

RGP40, RGP60

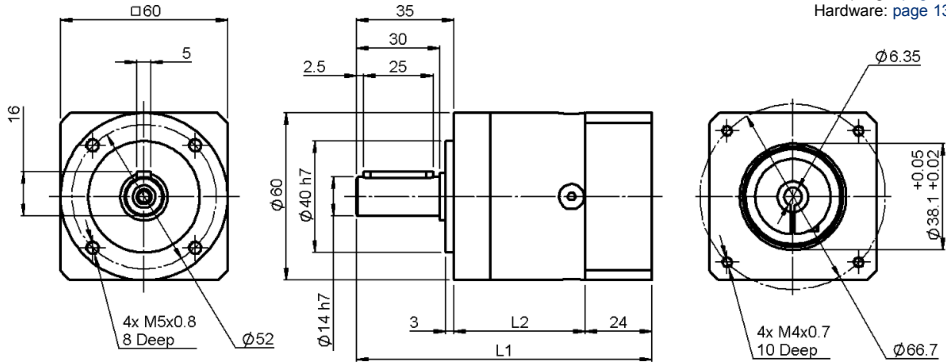
- standard backlash (RGP40 from <math><22'</math>)
(RGP60 from <math><18'</math>)
- high output torque
- novel motor clamp system
- high efficiency (up to 96%)
- ratios $i=3, \dots, 512$
- low noise
- high quality
- any mounting position
- easy motor mounting
- lifetime lubrication
- direction of rotation equidirectional

- 1 Output shaft**
High strength one piece planet carrier and output shaft
- 2 Output shaft bearing**
Deep groove ball bearings with contact seals
- 3 Planet gear**
Precision zero helix angle gear with optimised profile modifications and crowning, case hardened and hard finished by honing
- 4 Housing with integrated ring gear**
Ring gear case hardened for high load capacity, minimum wear, consistent backlash
- 5 Sun gear**
Precision machined optimised gear profile, case hardened and honed for higher load capacity, low noise, minimum wear and consistent backlash
- 6 Bearing for sun gear**
High speed, deep groove ball bearings eliminating thrust loads from thermal expansion, whilst providing exact sun gear position for easy mounting
- 7 Motor adaptor plate**
Allows matching up of the gear head with NEMA 17 and 23 motors, made from aluminium for enhanced thermal conductivity (other adaptors and motors on request)
- 8 Clamping ring**
Balanced ring suitable for high rpm, made from steel to allow greater clamping forces for safe torque transfer
- 9 Clamping screw**
High strength steel with special low pitch thread to generate a greater clamping force
- 10 Motor shaft clamp**
Multiple closed slot precision clamping system for improved reliability
- 11 Assembly hole**
Access hole for the clamping screw



All dimensions in mm

Associated Products
 Reliance Cool Muscle: page 2-2
 Couplings: page 8-1
 Hardware: page 13-1



Part number selection table

Example Part No:- **RGF60 - 60 - NEMA23**

Basic Part Number	Ratio	Stage	L1 mm	L2 mm	Output Torque		Inertia kgcm ²	Efficiency ⁽⁶⁾ with full load %
					Nominal Nm ⁽²⁾	Max Nm		
RGF60	3	1	106	47	28	45	0.135	98
	4				38	61	0.093	98
	5				40	64	0.078	98
	7				25	40	0.072	97
	8				18	29	0.065	97
	10				15	24	0.064	96
RGF60	9	2	118.5	59.5	44	70	0.131	97
	12				44	70	0.127	96
	15				44	70	0.077	96
	16				44	70	0.088	96
	20				44	70	0.075	96
	25				40	64	0.075	95
	32				44	70	0.064	95
	40				40	64	0.064	94
RGF60	60	3	131	72	44	70	0.076	92
	80				44	70	0.075	91
	100				44	70	0.075	89
	120				44	70	0.064	88
	160				44	70	0.064	86
	200				40	64	0.064	83
	256				44	70	0.064	81
	320				40	64	0.064	77
	512				18	29	0.064	51

Gearboxes

Technical information

Specification	Unit	RGP60	Stage
Backlash	arcmin	<12	1
		<15	2
		<18	3
Torsional stiffness	Nm/arcmin	2.3	1
		2.5	2
		2.5	3
Weight	kg	0.9	1
		1.1	2
		1.3	3
Lifetime⁽³⁾	h	30,000	
Radial load for 20,000h⁽⁴⁾	N	400	
Axial load for 20,000h⁽⁴⁾	N	500	
Running noise⁽⁵⁾	dB(A)	58	
Maximum input speed	rpm	13,000	
Input speed at >50% Torque		4,500	
Operating temperature	max °C	90	
	min °C	-25	
Motor mounting clamp torque	M3	Nm	4.5
Lubrication	Greased for life		
Degree of protection	IP54		

⁽¹⁾ Gearboxes for use with NEMA motors are supplied with a motor output shaft bush

⁽²⁾ Emergency stop torque equals twice nominal torque, maximum 500 times

⁽³⁾ Based on nominal torque and output shaft speed 100 rpm

⁽⁴⁾ Based on output shaft speed 100 rpm, centrally positioned along shaft

⁽⁵⁾ Distance 1 metre, idle running, input speed 3,000 rpm, ratio 5

⁽⁶⁾ Degree of efficiency at nominal output torque, reference temperature 70°C at 1,000 rpm

? Technical support

- Product overview - see [page 3-3](#)
- Technical information - see [pages T3-1 to T3-3](#)
- Section view - see [page 3-4](#)
- For detailed duty cycle and life calculation, please contact us
- Gearbox complements the Reliance Cool Muscle servo system - see [page 2-2](#)
- For system design information when using the RGP60 series with Reliance Cool Muscle, please contact us

i Features and options

- Gearbox may be used in any mounting orientation
- Housing material: Steel - black
- Input and output flanges material: Aluminium - untreated
- Optional smooth output shaft if required
- Other motors may be utilised, please contact us
- Available as a right angle gearbox, please contact us

