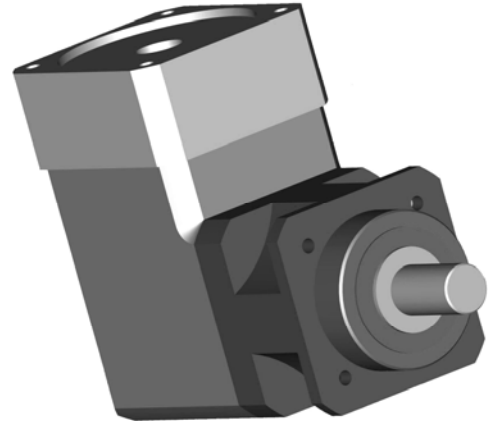




WPLS / WPLV

High Precision Bevel-Planetary Servo Gearhead

Main Configurations, Torque Rating

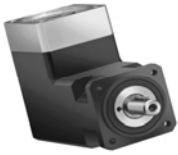


WPLS 70, 90, 115, 142, 190
 With the classic Neugart pilot arrangement, a square integrated output flange with through holes, and smooth shaft (key or spline optional), the WPLS can mount to any servo motor via PCS– the patented precision clamping system

WPLV 70, 90, 115, 142
 With a square integrated output flange with through holes, a industry standard long centering pilot, and a smooth shaft (key optional), the WPLV can mount to any servo motor via PCS– the patented precision clamping system

Nominal-Rated Torque ⁽¹⁾ ◇ Torque permissible 30000 output shaft rotations ⁽²⁾					Ratio	Stage ⁽³⁾
<i>Nm (lbin)</i>						
WPLS 70 WPLV70	WPLS 90 WPLV90	WPLS 115 WPLV 115	WPLS 142 WPLV142	WPLS 190		
40 (354) ◇ 64 (566)	64 (566) ◇ 102 (903)	165 (1460) ◇ 264 (2336)	465 (4115) ◇ 744 (6584)	1200 (10620) ◇ 1920 (16992)	4	1
50 (443) ◇ 80 (708)	80 (780) ◇ 128 (1133)	210 (1859) ◇ 336 (2974)	585 (5177) ◇ 936 (8284)	1500 (13275) ◇ 2400 (21240)	5	1
37(327) ◇ 59 (522)	62 (549) ◇ 99 (876)	148 (1310) ◇ 237 (2098)	450 (3983) ◇ 720 (6372)	1000 (8850) ◇ 1600 (14160)	8	1
27 (239) ◇ 43 (381)	45 (398) ◇ 72 (637)	125 (1106) ◇ 200 (1770)	305 (2699) ◇ 488 (4319)	630 (5576) ◇ 1008 (8921)	10	1
77 (681) ◇ 123 (1089)	120 (1062) ◇ 192 (1699)	260 (2301) ◇ 416 (3682)	910 (8054) ◇ 1456 (12886)	1800 (15930) ◇ 2880 (25488)	16	2
77 (681) ◇ 123 (1089)	110 (974) ◇ 176 (1558)	260 (2301) ◇ 416 (3682)	910 (8054) ◇ 1456 (12886)	1800 (15930) ◇ 2880 (25488)	20	2
68 (602) ◇ 109 (965)	110 (974) ◇ 176 (1558)	210 (1859) ◇ 336 (2974)	780 (6903) ◇ 1248 (11045)	1800 (15930) ◇ 2880 (25488)	25	2
77 (681) ◇ 123 (1089)	120 (1062) ◇ 192 (1699)	260 (2301) ◇ 416 (3682)	910 (8054) ◇ 1456 (12886)	1800 (15930) ◇ 2880 (25488)	32	2
68 (602) ◇ 109 (965)	110 (974) ◇ 176 (1558)	210 (1859) ◇ 336 (2974)	780 (6903) ◇ 1248 (11045)	800 (15930) ◇ 2880 (25488)	40	2
37 (327) ◇ 59 (522)	62 (549) ◇ 99 (876)	148 (1310) ◇ 237 (2098)	450 (3983) ◇ 720 (6372)	1000 (8850) ◇ 1600 (14160)	64	2
27 (239) ◇ 43 (381)	45 (398) ◇ 72 (637)	125 (1106) ◇ 200 (1770)	305 (2699) ◇ 488 (4319)	630 (5576) ◇ 1008 (8921)	100	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.



WPLS / WPLV

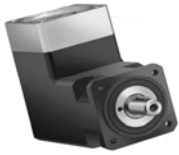
High Precision Bevel-Planetary Servo Gearhead

Design life, Emergency Stop (Peak) Torque, IP class
Efficiency, Backlash, Stiffness, Gearhead Weight, Max Unsupported Motor Weight, OP-temperature, Lubricant, Mounting Positions



Design Life • Emergency Peak Torque • IP Class • Efficiency • Backlash •						
		WPLS 70 WPLV 70	WPLS 90 WPLV 90	WPLS 115 WPLV 115	WPLS 142 WPLV 142	WPLS 190
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 65					
Full Load Efficiency %	1 stage	97 %				
	2 stage	94 %				
Rotational Backlash ⁽¹⁾ (arc.min)	1 stage	< 5	< 5	< 5	< 5	< 5
	2 stage	< 7	< 7	< 7	< 7	< 7
(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.						

Torsional (Rotational) Stiffness • Gearhead Weight • Recommended Maximum Unsupported Motor Weight • Operating Temperatures • Lubrication • Mounting Positions •						
		WPLS 70 WPLV 70	WPLS 90 WPLV 90	WPLS 115 WPLV 115	WPLS 142 WPLV 142	WPLS 190
Torsional (Rotational) Stiffness ⁽¹⁾ Nm/arc.min (lbin /arc.min)	1 stage	4 (35)	6 (53)	15 (133)	32 (283)	100 (885)
	2 stage	7 (62)	10 (88)	22 (195)	46 (411)	140 (1240)
Gearhead Weight kg (lb)	1 stage	4 (8.8) 4.2 (9.3)	7.3 (16) 6.6 (14.6)	13.5 (29.7) 12 (26.4)	26.5 (58.4) 25.6 (56.4)	50 (110)
	2 stage	4.7 (10.3) 4.9 (10.8)	8.7 (19.2) 8 (17.6)	16 (35.2) 14.9 (32.8)	29.6 (65.2) 28.6 (63.1)	61 (134)
Max. Unsupported Motor Weight ⁽²⁾	kg (lb)	10 (22.5)	15 (33)	34 (75)	50 (110)	75 (165)
Operating Temperature ⁽³⁾ °C (°F)	Minimum	-25 (-13)				
	Maximum	+100 (212)				
Lubrication	Lubricated for life with semi fluid synthetic grease "Klubersynth GE 46-1200" (Kluber Lubrication LP - www.kluber.com)					
Mounting Positions	Any mounting position permissible					
(1) Measured at the output shaft (2) For horizontal mounting position (support recommended if motor weight exceeds the given value) (3) Measured at the middle of the gearbox main body						



WPLS / WPLV

High Precision Bevel-Planetary Servo Gearhead

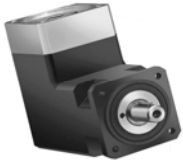
Radial / Axial Loads, Input Speeds, Noise Level, Inertias



Output Shaft Radial and Axial Loads • Input Speeds • Noise Level •						
		WPLS 70 WPLV70	WPLS 90 WPLV 90	WPLS 115 WPLV 115	WPLS 142 WPLV 142	WPLS 190
Output Shaft Radial Load ⁽¹⁾ (at 20000 hrs L10 and 100 output shaft rpm)	<i>N (lb)</i>	3300 (742) 2800 (629)	4300 (967)	4800 (1079)	9000 (2023)	13300 (2990)
Output shaft Axial Load (at 20000 hrs L10 and 100 output shaft rpm)	<i>N (lb)</i>	4700 (1057)	6400 (1439)	8000 (1798)	15000 (3372)	21000 (4721)
Output Shaft Radial Load ⁽¹⁾ (at 30000 hrs L10 and 100 output shaft rpm)	<i>N (lb)</i>	3000 (674) 2800 (629)	3900 (877)	4300 (967)	8200 (1843)	12000 (2698)
Output Shaft Axial Load (at 30000 hrs L10 and 100 output shaft rpm)	<i>N (lb)</i>	4100 (922)	5700 (1281)	7100 (1596)	13300 (2990)	18500 (4159)
Max Input Speed	<i>rpm</i>	8000	7000	6000	4500	4000
Continuous / Average Input Speed	<i>rpm</i>	any rpm as long as the gearbox temperature does not exceed the +100 °C (212 °F)				
Noise Level ⁽²⁾	<i>dBA</i>	72	73	76	78	78

(1) Radial load at shaft midpoint.
 (2) Sound pressure level measured at 3000 rpm, no load, 1m distance from the gearbox.

Standard Motor Mount WPLS / WPLV Gearhead Moment of Inertia (at the input)						<i>kgcm² (lbin.sec² 10⁻⁴)</i>	
WPLS 70 WPLV 70	WPLS 90 WPLV 90	WPLS 115 WPLV 115	WPLS 142 WPLV 142	WPLS 190	Ratio	Stages	
0.61 (5.40)	1.91 (16.9)	5.00 (44.3)	19.4 (171)	116 (1030)	4	1	
0.57 (5.04)	1.85 (16.4)	4.70 (41.6)	17.5 (155)	109 (965)	5	1	
0.52 (4.60)	1.79 (15.8)	4.60 (40.7)	15.9 (140)	102 (903)	8	1	
0.50 (4.43)	1.73 (15.3)	4.50 (39.8)	15.5 (137)	100 (885)	10	1	
0.61 (5.40)	1.91 (16.9)	5.00 (44.3)	19.4 (171)	38 (336)	16	2	
0.58 (5.13)	1.91 (16.9)	4.70 (41.6)	17.5 (155)	31 (274)	20	2	
0.57 (5.04)	1.85 (16.4)	4.70 (41.6)	17.5 (155)	31 (264)	25	2	
0.52 (4.60)	1.79 (15.8)	4.60 (40.7)	15.9 (140)	24 (212)	32	2	
0.52 (4.60)	1.79 (15.8)	460 (40.7)	15.9 (140)	24(212)	40	2	
0.52 (4.60)	1.79 (15.8)	4.60 (40.7)	15.9 (140)	24 (212)	64	2	
0.50 (4.43)	1.73 (15.3)	4.50 (39.8)	15.5 (137)	22 (195)	100	2	



WPLS / WPLV

High Precision Bevel-Planetary Servo Gearhead

Ordering (Type) Code



- Ordering (Type) Code -

WPLS 115 - 08 / MOTOR - OP8

Gearbox Type :
WPLS
WPLV

Size :
 70
 90
 115
 142
 190- (WPLS only)

Reduction Ratio:
 4, 5, 8, 10,16,
 20, 25,
 32, 40,
 64, 100

MOTOR description
 Manufacturer ,Type
 and Size

or

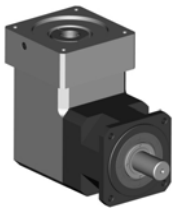
Motor shaft diameter/
 Motor shaft length/
 Pilot diameter/
 Bolt circle diameter/
 Bolt hole diameter

Requested Options:

- OP3** - Case Mounting
(not available for WPLV)
- OP4** - Foot Mounting
(not available for WPLV)
- OP7** - Keyed Output Shaft
- OP8** - Custom Output Shaft
- OP11** - PL Output Shaft
- OP12** -ATEX explosion
proof certificate
- LS** -Food grade grease
- EP** -Epoxy paint

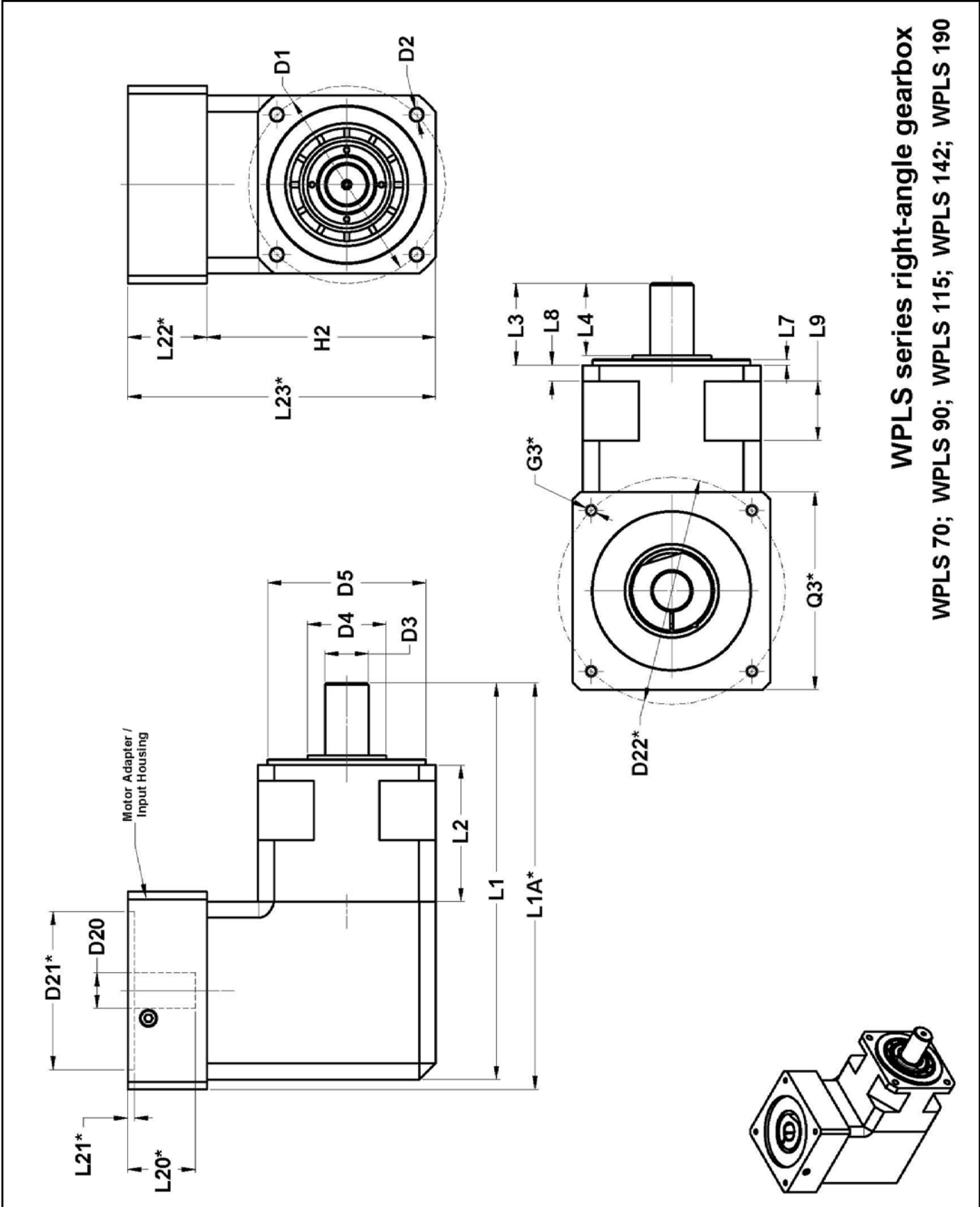
Example: **WPLS 115-08 / AC Servo Motor XYZ- OP8**

NOTE : In case motor description (Manufacturer, Type, Size) is not available submit following motor dimensions:
Motor Shaft Diameter / Motor Shaft Length / Motor Flange Pilot (Centering) Diameter /
Motor Flange Pilot Length / Motor Flange Bolt Circle Diameter / Motor Flange Bolt Hole Diameter

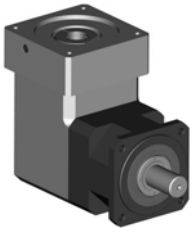


WPLS

High Precision Bevel- Planetary Servo Gearhead
 With Standard Neugart Output Flange



WPLS series right-angle gearbox
WPLS 70; WPLS 90; WPLS 115; WPLS 142; WPLS 190



WPLS

High Precision Bevel-Planetary Servo Gearhead With Standard Neugart Output Flange



DIMENSIONS mm (in.)		Tol./#	WPLS 70	WPLS 90	WPLS 115	WPLS 142	WPLS 190
D1	Output flange bolt circle	•	75 (2.952)	100 (3.937)	130 (5.118)	165 (6.496)	215 (8.464)
D3	Output shaft diameter	k6	19 (0.748)	22 (0.866)	32 (1.259)	40 (1.575)	55 (2.165)
D4	Output shaft collar diameter	•	32.5 (1.280)	37.5 (1.476)	42.5 (1.673)	62.5 (2.461)	77.5 (3.051)
D5	Pilot diameter	h7	60 (2.362)	80 (3.150)	110 (4.331)	130 (5.118)	160 (6.299)
Q1	Gearbox housing / output flange □	•	70 (2.756)	90 (3.543)	115 (4.528)	140 (5.512)	190 (7.480)
D2	Output flange mounting hole size	4	5.5 (0.216)	6.5 (0.256)	8.5 (0.335)	11 (0.433)	13.5 (0.531)
L1	Minimum overall length	1-stage	164.5 (6.476)	200.5 (7.894)	257 (10.118)	337 (13.268)	435 (17.126)
		2-stage	188 (7.402)	229 (9.016)	290.5 (11.437)	378 (14.882)	449 (17.677)
L2	Main housing length	1-stage	62.5 (2.461)	69 (2.717)	77.5 (3.051)	110 (4.331)	155 (6.102)
		2-stage	86 (3.385)	97.5 (3.839)	111 (4.370)	151 (5.945)	169 (6.654)
L7	Output pilot length	•	3 (0.118)	3 (0.118)	4 (0.157)	5 (0.197)	6 (0.236)
L8	Output flange thickness	•	7 (0.276)	8 (0.315)	14 (0.551)	20 (0.787)	20 (0.787)
L9	Housing recess width	•	23 (0.906)	30 (1.181)	34 (1.339)	52 (2.047)	52 (2.047)
Q2	Housing recess □ (across flats)	•	64 (2.520)	87 (3.425)	115 (4.528)	140 (5.512)	190 (7.480)
H2	Right-angle housing height	•	98.5 (3.878)	116 (4.567)	145 (5.709)	160.5 (6.319)	1-stg. 231 (9.094) 2-stg. 190 (7.480)
D20	Maximum input pinion bore ⁽¹⁾	•	14 (0.551)	19 (0.748)	24 (0.945)	35 (1.378)	48 (1.890)
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; 15.875; 16;	11; 12.7; 14; 15.87; 16; 19; 19.05; 22; 22.22	19; 22; 24; 28; 28.575; 32	28; 32; 35; 38; 42
(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; .393; .433; .472; .500; .551; .625; .630	.433; .500; .551; .625; .630; .748; .750; .866; .875	.748; .866; .944; 1.125; 1.102; 1.260	1.102; 1.260 1.378; 1.496; 1.654
Motor-dependent dimensions: D21*, D22*, L1A*, L20* L21*, L22*, L23*, 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 L22* tolerance mm (in) +5 / -0 (+0.196" / -0)		Determine L22* calc = Motor shaft length + ΔL If L22* calc ≤ L22* minimum → L22* = L22* minimum + tolerance If L22* calc > L22* minimum → L22* = L22* calc + tolerance					
ΔL			6.5 (0.256)	10 (0.394)	6 (0.236)	14.5 (0.571)	13 (0.512) ^(a)
L22* minimum			29.5 (1.161)	40 (1.575)	46 (1.811)	64.5 (2.539)	73 (2.874) ^(a)

^(a) WPLS 190 has 2 right-angle input units available for the 2-stage gearbox: Smaller housing for motor shaft diameter 24mm - 35mm; larger one for motor shaft diameter 35mm - 48mm. The SMALLER right-angle housing REDUCES ΔL & L22* by 4mm.