

## XPC<sup>+</sup> / RPC<sup>+</sup> – High precision and low ratios around the corner

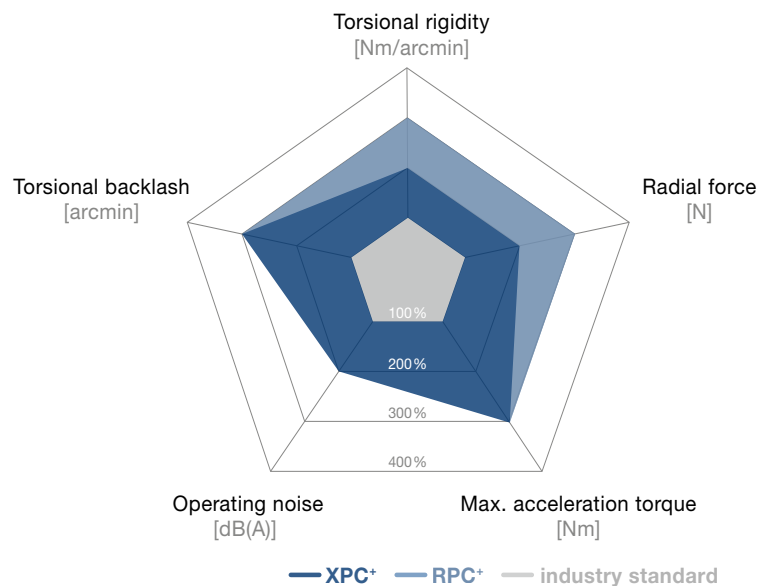


New performance standard, also available in the bevel version

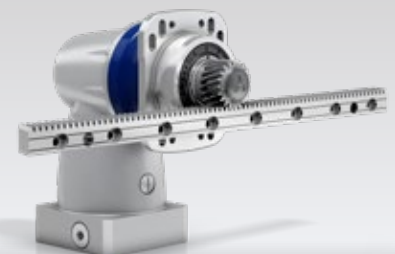
Both the XP<sup>+</sup> and RP<sup>+</sup> Premium planetary gearboxes are now available in a right-angle version with bevel toothing. Bevel gearboxes are primarily characterized by low gear ratios (ratio 1 and 2) in the angle section. Consequently, right-angle and planetary gearbox combinations can achieve the same low ratios as planetary gearboxes. The product design has a positive influence on temperature development in the gearbox and reduces overall heat development in the system as a result. The overall system achieves a higher degree of positioning accuracy as a consequence.

XPC<sup>+</sup> and RPC<sup>+</sup> compared to industry standard

Product highlights	
<b>Max. torsional backlash</b>	
XPC <sup>+</sup>	≤ 4 arcmin (Standard) ≤ 2 arcmin (Reduced)
RPC <sup>+</sup>	≤ 1.3 arcmin
<b>XPC<sup>+</sup> and RPC<sup>+</sup>:</b>	
Low ratios of $i = 4 - 88$ possible	
Optimized temperature distribution, even at high speeds	
High tilting moments and torsional rigidity	
Optimized for rack and pinion applications	
<b>Multiple output configurations for greater flexibility</b>	
Smooth shaft, shaft with key, splined shaft (DIN 5480), blind hollow shaft, flange, System output	



XPC<sup>+</sup> with pinion and slots



XPC<sup>+</sup> with pinion, slots and rack

Specially designed output for transmitting extremely high torques

Intelligent design reduces losses to a minimum

High-quality bevel toothing with low gear ratios of  $i = 1 - 2$  in the angle section

Low temperature development, even at high speeds

RPC+

Metal bellows coupling incorporated for thermal length compensation and protection of the motor bearing



RPC+ with pinion and slots



RPC+ with pinion, slots and rack

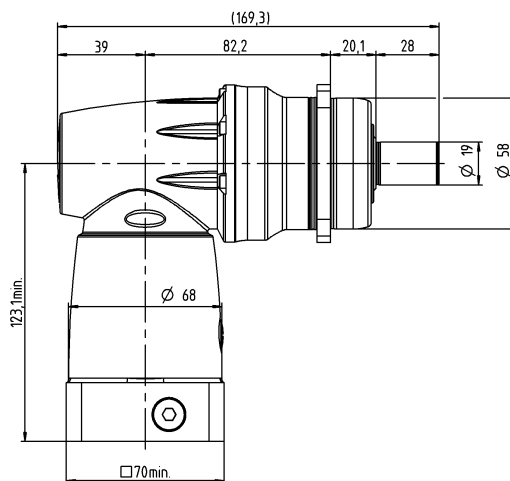
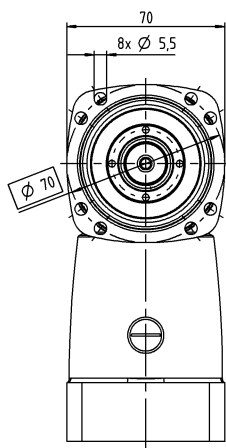
# XPC<sup>+</sup> 010 MF 2-stage

			2-stage
Ratio	$i$		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque <sup>a)</sup>	$T_{2a}$	$Nm$	48 – 84
		$in.lb$	425 – 743
Max. acceleration torque (max. 1000 cycles per hour)	$T_{2B}$	$Nm$	40 – 70
		$in.lb$	354 – 620
Nominal torque (at $n_n$ )	$T_{2N}$	$Nm$	27 – 28
		$in.lb$	239 – 248
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	$T_{2Not}$	$Nm$	100 – 165
		$in.lb$	885 – 1460
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) <sup>b)</sup>	$n_{1T}$	$rpm$	3300 – 3750
Max. input speed	$n_{1Max}$	$rpm$	6000
Max. torsional backlash	$j_t$	$arcmin$	Standard ≤ 5 / Reduced ≤ 3
Torsional rigidity	$C_{t21}$	$Nm/arcmin$	3.1 – 5,5
		$in.lb/arcmin$	27 – 49
Max. tilting moment	$M_{2KMax}$	$Nm$	339
		$in.lb$	3000
Operating noise <sup>c)</sup>	$L_{PA}$	$dB(A)$	≤ 68
Lubrication			Lubricated for life
Clamping hub diameter		$mm$	14 – 19

<sup>a)</sup> Application-specific design with cymex® – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

<sup>b)</sup> For higher ambient temperatures, please reduce input speed

<sup>c)</sup> At reference ratio and reference speed. Ratio-specific values available in cymex®.

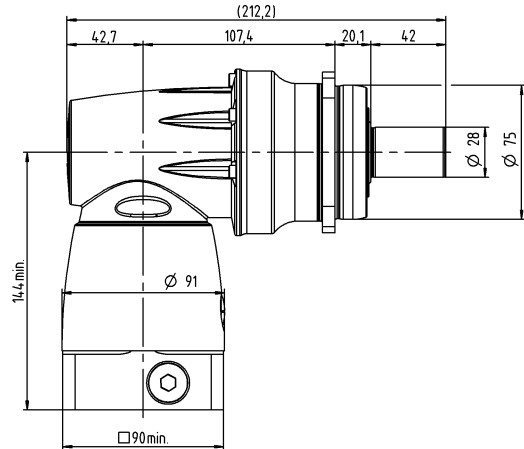
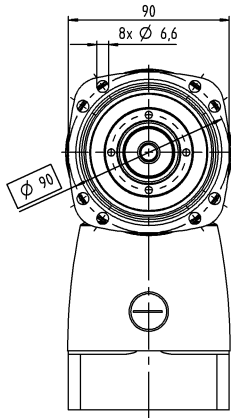


			2-stage
Ratio	$i$		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque <sup>a)</sup>	$T_{2a}$	$Nm$	144 – 240
		$in.lb$	1275 – 2124
Max. acceleration torque (max. 1000 cycles per hour)	$T_{2B}$	$Nm$	120 – 180
		$in.lb$	1062 – 1593
Nominal torque (at $n_{90}$ )	$T_{2N}$	$Nm$	60 – 75
		$in.lb$	531 – 664
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	$T_{2Not}$	$Nm$	192 – 418
		$in.lb$	1699 – 3700
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) <sup>b)</sup>	$n_{1T}$	$rpm$	2600 – 3050
Max. input speed	$n_{1Max}$	$rpm$	6000
Max. torsional backlash	$j_t$	$arcmin$	Standard $\leq 4$ / Reduced $\leq 2$
Torsional rigidity	$C_{t21}$	$Nm/arcmin$	9.1 – 14
		$in.lb/arcmin$	81 – 124
Max. tilting moment	$M_{2KMax}$	$Nm$	675
		$in.lb$	5974
Operating noise <sup>c)</sup>	$L_{PA}$	$dB(A)$	$\leq 68$
Lubrication			Lubricated for life
Clamping hub diameter		$mm$	19 – 28

<sup>a)</sup> Application-specific design with cymex® – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

<sup>b)</sup> For higher ambient temperatures, please reduce input speed

<sup>c)</sup> At reference ratio and reference speed. Ratio-specific values available in cymex®.



2-stage

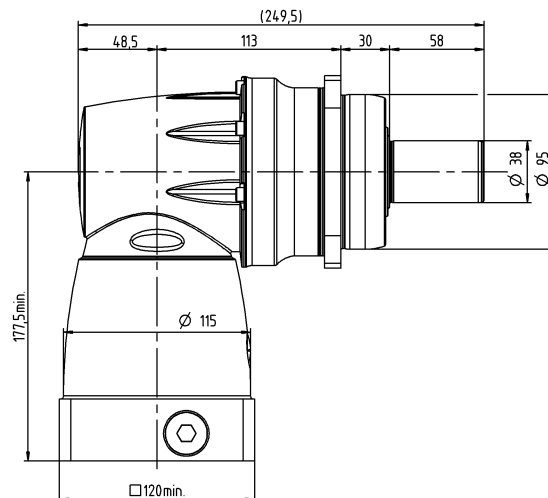
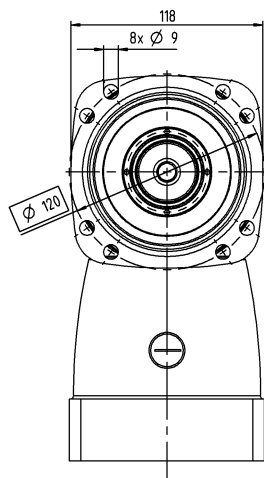
# XPC+ 030 MF 2-stage

			2-stage
Ratio	$i$		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque <sup>a)</sup>	$T_{2a}$	$Nm$	389 – 486
		$in.lb$	3443 – 4301
Max. acceleration torque (max. 1000 cycles per hour)	$T_{2B}$	$Nm$	320 – 420
		$in.lb$	2832 – 3717
Nominal torque (at $n_n$ )	$T_{2N}$	$Nm$	120 – 180
		$in.lb$	1062 – 1593
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	$T_{2Not}$	$Nm$	540 – 800
		$in.lb$	4779 – 7081
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) <sup>b)</sup>	$n_{1T}$	$rpm$	2100 – 2750
Max. input speed	$n_{1Max}$	$rpm$	4500
Max. torsional backlash	$j_t$	$arcmin$	Standard $\leq 4$ / Reduced $\leq 2$
Torsional rigidity	$C_{t21}$	$Nm/arcmin$	23 – 36
		$in.lb/arcmin$	204 – 319
Max. tilting moment	$M_{2KMax}$	$Nm$	1296
		$in.lb$	11471
Operating noise <sup>c)</sup>	$L_{PA}$	$dB(A)$	$\leq 68$
Lubrication			Lubricated for life
Clamping hub diameter		$mm$	28 – 38

<sup>a)</sup> Application-specific design with cymex® – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

<sup>b)</sup> For higher ambient temperatures, please reduce input speed

<sup>c)</sup> At reference ratio and reference speed. Ratio-specific values available in cymex®.

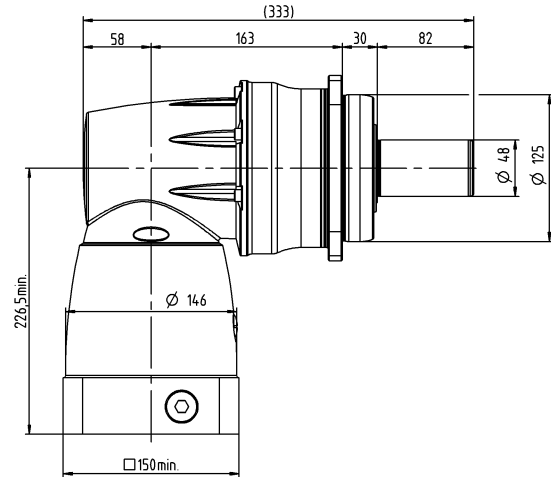
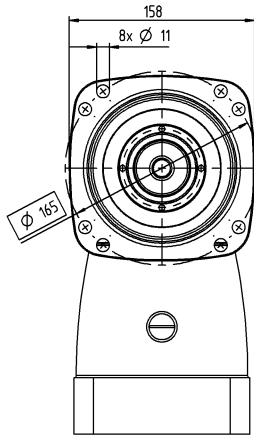


			2-stage
Ratio	<i>i</i>		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque <sup>a)</sup>	$T_{2a}$	<i>Nm</i>	792 – 1050
		<i>in.lb</i>	7010 – 9293
Max. acceleration torque (max. 1000 cycles per hour)	$T_{2B}$	<i>Nm</i>	700 – 875
		<i>in.lb</i>	6196 – 7744
Nominal torque (at $n_{90}$ )	$T_{2N}$	<i>Nm</i>	240 – 370
		<i>in.lb</i>	2124 – 3275
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	$T_{2Not}$	<i>Nm</i>	960 – 2170
		<i>in.lb</i>	8497 – 19206
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) <sup>b)</sup>	$n_{1T}$	<i>rpm</i>	1550 – 1900
Max. input speed	$n_{1Max}$	<i>rpm</i>	4500
Max. torsional backlash	$j_t$	<i>arcmin</i>	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	$C_{t21}$	<i>Nm/arcmin</i>	50 – 74
		<i>in.lb/arcmin</i>	443 – 655
Max. tilting moment	$M_{2KMax}$	<i>Nm</i>	1635
		<i>in.lb</i>	14471
Operating noise <sup>c)</sup>	$L_{PA}$	<i>dB(A)</i>	≤ 70
Lubrication			Lubricated for life
Clamping hub diameter		<i>mm</i>	38

<sup>a)</sup> Application-specific design with cymex® – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

<sup>b)</sup> For higher ambient temperatures, please reduce input speed

<sup>c)</sup> At reference ratio and reference speed. Ratio-specific values available in cymex®.



2-stage

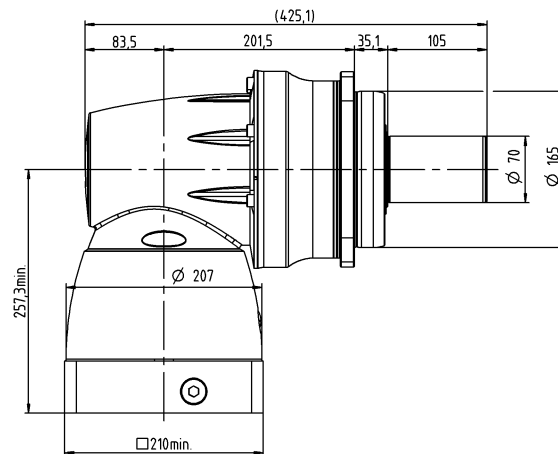
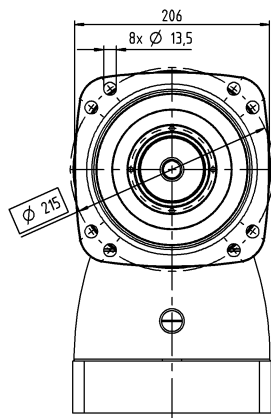
# XPC+ 050 MF 2-stage

			2-stage
Ratio	<i>i</i>		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque <sup>a)</sup>	$T_{2a}$	<i>Nm</i>	1512 – 2646
		<i>in.lb</i>	13382 – 23419
Max. acceleration torque (max. 1000 cycles per hour)	$T_{2B}$	<i>Nm</i>	1260 – 2205
		<i>in.lb</i>	11152 – 19516
Nominal torque (at $n_n$ )	$T_{2N}$	<i>Nm</i>	700 – 750
		<i>in.lb</i>	6196 – 6638
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	$T_{2Not}$	<i>Nm</i>	1560 – 4795
		<i>in.lb</i>	13807 – 42440
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) <sup>b)</sup>	$n_{1T}$	<i>rpm</i>	1050 – 1550
Max. input speed	$n_{1Max}$	<i>rpm</i>	4000
Max. torsional backlash	$j_t$	<i>arcmin</i>	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	$C_{t21}$	<i>Nm/arcmin</i>	127 – 215
		<i>in.lb/arcmin</i>	1124 – 1903
Max. tilting moment	$M_{2KMax}$	<i>Nm</i>	3256
		<i>in.lb</i>	28818
Operating noise <sup>c)</sup>	$L_{PA}$	<i>dB(A)</i>	≤ 70
Lubrication			Lubricated for life
Clamping hub diameter		<i>mm</i>	48

<sup>a)</sup> Application-specific design with cymex® – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

<sup>b)</sup> For higher ambient temperatures, please reduce input speed

<sup>c)</sup> At reference ratio and reference speed. Ratio-specific values available in cymex®.

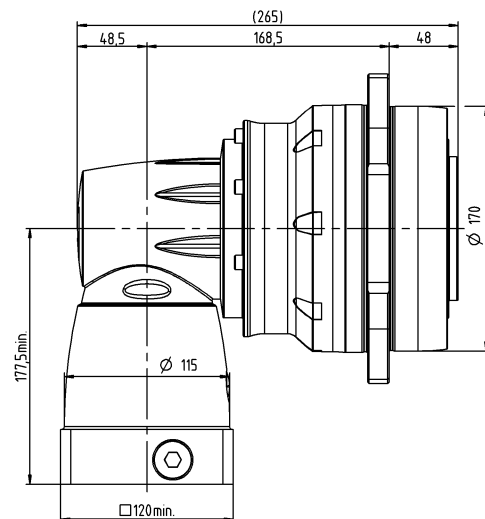
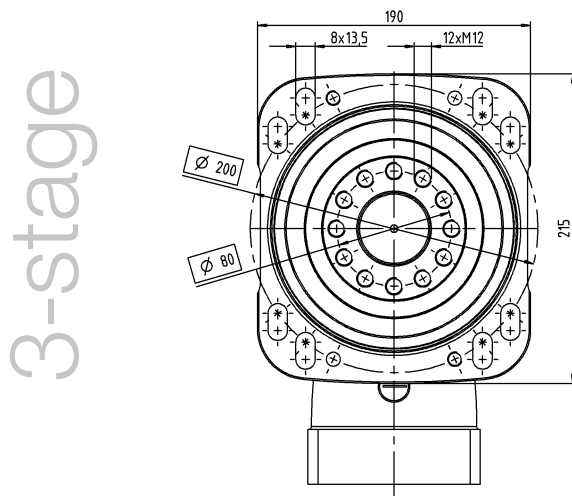


			3-stage
Ratio	$i$		22 / 27.5 / 38.5 / 44 / 55
Max. torque <sup>a)</sup>	$T_{2a}$	$Nm$	1402
		$in.lb$	12409
Max. acceleration torque (max. 1000 cycles per hour)	$T_{2Not}$	$Nm$	2613
		$in.lb$	23127
Nominal torque (at $n_{n0}$ )	$T_{2B}$	$Nm$	950
		$in.lb$	8408
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	$T_{2N}$	$Nm$	675
		$in.lb$	5974
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) <sup>b)</sup>	$n_{1T}$	$rpm$	1800 – 2500
Max. input speed	$n_{1Max}$	$rpm$	4500
Max. torsional backlash	$j_t$	$arcmin$	Standard $\leq 1,3$
Torsional rigidity	$C_{t21}$	$Nm/arcmin$	194 – 215
		$in.lb/arcmin$	1717 – 1903
Max. tilting moment	$M_{2KMax}$	$Nm$	3600
		$in.lb$	31863
Operating noise <sup>c)</sup>	$L_{PA}$	$dB(A)$	$\leq 70$
Lubrication			Lubricated for life
Clamping hub diameter		$mm$	28 – 38

<sup>a)</sup> Application-specific design with cymex® – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

<sup>b)</sup> For higher ambient temperatures, please reduce input speed

<sup>c)</sup> At reference ratio and reference speed. Ratio-specific values available in cymex®.





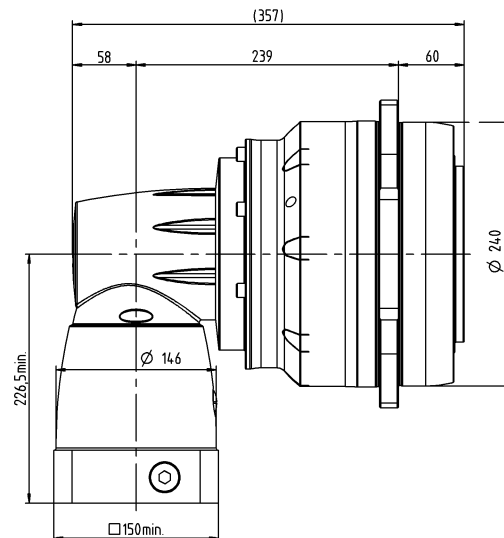
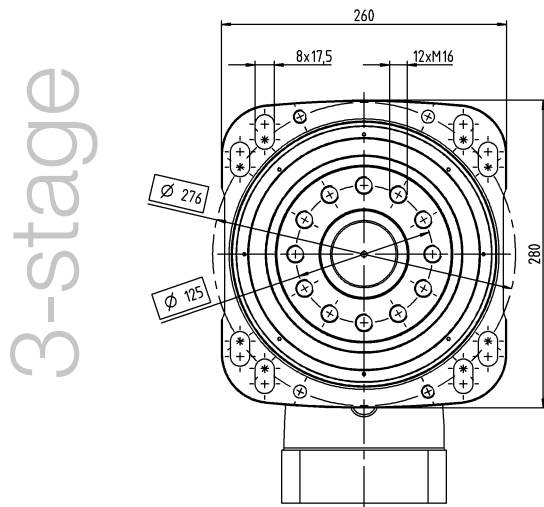
# RPC+ 050 MA 3-stage

			3-stage
Ratio	$i$		22 / 27.5 / 38.5 / 44 / 55
Max. torque <sup>a)</sup>	$T_{2a}$	Nm	3822
		in.lb	33828
Max. acceleration torque (max. 1000 cycles per hour)	$T_{2B}$	Nm	3100
		in.lb	27437
Nominal torque (at $n_n$ )	$T_{2N}$	Nm	1650
		in.lb	14604
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	$T_{2Not}$	Nm	5280 – 7150
		in.lb	46732 – 63283
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) <sup>b)</sup>	$n_{1T}$	rpm	1300 – 1700
Max. input speed	$n_{1Max}$	rpm	4500
Max. torsional backlash	$j_t$	arcmin	Standard ≤ 1,3
Torsional rigidity	$C_{t21}$	Nm/arcmin	607 – 671
		in.lb/arcmin	5372 – 5939
Max. tilting moment	$M_{2KMax}$	Nm	11000
		in.lb	97359
Operating noise <sup>c)</sup>	$L_{PA}$	dB(A)	≤ 71
Lubrication			Lubricated for life
Clamping hub diameter		mm	38

<sup>a)</sup> Application-specific design with cymex® – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

<sup>b)</sup> For higher ambient temperatures, please reduce input speed

<sup>c)</sup> At reference ratio and reference speed. Ratio-specific values available in cymex®.



			3-stage
Ratio	$i$		22 / 27.5 / 38.5 / 44 / 55
Max. torque <sup>a)</sup>	$T_{2a}$	Nm	7535
		in.lb	66691
Max. acceleration torque (max. 1000 cycles per hour)	$T_{2B}$	Nm	5500
		in.lb	48679
Nominal torque (at $n_{n1}$ )	$T_{2N}$	Nm	3500
		in.lb	30978
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	$T_{2Not}$	Nm	8580 – 14575
		in.lb	75940 – 129000
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) <sup>b)</sup>	$n_{1T}$	rpm	850 – 1350
Max. input speed	$n_{1Max}$	rpm	4000
Max. torsional backlash	$j_t$	arcmin	Standard ≤ 1,8
Torsional rigidity	$C_{t21}$	Nm/arcmin	1039 – 1171
		in.lb/arcmin	9196 – 10364
Max. tilting moment	$M_{2KMax}$	Nm	21000
		in.lb	185867
Operating noise <sup>c)</sup>	$L_{PA}$	dB(A)	≤ 71
Lubrication			Lubricated for life
Clamping hub diameter		mm	48

<sup>a)</sup> Application-specific design with cymex® – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

<sup>b)</sup> For higher ambient temperatures, please reduce input speed

<sup>c)</sup> At reference ratio and reference speed. Ratio-specific values available in cymex®.

3-stage

