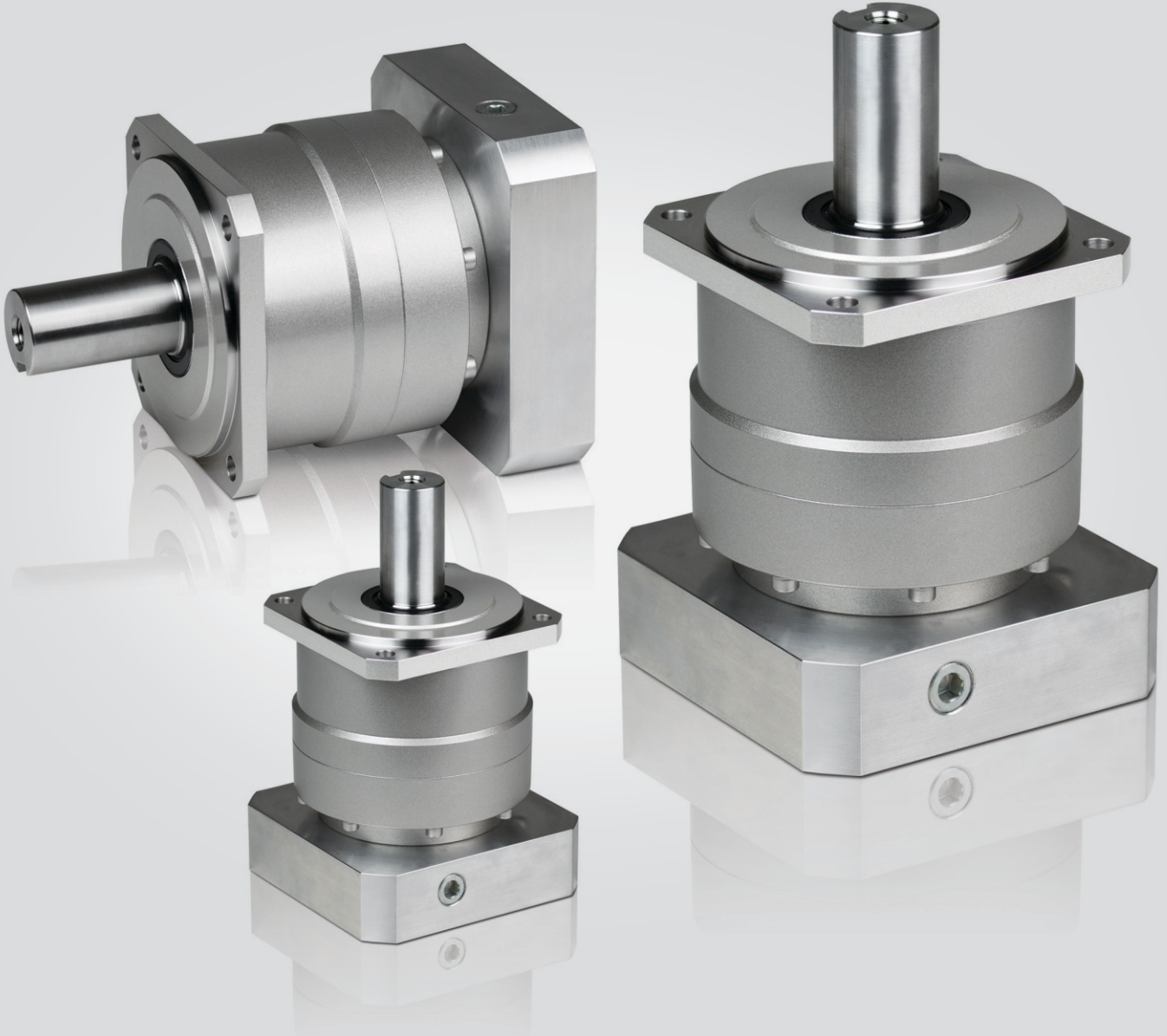


VRB SERIES



VRB

- ▶ Exceptional value for high end motion control applications with demanding accuracy requirements
- ▶ The widest range of frame sizes and ratios available in the market
- ▶ Best-In-class backlash (≤ 3 arc-min)
- ▶ Broad range of mounting adapters offer a simple, precise attachment to any motor
- ▶ Maintenance-free solution that is lubricated for life. High performance grease allows flexible mounting in any orientation
- ▶ Industry standard through-bolt mounting style
- ▶ Assembled in the USA, with immediate delivery



VRB 042 1-Stage Specifications

Frame Size	042									
Ratio	Units	Notes	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	1	6	9	10	10	10	10	10	10
Maximum Acceleration Torque	[Nm]	2	14	21	21	21	21	21	14	14
Maximum Torque	[Nm]	3	17	25	25	25	25	25	17	17
Emergency Stop Torque	[Nm]	4	30	35	35	35	35	35	30	30
Nominal Input Speed	[rpm]	5	4000	4000	4000	4000	4000	4000	4000	4000
Maximum Input Speed	[rpm]	6	8000	8000	8000	8000	8000	8000	8000	8000
No Load Running Torque	[Nm]	7	0.03							
Maximum Radial Load	[N]	8	710							
Maximum Axial Load	[N]	9	640							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.053	0.041	0.036	0.034	0.032	0.031	0.031	0.030
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.17	0.16	0.15	0.15	0.15	0.15	0.15	0.15
Efficiency	[%]	10	95							
Torsional Rigidity	[Nm/arc-min]	11	2							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 61							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	0.6							

VRB 042 2-Stage Specifications

Frame Size	042									
Ratio	Units	Notes	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	1	9	14	14	15	15	11	15	15
Maximum Acceleration Torque	[Nm]	2	14	21	21	21	21	14	21	21
Maximum Torque	[Nm]	3	14	21	21	21	21	14	21	21
Emergency Stop Torque	[Nm]	4	30	35	35	35	35	30	35	35
Nominal Input Speed	[rpm]	5	4000	4000	4000	4000	4000	4000	4000	4000
Maximum Input Speed	[rpm]	6	8500	8500	8500	8500	8500	8500	8500	8500
No Load Running Torque	[Nm]	7	0.01							
Maximum Radial Load	[N]	8	710							
Maximum Axial Load	[N]	9	640							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.035	0.038	0.034	0.034	0.038	0.030	0.034	0.030
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	10	90							
Torsional Rigidity	[Nm/arc-min]	11	2							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	12	≤ 61							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	0.7							

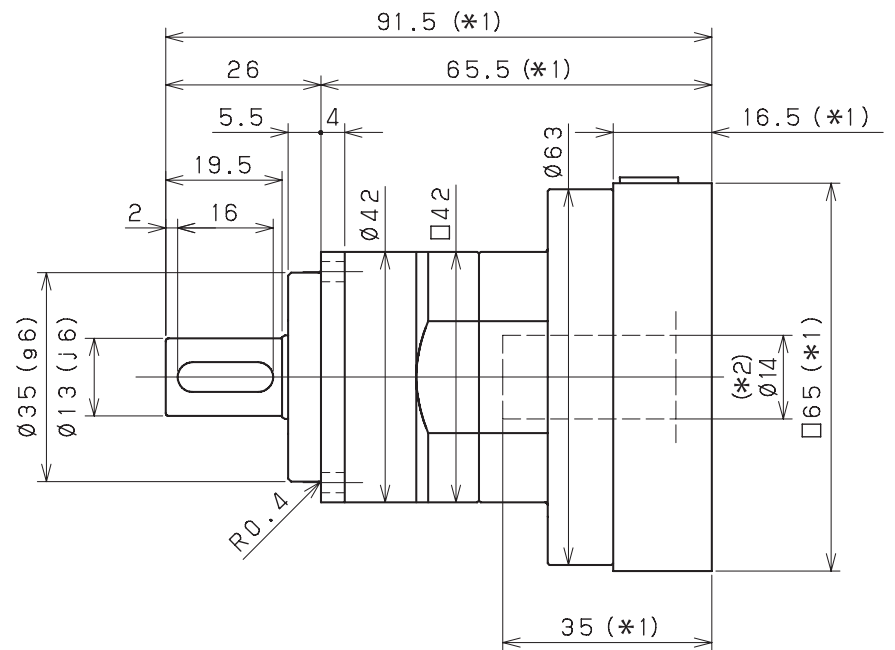
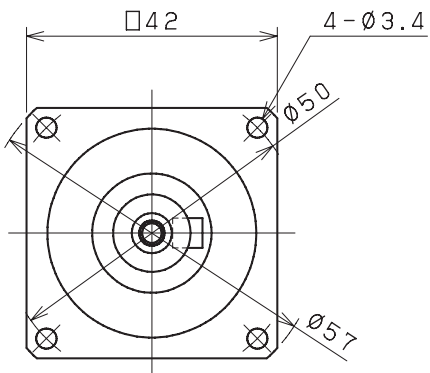
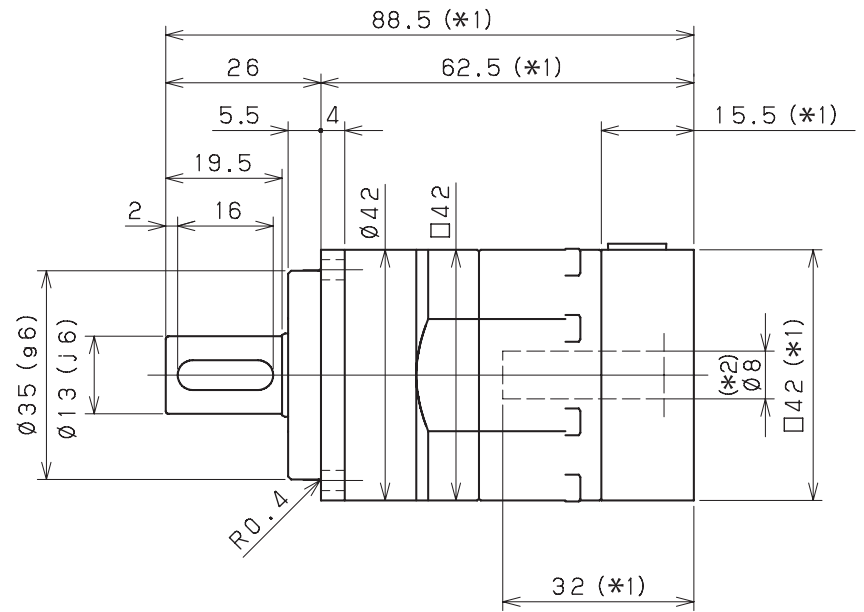
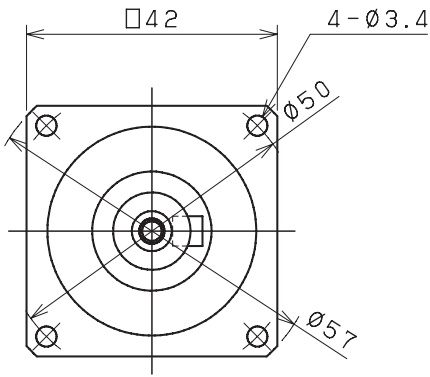
VRB 042 2-Stage Specifications

Frame Size	042								
Ratio	Units	Notes	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	1	11	15	15	15	15	11	11
Maximum Acceleration Torque	[Nm]	2	14	21	21	21	21	14	14
Maximum Torque	[Nm]	3	14	21	21	21	21	14	14
Emergency Stop Torque	[Nm]	4	30	35	35	35	35	30	30
Nominal Input Speed	[rpm]	5	4000	4000	4000	4000	4000	4000	4000
Maximum Input Speed	[rpm]	6	8500	8500	8500	8500	8500	8500	8500
No Load Running Torque	[Nm]	7	0.01						
Maximum Radial Load	[N]	8	710						
Maximum Axial Load	[N]	9	640						
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.034	0.030	0.030	0.030	0.030	0.030	0.030
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	--	--	--	--	--	--	--
Efficiency	[%]	10	90						
Torsional Rigidity	[Nm/arc-min]	11	2						
Maximum Torsional Backlash	[arc-min]	--	≤ 5						
Noise Level	dB [A]	12	≤ 61						
Protection Class	--	13	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	14	0.7						

- 1) At nominal input speed, service life is 20,000 hours
- 2) The maximum torque when starting or stopping operation. Apply Cycle Factor found on page 468, for higher duty cycle applications
- 3) Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft
- 4) The maximum torque allowed under a stress situation. Permitted 1,000 times during service life
- 5) The average input speed at nominal input torque. Maintain housing temperature below permitted value
- 6) The maximum intermittent input speed
- 7) Torque at no load applied to the input shaft at nominal input speed
- 8) The maximum radial load that the gearbox can accept
- 9) The maximum axial load that the gearbox can accept
- 10) The efficiency at the nominal output torque rating
- 11) This does not include lost motion
- 12) Contact Nidec Drive Technology for the testing conditions and environment
- 13) IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details
- 14) Weight may vary slightly between models

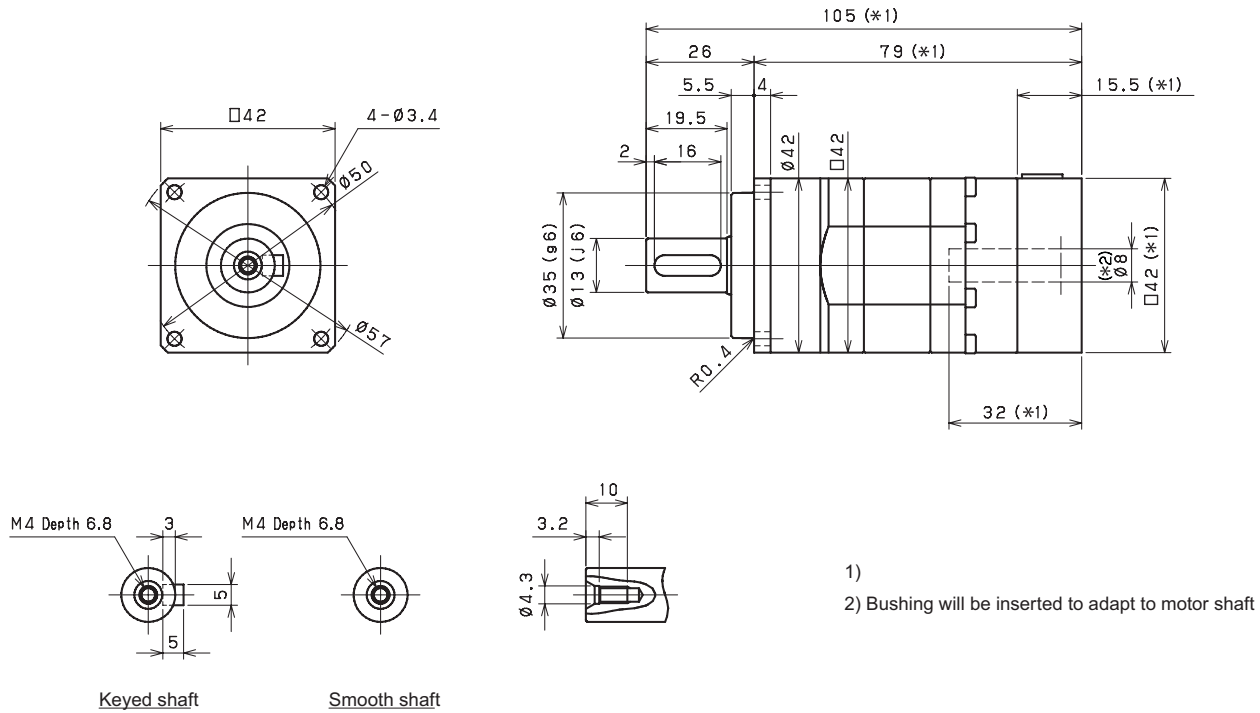


Input bore size $\leq \varnothing 8$ mm



VRB 042 2-Stage Dimensions Length will vary depending on motor

Input bore size $\leq \phi 8$ mm



VRB 060 1-Stage Specifications

Frame Size	060									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	1	19	27	28	28	28	28	28	28
Maximum Acceleration Torque	[Nm]	2	46	66	66	66	66	66	46	46
Maximum Torque	[Nm]	3	55	79	79	79	79	76	55	55
Emergency Stop Torque	[Nm]	4	80	100	100	100	100	100	80	80
Nominal Input Speed	[rpm]	5	3300	3300	4000	4000	4000	4000	4000	4000
Maximum Input Speed	[rpm]	6	7500	7500	7500	7500	7500	7500	7500	7500
No Load Running Torque	[Nm]	7	0.15							
Maximum Radial Load	[N]	8	1200							
Maximum Axial Load	[N]	9	1100							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.14	0.095	0.077	0.068	0.062	0.059	0.057	0.056
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.25	0.21	0.19	0.18	0.17	0.17	0.17	0.17
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.53	0.48	0.46	0.46	0.45	0.45	0.44	0.44
Efficiency	[%]	10	95							
Torsional Rigidity	[Nm/arc-min]	11	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 66							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	1.4							

VRB 060 2-Stage Specifications

Frame Size	060									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	1	25	32	32	43	45	32	45	45
Maximum Acceleration Torque	[Nm]	2	46	66	66	66	66	46	66	66
Maximum Torque	[Nm]	3	46	66	66	66	66	46	66	66
Emergency Stop Torque	[Nm]	4	80	100	100	100	100	80	100	100
Nominal Input Speed	[rpm]	5	4000	4000	4000	4000	4000	4000	4000	4000
Maximum Input Speed	[rpm]	6	8500	8500	8500	8500	8500	8500	8500	8500
No Load Running Torque	[Nm]	7	0.04							
Maximum Radial Load	[N]	8	1200							
Maximum Axial Load	[N]	9	1100							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.064	0.070	0.062	0.061	0.068	0.051	0.061	0.051
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.18	0.18	0.17	0.17	0.18	0.16	0.17	0.16
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.45	0.46	0.45	0.45	0.46	0.44	0.45	0.44
Efficiency	[%]	10	90							
Torsional Rigidity	[Nm/arc-min]	11	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 66							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	1.6							

VRB 060 2-Stage Specifications

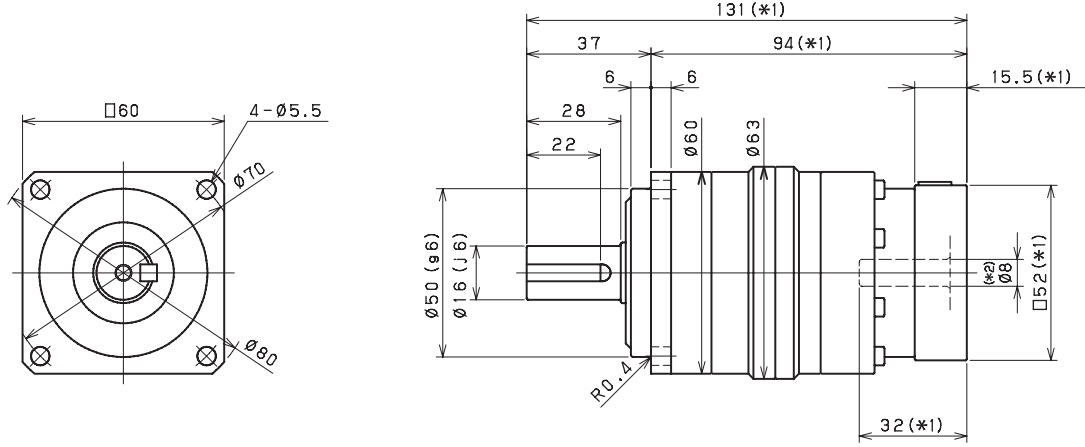
Frame Size	060										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	1	32	45	45	45	45	32	32		
Maximum Acceleration Torque	[Nm]	2	46	66	66	66	66	46	46		
Maximum Torque	[Nm]	3	46	66	66	66	66	46	46		
Emergency Stop Torque	[Nm]	4	80	100	100	100	100	80	80		
Nominal Input Speed	[rpm]	5	4000	4800	4800	5500	5500	5500	5500		
Maximum Input Speed	[rpm]	6	8500	8500	8500	8500	8500	8500	8500		
No Load Running Torque	[Nm]	7	0.04								
Maximum Radial Load	[N]	8	1200								
Maximum Axial Load	[N]	9	1100								
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.061	0.051	0.051	0.051	0.051	0.051	0.051		
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.17	0.16	0.16	0.16	0.16	0.16	0.16		
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.45	0.44	0.44	0.44	0.44	0.44	0.44		
Efficiency	[%]	10	90								
Torsional Rigidity	[Nm/arc-min]	11	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	dB [A]	12	≤ 66								
Protection Class	--	13	IP54 (IP65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	14	1.6								

- 1) At nominal input speed, service life is 20,000 hours
- 2) The maximum torque when starting or stopping operation. Apply Cycle Factor found on page 468, for higher duty cycle applications
- 3) Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft
- 4) The maximum torque allowed under a stress situation. Permitted 1,000 times during service life
- 5) The average input speed at nominal input torque. Maintain housing temperature below permitted value
- 6) The maximum intermittent input speed
- 7) Torque at no load applied to the input shaft at nominal input speed
- 8) The maximum radial load that the gearbox can accept
- 9) The maximum axial load that the gearbox can accept
- 10) The efficiency at the nominal output torque rating
- 11) This does not include lost motion
- 12) Contact Nidec Drive Technology for the testing conditions and environment
- 13) IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details
- 14) Weight may vary slightly between models

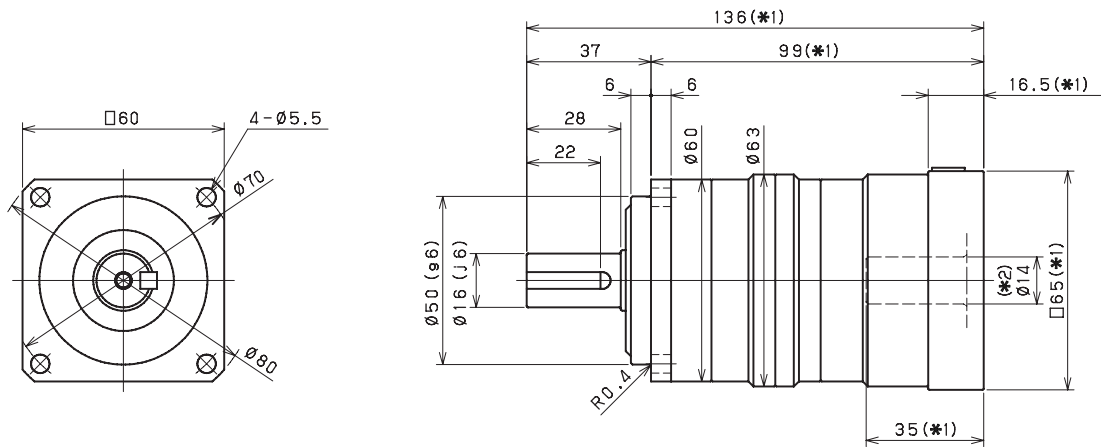


VRB 060 2-Stage Dimensions

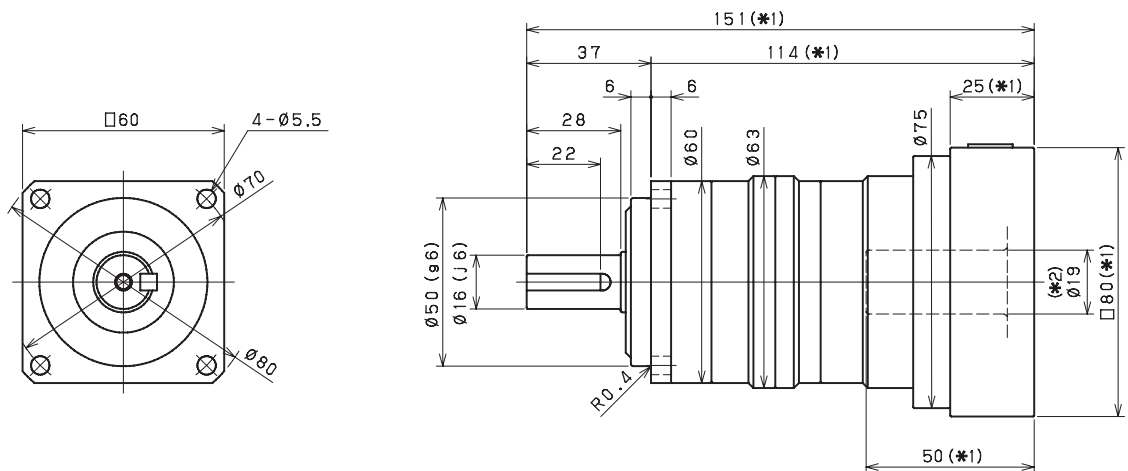
Input bore size F·C ϕ 8 mm



Input bore size F·C ϕ 14 mm



Input bore size F·C ϕ 19 mm



VRB 090 1-Stage Specifications

Frame Size	090									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	1	53	77	84	84	84	84	84	84
Maximum Acceleration Torque	[Nm]	2	108	165	165	165	165	165	112	112
Maximum Torque	[Nm]	3	135	200	200	195	195	190	145	145
Emergency Stop Torque	[Nm]	4	200	250	250	250	250	250	200	200
Nominal Input Speed	[rpm]	5	2900	2900	2900	2900	3100	3100	3100	3100
Maximum Input Speed	[rpm]	6	7500	7500	7500	7500	7500	7500	7500	7500
No Load Running Torque	[Nm]	7	0.35							
Maximum Radial Load	[N]	8	2400							
Maximum Axial Load	[N]	9	2200							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.72	0.50	0.41	0.36	0.33	0.31	0.30	0.30
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.1	0.90	0.80	0.75	0.73	0.71	0.70	0.70
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.9	2.7	2.6	2.5	2.5	2.5	2.5	2.5
Efficiency	[%]	10	95							
Torsional Rigidity	[Nm/arc-min]	11	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 67							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	3.7							

VRB 090 2-Stage Specifications

Frame Size	090									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	1	65	80	86	106	118	88	118	118
Maximum Acceleration Torque	[Nm]	2	108	165	165	165	165	108	165	165
Maximum Torque	[Nm]	3	108	165	165	165	165	108	165	165
Emergency Stop Torque	[Nm]	4	200	250	250	250	250	200	250	250
Nominal Input Speed	[rpm]	5	3500	3500	3500	3500	3500	3500	3500	3500
Maximum Input Speed	[rpm]	6	8500	8500	8500	8500	8500	8500	8500	8500
No Load Running Torque	[Nm]	7	0.06							
Maximum Radial Load	[N]	8	2400							
Maximum Axial Load	[N]	9	2200							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.20	0.25	0.19	0.19	0.24	0.12	0.18	0.11
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.36	0.41	0.35	0.35	0.4	0.28	0.35	0.28
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.75	0.79	0.74	0.74	0.78	0.67	0.73	0.67
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.4
Efficiency	[%]	10	90							
Torsional Rigidity	[Nm/arc-min]	11	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 67							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	4.2							

VRB 090 2-Stage Specifications

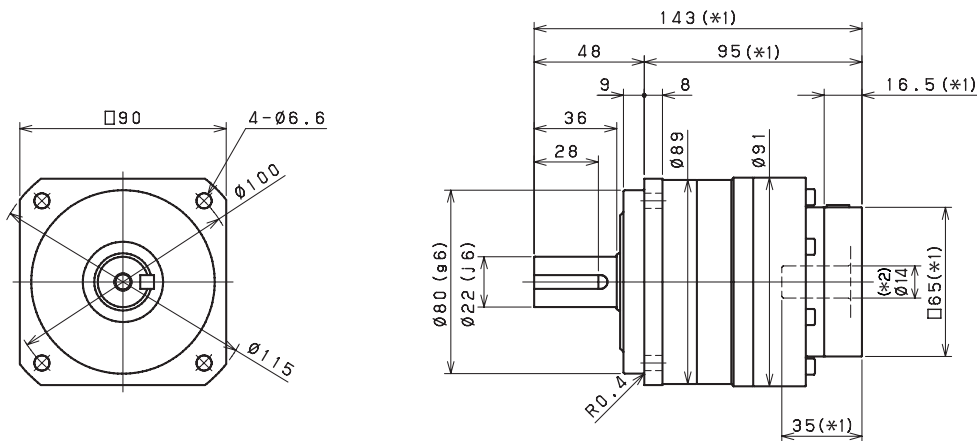
Frame Size	090										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	1	88	118	118	118	118	88	88		
Maximum Acceleration Torque	[Nm]	2	112	165	165	165	165	112	112		
Maximum Torque	[Nm]	3	112	165	165	165	165	112	112		
Emergency Stop Torque	[Nm]	4	200	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	5	3500	3800	3800	4500	4500	4500	4500		
Maximum Input Speed	[rpm]	6	8500	8500	8500	8500	8500	8500	8500		
No Load Running Torque	[Nm]	7	0.06								
Maximum Radial Load	[N]	8	2400								
Maximum Axial Load	[N]	9	2200								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.18	0.11	0.11	0.11	0.11	0.11	0.11		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.34	0.27	0.27	0.27	0.27	0.27	0.27		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.73	0.67	0.67	0.67	0.67	0.67	0.67		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.5	2.4	2.4	2.4	2.4	2.4	2.4		
Efficiency	[%]	10	90								
Torsional Rigidity	[Nm/arc-min]	11	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	dB [A]	12	≤ 67								
Protection Class	--	13	IP54 (IP65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	14	4.2								

- 1) At nominal input speed, service life is 20,000 hours
- 2) The maximum torque when starting or stopping operation. Apply Cycle Factor found on page 468, for higher duty cycle applications
- 3) Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft
- 4) The maximum torque allowed under a stress situation. Permitted 1,000 times during service life
- 5) The average input speed at nominal input torque. Maintain housing temperature below permitted value
- 6) The maximum intermittent input speed
- 7) Torque at no load applied to the input shaft at nominal input speed
- 8) The maximum radial load that the gearbox can accept
- 9) The maximum axial load that the gearbox can accept
- 10) The efficiency at the nominal output torque rating
- 11) This does not include lost motion
- 12) Contact Nidec Drive Technology for the testing conditions and environment
- 13) IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details
- 14) Weight may vary slightly between models

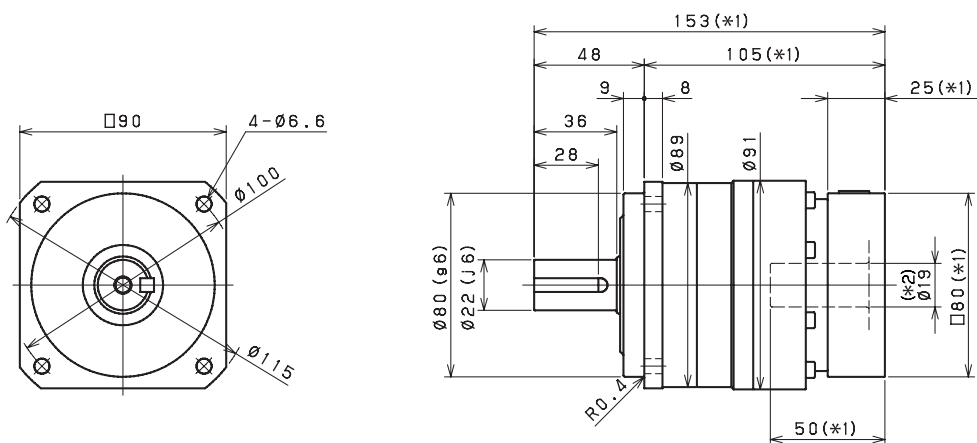


VRB 090 1-Stage Dimensions

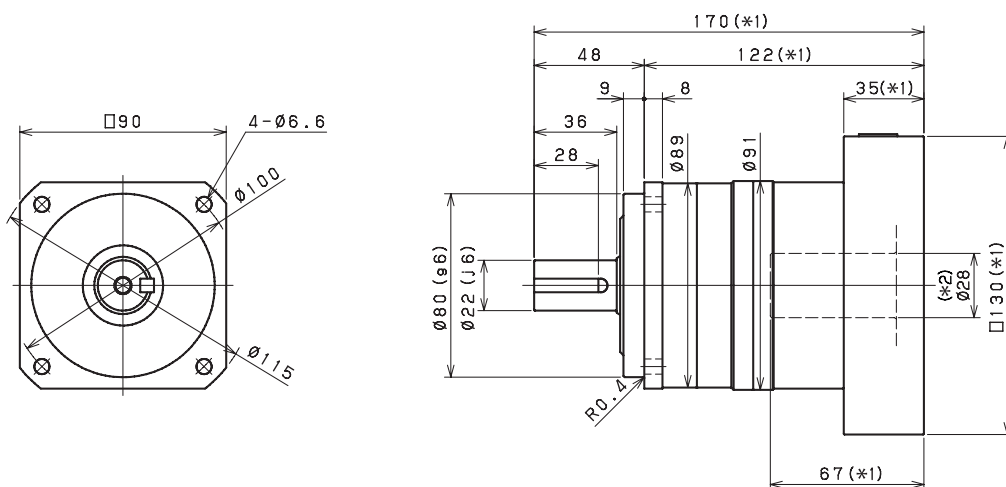
Input bore size F·Czφ14 mm



Input bore size F·Czφ19 mm

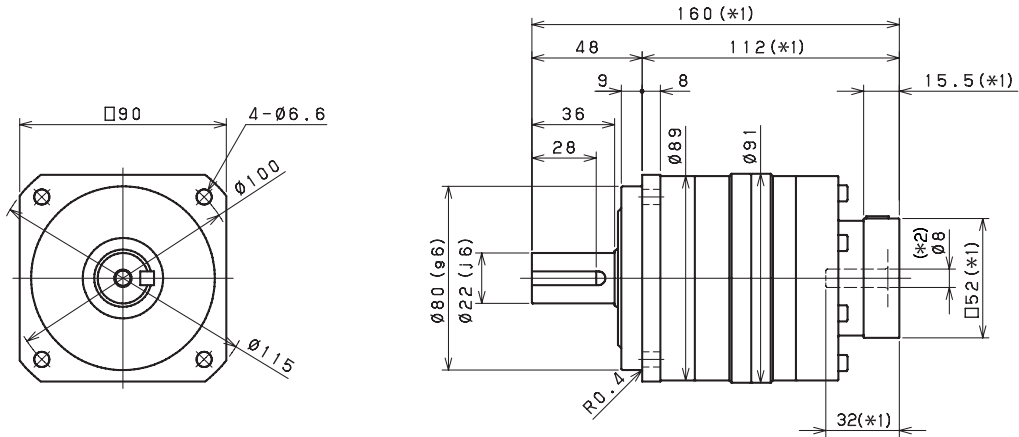


Input bore size

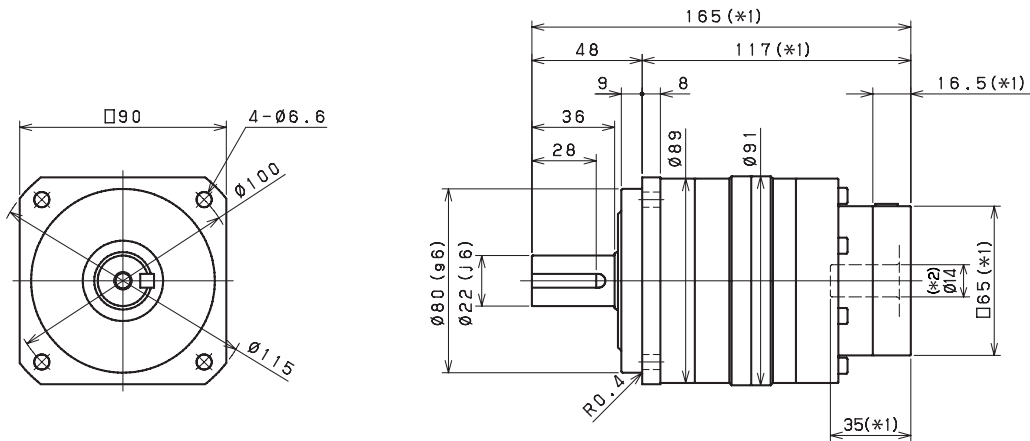


VRB 090 2-Stage Dimensions

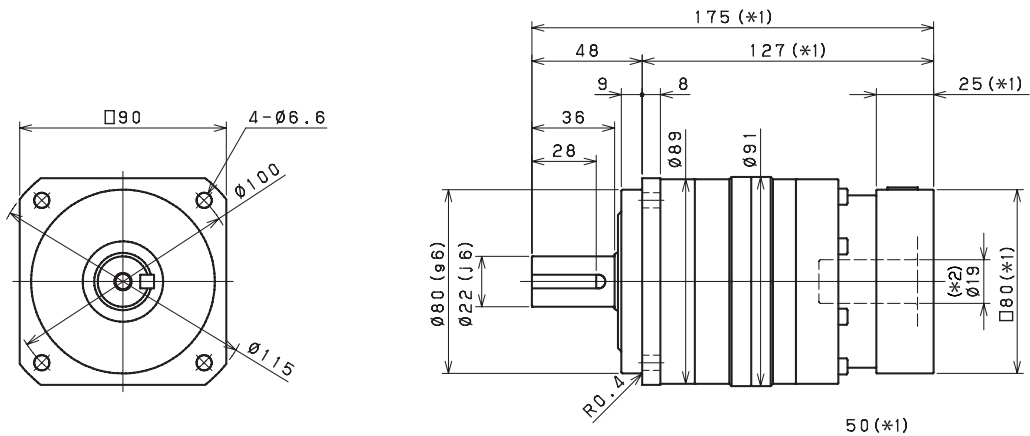
Input bore size F·Czφ8 mm



Input bore size F·Czφ14 mm



Input bore size F·Czφ19 mm⁽³⁾



VRB 115 1-Stage Specifications

Frame Size	115									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	1	128	146	190	190	190	190	190	190
Maximum Acceleration Torque	[Nm]	2	270	390	390	390	390	390	292	292
Maximum Torque (new)	--	3	340	490	490	480	480	480	370	370
Emergency Stop Torque	[Nm]	4	500	625	625	625	625	625	500	500
Nominal Input Speed	[rpm]	5	2800	2800	2800	2800	2800	2800	2800	2800
Maximum Input Speed	[rpm]	6	5500	5500	5500	5500	5500	5500	5500	5500
No Load Running Torque	[Nm]	7	1.30							
Maximum Radial Load	[N]	8	4300							
Maximum Axial Load	[N]	9	3900							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	3.2	2.0	1.4	1.2	1.0	0.92	0.86	0.83
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	5.1	3.7	3.1	2.9	2.8	2.7	2.6	2.6
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	12	10	9.5	9.3	9.1	9.0	8.9	8.9
Efficiency	[%]	10	95							
Torsional Rigidity	[Nm/arc-min]	11	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 71							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	8							

VRB 115 2-Stage Specifications

Frame Size	115									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	1	174	200	220	280	280	220	280	270
Maximum Acceleration Torque	[Nm]	2	270	390	390	390	390	270	390	390
Maximum Torque (new)	--	3	270	390	390	390	390	270	390	390
Emergency Stop Torque	[Nm]	4	500	625	625	625	625	500	625	625
Nominal Input Speed	[rpm]	5	3100	3100	3100	3100	3100	3100	3100	3100
Maximum Input Speed	[rpm]	6	6500	6500	6500	6500	6500	6500	6500	6500
No Load Running Torque	[Nm]	7	0.42							
Maximum Radial Load	[N]	8	4300							
Maximum Axial Load	[N]	9	3900							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.77	0.98	0.72	0.70	0.92	0.38	0.68	0.37
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.2	1.4	1.1	1.1	1.3	0.78	1.1	0.77
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.9	3.1	2.8	2.8	3.0	2.5	2.8	2.5
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	9.2	9.4	9.1	9.1	9.3	8.8	9.1	8.8
Efficiency	[%]	10	90							
Torsional Rigidity	[Nm/arc-min]	11	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 71							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	8.9							

VRB 115 2-Stage Specifications

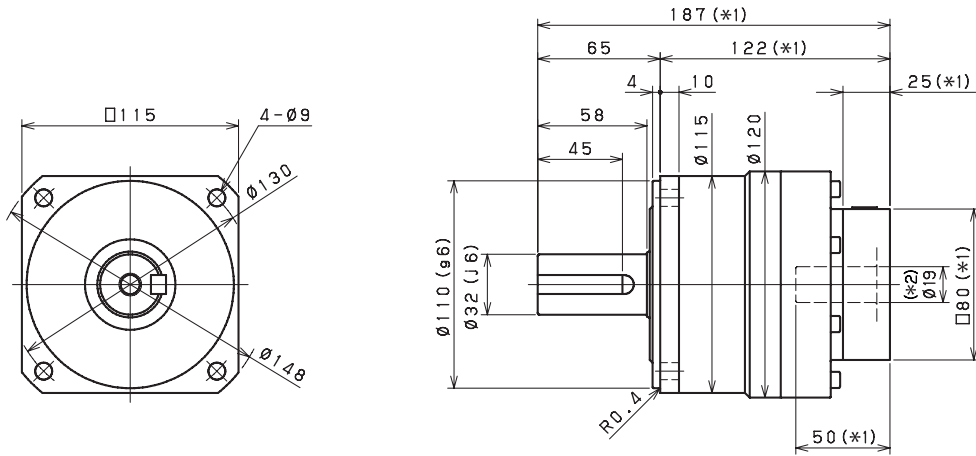
Frame Size	115										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	1	220	280	280	280	280	220	220		
Maximum Acceleration Torque	[Nm]	2	292	390	390	390	390	292	292		
Maximum Torque (new)	--	3	292	390	390	390	390	292	292		
Emergency Stop Torque	[Nm]	4	500	625	625	625	625	500	500		
Nominal Input Speed	[rpm]	5	3100	3500	3500	4200	4200	4200	4200		
Maximum Input Speed	[rpm]	6	6500	6500	6500	6500	6500	6500	6500		
No Load Running Torque	[Nm]	7	0.42								
Maximum Radial Load	[N]	8	4300								
Maximum Axial Load	[N]	9	3900								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	--	0.19	0.19	0.19	0.19	0.19	0.19		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.68	0.36	0.36	0.36	0.36	0.36	0.36		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.1	0.76	0.76	0.76	0.76	0.76	0.76		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.8	2.5	2.5	2.5	2.5	2.5	2.5		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	9.1	8.8	8.8	8.8	8.8	8.8	8.8		
Efficiency	[%]	10	90								
Torsional Rigidity	[Nm/arc-min]	11	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	dB [A]	12	≤ 71								
Protection Class	--	13	IP54 (IP65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	14	8.9								

- 1) At nominal input speed, service life is 20,000 hours
- 2) The maximum torque when starting or stopping operation. Apply Cycle Factor found on page 468, for higher duty cycle applications
- 3) Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft
- 4) The maximum torque allowed under a stress situation. Permitted 1,000 times during service life
- 5) The average input speed at nominal input torque. Maintain housing temperature below permitted value
- 6) The maximum intermittent input speed
- 7) Torque at no load applied to the input shaft at nominal input speed
- 8) The maximum radial load that the gearbox can accept
- 9) The maximum axial load that the gearbox can accept
- 10) The efficiency at the nominal output torque rating
- 11) This does not include lost motion
- 12) Contact Nidec Drive Technology for the testing conditions and environment
- 13) IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details
- 14) Weight may vary slightly between models

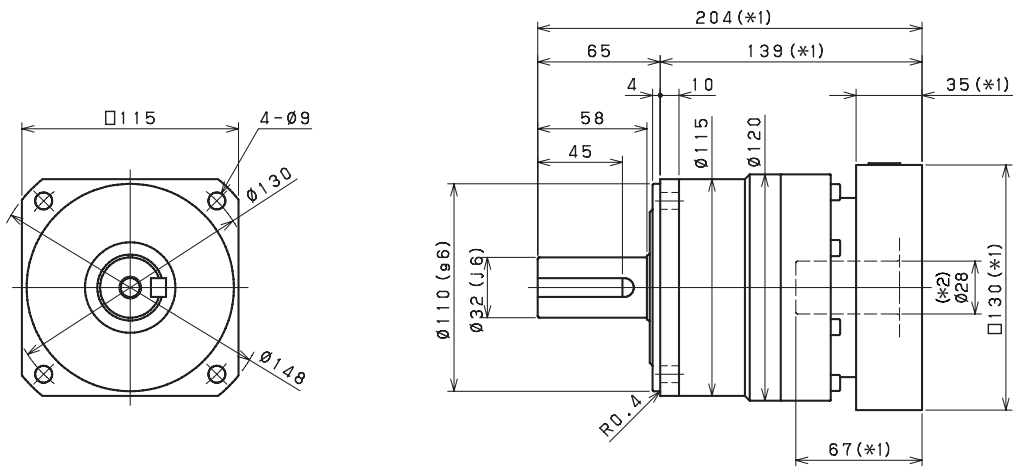


VRB 115 1-Stage Dimensions

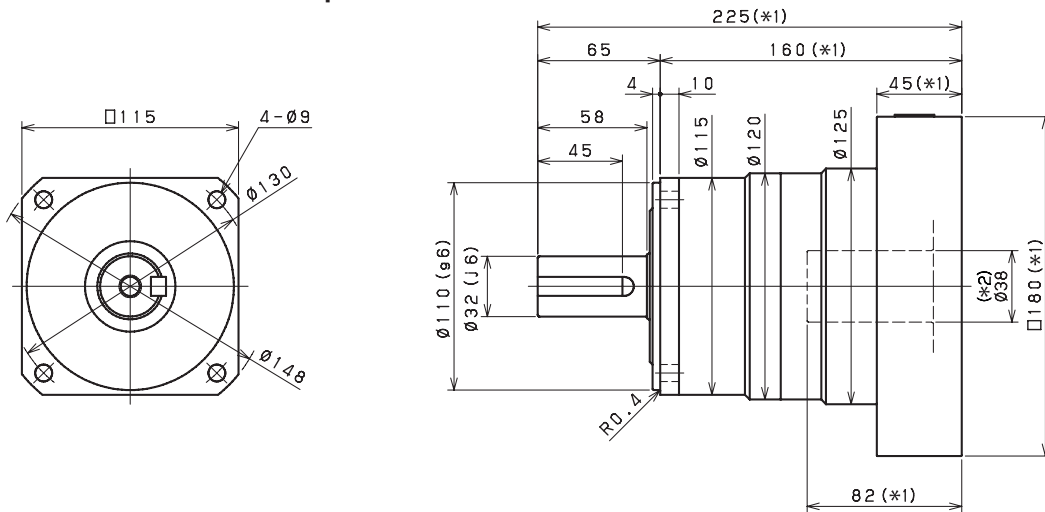
Input bore size F·Cz $\phi 19$ mm



Input bore size F·Cz $\phi 28$ mm

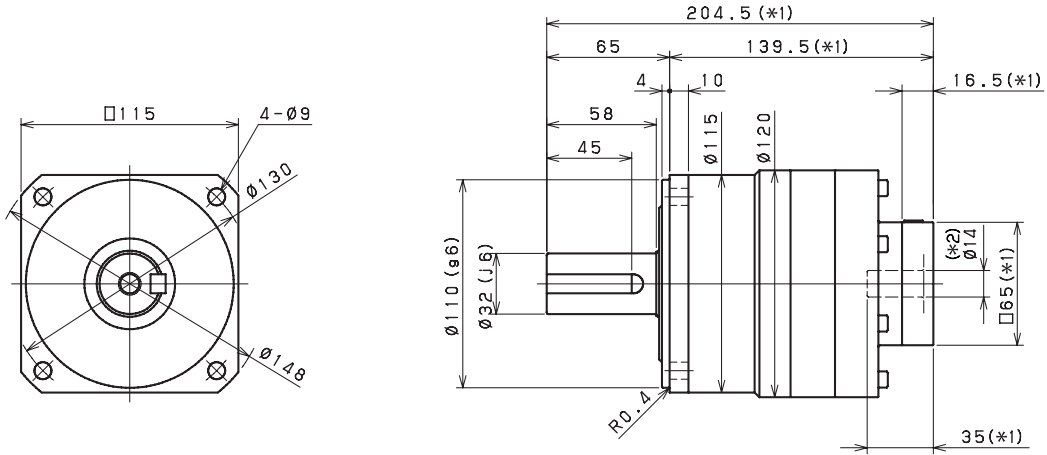


Input bore size

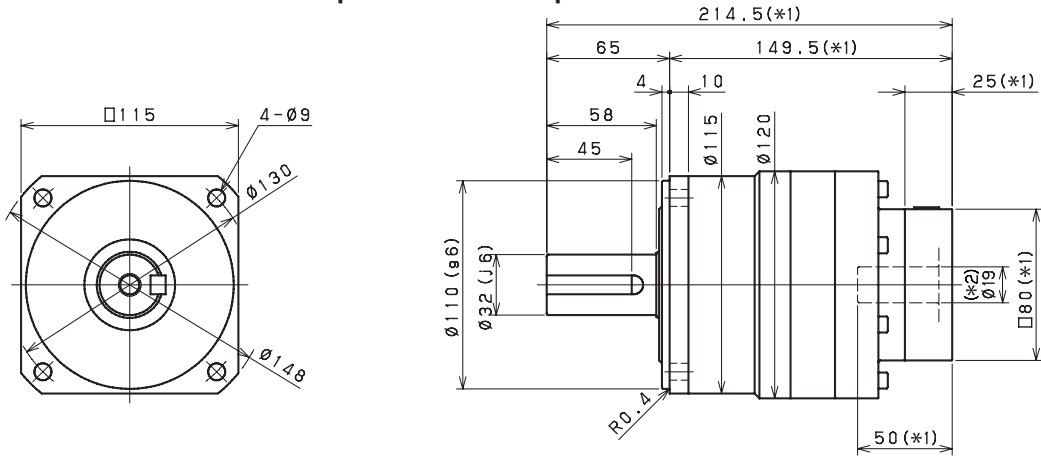


VRB 115 2-Stage Dimensions

Input bore size F·Czφ14 mm

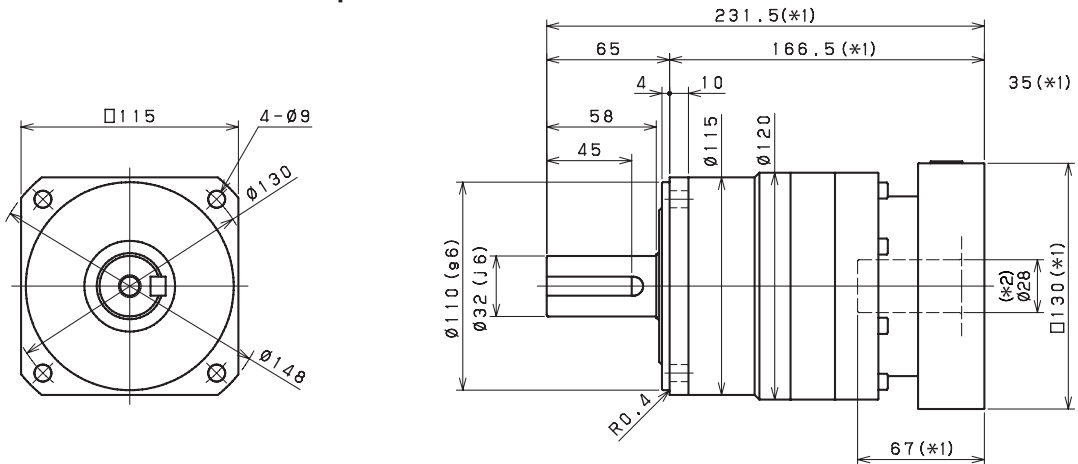


Input bore size F·Czφ19 mm



Input bore size

(3)



VRB 140 1-Stage Specifications

Frame Size	140									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	1	248	280	380	380	380	380	380	380
Maximum Acceleration Torque	[Nm]	2	560	840	840	840	840	840	610	610
Maximum Torque	[Nm]	3	630	1000	1000	950	950	950	730	730
Emergency Stop Torque	[Nm]	4	1000	1250	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	5	2100	2100	2100	2100	2600	2600	2600	2600
Maximum Input Speed	[rpm]	6	5000	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque	[Nm]	7	1.63							
Maximum Radial Load	[N]	8	9100							
Maximum Axial Load	[N]	9	8200							
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	12	7.3	5.3	4.3	3.9	3.5	3.3	3.2
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	18	14	12	11	10	9.9	9.7	9.6
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	35	29	27	26	25	25	25	25
Efficiency	[%]	10	95							
Torsional Rigidity	[Nm/arc-min]	11	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 67							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	16							

VRB 140 2-Stage Specifications

Frame Size	140									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	1	360	380	410	590	590	440	590	500
Maximum Acceleration Torque	[Nm]	2	560	840	840	840	840	560	840	840
Maximum Torque	[Nm]	3	560	840	840	840	840	560	840	840
Emergency Stop Torque	[Nm]	4	1000	1250	1250	1250	1250	1000	1250	1250
Nominal Input Speed	[rpm]	5	2900	2900	2900	2900	2900	2900	2900	2900
Maximum Input Speed	[rpm]	6	6000	6000	6000	6000	6000	6000	6000	6000
No Load Running Torque	[Nm]	7	0.56							
Maximum Radial Load	[N]	8	9100							
Maximum Axial Load	[N]	9	8200							
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	2.6	3.5	2.4	2.4	3.3	1.1	2.3	1.1
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.4	5.3	4.2	4.1	5.1	2.9	4.1	2.8
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	11	12	10	10	11	9.2	10	9.1
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	26	27	25	25	26	24	25	24
Efficiency	[%]	10	90							
Torsional Rigidity	[Nm/arc-min]	11	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 67							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	17							

VRB 140 2-Stage Specifications

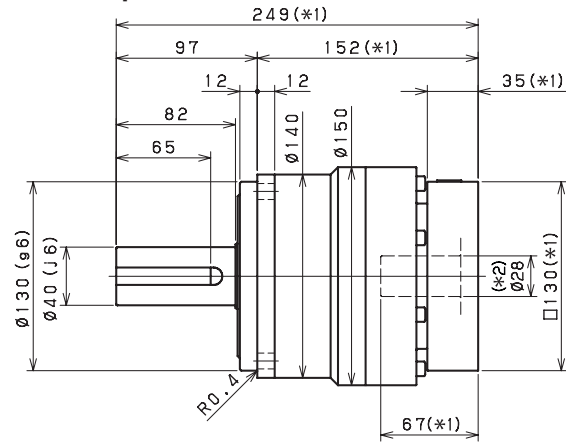
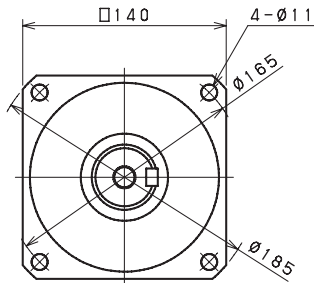
Frame Size	140										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	1	440	590	590	590	590	440	440		
Maximum Acceleration Torque	[Nm]	2	610	840	840	840	840	610	610		
Maximum Torque	[Nm]	3	610	840	840	840	840	610	610		
Emergency Stop Torque	[Nm]	4	1000	1250	1250	1250	1250	1000	1000		
Nominal Input Speed	[rpm]	5	2900	3200	3200	3900	3900	3900	3900		
Maximum Input Speed	[rpm]	6	6000	6000	6000	6000	6000	6000	6000		
No Load Running Torque	[Nm]	7	0.56								
Maximum Radial Load	[N]	8	9100								
Maximum Axial Load	[N]	9	8200								
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	--	0.65	0.64	0.64	0.63	0.63	0.63		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	2.3	1.1	1.1	1.1	1.1	1.1	1.1		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.0	2.8	2.8	2.8	2.8	2.8	2.8		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	10	9.1	9.1	9.1	9.1	9.1	9.1		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	25	24	24	24	24	24	24		
Efficiency	[%]	10	90								
Torsional Rigidity	[Nm/arc-min]	11	60								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	dB [A]	12	≤ 67								
Protection Class	--	13	IP54 (IP65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	14	17								

- 1) At nominal input speed, service life is 20,000 hours
- 2) The maximum torque when starting or stopping operation. Apply Cycle Factor found on page 468, for higher duty cycle applications
- 3) Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft
- 4) The maximum torque allowed under a stress situation. Permitted 1,000 times during service life
- 5) The average input speed at nominal input torque. Maintain housing temperature below permitted value
- 6) The maximum intermittent input speed
- 7) Torque at no load applied to the input shaft at nominal input speed
- 8) The maximum radial load that the gearbox can accept
- 9) The maximum axial load that the gearbox can accept
- 10) The efficiency at the nominal output torque rating
- 11) This does not include lost motion
- 12) Contact Nidec Drive Technology for the testing conditions and environment
- 13) IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details
- 14) Weight may vary slightly between models

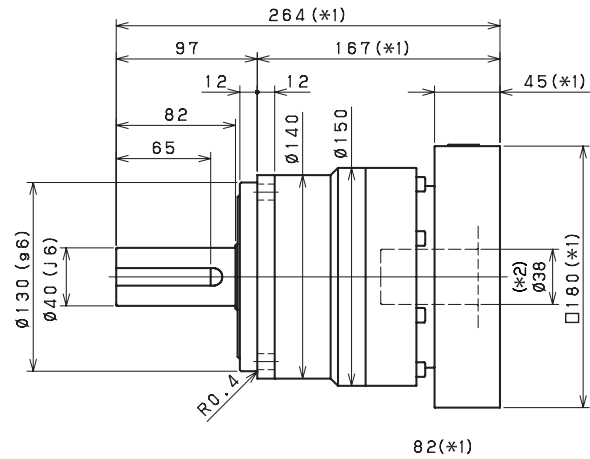
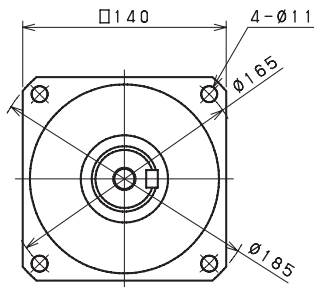


VRB 140 1-Stage Dimensions

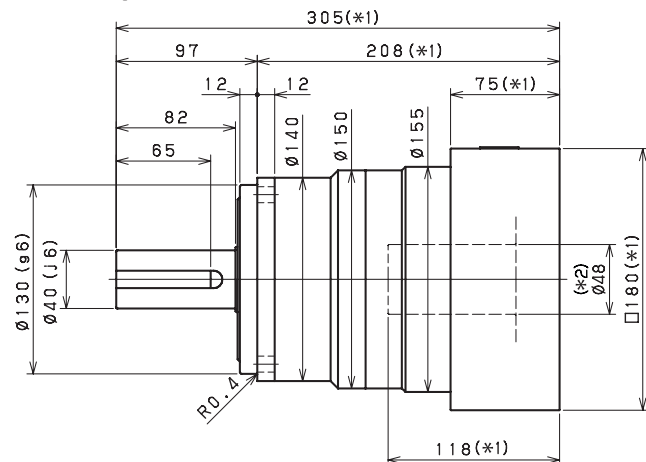
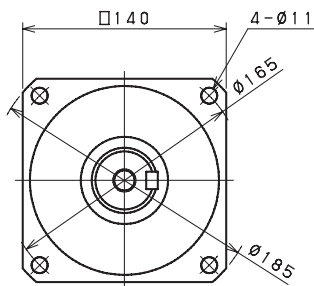
Input bore size F·Cz $\phi 28$ mm



Input bore size F·Cz $\phi 38$ mm

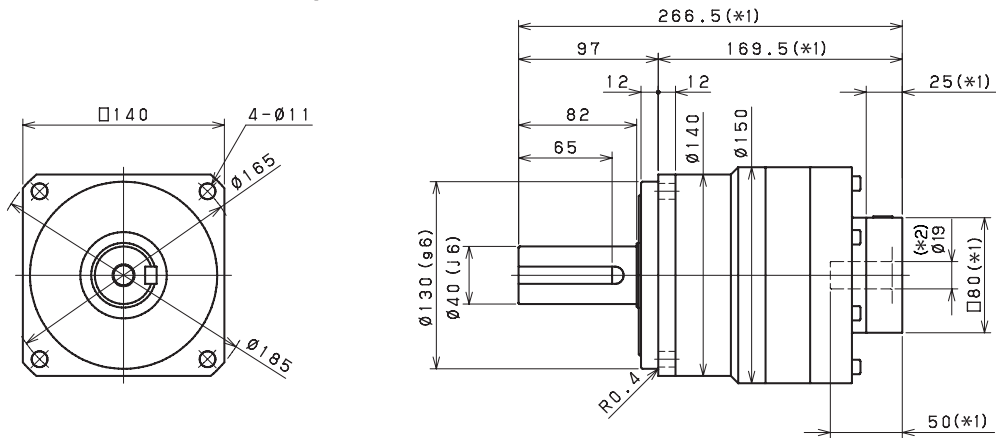


Input bore size F·Cz $\phi 48$ mm

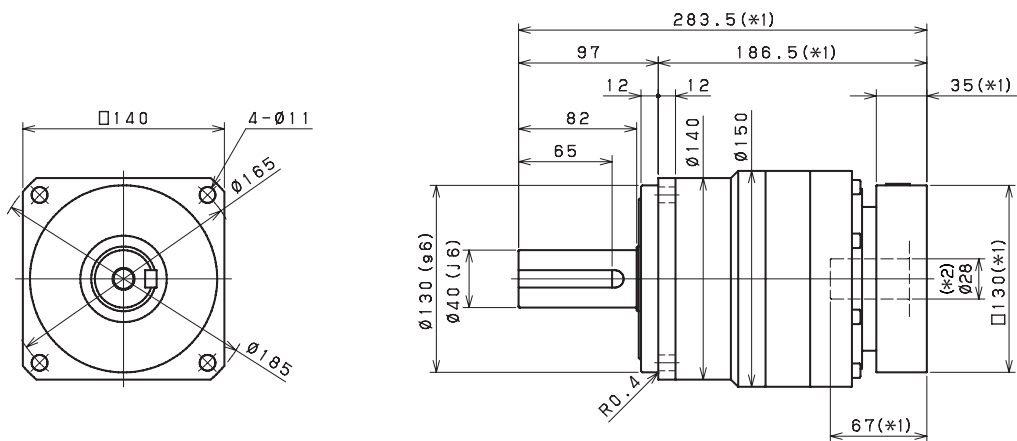


VRB 140 2-Stage Dimensions

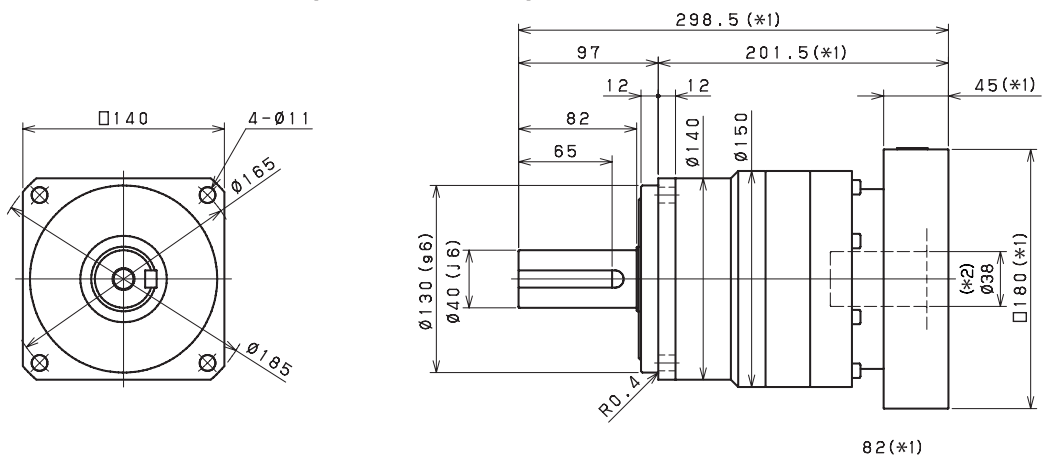
Input bore siz



Input bore size F·CzØ28 mm



Input bore size F·CzØ38 mm³⁾



VRB 180 1-Stage Specifications

Frame Size	180									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	1	570	850	910	910	910	910	910	910
Maximum Acceleration Torque	[Nm]	2	1300	1850	1850	1850	1850	1850	1350	1350
Maximum Torque	[Nm]	3	1450	2250	2250	2150	2150	2150	1750	1750
Emergency Stop Torque	[Nm]	4	2200	2750	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	5	1500	1500	1500	1500	2300	2300	2300	2300
Maximum Input Speed	[rpm]	6	4500	4500	4500	4500	4500	4500	4500	4500
No Load Running Torque	[Nm]	7	2.68							
Maximum Radial Load	[N]	8	15000							
Maximum Axial Load	[N]	9	14000							
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	43	26	19	15	14	13	12	12
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	57	41	34	31	29	28	27	27
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	110	85	78	75	73	72	71	71
Efficiency	[%]	10	95							
Torsional Rigidity	[Nm/arc-min]	11	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 67							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	36							

VRB 180 2-Stage Specifications

Frame Size	180									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	1	660	850	910	1100	1300	930	1300	1200
Maximum Acceleration Torque	[Nm]	2	1300	1850	1850	1850	1850	1300	1850	1850
Maximum Torque	[Nm]	3	1300	1850	1850	1850	1850	1300	1850	1850
Emergency Stop Torque	[Nm]	4	2200	2750	2750	2750	2750	2200	2750	2750
Nominal Input Speed	[rpm]	5	2700	2700	2700	2700	2700	2700	2700	2700
Maximum Input Speed	[rpm]	6	5000	5000	5000	5000	5000	5000	5000	5000
No Load Running Torque	[Nm]	7	1.39							
Maximum Radial Load	[N]	8	15000							
Maximum Axial Load	[N]	9	14000							
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	8.8	11	8.1	7.9	11	4.0	7.6	3.9
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	15	18	14	14	17	10	14	10
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	30	33	29	29	32	25	29	25
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	10	90							
Torsional Rigidity	[Nm/arc-min]	11	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 67							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	37							

VRB 180 2-Stage Specifications

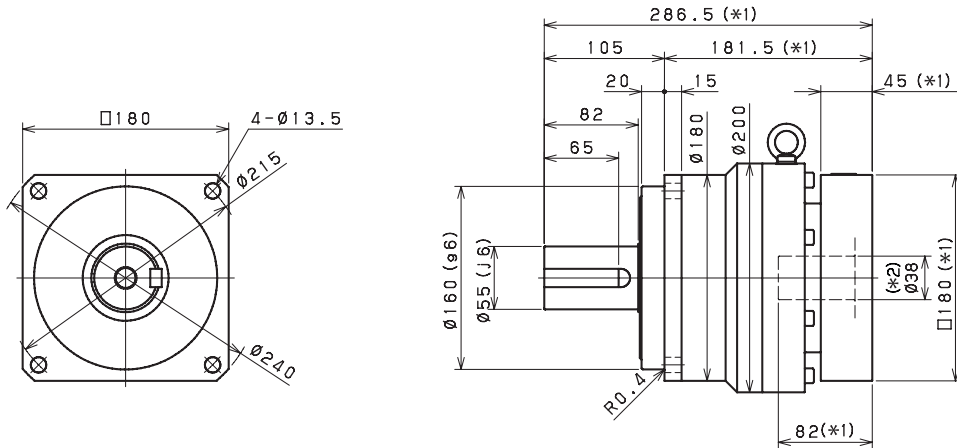
Frame Size	180										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	1	930	1300	1300	1300	1300	930	930		
Maximum Acceleration Torque	[Nm]	2	1350	1850	1850	1850	1850	1350	1350		
Maximum Torque	[Nm]	3	1350	1850	1850	1850	1850	1350	1350		
Emergency Stop Torque	[Nm]	4	2200	2750	2750	2750	2750	2200	2200		
Nominal Input Speed	[rpm]	5	2700	2900	2900	3400	3400	3400	3400		
Maximum Input Speed	[rpm]	6	5000	5000	5000	5000	5000	5000	5000		
No Load Running Torque	[Nm]	7	1.39								
Maximum Radial Load	[N]	8	15000								
Maximum Axial Load	[N]	9	14000								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	1.9	1.9	1.8	1.8	1.8	1.8		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	7.6	3.8	3.8	3.8	3.7	3.7	3.7		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	14	10	10	10	10	10	10		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	29	25	25	25	25	25	25		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	10	90								
Torsional Rigidity	[Nm/arc-min]	11	175								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	dB [A]	12	≤ 67								
Protection Class	--	13	IP54 (IP65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	14	37								

- 1) At nominal input speed, service life is 20,000 hours
- 2) The maximum torque when starting or stopping operation. Apply Cycle Factor found on page 468, for higher duty cycle applications
- 3) Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft
- 4) The maximum torque allowed under a stress situation. Permitted 1,000 times during service life
- 5) The average input speed at nominal input torque. Maintain housing temperature below permitted value
- 6) The maximum intermittent input speed
- 7) Torque at no load applied to the input shaft at nominal input speed
- 8) The maximum radial load that the gearbox can accept
- 9) The maximum axial load that the gearbox can accept
- 10) The efficiency at the nominal output torque rating
- 11) This does not include lost motion
- 12) Contact Nidec Drive Technology for the testing conditions and environment
- 13) IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details
- 14) Weight may vary slightly between models

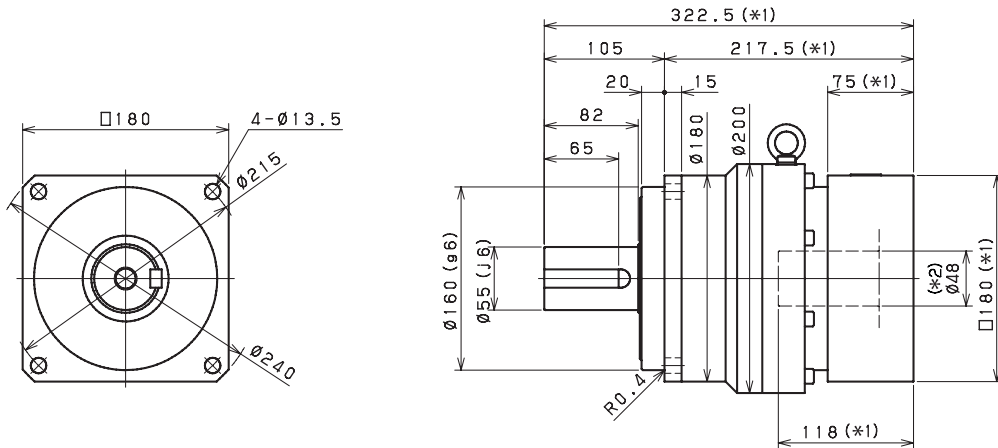


VRB 180 1-Stage Dimensions

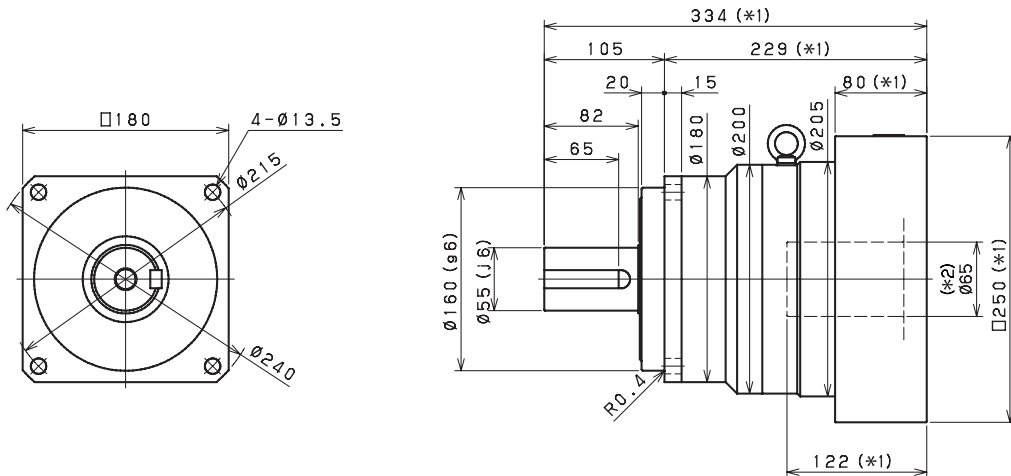
Input bore size F-Cz $\phi 38$ mm



Input bore size F-Cz $\phi 48$ mm

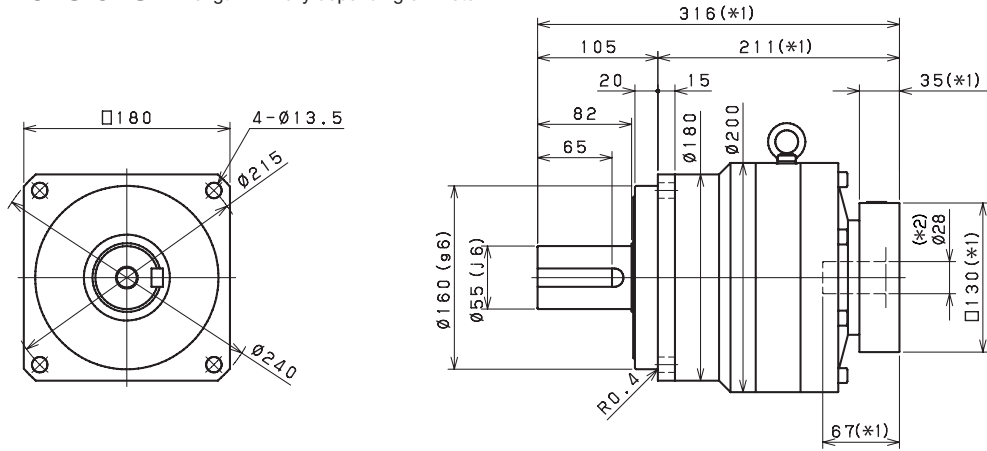


Input bore size F-Cz $\phi 65$ mm

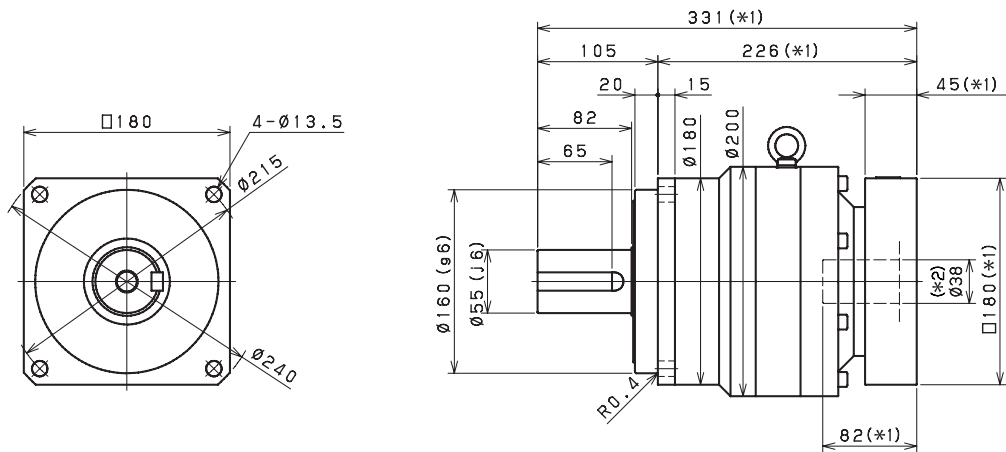


VRB 180 2-Stage Dimensions Input bore size F-Cz ϕ 28 mm

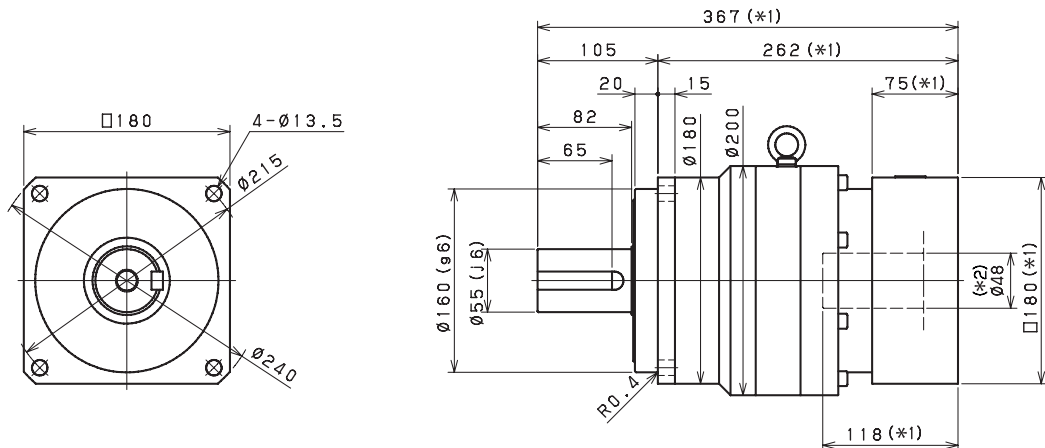
Length will vary depending on motor



Input bore size F-Cz ϕ 38 mm



Input bore size



1)



VRB 220 1-Stage Specifications

Frame Size	220									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	1	980	1400	1400	1600	1700	1700	1700	1700
Maximum Acceleration Torque	[Nm]	2	2000	2900	2900	2900	2900	2900	2600	2200
Maximum Torque	[Nm]	3	2400	3700	3700	3500	3500	3400	3000	2700
Emergency Stop Torque	[Nm]	4	4000	5000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	5	1200	1200	1500	1500	1700	1700	2000	2000
Maximum Input Speed	[rpm]	6	3000	3000	3000	3000	3000	3000	3000	3000
No Load Running Torque	[Nm]	7	2.92							
Maximum Radial Load	[N]	8	15000							
Maximum Axial Load	[N]	9	14000							
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	110	54	42	35	33	30	29	28
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	160	98	85	79	76	74	73	72
Efficiency	[%]	10	95							
Torsional Rigidity	[Nm/arc-min]	11	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 61							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	53							

VRB 220 2-Stage Specifications

Frame Size	220									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	1	1100	1400	1500	1800	2000	1300	2000	2000
Maximum Acceleration Torque	[Nm]	2	2000	2900	2900	2900	2900	2000	2900	2900
Maximum Torque	[Nm]	3	2000	2900	2900	2900	2900	2000	2900	2900
Emergency Stop Torque	[Nm]	4	4000	5000	5000	5000	5000	4000	5000	5000
Nominal Input Speed	[rpm]	5	2200	2200	2200	2200	2200	2200	2200	2200
Maximum Input Speed	[rpm]	6	4500	4500	4500	4500	4500	4500	4500	4500
No Load Running Torque	[Nm]	7	1.14							
Maximum Radial Load	[N]	8	15000							
Maximum Axial Load	[N]	9	14000							
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	20	24	19	18	23	12	18	12
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	34	39	33	33	37	26	32	26
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	10	90							
Torsional Rigidity	[Nm/arc-min]	11	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	12	≤ 61							
Protection Class	--	13	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	14	54							

VRB 220 2-Stage Specifications

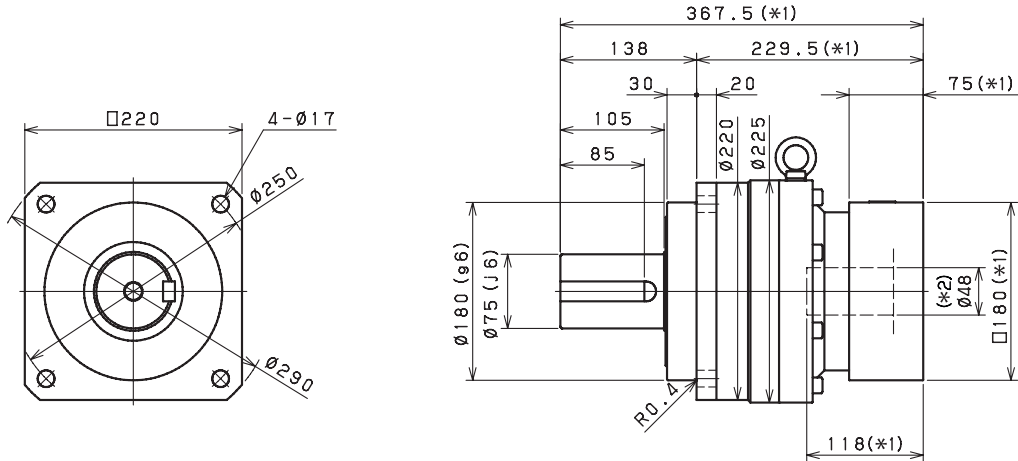
Frame Size	220										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	1	1300	2000	2000	2000	2000	1300	1300		
Maximum Acceleration Torque	[Nm]	2	1800	2900	2900	2900	2500	1800	1600		
Maximum Torque	[Nm]	3	1800	2900	2900	2900	2500	1800	1600		
Emergency Stop Torque	[Nm]	4	4000	5000	5000	5000	5000	4000	4000		
Nominal Input Speed	[rpm]	5	2200	2500	2500	3000	3000	3000	3000		
Maximum Input Speed	[rpm]	6	4500	4500	4500	4500	4500	4500	4500		
No Load Running Torque	[Nm]	7	1.14								
Maximum Radial Load	[N]	8	15000								
Maximum Axial Load	[N]	9	14000								
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	4.7	4.7	4.6	4.6	4.6	4.6		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	18	12	11	11	11	11	11		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	32	26	26	26	26	26	26		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	10	90								
Torsional Rigidity	[Nm/arc-min]	11	400								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	dB [A]	12	≤ 61								
Protection Class	--	13	IP54 (IP65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	14	54								

- 1) At nominal input speed, service life is 20,000 hours
- 2) The maximum torque when starting or stopping operation. Apply Cycle Factor found on page 468, for higher duty cycle applications
- 3) Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft
- 4) The maximum torque allowed under a stress situation. Permitted 1,000 times during service life
- 5) The average input speed at nominal input torque. Maintain housing temperature below permitted value
- 6) The maximum intermittent input speed
- 7) Torque at no load applied to the input shaft at nominal input speed
- 8) The maximum radial load that the gearbox can accept
- 9) The maximum axial load that the gearbox can accept
- 10) The efficiency at the nominal output torque rating
- 11) This does not include lost motion
- 12) Contact Nidec Drive Technology for the testing conditions and environment
- 13) IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details
- 14) Weight may vary slightly between models

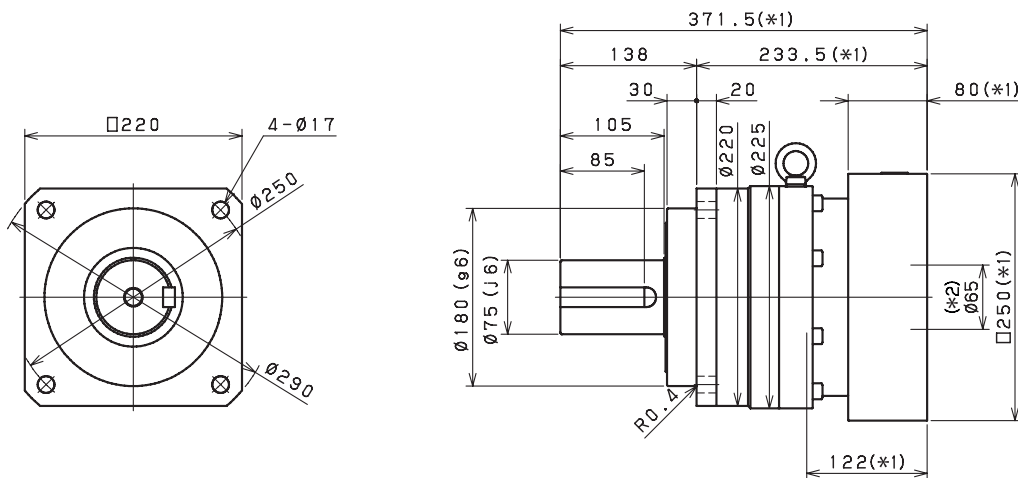


VRB 220 1-Stage Dimensions

Input bore size F·Czφ48 mm

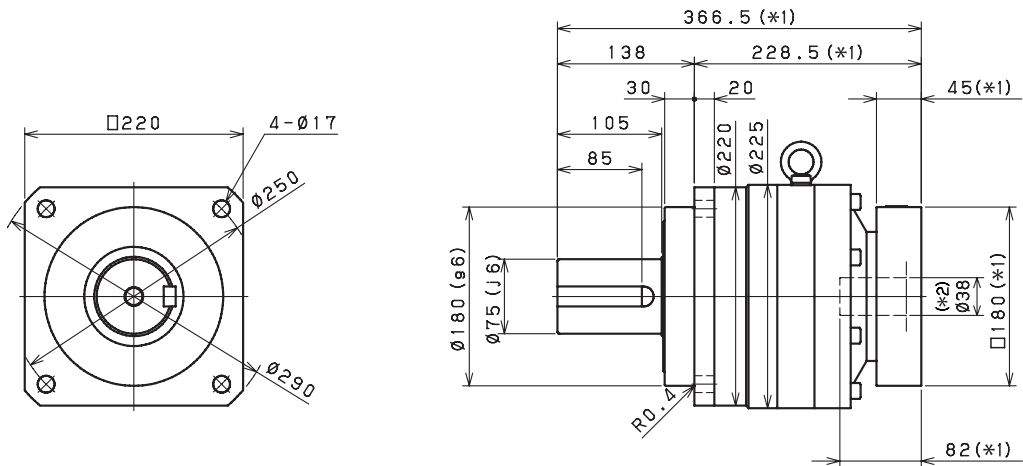


Input bore size F·Czφ65 mm



VRB 220 2-Stage Dimensions

Input bore size F-Cz $\phi 38$ mm



Input bore size

