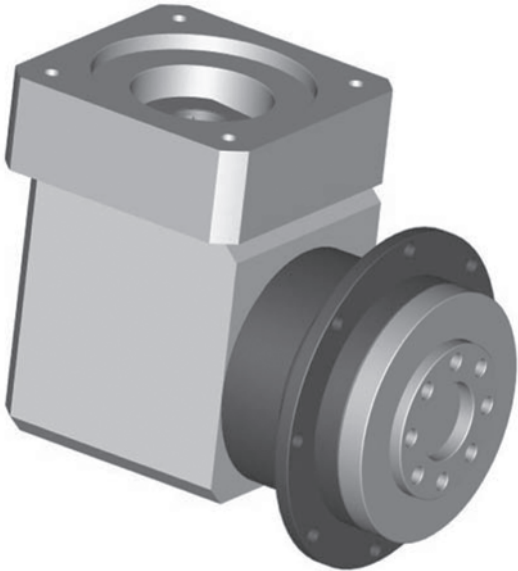




WPLFE

Right-Angle Bevel-Planetary Servo Gearhead
Main Configuration, Torque Rating



WPLFE 64, 90, 110

Compact planetary servo gearhead with rotating disc output according to the EN ISO 9409 “Standard for Mechanical Interfaces for Manipulating Industrial Robots in Automation” in right-angle power flow.

Compact, high stiffness, high torque density solution for automation tasks. Flexible motor mounting via PCS clamping arrangement.

Nominal-Rated Torque ⁽¹⁾ ◇ Torque permissible 30000 output shaft rotations ⁽²⁾ Nm (lbin)			Ratio	Stages ⁽³⁾
WPLFE 64	WPLFE 90	WPLFE 110		
28 (245) ◇ 45 (398)	85(752) ◇ 136 (1203)	115 (1018) ◇ 184 (1628)	3	1
38 (336) ◇ 61 (540)	115 (1018) ◇ 184 (1628)	155 (1372) ◇ 248 (2531)	4	1
40 (354) ◇ 64 (566)	110 (973) ◇ 176 (1558)	195 (1726) ◇ 312 (2761)	5	1
18 (160) ◇ 29 (256)	50 (442) ◇ 80 (708)	120 (1062) ◇ 192 (1699)	8	1
44 (389) ◇ 70 (619)	130 (1150) ◇ 208 (1840)	240 (2124) ◇ 336 (2973)	9	2
44 (389) ◇ 70 (619)	130 (1150) ◇ 192 (1699)	260 (2301) ◇ 412 (3646)	12	2
44 (389) ◇ 70 (619)	110 (973) ◇ 176 (1558)	230 (2035) ◇ 368 (3257)	15	2
44 (389) ◇ 70 (619)	120 (1062) ◇ 192 (1699)	260 (2301) ◇ 416 (3681)	16	2
44 (389) ◇ 70 (619)	120 (1062) ◇ 192 (1699)	260 (2301) ◇ 416 (3681)	20	2
40 (354) ◇ 64 (566)	110 (973) ◇ 176 (1558)	230 (2035) ◇ 368 (3257)	25	2
44 (389) ◇ 70 (619)	120 (1062) ◇ 192 (1699)	260 (2301) ◇ 416 (3681)	32	2
40 (354) ◇ 64 (566)	110 (973) ◇ 176 (1558)	230 (2035) ◇ 368 (3257)	40	2
18 (159) ◇ 29 (256)	50 (442) ◇ 80 (708)	120 (1062) ◇ 192 (1699)	64	2

(1) Continuous duty-rated torque, at uniform load, 30000 hrs L10 design life, at 100 rpm output shaft speed
 (2) Maximum torque allowable for 30000 output shaft rotations
 (3) Number of planetary reduction stages

Emergency Stop / Short Term Peak Torque
 200% of the continuous duty-rated torque. The gearbox will withstand this torque only for a few thousand load cycles.
-Torques at this magnitude should not be part of the normal operating cycle!



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Engineering Data



Design life • Emergency peak torque • IP class • Efficiency • Backlash • Stiffness •				
		WPLFE 64	WPLFE 90	WPLFE 110
Design Life (L10 Life)	hrs	20000 hrs		
Emergency Stop Peak torque		200% of the continuous duty-rated torque. The gearbox will withstand this torque only a very limited time (about 500 to 1000 times during the life of the gearbox). -Torques at this magnitude should not be part of the standard operating cycle!		
IP protection class		IP 54 / 55		
Full load efficiency %	1-stage	96 %		
	2-stage	94 %		
Rotational Backlash ⁽¹⁾ (arc.min)	1-stage	<22	<15	<12
	2-stage	<26	<19	<16
Torsional Stiffness Nm/ang.min (lbin /arc.min)	1-stage	18 (159)	34 (301)	93 (823)
	2-stage	12 (106)	25 (221)	68 (602)

(1) Maximum value of the rotational backlash measured at the output in arc minutes (1 arc min = 1 angular min).
Average backlash is approximately 25% smaller than the listed worst case value.

Gearhead Weight • Recommended Maximum Unsupported Motor Weight • Operating Temperatures • Lubrication • Mounting Positions •				
Gearhead Weight kg (lb)	1-stage	2 (4.41)	5.9 (13)	13.0 (28.7)
	2-stage	2.4 (5.3)	6.3 (13.9)	15.0 (33)
Max. Unsupported Motor Weight ⁽²⁾ kg (lb)		3.5 (7.7)	9 (19.8)	16 (35.2)
Operating Temperature ⁽³⁾ Minimum	°C (°F)	-25 (-13)		
	Maximum	+90 (194)		
Lubrication		Lubricated for life with semi-fluid synthetic grease <i>Kluberplex BEM 34-132*</i> (Kluber Lubrication LP, - www.kluber.com)		
Mounting Positions		Any mounting position permissible without change of lubrication		

(2) For horizontal mounting position (support recommended if motor weight exceeds the given value)
(3) Measured at the middle of the gearbox main body

Permissible Output Shaft Radial and Axial loads • Input Speeds • Noise Level •				
Radial Load ⁽¹⁾	N (lb)	550 (124)	1400 (315)	2400 (540)
Axial Load ⁽¹⁾	N (lb)	1200 (270)	3000 (675)	3300 (742)
Max. Peak Input Speed	rpm	13000	7000	6500
Continuous Input Speed	rpm	any rpm as long as the gearbox temperature does not exceed +90 °C (194 °F)		
Noise Level ⁽²⁾	dBA	58	60	65

(1) Based on 20000 hrs. L10 life, 100 rpm mean output speed, radial load at shaft midpoint.
(Detailed bearing life calculation utility is available at www.neugartusa.com or contact **Neugart USA** with the application data.)
(2) Sound pressure level measured at 3000 rpm, no load, at 1m distance from the gearbox.



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With EN ISO 9409 Rotating Output Flange



Dimensions mm (inch)		Tol.	WPLFE 64	WPLFE 90	WPLFE 110
D6	Gearhead body diameter		60 (2.362) / 64 (2.520)	80 (3.150) / 92 (3.622)	115 (4.528)
D10	Rotating flange pilot BORE diameter	h7	20 (0.787)	31.5 (1.240)	40 (1.575)
D11	Rotating flange bolt circle diameter		31.5 (1.240)	50 (1.969)	63 (2.480)
D12	Rotating flange OUTSIDE diameter	h7	40 (1.575)	63 (2.480)	80 (3.150)
D13	Stationary flange pilot diameter	h7	64 (2.519)	90 (3.543)	110 (4.331)
D14	Stationary (outer) flange OD		86 (3.386)	118 (4.646)	145 (5.709)
D15	Index / Dowel bore diameter x depth (See drawing on page 27)		5 x 6 (0.197 x 0.236)	6 x 7 (0.236 x 0.276)	6 x 7 (0.236 x 0.276)
D16	Stationary flange bolt thru hole # / diameter (See drawing on page 27)		8 / 4.5 (0.315 / 0.177)	8 / 5.5 (0.315 / 0.217)	8 / 5.5 (0.315 / 0.217)
D17	Stationary flange bolt circle diameter		79 (3.110)	109 (4.291)	135 (5.315)
D20	Maximum input pinion bore ⁽¹⁾		14 (0.551)	19 (0.748)	24 (0.945)
L1	Minimum overall unit length 1-Stage		147.5 (5.807)	184.5 (7.263)	249.5 (9.822)
	2-Stage		159.5 (6.279)	201.5 (7.933)	276.5 (10.885)
L2	Gearhead body length 1-Stage		47 (1.850)	60.5 (2.381)	74 (2.913)
	2-Stage		59 (2.322)	77.5 (3.051)	101 (3.976)
L10	Rotating flange pilot BORE depth		4 (0.157)	6 (0.236)	6 (0.236)
L11	Rotating flange (OD) pilot length		3 (0.118)	6 (0.236)	6 (0.236)
L12	Stationary flange pilot length		7 (0.276)	10 (0.394)	10 (0.394)
L13	Length from mounting face		19.5 (0.768)	30 (1.181)	29 (1.142)
L14	Stationary flange thickness		4 (0.157)	7 (0.276)	8 (0.315)
G2	Rotating flange bolt hole # / M size x depth (See drawing on page 27)		7 / M5 x 7	7 / M6 x 10	11 / M6 x 12
H2	Right-angle housing height		69.5 (2.736)	88.3 (3.476)	123.7 (4.870)
Available standard bushings ⁽¹⁾ mm			6; 6.35; 7; 8; 9; 9.525; 10; 11; 12; 12.7	9.525; 10; 11; 12; 12.7; 14; 15.87; 16	11; 12.7; 14; 15.87; 16; 19; 19.05; 22; 22.22
⁽¹⁾ For motor shaft SMALLER than D20, a precision standard bushing is supplied.					
Inch			.236; .250; .276; .315; .354; .375; .394; 433; .472; .500	.375; .394; .433; .472; .500; .551; .625; .630	.433; .500; .551; .625; .630; .748; .750; .866; .875
Motor-dependent dimensions: D21*, D22*, L1A*, L20*, L21*, L23*, L22* G3*, Q3*		Adapter / Input Housing dimensions and unit overall length depend on motor output geometry. A motor-specific adapter / input housing is supplied with every gearhead.			
L22* - dimension calculation		Determine L22* calc = motor shaft length + Δ L , if L22* calc ≤ L22* minimum → L22* = L22* minimum + Tolerance if L22* calc > L22* minimum → L22* = L22* calc + Tolerance			
L22* Tolerance: + 5 / - 0.0 (+ 0.196 / - 0.0)					
Δ L			7 (0.276)	8.8 (0.346)	18.2 (0.741)
L22* minimum			16 (0.63)	21.2 (0.835)	21.8 (0.858)