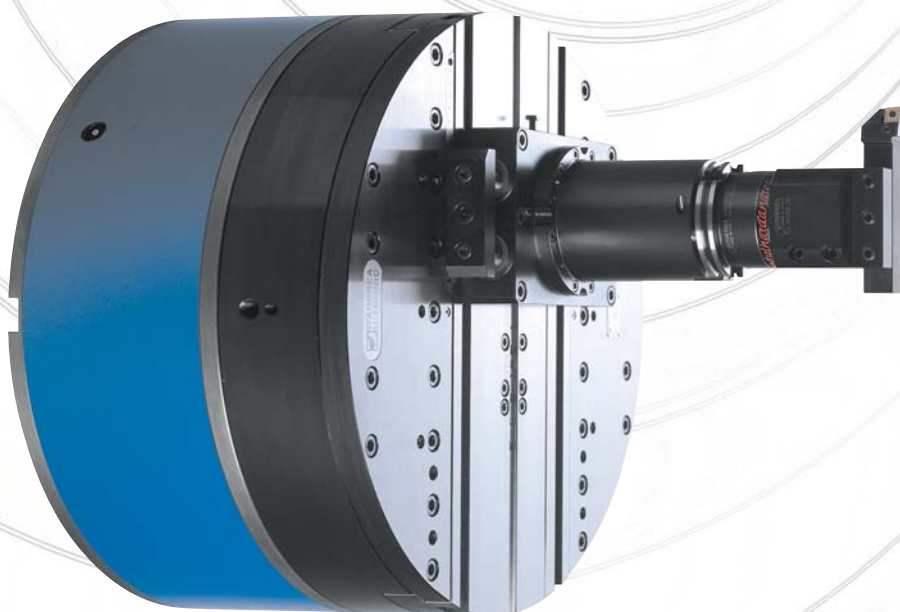
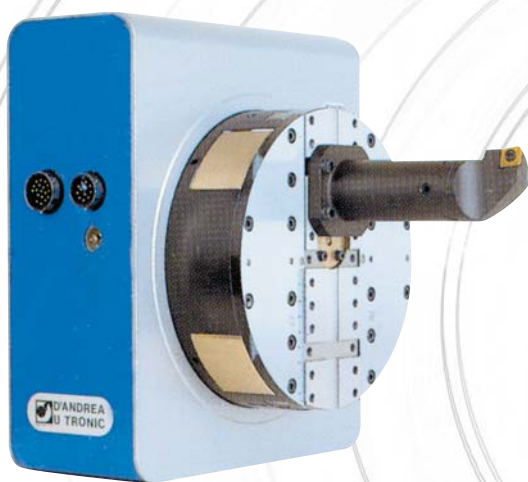




U-TRONIC

Medium and large-sized NC heads for facing,
boring, threading and radiusing



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U-TRONIC

Medium and large-sized NC heads for facing,
boring, threading and radiusing

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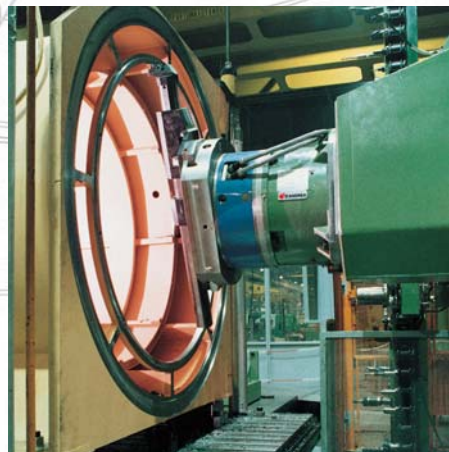
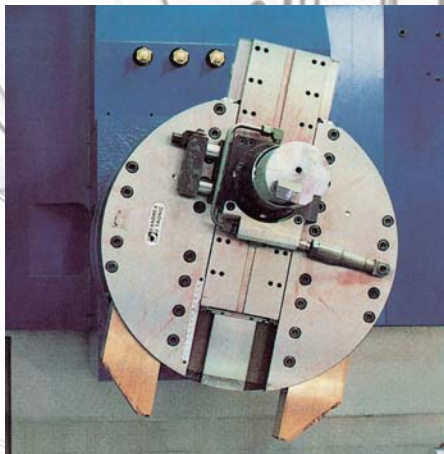
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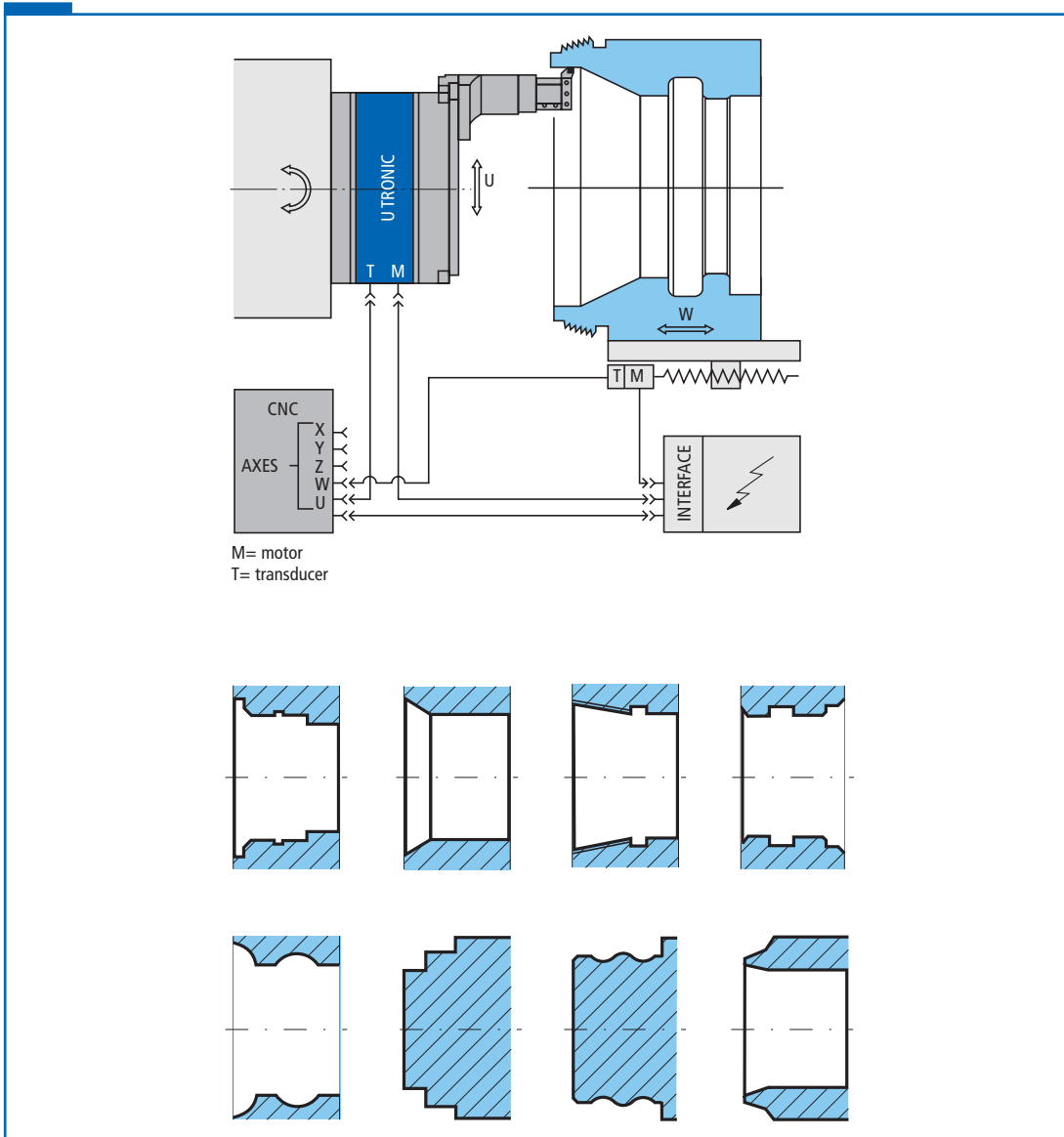
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U-TRONIC are medium and large NC heads, controlled by the U axis of the CNC of the machine tool for inner and outer facing, undercutting, cylindrical and conical boring and threading, concave and convex radiusing machining, by interpolation with other machine axis. These heads can be fitted to boring machines, to machining centres and to special machines manually, automatically or by means of palletized systems. These heads are manufactured in 8 models, from \varnothing 180 mm to 1000 mm and all of them have internal coolant supply. The versions \varnothing 180 and 200 BH are provided with two counterweights which allow machining at high RPM with insignificant vibrations. U-TRONIC special versions, with two slides and with self-balance counterweights can be supplied on request. Fixed toolholders are applied on the slide, with manual or automatic tool change.



COMPONENTS

1. Stationary body
2. Rotating body
3. Tool slide
4. Gears
5. Bearings
6. Coolant way
7. Servomotor
8. Rotary transducer
9. Limit switches
10. Connectors
11. Interchangeable arbor
12. Flange

IMPORTANT NOTE

The kinematic system of the U-TRONIC is made up of a kinematic chain complete with differential or epicycloidal unit where:

- U-TRONIC 180 and 200 BH one motor revolution=0.125 mm radial shift of the slide. One revolution of the transducer = 0.25 mm radial shift of the slide.
- U-TRONIC 325, 400, 500 and 630 one motor revolution=0.1 mm radial shift of the slide. One revolution of the transducer = 2 mm radial shift of the slide.
- U-TRONIC 800, 1000 one motor revolution=0.4 mm radial shift of the slide. One revolution of the transducer = 2 mm radial shift of the slide.

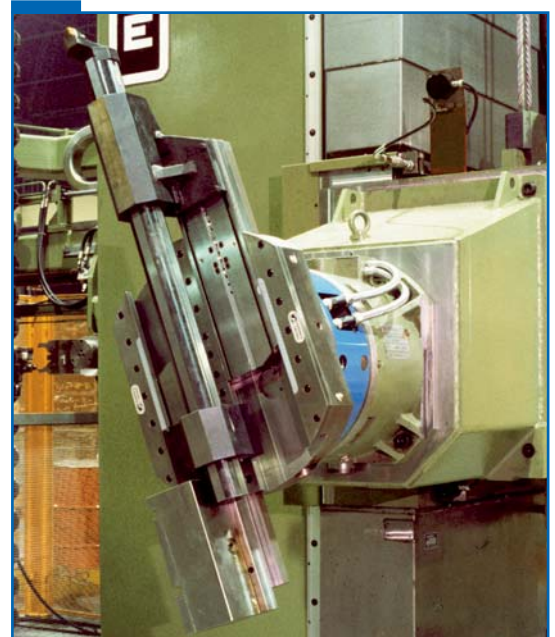
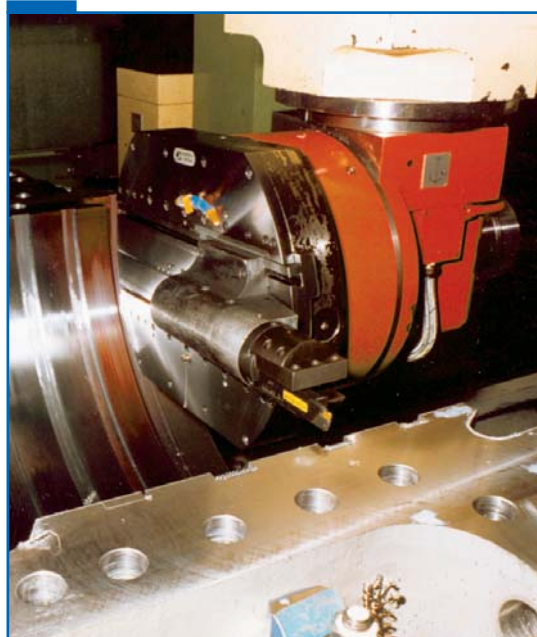
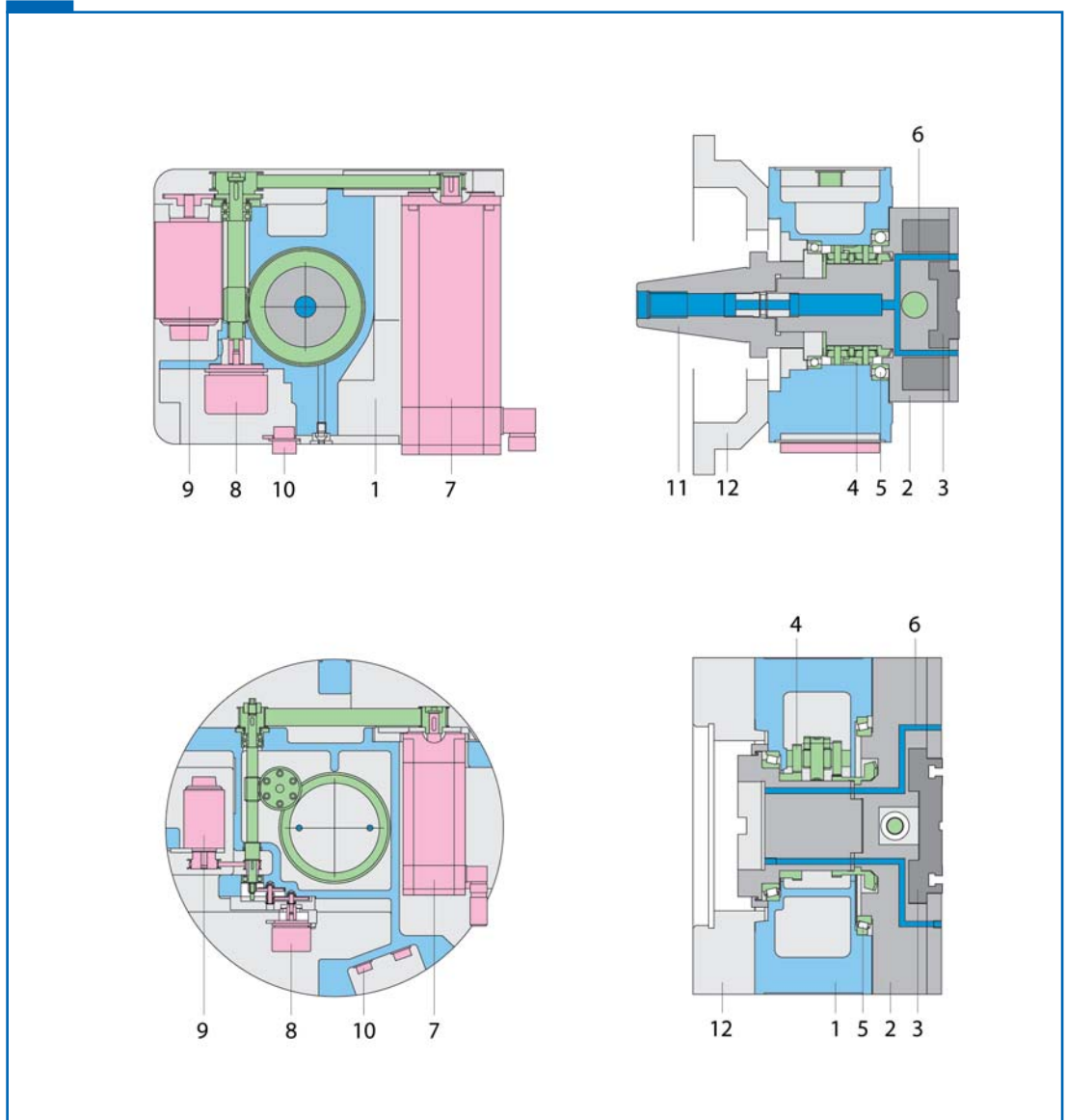
Between the transducer and the toolholder slide there is a max radial reversal play in the kinematic chain of approximately 0.05 mm, thus in order to be precise positioning must take place in a single direction, and be included during programming.

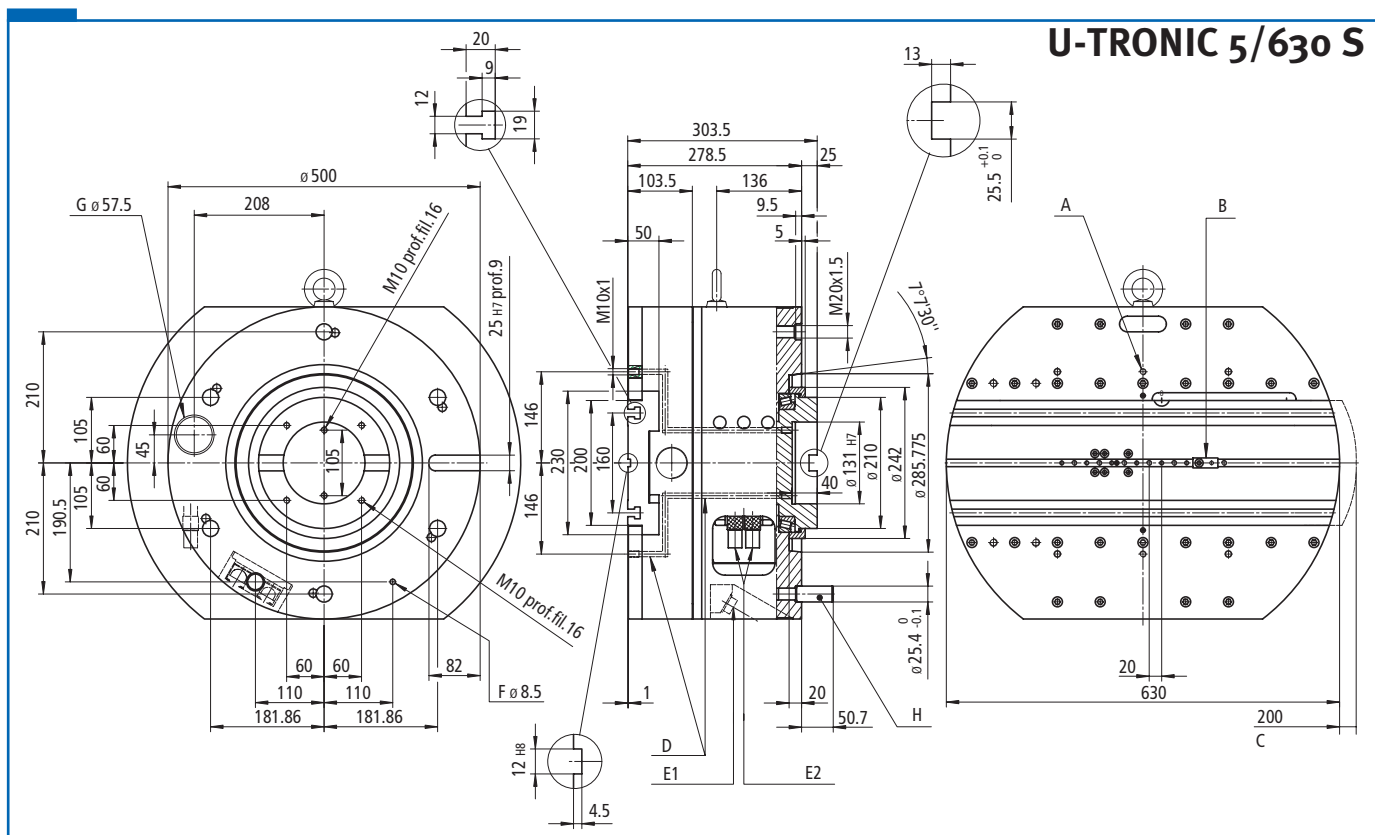
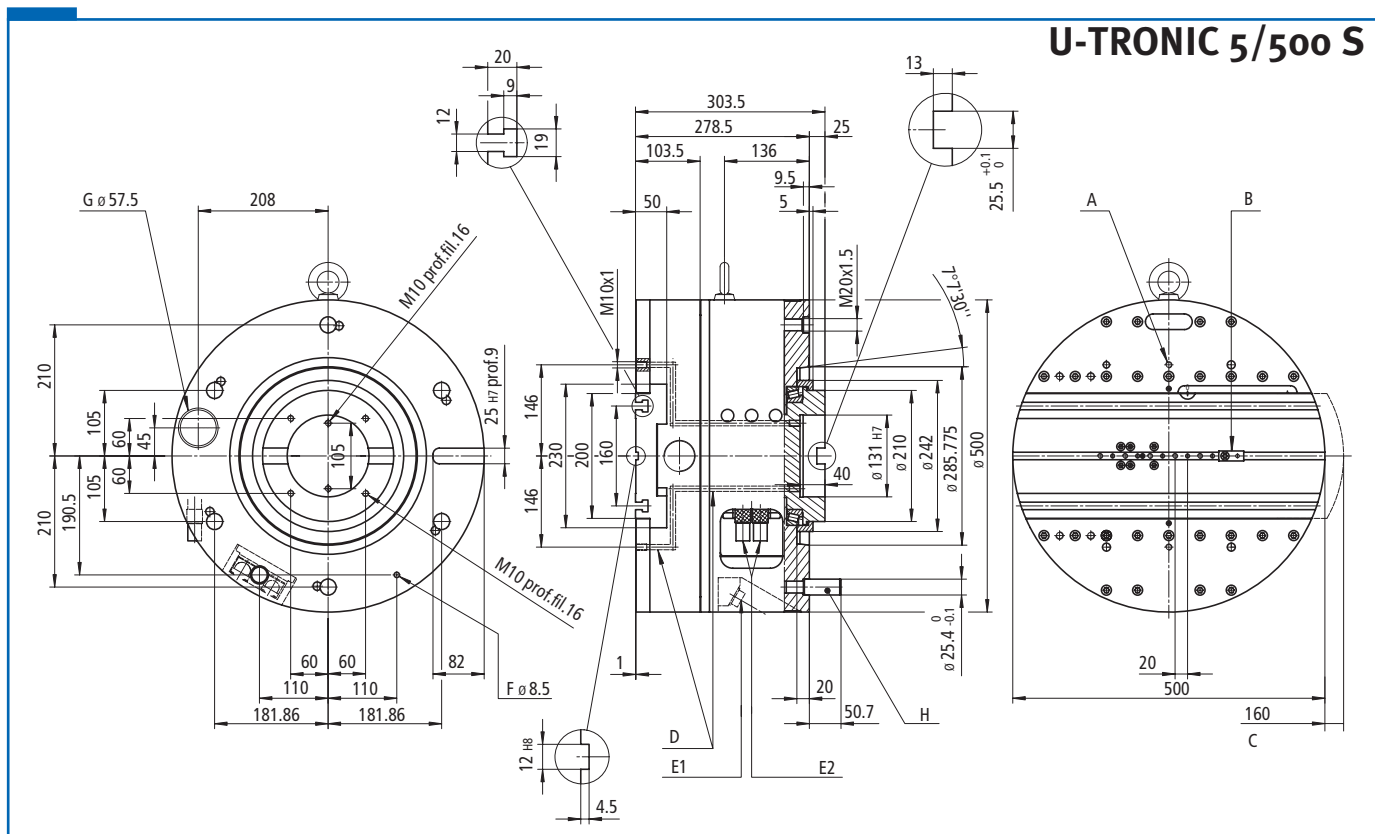
For safety reasons, install a microswitch on the machine that signals when the U-TRONIC is mounted and limits spindle rotation as follows:

UT 180 BH max. RPM 1000

UT 200 BH max. RPM 800:
per stroke +/- 25 mm
RPM 600:
per stroke from 25 to 37.5 mm

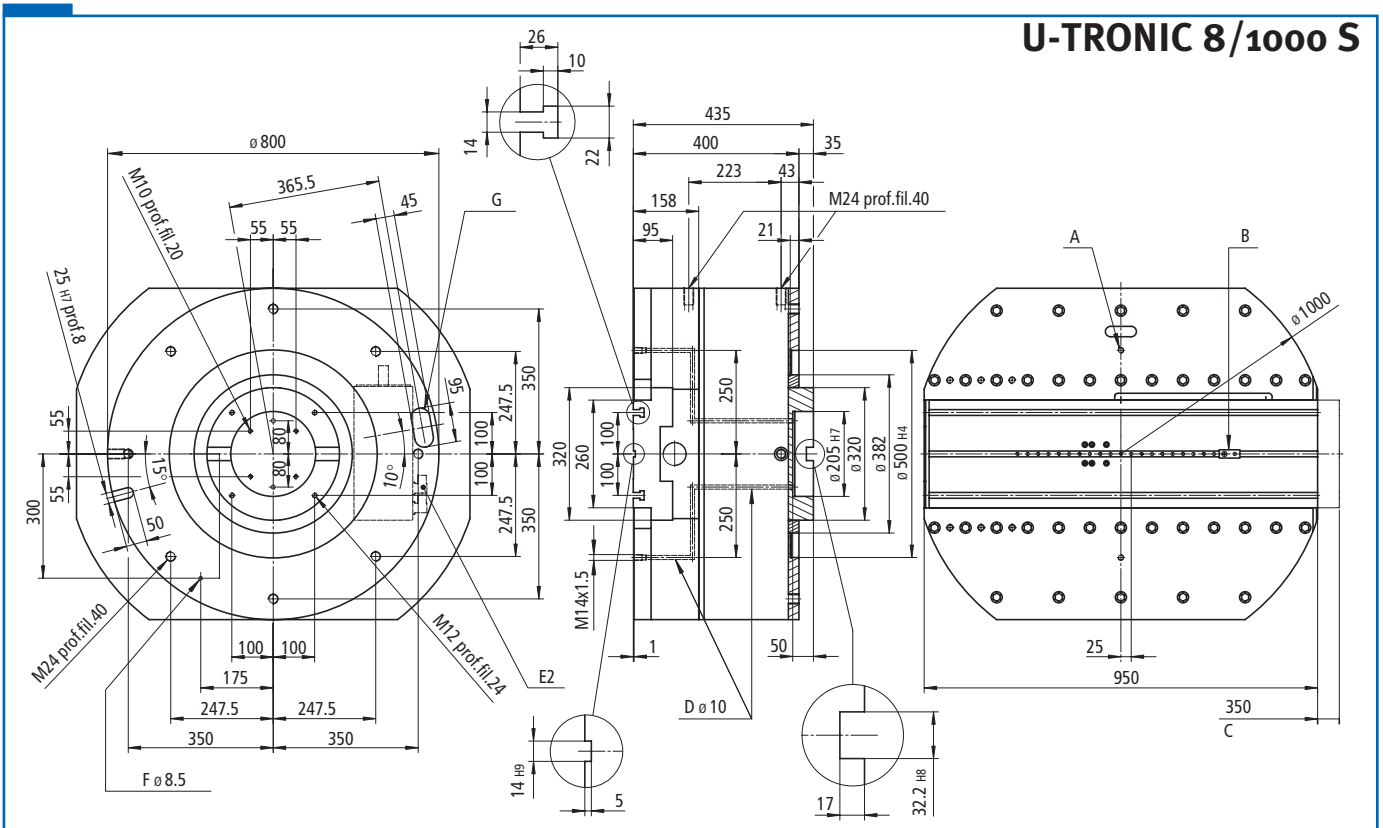
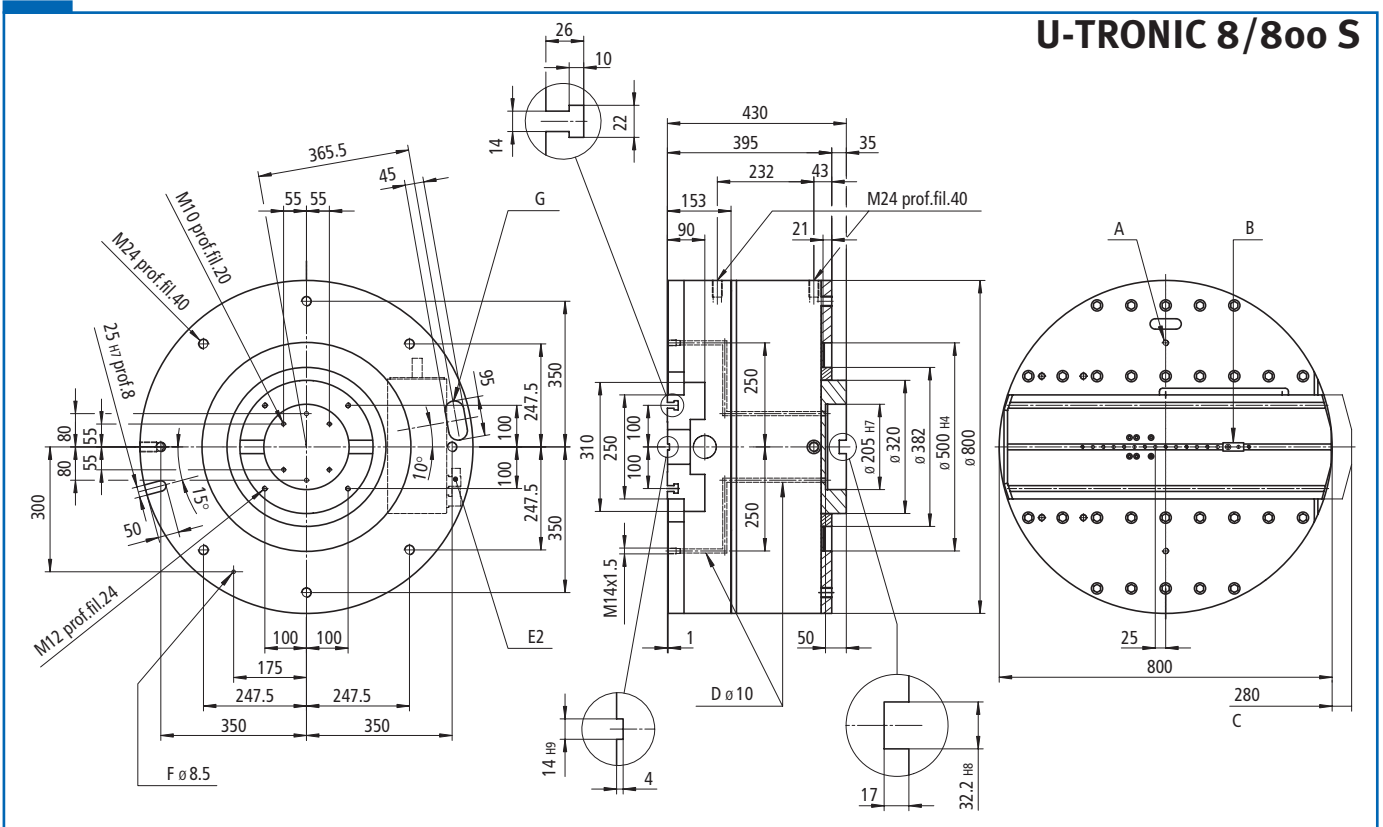
UT 3-325 S max. RPM 500
UT 5-400 S max. RPM 400
UT 5-500 S max. RPM 315
UT 5-630 S max. RPM 250
UT 8-800 S max. RPM 200
UT 8-1000 S max. RPM 160





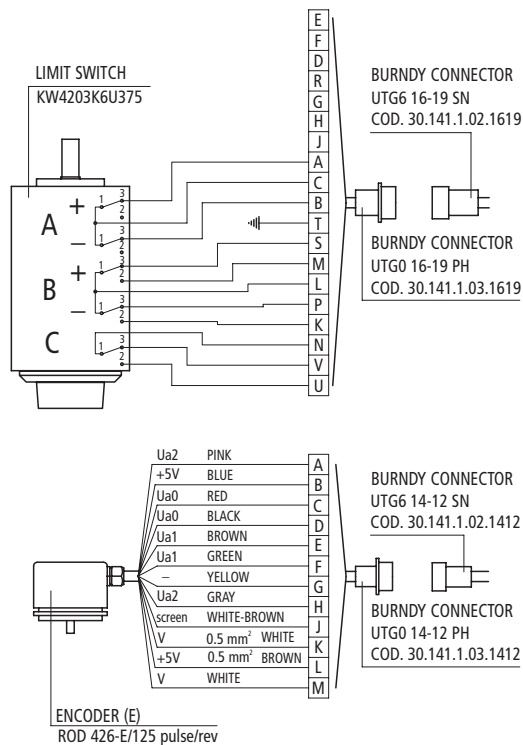
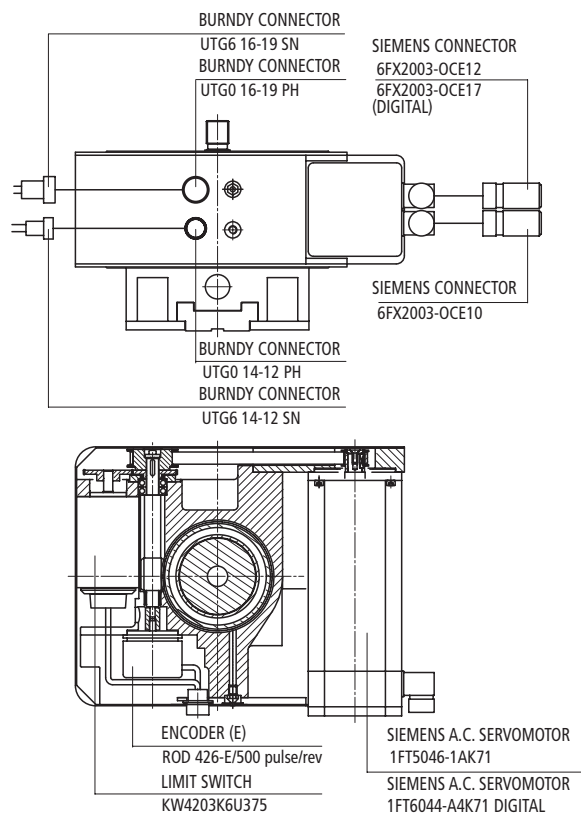
- | | | |
|--------------------------------|-------------------------------------|-------------------------|
| A = Coolant outlet | Encoder-Limit stop | G = Cables way |
| B = Presetting block | E2= Electric connectors | H = CamLock gr.8 |
| C = Radial trasverse | Servomotor | |
| D = Coolant way | F = 0.5-1 BAR air intake for | |
| E1= Electric connectors | inner pressurization | |



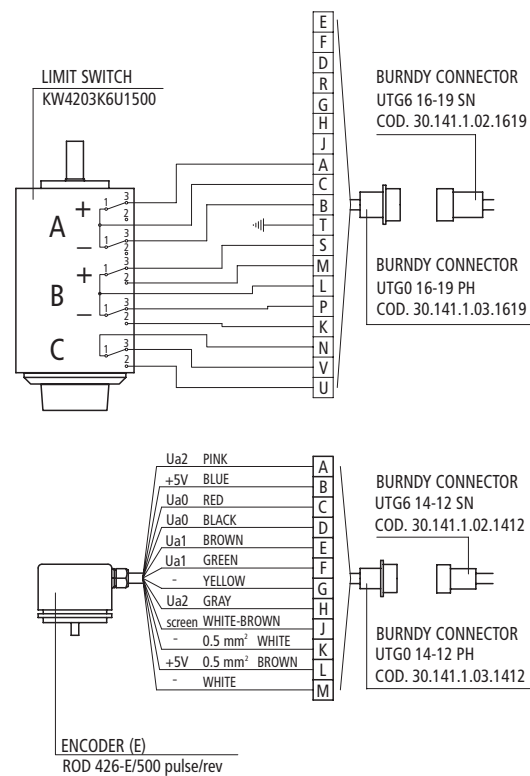
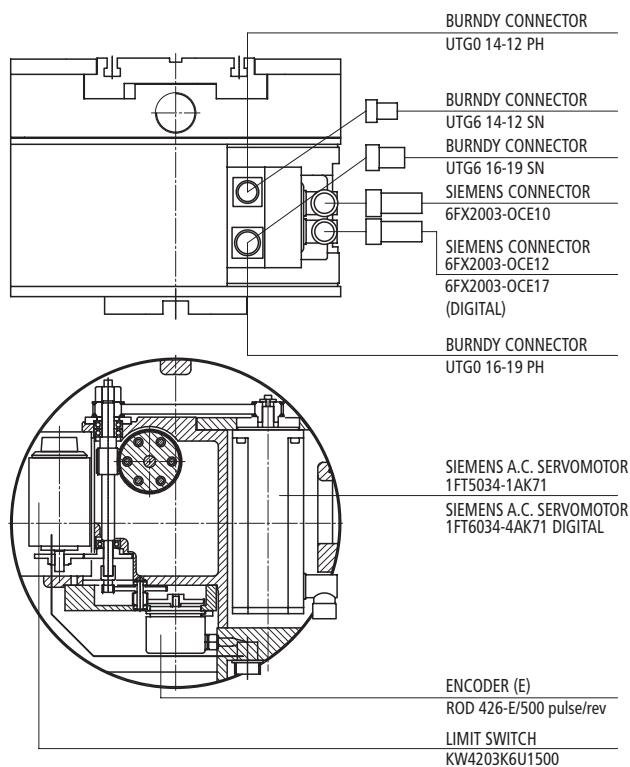


- A = Coolant outlet
- B = Presetting block
- C = Radial trasverse
- D = Coolant way
- E2= Electric connectors
Servomotor
- F = 0.5-1 BAR air intake for
inner pressurization
- G = Cables way

U-TRONIC 180 - 200 BH



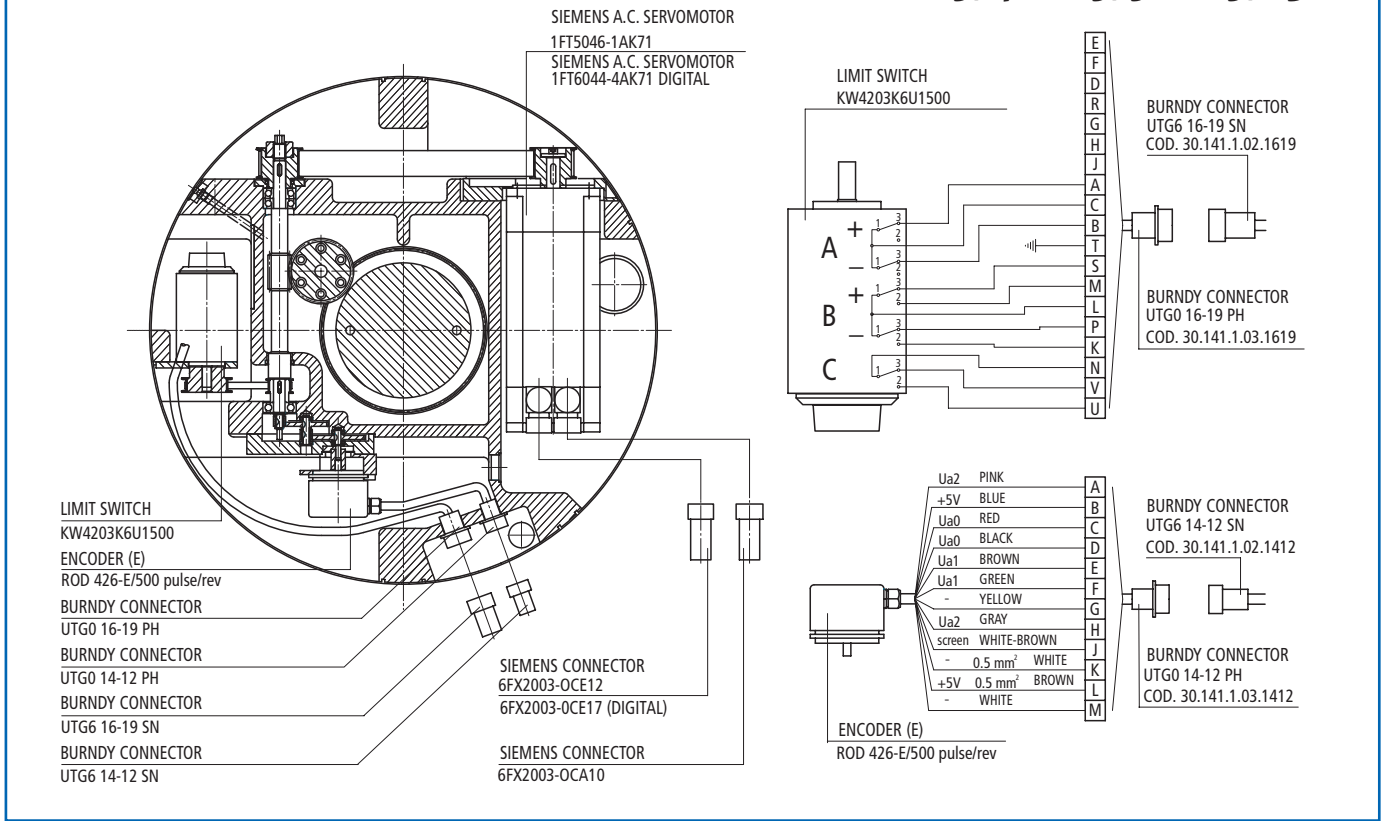
U-TRONIC 3/325 S



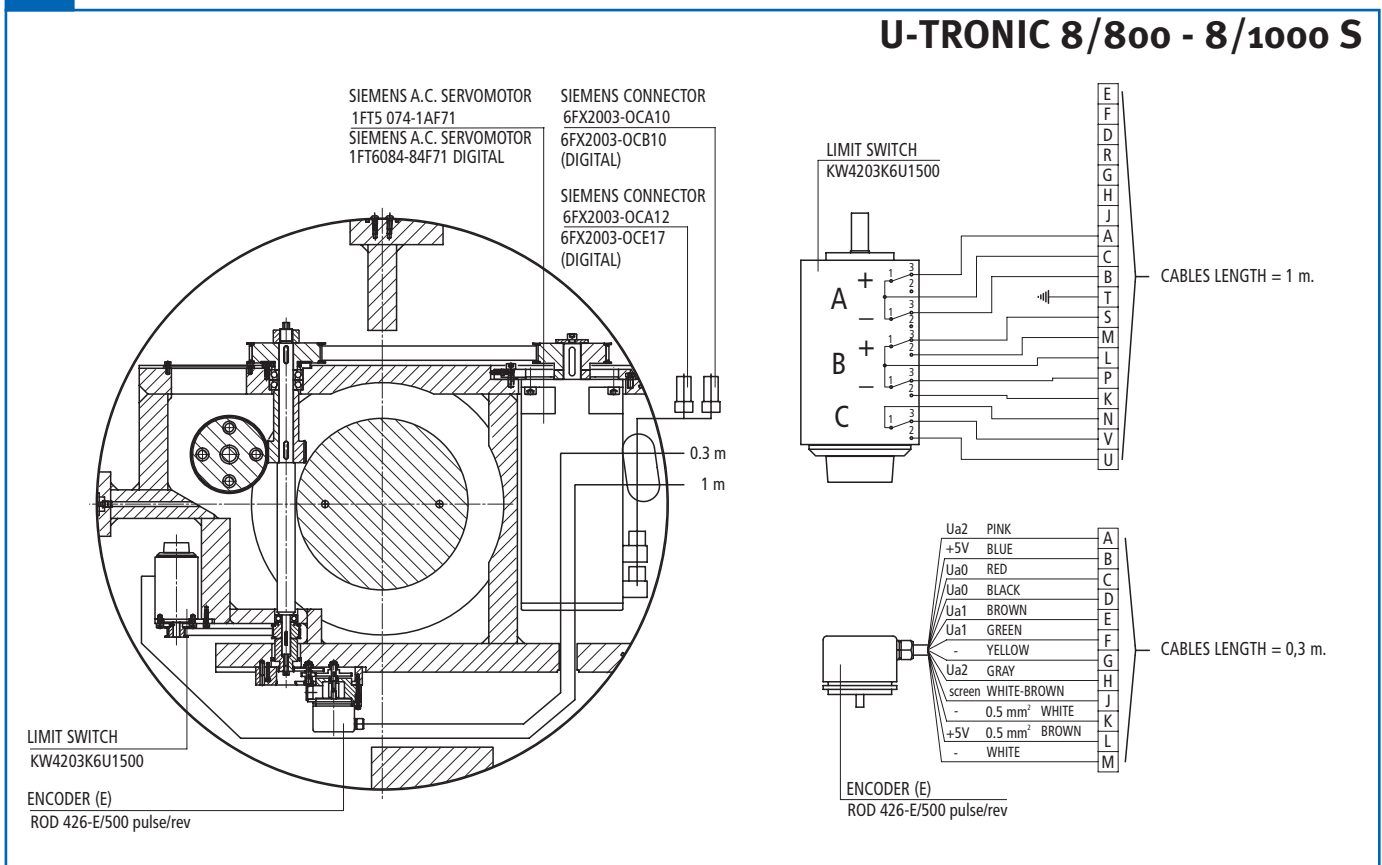
A= END OF STROKE
B= EMERGENCY
C= RESET

(E): For digital servomotor,
encoder on request

U-TRONIC 5/400 - 5/500 - 5/630 S

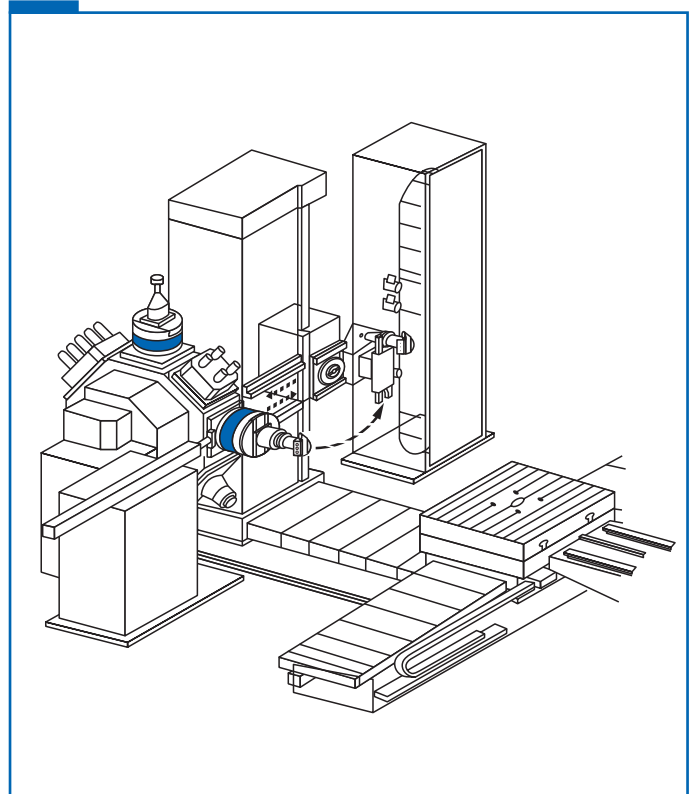
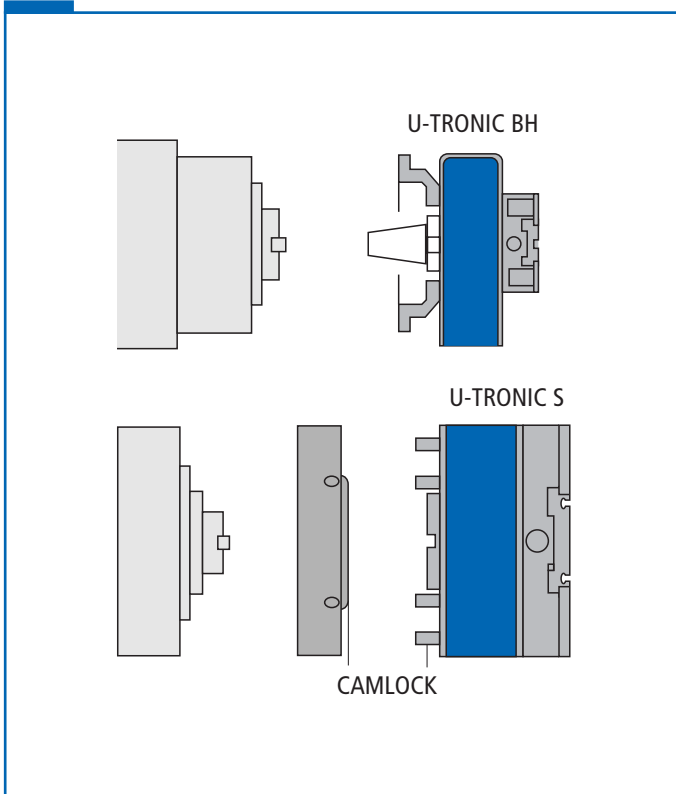


U-TRONIC 8/800 - 8/1000 S



A= END OF STROKE
B= EMERGENCY
C= RESET

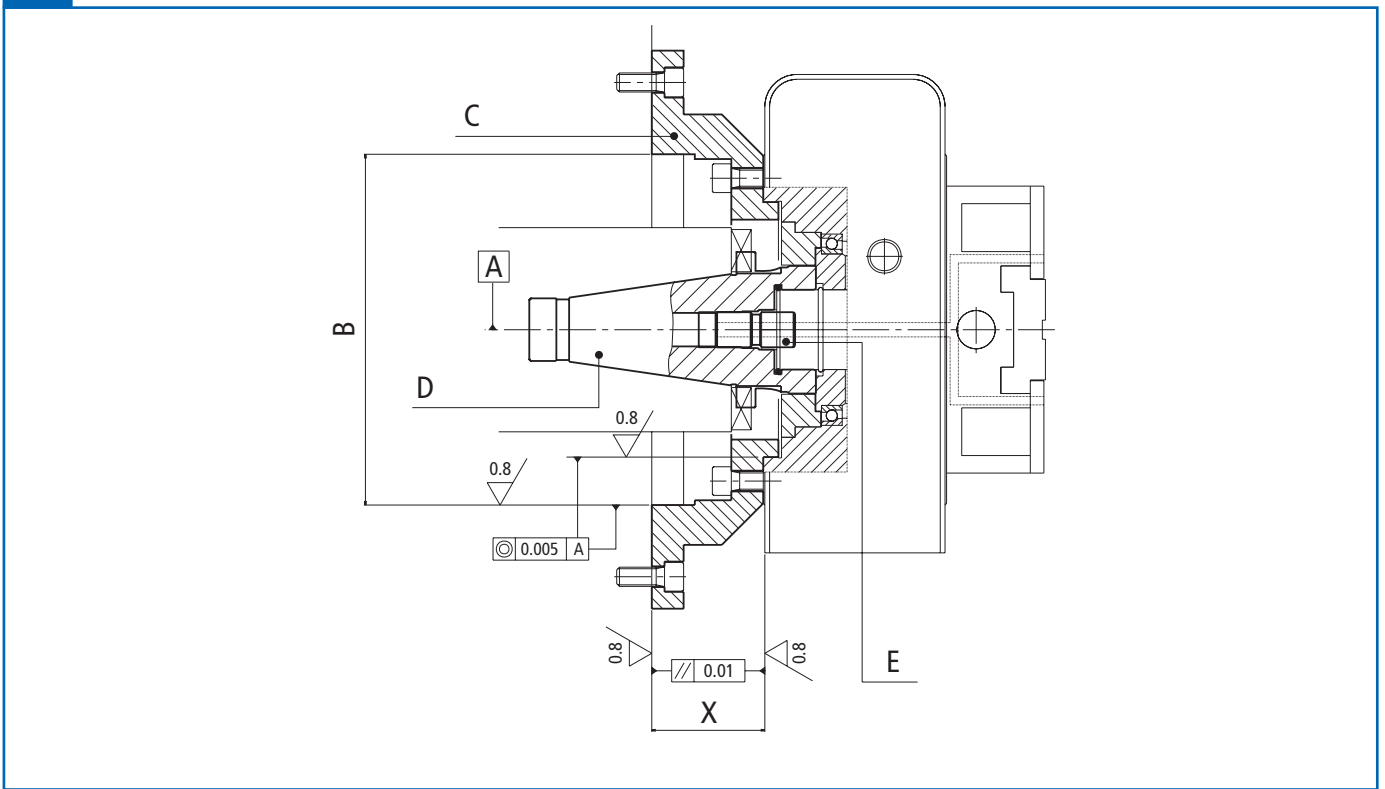
(E): For digital servomotor,
encoder on request



The BH U-TRONICS are applied manually or automatically using the taper for rotation and a flange for fastening. The other U-TRONICS, fitted with rotation plate in place of the taper, are applied:

- manually, with a camlock flange for quick fastening
- automatically with palletized systems and special connectors.





On machines with fixed spindle

- Mount the U-TRONIC with the taper and without flange on the machine spindle and measure exactly the 'X' distance with a tolerance of ± 0.005 mm.
- Make the flange with 'X' distance and a tolerance

of ± 0.005 mm.

- Mount the U-TRONIC with the taper and the flange on the machine spindle and tighten the screws.

On machines with axial spindle stroke (boring machines)

- Make the flange with support surfaces parallel

in 0.01 mm tolerance.

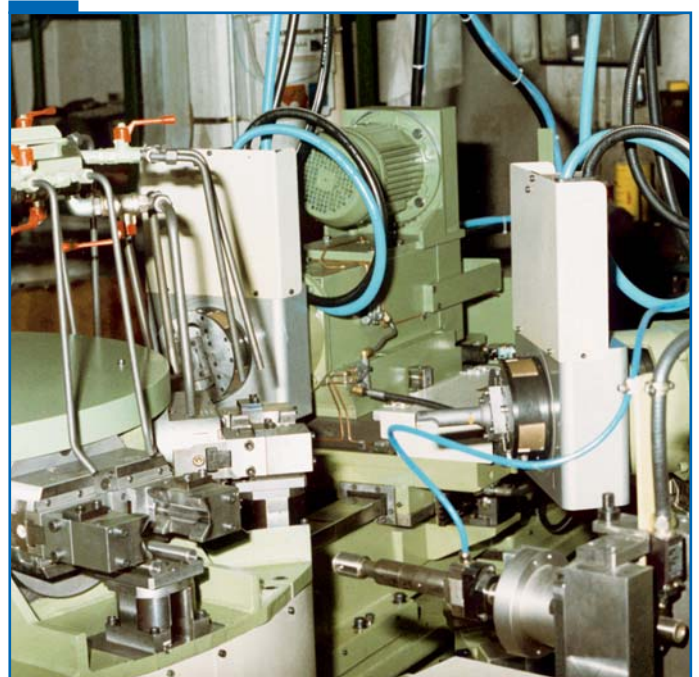
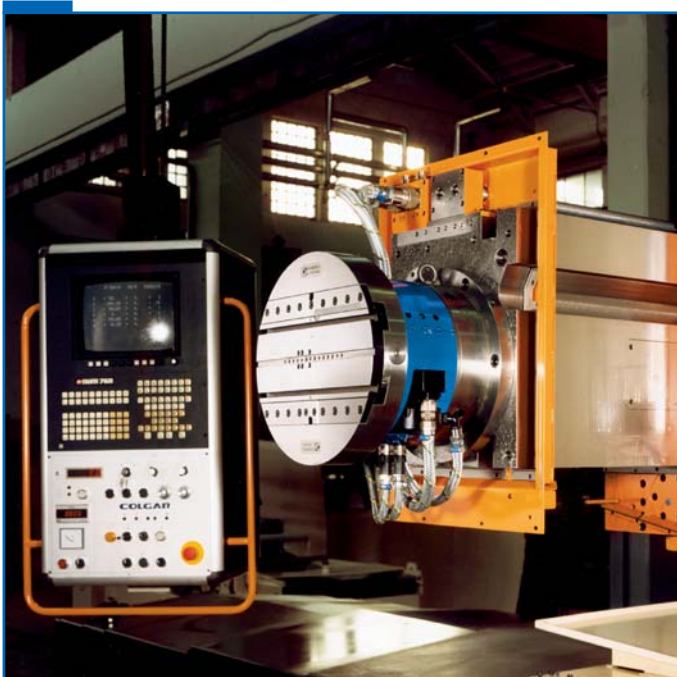
- Mount the U-TRONIC with the taper and the flange on the machine spindle.
- Retract the spindle until the flange rests lightly against the front surface of the boring machine head.
- Block the axial stroke of the boring machine spindle.
- Tighten the flange screws.

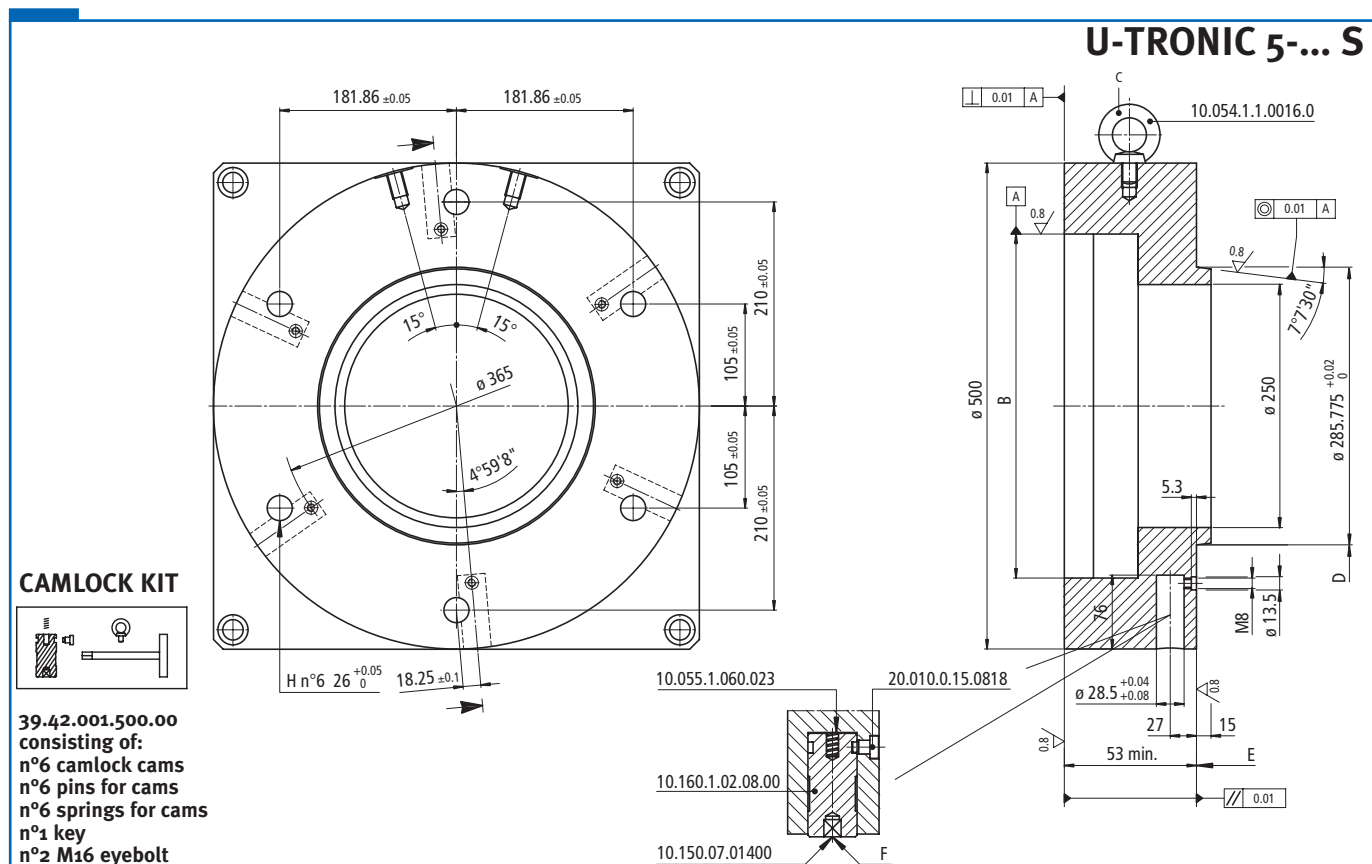
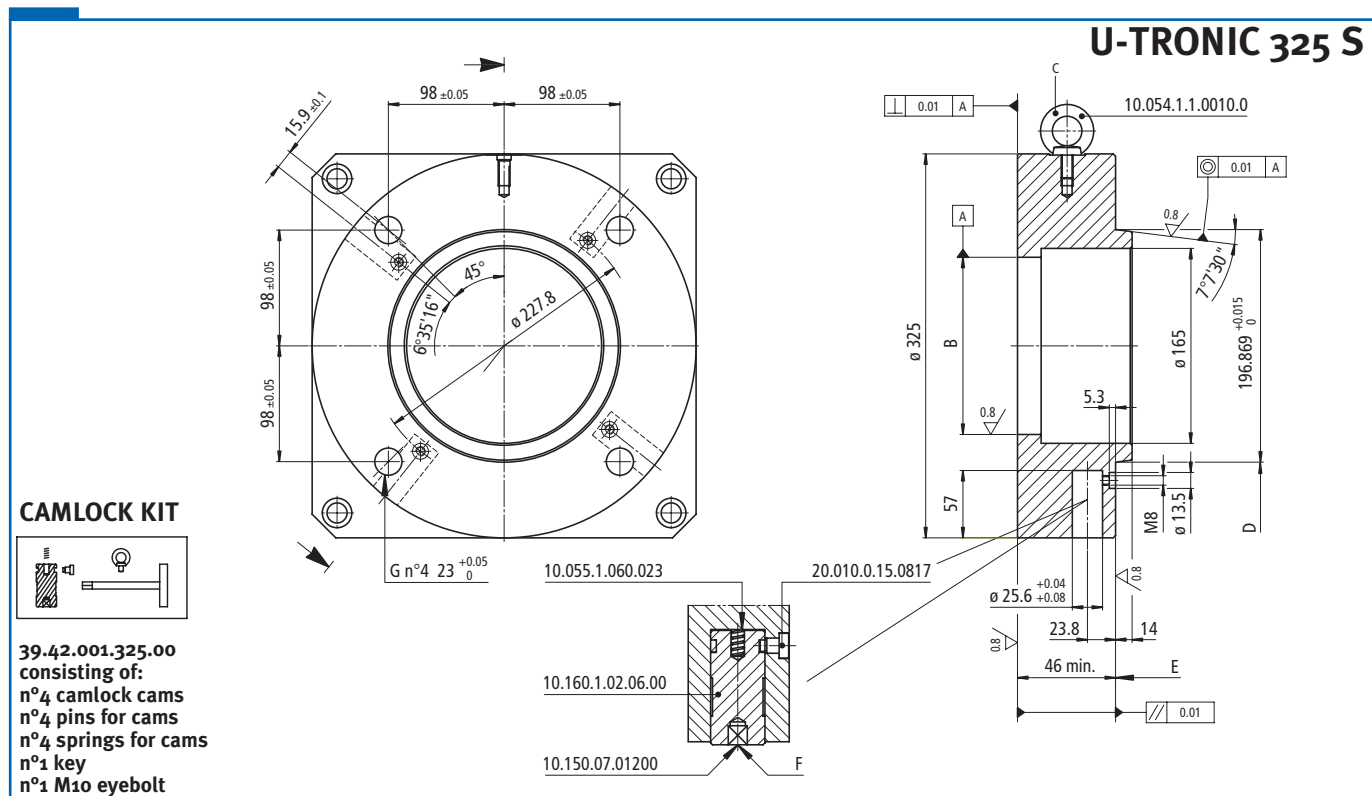
B = Center the boring machine spindle

C = Flange

D = Arbor

E = Stud Bolt



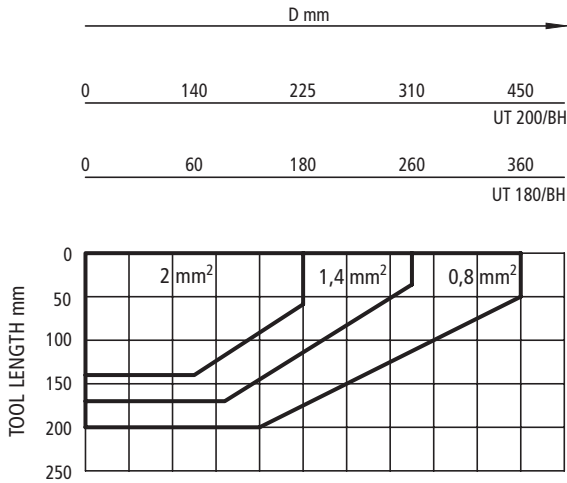


B = Center the boring machine spindle
 C = Eyebolt

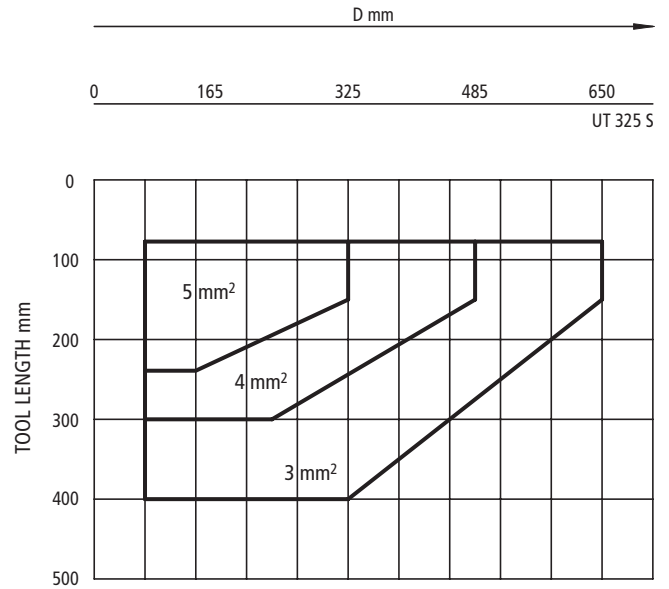
D = Control with Gauge
 E = Size to control depending on the spindle protrusion

F = Control wrench
 G = Bores min. depth 46
 H = Bores min. depth 53

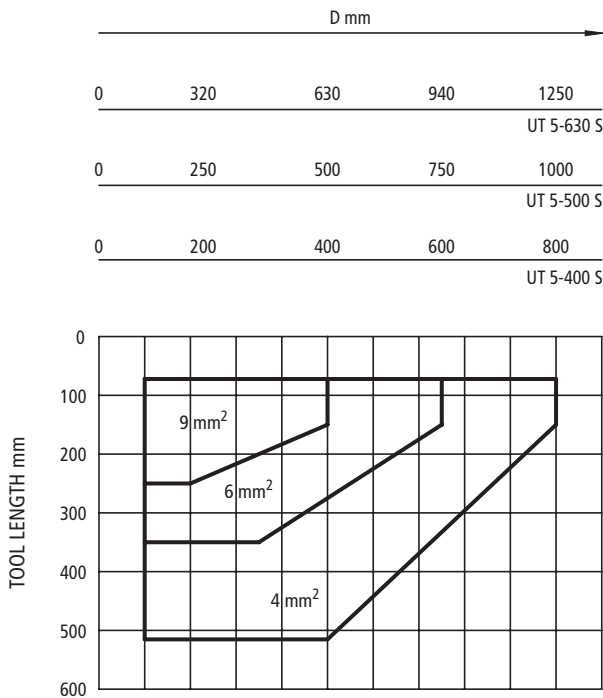
U-TRONIC 180-200 BH



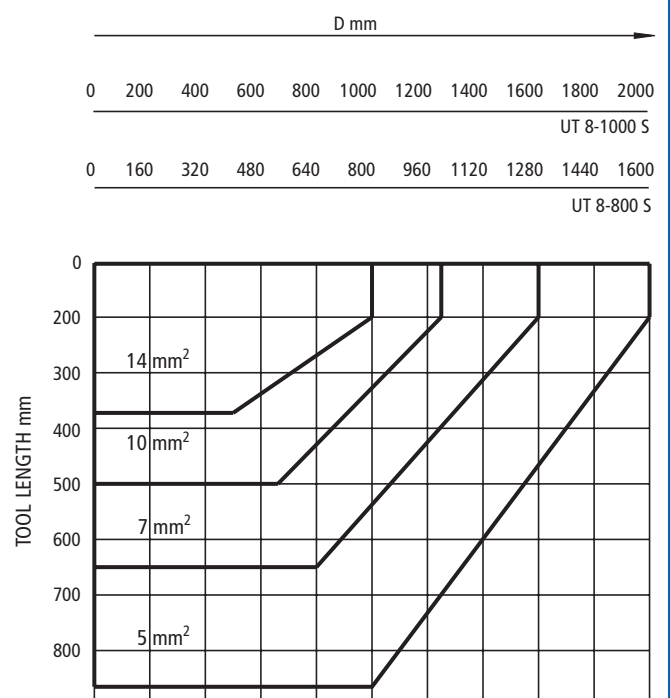
U-TRONIC 325 S



U-TRONIC 400-500-630 S



U-TRONIC 800-1000 S



These parameters are indicative for normal working conditions on steel with a hardness of 160-200 HB, tool with a positive rake angle $\gamma = +6^\circ$ and lead

angle = 75° (average $K_s = 2000\text{N/mm}^2$)
cutting speed = 120 m/min.
Optimal value and working time will be determined by tests.

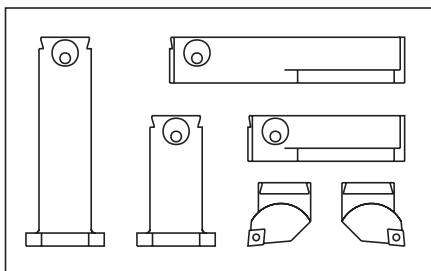
For a good chip removal and for the chip break control, it is advised:
 $a : f = 6 \div 8$
 a = cutting depth (mm)
 f = feed (mm/rev)



U-TRONIC 180 - 200 BH



K03

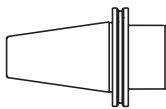


consisting of:

- P 100
- P 101
- P 110
- P 111
- T 214 L
- T 214 R

REF.	K03 UT 180/BH	K03 UT 200/BH
CODE	50 04 182 03 000	50 04 182 03 000

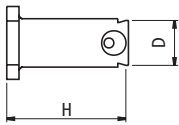
ARBORS



REF.	UT 180/BH	UT 200/BH
	ISO 40 - ISO 45 - ISO 50	ISO 40 - ISO 45 - ISO 50

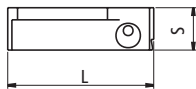


P100
P101



	REF.	CODE	D	H
UT 180 - 200/BH	P 100	43 15 60 40 100 0	40	100
	P 101	43 15 60 40 160 0		160

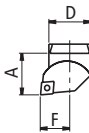
P110
P111



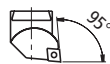
	REF.	CODE	S	L
UT 180 - 200/BH	P 110	43 35 60 40 120 0	35	120
	P 111	43 35 60 40 180 0		180




T 214L
T 214R

T 214 L



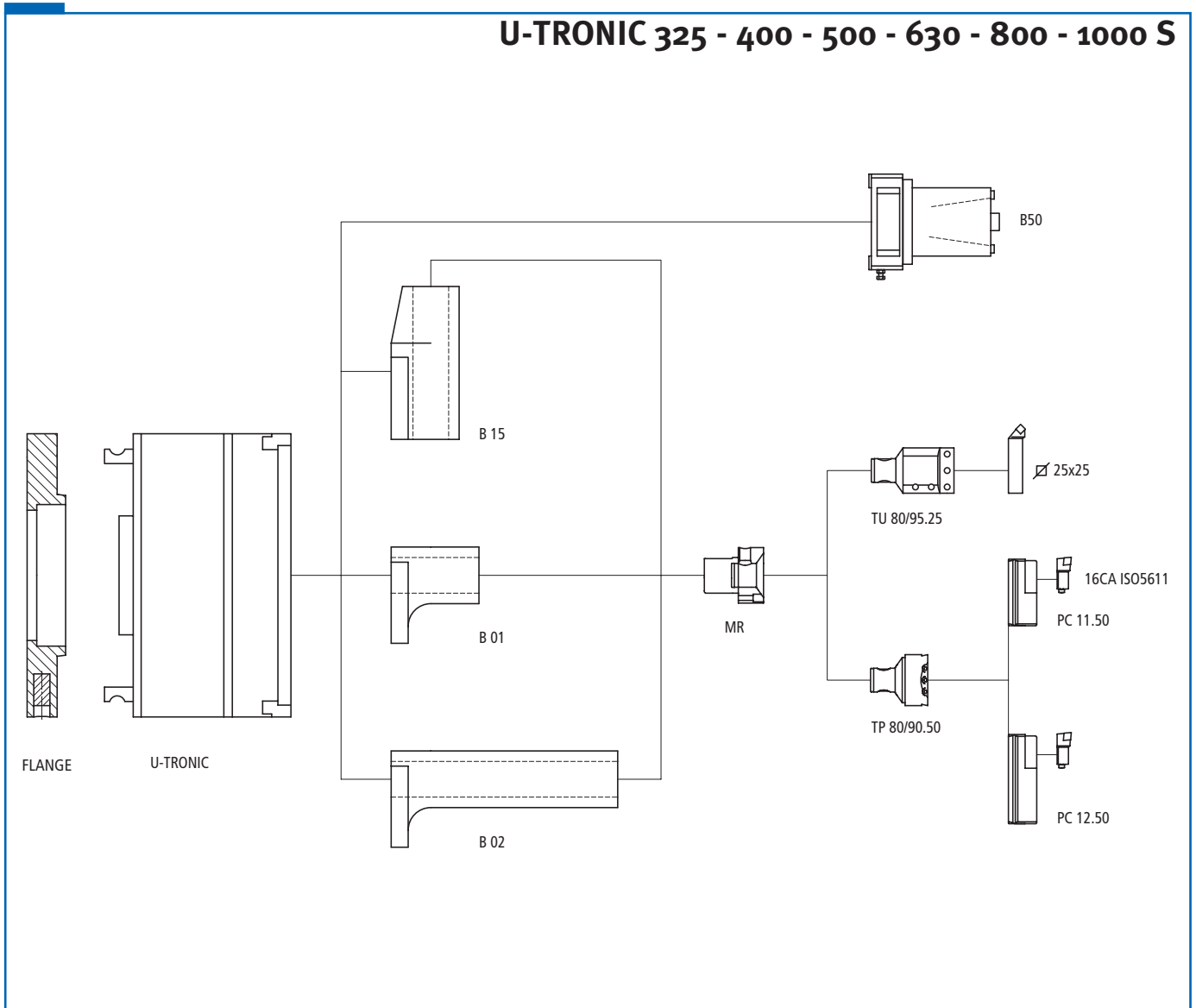
T 214 R



	REF.	CODE	A	D	F			
UT 180 - 200/BH	T 214 L	46 02 040 12 9 10	40	40	28	CCMT 1204..	49 40 1 0005009	10 150 09 0250 0
	T 214 R	46 02 040 12 9 20						



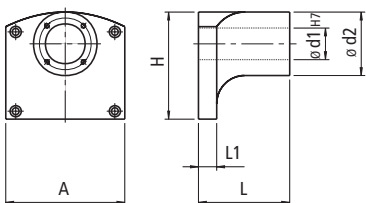
U-TRONIC 325 - 400 - 500 - 630 - 800 - 1000 S

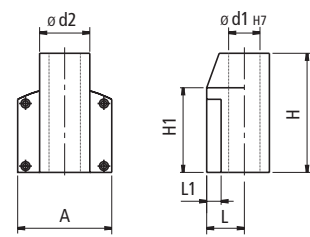


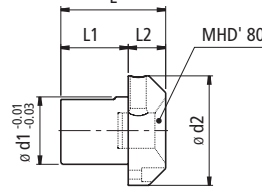
56

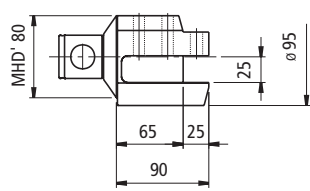
K03		REF.
<p>consisting of: B01 B02 B15 MR TU</p>	UT3/325S	50 17 0325 9 3 00
	UT5/400S	
	UT5/500S	50 17 0500 9 3 00
	UT5/630S	
	UT8/800S	
	UT8/1000S	50 17 0800 9 3 00
	UT8/1000S	

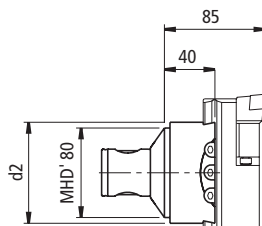
Toolholder with automatic tool change		REF.
	B50	
	UT5/400S	
	UT5/500S	B50 HSK - A63 - A100
	UT5/630S	B50 DIN69871-A - B50
	UT8/800S	B50 MAS BT50
UT8/1000S		

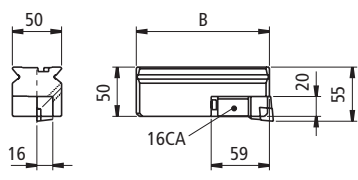
B01/B02		REF.	CODE	A	d ₁	d ₂	H	L	L ₁	kg
	UT3/325S	B01 UT 3	44 3 0 050 0115 0	150	50	80	135	100	23	5.5
		B02 UT 3	44 3 0 050 0275 0	150	50	80	135	260	23	8.5
	UT5/400S	B01 UT 5	44 3 0 063 0155 0	200	63	100	170	155	30	11
	UT5/500S	B02 UT 5	44 3 0 063 0365 0	200	63	100	170	400	30	19
	UT5/630S									
	UT8/800S	B01 UT 8	44 3 0 080 0230 0	250	80	130	200	230	30	25
UT8/1000S	B02 UT 8	44 3 0 080 0720 0	250	80	130	250	720	30	60	

B15		REF.	CODE	A	d ₁	d ₂	H	H ₁	L	L ₁	kg
	UT3/325S	B15 UT 3	44 5 0 050 0190 0	150	50	80	190	135	60	23	3.7
	UT5/400S	B15 UT 5	44 5 0 063 0250 0	200	63	100	270	170	70	30	7.5
	UT5/500S										
	UT5/630S										
	UT8/800S	B15 UT 8	44 5 0 080 0300 1	250	80	130	300	200	85	30	30
	UT8/1000S										

MR		REF.	CODE	d ₁	d ₂	L	L ₁	L ₂	kg
	UT3/325S	MR 50/80.80	45 02 080 0106 0	50	80	95	50	45	1.6
	UT5/400S	MR 63/98.80	45 02 098 0106 0	63	98	105	60	45	3
	UT5/500S								
	UT5/630S								
	UT8/800S	MR 80/130.80	45 02 130 0124 0	80	130	125	78	45	7
	UT8/1000S								

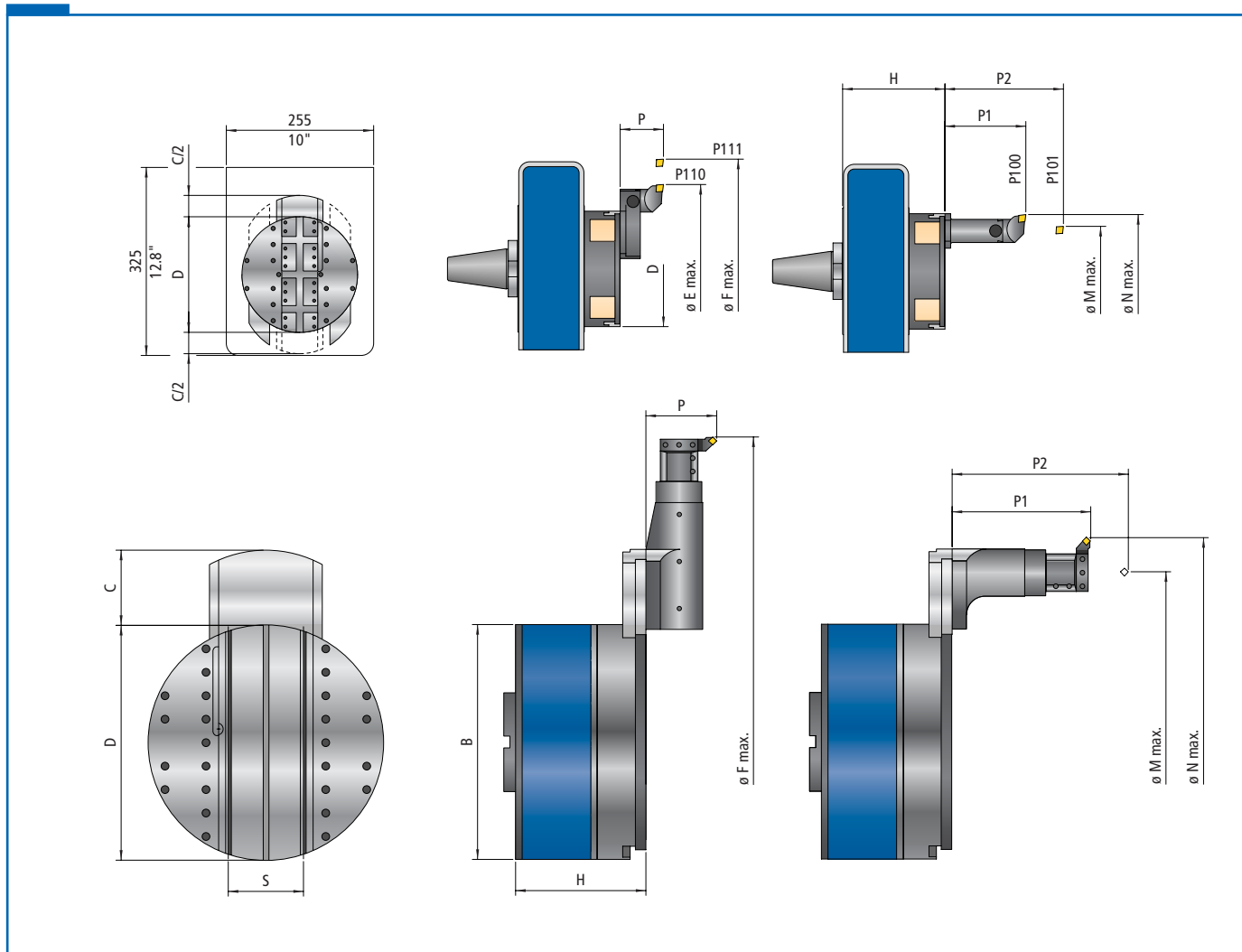
TU		REF.	CODE	kg
	UT3/325S	TU 80/95.25	46 05 080 25 0 01	4
	UT5/400S			
	UT5/500S			
	UT5/630S			
	UT8/800S			
	UT8/1000S			

TP		REF.	CODE	d ₂	kg
	UT3/325S	TP 80/90.50	46 04 080 50 0 01	90	2.3
	UT5/400S				
	UT5/500S				
	UT5/630S				
	UT8/800S	TP 80/125.50	46 04 080 50 0 02	125	3.2
	UT8/1000S				

PC		REF.	CODE	B	kg
	UT3/325S	PC 11.50	43 30 50 16 095 0	95	1.3
	UT5/400S				
	UT5/500S				
	UT5/630S				
	UT8/800S				
	UT8/1000S				

Use 16CA ISO5611 cartridges (see p.77)





TECHNICAL DATA			UT 180 BH		UT 200 BH		UT 325 S	
Radial trasverse C	mm	inch	50	1.97"	75	2.95"	100	3.94"
Feed	mm/min.	inch/min.	1÷500	.04"÷19.7"	1÷500	.04"÷19.7"	1÷400	.04"÷15.75"
Rapid trasverse	mm/min.	inch/min.	500	19.7"	500	19.7"	400	15.75"
Maximum rotation	min ⁻¹	RPM	1000		800		500	
Torque	da Nm	lb ft.	100	740	100	740	350	2590
Radial force	da N	pound	250	562.5	250	562.5	300	675
Weight	Kg	pound	32	70.4	40	88	110	242
Ø B	mm	inch	-	-	-	-	325	12.8"
Ø D	mm	inch	180	7.090"	200	7.87"	325	12.8"
H	mm	inch	-	-	-	-	235	9.25"
S	mm	inch	-	-	-	-	125	4.92"
Ø E x P	mm	inch	240 x 75	9.45" x 3"	350 x 75	13.78" x 3"	-	-
Ø F x P	mm	inch	360 x 75	14.17" x 3"	450 x 75	17.7" x 3"	650 x 140	25.5" x 10.5"
Ø M x P2	mm	inch	125 x 200	4.92" x 7.87"	180 x 200	7" x 7.87"	360 x 400	13.9" x 15.75"
Ø N x P1	mm	inch	165 x 140	6.5" x 5.5"	250 x 140	9.84" x 5.5"	560 x 240	20" x 9.45"
Repeatability accuracy	mm	inch	0.003	.00012"	0.003	.00012"	0.003	.00012"
Boring accuracy			H7	H7	H7	H7	H7	H7
Facing accuracy	mm	inch	0.010	.0004"	0.010	.0004"	0.010	.0004"
Max. chip removal on C40 steel	mm ²	inch ²	2	.0031"	2.5	.0039"	5	.0078"
Roughness	Ra	µin	1.6	63"	1.6	63"	1.6	63"





UT 5 400 S		UT 5 500 S		UT 5 630 S		UT 8 800 S		UT 8 1000 S	
125	4.92"	160	6.3"	200	7.87"	280	11.03"	350	13.78"
1÷400	.04"÷15.75"	1÷400	.04"÷15.75"	1÷400	.04"÷15.75"	1÷500	.04"÷19.7"	1÷500	.04"÷19.7"
400	15.75"	400	15.75"	400	15.75"	500	19.7"	500	19.7"
400		315		250		200		160	
800	5920	800	5920	800	5920	1000	7400	1000	7400
500	1125	500	1125	500	1125	1000	2250	1000	2250
200	440	230	506	350	770	1200	2700	1500	3375
500	19.7"	500	19.7"	500	19.7"	800	31.5"	800	31.5"
400	15.75"	500	19.7"	630	24.8"	800	31.5"	1000	39.37"
274.5	10.8"	278.5	10.96"	278.5	10.96"	395	15.55"	400	15.75"
160	6.3"	160	6.3"	160	6.3"	200	7.87"	200	7.87"
-	-	-	-	-	-	-	-	-	-
800 x 150	31.5" x 6"	1000 x 150	39.5" x 6"	1250 x 150	49" x 6"	1600 x 160	63" x 6.3"	2000 x 160	79" x 6.3"
450 x 540	17.7" x 21.26"	560 x 540	22" x 21.26"	700 x 540	27.6" x 21.26"	850 x 860	33.5" x 33.8"	1050 x 860	41.5" x 33.8"
680 x 295	26.8" x 11.6"	850 x 295	33.5" x 11.6"	1050 x 295	41.4" x 11.6"	1250 x 370	49.2" x 14.5"	1600 x 370	63" x 14.5"
0.003	.00012"	0.003	.00012"	0.003	.00012"	0.005	.0002"	0.005	.0002"
H7	H7	H7	H7	H7	H7	H7	H7	H7	H7
0.01	.0004"	0.015	.0006"	0.015	.0006"	0.020	.0008"	0.020	.0008"
9	.014"	9	.014"	9	.014"	14	.0217"	14	.0217"
1.6	63"	1.6	63"	1.6	63"	1.6	63"	1.6	63"

