



WGN

The hypoid-toothed right-angle gearbox with hollow shaft – low-noise and force-fit mounting

Our **WGN** is the right-angle hollow shaft gearbox that operates particularly quietly. At the same time, the hypoid gearing increases the quality of the surface of your work-piece. With a shrink disc, it can be connected directly to the application - this is uncomplicated, safe and opens up new design possibilities.

Cyclic torque **22 - 320 Nm**



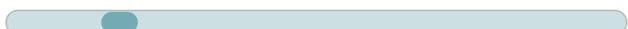
Radial force **2700 - 10000 N**



Axial force **4300 - 14500 N**



Torsional backlash **5 arcmin**

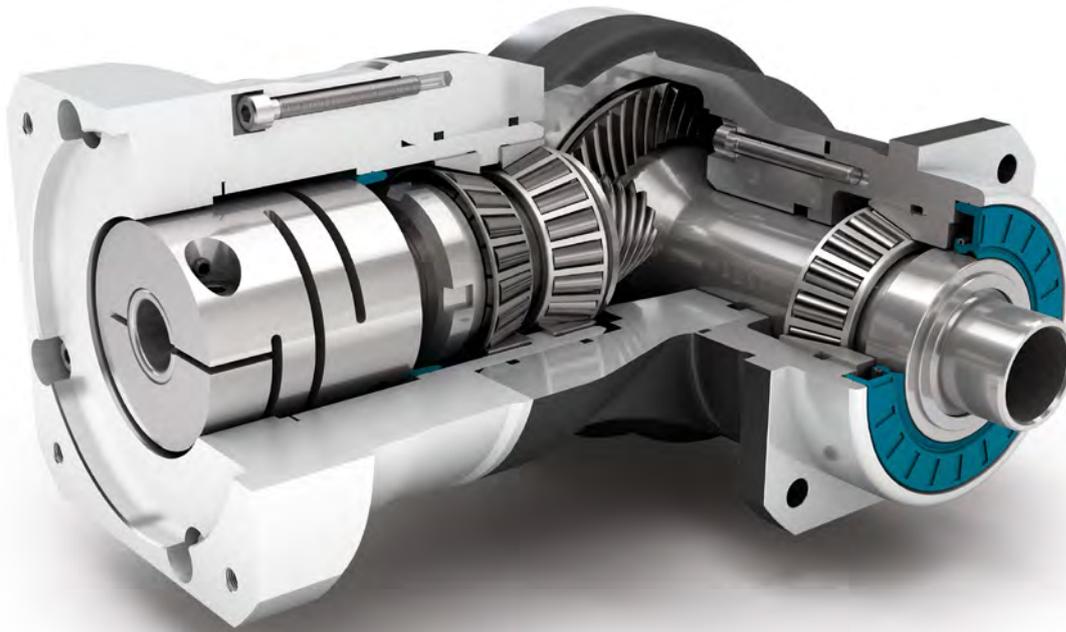


Protection class **IP65**



Frame sizes

- 70
- 90
- 115
- 142



Precision Line



Counterdirectional rotation



Square type output flange



Rotary shaft seal



Hollow shaft for clamping system with shrink disc



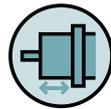
Right angle gearbox



Hypoid gear right angle stage



Preloaded tapered roller bearings



Extra long centering collar



Option: Painted surface – RAL 9005 Jet black

Detailed explanations of the technical features starting on page 201.

Code	Gearbox characteristics			WGN070	WGN090	WGN115	WGN142	p ⁽¹⁾
	Service life ⁽²⁾	L _h	h	20,000				
	Efficiency ⁽³⁾	η	%	95				
	Min. operating temperature	T _{min}	°C	-25 (-13)				
	Max. operating temperature	T _{max}	(°F)	90 (194)				
	Protection class			IP65				
S	Standard lubrication			Oil (lifetime lubrication)				
F	Food grade lubrication			Oil (lifetime lubrication)				
	Installation position			Any				
S	Standard backlash	φ	arcmin	< 5				
R	Reduced backlash			-				
	Torsional stiffness ⁽³⁾	C _{2t}	Nm / arcmin (lb _i .in / arcmin)	1.6 - 2.2 (14 - 19)	4.2 - 5.7 (37 - 50)	9.2 - 12.4 (81 - 110)	23.5 - 31.5 (208 - 279)	
	Gearbox weight ⁽³⁾	m	kg (lb _m)	3.2 (7.1)	5.1 - 5.5 (11.2 - 12.2)	10.7 - 10.8 (23.7 - 23.8)	22.9 - 23.5 (50.6 - 51.8)	
S	Standard surface			Right angle housing: Aluminum – anodized (black)				
B	Painted surface ⁽⁴⁾			RAL 9005 Jet black				
	Running noise ⁽³⁾	L _{pA}	dB(A)	66	67	68	70	

Output shaft loads			WGN070	WGN090	WGN115	WGN142	p ⁽¹⁾
Maximum radial force	F _{r max}	N (lb _r)	2700 (607)	4000 (899)	6500 (1461)	10000 (2248)	
Maximum axial force	F _{a max}		3400 (764)	4500 (1012)	6500 (1461)	12000 (2698)	
Maximum tilting moment	M _{K max}	Nm (lb _r .in)	253 (2235)	442 (3912)	970 (8586)	1505 (13320)	

Input characteristics			WGN070	WGN090	WGN115	WGN142	p ⁽¹⁾
Clamping system diameter input (Code)	D26	mm	14 (D) ⁽⁵⁾	19 (E) ⁽⁵⁾	24 (F) ⁽⁵⁾	35 (G) ⁽⁵⁾	
			19 (E)	24 (F)	35 (G)	42 (H)	
Mass moment of inertia input ⁽³⁾⁽⁵⁾	J ₁	kgcm ² (lb _r .in.s ² ·10 ⁻⁴)	0.502 - 0.834 (4.443 - 7.382)	1.018 - 1.417 (9.010 - 12.542)	4.805 - 6.111 (42.528 - 54.087)	12.934 - 18.905 (114.476 - 167.323)	
Average idle torque ⁽³⁾⁽⁵⁾	T ₀	Nm (lb _r .in)	1.20 - 1.50 (11 - 13)	1.85 - 2.35 (16 - 21)	6.00 - 6.90 (53 - 61)	16.00 - 16.10 (142)	
Max. bending moment based on the gearbox input flange	M _{b1}		12 (106)	25,5 (226)	53 (469)	120 (1062)	

⁽¹⁾ Number of stages

⁽²⁾ Application specific configuration with NCP – www.neugart.com

⁽³⁾ The ratio-dependent values can be retrieved in Tec Data Finder – www.neugart.com

⁽⁴⁾ More information on page 183

⁽⁵⁾ Reference clamping system diameter

Output torques			WGN070	WGN090	WGN115	WGN142	i ⁽¹⁾	p ⁽²⁾
Cyclic torque ⁽³⁾⁽⁴⁾	T _{2z}	Nm (lb.in)	45 (398)	90 (797)	160 (1416)	320 (2832)	4	1
			42 (372)	75 (664)	140 (1239)	280 (2478)	5	
			28 (248)	51 (451)	91 (805)	189 (1673)	7	
			27 (239)	50 (443)	90 (797)	180 (1593)	8	
			22 (195)	40 (354)	75 (664)	160 (1416)	10	
Maximum torque ⁽³⁾⁽⁴⁾	T _{2max}	Nm (lb.in)	60 (531)	140 (1239)	255 (2257)	510 (4514)	4	
			67 (593)	120 (1062)	220 (1947)	445 (3939)	5	
			44 (389)	81 (717)	145 (1283)	300 (2655)	7	
			43 (381)	80 (708)	144 (1275)	285 (2522)	8	
			35 (310)	64 (566)	120 (1062)	255 (2257)	10	
Continuous torque ⁽³⁾	T _{2D}	Nm (lb.in)	30 (266)	42 (372)	105 (929)	240 (2124)	4	
			32 (283)	40 (354)	102 (903)	235 (2080)	5	
			23 (204)	41 (363)	77 (682)	160 (1416)	7	
			22 (195)	38 (336)	76 (673)	153 (1354)	8	
			18,5 (164)	34 (301)	63 (558)	136 (1204)	10	

Input speeds			WGN070	WGN090	WGN115	WGN142	i ⁽¹⁾	p ⁽²⁾
Continuous input speed ⁽³⁾⁽⁴⁾	n _{1D}	rpm	1600	1600	1000	850	4	1
			1750	1750	1100	850	5	
			2000	2000	1250	1100	7	
			2050	2050	1250	940	8	
			2250	2150	1350	970	10	
Max. mechanical input speed ⁽³⁾	n _{1max}	rpm	16000	14000	9500	8000		

Output torques			WGN070	WGN090	WGN115	WGN142	i ⁽¹⁾	p ⁽²⁾
Emergency stop torque ⁽⁴⁾⁽⁵⁾	T _{2Stop}	Nm (lb.in)	80 (708)	200 (1770)	400 (3540)	800 (7081)	4	1
			100 (885)	200 (1770)	400 (3540)	800 (7081)	5	
			75 (664)	150 (1328)	300 (2655)	700 (6196)	7	
			75 (664)	150 (1328)	300 (2655)	700 (6196)	8	
			75 (664)	150 (1328)	300 (2655)	700 (6196)	10	

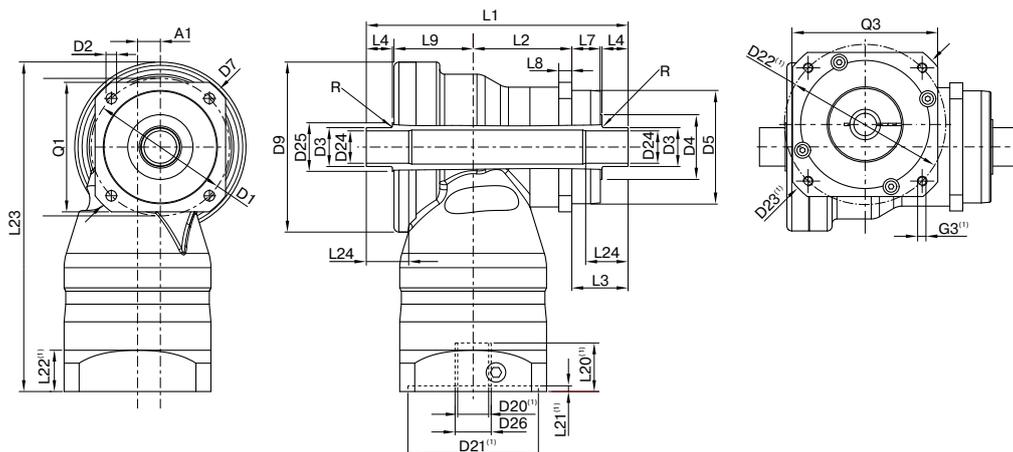
⁽¹⁾ Ratios (i=n₁/n₂)

⁽²⁾ Number of stages

⁽³⁾ Application specific configuration with NCP – www.neugart.com

⁽⁴⁾ Based on reference clamping system diameter

⁽⁵⁾ Permitted 1000 times



Drawing corresponds to a WGN090 / 1-stage / hollow output shaft on both sides / 19 mm clamping system / motor adaptation – 2-part – round universal flange / B5 flange type motor

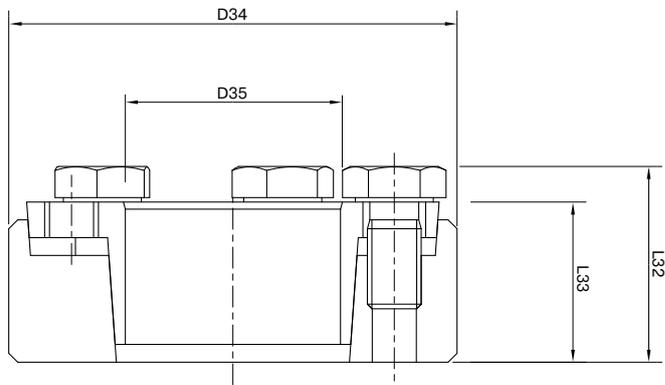
⁽¹⁾ The dimensions vary with the motor/gearbox flange. The input flange dimensions can be retrieved for each specific motor in Tec Data Finder at www.neugart.com

Geometry ⁽²⁾			WGN070	WGN090	WGN115	WGN142	p ⁽³⁾	Code
Axis offset	A1		10 (0.394)	14 (0.551)	20 (0.787)	26 (1.024)	1	
Pitch circle diameter output	D1		68 (2.677) - 75 (2.953)	85 (3.346)	120 (4.724)	165 (6.496)		
Mounting bore output	D2	4x	5.5 (0.217)	6.5 (0.256)	9.0 (0.354)	11.0 (0.433)		
Shaft diameter output	D3	h8	18 (0.709)	24 (0.945)	36 (1.417)	50 (1.969)		
Shaft collar output	D4		30 (1.181)	34 (1.339)	45 (1.772)	70 (2.756)		
Centering diameter output	D5	g7	60 (2.362)	70 (2.756)	90 (3.543)	130 (5.118)		
Diagonal dimension output	D7		92 (3.622)	100 (3.937)	140 (5.512)	185 (7.283)		
Max. diameter	D9		86 (3.386)	105 (4.134)	120 (4.724)	170 (6.693)		
Flange cross section output	Q1	■	70 (2.756)	80 (3.150)	110 (4.331)	142 (5.591)		
Housing length	L2		46.5 (1.831)	60.5 (2.382)	73.5 (2.894)	76 (2.992)		
Shaft length output	L3		33 (1.299)	34.5 (1.358)	48 (1.890)	54 (2.126)		
Centering depth output	L7		18 (0.709)	17.5 (0.689)	27 (1.063)	28 (1.102)		
Flange thickness output	L8		7 (0.276)	8 (0.315)	10 (0.394)	12 (0.472)		
Offset length	L9		43 (1.693)	48.5 (1.909)	56.5 (2.224)	87 (3.425)		
Min. overall height	L23		179 (7.047)	203.5 (8.012)	247.5 (9.744)	318 (12.520)		
Max. radius	R		1.5 (0.059)					
Motor shaft diameter j6/k6	D20		More information on page 191/192					
Clamping system diameter input	D26		More information on page 154					
Hollow output shaft on one side							F	
Hollow shaft diameter	D24	H6	15 (0.591)	20 (0.787)	30 (1.181)	40 (1.575)		
Total length	L1		122.5 (4.823)	143.5 (5.650)	178 (7.008)	217 (8.543)		
Shaft length from shoulder	L4		14 (0.551)	16 (0.630)	20 (0.787)	25 (0.984)		
Min. fit length	L24		20 (0.787)	25 (0.984)	30 (1.181)	35 (1.378)	G	
Hollow output shaft on both sides								
Hollow shaft diameter	D24	H6	15 (0.591)	20 (0.787)	30 (1.181)	40 (1.575)		
Shaft collar	D25		25 (0.984)	30 (1.181)	42 (1.654)	55 (2.165)		
Total length	L1		137.5 (5.413)	160.5 (6.319)	199 (7.835)	243 (9.567)		
Shaft length from shoulder	L4		14 (0.551)	16 (0.630)	20 (0.787)	25 (0.984)		
Min. fit length	L24		20 (0.787)	25 (0.984)	30 (1.181)	35 (1.378)		

⁽²⁾ Dimensions in mm

⁽³⁾ Number of stages

WGN Shrink disc



This shrink disc can be used to make a force-fit connection between your machine shaft and the right angle hollow shaft gearbox WGN.

			WGN070	WGN090	WGN115	WGN142
Art. No.			58365	58366	58367	58368
Outside diameter	D34	mm (in)	44 (1.732)	50	72	90
Inner diameter	D35		18 (0.709)	24 (0.945)	36 (1.417)	50 (1.968)
Overall length ⁽¹⁾	L32		19 (0.748)	22 (0.866)	27.3 (1.075)	31.3 (1.232)
Clamp length ⁽¹⁾	L33		15 (0.591)	18 (0.709)	22 (0.866)	26 (1.024)
Width across flats	SW30		10 (0.394)	10 (0.394)	13 (0.512)	13 (0.512)
Number of clamp screws	N30		4 (0.157)	5 (0.197)	5 (0.197)	5 (0.197)
Mass moment of inertia	J ₁	kgcm ² (lbf.in.s ² 10 ⁻⁴)	0.4251 (3.672)	0.7831 (6.930)	4.212 (37.276)	11.55 (102.218)

For the load shaft, we recommend a tolerance of h6 and a surface roughness of Ra < 3.2 µm. CAD data can be accessed at www.neugart.com

For correct installation of the shrink disc, please refer to the corresponding mounting instructions (www.neugart.com)

Included parts

1 x Shrink disc (incl. screws)

⁽¹⁾ Dimensions in unclamped state