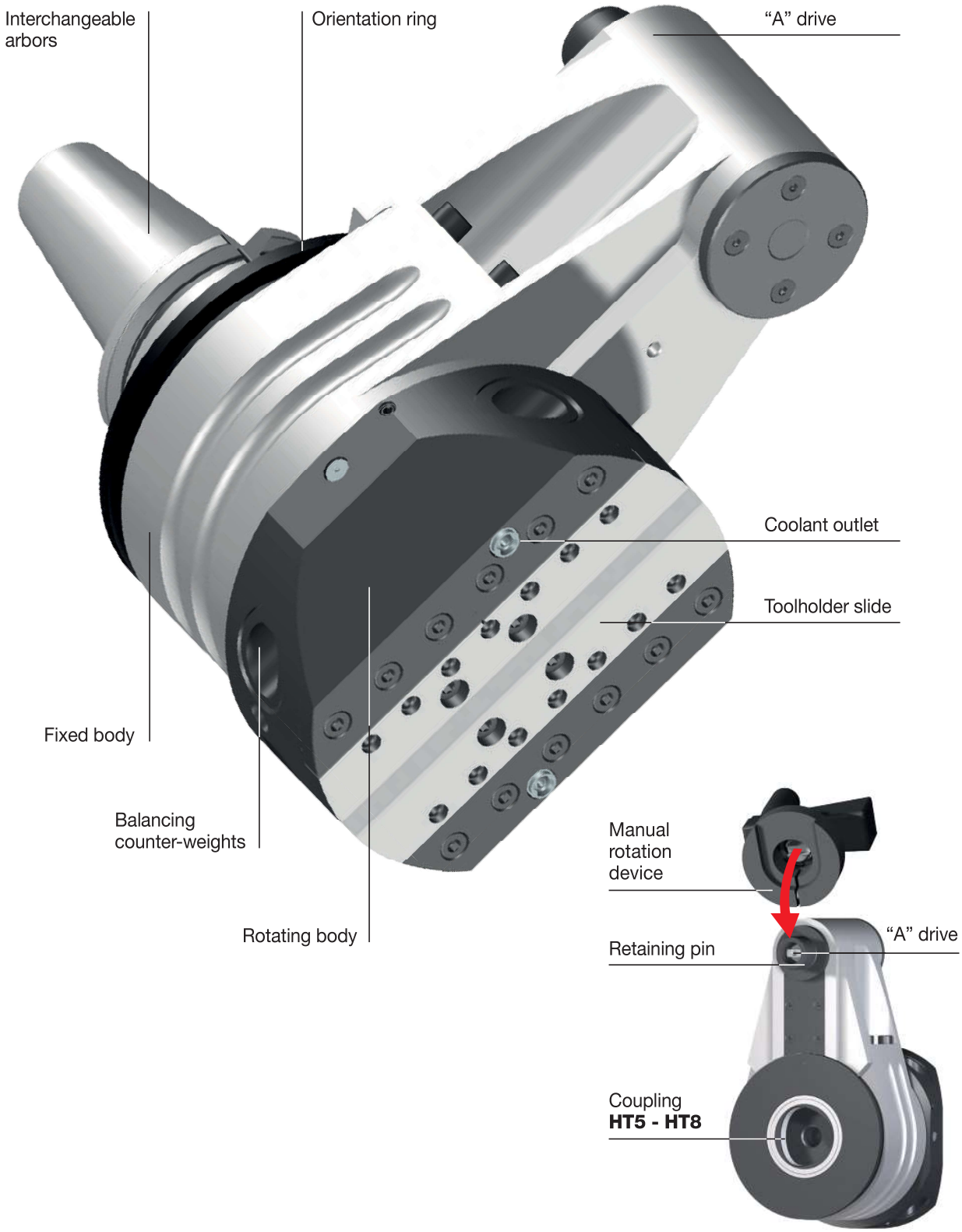
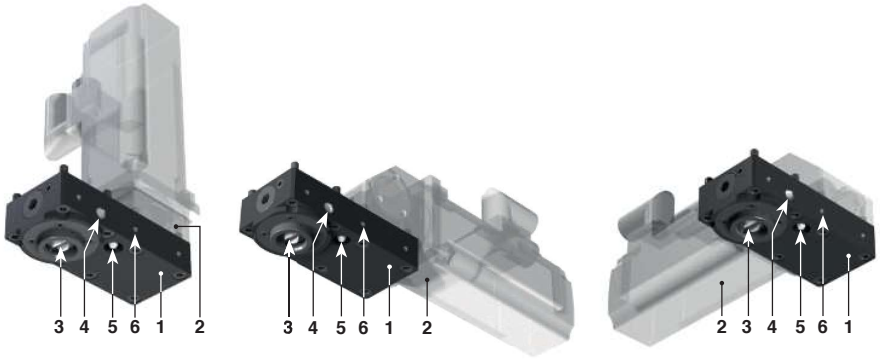
TA-CENTER 2 - Boring and facing heads realized for machines with automatic tool change and applicable on every machining centers.
The toolholder slide movement is managed by a drive unit External U-DRIVE fixed to the spindle flange.



COMPONENTS U-DRIVE

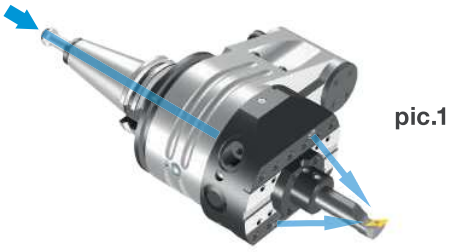


1. Base element
2. Servomotor
3. Mechanical unit for automatic hook-up to the TA-CENTER 2 drive
4. The unit comes with air inlet connection for cleaning the drive
5. Manual lubrication
6. n°6 M5x8 holes to be used for securing a possible protective casing

COMMAND

The TA-CENTER 2 boring and facing heads are designed to be used on machines with automatic tool change, therefore essentially on all machining centers. The control of the feed, the tool-holder slide and the tool position, also during rotation, are controlled by a **U-DRIVE** gearbox unit. This group is managed directly by an axis called “U” of the numerical control of the machining center. A machining center set up in this way allows to hit several different features such as internal and external turning, grooves, taper bores, concave and convex radius machining, cylindrical and conical threads and facing for serration.

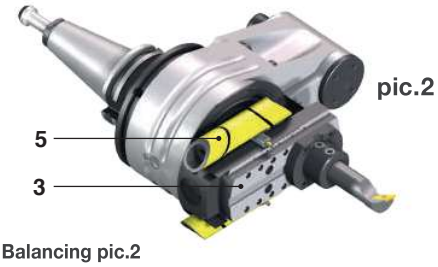
PREARRANGEMENTS



pic.1

Coolant supply pic.1

Coolant exits from the two adjustable nozzles in the TA-C2 located next to the slide after crossing the taper and the rotating body of the head. This noteworthy advantage ensures longer duration of the cutting edge, quicker cutting speed and for obtaining good surface finishes. The centralized supply of coolant does not harm the TA-C2 of which the internal labyrinth protected by an O-ring. It is advisable to not exceed **50 BAR** of pressure.

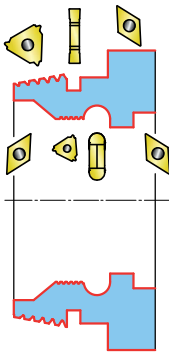


pic.2

Balancing pic.2

TA-CENTER heads are designed with two counter-weights **(5)** for automatic balancing, that move opposite to the slide **(3)** allowing to machine at a higher number of rpm without noticeable oscillations.

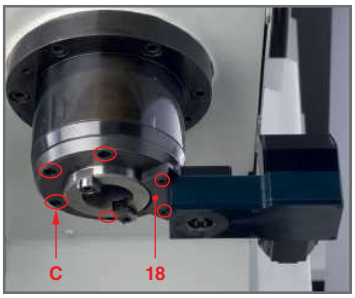
MACHINING

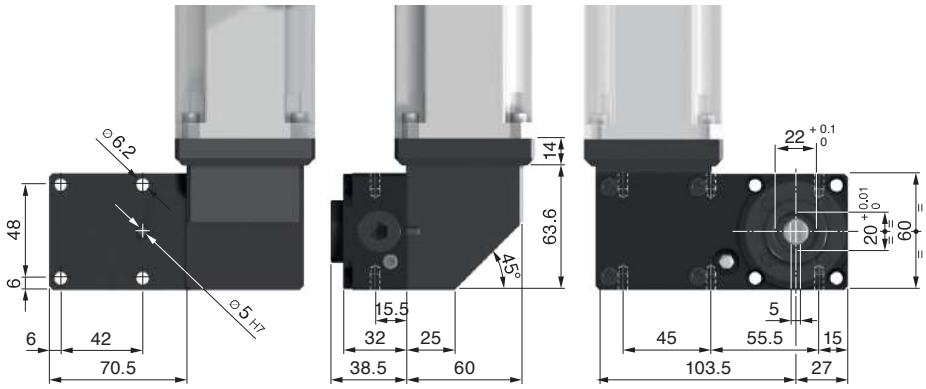


APPLICATION

U-Drive
D'ANDREA has developed a standard U-DRIVE unit (horizontal and vertical), on which different types of servomotors can be mounted.
The U-DRIVE can be easily positioned on the machine (see photo) with plate **(18)** adapted to the machine that is connected and fixed to the holes **(C)** on the front of the spindle flange.

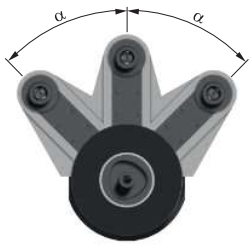
Other special configurations can be provided on request



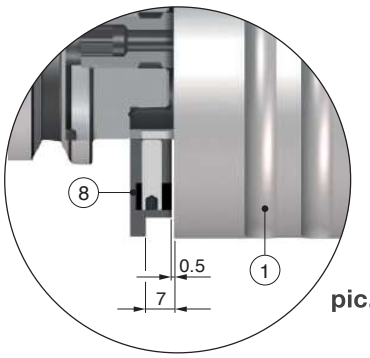


U-DRIVE assembly TA-CENTER
For a correct installation of the U-DRIVE and TA-CENTER 2, carefully follow these instructions:
1. Mount the cone on the TA-CENTER 2, detect the **B** distance between the gauge limit of the cone **(4)** and the retaining pin plane **(9).**
Calculate X height with the formula X=B+4 mm.
Warning, if more heads are employed on the same machine, calculate the X height by using the lower B value.
2. Mount the plate **(18)** and the U-DRIVE on the machine according to the Layout and detect the F distance between the spindle gauge limit and the U-DRIVE plane.
The F distance must be equal to the X height.
The plate **(18)** is thicker than indicated in the layout, to get the F and X distances alike, the plate thickness must be trimmed **(18).** After adjusting the F height, remount the U-DRIVE by paying attention to its alignment, the position of the drive shaft **(22)** and distance **(23)** between the drive shaft axis **(22)** and the machine spindle centre.

⚠ **The driving flange (24) must point towards the centre of the spindle.**
3. To align the TA-CENTER 2 to the U-DRIVE, remove the two locking dowels **(21)** of the orientation ring **(8)** to the left and right of the white reference point, and replace them temporarily with two longer dowels, integrating the ring to the fixed body. Screw the 4 ring dowels until they lay slightly to the cone **(4) (pic.1-2).**
After checking that the head is in the **HOME POSITION,** that the slide stroke is 0 and that the transmission shaft **(22)** of the U-DRIVE is aligned with the retaining pin **(9)** of the head, spindle orientation (M19), manually mount the head in the machine. Insert the cone **(4)** in the spindle by rotating the fixed body **(1)** up to the U-DRIVE, once the TA-CENTER 2 and U-DRIVE are aligned, lock the TA-CENTER 2 in the machine and tighten all dowels **(21)** putting the two original dowels one at a time. During this operation, pay attention to the height between the ring **(8)** and the fixed body **(1) (pic.3).** Load and unload the TA-CENTER 2 manually a few times to check the alignment.



pic.1



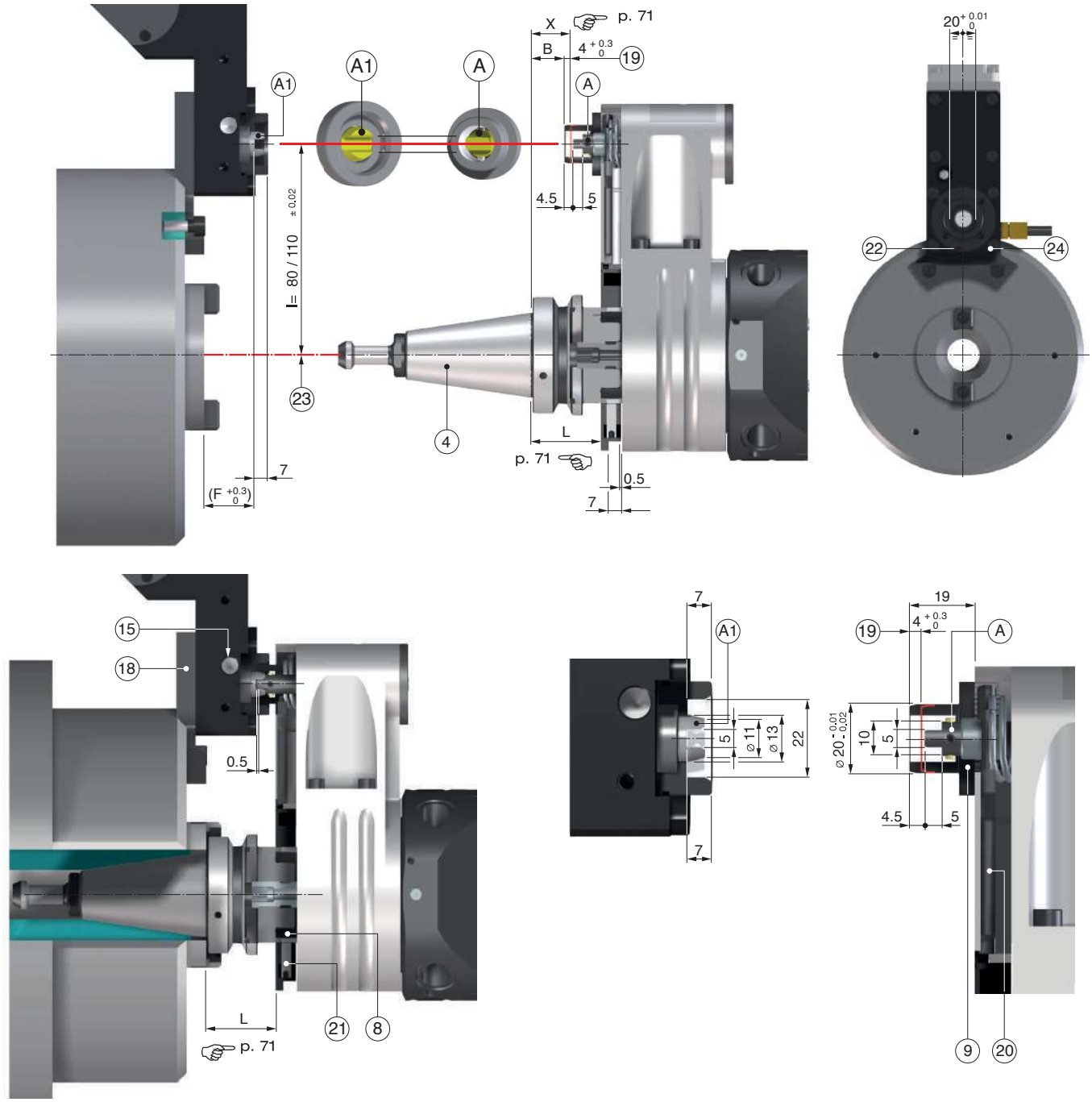
pic.2

U-DRIVE assembly TA-CENTER

⚠ WARNING

During tool changes the "A" shafts of the TA-CENTER and "A1" U-DRIVE must comply with the correct "HOME POSITION" setting and must be always run in an unidirectional way to allow :

- **the perfect coupling tooth "A" to "A1".**
- **can be properly attached, the rotating body can be properly coupled to the fixed body.**
- **to avoid exceeding runout and cause damage inside the head, recognition of the "0" position of the tool slide is required.**



15. Air inlet connection for cleaning the drive 1/8 GAS.

18. Support plate for blocking and adapting the X dimension of the U-DRIVE (X $^{+0.3}_{0}$) mm.

19. Release rotation lock travel.

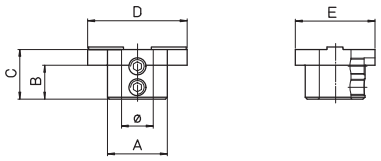
20. Locking-unlocking lever.

TA-CENTER 2

SUPPLY

P120

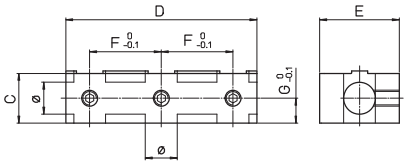
TA-C2 / TA-T2



REF.	CODE	ØH7	A	B	C	D	E	Kg.
P 120 TA-C2.110 / TA-T2.110	431550160250	16	30	17	25	50	40	0.2
P 120 TA-C2.170 / TA-T2.170	431550250380	25	47	27.5	38	76	54	0.55

P130

TA-C2 / TA-T2

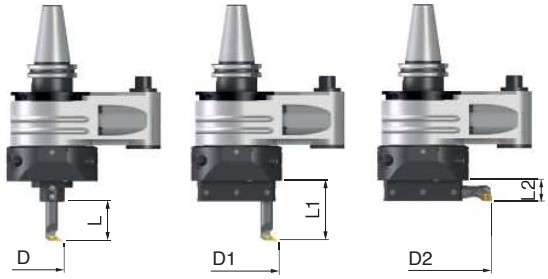


REF.	CODE	ØH7	C	D	E	F	G	Kg.
P 130 TA-C2.110 / TA-T2.110	433040250950	16	25	95	40	37	10.5	0.5
P 130 TA-C2.170 / TA-T2.170	433054381520	25	38	152	54	59.5	16.5	1.6

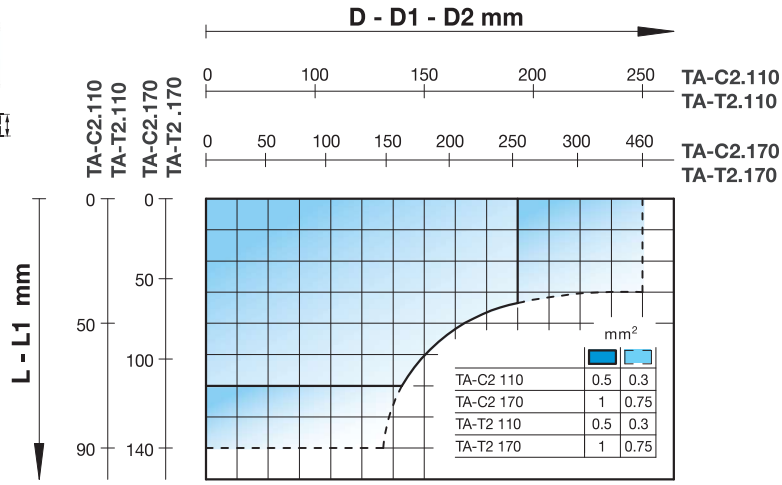
CHIP REMOVAL CAPACITY

TA-C2 / TA-T2

The chip removals are indicative for normal working conditions on steels with hardness 160-200 HB, (average Ks = 2000 N/mm2) recommended Vt 120/160 m/min.
The optimal values and working times must be determined with trials.



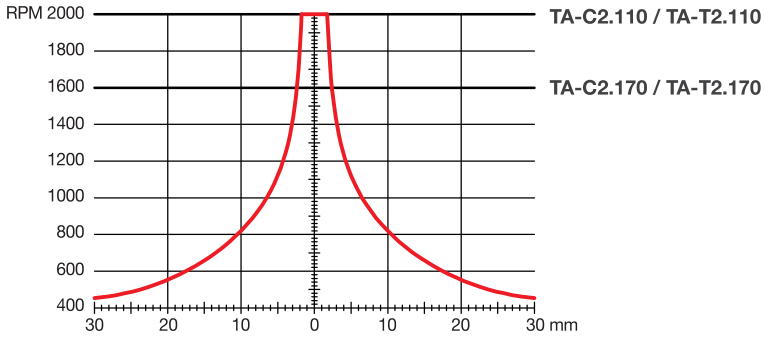
	TA-C2.110 TA-T2.110	TA-C2.170 TA-T2.170
D	10 ~ 102	20 ~ 194
L	65	100
D1	96 ~ 126	153 ~ 263
L1	90	140
D2	126 ~ 250	203 ~ 460
L2	25.5	38.5



MAX ROTATION SPEED

TA-C2 / TA-T2

For good TA-CENTER head operations and to protect it from damages, it is advisable to follow the chart below that indicates the **maximum rpm,** based on the slide travel.

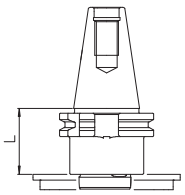


K02

For Interchangeability with previous version TA-CENTER, use **TA-C2** with mechanical ratio **R.0.5.**

REF.	CODE	
K02 TA-C2.110 I.80 R. 0.25	501251100800	
K02 TA-C2.110 I.80 R. 0.5	501251100801	
K02 TA-C2.110 I.110 R. 0.25	501251101100	
K02 TA-C2.110 I.110 R. 0.5	501251101101	
K02 TA-C2.170 I.110 R. 0.25	501251701100	
K02 TA-C2.170 I.110 R. 0.5	501251701101	
U-DRIVE KB-KA1		

ARBORS HT

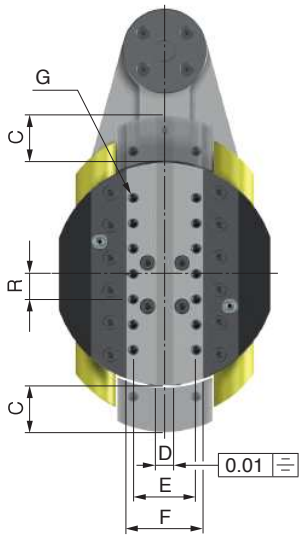


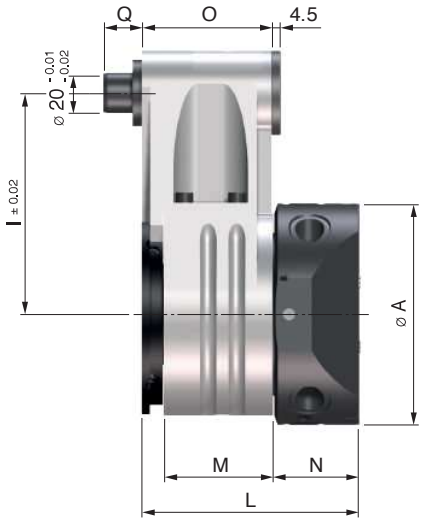
SUPPLY

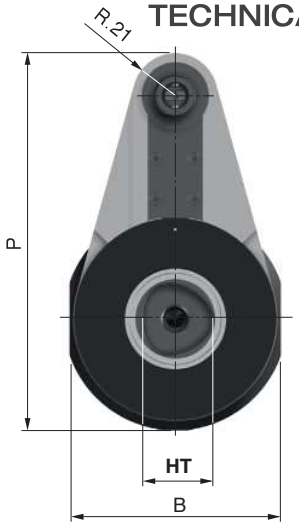
TA-C2 / TA-T2

	REF.	CODE	L	X	
TA-C2.110 TA-T2.110	DIN69871-A40-HT5.36.5	41HT05024000	36.5	21.5	
	DIN69871-A40-HT5.44.5	41HT05024001	44.5	29.5	
	MAS403 BT40-HT5.27	41HT05034000	27	12	
	MAS403 BT40-HT5.36.5	41HT05034001	36.5	21.5	
	MAS403 BT40-HT5.44.5	41HT05034002	44.5	29.5	
	HSK-A63-HT5.54.5	41HT05046300	54.5	39.5	
	ANSI/CAT40-HT5.54.5	41HT05054000	54.5	39.5	
TA-C2.170 TA-T2.170	DIN69871-A50-HT8.36.5	41HT08025000	36.5	21.5	
	MAS403 BT50-HT8.38.5	41HT08035000	38.5	23.5	
	HSK-A100-HT8.76.5	41HT08041000	76.5	61.5	
	ANSI/CAT40-HT8.50.5	41HT08055000	50.5	35.5	

TECHNICAL DATA







TECHNICAL DATA		TA-C2.110	TA-C2.170
Ø A	mm	110	170
B	mm	104	164
C radial traverse	mm	± 15	± 30
D	mm	$8^{+0.04}_{+0.02}$	$10^{+0.04}_{+0.02}$
E	mm	31	40
F	mm	38	54
G	mm	M 4	M5
HT	mm	**HT5**	**HT8**
I	mm	80/110	110
L	mm	108	136
M	mm	55	69
N	mm	42	56
O	mm	64.5	69
P	mm	156 / 186	216
Q	mm	19	19
R	mm	12.5	12.5
Feed	mm/min	1 ÷ 500	
Radial force	daN	150	250
Maximum speed	RPM	2000	1600
Torque	Nm	400	800
Weight without the cone	Kg	5.7	16.5
Boring accuracy		H7	
Max workable ø	mm	250	460
Max chip removal on C40 steel	mm^2	0,5	1
Roughness	Ra	0.8 - 1.2	