*optional

Facts

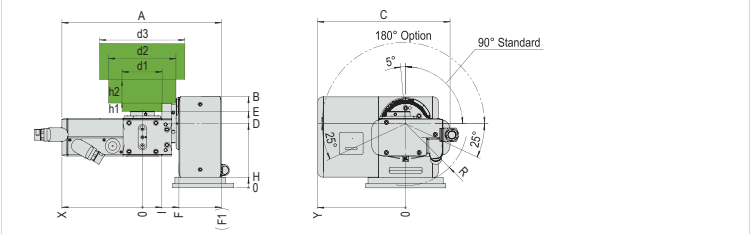
- Compact solution
- For lightweight components

= Dividing axis for High Series (high speed, high resistance)

					TF-507510 TIP1c	TF-508510 TIP1cs	TF-510520 TIP2c	TF-511520 TIP2cs	TF-520530 TIP3c	TF-521530 TIP3cs
Dimensions	Swivel ø			mm	180		220		195	
	Swiveling range			degrees	90° +5°/-25° (optional 180° ±25°)					
	Center height			mm	180		210		220	
	Total weight	with motor		kg	65		110		220	
	Center bore	Standard / increased		mm	30		34		46 / 64	
Bearing / Clamping	Max. clamping torque	4th axis		Nm	300	250	800	600	2,000	1,800
		5th axis		Nm	800		2,000		5,000	
	Max. spindle load	0°–30°		kg	40		66		135	
		30°–90°		kg	27		44		90	
		Standard load [1]		kg	17	12	42	21	90	61
	Max. axial force	4th axis		kN	6		10		40	
	Max. pull-out torque	4th axis		Nm	1,200		2,000		3,900	
		5th axis		Nm	2,000		3,900		10,400	
Gear unit	Max. moment of inertia	Standard load [1]		kgm²	0.05	0.025	0.2	0.07	0.8	0.4
		J max		kgm²	0.5	0.25	2	0.7	8	4
	Feed torque max [3]	4th axis		Nm	120	70	250	150	440	220
		5th axis		Nm	230		440		650	
	Limited torques due to eccentric loads (acting on the tilting axis) [5]			Nm	40		110		280	
	Gear unit loading 5th axis	without load		Nm	-12		-22		-44	
		with standard load		Nm	15	10	30	5	100	45
		M max		Nm	250		440		650	
	Indexing accuracy Pa	4th axis [2]		± arc sec	20/15		17/10		12/8	
		5th axis (90°) [4]		± arc sec	35/20	35/22	21/22	21/13	11/38	11/20
	Repeat accuracy Ps average	4th axis		± arc sec	2					
		5th axis		± arc sec	2					
	Max speed at standard load	4th axis [1]		min⁻¹	111	210	80	160	50	100
		5th axis [1]		min⁻¹	70		40		25	
Precision	Radial run-out [2]	on spindle ø		µm	6 / 3					
	Axial run-out [2]	at spindle end face		µm	6 / 3					
	Parallelism [2]	Spindle to base		µm/100 mm	10 / 5					

[1] Mutually dependent; for individual drive motor data, see right side
[2] Standard / increased; for measuring method and validity of the values, please refer to **p. 80**, for optional angular position measuring systems, please refer to **p. 82/83**
[3] Limit value for gear unit, at 1 rpm
[4] Without load / with standard load 0°–90°
[5] For torque calculation, see **p. 120**

Dimensions



	A	A*	B	C	C*	D	E	F	F1	H	I	R	X	Y	Y*	d1	d2	d3	h1	h2
TIP1c	466		245	382	404	180	226	104	230	30	55	147	236	248	270		186	350		55
TIP2c	512	534	310	444	469	220	260	122	264	40	65	173	248	295	320	128	220	226	30	95
TIP3c	630	655	360	554		220	260	155	335	40	90	195	295	390		178	282	326	66	166

Dimensions with 508, 511 or. 521 identical to 507510, 510520 and 520530.
*With large motor (option)

Important information

Center height increase (option)
Depending on the accessories involved (clamping cylinder, rotary union, angular position measuring system...), a center height increase (dimension D) is required. (See page for respective accessory)