

F4CF-UA 25 type specifications

Technical data type F4CF-UA 25	Description	Unit	Value
Reduction ratio Cyclo stage	i_{Cyclo}		35
Total reduction ratios standard/slow speed shaft rotates*	i_{ges}		82/100/124/145/173
Total reduction ratios/gearbox housing rotates*	i_{ges}		81/99/123/144/172
Rated output torque T_{2N} at $n_2 = 5 \text{ min}^{-1}$	$T_{2N,5}$	[Nm]	695
Rated output torque T_{2N} at $n_2 = 10 \text{ min}^{-1}$	$T_{2N,10}$	[Nm]	565
Rated output torque T_{2N} at $n_2 = 15 \text{ min}^{-1}$	$T_{2N,15}$	[Nm]	500
Rated output torque T_{2N} at $n_2 = 20 \text{ min}^{-1}$	$T_{2N,20}$	[Nm]	459
Rated output torque T_{2N} at $n_2 = 25 \text{ min}^{-1}$	$T_{2N,25}$	[Nm]	429
Rated output torque T_{2N} at $n_2 = 30 \text{ min}^{-1}$	$T_{2N,30}$	[Nm]	406
Rated output torque T_{2N} at $n_2 = 40 \text{ min}^{-1}$	$T_{2N,40}$	[Nm]	373
Rated output torque T_{2N} at $n_2 = 50 \text{ min}^{-1}$	$T_{2N,50}$	[Nm]	348
Acceleration torque	T_{2A}	[Nm]	1.250
Emergency stop torque (1,000 x during lifetime)	T_{2max}	[Nm]	2.500
Moment rating	T_k	[Nm]	1.666
Maximum moment rating emergency stop	T_{kmax}	[Nm]	3.332
Allowable axial load pull	$F_{A2 Zug}$	[N]	5194
Lost Motion	LM φ	[arcmin]	< 1
Torsional stiffness at 50 - 100% T_{2N}	Θ	[Nm/arcmin]	112
Moment stiffness (main bearing)	Θ_1	[Nm/arcmin]	aprx. 500
Internal bearing distance	mm	L1	131,9
Distance	mm	a	26
Maximum allowable output speed	n_{2max}	[min^{-1}]	50
Maximum outer diameter of gear unit	d	[mm]	159
Weight without motor adapter	m	[kg]	6
Motor mounting acc. to customer's request			depending on motor type
Housing (depending on application)			Fixed or rotating
Lifetime lubrication			Grease or oil
Mounting position			Universal

*Nominal gear ratios

F4CF – UA 25

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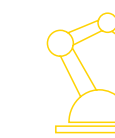
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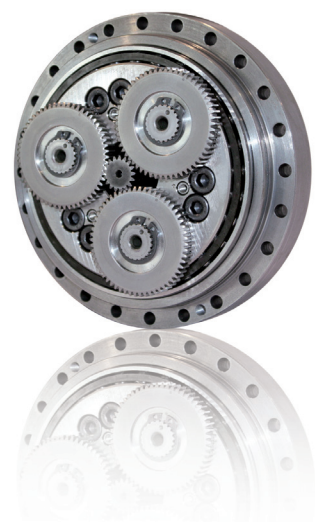
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Fine Cyclo F4CF – UA 25
Zero backlash precision gearboxes
for robots and machine tools



F4CF-UA 25 – accurate, compact, moment stiff

Highest levels of dynamics and positioning accuracy under high torsional and tilting moments and inertial forces – when used in robotics or positioning and handling systems, precision gear units need to meet the most exacting demands.

The new UA series includes precision gearboxes for next generation robot and machine tools. Offering improved bearings, increased torque ratings, and highly compact unit sizes and featuring high positioning and path accuracy even at maximum dynamic variable loads, these gearboxes meet the stringent demands placed on gearbox development and manufacturing by present-day robotics and machine tool technology.

The new UA 25 model is the smallest size within the UA-series, currently comprising six different sizes with differing bearing arrangements.

The UA 25 size gearbox has an outer diameter of 159 millimetres and makes use of the proven Cyclo functional principle.

Thanks to its specially contoured cycloid disc lobes, the two-stage reduction gear operates at extremely low vibration levels and with optimally distributed load forces.

The UA 25 combines the second gear stage's cycloid discs with three spur gears that operate as the first stage driven by a central, toothed input shaft.

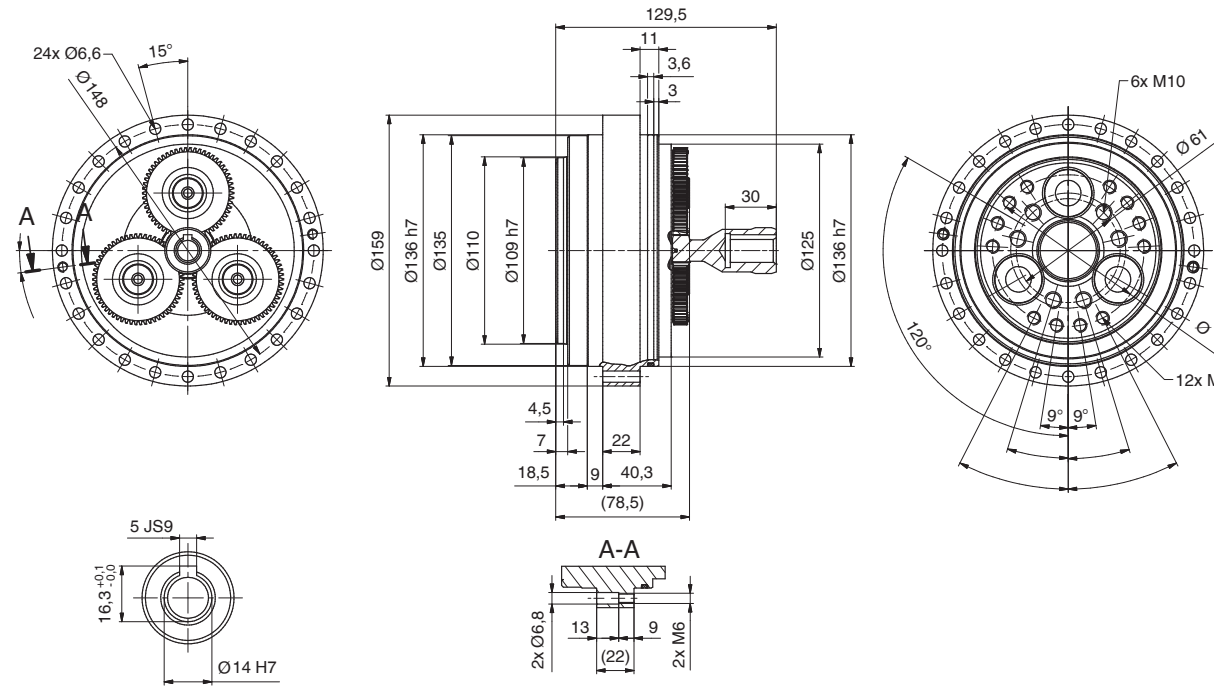
Each spur gear is attached to an eccentric shaft that, in turn, drives two of the symmetric cycloid discs of the secondary drive stage.

Put together, the high degree of overlap between the cycloid disc lobes and the outer pins and the smooth distribution of forces within the gear unit enable this compact reducer to achieve a rated torque of up to 695 Nm and an acceleration torque of up to 1,250 Nm.

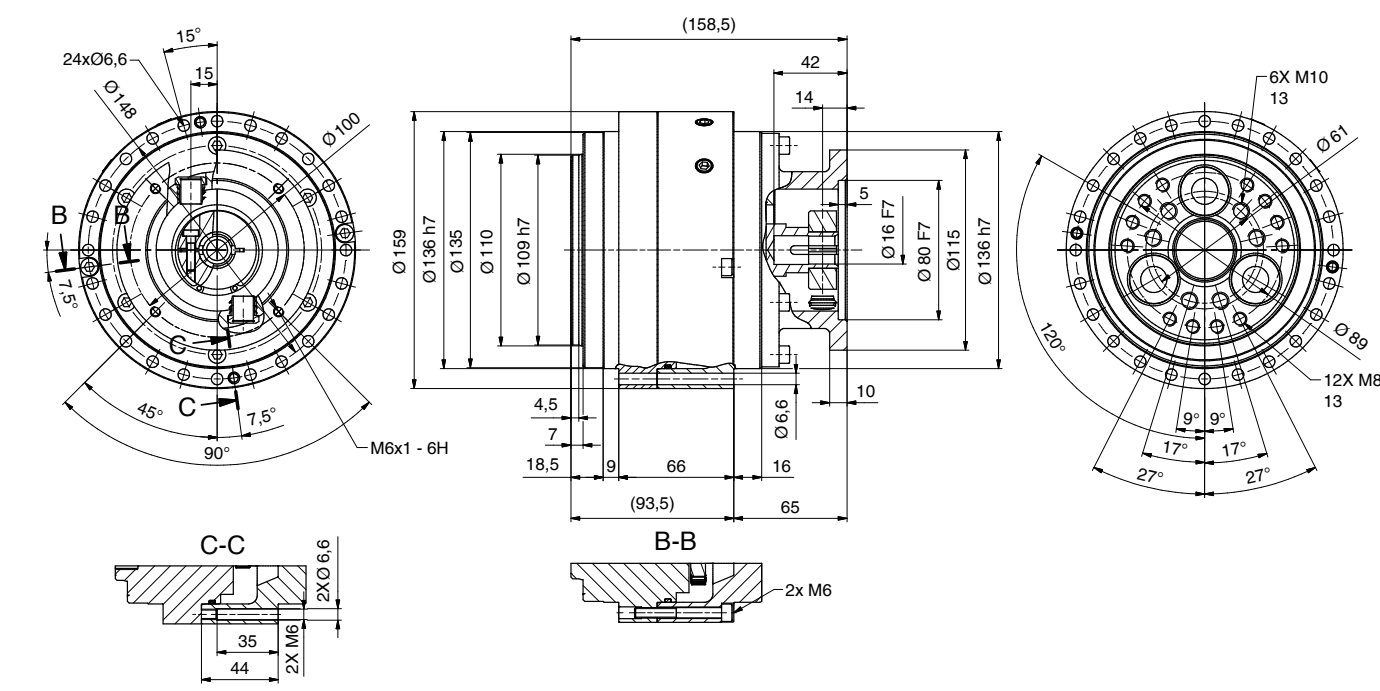
In case of an emergency stop, these precision gear units can safely withstand 2500 Nm.

The built-in angular ball bearings allow for tilt moments of up to 1,666 Nm on the output side while retaining a tilt resistance of aprx. 500 Nm/arcmin.

F4CF-UA 25 output flange rotates (standard design)

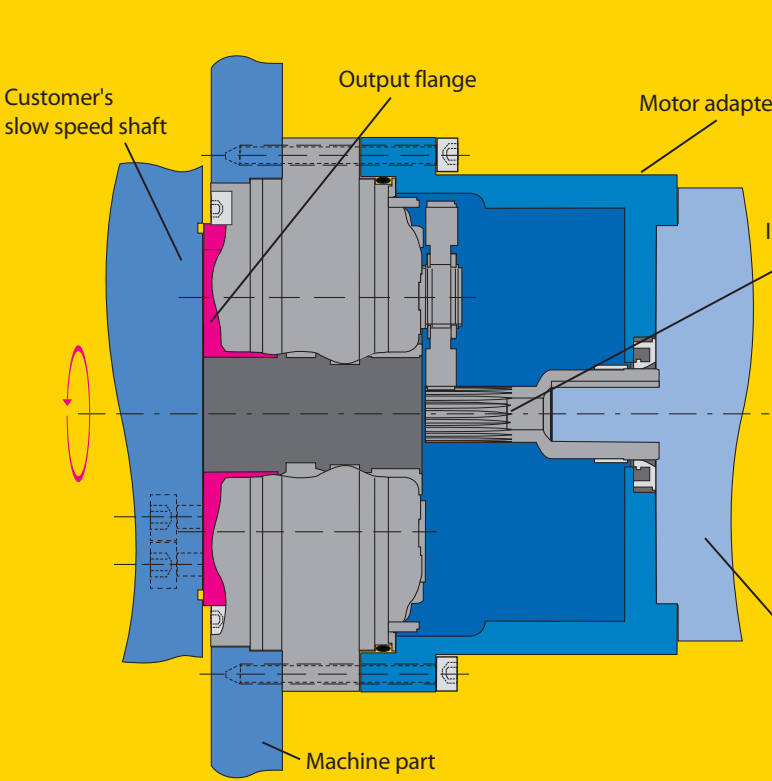


F4CFS-UA 25 output flange rotates (optionally in clamping design with motor adapter)*

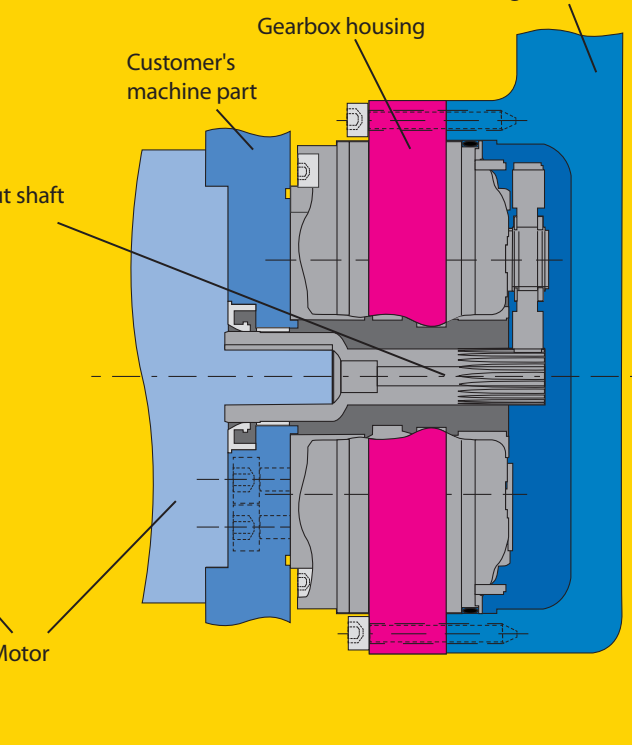


Mounting examples

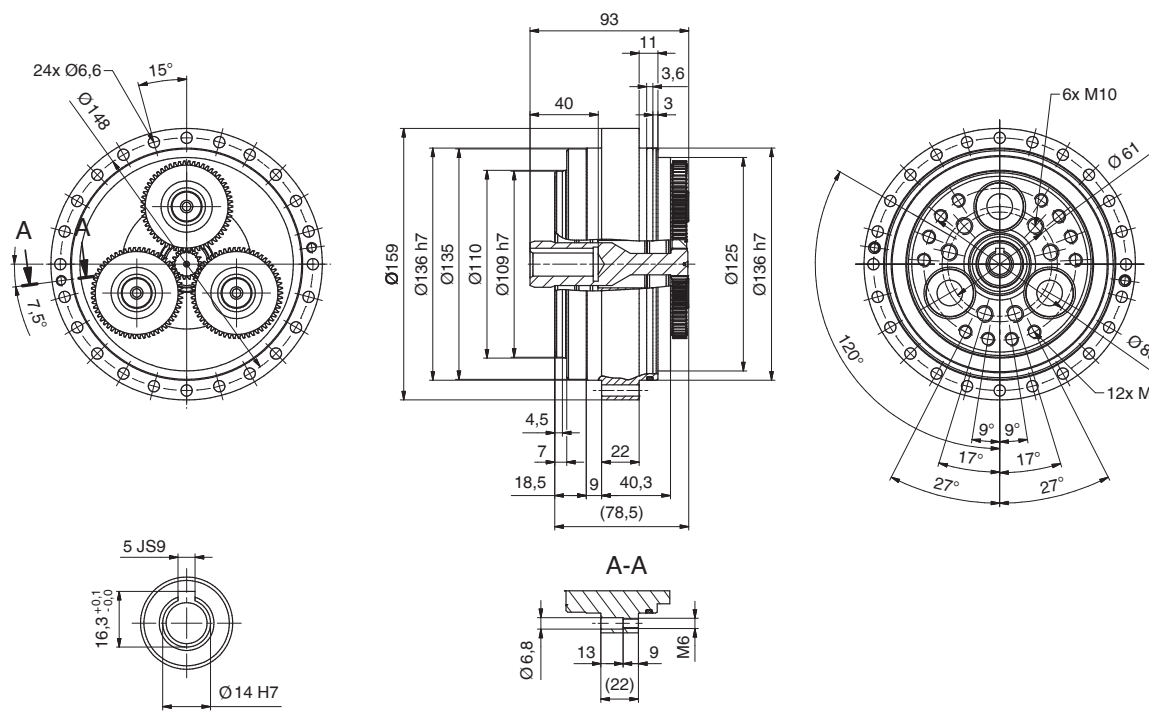
Output flange rotates (standard design)



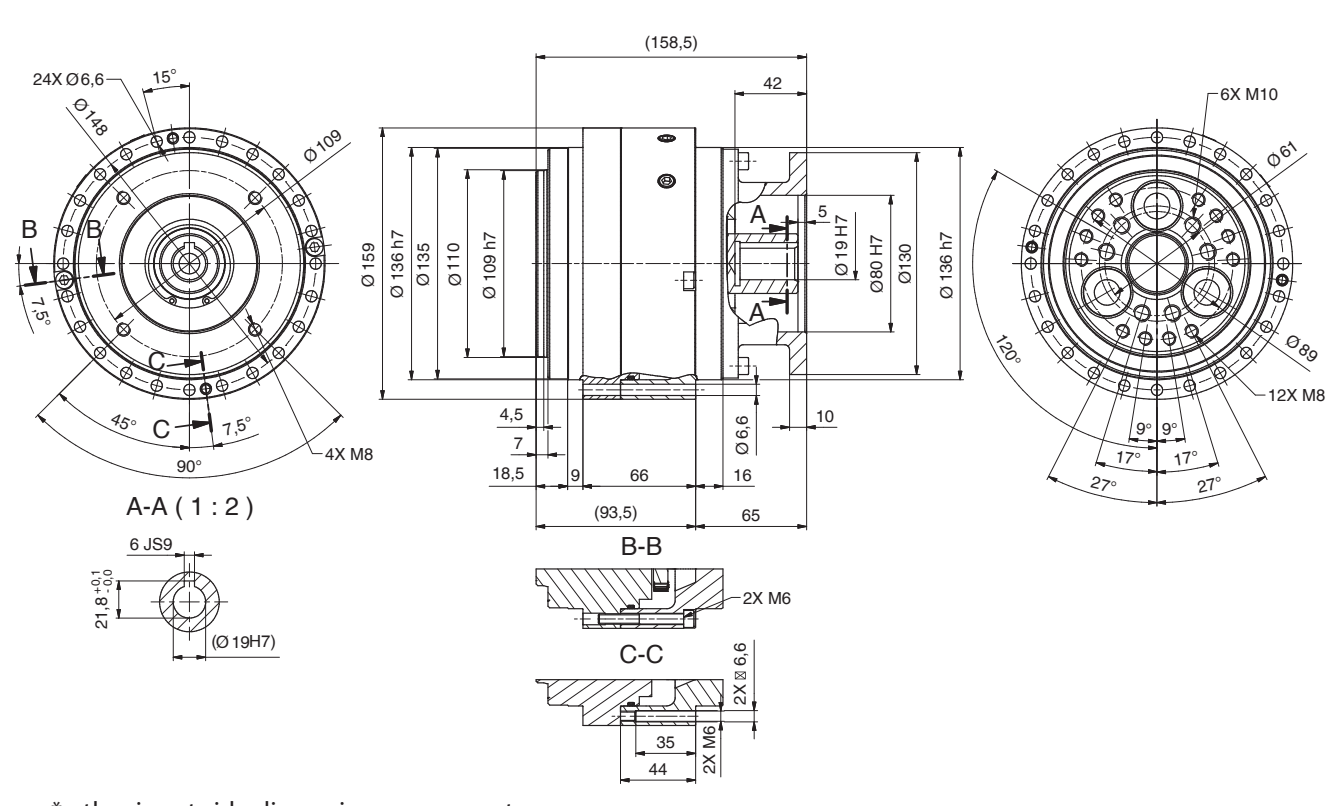
Gearbox housing rotates (optionally in keyway design)



F4CFS-UA 25 gearbox housing rotates (optionally in keyway design)



F4CFS-UA 25 output flange rotates (optionally in keyway design with motor adapter)*



* other input side dimensions on request