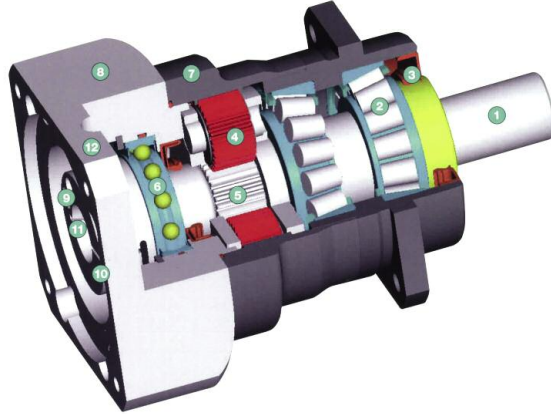


RGPN70

- low backlash (<math><5'</math>)
- high output torque
- novel motor clamp system
- high efficiency (up to 98%)
- honed gearing
- ratios $i=3, \dots, 100$
- low noise (<math>< 58 \text{ dB}</math>)
- 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

High precision, preloaded taper roller bearings for zero clearance

3 Sealing ring

Dedicated double lip seal. The lubricant is kept in while contaminants remain outside the gearbox; IP65 rated

4 Planet gear

Precision zero helix angle gear with optimised profile modifications and crowning, case hardened and hard finished by honing

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 Housing with integrated ring gear

Ring gear case hardened for high load capacity, minimum wear, consistent backlash

8 Motor adaptor plate

Allows matching up of the gearhead with NEMA 23 motors, made from aluminium for enhanced thermal conductivity (other adaptors and motors on request)

9 Clamping ring

Balanced ring suitable for high rpm, made from steel to allow greater clamping forces for safe torque transfer

10 Clamping screw

High strength steel with special low pitch thread to generate a greater clamping force

11 Motor shaft clamp

Precision clamping system for improved reliability

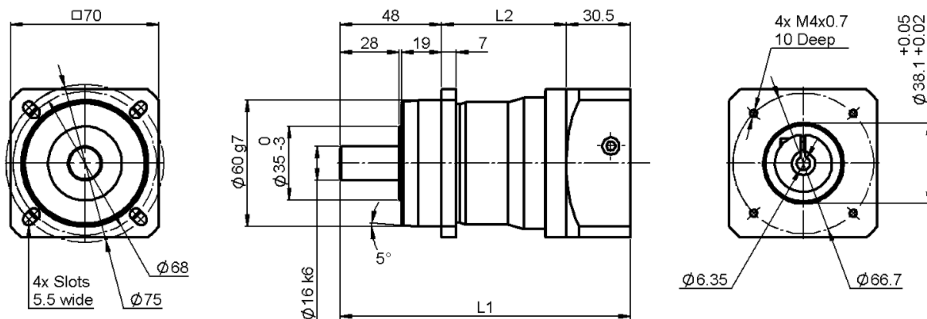
12 Assembly hole

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



See page 3-10 for motor mount details

Part number selection table

Example Part No:- **RGN70 - 40 - NEMA23**

Basic Part Number	Ratio	Stage	L1 mm	L2 mm	Output Torque		Inertia kgcm ²	Input Speed at 50% Torque rpm	Input Speed at 100% Torque rpm
					Nominal Nm ⁽²⁾	Max Nm			
RGN70	3	1	137.5	59	45	72	0.40	1,900	1,650
	4				60	96	0.32	2,200	1,800
	5				65	104	0.28	2,500	2,000
	7				45	72	0.26	3,200	2,800
	8				40	64	0.25	3,500	3,100
	10				27	43	0.25	4,000	3,700
RGN70	12	2	166.5	88	68	109	0.40	3,350	2,750
	15				68	109	0.38	3,800	3,150
	16				77	123	0.35	3,600	3,000
	20				77	123	0.33	4,000	3,350
	25				65	104	0.30	4,400	3,800
	32				77	123	0.32	4,500	4,200
	40				65	104	0.29	4,500	4,500
	64				40	64	0.26	4,500	4,500
	100				27	43	0.25	4,500	4,500

Technical information

Specification	Unit	RGPN70	Stage
Backlash	arcmin	<3	1
		<5	2
Torsional stiffness	Nm/arcmin	6	1
		7	2
Efficiency with full load	%	98	1
		95	2
Weight	kg	1.9	1
		2.4	2
Lifetime⁽³⁾	h	20,000	
Radial load for 20,000h⁽⁴⁾	N	3,200	
Axial load for 20,000h⁽⁴⁾	N	4,400	
Running noise⁽⁵⁾	dB(A)	58	
Maximum input speed	rpm	14,000	
Operating temperature	max °C	90	
	min °C	-25	
Motor mounting clamp torque	M3	Nm	4.5
	M4		9.5
Lubrication		Greased for life	
Degree of protection		IP65	

⁽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

? Technical support

- Product overview - see [page 3-3](#)
- Technical information - see [pages T3-1 to T3-3](#)
- Section view - see [page 3-5](#)
- 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 RGPN70 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 keyway output shaft if required
- Other motors may be utilised, please contact us
- Available as a right angle gearbox, please contact us

