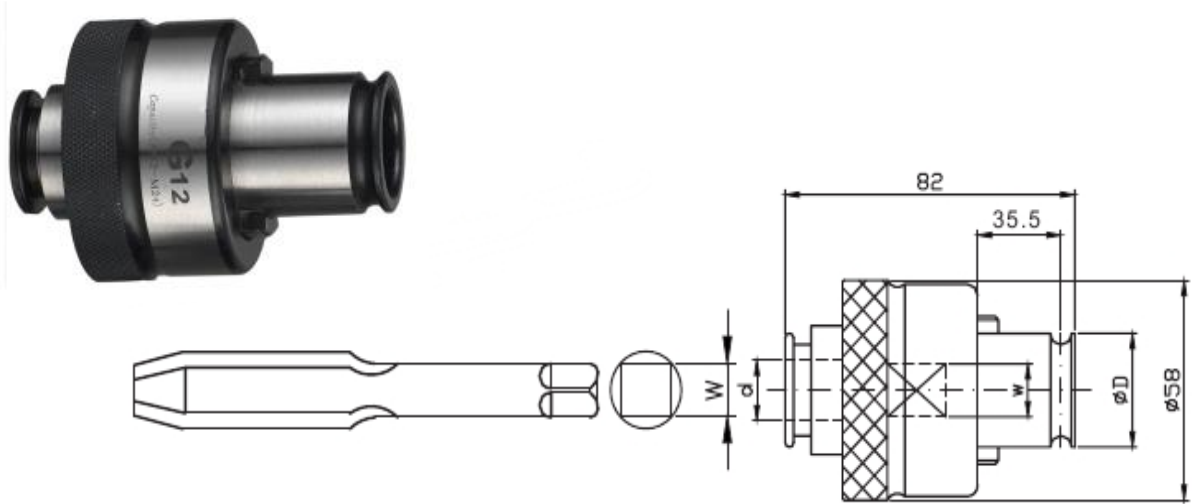
型号/规格 Model	规格(JIS) Specification	d +0.10	W +0.15	D
G12 (ISO)	M6-8	6	5	30
	M10	8	6.3	30
	M12	9	7.1	30
	M14	11.2	9	30
	M16	12.5	10	30
	M18-20	14	11.2	30
	M22	16	12.5	30
	M24	18	14	30

备注:

1. 本产品具有扭矩过载保护功能、高精度、高感度和使用寿命长。
1. High precision, long tool-life with torque protection function .
2. 扭矩的变动反应灵敏, 可根据各种不同材质而设定相应的扭矩。
2. Torsion reflect sensitive and changes according to material to set up corresponding torque.
3. 适用于各种攻牙机器人和电动攻牙机, 气动攻牙机。
3. Used for various of tapping machines.
4. 目前已与众多攻牙机厂配套使用
4. Widely used by all over the world.

G12 丝攻筒夹 (英制/JIS)

G12 TAPPING COLLET (INCH/JIS)



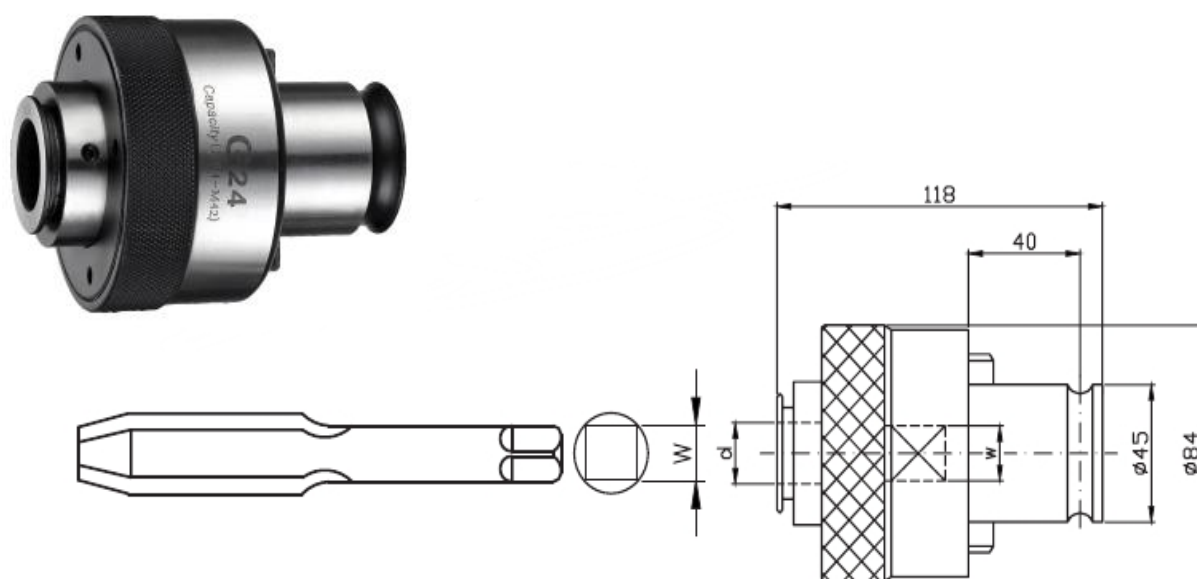
型号/规格 Model	规格(JIS) Specification	d +0.10	W +0.15	D
G12 (JIS)	M6	6	4.5	31
	M8	6.2	5	31
	M10	7	5.5	31
	M12	8.5	6.5	31
	M14	10.5	8	31
	M16	12.5	10	31
	M18	14	11	31
	M20	15	12	31
	M22	17	13	31

备注:

1. 本产品具有扭矩过载保护功能、高精度、高感度和使用寿命长。
1. High precision, long tool-life with torque protection function .
2. 扭矩的变动反应灵敏，可根据各种不同材质而设定相应的扭矩。
2. Torsion reflect sensitive and changes according to material to set up corresponding torque.
3. 适用于各种攻牙机器和电动攻牙机，气动攻牙机。
3. Used for various of tapping machines.
4. 目前已与众多攻牙机厂配套使用
4. Widely used by all over the world.

G24 丝攻筒夹 (公制)

G24 TAPPING COLLET (ISO)



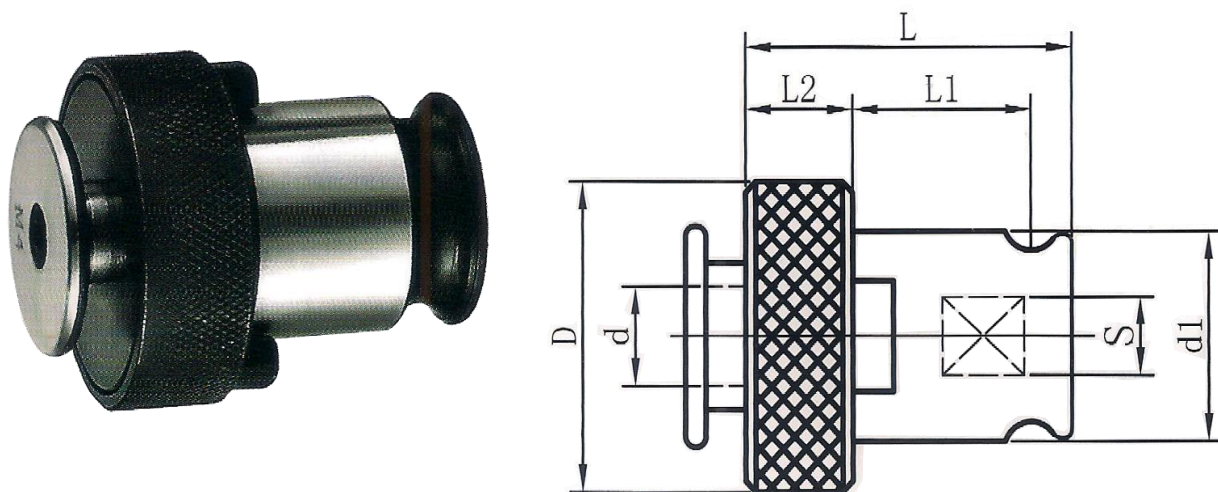
型号/规格 Model	规格(JIS) Specification	d +0.10	W +0.15
G24 (ISO)	M24	18	14
	M27-30	20	16
	M33	22.4	18
	M36	25	20
	M39-42	28	22.4

备注:

- | | |
|---|---|
| <p>1. 本产品具有扭矩过载保护功能、高精度、高感度和使用寿命长。</p> <p>2. 扭矩的变动反应灵敏，可根据各种不同材质而设定相应的扭矩。</p> <p>3. 适用于各种攻牙机器和电动攻牙机，气动攻牙机。</p> <p>4. 目前已与众多攻牙机厂配套使用</p> | <p>1. High precision, long tool-life with torque protection function .</p> <p>2. Torsion reflect sensitive and changes according to material to set up corresponding torque.</p> <p>3. Used for various of tapping machines.</p> <p>4. Widely used by all over the world.</p> |
|---|---|

K3 丝攻筒夹 (公制)

K3 TAPPING COLLET (ISO)



型号	规格	d	S	D	d1	L	L1	L2
K3 (ISO)	M2	2.5	2	φ28	φ19	32	17.5	10.5
	M3	3.15	2.5	φ28	φ19	32	17.5	10.5
	M4	4	3.15	φ28	φ19	32	17.5	10.5
	M5	5	4	φ28	φ19	32	17.5	10.5
	M6-8	6.3	5	φ28	φ19	32	17.5	10.5
	M10	8	6.3	φ28	φ19	32	17.5	10.5
	M12	9	7.1	φ28	φ19	32	17.5	10.5

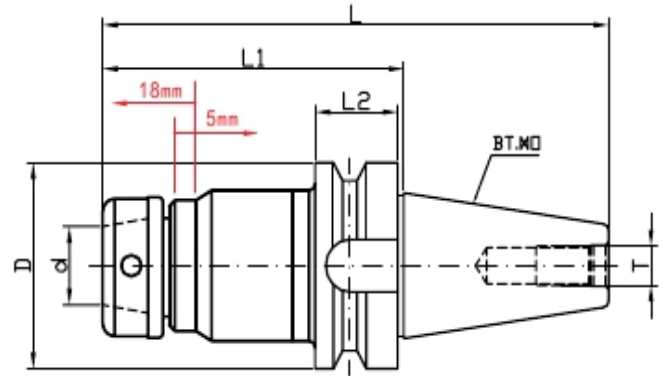
备注:

1. 本产品不具有扭矩过载保护功能
2. 本产品具有高精度、高强度和使用寿命长。
3. 适用于各种攻牙机器人和电动攻牙机，气动攻牙机
4. 目前已与众多攻牙机厂配套使用

1. Do not have tension protect
2. High accuracy, high strength, long using life
3. Used for various of tapping machines.
4. Widely used by all over the world.

BT 刚性伸缩攻牙刀柄

MAS 403 BT RIGID AND COMPRESSION TAPPING HOLDER



型号/规格 Model	攻牙范围 Clamp Range	D	d	L	L1	L2	T	适用筒夹 Collet
BT30-ETP16	M2-M12	46	-	149	100.6	20	M12	ERG16
BT30-ETP20	M2-M16	46	-	151	102.6	20	M12	ERG20
BT30-ETP25	M2-M22	46	-	153	104.6	20	M12	ERG25
BT30-ETP32	M2-M30	46	-	156	107.6	20	M12	ERG32
BT40-ETP16	M2-M12	63	-	161	95.6	25	M16	ERG16
BT40-ETP20	M2-M16	63	-	163	97.6	25	M16	ERG20
BT40-ETP25	M2-M22	63	-	165	99.6	25	M16	ERG25
BT40-ETP32	M2-M30	63	-	168	102.6	25	M16	ERG32
BT50-ETP16	M2-M12	46	-	207	105.2	35	M24	ERG16
BT50-ETP20	M2-M16	46	-	209	107.2	35	M24	ERG20
BT50-ETP25	M2-M22	46	-	211	109.2	35	M24	ERG25
BT50-ETP32	M2-M30	46	-	214	112.2	35	M24	ERG32

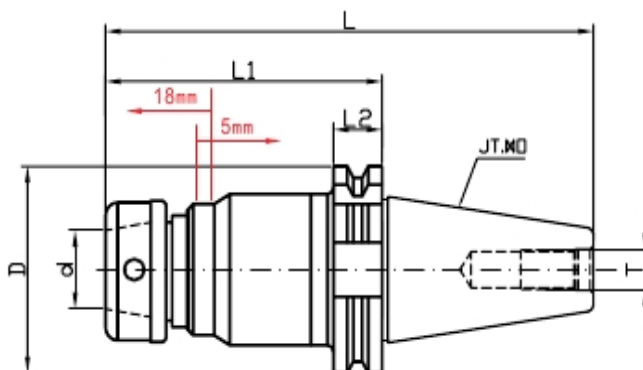
备注:

1. 本体规格: JIS MAS 430 BT。
2. 刚性功能确保加工中心主轴转动同进给精确同步。
3. 刚性攻牙刀柄可使用ER筒夹代替, 作为夹持铣刀、钻头和铰刀等刀柄。
4. 采用刚性攻牙本体, 使用时, 螺帽请勿过度锁紧, 以免造成损坏。

1. Spindle connection standard: JIS MAS 430 BT.
2. Rigid function ensures machining center spindle rotate in synchronized precise.
3. Can be replaced by ER collet for clamping end mills, Drill bits, and reamers and so on.
4. Don't lock excessively of the clamping nut to avoid damage.

DIN69871.A 刚性伸缩攻牙刀柄

DIN69871.A RIGID AND COMPRESSION TAPPING HOLDER



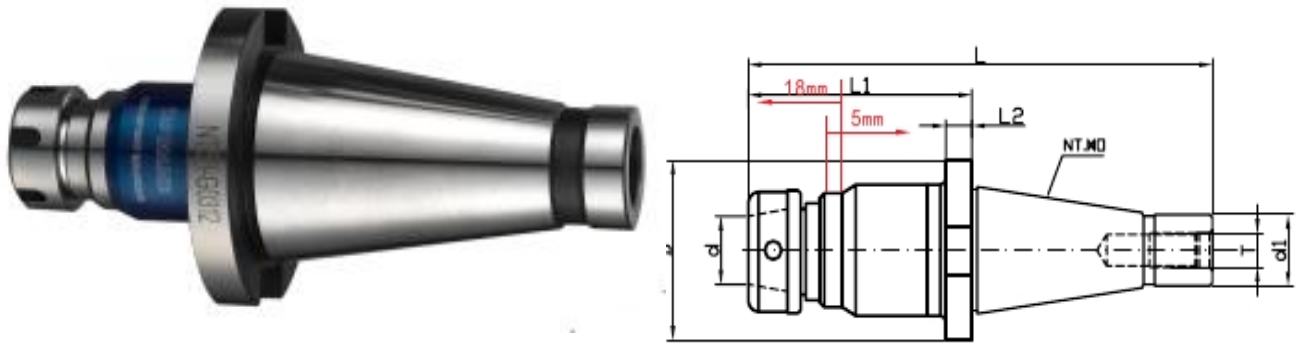
型号/规格 Model	攻牙范围 Clamp Range	D	d	L	L1	L2	T	适用筒夹 Collet
DIN69871.A40-ETP16	M2-M12	63.55	-	152	86.5	15.9	M16	ERG16
DIN69871.A40-ETP20	M2-M16	63.55	-	154	88.5	15.9	M16	ERG20
DIN69871.A40-ETP25	M2-M22	63.55	-	156	90.5	15.9	M16	ERG25
DIN69871.A40-ETP32	M2-M30	63.55	-	159	93.5	15.9	M16	ERG32
DIN69871.A50-ETP16	M2-M12	97.5	-	189	86.5	15.9	M24	ERG16
DIN69871.A50-ETP20	M2-M16	97.5	-	191	88.5	15.9	M24	ERG20
DIN69871.A50-ETP25	M2-M22	97.5	-	193	90.5	15.9	M24	ERG25
DIN69871.A50-ETP32	M2-M30	97.5	-	195	93.5	15.9	M24	ERG32

备注:

1. 本体规格: DIN69871-A及GB10944.
2. 刚性功能确保加工中心主轴转动同进给精确同步。
3. 刚性攻牙刀柄可使用ER筒夹代替, 作为夹持铣刀、钻头和铰刀等刀柄。
4. 采用刚性攻牙本体, 使用时, 螺帽请勿过度锁紧, 以免造成损坏。

NT 刚性伸缩攻牙刀柄

NT RIGID AND COMPRESSION TAPPING HOLDER



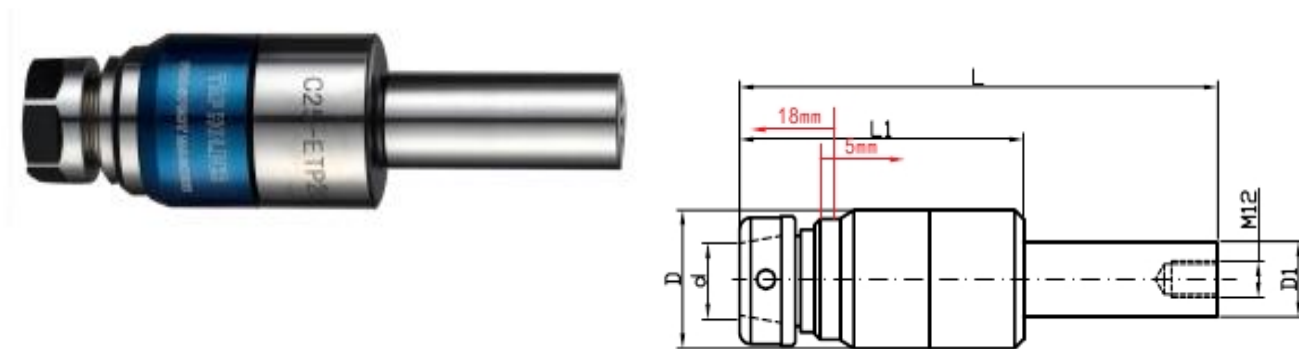
型号/规格 Model	攻牙范围 Clamp Range	D	d	d1	L	L1	L2	T	适用筒夹 Collet
NT40-ETP16	M2-M12	63	-	25.3	174	108.6	10	M16	ERG16
NT40-ETP20	M2-M16	63	-	25.3	176	110.6	10	M16	ERG20
NT40-ETP25	M2-M22	63	-	25.3	178	112.6	10	M16	ERG25
NT40-ETP32	M2-M30	63	-	25.3	181	115.6	10	M16	ERG32
NT50-ETP16	M2-M12	100	-	39.6	209	110.6	12	M24	ERG16
NT50-ETP20	M2-M16	100	-	39.6	211	112.6	12	M24	ERG20
NT50-ETP25	M2-M22	100	-	39.6	213	114.6	12	M24	ERG25
NT50-ETP32	M2-M30	100	-	39.6	216	117.6	12	M24	ERG32

备注:

1. 本体规格: NT/GB3837.
 2. 刚性功能确保加工中心主轴转动同进给精确同步。
 3. 刚性攻牙刀柄可使用ER筒夹代替, 作为夹持铣刀、钻头和铰刀等刀柄。
 4. 采用刚性攻牙本体, 使用时, 螺帽请勿过度锁紧, 以免造成损坏。
1. Spindle connection standard: NT/GB3837.
 2. Rigid function ensures machining center spin rotate in synchronized precise.
 3. Can be replaced by ER collet for clamping en Drill bits, and reamers and so on.
 4. Don't lock excessively of the clamping nut to damage.

直柄刚性伸缩攻牙刀柄

STRAIGHT SHANK RIGID AND COMPRESSION TAPPING HOLDER



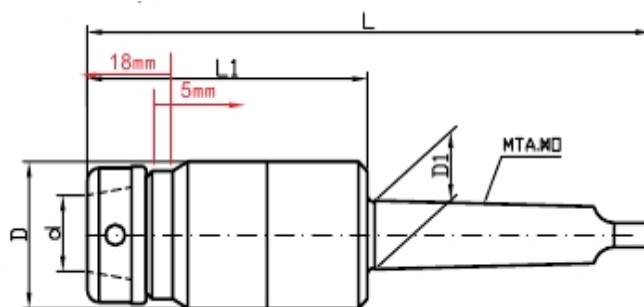
型号/规格 Model	攻牙范围 Clamp Range	D	d	L	L1	D1	适用筒夹 Collet
C20-50/100-ETP16	M2-M12	46	-	147/197	97	20	ERG16
C20-50/100-ETP20	M2-M16	46	-	149/199	99	20	ERG20
C20-50/100-ETP25	M2-M22	46	-	161/201	101	20	ERG25
C20-50/100-ETP32	M2-M30	46	-	164/204	104	20	ERG32
C25-50/100-ETP16	M2-M12	46	-	147/197	97	25	ERG16
C25-50/100-ETP20	M2-M16	46	-	149/199	99	25	ERG20
C25-50/100-ETP25	M2-M22	46	-	161/201	101	25	ERG25
C25-50/100-ETP32	M2-M30	46	-	164/204	104	25	ERG32

备注:

- 刚性功能确保加工中心主轴转动同进给精确同步。
 - 刚性攻牙刀柄可使用ER筒夹代替，作为夹持铣刀、钻头和铰刀等刀柄。
 - 采用刚性攻牙本体，使用时，螺帽请勿过度锁紧，以免造成损坏。
- Rigid function ensures machining center spindle rotate in synchronized precise.
 - Can be replaced by ER collet for clamping end mills, Drill bits, and reamers and so on.
 - Don't lock excessively of the clamping nut to avoid damage.

莫氏扁尾刚性伸缩攻牙刀柄

MTA SHANK RIGID AND COMPRESSION TAPPING HOLDER



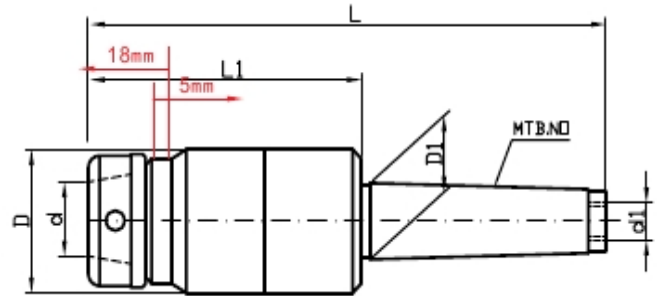
型号/规格 Model	攻牙范围 Clamp Range	D	d	L	L1	D1	适用筒夹 Collet
MTA2-ETP16	M2-M12	46	-	177	97	17.78	ERG16
MTA2-ETP20	M2-M16	46	-	179	99	17.78	ERG20
MTA2-ETP25	M2-M22	46	-	181	101	17.78	ERG25
MTA3-ETP16	M2-M12	50	-	196	97	23.825	ERG16
MTA3-ETP20	M2-M16	50	-	198	99	23.825	ERG20
MTA3-ETP25	M2-M22	50	-	200	101	23.825	ERG25
MTA3-ETP32	M2-M30	50	-	203	104	23.825	ERG32
MTA4-ETP16	M2-M12	66	-	221	97	31.267	ERG16
MTA4-ETP20	M2-M16	66	-	223	99	31.267	ERG20
MTA4-ETP25	M2-M22	66	-	225	101	31.267	ERG25
MTA4-ETP32	M2-M30	66	-	228	104	31.267	ERG32
MTA5-ETP32	M2-M30	66	-	260	104	44.339	ERG32

备注:

1. 刚性功能确保加工中心主轴转动同进给精确同步。
 2. 刚性攻牙刀柄可使用ER筒夹代替，作为夹持铣刀、钻头和铰刀等刀柄。
 3. 采用刚性攻牙本体，使用时，螺帽请勿过度锁紧，以免造成损坏。
1. Rigid function ensures machining center spindle rotate in synchronized precise.
 2. Can be replaced by ER collet for clamping end mills, Drill bits, and reamers and so on.
 3. Don't lock excessively of the clamping nut to avoid damage.

莫氏后拉式刚性伸缩攻牙刀柄

MTB SHANK RIGID AND COMPRESSION TAPPING HOLDER



型号/规格 Model	攻牙范围 Clamp Range	D	d	d1	D1	L	L1	适用筒夹 Collet
MTB3-ETP16	M2-M12	46	-	M12	23.825	176	89	ERG16
MTB3-ETP20	M12-M24	46	-	M12	23.825	206	120	ERG20
MTB3-ETP25	M2-M22	46	-	M12	23.825	176	89	ERG25
MTB3-ETP32	M2-M30	46	-	M12	23.825	206	120	ERG32
MTB4-ETP16	M2-M12	46	-	M16	31.267	199	89	ERG16
MTB4-ETP20	M12-M24	46	-	M16	31.267	229	120	ERG20
MTB4-ETP25	M2-M22	46	-	M16	31.267	199	89	ERG25
MTB4-ETP32	M2-M30	46	-	M16	31.267	229	120	ERG32

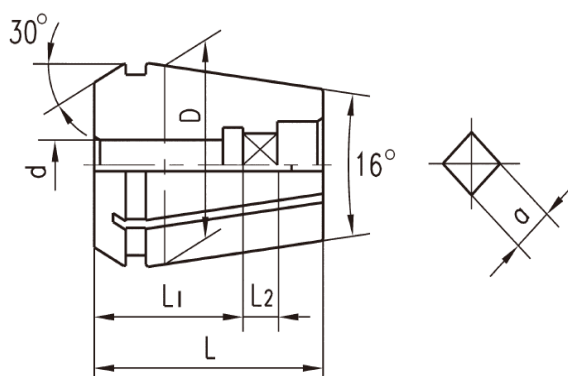
备注:

1. 刚性功能确保加工中心主轴转动同进给精确同步。
2. 刚性攻牙刀柄可使用ER筒夹代替，作为夹持铣刀、钻头和铰刀等刀柄。
3. 采用刚性攻牙本体，使用时，螺帽请勿过度锁紧，以免造成损坏。

1. Rigid function ensures machining center spindle rotate in synchronized precise.
2. Can be replaced by ER collet for clamping end mills, Drill bits, and reamers and so on.
3. Don't lock excessively of the clamping nut to avoid damage.

ERG 型丝攻筒夹

ERG TAPPING COLLET



Collet Model	d x a	d x a	d x a	d x a	d x a	d x a	d x a	d x a
ERG8	2.2*1.8	2.5*2.1	2.8*2.1	3.5*2.7	4.0*3.0			
ERG11	2.5*2.1	2.8*2.1	3.5*2.7	4.0*3.2	4.5*3.4	5.0*4.0	5.5*4.5	6.0*5.0
ERG16	2.8*2.1	3.0*2.5	3.5*2.7	4.0*3.0	4.0*3.2	4.5*3.4	5.0*4.0	5.5*4.3
	5.5*4.5	6.0*4.3	6.0*4.5	6.0*4.9	6.1*5.0	6.2*5.0	6.3*5.0	6.35*5.0
	7.0*5.5	7.1*5.6	8.0*6.0	8.0*6.2	8.0*6.3	9.0*7.0	9.0*7.1	10.0*8.0
ERG20	2.8*2.1	3.5*2.7	4.0*3.0	4.0*3.2	4.0*3.5	4.5*3.4	4.5*3.55	5.0*4.0
	5.5*4.3	5.5*4.5	6.0*4.5	6.0*4.9	6.1*5.0	6.2*5.0	6.3*5.0	7.0*5.5
	7.1*5.6	8.0*6.0	8.0*6.2	8.0*6.3	8.5*6.5	9.0*7.0	9.0*7.1	10.0*8.0
	11.0*9.0	11.2*9.0	12.0*9.0					
ERG25	3.0*2.5	3.5*2.7	2.8*2.1	4.0*3.0	4.0*3.2	4.5*3.4	4.5*3.5	4.5*3.55
	5.0*4.0	5.5*4.3	5.5*4.5	6.0*4.5	6.0*4.9	6.0*5.0	6.1*5.0	6.2*5.0
	6.3*5.0	7.0*5.5	7.1*5.6	8.0*6.0	8.0*6.2	8.0*6.3	8.5*6.5	9.0*7.0
	9.0*7.1	10.0*8.0	10.5*8.0	11.0*9.0	11.2*9.0	12.0*9.0	12.5*10.0	14.0*11.0
	14.0*11.2	15.0*12.0	15.0*12.5	16.0*12.0	16.0*12.5			
ERG32	3.5*2.7	4.0*3.0	4.0*3.15	4.0*3.2	4.0*3.4	4.5*3.4	4.5*3.55	4.5*3.6
	5.0*4.0	5.5*4.3	5.5*4.5	6.0*4.9	6.0*4.5	6.0*5.0	6.1*5.0	6.2*5.0
	6.3*5.0	7.0*5.0	7.0*5.5	7.1*5.6	8.0*6.0	8.0*6.1	8.0*6.2	8.0*6.3
	8.5*6.5	9.0*7.0	9.0*7.1	10.0*8.0	10.5*8.0	11.0*9.0	11.2*9.0	12.0*9.0
	12.5*10.0	14.0*11.0	14.0*11.2	15.0*12.0	16.0*12.0	16.0*12.5	20.0*16.0	18.0*14.0
	18.0*14.5							
ERG40	3.5*2.7	4.0*3.0	4.0*3.2	4.5*3.4	5.0*4.0	5.5*4.3	6.0*4.5	6.0*4.9
	6.3*5.0	7.0*5.5	7.1*5.6	8.0*6.2	8.0*6.3	9.0*7.0	9.0*7.1	10.0*8.0
	10.5*8.0	11.0*9.0	11.2*9.0	11.2*9.4	12.0*9.0	12.5*10.0	14.0*11.0	14.0*11.2
	15.0*12.0	16.0*12.0	16.0*12.5	18.0*14.0	18.0*14.5	19.0*15.0	20.0*16.0	22.0*18.0
	22.4*18.0	23.0*17.0	25.0*20.0	5/16"*5.0	3/8"*6.3	1/2"*7.1		