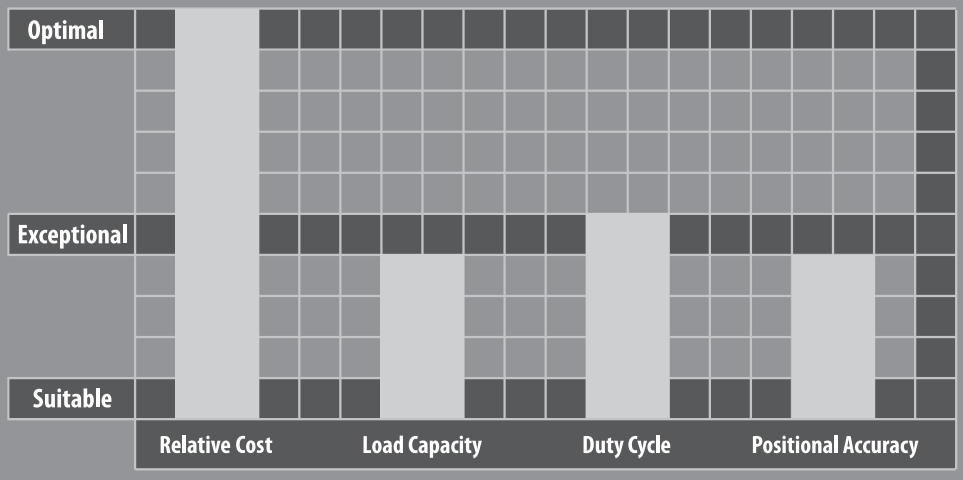
VRSF SERIES

The intelligent, value engineered selection for lower duty cycle servo and stepper motor applications. The VRSF utilizes a lightweight aluminum frame, making it optimal for traveling axes and end of arm tooling systems. Helical cut gearing allows the VRSF to operate much quieter than the industry standard economy products which rely on spur gearing. The VRSF comes standard with 15 arc-minutes of backlash, but can also be configured to higher accuracy levels.

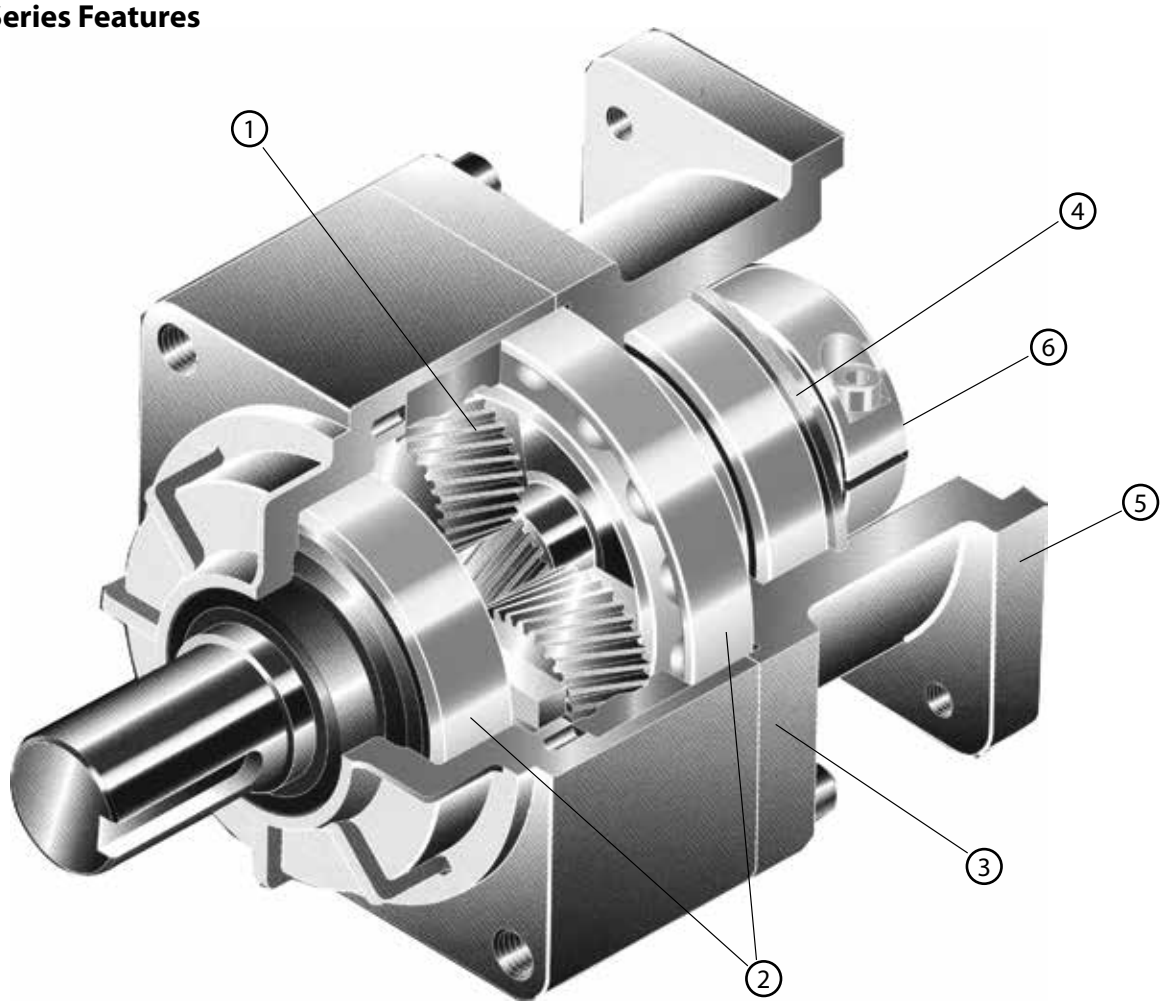
The VRSF is available in four frame sizes, putting out a peak output torque of 274Nm across 9 reduction ratios. The VRSF is the ideal choice for OEMs producing high volume machines where cost is critical, accuracy relatively important and duty cycle not overly extreme. The VRSF's aluminum body has made it a popular choice in medical, food packaging and other harsh environments. The VRSF can be fitted with a NEMA output flange, for standardized connection to customer equipment.



VRSF SERIES

- Value engineered solution for simple servo and stepper motor applications
- Quiet operation: Helical cut gears contribute to reduced vibration and noise
- Wide range of mounting adapters offer a simple, precise attachment to any motor
- Lightweight aluminum body reduces excess weight
- Aluminum body, combined with other wash-down features can be used in harsh environments
- Maintenance-free solution that is lubricated for life. High performance grease allows flexible mounting in any orientation

VRSF Series Features



1. Carburized helical gears with proprietary secondary finishing process for higher accuracy and smooth, quiet operation
2. One piece output shaft and planet carrier with two bearings straddling the planet gears. Higher stiffness and safety factor, with guaranteed alignment of gearing
3. Aluminum body for a light weight solution, capable of withstanding corrosive environments
4. Input seal allows for IP65 ingress protection
5. Optimized mounting system with active centering on motor pilot diameter guarantees alignment of motor. Motor can be installed in any orientation
6. True concentric clamping connection, optimized for your motor. Reduced inertia for dynamic performance and balanced for high speed operation

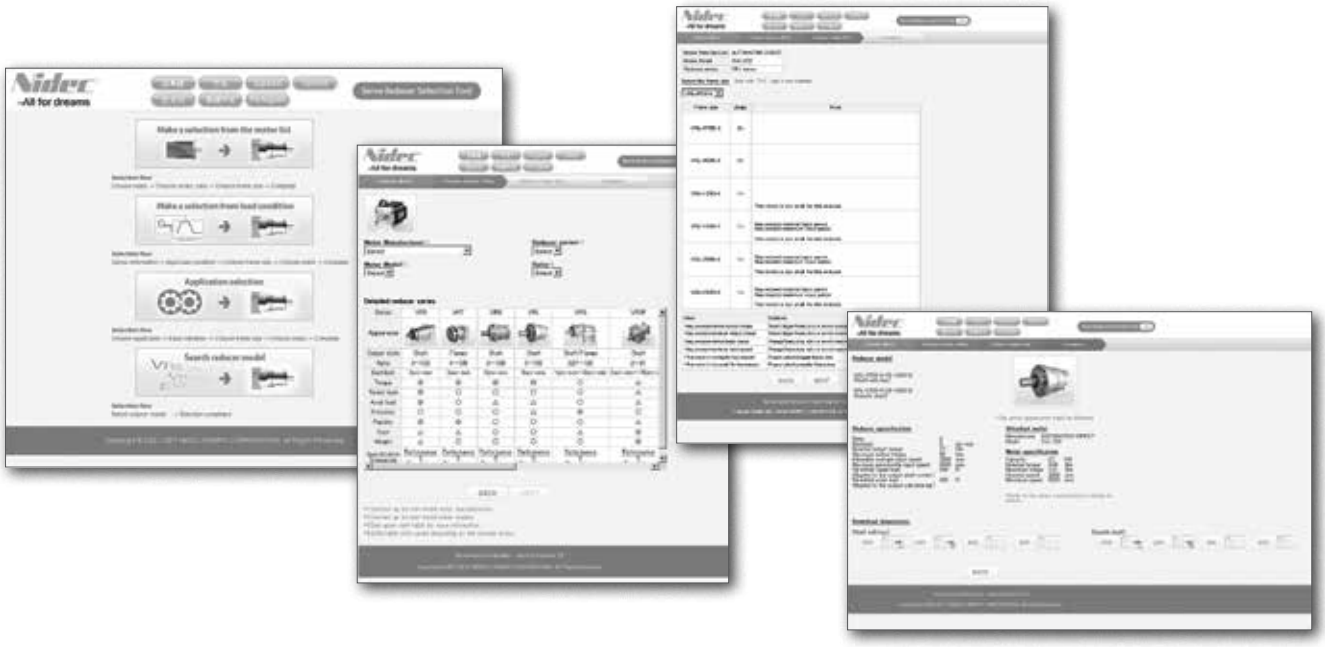
VRSF Series Model Code

VRSF - LB - 15 - C - 19HB16

- 19HB16 — Motor mounting code (*1)
- C — Frame size: B, C, D, E
- 15 — Ratio: 1-Stage: 3, 5, S9; 2-Stage: 15, 20, 25, 35, 45, 81
- LB — Backlash: No code: Standard (15 arc-min); LB: Low (5 arc-min)
- VRSF — Series

*1) Code varies depending on the motor. Use the selection tool link below to configure the code

Contact us for additional information or refer to our online gearhead selection tool.
Selection tool http://sitspa.com/tools-online/



VRSF B-Frame 1-Stage and 2-Stage Specifications

Frame Size	**B**								
Stage			**1-Stage**			**2-Stage**			
Ratio	Units	Note	3	5	9	15	20	25	35
Nominal Output Torque	[Nm]	*1	3.43	2.84	2.35	4.02	5.00	6.27	3.84
Maximum Acceleration Torque	[Nm]	*2	10.3	8.53	7.25	12.2	15.0	19.0	11.5
Emergency Stop Torque	[Nm]	--	--	--	--	--	--	--	--
Nominal Input Speed	[rpm]	*3	3000			3000			
Maximum Input Speed	[rpm]	*4	5000			5000			
No Load Running Torque	[Nm]	*5	0.119			0.048			
Permitted Radial Load	[N]	*6	392	490	588	784	804	882	882
Permitted Axial Load	[N]	*7	196	245	294	392	402	441	441
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.081	0.059	0.052	0.057	0.056	0.056	0.052
Moment of Inertia (≤Ø 14)	[kgcm2]	--	0.150	0.130	0.120	0.130	0.130	0.130	0.120
Efficiency	[%]	*8	90			85			
Torsional Rigidity	[Nm/arcmin]	*9	0.8			0.8			
Backlash (Standard)	[Arc-min]	--	≤ 15			≤ 15			
Backlash (Low)	[Arc-min]	--	≤ 10			≤ 10			
Backlash (Precision)	[Arc-min]	--	≤ 3			≤ 3			
Noise Level	[dB]	*10	≤ 72			≤ 65			
Protection Class	--	*11	IP65			IP65			
Ambient Temperature	[°C]	--	0-40			0-40			
Permitted Housing Temperature	[°C]	--	90			90			
Weight (≤Ø 8)	[kg]	*12	0.58			0.75			
Weight (≤Ø 14)	[kg]	*12	0.7			0.86			

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The average input speed

*4) The maximum intermittent input speed

*5) Torque at no load applied to the input shaft at nominal input speed

*6) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*7) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*8) The efficiency at the nominal output torque rating

*9) This does not include lost motion

*10) Contact SIT S.p.A. for the testing conditions and environment

*11) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*12) The weight may vary slightly between models

VRSF C-Frame 1-Stage and 2-Stage Specifications

Frame Size	**C**										
Stage	**1-Stage**					**2-Stage**					
Ratio	Units	Note	3	5	9	15	20	25	35	45	81
Nominal Output Torque	[Nm]	*1	6.86	11.5	9.7	16.2	21.1	26.4	15.5	9.5	9.7
Maximum Acceleration Torque	[Nm]	*2	20.6	34.3	29.2	48.6	63.3	79.2	46.6	28.6	29.2
Emergency Stop Torque	[Nm]	--	--	--	--	--	--	--	--	--	--
Nominal Input Speed	[rpm]	*3	3000			3000					
Maximum Input Speed	[rpm]	*4	5000			5000					
No Load Running Torque	[Nm]	*5	0.29			0.19					
Permitted Radial Load	[N]	*6	784	980	1180	1470	1570	1670	1670	1670	1670
Permitted Axial Load	[N]	*7	392	490	588	735	785	833	833	833	833
Moment of Inertia (≤Ø 8)	[kgcm2]	--	--	--	--	0.077	0.070	0.062	0.055	0.053	0.052
Moment of Inertia (≤Ø 14)	[kgcm2]	--	0.630	0.380	0.300	0.150	0.140	0.130	0.130	0.120	0.120
--	--	--	1.100	0.880	0.800	--	--	--	--	--	--
Efficiency	[%]	*8	90			85					
Torsional Rigidity	[Nm/arcmin]	*9	3			3					
Backlash (Standard)	[Arc-min]	--	≤ 15			≤ 15					
Backlash (Low)	[Arc-min]	--	≤ 5			≤ 5					
Backlash (Precision)	[Arc-min]	--	≤ 3			≤ 3					
Noise Level	[dB]	*10	≤ 72			≤ 65					
Protection Class	--	*11	IP 65			IP65					
Ambient Temperature	[°C]	--	0-40			0-40					
Permitted Housing Temperature	[°C]	--	90			90					
Weight (≤Ø 8)	[kg]	*12	--			1.8					
Weight (≤Ø 14)	[kg]	*12	1.8			1.9					
Weight (≤Ø 19)	--	*12	2.2			--					

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The average input speed

*4) The maximum intermittent input speed

*5) Torque at no load applied to the input shaft at nominal input speed

*6) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*7) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*8) The efficiency at the nominal output torque rating

*9) This does not include lost motion

*10) Contact SIT S.p.A. for the testing conditions and environment

*11) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*12) The weight may vary slightly between models

VRSF D-Frame 1-Stage and 2-Stage Specifications

Frame Size			**D**								
Stage			**1-Stage**			**2-Stage**					
Ratio	Units	Note	3	5	9	15	20	25	35	45	81
Nominal Output Torque	[Nm]	*1	18.3	23.5	18.2	30.4	40.6	50.7	37	28.3	17.8
Maximum Acceleration Torque	[Nm]	*2	54.9	70.6	54.7	91.2	122	152	111	85.2	53.5
Emergency Stop Torque	[Nm]	--	--	--	--	--	--	--	--	--	--
Nominal Input Speed	[rpm]	*3	3000			3000					
Maximum Input Speed	[rpm]	*4	5000			5000					
No Load Running Torque	[Nm]	*5	0.51			0.26					
Permitted Radial Load	[N]	*6	882	1080	1470	1760	1910	2060	2060	2060	2060
Permitted Axial Load	[N]	*7	441	539	735	882	955	1030	1030	1030	1030
Moment of Inertia (≤Ø 8)	[kgcm2]	--	--	--	--	--	--	--	--	--	0.10
Moment of Inertia (≤Ø 14)	[kgcm2]	--	1.30	0.59	0.38	0.37	0.35	0.34	0.30	0.29	0.29
Moment of Inertia (≤Ø 19)	[kgcm2]	--	1.80	1.10	0.90	0.86	0.84	0.83	0.79	0.78	0.77
Moment of Inertia (≤Ø 28)	[kgcm2]	--	3.60	2.90	2.70	2.70	2.70	2.70	--	--	--
Efficiency	[%]	*8	90			85					
Torsional Rigidity	[Nm/arcmin]	*9	6			6					
Backlash (Standard)	[Arc-min]	--	≤ 15			≤ 15					
Backlash (Low)	[Arc-min]	--	≤ 5			≤ 5					
Backlash (Precision)	[Arc-min]	--	≤ 3			≤ 3					
Noise Level	[dB]	*10	≤ 72			≤ 65					
Protection Class	--	*11	IP65			IP65					
Ambient Temperature	[°C]	--	0-40			0-40					
Permitted Housing Temperature	[°C]	--	90			90					
Weight (≤Ø 8)	[kg]	*12	--			2.8					
Weight (≤Ø 14)	[kg]	*12	2.8			3.3					
Weight (≤Ø 19)	[kg]	*12	3.2			3.7					
Weight (≤Ø 28)	[kg]	*12	4.0			4.8					

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The average input speed

*4) The maximum intermittent input speed

*5) Torque at no load applied to the input shaft at nominal input speed

*6) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*7) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*8) The efficiency at the nominal output torque rating

*9) This does not include lost motion

*10) Contact SIT S.p.A. for the testing conditions and environment

*11) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*12) The weight may vary slightly between models

VRSF E-Frame 1-Stage and 2-Stage Specifications

Frame Size	**E**										
Stage	**1-Stage**					**2-Stage**					
Ratio	Units	Note	3	5	9	15	20	25	35	45	81
Nominal Output Torque	[Nm]	*1	44.1	56.8	73.5	91.4	78.4	65.4	71	91.3	43.3
Maximum Acceleration Torque	[Nm]	*2	132	171	221	274	235	196	213	274	130
Emergency Stop Torque	[Nm]	--	--	--	--	--	--	--	--	--	--
Nominal Input Speed	[rpm]	*3	3000			3000					
Maximum Input Speed	[rpm]	*4	5000			5000					
No Load Running Torque	[Nm]	*5	1.12			0.62					
Permitted Radial Load	[N]	*6	1370	1670	1960	2350	2500	2650	3430	3520	3530
Permitted Axial Load	[N]	*7	686	833	980	1180	1250	1320	1715	1760	1765
Moment of Inertia (≤Ø 8)	[kgcm2]	--	--	--	0.61	0.63	0.56	0.53	0.40	0.35	0.34
Moment of Inertia (≤Ø 14)	[kgcm2]	--	4.40	1.90	1.20	1.10	1.10	1.00	0.90	0.85	0.84
Moment of Inertia (≤Ø 19)	[kgcm2]	--	6.20	3.70	2.90	3.30	3.20	3.20	2.80	2.70	2.70
Moment of Inertia (≤Ø 28)	[kgcm2]	--	14.00	11.00	11.00	11.00	11.00	11.00	--	--	--
Efficiency	[%]	*8	90			85					
Torsional Rigidity	[Nm/arcmin]	*9	20			20					
Backlash (Standard)	[Arc-min]	--	≤ 15			≤ 15					
Backlash (Low)	[Arc-min]	--	≤ 5			≤ 5					
Backlash (Precision)	[Arc-min]	--	≤ 3			≤ 3					
Noise Level	[dB]	*10	≤ 75			≤ 75					
Protection Class	--	*11	IP65			IP65					
Ambient Temperature	[°C]	--	0-40			0-40					
Permitted Housing Temperature	[°C]	--	90			90					
Weight (≤Ø 8)	[kg]	*12	6.1			7.1					
Weight (≤Ø 14)	[kg]	*12	6.5			7.5					
Weight (≤Ø 19)	[kg]	*12	7.4			9.3					
Weight (≤Ø 28)	[kg]	*12	9.8			11.7					

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The average input speed

*4) The maximum intermittent input speed

*5) Torque at no load applied to the input shaft at nominal input speed

*6) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*7) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*8) The efficiency at the nominal output torque rating

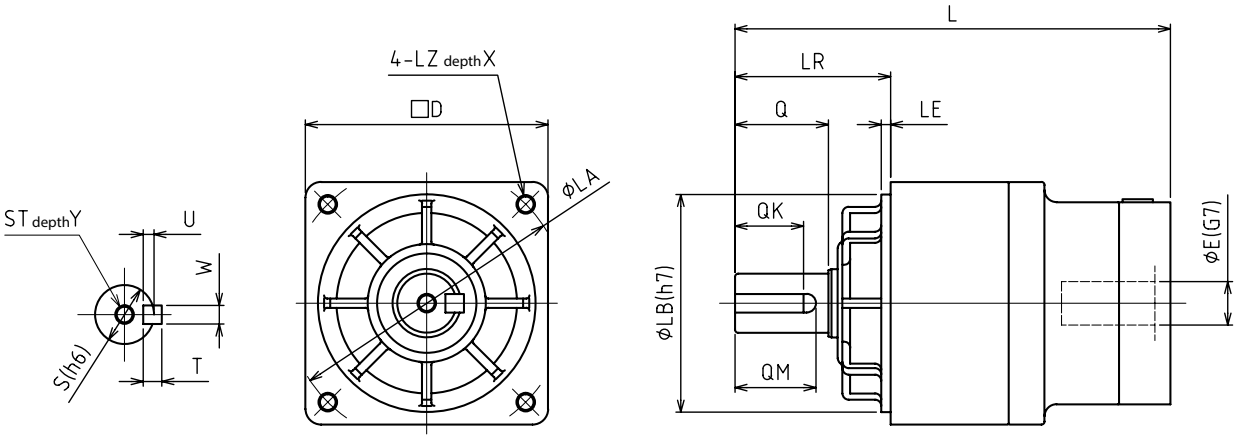
*9) This does not include lost motion

*10) Contact SIT S.p.A. for the testing conditions and environment

*11) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

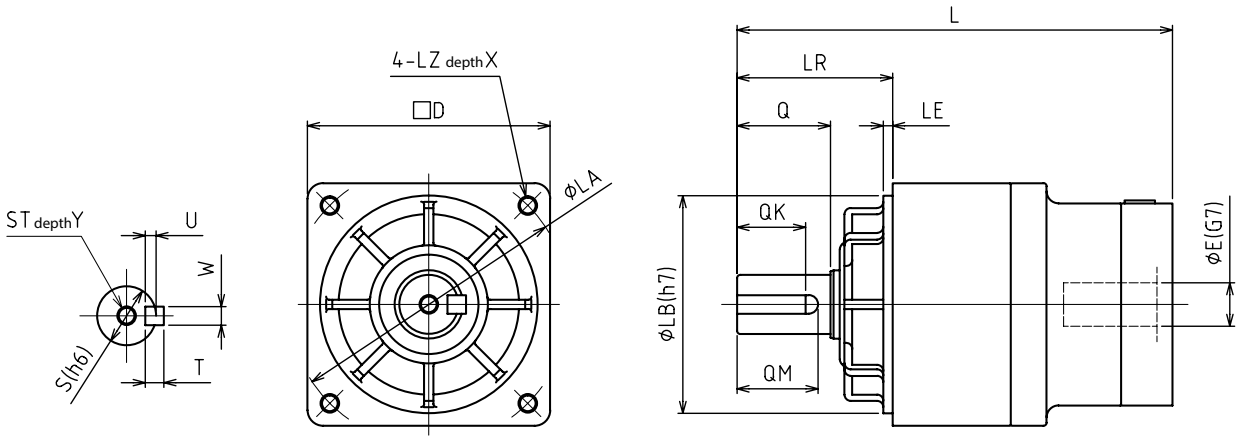
*12) The weight may vary slightly between models

VRSF B-Frame 1-Stage and 2-Stage Dimensions



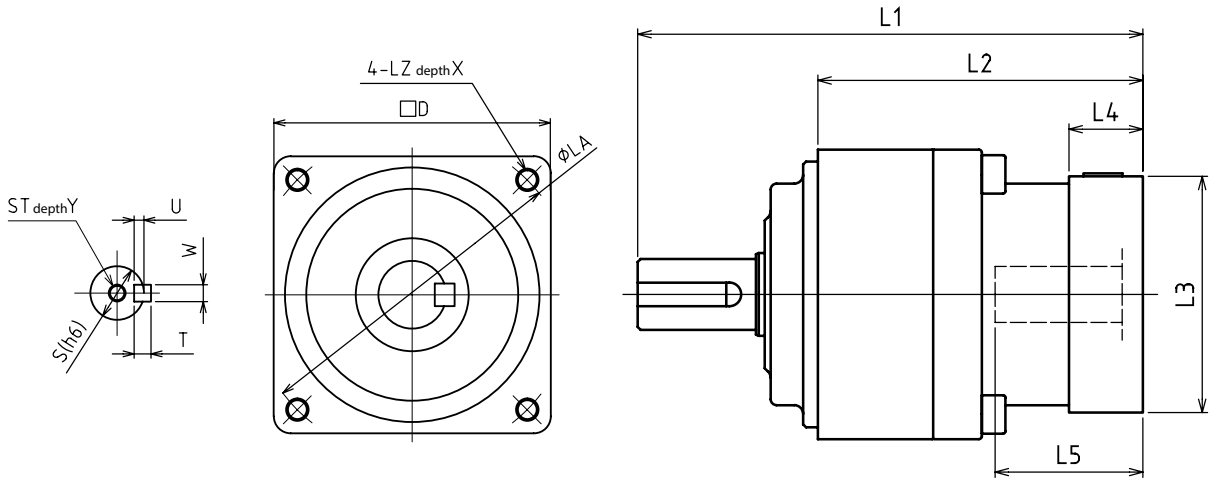
Frame Size	Ratio	Input Bore Dia. E	Dimensions															
			L	LR	S	ST	Y	Q	QM	QK	W×U	T	D	LB	LE	LA	LZ	X
B	1-Stage	≦φ8	104.5	32	12	M5	10	20	18	16	4×2.5	4	52	50	3	60	M5	12
		≦φ14	107.5															
	2-Stage	≦φ8	115.5															
		≦φ14	118.5															

VRSF C-Frame 1-Stage and 2-Stage Dimensions



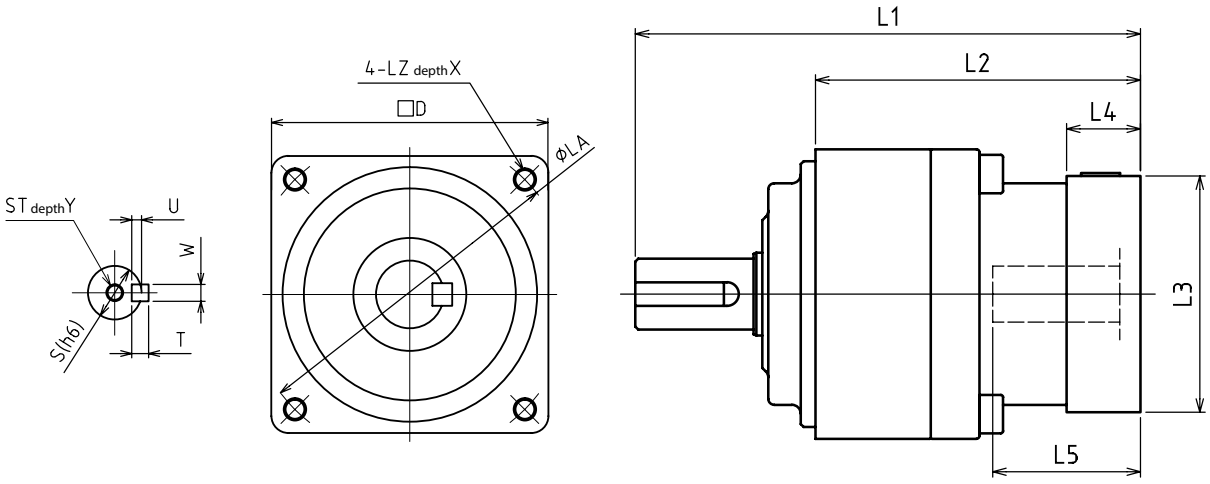
Frame Size	Ratio	Input Bore Dia. E	Dimensions															
			L	LR	S	ST	Y	Q	QM	QK	W×U	T	D	LB	LE	LA	LZ	X
C	1-Stage	≦φ14	140	50	19	M6	12	30	26	22	6×3.5	6	78	70	3	90	M6	20
		≦φ19	156															
	2-Stage	≦φ8	147.5															
		≦φ14	150.5															

VRSF D-Frame 1-Stage and 2-Stage Dimensions



Frame Size	Ratio	Input Bore Dia. E	Dimensions															
			L	LR	S	ST	Y	Q	QM	QK	W×U	T	D	LB	LE	LA	LZ	X
D	1-Stage	≦φ14	155	61	24	M8	16	40	35	30	8×4	7	98	90	5	115	M8	20
		≦φ19	171															
		≦φ28	186															
	2-Stage	≦φ8	163															
		≦φ14	169															
		≦φ19	184															
		≦φ28	200.5															

VRSF E-Frame 1-Stage and 2-Stage Dimensions

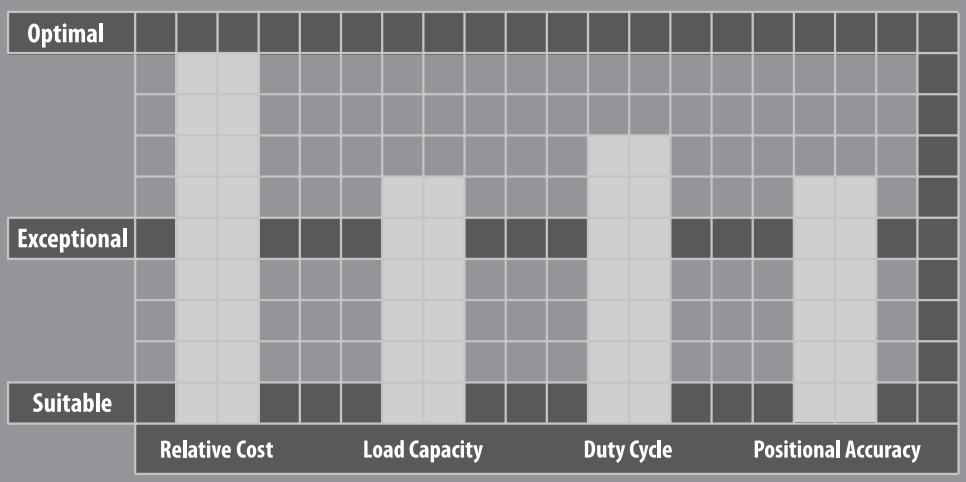


Frame Size	Ratio	Input Bore Dia. E	Dimensions															
			L	LR	S	ST	Y	Q	QM	QK	W×U	T	D	LB	LE	LA	LZ	X
E	1-Stage	≦φ14	189	75	32	M10	20	55	52	45	10×5	8	125	110	5	135	M10	20
		≦φ19	198.5															
		≦φ28	224															
		≦φ38	240															
	2-Stage	≦φ14	210															
		≦φ19	225															
		≦φ28	246.5															
		≦φ38	261.5															

VRL SERIES

The VRL series is the all-rounder in the planetary gearbox marketplace. With helical gearing, robust internal construction, smooth operation and high torque density, this product is truly best-in-class. 5 arc-min backlash allows the VRL to be applied to a wide range of applications where accuracy and dynamics are in play, but cost is of concern.

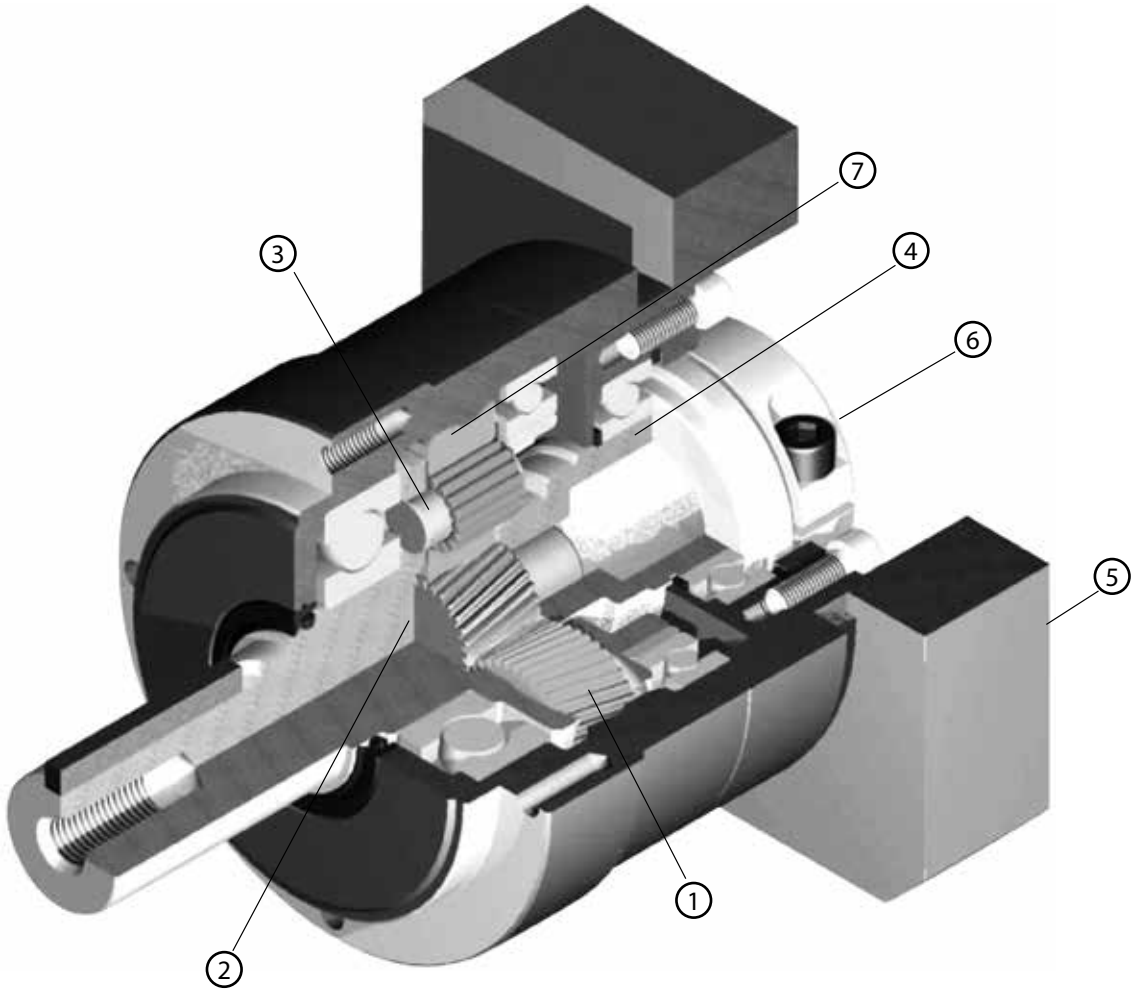
The VRL is an excellent choice for servo applications in packaging, handling and automation systems. A variety of standard wash down and food grade options are available, making it an attractive option for the toughest environments. We offer the broadest selection of frame sizes and ratios, giving our customers more flexibility than ever before. Industry standard mounting dimensions allow the VRL to be implemented in legacy machine designs, saving our customers valuable time



VRL SERIES

- The all-rounder for mid to high end motion control applications
- The widest range of frame sizes and ratios available in the market
- Best-In-class backlash (≤5 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 mounting dimensions
- Assembled in the USA, with immediate delivery

VRL Series Features



1. Carburized helical gears with proprietary secondary finishing process for higher accuracy and smooth, quiet operation. 40% higher tooth surface area than the industry standard
2. One piece output shaft and planet carrier with two bearings straddling the planet gears. Higher stiffness, torque capacity and safety factor, with guaranteed alignment of gearing
3. Uncaged needle roller bearings provide excellent torque density and torsional rigidity. 43% larger bearing surface area compared to the rest of the industry
4. Unique labyrinth input seal design greatly reduces heat and increases system efficiency. IP65 protection is available for wash down applications
5. Optimized mounting system with active centering on motor pilot diameter guarantees alignment of motor. Motor can be installed in any orientation
6. True concentric motor shaft clamping connection, optimized for your specific motor. Reduced inertia for dynamic performance and balanced for high speed operation
7. Ring gear machined directly into the housing, not welded or pressed in. Provides greater concentricity and elimination of speed fluctuation

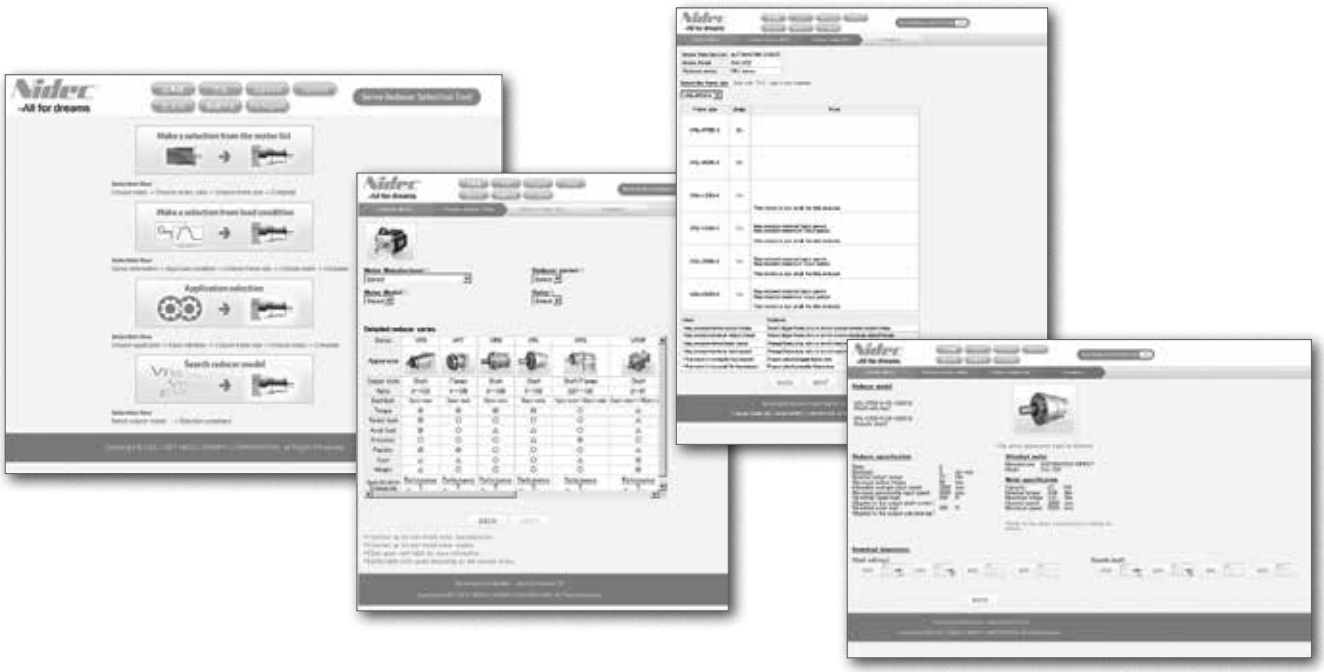
VRL Series Model Code

VRL – 090 C – 7 – K 5 – 19HB16

- 19HB16 — Motor mounting code (*1)
- 5 — Backlash: 5 arc-min
- K — Output mounting style: K: Keyed Shaft; S: Smooth shaft
- 7 — Ratio: 1-Stage: 3, 4, 5, 6, 7, 8, 9, 10; 2-Stage: 15, 16, 20, 25, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
- C — Design version. **B** design version in exhaustion. Available in demand.
- 090 — Frame size: 050, 070, 090, 120, 155, 205, 235
- VRL — Series

*1) Motor mounting code varies depending on the motor. Use the selection tool link below to configure the code.

Contact us for additional information or refer to our online gearhead selection tool.
Selection tool http://sitspa.com/tools-online/



VRL 050 1-Stage Specifications

Frame Size	050									
Stage	1-Stage									
Ratio	Units	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	6	9	9	9	9	9	6	6
Maximum Acceleration Torque	[Nm]	*2	12	18	18	18	18	18	12	12
Emergency Stop Torque	[Nm]	*3	30	35	35	35	35	35	30	30
Nominal Input Speed	[rpm]	*4	4000							
Maximum Input Speed	[rpm]	*5	8000							
No Load Running Torque	[Nm]	*6	0.03							
Permitted Radial Load	[N]	*7	240	270	290	310	320	340	350	360
Permitted Axial Load	[N]	*8	270	300	330	360	380	410	430	450
Maximum Radial Load	[N]	*9	710							
Maximum Axial Load	[N]	*10	640							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.053	0.041	0.036	0.034	0.032	0.031	0.031	0.030
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.091	0.079	0.074	0.072	0.071	0.070	0.069	0.069
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	2							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	0.7							

VRL 050 2-Stage Specifications

Frame Size	050									
Stage	2-Stage									
Ratio	Units	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	6	9	9	9	9	9	9	9
Maximum Acceleration Torque	[Nm]	*2	12	18	18	18	18	12	18	18
Emergency Stop Torque	[Nm]	*3	30	35	35	35	35	30	35	35
Nominal Input Speed	[rpm]	*4	4000							
Maximum Input Speed	[rpm]	*5	8000							
No Load Running Torque	[Nm]	*6	0.01							
Permitted Radial Load	[N]	*7	410	420	460	490	510	520	550	570
Permitted Axial Load	[N]	*8	540	550	610	640	640	640	640	640
Maximum Radial Load	[N]	*9	710							
Maximum Axial Load	[N]	*10	640							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.035	0.038	0.034	0.034	0.038	0.030	0.034	0.030
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	2							
Maximum Torsional Backlash	[arc-min]	--	≤ 7							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	0.8							

VRL 050 2-Stage Specifications

Frame Size	**050**								
Stage	**2-Stage**								
Ratio	Units	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	6	9	9	9	9	6	6
Maximum Acceleration Torque	[Nm]	*2	12	18	18	18	18	12	12
Emergency Stop Torque	[Nm]	*3	30	35	35	35	35	30	30
Nominal Input Speed	[rpm]	*4	4000						
Maximum Input Speed	[rpm]	*5	8000						
No Load Running Torque	[Nm]	*6	0.01						
Permitted Radial Load	[N]	*7	600	620	660	690	710	710	710
Permitted Axial Load	[N]	*8	640	640	640	640	640	640	640
Maximum Radial Load	[N]	*9	710						
Maximum Axial Load	[N]	*10	640						
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.034	0.030	0.030	0.030	0.030	0.030	0.030
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	2						
Maximum Torsional Backlash	[arc-min]	--	≤ 7						
Noise Level	dB [A]	*13	≤ 61						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	0.8						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

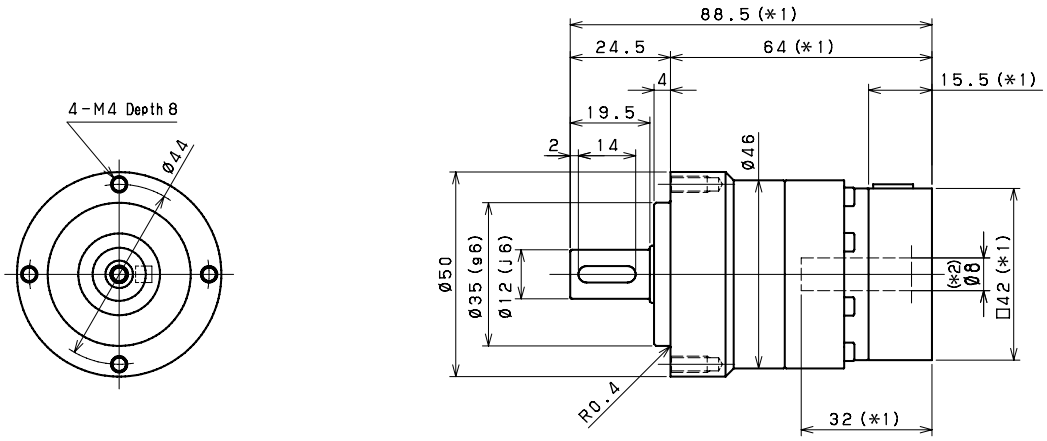
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

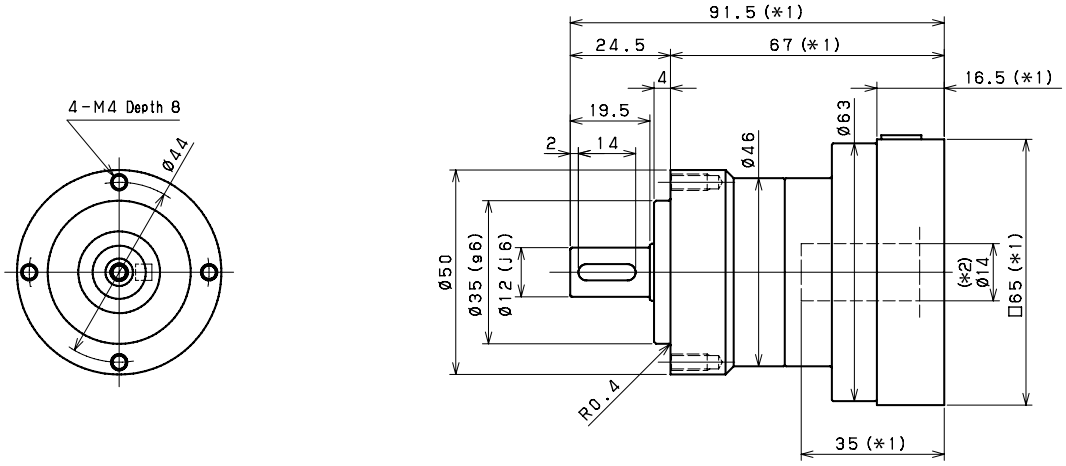
*15) The weight may vary slightly between models

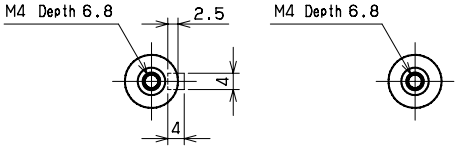
VRL 050 1-Stage Dimensions

Input bore size ≦φ8 mm



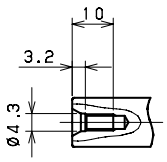
Input bore size ≦φ14 mm





Keyed shaft

Smooth shaft

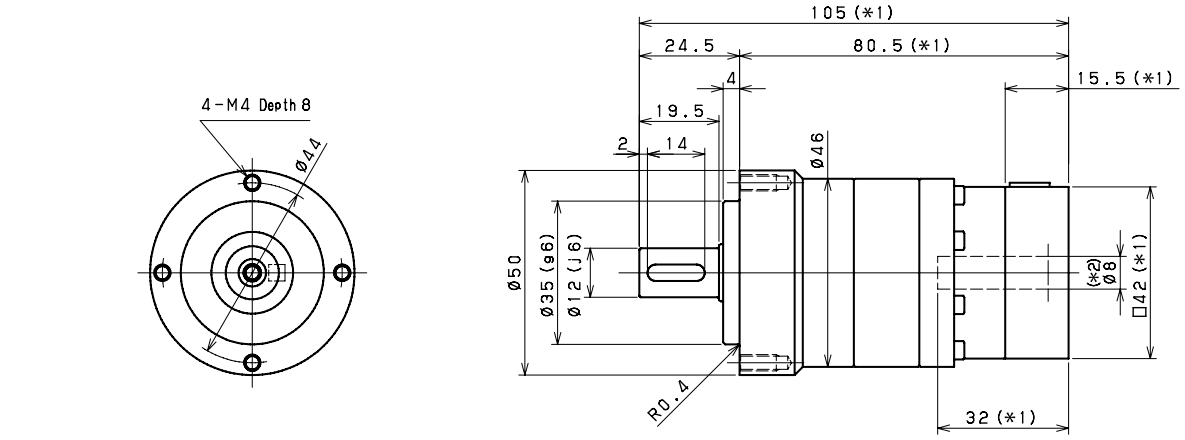


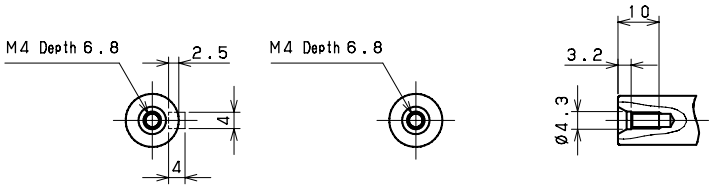
*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL 050 2-Stage Dimensions

Input bore size ≦φ8 mm





Keyed shaft

Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL 070 1-Stage Specifications

Frame Size	070									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	27	18	18
Maximum Output Torque	[Nm]	*2	35	50	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.08							
Permitted Radial Load	[N]	*7	430	470	510	540	570	600	620	640
Permitted Axial Load	[N]	*8	310	360	390	430	460	480	510	530
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.140	0.095	0.077	0.068	0.062	0.059	0.057	0.056
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.220	0.170	0.160	0.150	0.140	0.140	0.140	0.140
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.430	0.380	0.360	0.360	0.350	0.350	0.340	0.340
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arcmin]	*12	3							
Maximum Torsional Backlash	[Arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 66							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.5							

VRL 070 2-Stage Specifications

Frame Size	070									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	27	27
Maximum Output Torque	[Nm]	*2	35	50	50	50	50	35	50	50
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	100	100
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.04							
Permitted Radial Load	[N]	*7	740	750	810	870	910	930	980	1000
Permitted Axial Load	[N]	*8	630	650	720	790	830	860	920	970
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.055	0.057	0.054	0.053	0.055	0.049	0.053	0.049
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.140	0.140	0.130	0.130	0.140	0.130	0.130	0.130
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.350	0.360	0.350	0.350	0.360	0.340	0.350	0.340
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arcmin]	*12	3							
Maximum Torsional Backlash	[Arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 66							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.7							

VRL 070 2-Stage Specifications

Frame Size			**070**						
Stage			**2-Stage**						
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	18
Maximum Output Torque	[Nm]	*2	35	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.04						
Permitted Radial Load	[N]	*7	1100	1100	1200	1200	1200	1200	1200
Permitted Axial Load	[N]	*8	1000	1100	1100	1100	1100	1100	1100
Maximum Radial Load	[N]	*9	1200						
Maximum Axial Load	[N]	*10	1100						
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.053	0.049	0.049	0.049	0.049	0.049	0.049
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.130	0.130	0.130	0.130	0.130	0.13	0.13
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.350	0.340	0.340	0.340	0.340	0.340	0.340
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arcmin]	*12	3						
Maximum Torsional Backlash	[Arc-min]	--	≤ 5						
Noise Level	dB [A]	*13	≤ 66						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	1.7						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

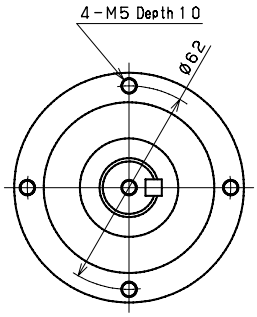
*13) Contact SIT S.p.A. for the testing conditions and environment

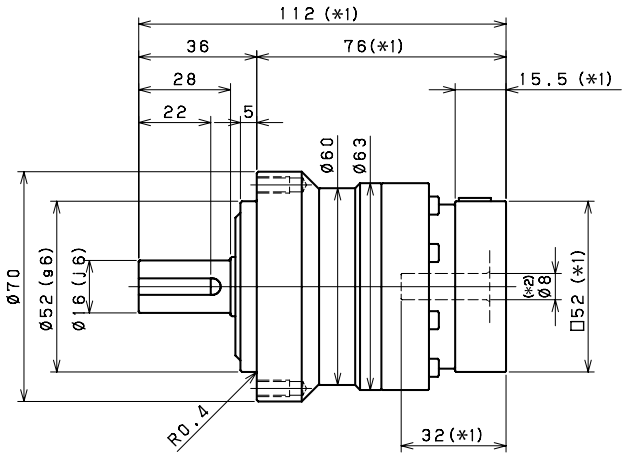
*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*15) The weight may vary slightly between models

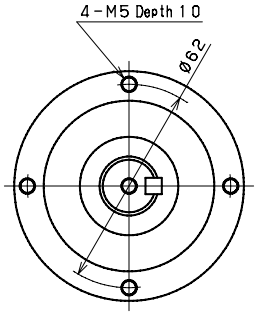
VRL 070 1-Stage Dimensions

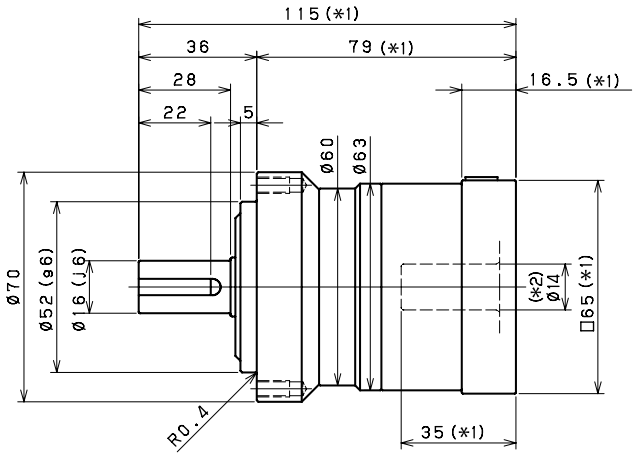
Input bore size ≦φ8 mm



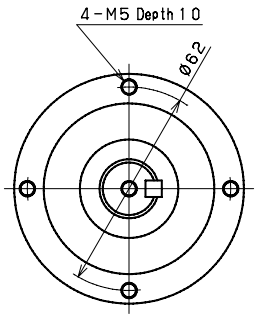


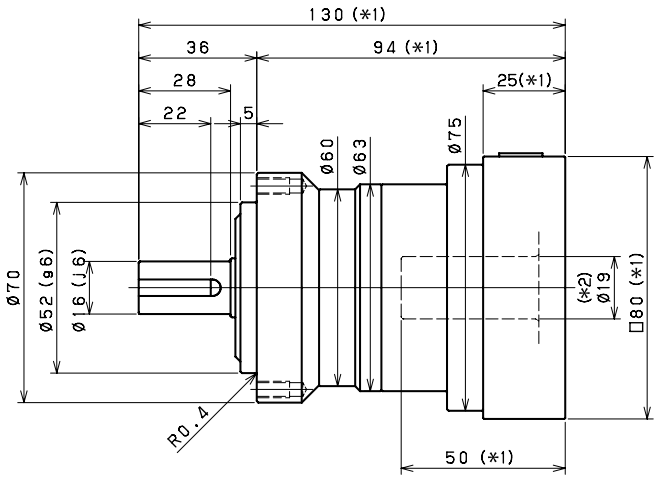
Input bore size ≦φ14 mm

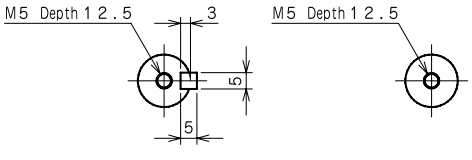




Input bore size ≦φ19 mm







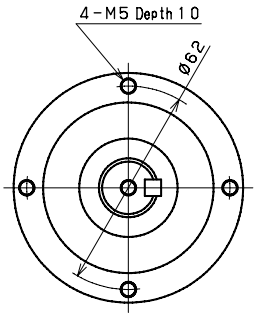
Keyed shaft Smooth shaft

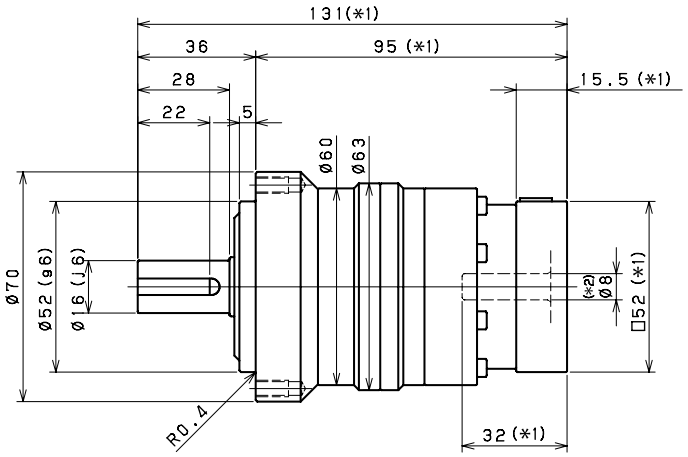
*1) Length will vary depending on motor

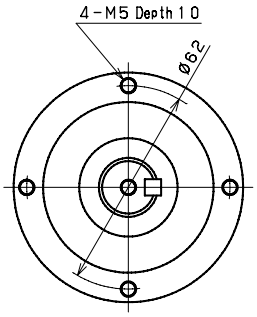
*2) Bushing will be inserted to adapt to motor shaft

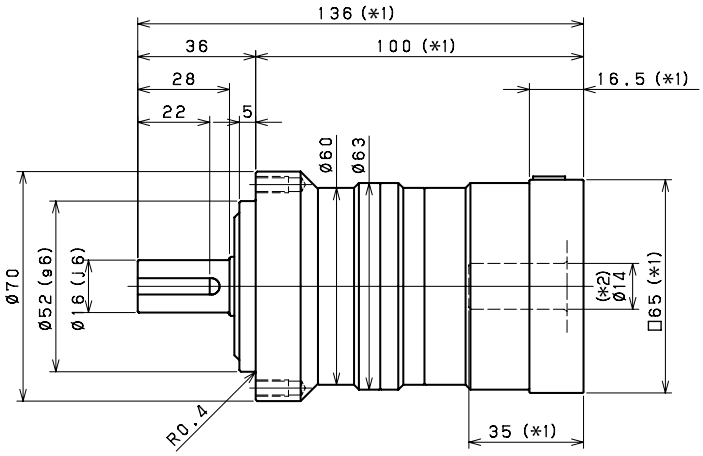
VRL 070 2-Stage Dimensions

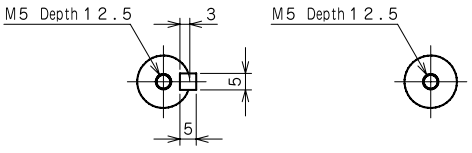
Input bore size ≦φ8 mm











Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL 090 1-Stage Specifications

Frame Size	090									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.35							
Permitted Radial Load	[N]	*7	810	890	960	1000	1100	1100	1200	1200
Permitted Axial Load	[N]	*8	930	1100	1200	1300	1300	1400	1500	1600
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.720	0.490	0.400	0.360	0.320	0.310	0.290	0.290
Moment of Inertia (≤ Ø 19)	--	--	1.200	0.950	0.860	0.820	0.790	0.770	0.760	0.750
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.200	3.000	2.900	2.800	2.800	2.800	2.800	2.800
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	3.5							

VRL 090 2-Stage Specifications

Frame Size	090									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	75	75
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	125	125
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	250	250
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.06							
Permitted Radial Load	[N]	*7	1400	1400	1500	1600	1700	1700	1800	1900
Permitted Axial Load	[N]	*8	1900	1900	2100	2200	2200	2200	2200	2200
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.130	0.150	0.130	0.120	0.140	0.100	0.120	0.099
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.280	0.300	0.280	0.280	0.290	0.250	0.270	0.250
Moment of Inertia (≤ Ø 19)	--	--	0.720	0.740	0.720	0.710	0.730	0.700	0.710	0.700
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.700	2.800	2.700	2.700	2.700	2.600	2.700	2.600
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	4							

VRL 090 2-Stage Specifications

Frame Size	**090**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.06						
Permitted Radial Load	[N]	*7	2000	2100	2200	2300	2400	2400	2400
Permitted Axial Load	[N]	*8	2200	2200	2200	2200	2200	2200	2200
Maximum Radial Load	[N]	*9	2400						
Maximum Axial Load	[N]	*10	2200						
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.120	0.098	0.098	0.097	0.097	0.097	0.097
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250
Moment of Inertia (≤ Ø 19)	--	--	0.710	0.690	0.690	0.690	0.690	0.690	0.690
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.700	2.600	2.600	2.600	2.600	2.600	2.600
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	10						
Maximum Torsional Backlash	[arc-min]	--	≤ 5						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	4						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

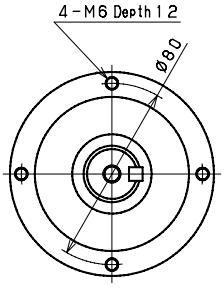
*13) Contact SIT S.p.A. for the testing conditions and environment

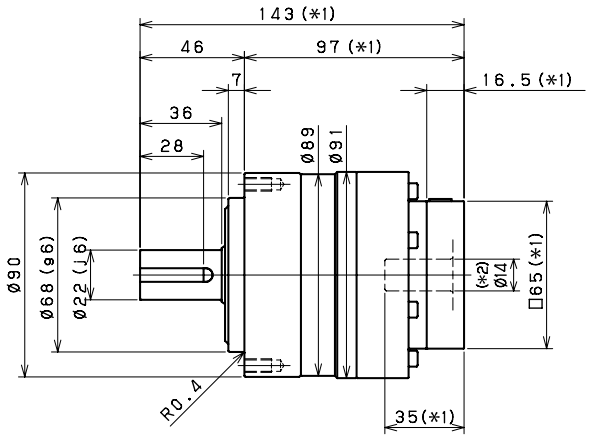
*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*15) The weight may vary slightly between models

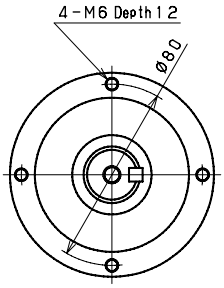
VRL 090 1-Stage Dimensions

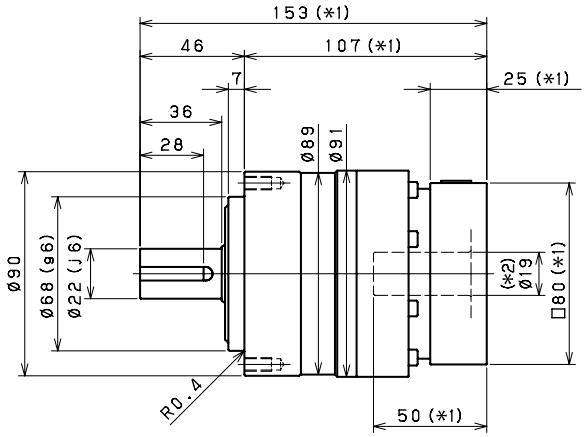
Input bore size ≦φ14 mm



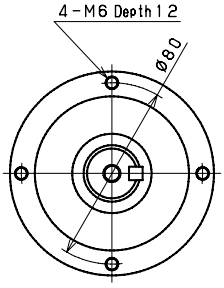


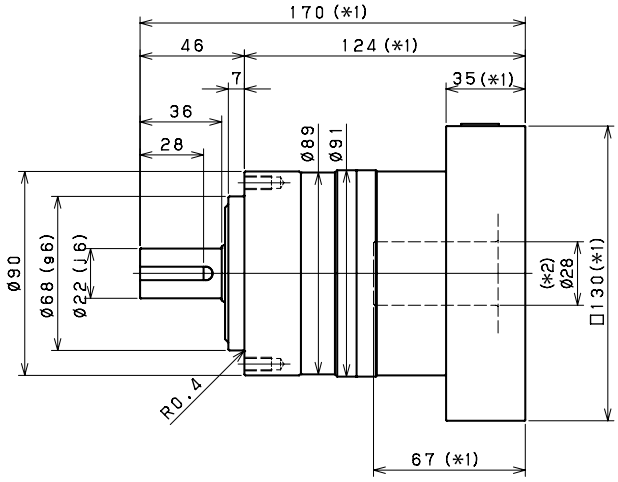
Input bore size ≦φ19 mm

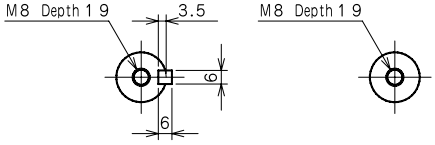




Input bore size ≦φ28 mm







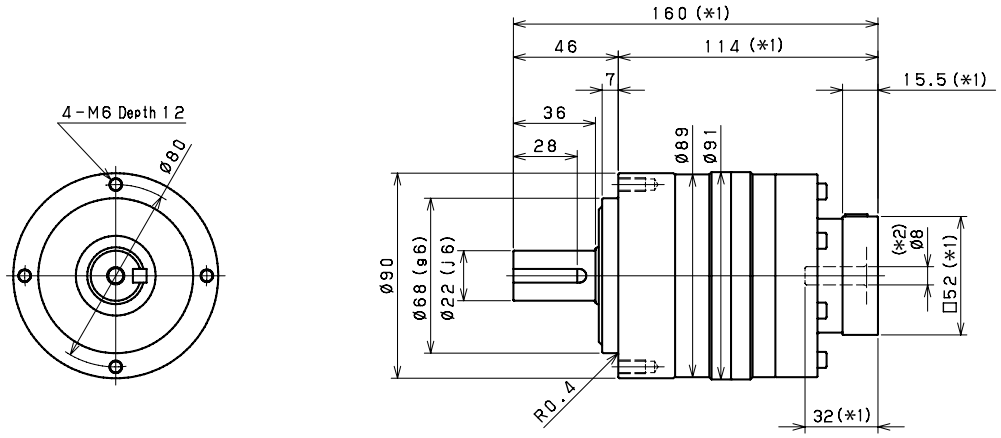
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

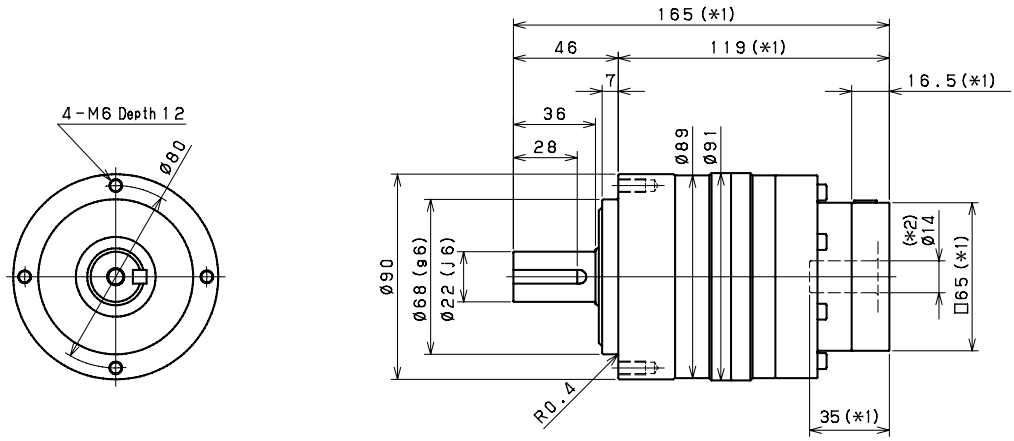
*2) Bushing will be inserted to adapt to motor shaft

VRL 090 2-Stage Dimensions

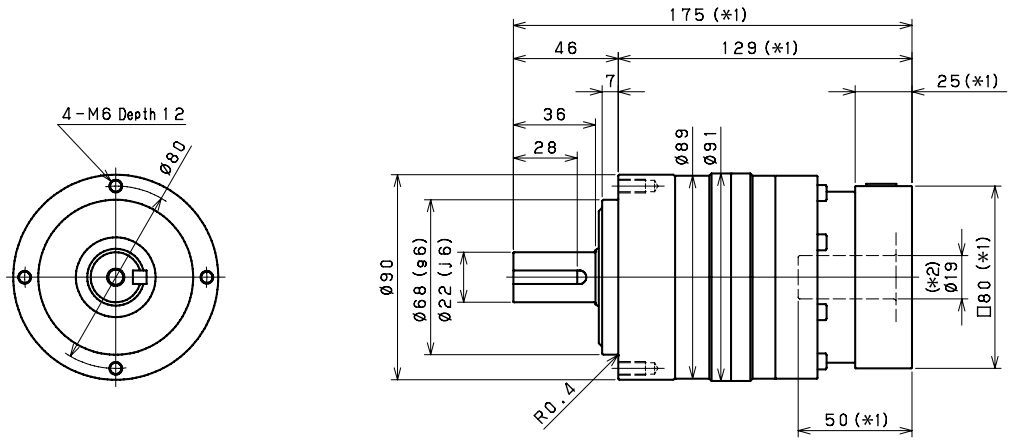
Input bore size ≦φ8 mm

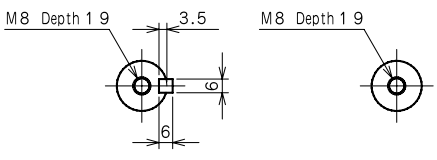


Input bore size ≦φ14 mm



Input bore size ≦φ19 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL 120 1-Stage Specifications

Frame Size			120							
Stage			1-Stage							
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	120	120	180	180	180	180	120	120
Maximum Output Torque	[Nm]	*2	225	330	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*14	1.30							
Permitted Radial Load	[N]	*6	1300	1500	1600	1700	1800	1900	1900	2000
Permitted Axial Load	[N]	*7	1500	1700	1900	2000	2100	2300	2400	2500
Maximum Radial Load	[N]	*8	4300							
Maximum Axial Load	[N]	*9	3900							
Moment of Inertia (≤Ø 14)	[kgcm2]		--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 19)	[kgcm2]		3.300	2.000	1.600	1.300	1.100	1.000	0.980	0.950
Moment of Inertia (≤ Ø 28)	[kgcm2]		5.300	4.100	3.600	3.300	3.200	3.100	3.000	3.000
Moment of Inertia (≤ Ø 38)	[kgcm2]		13.000	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 71							
Protection Class		*15	IP54 (IP65)							
Ambient Temperature	[°C]		0-40							
Permitted Housing Temperature	[°C]	*16	90							
Weight	[kg]	*10	7.8							

VRL 120 2-Stage Specifications

Frame Size			120							
Stage			2-Stage							
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	180	180
Maximum Output Torque	[Nm]	*2	225	330	330	330	330	225	330	330
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	625	625
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*14	0.42							
Permitted Radial Load	[N]	*6	2300	2300	2500	2700	2800	2900	3000	3200
Permitted Axial Load	[N]	*7	3000	3100	3400	3700	3900	3900	3900	3900
Maximum Radial Load	[N]	*8	4300							
Maximum Axial Load	[N]	*9	3900							
Moment of Inertia (≤Ø 14)	[kgcm2]		0.430	0.480	0.400	0.380	0.440	0.290	0.370	0.280
Moment of Inertia (≤ Ø 19)	[kgcm2]		0.860	0.920	0.830	0.820	0.880	0.740	0.810	0.730
Moment of Inertia (≤ Ø 28)	[kgcm2]		2.800	2.900	2.800	2.800	2.800	2.700	2.700	2.700
Moment of Inertia (≤ Ø 38)	[kgcm2]		--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 71							
Protection Class		*15	IP54 (IP65)							
Ambient Temperature	[°C]		0-40							
Permitted Housing Temperature	[°C]	*16	90							
Weight	[kg]	*10	8.7							

VRL 120 2-Stage Specifications

Frame Size	**120**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	120
Maximum Output Torque	[Nm]	*2	225	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*14	0.42						
Permitted Radial Load	[N]	*6	3300	3400	3600	3800	4000	4200	4300
Permitted Axial Load	[N]	*7	3900	3900	3900	3900	3900	3900	3900
Maximum Radial Load	[N]	*8	4300						
Maximum Axial Load	[N]	*9	3900						
Moment of Inertia (≤Ø 14)	[kgcm2]		0.370	0.280	0.280	0.280	0.280	0.270	0.270
Moment of Inertia (≤ Ø 19)	[kgcm2]		0.800	0.730	0.730	0.730	0.730	0.730	0.730
Moment of Inertia (≤ Ø 28)	[kgcm2]		2.700	2.700	2.700	2.700	2.700	2.700	2.700
Moment of Inertia (≤ Ø 38)	[kgcm2]		--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	31						
Maximum Torsional Backlash	[arc-min]	--	≤ 5						
Noise Level	dB [A]	*13	≤ 71						
Protection Class		*15	IP54 (IP65)						
Ambient Temperature	[°C]		0-40						
Permitted Housing Temperature	[°C]	*16	90						
Weight	[kg]	*10	8.7						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

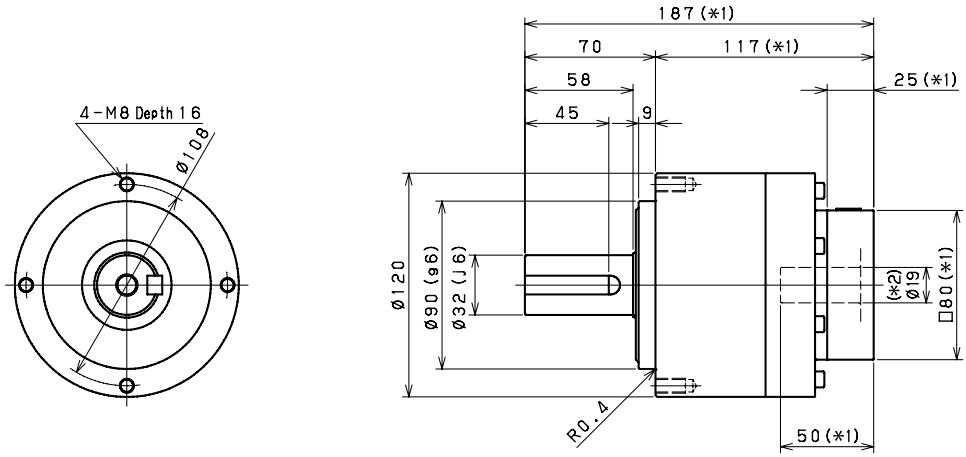
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

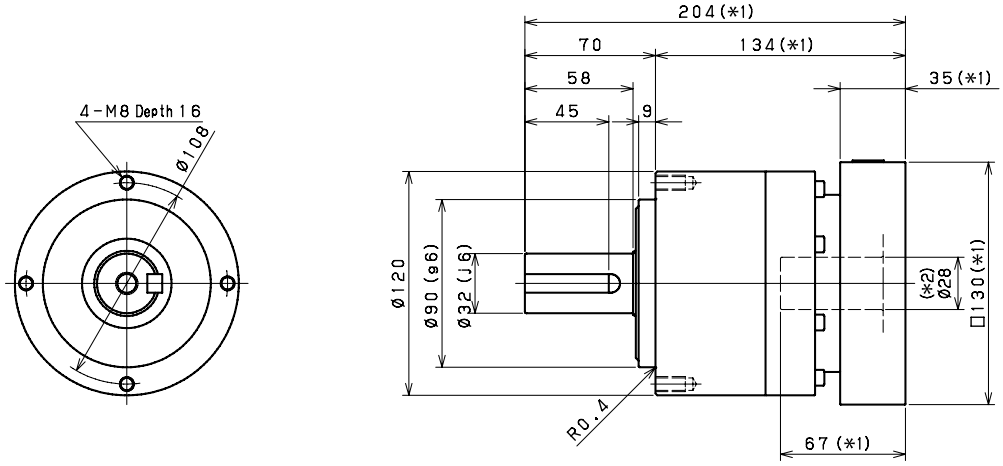
*15) The weight may vary slightly between models

VRL 120 1-Stage Dimensions

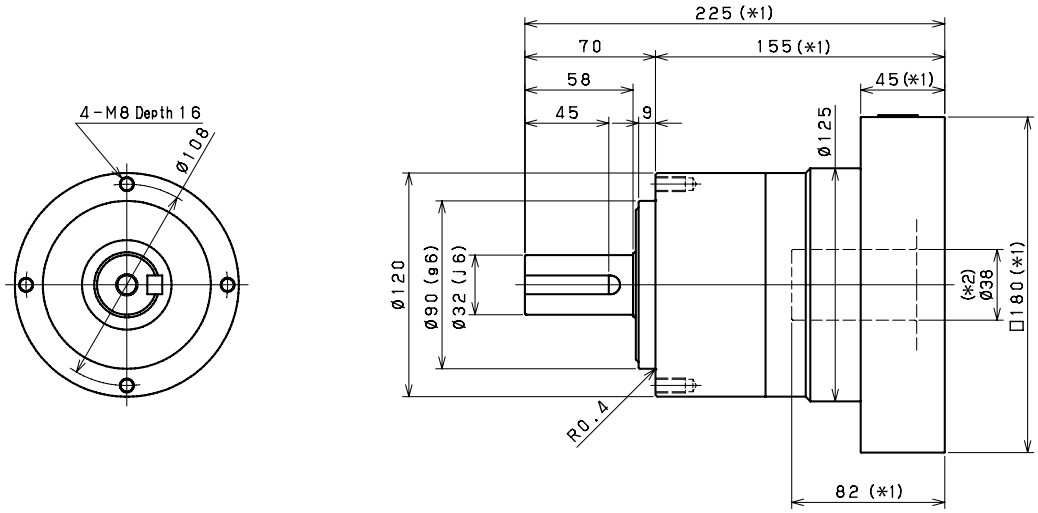
Input bore size ≦φ19 mm

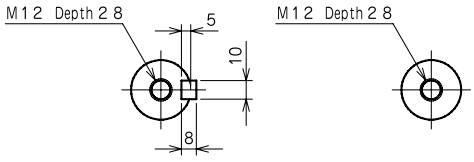


Input bore size ≦φ28 mm



Input bore size ≦φ38 mm





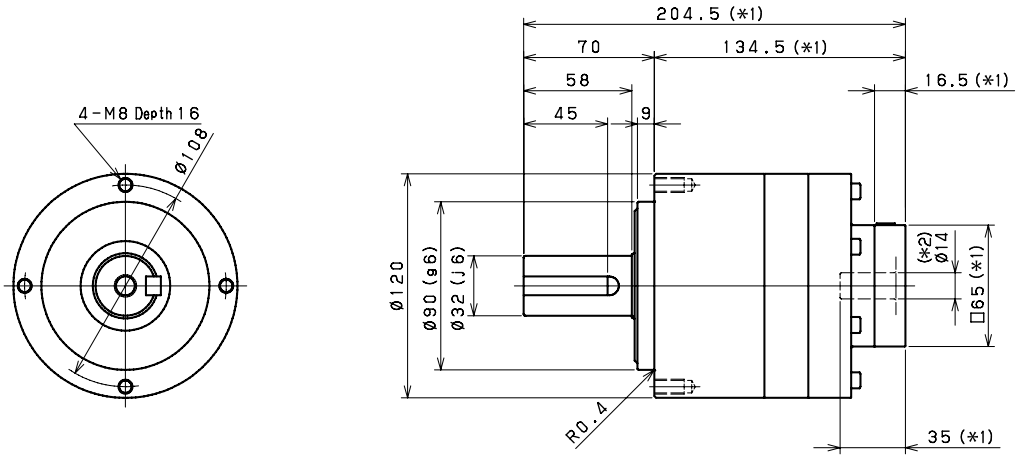
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

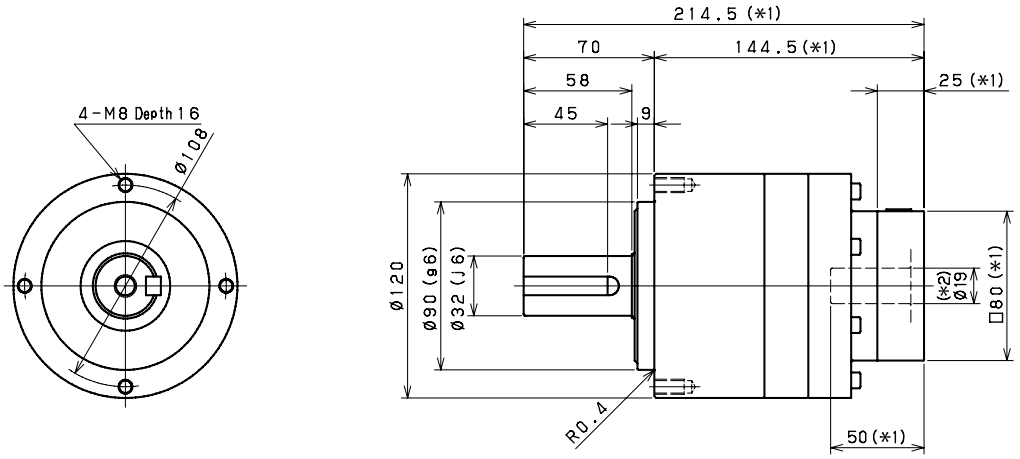
*2) Bushing will be inserted to adapt to motor shaft

VRL 120 2-Stage Dimensions

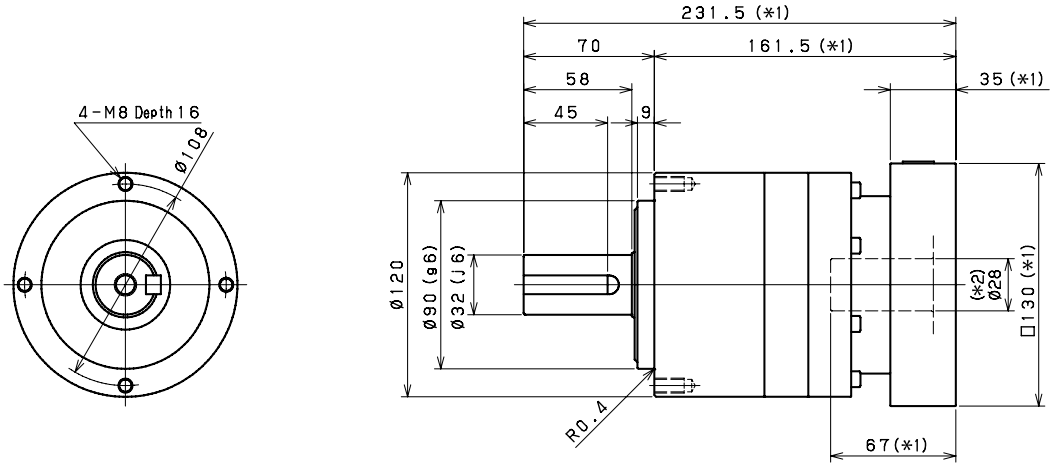
Input bore size ≦φ14 mm

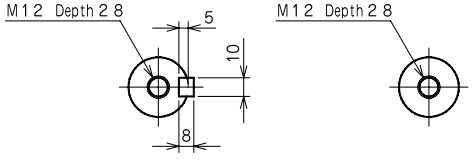


Input bore size ≦φ19 mm



Input bore size ≦φ28 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL 155 1-Stage Specifications

Frame Size	155									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	240	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	1.63							
Permitted Radial Load	[N]	*7	3200	3500	3800	4000	4200	4400	4600	4700
Permitted Axial Load	[N]	*8	2400	2700	3000	3300	3500	3700	3900	4100
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia (≤Ø 19)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	12.000	7.500	5.800	4.900	4.100	3.800	3.600	3.500
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	20.000	15.000	14.000	13.000	12.000	12.000	11.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	42.000	37.000	36.000	35.000	34.000	34.000	34.000	34.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	16							

VRL 155 2-Stage Specifications

Frame Size	155									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	360	360
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	700	700
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1250	1250
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	0.56							
Permitted Radial Load	[N]	*7	5400	5500	6000	6400	6700	6800	7200	7500
Permitted Axial Load	[N]	*8	4900	5000	5500	6100	6400	6600	7000	7500
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia (≤Ø 19)	[kgcm2]	--	1.300	1.500	1.200	1.100	1.400	0.850	1.100	0.830
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.200	3.500	3.100	3.100	3.300	2.800	3.100	2.800
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	11.000	11.000	11.000	11.000	11.000	10.000	11.000	10.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	18							

VRL 155 2-Stage Specifications

Frame Size	**155**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000						
Maximum Input Speed	[rpm]	*5	4000						
No Load Running Torque	[Nm]	*6	0.56						
Permitted Radial Load	[N]	*7	7800	8100	8600	9100	9100	9100	9100
Permitted Axial Load	[N]	*8	7900	8200	8200	8200	8200	8200	8200
Maximum Radial Load	[N]	*9	9100						
Maximum Axial Load	[N]	*10	8200						
Moment of Inertia (≤Ø 19)	[kgcm2]	--	1.100	0.810	0.810	0.800	0.800	0.800	0.800
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.000	2.800	2.800	2.800	2.800	2.800	2.800
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	11.000	10.000	10.000	10.000	10.000	10.000	10.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	60						
Maximum Torsional Backlash	[arc-min]	--	≤ 5						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	18						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

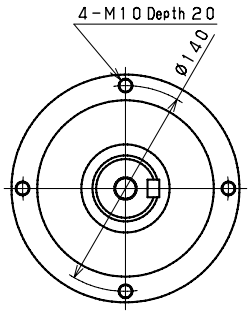
*13) Contact SIT S.p.A. for the testing conditions and environment

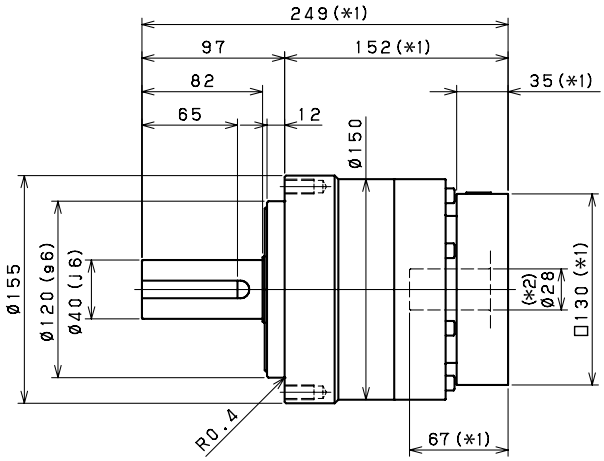
*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*15) The weight may vary slightly between models

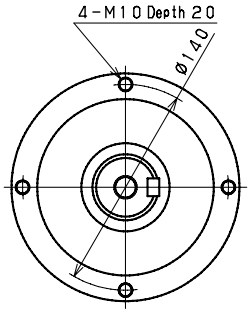
VRL 155 1-Stage Dimensions

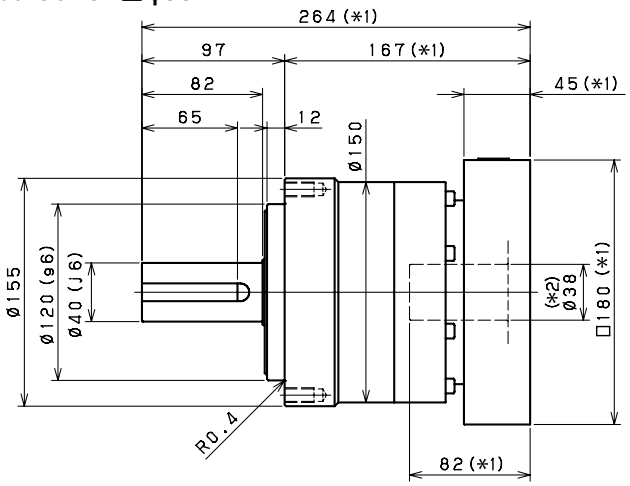
Input bore size ≦φ28 mm



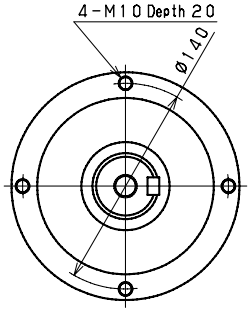


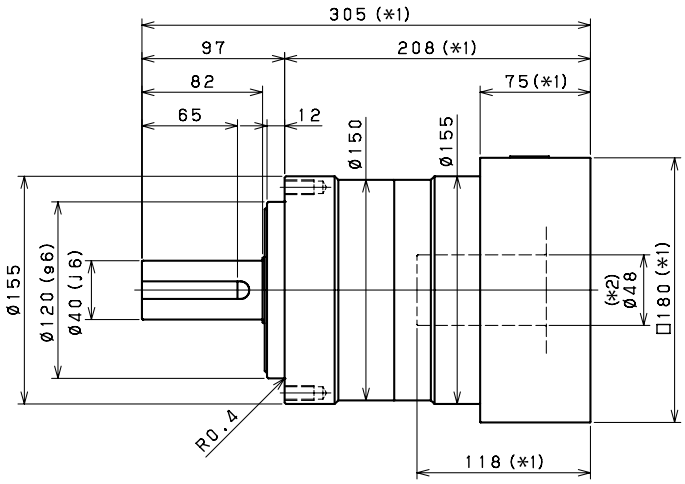
Input bore size ≦φ38 mm

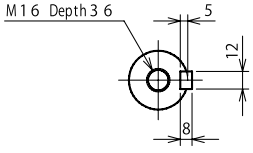




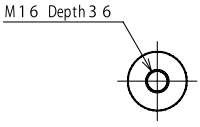
Input bore size ≦φ48 mm







Keyed shaft



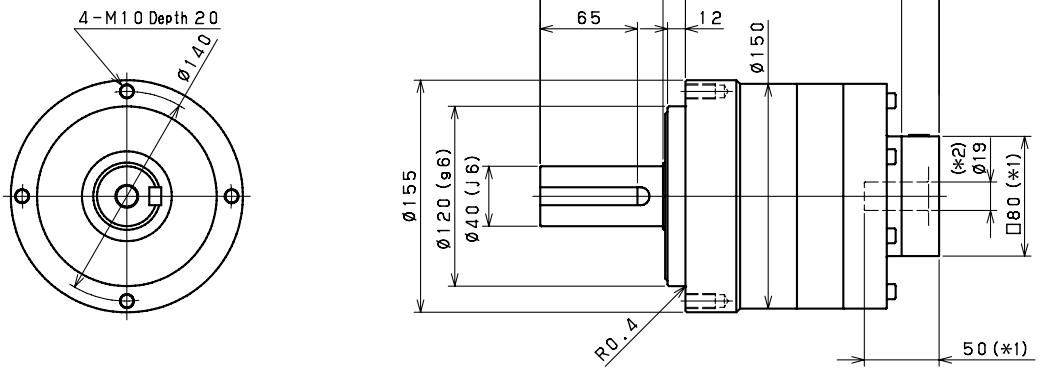
Smooth shaft

*1) Length will vary depending on motor

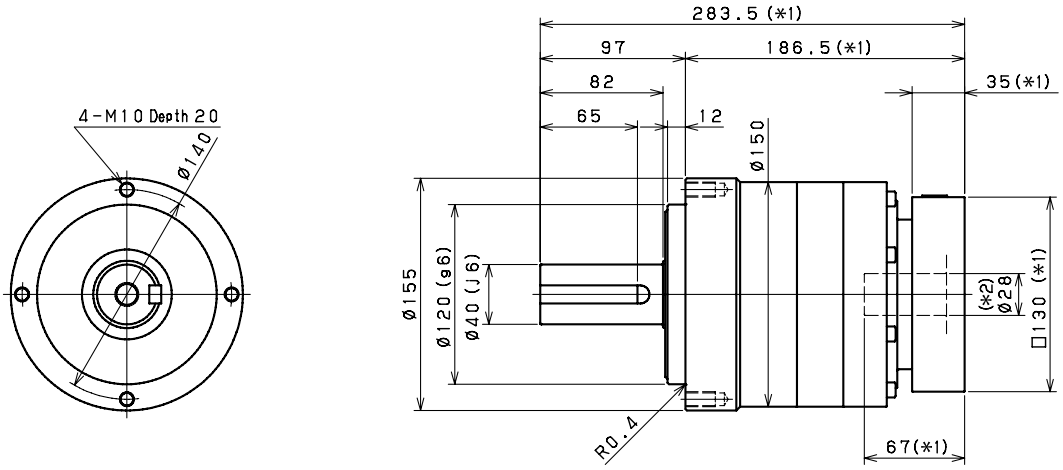
*2) Bushing will be inserted to adapt to motor shaft

VRL 155 2-Stage Dimensions

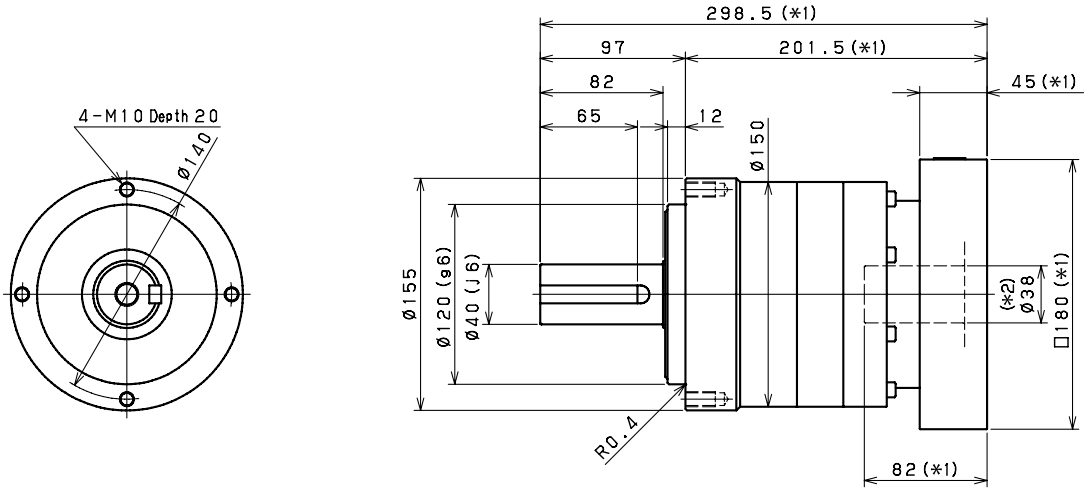
Input bore size ≦φ19 mm

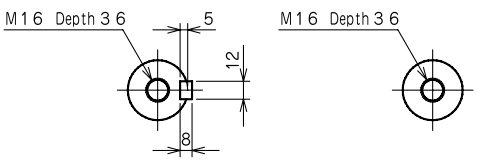


Input bore size ≦φ28 mm



Input bore size ≦φ38 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL 205 1-Stage Specifications

Frame Size	205									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	2.68							
Permitted Radial Load	[N]	*7	5600	6200	6700	7100	7400	7800	8100	8400
Permitted Axial Load	[N]	*8	4300	4900	5400	5800	6300	6600	7000	7300
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia (≤Ø 28)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	44.000	28.000	22.000	18.000	16.000	15.000	14.000	14.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	66.000	50.000	44.000	41.000	38.000	37.000	36.000	36.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	130.000	110.000	100.000	100.000	99.000	97.000	97.000	96.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	39							

VRL 205 2-Stage Specifications

Frame Size	205									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	750	750
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	1400	1400
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2750	2750
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	1.39							
Permitted Radial Load	[N]	*7	9600	9800	11000	11000	12000	12000	13000	13000
Permitted Axial Load	[N]	*8	8700	8900	9900	11000	11000	12000	13000	13000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia (≤Ø 28)	[kgcm2]	--	4.700	5.400	4.400	4.200	4.900	3.200	4.100	3.200
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	12.000	13.000	12.000	12.000	13.000	11.000	12.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	34.000	35.000	34.000	34.000	35.000	33.000	34.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	40							

VRL 205 2-Stage Specifications

Frame Size	**205**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500						
Maximum Input Speed	[rpm]	*5	3000						
No Load Running Torque	[Nm]	*6	1.39						
Permitted Radial Load	[N]	*7	14000	14000	15000	15000	15000	15000	15000
Permitted Axial Load	[N]	*8	14000	14000	14000	14000	14000	14000	14000
Maximum Radial Load	[N]	*9	15000						
Maximum Axial Load	[N]	*10	14000						
Moment of Inertia (≤Ø 28)	[kgcm2]	--	4.000	3.100	3.100	3.100	3.100	3.100	3.100
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	34.000	33.000	33.000	33.000	33.000	33.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	175						
Maximum Torsional Backlash	[arc-min]	--	≤ 5						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	40						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

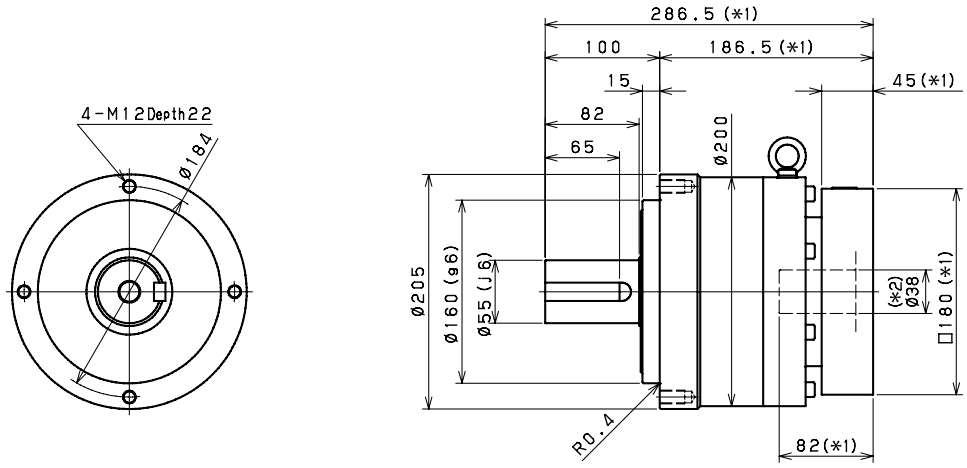
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

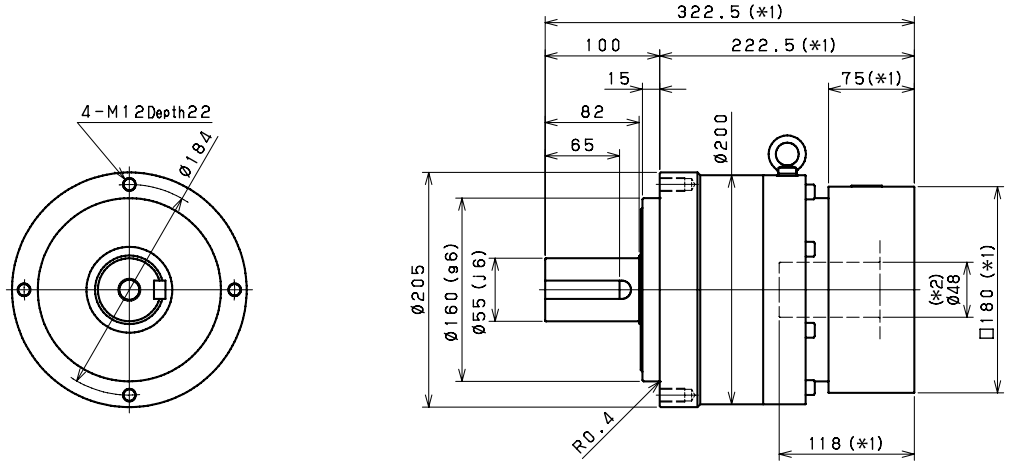
*15) The weight may vary slightly between models

VRL 205 1-Stage Dimensions

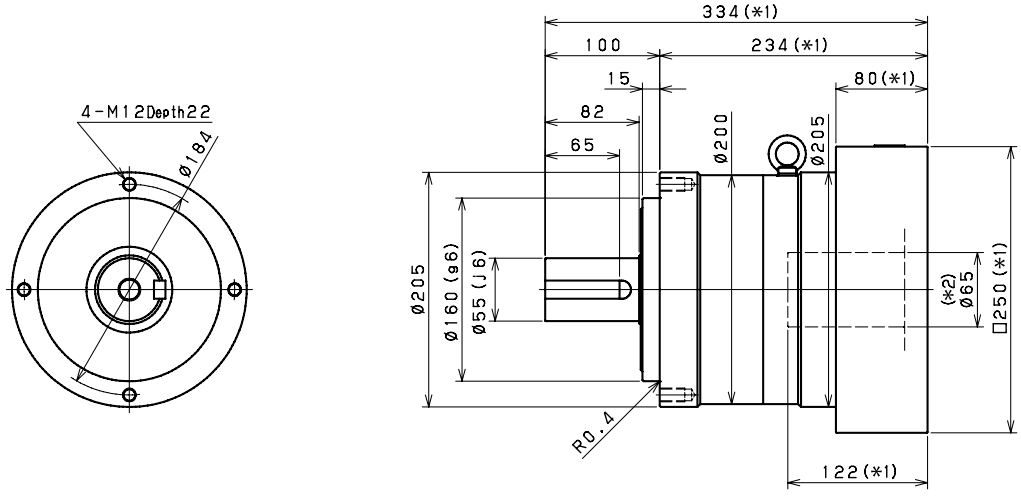
Input bore size ≦φ38 mm

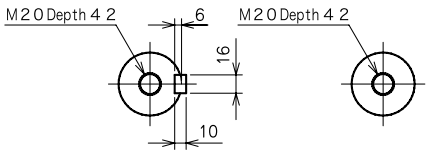


Input bore size ≦φ48 mm



Input bore size ≦φ65 mm





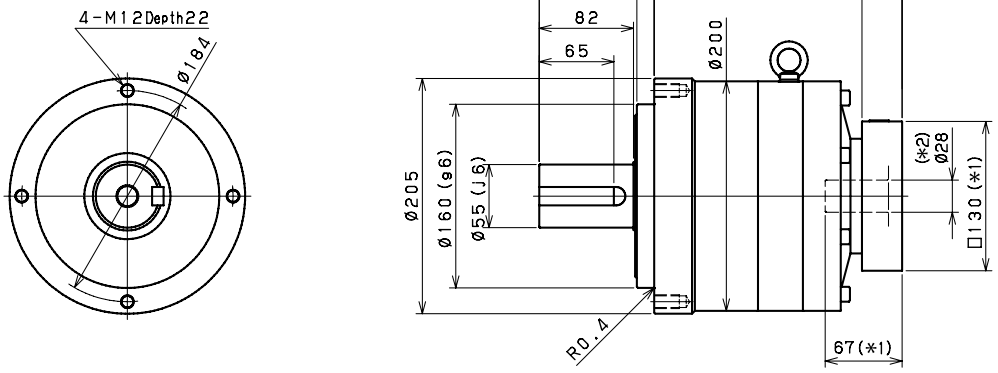
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

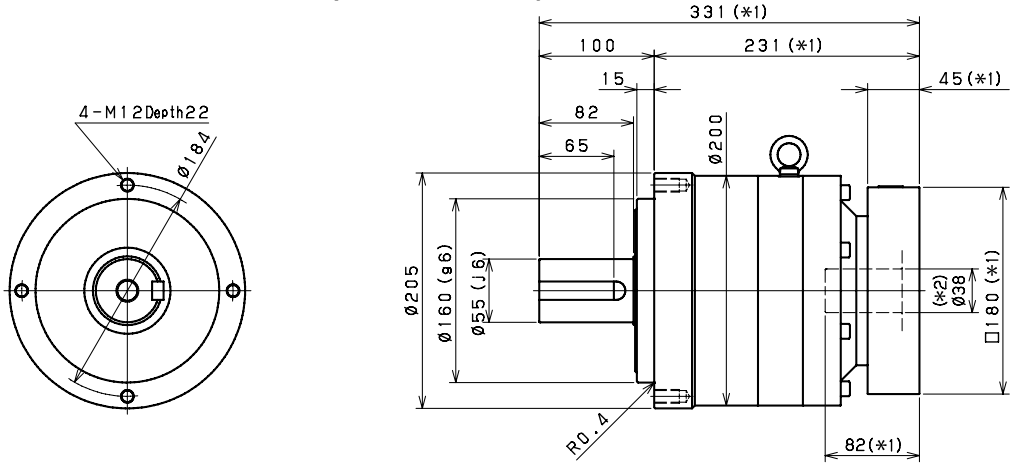
*2) Bushing will be inserted to adapt to motor shaft

VRL 205 2-Stage Dimensions

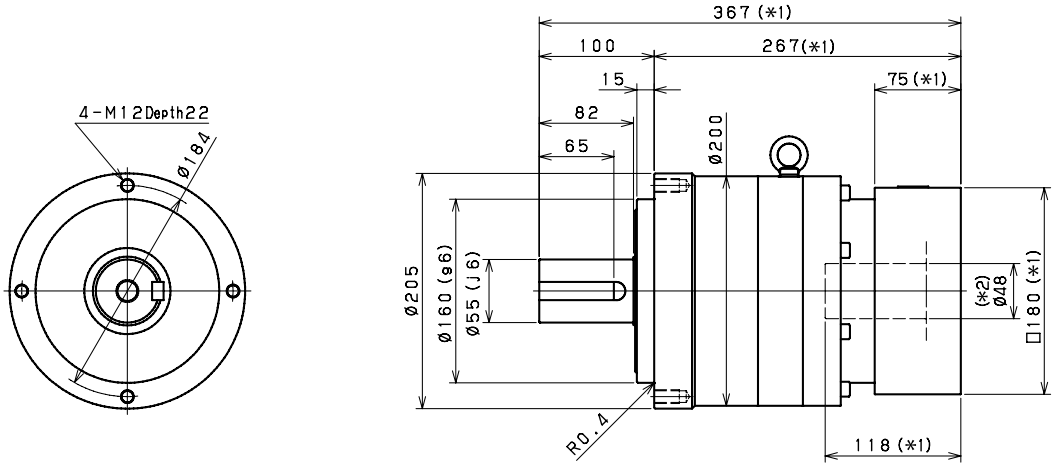
Input bore size ≦φ28 mm

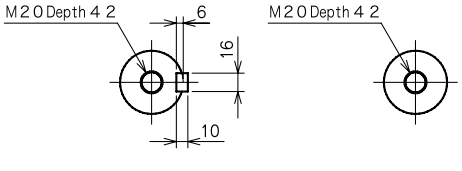


Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL 235 1-Stage Specifications

Frame Size	235									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1500	1000	1000
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	2200	1900	1600
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	2.92							
Permitted Radial Load	[N]	*7	5800	6400	6900	7300	7700	8000	8400	8700
Permitted Axial Load	[N]	*8	6400	7200	7900	8600	9200	9700	10000	11000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	90.000	62.000	52.000	47.000	42.000	40.000	39.000	38.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	150.000	120.000	110.000	110.000	100.000	100.000	99.000	98.000
Efficiency	[%]	*11	97							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	55							

VRL 235 2-Stage Specifications

Frame Size	235									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1500	1500
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	1600	2300	2300
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	5000	5000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	1.14							
Permitted Radial Load	[N]	*7	9900	10000	11000	12000	12000	13000	13000	14000
Permitted Axial Load	[N]	*8	13000	13000	14000	14000	14000	14000	14000	14000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	14.000	16.000	14.000	14.000	15.000	12.000	13.000	12.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	36.000	37.000	35.000	35.000	36.000	34.000	35.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	57							

VRL 235 2-Stage Specifications

Frame Size			**235**						
Stage			**2-Stage**						
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1000
Maximum Acceleration Torque	[Nm]	*2	1300	2300	2300	2300	1800	1300	1200
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	*4	1000						
Maximum Input Speed	[rpm]	*5	2000						
No Load Running Torque	[Nm]	*6	1.14						
Permitted Radial Load	[N]	*7	14000	15000	15000	15000	15000	15000	15000
Permitted Axial Load	[N]	*8	14000	14000	14000	14000	14000	14000	14000
Maximum Radial Load	[N]	*9	15000						
Maximum Axial Load	[N]	*10	14000						
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	13.000	12.000	12.000	12.000	12.000	12.000	12.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	35.000	33.000	33.000	33.000	33.000	33.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92						
Torsional Rigidity	[Nm/arc-min]	*12	400						
Maximum Torsional Backlash	[arc-min]	--	≤ 5						
Noise Level	dB [A]	*13	≤ 61						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	57						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

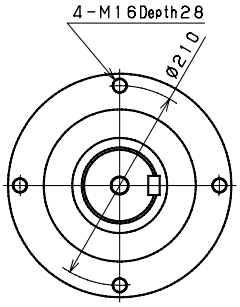
*13) Contact SIT S.p.A. for the testing conditions and environment

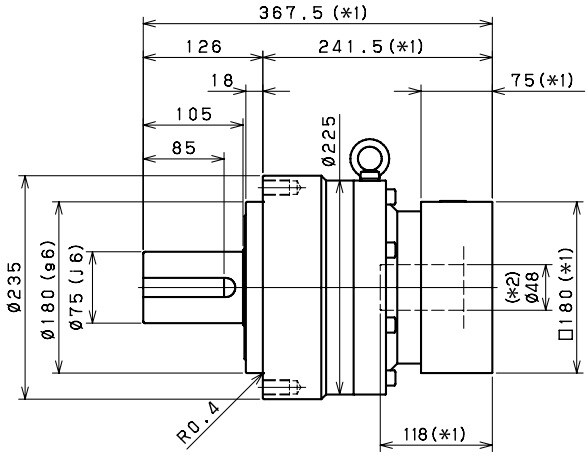
*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*15) The weight may vary slightly between models

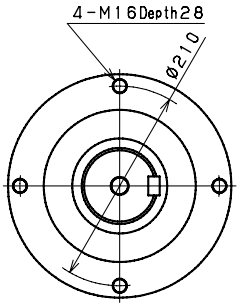
VRL 235 1-Stage Dimensions

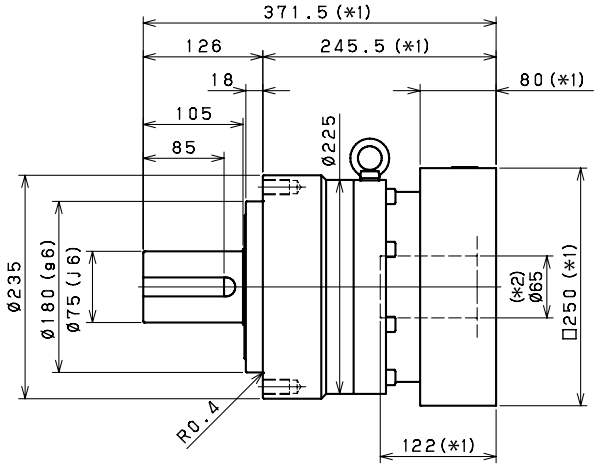
Input bore size ≦φ48 mm

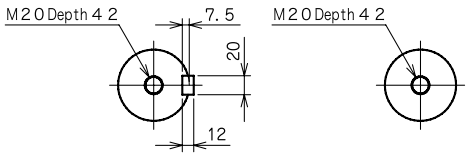




Input bore size ≦φ65 mm







Keyed shaft

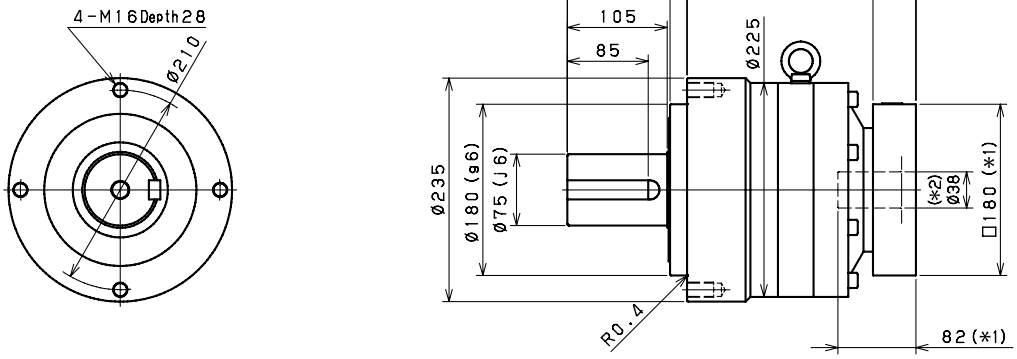
Smooth shaft

*1) Length will vary depending on motor

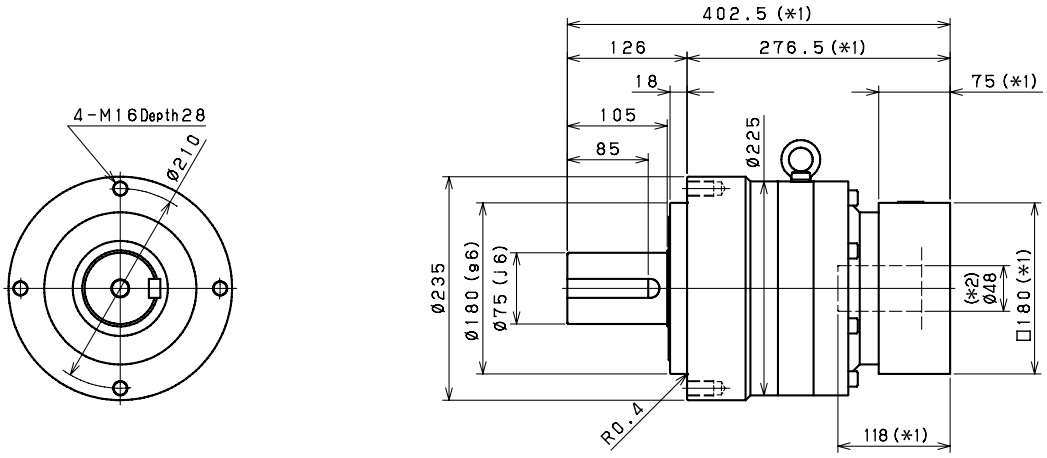
*2) Bushing will be inserted to adapt to motor shaft

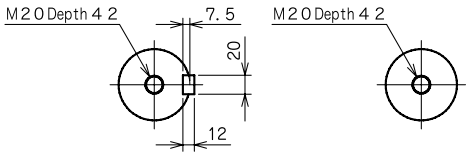
VRL 235 2-Stage Dimensions

Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





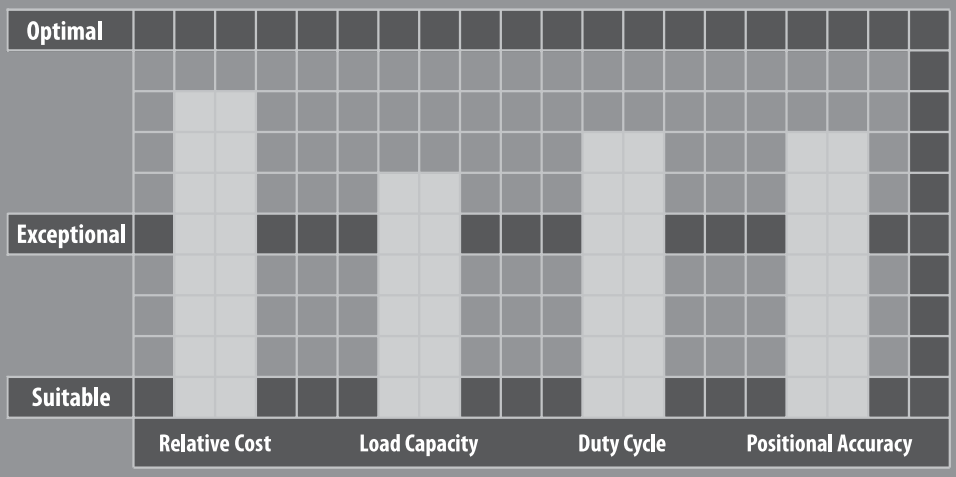
*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB SERIES

A valuable alternative for applications requiring high positional accuracy and dynamic performance. The VRB is a <3 arc-min gearbox that offers a through hole mounting design, making it easier to assemble onto various equipment. This product is an ideal fit for various belt drive and actuator applications found throughout the packaging and assembly cell automation markets.

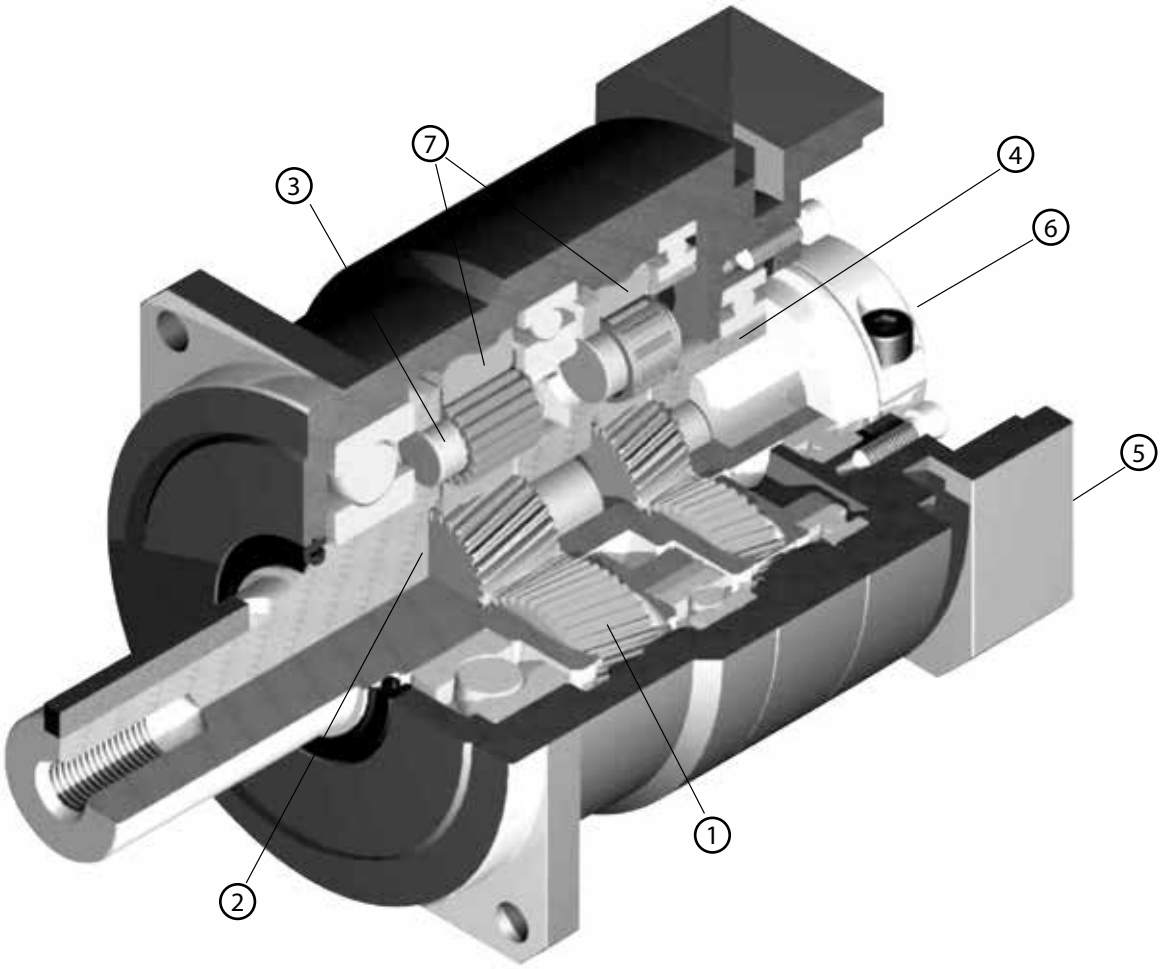
Various standard wash down and food grade options are available, making the VRB an attractive choice for the toughest environments. We offer the broadest selection of frame sizes and ratios, with immediate availability on most configurations. Industry standard mounting dimensions allow the VRB to be employed in legacy equipment designs, saving our customers time and money.



VRB SERIES

- 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 Series Features



1. Carburized helical gears with proprietary secondary finishing process for higher accuracy and smooth, quiet operation. 40% higher tooth surface area than the industry standard
2. One piece output shaft and planet carrier with two bearings straddling the planet gears. Higher stiffness, torque capacity and safety factor, with guaranteed alignment of gearing
3. Uncaged needle roller bearings provide excellent torque density and torsional rigidity. 43% larger bearing surface area compared to the rest of the industry
4. Unique labyrinth input seal design greatly reduces heat and increases system efficiency. IP65 protection is available for wash down applications
5. Optimized mounting system with active centering on motor pilot diameter guarantees alignment of motor. Motor can be installed in any orientation
6. True concentric motor shaft clamping connection, optimized for your specific motor. Reduced inertia for dynamic performance and balanced for high speed operation
7. Ring gear machined directly into the housing, not welded or pressed in. Provides greater concentricity and elimination of speed fluctuation

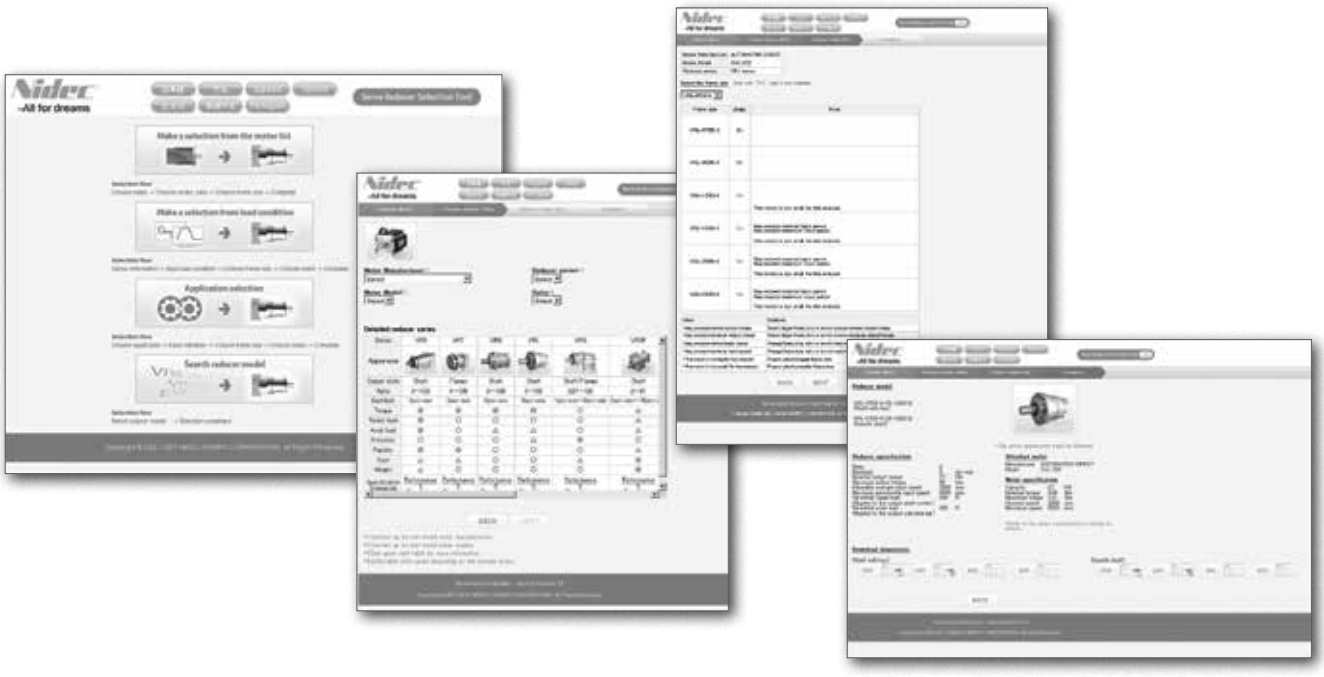
VRB Series Model Code

VRB – 090 C – 7 – K 3 – 19HB16

- **19HB16** — Motor mounting code (*1)
- **3** — Backlash: 3 arc-min
- **K** — Output mounting style: K: Keyed Shaft; S: Smooth shaft
- **7** — Ratio: 1-Stage: 3, 4, 5, 6, 7, 8, 9, 10; 2-Stage: 15, 16, 20, 25, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
- **C** — Design version. **B** design version in exhaustion. Available in demand.
- **090** — Frame size: 042, 060, 090, 115, 140, 180, 220
- **VRB** — Series

*1) Motor mounting code varies depending on the motor. Use the selection tool link below to configure the code.

Contact us for additional information or refer to our online gearhead selection tool.
Selection tool http://sitspa.com/tools-online/



VRB 042 1-Stage Specifications

Frame Size	042									
Stage	1-Stage									
Ratio	Units	Notes	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	6	9	9	9	9	9	6	6
Maximum Acceleration Torque	[Nm]	*2	12	18	18	18	18	18	12	12
Emergency Stop Torque	[Nm]	*3	30	35	35	35	35	35	30	30
Nominal Input Speed	[rpm]	*4	4000							
Maximum Input Speed	[rpm]	*5	8000							
No Load Running Torque	[Nm]	*6	0.03							
Permitted Radial Load	[N]	*7	240	270	290	310	320	340	350	360
Permitted Axial Load	[N]	*8	270	300	330	360	380	410	430	450
Maximum Radial Load	[N]	*9	710							
Maximum Axial Load	[N]	*10	640							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.053	0.041	0.036	0.034	0.032	0.031	0.031	0.030
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.091	0.079	0.074	0.072	0.071	0.070	0.069	0.069
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	2							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	0.6							

VRB 042 2-Stage Specifications

Frame Size	042									
Stage	2-Stage									
Ratio	Units	Notes	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	6	9	9	9	9	6	9	9
Maximum Acceleration Torque	[Nm]	*2	12	18	18	18	18	12	18	18
Emergency Stop Torque	[Nm]	*3	30	35	35	35	35	30	35	35
Nominal Input Speed	[rpm]	*4	4000							
Maximum Input Speed	[rpm]	*5	8000							
No Load Running Torque	[Nm]	*6	0.01							
Permitted Radial Load	[N]	*7	410	420	460	490	510	520	550	570
Permitted Axial Load	[N]	*8	540	550	610	640	640	640	640	640
Maximum Radial Load	[N]	*9	710							
Maximum Axial Load	[N]	*10	640							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.035	0.038	0.034	0.034	0.038	0.030	0.034	0.030
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	2							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	0.7							

VRB 042 2-Stage Specifications

Frame Size	**042**								
Stage	**2-Stage**								
Ratio	Units	Notes	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	6	9	9	9	9	6	6
Maximum Acceleration Torque	[Nm]	*2	12	18	18	18	18	12	12
Emergency Stop Torque	[Nm]	*3	30	35	35	35	35	30	30
Nominal Input Speed	[rpm]	*4	4000						
Maximum Input Speed	[rpm]	*5	8000						
No Load Running Torque	[Nm]	*6	0.01						
Permitted Radial Load	[N]	*7	600	620	660	690	710	710	710
Permitted Axial Load	[N]	*8	640	640	640	640	640	640	640
Maximum Radial Load	[N]	*9	710						
Maximum Axial Load	[N]	*10	640						
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.034	0.030	0.030	0.030	0.030	0.030	0.030
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	2						
Maximum Torsional Backlash	[arc-min]	--	≤ 5						
Noise Level	dB [A]	*13	≤ 61						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	0.7						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

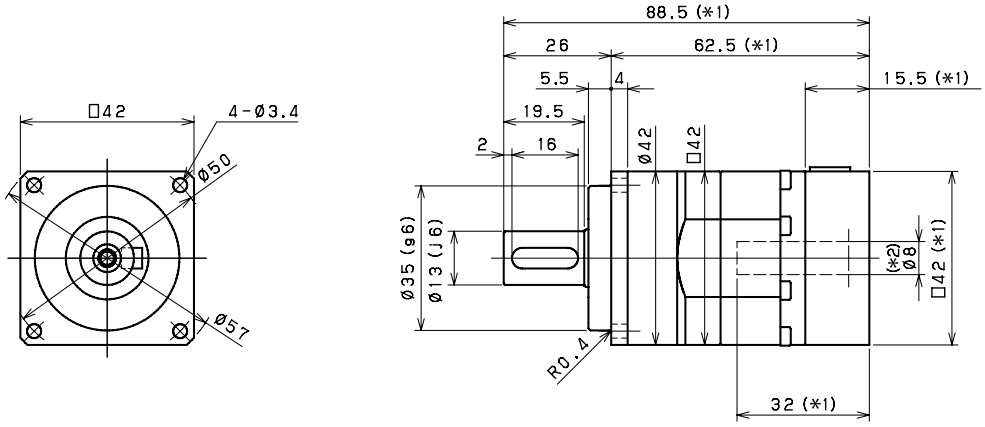
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.p.A. for more details

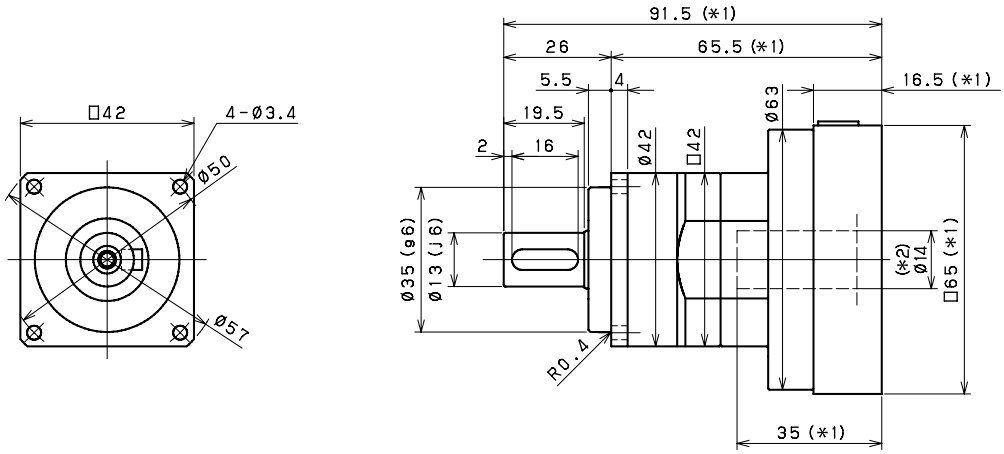
*15) The weight may vary slightly between models

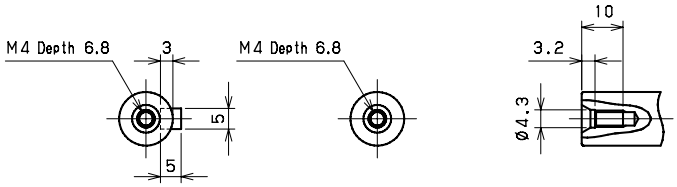
VRB 042 1-Stage Dimensions

Input bore size ≦φ8 mm



Input bore size ≦φ14 mm





Keyed shaft

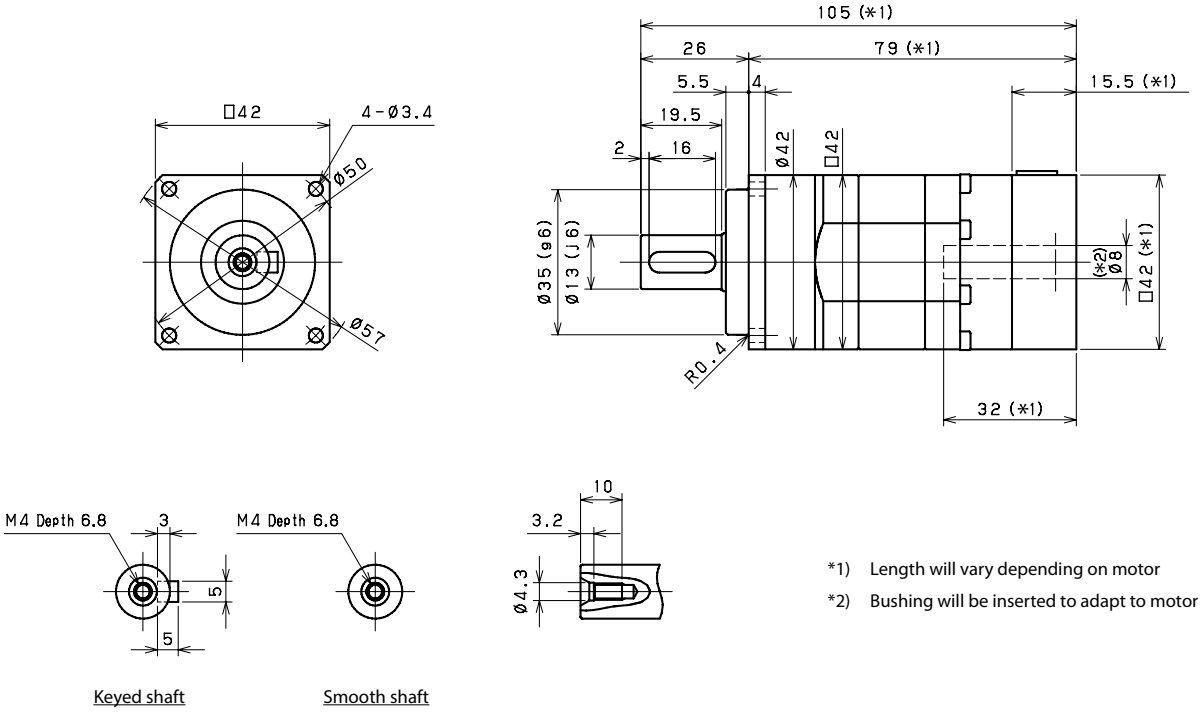
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB 042 2-Stage Dimensions

Input bore size ≦φ8 mm



Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB 060 1-Stage Specifications

Frame Size			060							
Stage			1-Stage							
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.15							
Permitted Radial Load	[N]	*7	430	470	510	540	570	600	620	640
Permitted Axial Load	[N]	*8	310	360	390	430	460	480	510	530
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.140	0.095	0.077	0.068	0.062	0.059	0.057	0.056
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.220	0.170	0.160	0.150	0.140	0.140	0.140	0.140
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.430	0.380	0.360	0.360	0.350	0.350	0.340	0.340
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 66							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.4							

VRB 060 2-Stage Specifications

Frame Size			060							
Stage			2-Stage							
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	27	27
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	50	50
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	100	100
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.04							
Permitted Radial Load	[N]	*7	740	750	810	870	910	930	980	1000
Permitted Axial Load	[N]	*8	630	650	720	790	830	860	920	970
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.055	0.057	0.054	0.053	0.055	0.049	0.053	0.049
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.140	0.140	0.130	0.130	0.140	0.130	0.130	0.130
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 66							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.6							

VRB 060 2-Stage Specifications

Frame Size			**060**						
Stage			**2-Stage**						
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.04						
Permitted Radial Load	[N]	*7	1100	1100	1200	1200	1200	1200	1200
Permitted Axial Load	[N]	*8	1000	1100	1100	1100	1100	1100	1100
Maximum Radial Load	[N]	*9	1200						
Maximum Axial Load	[N]	*10	1100						
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.053	0.049	0.049	0.049	0.049	0.049	0.049
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.130	0.130	0.130	0.130	0.130	0.130	0.130
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	3						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 66						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	1.6						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

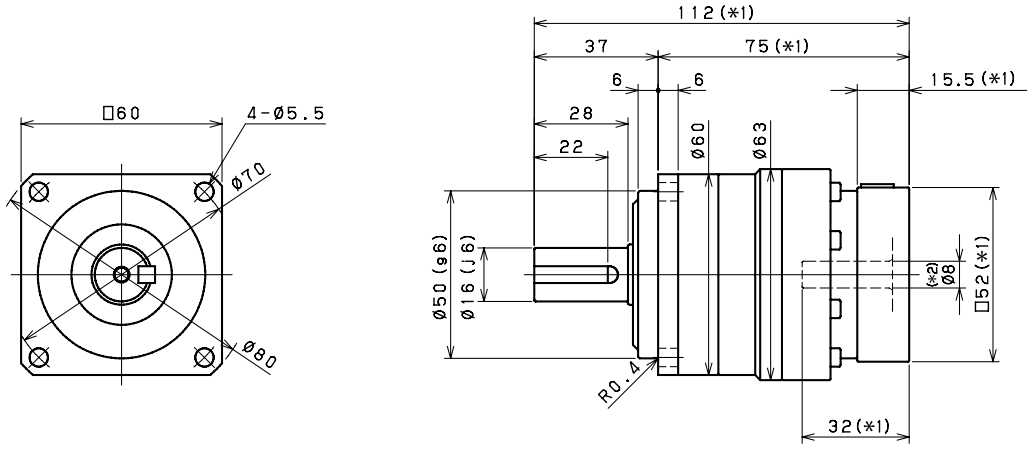
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.p.A. for more details

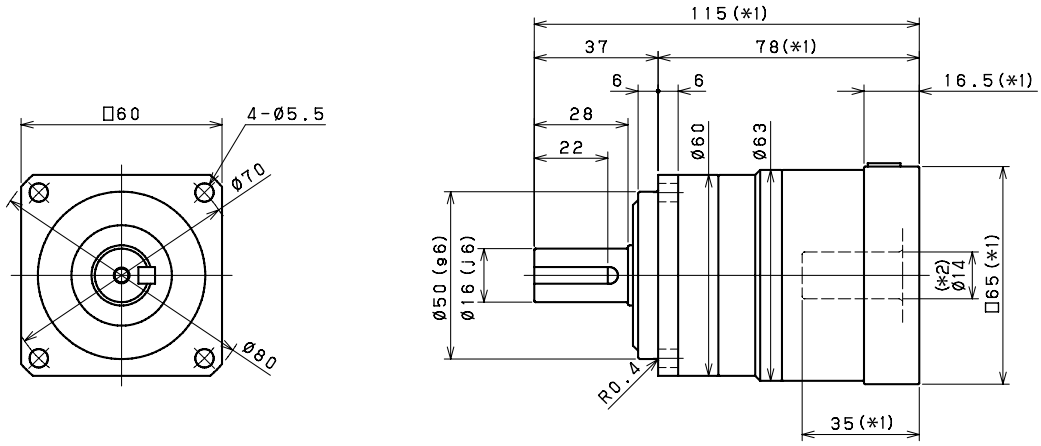
*15) The weight may vary slightly between models

VRB 060 1-Stage Dimensions

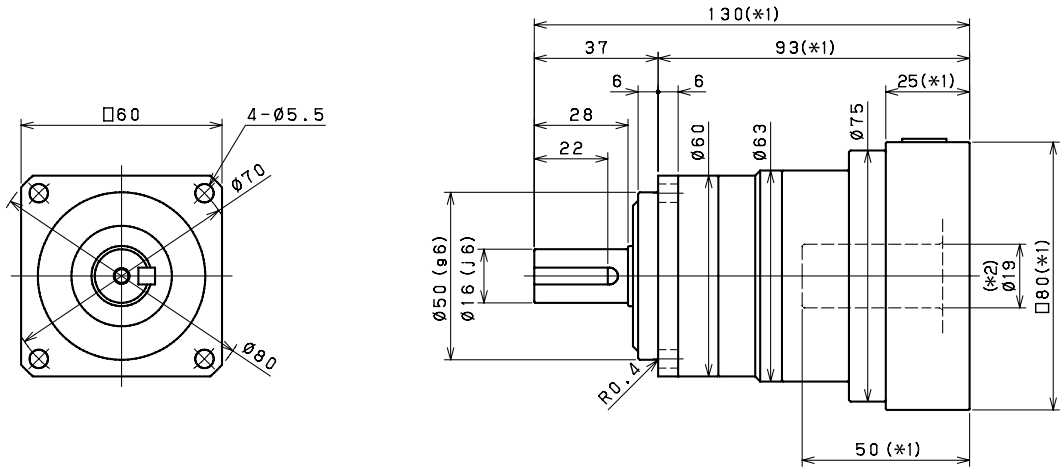
Input bore size ≦φ8 mm

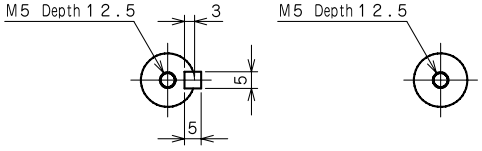


Input bore size ≦φ14 mm



Input bore size ≦φ19 mm





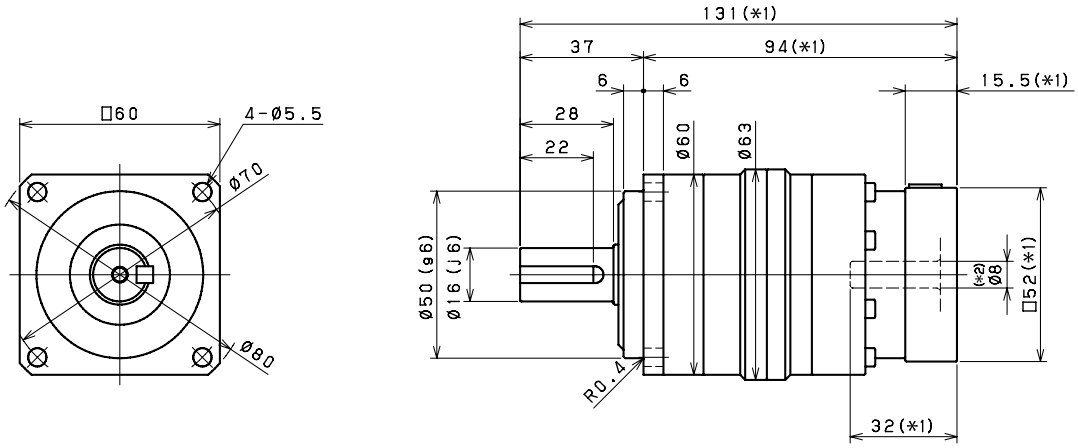
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

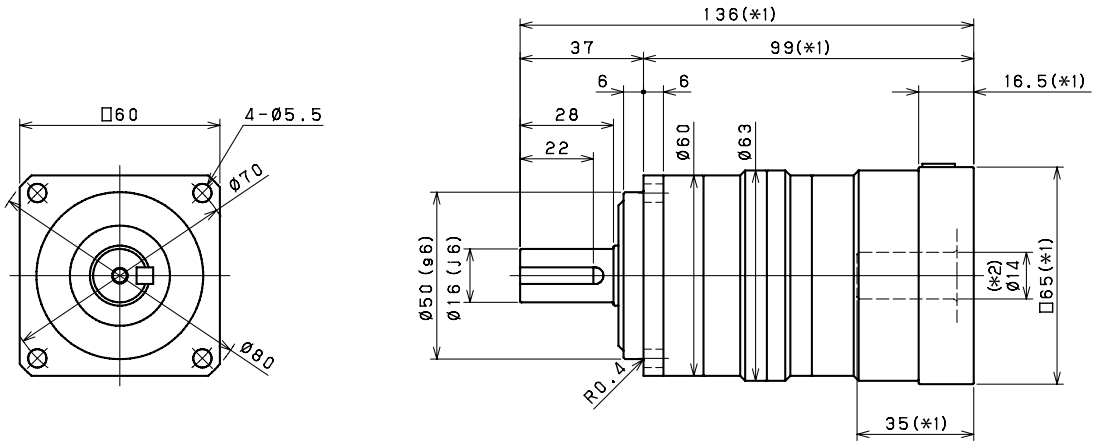
*2) Bushing will be inserted to adapt to motor shaft

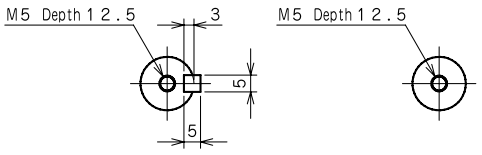
VRB o6o 2-Stage Dimensions

Input bore size ≦φ8 mm



Input bore size ≦φ14 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB 090 1-Stage Specifications

Frame Size	090									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.35							
Permitted Radial Load	[N]	*7	810	890	960	1000	1100	1100	1200	1200
Permitted Axial Load	[N]	*8	930	1100	1200	1300	1300	1400	1500	1600
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.720	0.490	0.400	0.360	0.320	0.310	0.290	0.290
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	1.200	0.950	0.860	0.820	0.790	0.770	0.760	0.750
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.200	3.000	2.900	2.800	2.800	2.800	2.800	2.800
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	3.7							

VRB 090 2-Stage Specifications

Frame Size	090									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	75	75
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	125	125
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	250	250
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.06							
Permitted Radial Load	[N]	*7	1400	1400	1500	1600	1700	1700	1800	1900
Permitted Axial Load	[N]	*8	1900	1900	2100	2200	2200	2200	2200	2200
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.130	0.150	0.130	0.120	0.140	0.100	0.120	0.099
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.280	0.300	0.280	0.280	0.290	0.250	0.270	0.250
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.720	0.740	0.720	0.710	0.730	0.700	0.710	0.700
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	4.2							

VRB 090 2-Stage Specifications

Frame Size	**090**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.06						
Permitted Radial Load	[N]	*7	2000	2100	2200	2300	2400	2400	2400
Permitted Axial Load	[N]	*8	2200	2200	2200	2200	2200	2200	2200
Maximum Radial Load	[N]	*9	2400						
Maximum Axial Load	[N]	*10	2200						
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.120	0.098	0.098	0.097	0.097	0.097	0.097
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.710	0.690	0.690	0.690	0.690	0.690	0.690
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	10						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	4.2						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

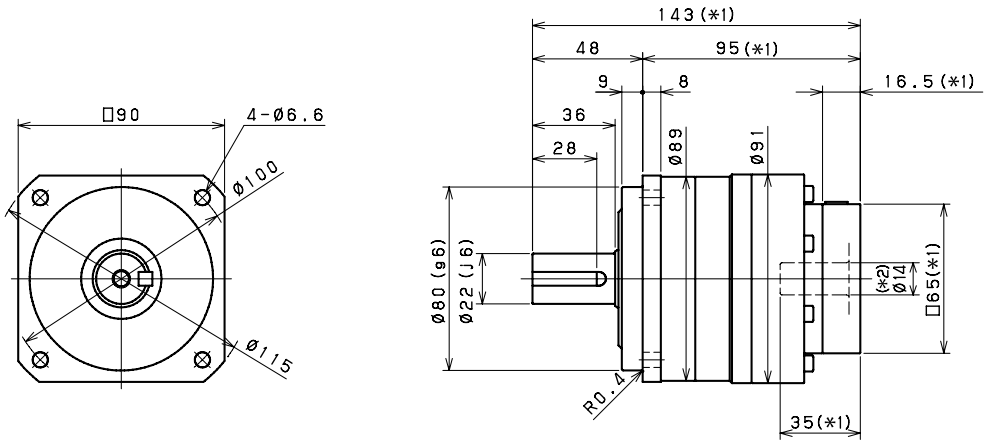
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.p.A. for more details

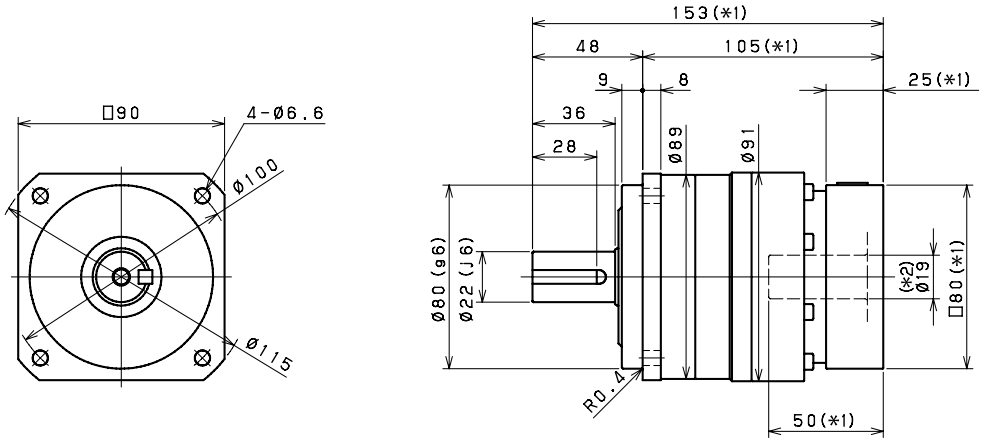
*15) The weight may vary slightly between models

VRB 090 1-Stage Dimensions

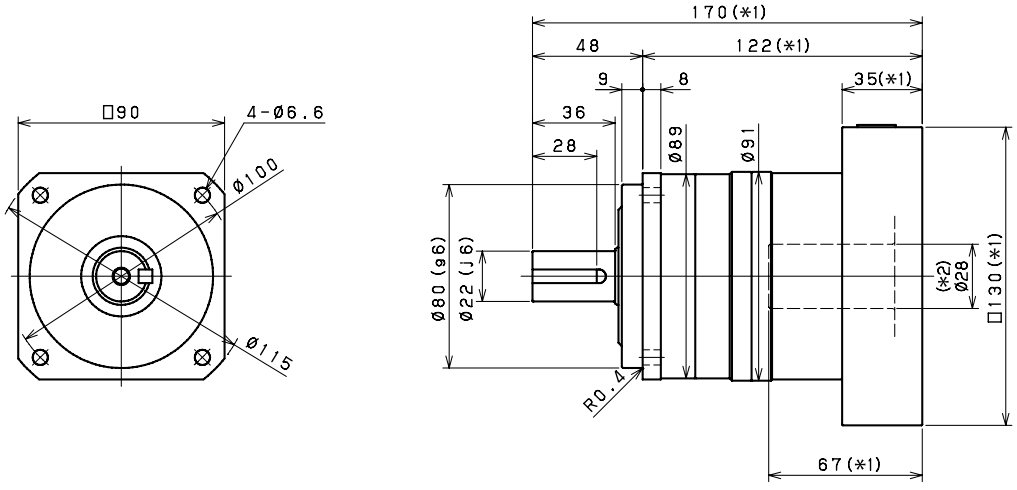
Input bore size ≦φ14 mm

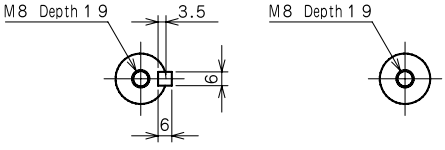


Input bore size ≦φ19 mm



Input bore size ≦φ28 mm





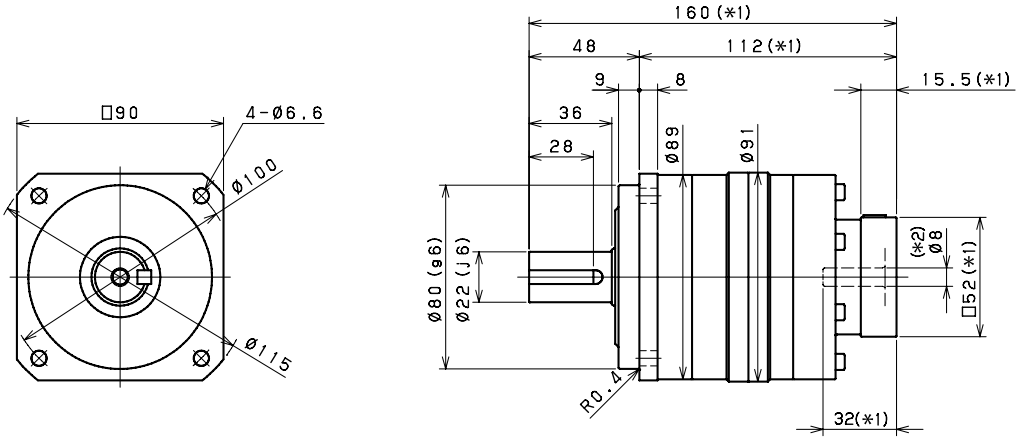
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

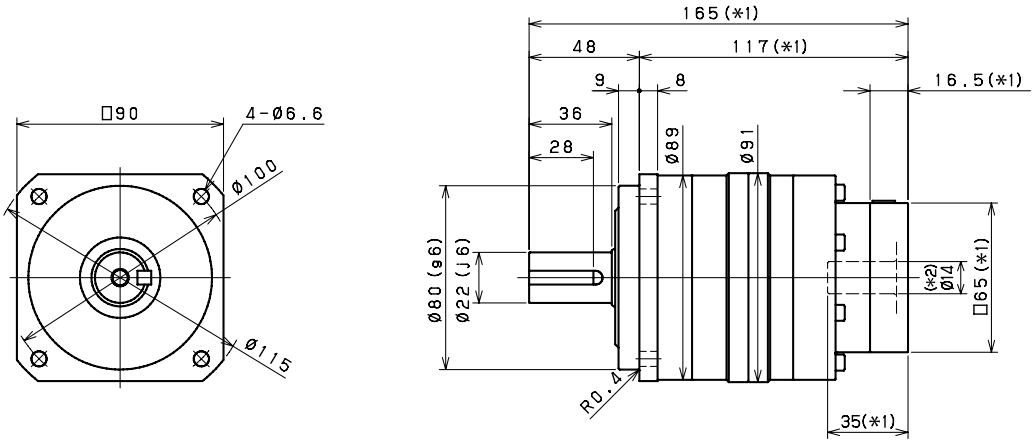
*2) Bushing will be inserted to adapt to motor shaft

VRB 090 2-Stage Dimensions

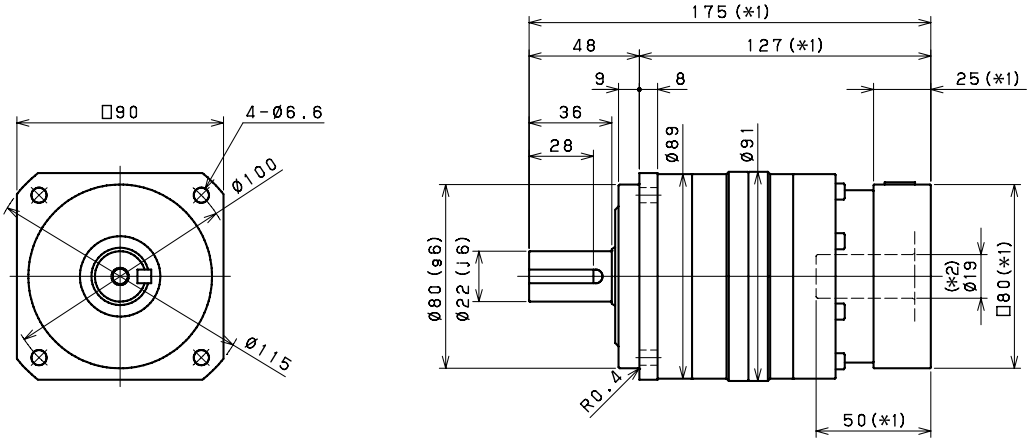
Input bore size ≦φ8 mm

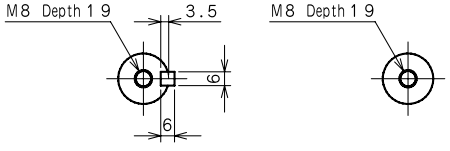


Input bore size ≦φ14 mm



Input bore size ≦φ19 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB 115 1-Stage Specifications

Frame Size	115									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	120	120	180	180	180	180	120	120
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.30							
Permitted Radial Load	[N]	*7	1300	1500	1600	1700	1800	1900	1900	2000
Permitted Axial Load	[N]	*8	1500	1700	1900	2000	2100	2300	2400	2500
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia (≤Ø 14)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	3.300	2.000	1.600	1.300	1.100	1.000	0.980	0.950
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	5.300	4.100	3.600	3.300	3.200	3.100	3.000	3.000
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	13.000	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 71							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	8							

VRB 115 2-Stage Specifications

Frame Size	115									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	180	180
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	330	330
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	625	625
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.42							
Permitted Radial Load	[N]	*7	2300	2300	2500	2700	2800	2900	3000	3200
Permitted Axial Load	[N]	*8	3000	3100	3400	3700	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia (≤Ø 14)	[kgcm2]	--	0.430	0.480	0.400	0.380	0.440	0.290	0.370	0.280
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.860	0.920	0.830	0.820	0.880	0.740	0.810	0.730
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.800	2.900	2.800	2.800	2.800	2.700	2.700	2.700
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 71							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	8.9							

VRB 115 2-Stage Specifications

Frame Size	**115**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	120
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.42						
Permitted Radial Load	[N]	*7	3300	3400	3600	3800	4000	4200	4300
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300						
Maximum Axial Load	[N]	*10	3900						
Moment of Inertia (≤Ø 14)	[kgcm2]	--	0.370	0.280	0.280	0.280	0.280	0.270	0.270
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.800	0.730	0.730	0.730	0.730	0.730	0.730
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.700	2.700	2.700	2.700	2.700	2.700	2.700
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	31						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 71						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	8.9						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

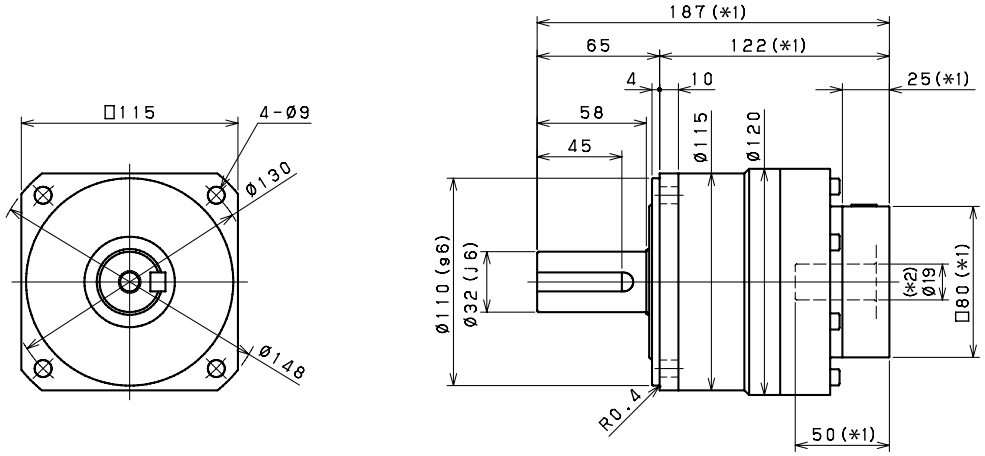
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.p.A. for more details

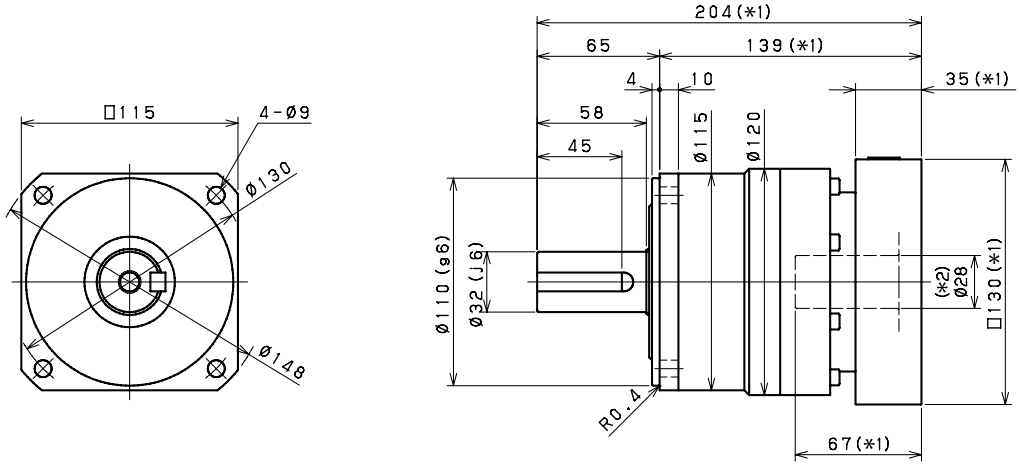
*15) The weight may vary slightly between models

VRB 115 1-Stage Dimensions

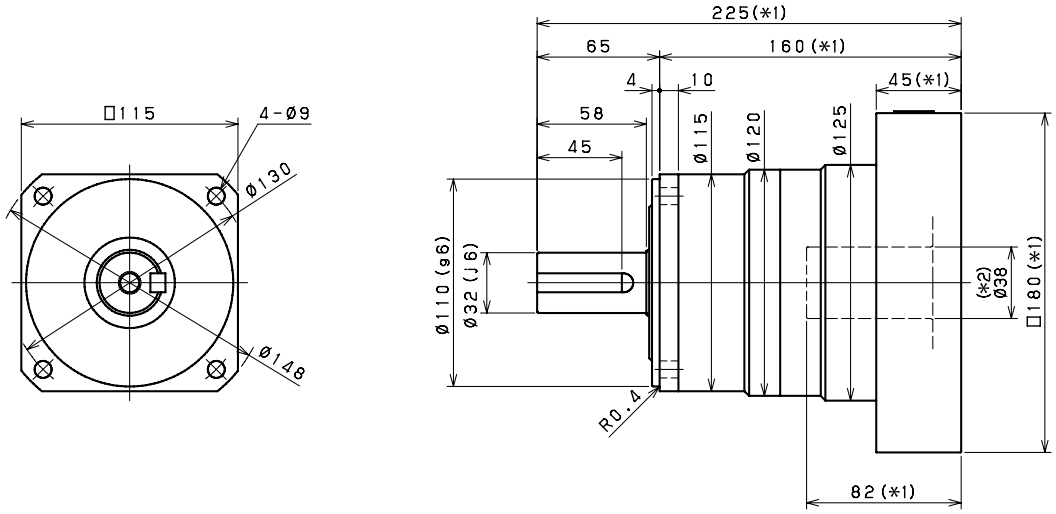
Input bore size ≦φ19 mm

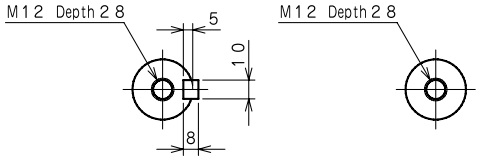


Input bore size ≦φ28 mm



Input bore size ≦φ38 mm





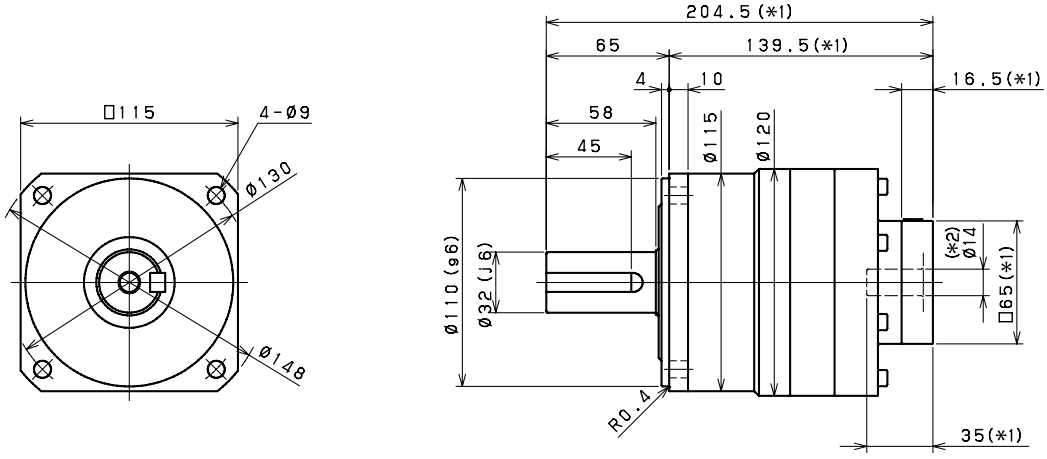
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

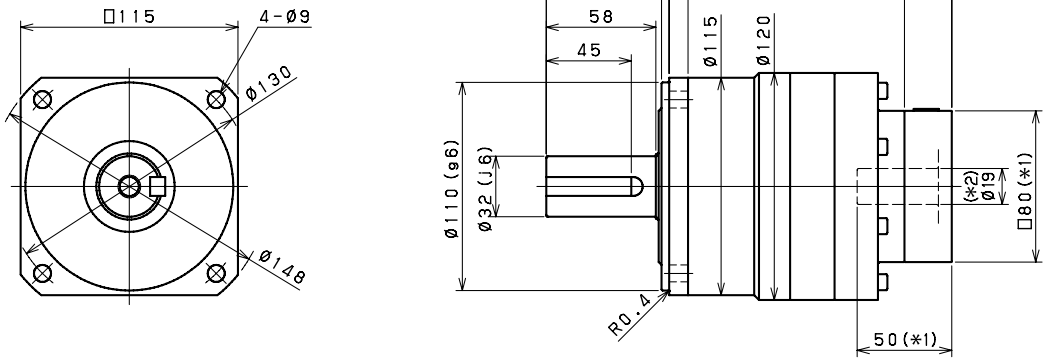
*2) Bushing will be inserted to adapt to motor shaft

VRB 115 2-Stage Dimensions

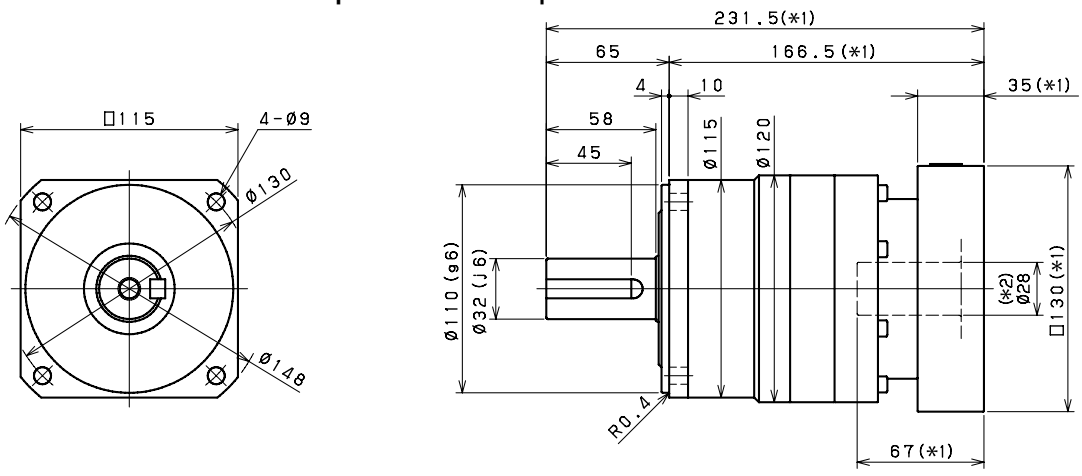
Input bore size ≦φ14 mm

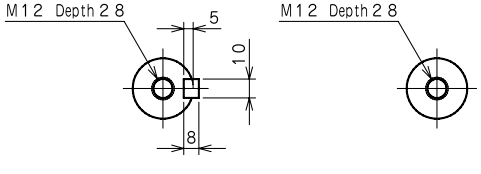


Input bore size ≦φ19 mm



Input bore size ≦φ28 mm





Keyed shaft　　Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB 140 1-Stage Specifications

Frame Size	140									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	240	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	1.63							
Permitted Radial Load	[N]	*7	3200	3500	3800	4000	4200	4400	4600	4700
Permitted Axial Load	[N]	*8	2400	2700	3000	3300	3500	3700	3900	4100
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia (≤Ø 19)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	12.000	7.500	5.800	4.900	4.100	3.800	3.600	3.500
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	20.000	15.000	14.000	13.000	12.000	12.000	11.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	42.000	37.000	36.000	35.000	34.000	34.000	34.000	34.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	16							

VRB 140 2-Stage Specifications

Frame Size	140									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	360	360
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	700	700
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1250	1250
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	0.56							
Permitted Radial Load	[N]	*7	5400	5500	6000	6400	6700	6800	7200	7500
Permitted Axial Load	[N]	*8	4900	5000	5500	6100	6400	6600	7000	7500
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia (≤Ø 19)	[kgcm2]	--	1.300	1.500	1.200	1.100	1.400	0.850	1.100	0.830
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.200	3.500	3.100	3.100	3.300	2.800	3.100	2.800
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	11.000	11.000	11.000	11.000	11.000	10.000	11.000	10.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	17							

VRB 140 2-Stage Specifications

Frame Size			**140**						
Stage			**2-Stage**						
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000						
Maximum Input Speed	[rpm]	*5	4000						
No Load Running Torque	[Nm]	*6	0.56						
Permitted Radial Load	[N]	*7	7800	8100	8600	9100	9100	9100	9100
Permitted Axial Load	[N]	*8	7900	8200	8200	8200	8200	8200	8200
Maximum Radial Load	[N]	*9	9100						
Maximum Axial Load	[N]	*10	8200						
Moment of Inertia (≤Ø 19)	[kgcm2]	--	1.100	0.810	0.810	0.800	0.800	0.800	0.800
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.000	2.800	2.800	2.800	2.800	2.800	2.800
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	11.000	10.000	10.000	10.000	10.000	10.000	10.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	60						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	17						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

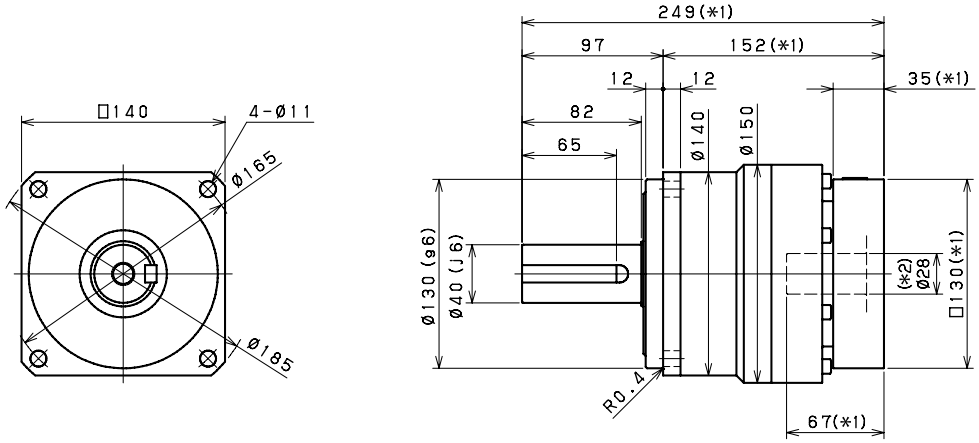
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.p.A. for more details

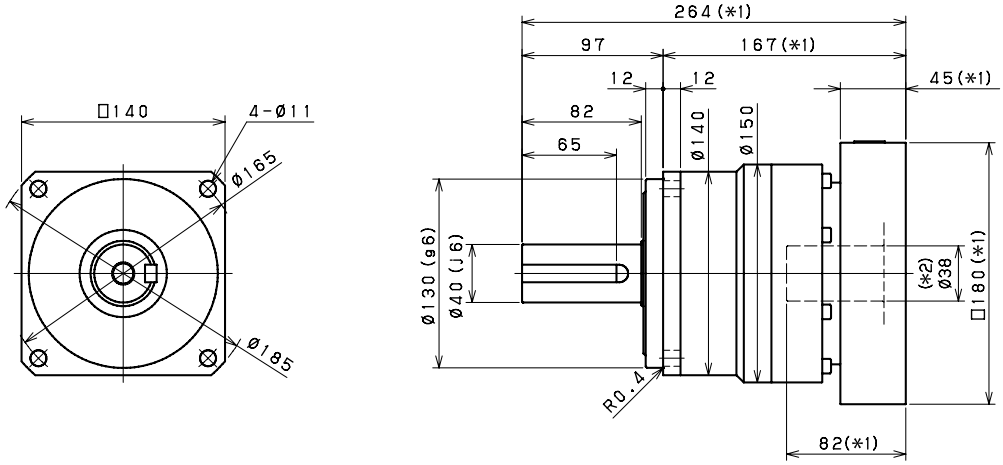
*15) The weight may vary slightly between models

VRB 140 1-Stage Dimensions

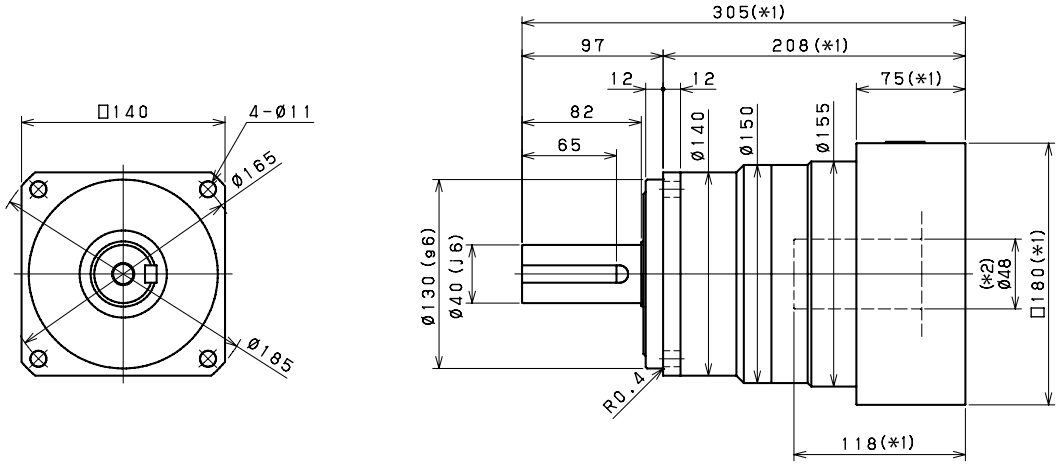
Input bore size ≦φ28 mm

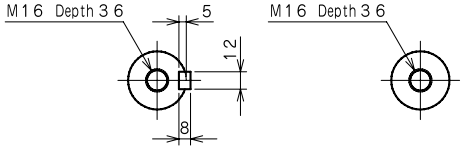


Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





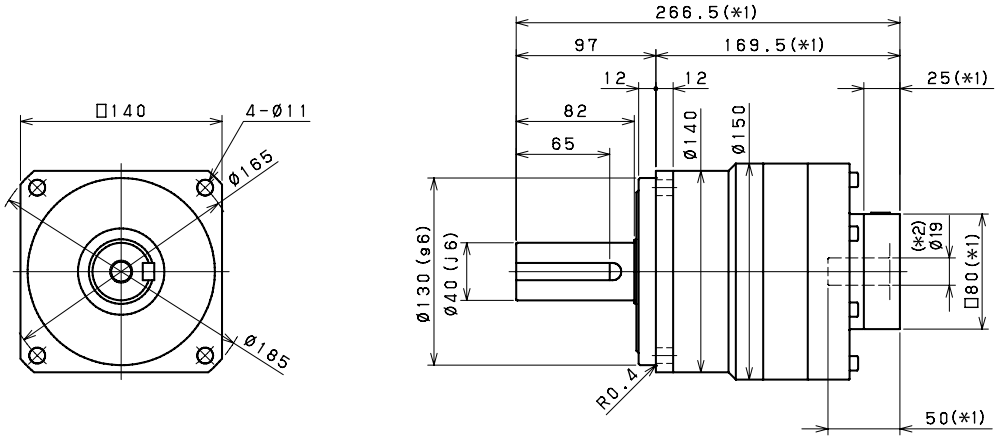
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

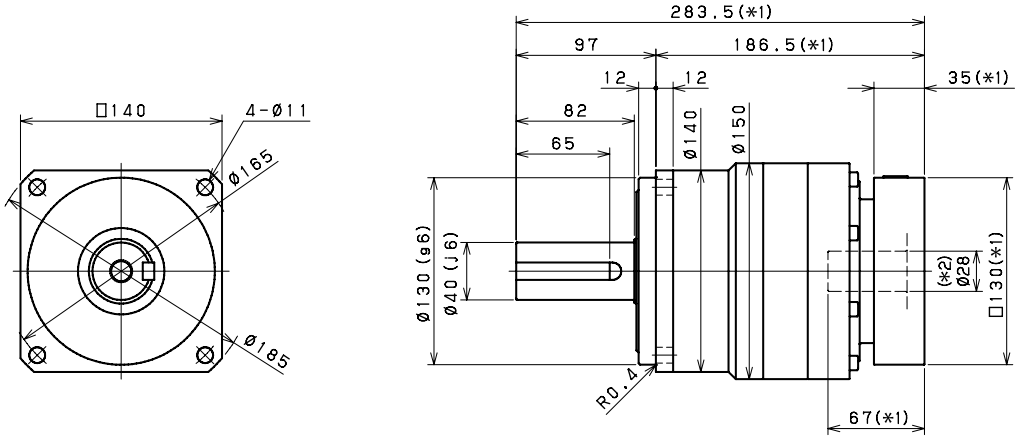
*2) Bushing will be inserted to adapt to motor shaft

VRB 140 2-Stage Dimensions

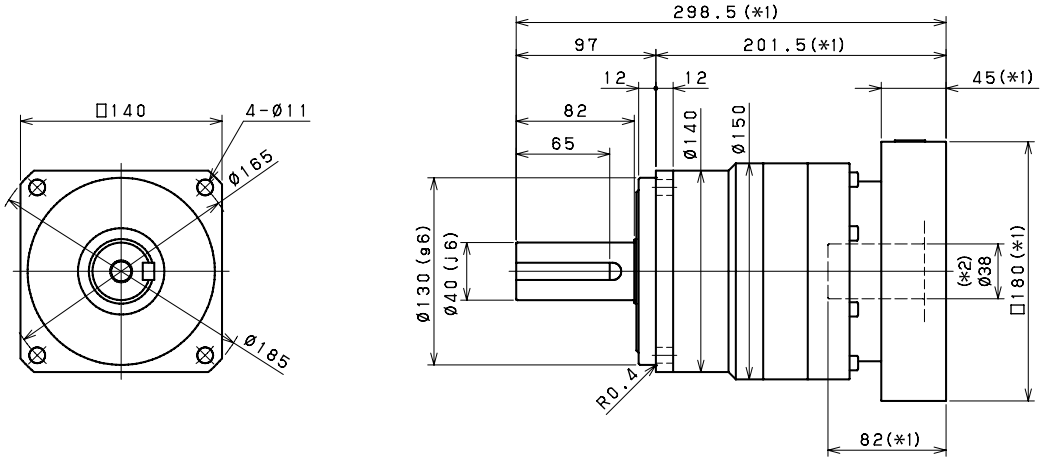
Input bore size ≦φ19 mm

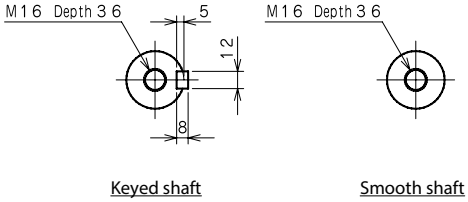


Input bore size ≦φ28 mm



Input bore size ≦φ38 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB 180 1-Stage Specifications

Frame Size			180							
Stage			1-Stage							
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	2.68							
Permitted Radial Load	[N]	*7	5600	6200	6700	7100	7400	7800	8100	8400
Permitted Axial Load	[N]	*8	4300	4900	5400	5800	6300	6600	7000	7300
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia (≤Ø 28)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	44.000	28.000	22.000	18.000	16.000	15.000	14.000	14.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	66.000	50.000	44.000	41.000	38.000	37.000	36.000	36.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	130.000	110.000	100.000	100.000	99.000	97.000	97.000	96.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	36							

VRB 180 2-Stage Specifications

Frame Size			180							
Stage			2-Stage							
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	750	750
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	1400	1400
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2750	2750
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	1.39							
Permitted Radial Load	[N]	*7	9600	9800	11000	11000	12000	12000	13000	13000
Permitted Axial Load	[N]	*8	8700	8900	9900	11000	11000	12000	13000	13000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia (≤Ø 28)	[kgcm2]	--	4.700	5.400	4.400	4.200	4.900	3.200	4.100	3.200
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	12.000	13.000	12.000	12.000	13.000	11.000	12.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	34.000	35.000	34.000	34.000	35.000	33.000	34.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	37							

VRB 180 2-Stage Specifications

Frame Size	**180**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500						
Maximum Input Speed	[rpm]	*5	3000						
No Load Running Torque	[Nm]	*6	1.39						
Permitted Radial Load	[N]	*7	14000	14000	15000	15000	15000	15000	15000
Permitted Axial Load	[N]	*8	14000	14000	14000	14000	14000	14000	14000
Maximum Radial Load	[N]	*9	15000						
Maximum Axial Load	[N]	*10	14000						
Moment of Inertia (≤Ø 28)	[kgcm2]	--	4.000	3.100	3.100	3.100	3.100	3.100	3.100
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	34.000	33.000	33.000	33.000	33.000	33.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	175						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	37						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

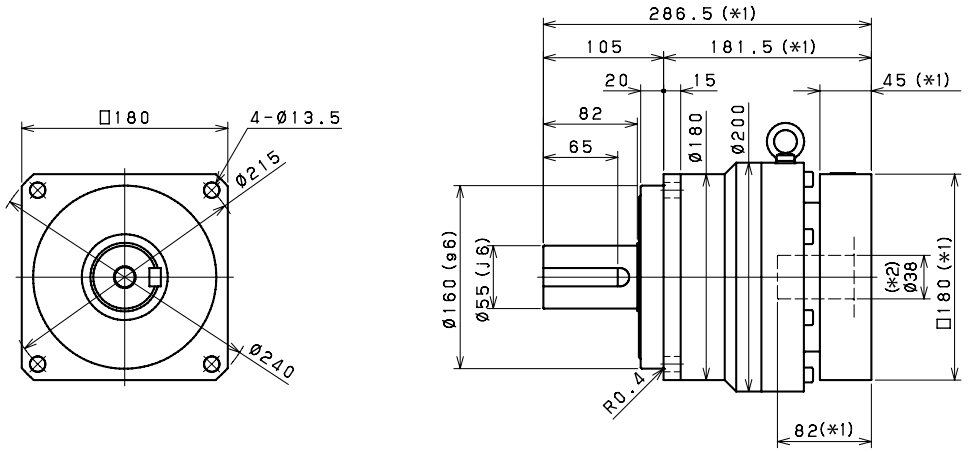
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.p.A. for more details

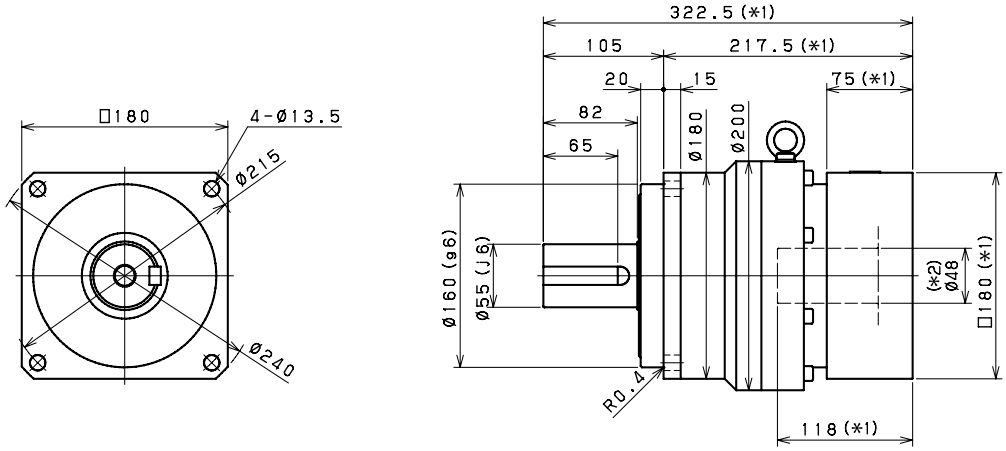
*15) The weight may vary slightly between models

VRB 180 1-Stage Dimensions

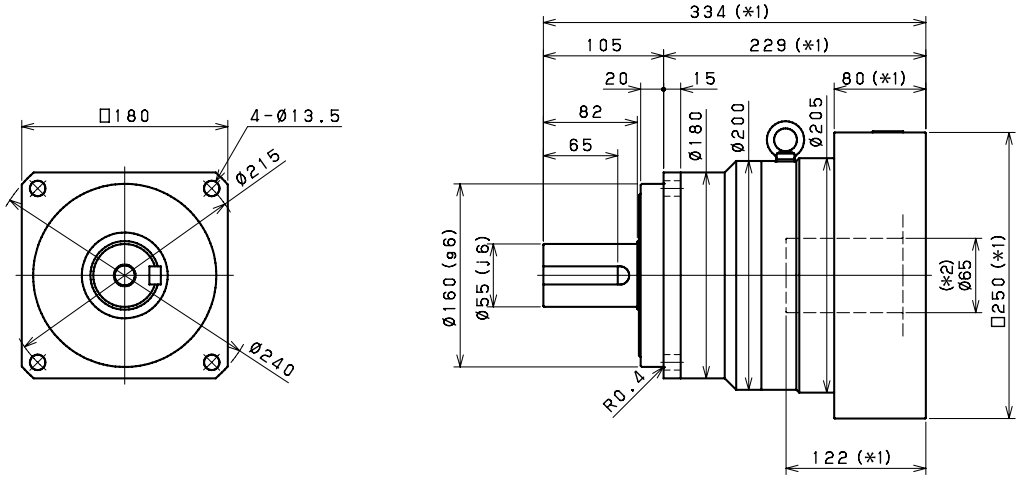
Input bore size ≦φ38 mm

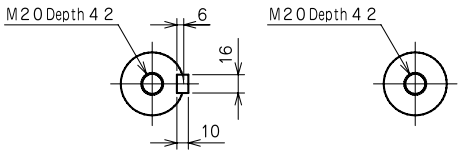


Input bore size ≦φ48 mm



Input bore size ≦φ65 mm





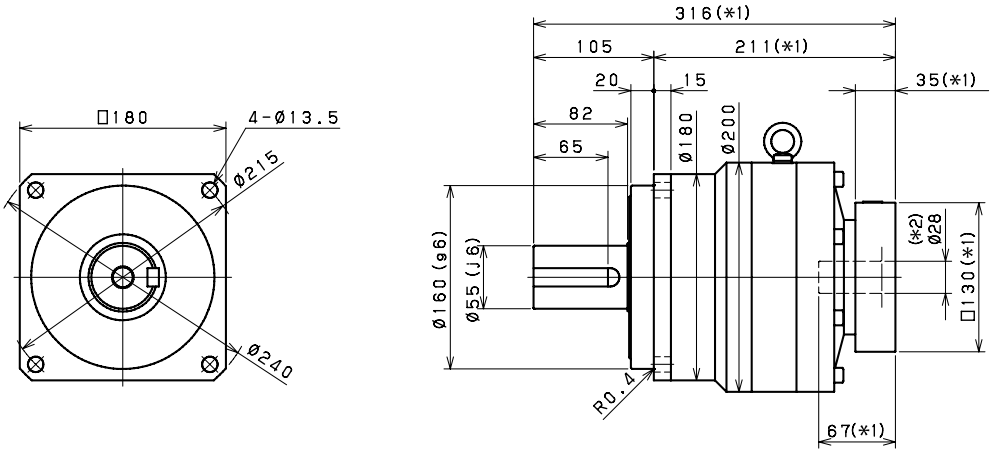
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

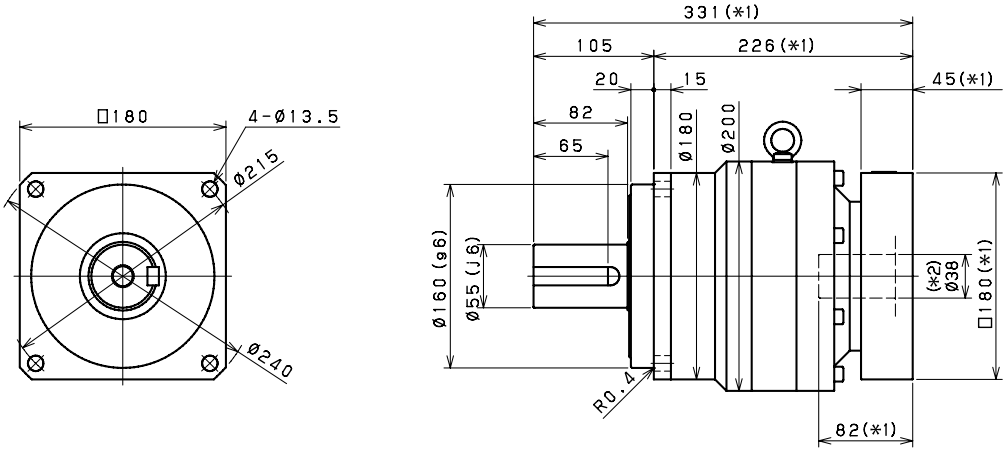
*2) Bushing will be inserted to adapt to motor shaft

VRB 180 2-Stage Dimensions

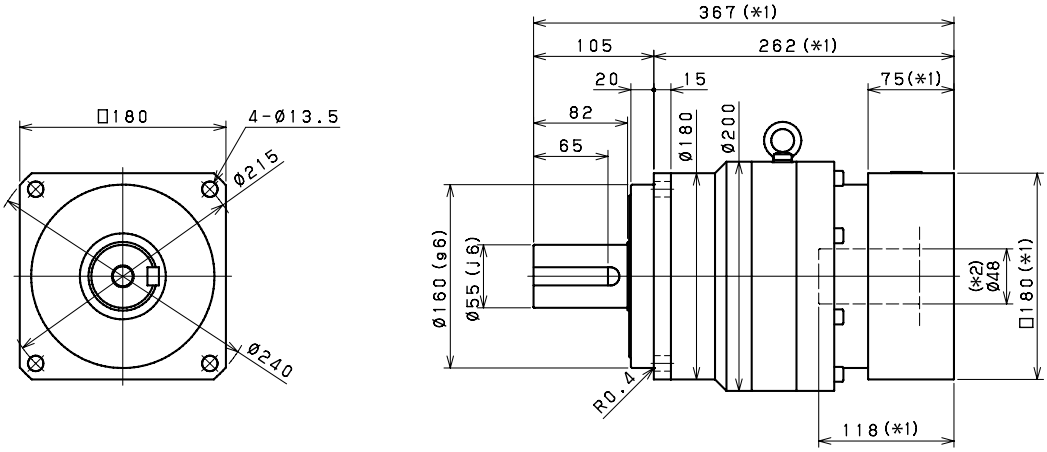
Input bore size ≦φ28 mm

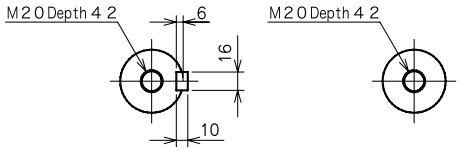


Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB 220 1-Stage Specifications

Frame Size			220							
Stage			1-Stage							
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1500	1000	1000
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	2200	1900	1600
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	2.92							
Permitted Radial Load	[N]	*7	5800	6400	6900	7300	7700	8000	8400	8700
Permitted Axial Load	[N]	*8	6400	7200	7900	8600	9200	9700	10000	11000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	90.000	62.000	52.000	47.000	42.000	40.000	39.000	38.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	150.000	120.000	110.000	110.000	100.000	100.000	99.000	98.000
Efficiency	[%]	*11	97							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	53							

VRB 220 2-Stage Specifications

Frame Size			220							
Stage			2-Stage							
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1500	1500
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	1600	2300	2300
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	5000	5000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	1.14							
Permitted Radial Load	[N]	*7	9900	10000	11000	12000	12000	13000	13000	14000
Permitted Axial Load	[N]	*8	13000	13000	14000	14000	14000	14000	14000	14000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	14.000	16.000	14.000	14.000	15.000	12.000	13.000	12.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	36.000	37.000	35.000	35.000	36.000	34.000	35.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	54							

VRB 220 2-Stage Specifications

Frame Size	**220**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1000
Maximum Acceleration Torque	[Nm]	*2	1300	2300	2300	2300	1800	1300	1200
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	*4	1000						
Maximum Input Speed	[rpm]	*5	2000						
No Load Running Torque	[Nm]	*6	1.14						
Permitted Radial Load	[N]	*7	14000	15000	15000	15000	15000	15000	15000
Permitted Axial Load	[N]	*8	14000	14000	14000	14000	14000	14000	14000
Maximum Radial Load	[N]	*9	15000						
Maximum Axial Load	[N]	*10	14000						
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	13.000	12.000	12.000	12.000	12.000	12.000	12.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	35.000	33.000	33.000	33.000	33.000	33.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92						
Torsional Rigidity	[Nm/arc-min]	*12	400						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 61						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	54						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

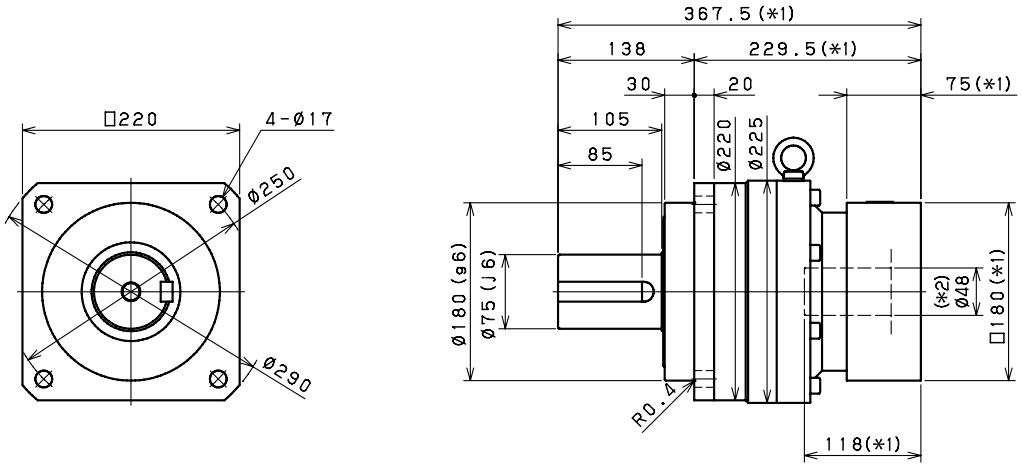
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.p.A. for more details

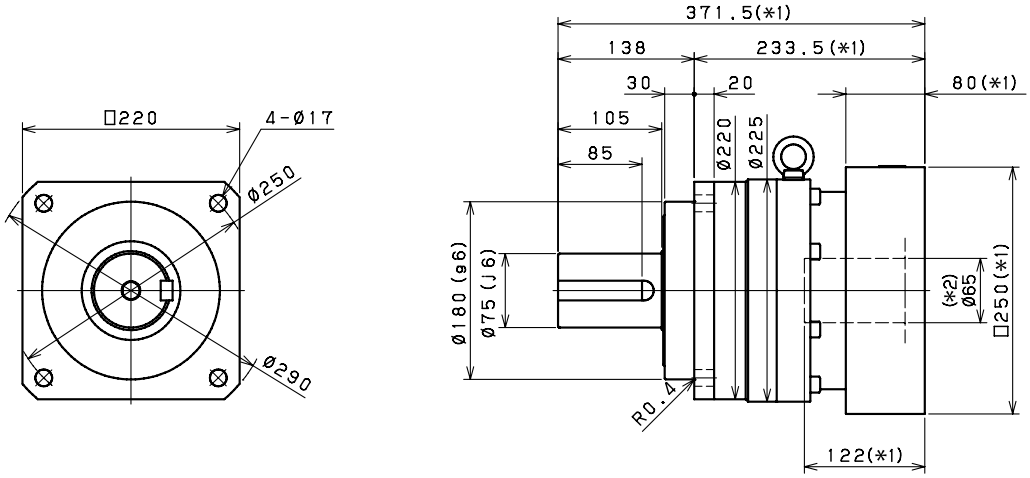
*15) The weight may vary slightly between models

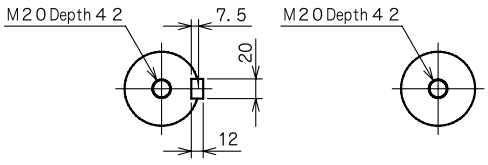
VRB 220 1-Stage Dimensions

Input bore size ≦φ48 mm



Input bore size ≦φ65 mm





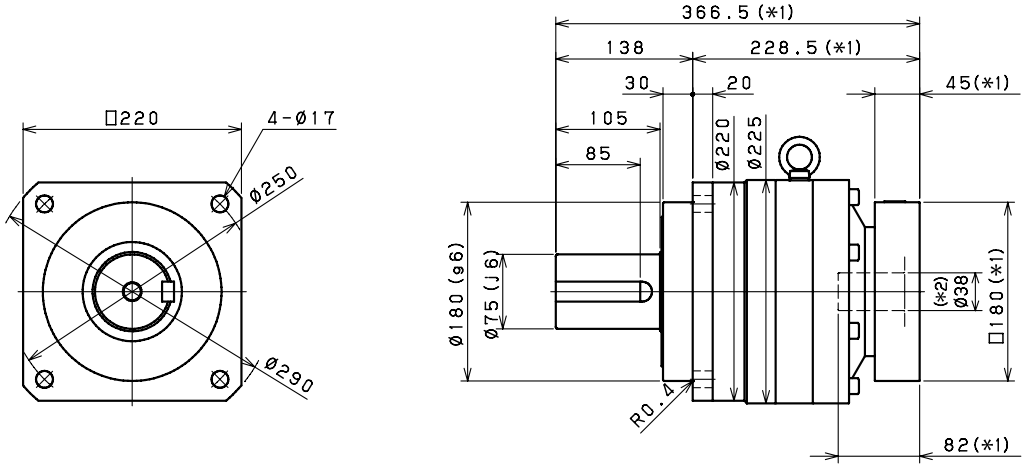
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

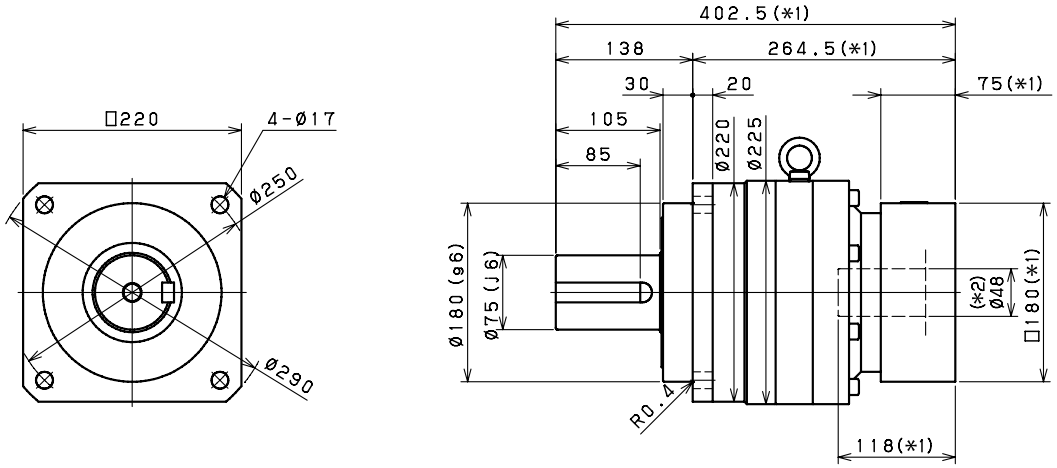
*2) Bushing will be inserted to adapt to motor shaft

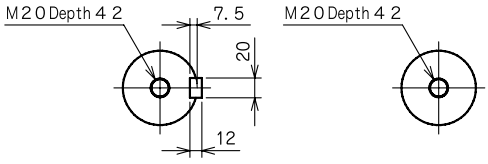
VRB 220 2-Stage Dimensions

Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





Keyed shaft Smooth shaft

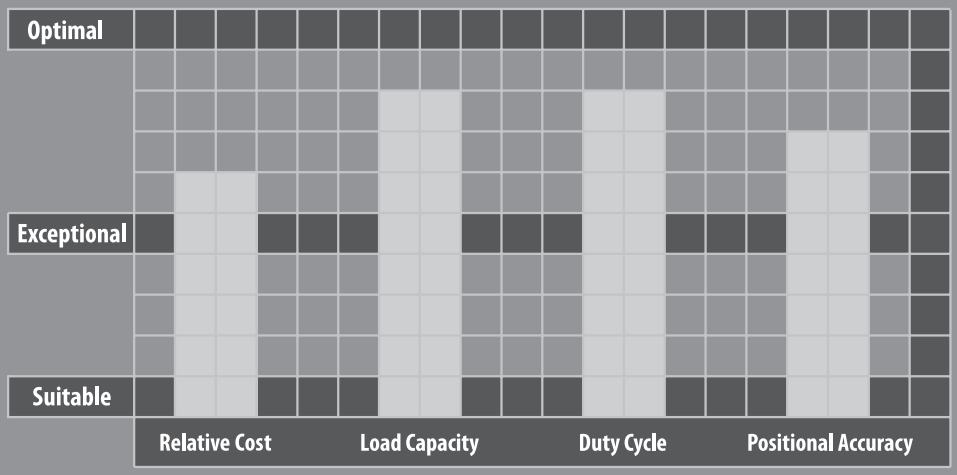
*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS SERIES

Compact and precise, the VRS is the ideal solution for demanding positioning accuracy and speed requirements. This product is a proven performer in higher speed, continuous duty applications where heat reduction is critical. Equipped with two rows of robust tapered roller bearings, the VRS runs smoothly and quietly even with the most challenging dynamic and static forces.

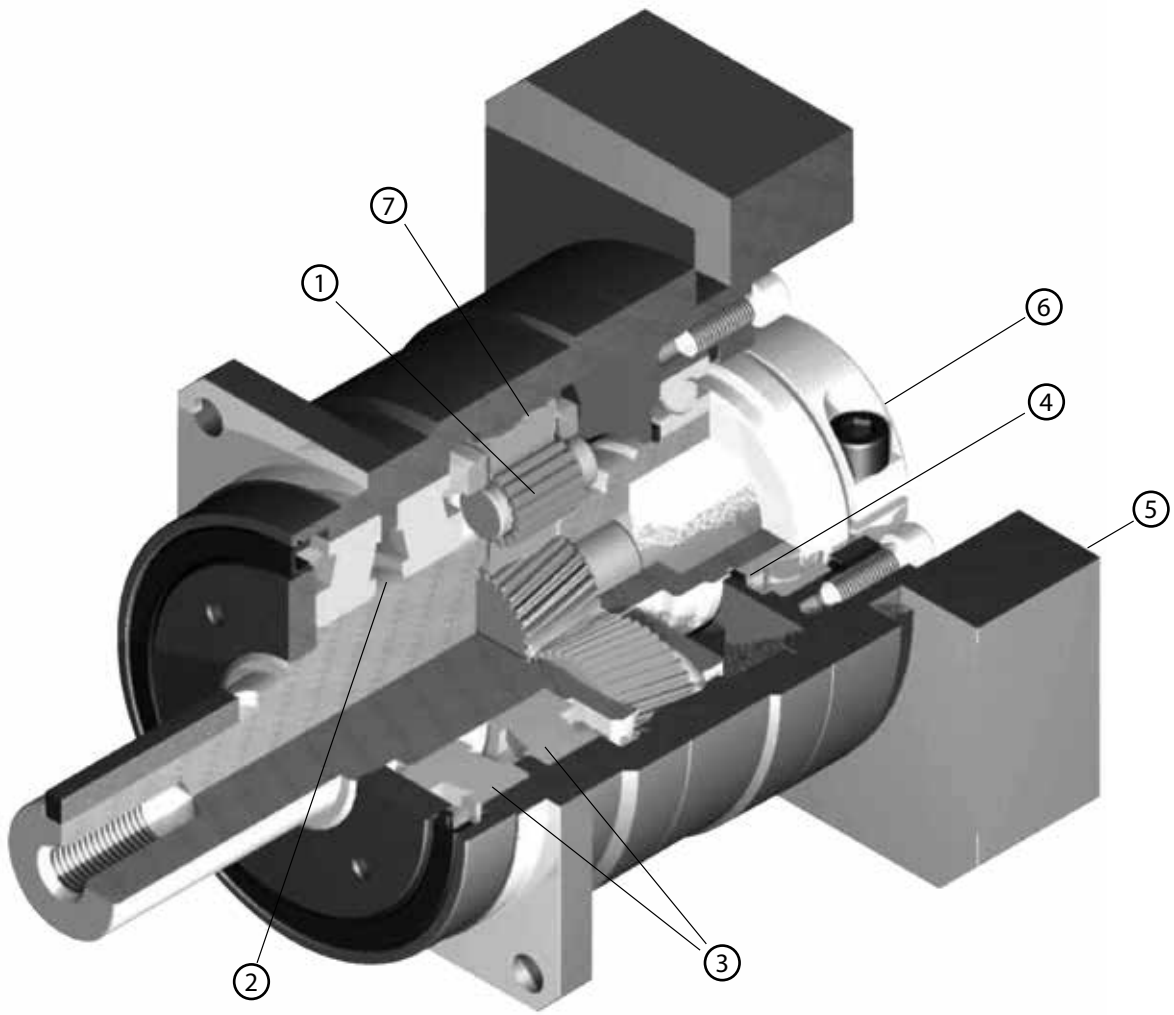
The VRS is available with reduced backlash, less than 2 arc-min, to handle dynamic machine tool and robotic applications with ease. With maximum acceleration torques up to 3700Nm, this product is an excellent partner to higher capacity servomotor models. Our customers specify this product when the industry standard is simply not good enough.



VRS SERIES

- Proven performer in high end motion control applications with demanding accuracy requirements
- Excellent fit for difficult overhung load situations or continuous duty cycles
- The widest range of frame sizes and ratios available in the market
- Best-In-class standard backlash (≤3 arc-min) with reduced backlash options available
- 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

VRS Series Features



1. Carburized, case hardened helical gears with proprietary secondary finishing process for higher accuracy and smooth, quiet operation
2. One piece output shaft and planet carrier with two robust tapered bearings straddling the planet gears. Higher radial/axial load capacity, stiffness, torque density and safety factor, with guaranteed alignment of gearing
3. Uncaged needle roller bearings provide excellent torque density and torsional rigidity
4. Unique labyrinth input seal design greatly reduces heat and increases system efficiency. IP65 protection is available for wash down applications
5. Optimized mounting system with active centering on motor pilot diameter guarantees alignment of motor. Motor can be installed in any orientation
6. True concentric motor shaft clamping connection, optimized for your specific motor. Reduced inertia for dynamic performance and balanced for high speed operation
7. Ring gear machined directly into the housing, not welded or pressed in. Provides greater concentricity and elimination of speed fluctuation

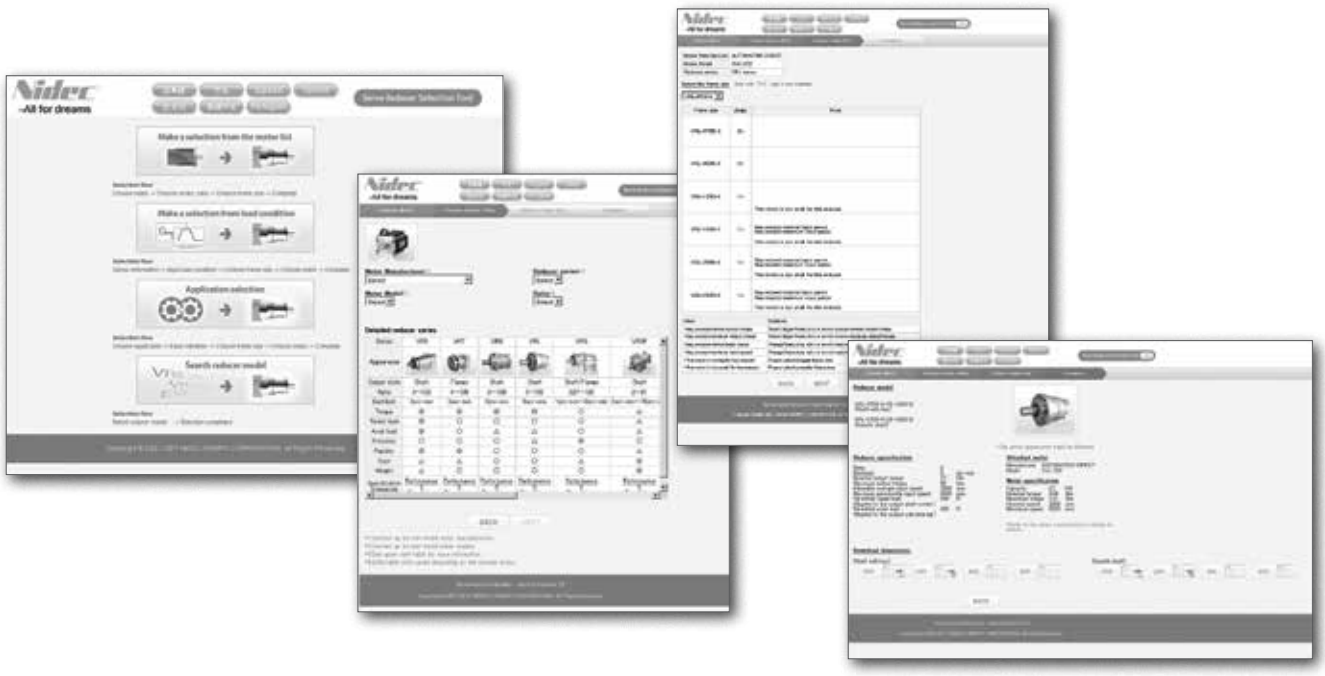
VRS Series Model Code

VRS – 100 C – 7 – K 3 – 19HB16

- 19HB16 — Motor mounting code (*1)
- 3 — Backlash: 3 arc-min
- K — Output mounting style: K: Keyed shaft; S: Smooth shaft
- 7 — Ratio: 1-Stage: 3, 4, 5, 6, 7, 8, 9, 10; 2-Stage: 15, 16, 20, 25, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
- C — Design version. **B** design version in exhaustion. Available in demand.
- 100 — Frame size: 060, 075, 100, 140, 180, 210, 240
- VRS — Series

*1) Motor mounting code varies depending on the motor. Use the selection tool link below to configure the code.

Contact us for additional information or refer to our online gearhead selection tool.
Selection tool http://sitspa.com/tools-online/



VRS 060 1-Stage Specifications

Frame Size	060									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.15							
Permitted Radial Load	[N]	*7	1700	1900	2000	2100	2200	2300	2400	2400
Permitted Axial Load	[N]	*8	2300	2500	2700	2700	2700	2700	2700	2700
Maximum Radial Load	[N]	*9	3000							
Maximum Axial Load	[N]	*10	2700							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.150	0.100	0.080	0.070	0.064	0.060	0.058	0.056
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.230	0.180	0.160	0.150	0.140	0.140	0.140	0.140
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.440	0.390	0.370	0.360	0.350	0.350	0.350	0.340
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 66							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.6							

VRS 060 2-Stage Specifications

Frame Size	060									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	27	27
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	50	50
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	100	100
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.04							
Permitted Radial Load	[N]	*7	2800	2800	3000	3000	3000	3000	3000	3000
Permitted Axial Load	[N]	*8	2700	2700	2700	2700	2700	2700	2700	2700
Maximum Radial Load	[N]	*9	3000							
Maximum Axial Load	[N]	*10	2700							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.055	0.057	0.054	0.053	0.055	0.049	0.053	0.049
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.140	0.140	0.130	0.130	0.140	0.130	0.130	0.130
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 66							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.8							

VRS 060 2-Stage Specifications

Frame Size	**060**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.04						
Permitted Radial Load	[N]	*7	3000	3000	3000	3000	3000	3000	3000
Permitted Axial Load	[N]	*8	2700	2700	2700	2700	2700	2700	2700
Maximum Radial Load	[N]	*9	3000						
Maximum Axial Load	[N]	*10	2700						
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.053	0.049	0.049	0.049	0.049	0.049	0.049
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.130	0.130	0.130	0.130	0.130	0.130	0.130
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	3						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 66						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	1.8						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

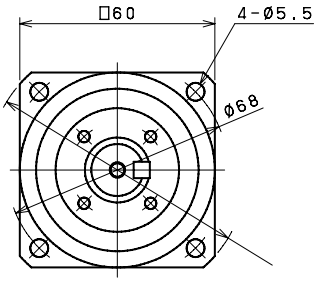
*13) Contact SIT S.p.A. for the testing conditions and environment

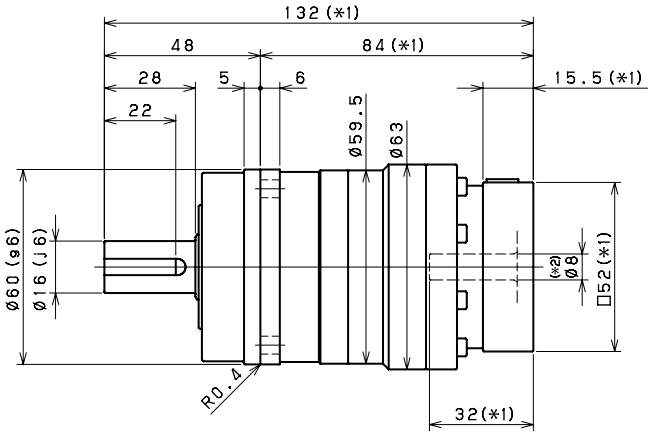
*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*15) The weight may vary slightly between models

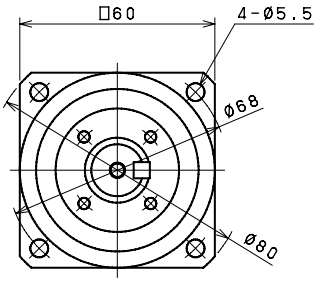
VRS o6o 1-Stage Dimensions

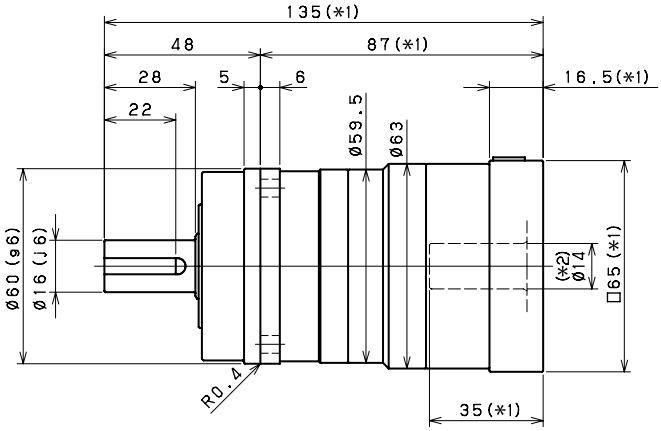
Input bore size ≦φ8 mm



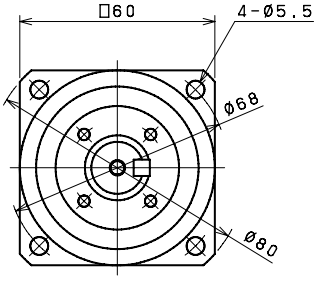


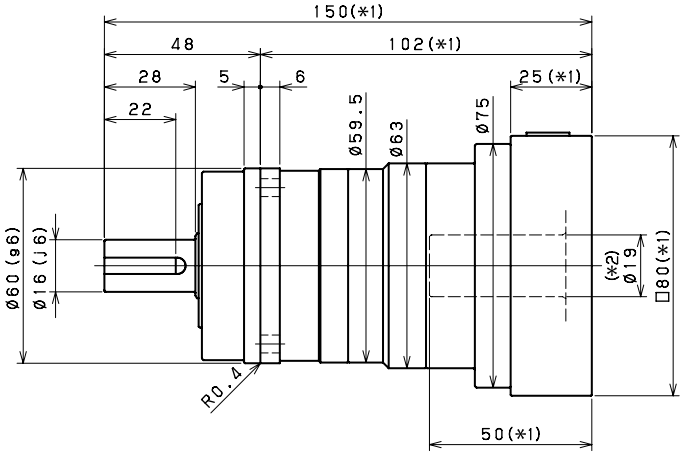
Input bore size ≦φ14 mm

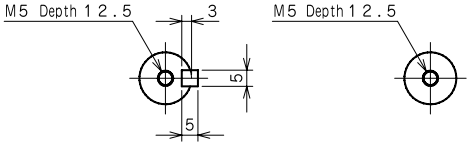




Input bore size ≦φ19 mm







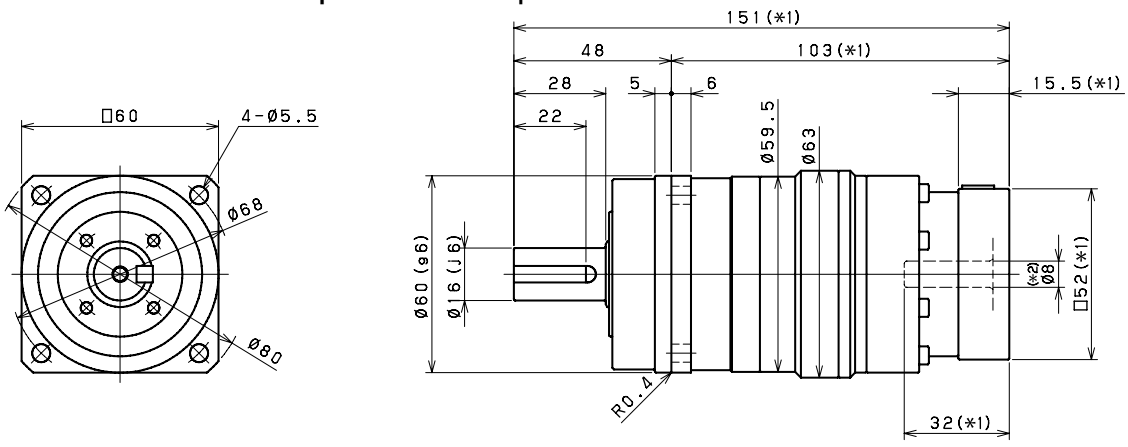
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

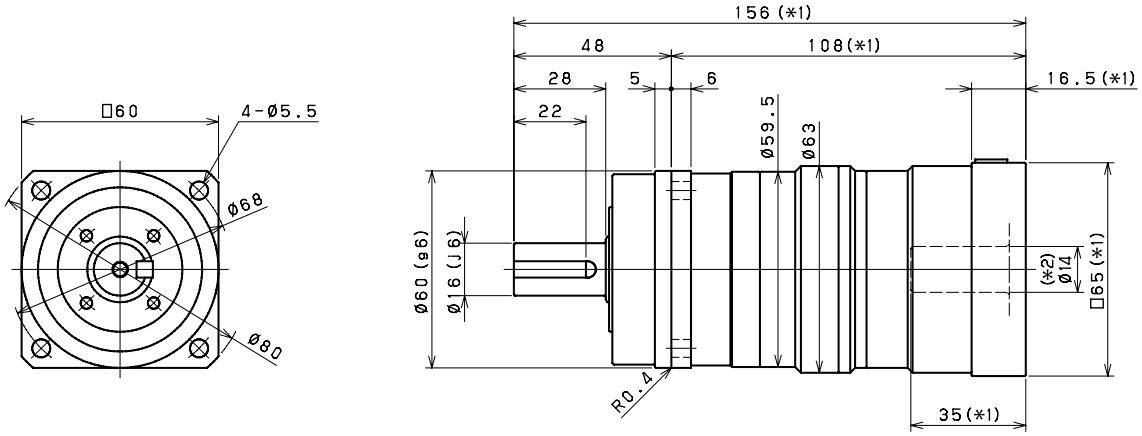
*2) Bushing will be inserted to adapt to motor shaft

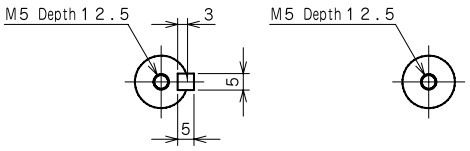
VRS 060 2-Stage Dimensions

Input bore size ≦φ8 mm



Input bore size ≦φ14 mm





Keyed shaft

Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS

VRS 075 1-Stage Specifications

Frame Size	075									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.35							
Permitted Radial Load	[N]	*7	2300	2500	2700	2800	3000	3100	3200	3300
Permitted Axial Load	[N]	*8	3400	3700	3900	3900	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.670	0.470	0.380	0.340	0.310	0.300	0.290	0.290
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	1.100	0.930	0.850	0.810	0.780	0.760	0.750	0.750
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.100	2.900	2.900	2.800	2.800	2.800	2.800	2.800
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	3.4							

VRS 075 2-Stage Specifications

Frame Size	075									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	75	75
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	125	125
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	250	250
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.06							
Permitted Radial Load	[N]	*7	3700	3800	4000	4300	4300	4300	4300	4300
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.130	0.140	0.130	0.120	0.140	0.099	0.120	0.098
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.280	0.300	0.280	0.280	0.290	0.250	0.270	0.250
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.720	0.730	0.720	0.710	0.730	0.700	0.710	0.690
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	3.8							

VRS 075 2-Stage Specifications

Frame Size			**075**						
Stage			**2-Stage**						
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.06						
Permitted Radial Load	[N]	*7	4300	4300	4300	4300	4300	4300	4300
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300						
Maximum Axial Load	[N]	*10	3900						
Moment of Inertia (≤Ø 8)	[kgcm2]	--	0.120	0.098	0.098	0.097	0.097	0.097	0.097
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.710	0.690	0.690	0.690	0.690	0.690	0.690
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	10						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	3.8						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

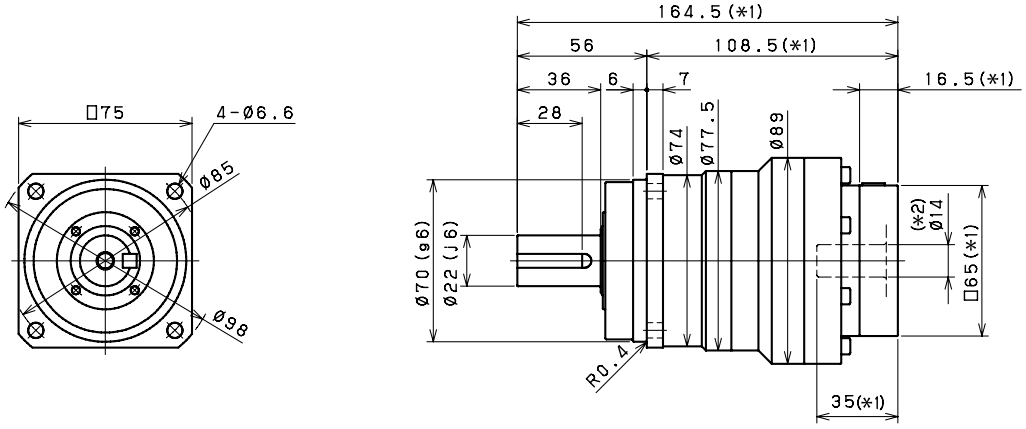
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

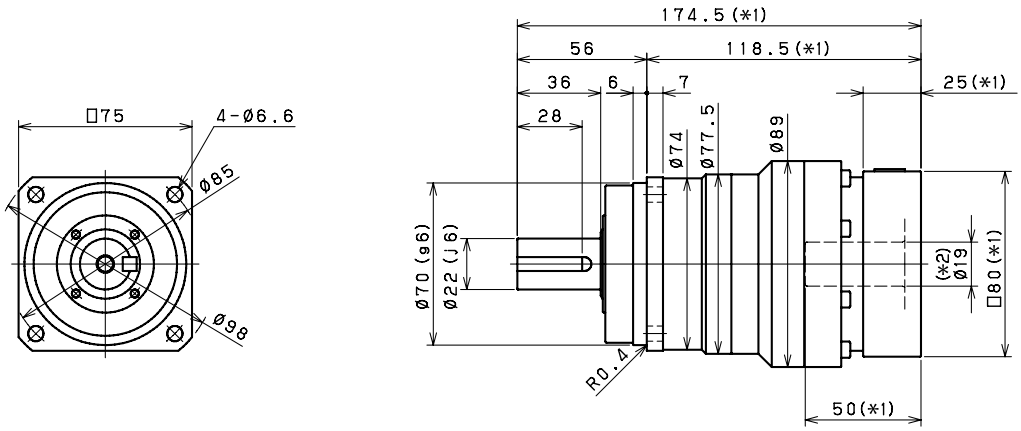
*15) The weight may vary slightly between models

VRS 075 1-Stage Dimensions

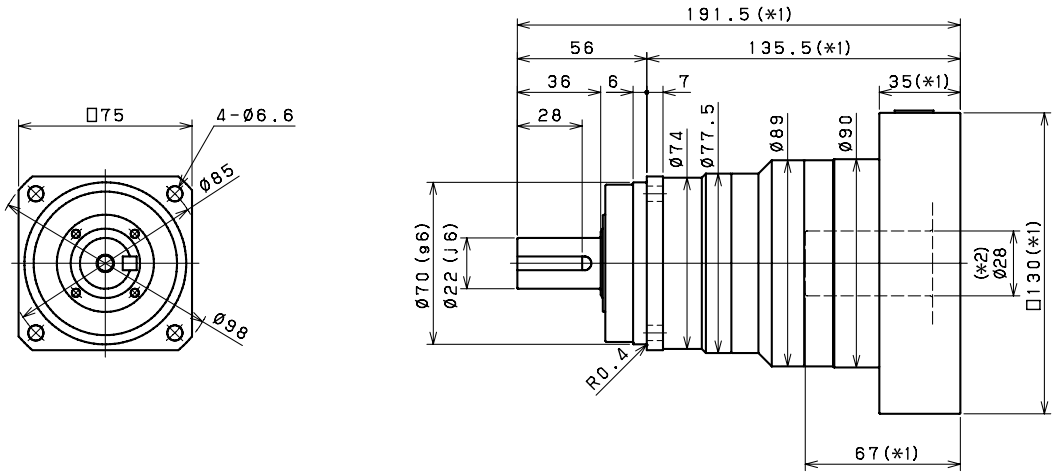
Input bore size ≦φ14 mm

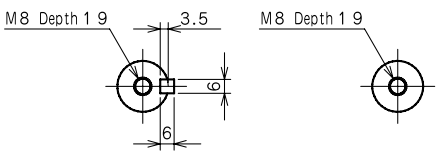


Input bore size ≦φ19 mm



Input bore size ≦φ28 mm





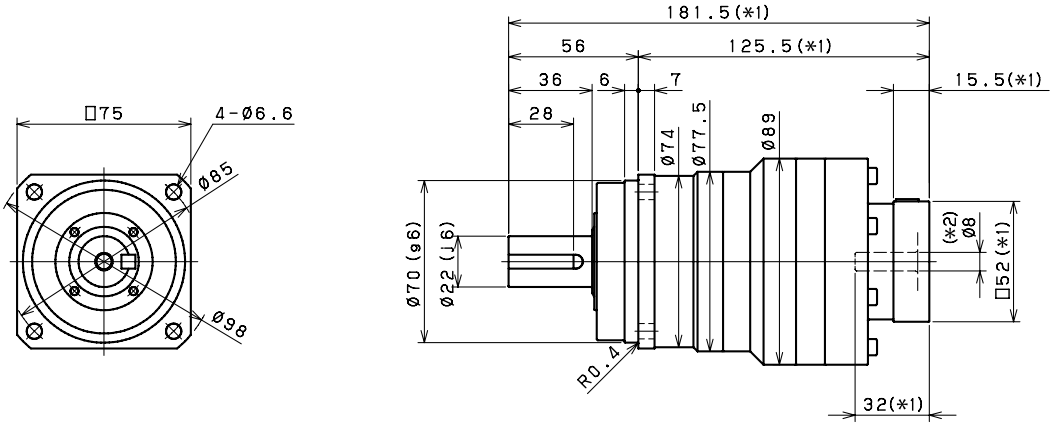
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

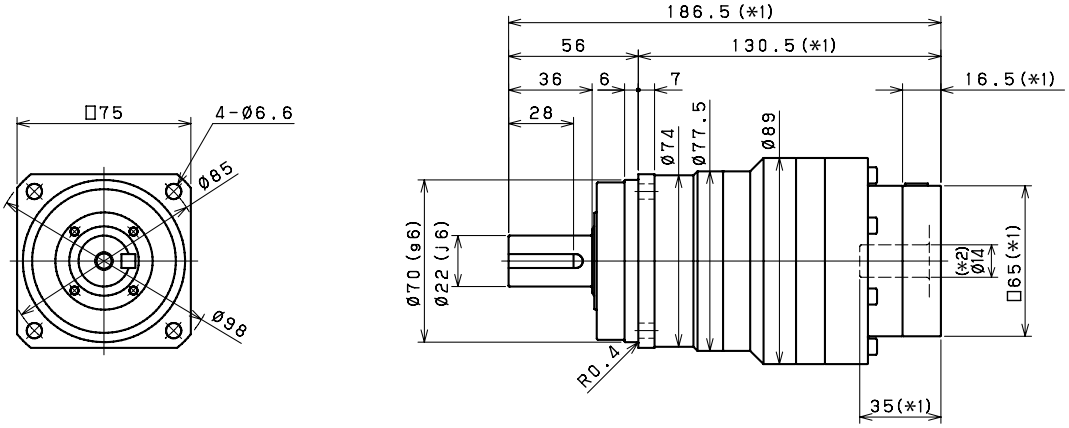
*2) Bushing will be inserted to adapt to motor shaft

VRS 075 2-Stage Dimensions

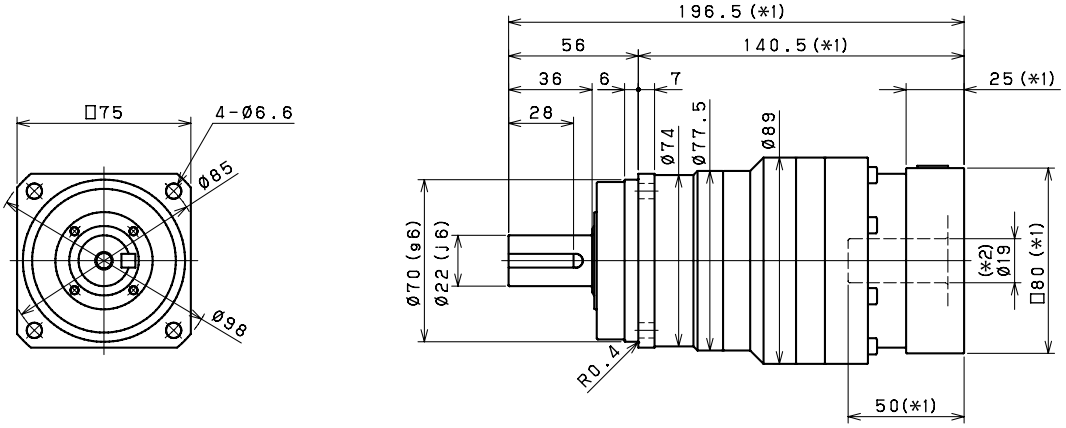
Input bore size ≦φ8 mm

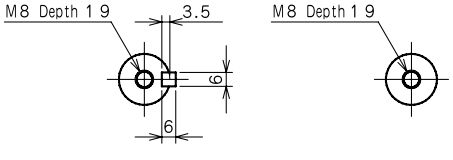


Input bore size ≦φ14 mm



Input bore size ≦φ19 mm





Keyed shaft　　Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS 100 1-Stage Specifications

Frame Size	100									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	120	120	180	180	180	180	120	120
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.30							
Permitted Radial Load	[N]	*7	3400	3700	4000	4200	4400	4600	4800	4900
Permitted Axial Load	[N]	*8	4800	5200	5600	5900	6100	6300	6300	6300
Maximum Radial Load	[N]	*9	7000							
Maximum Axial Load	[N]	*10	6300							
Moment of Inertia (≤Ø 14)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	3.200	2.000	1.500	1.300	1.100	1.000	0.960	0.930
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	5.200	4.000	3.600	3.300	3.100	3.000	3.000	3.000
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	13.000	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 71							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	8.1							

VRS 100 2-Stage Specifications

Frame Size	100									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	180	180
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	330	330
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	625	625
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.42							
Permitted Radial Load	[N]	*7	5600	5700	6100	6500	6700	6900	7000	7000
Permitted Axial Load	[N]	*8	6300	6300	6300	6300	6300	6300	6300	6300
Maximum Radial Load	[N]	*9	7000							
Maximum Axial Load	[N]	*10	6300							
Moment of Inertia (≤Ø 14)	[kgcm2]	--	0.420	0.480	0.400	0.380	0.440	0.290	0.370	0.280
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.860	0.910	0.830	0.820	0.870	0.740	0.810	0.730
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.800	2.900	2.800	2.800	2.800	2.700	2.700	2.700
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 71							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	8.8							

VRS 100 2-Stage Specifications

Frame Size			**100**						
Stage			**2-Stage**						
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	120
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.42						
Permitted Radial Load	[N]	*7	7000	7000	7000	7000	7000	7000	7000
Permitted Axial Load	[N]	*8	6300	6300	6300	6300	6300	6300	6300
Maximum Radial Load	[N]	*9	7000						
Maximum Axial Load	[N]	*10	6300						
Moment of Inertia (≤Ø 14)	[kgcm2]	--	0.370	0.280	0.280	0.280	0.280	0.270	0.270
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.800	0.730	0.730	0.730	0.730	0.730	0.730
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.700	2.700	2.700	2.700	2.700	2.700	2.700
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	31						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 71						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	8.8						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

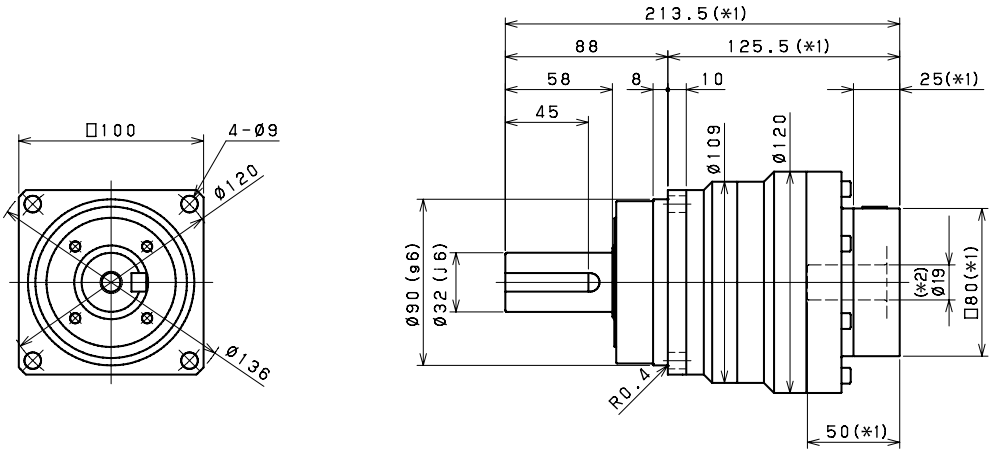
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

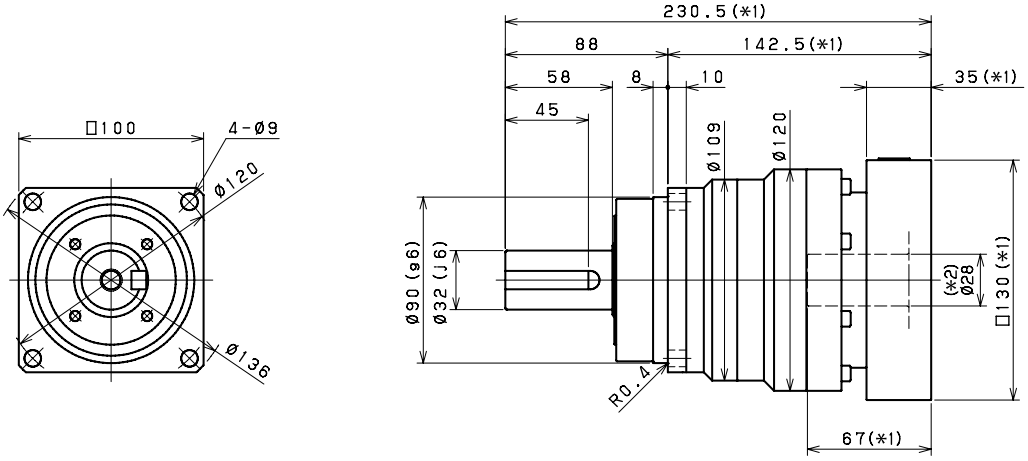
*15) The weight may vary slightly between models

VRS 100 1-Stage Dimensions

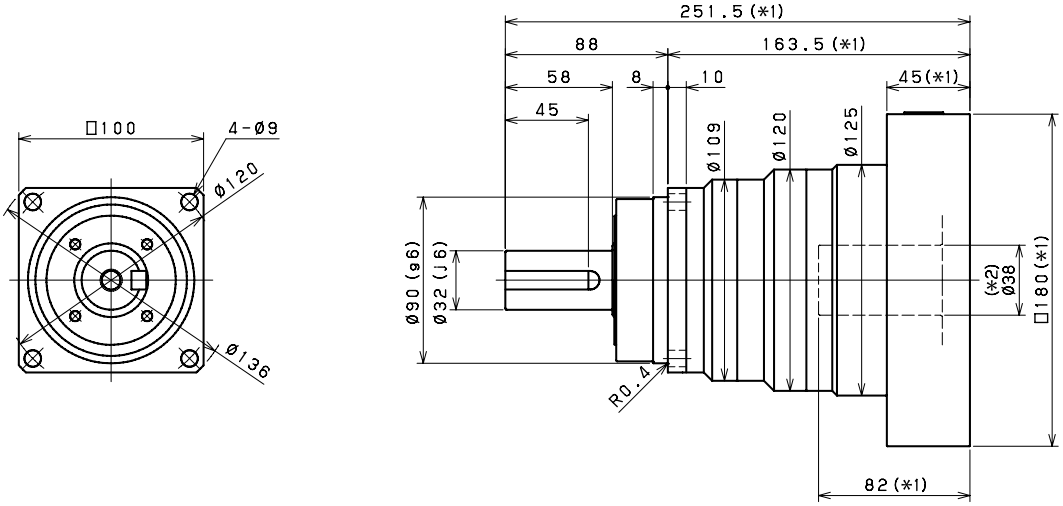
Input bore size ≦φ19 mm

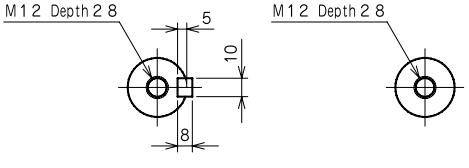


Input bore size ≦φ28 mm



Input bore size ≦φ38 mm





Keyed shaft

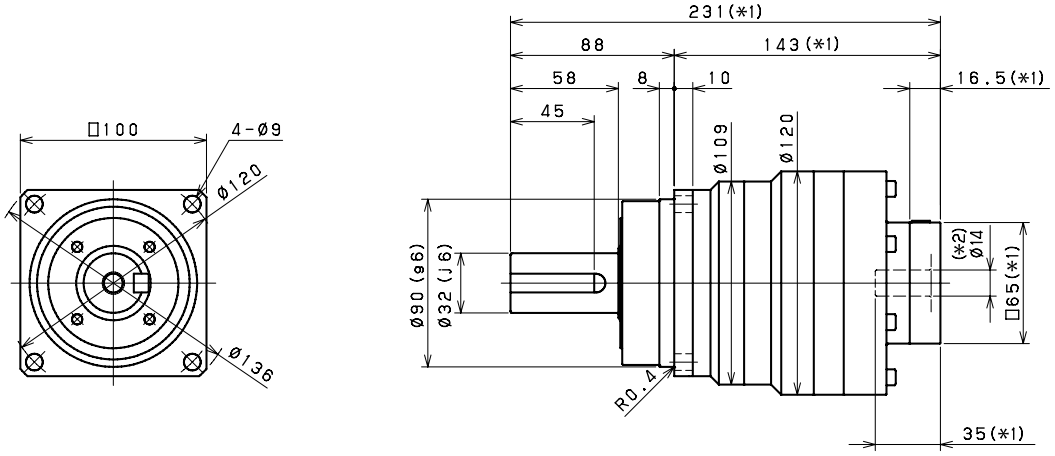
Smooth shaft

*1) Length will vary depending on motor

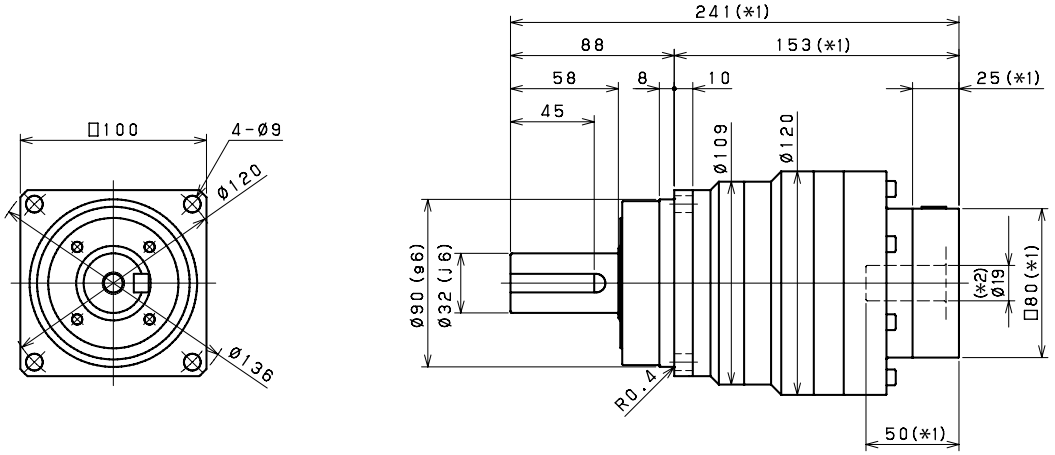
*2) Bushing will be inserted to adapt to motor shaft

VRS 100 2-Stage Dimensions

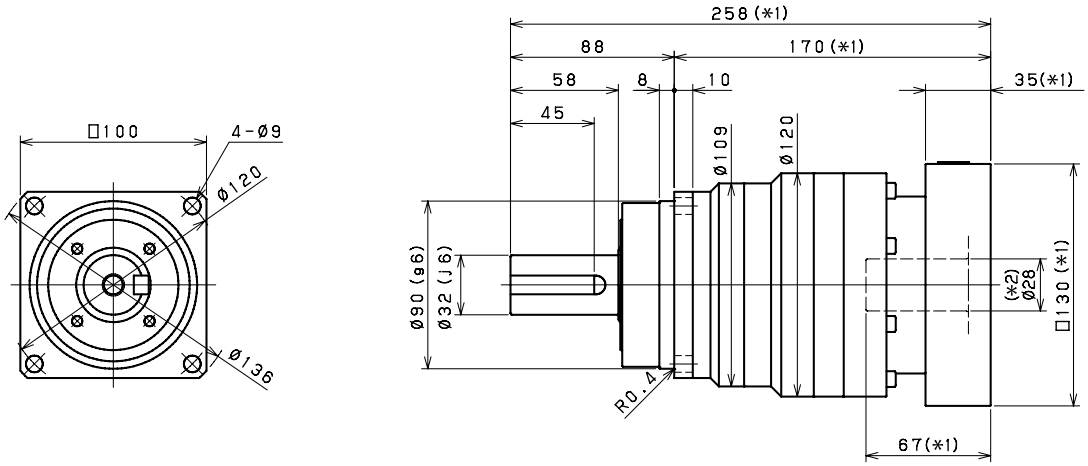
Input bore size ≦φ14 mm

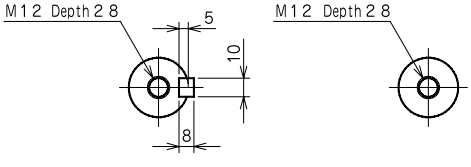


Input bore size ≦φ19 mm



Input bore size ≦φ28 mm





Keyed shaft

Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS

VRS 140 1-Stage Specifications

Frame Size	140									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	240	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	1.63							
Permitted Radial Load	[N]	*7	6700	7400	7900	8300	8700	9100	9400	9700
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000	9000
Maximum Radial Load	[N]	*9	10000							
Maximum Axial Load	[N]	*10	9000							
Moment of Inertia (≤Ø 19)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	12.000	7.400	5.800	4.900	4.100	3.800	3.600	3.400
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	20.000	15.000	13.000	13.000	12.000	12.000	11.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	42.000	37.000	36.000	35.000	34.000	34.000	34.000	33.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	17							

VRS 140 2-Stage Specifications

Frame Size	140									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	360	360
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	700	700
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1250	1250
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	0.56							
Permitted Radial Load	[N]	*7	10000	10000	10000	10000	10000	10000	10000	10000
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000	9000
Maximum Radial Load	[N]	*9	10000							
Maximum Axial Load	[N]	*10	9000							
Moment of Inertia (≤Ø 19)	[kgcm2]	--	1.300	1.500	1.200	1.100	1.400	0.850	1.100	0.830
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.200	3.500	3.100	3.100	3.300	2.800	3.100	2.800
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	11.000	11.000	11.000	11.000	11.000	10.000	11.000	10.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	19							

VRS 140 2-Stage Specifications

Frame Size			**140**						
Stage			**2-Stage**						
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000						
Maximum Input Speed	[rpm]	*5	4000						
No Load Running Torque	[Nm]	*6	0.56						
Permitted Radial Load	[N]	*7	10000	10000	10000	10000	10000	10000	10000
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000
Maximum Radial Load	[N]	*9	10000						
Maximum Axial Load	[N]	*10	9000						
Moment of Inertia (≤Ø 19)	[kgcm2]	--	1.100	0.810	0.810	0.800	0.800	0.800	0.800
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.000	2.800	2.800	2.800	2.800	2.800	2.800
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	11.000	10.000	10.000	10.000	10.000	10.000	10.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	60						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	19						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

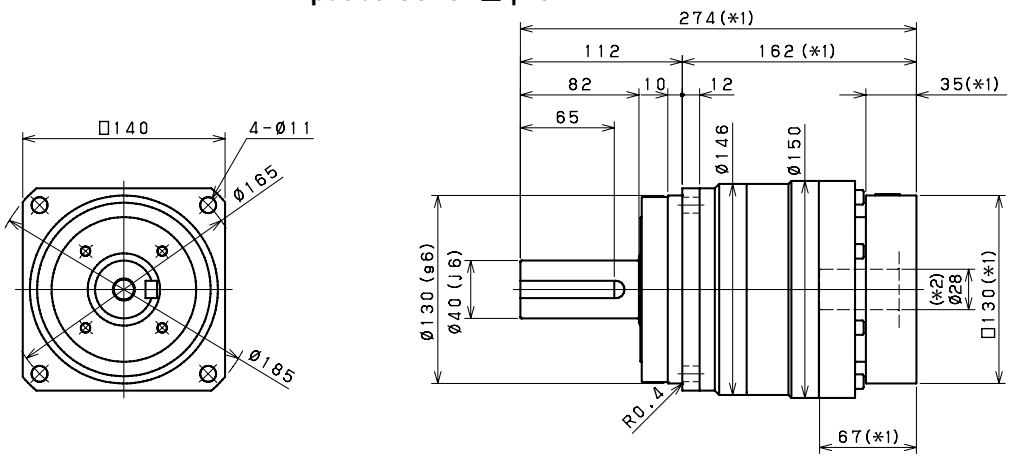
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

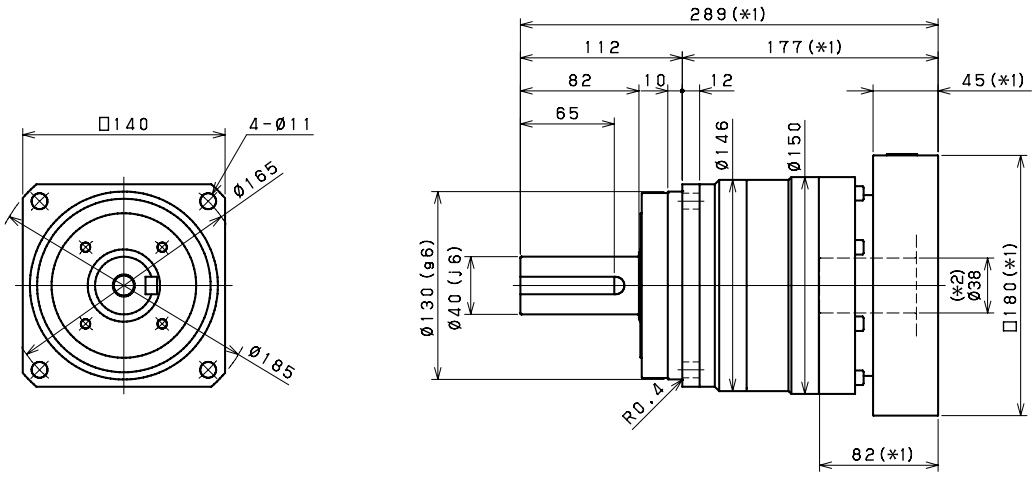
*15) The weight may vary slightly between models

VRS 140 1-Stage Dimensions

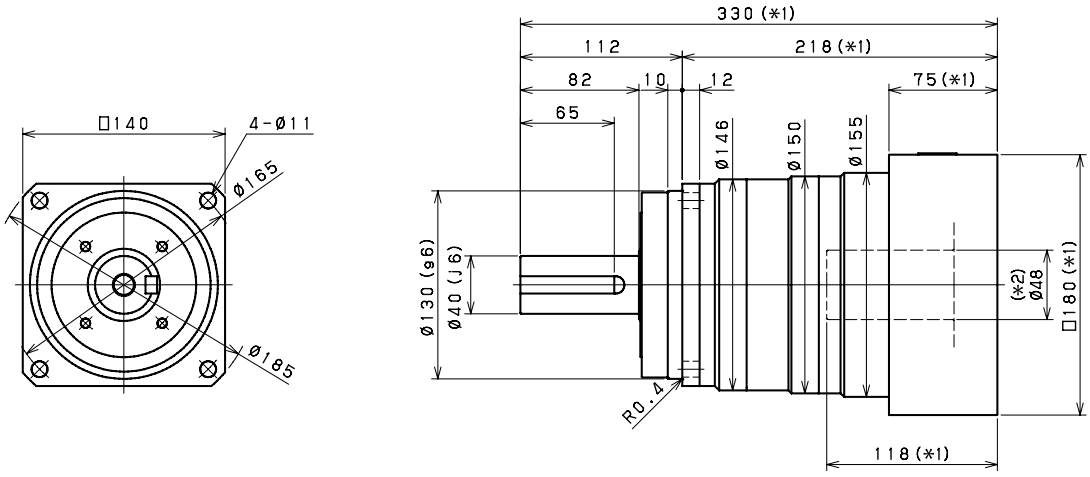
Input bore size ≦φ28 mm

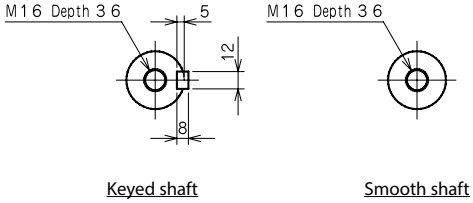


Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





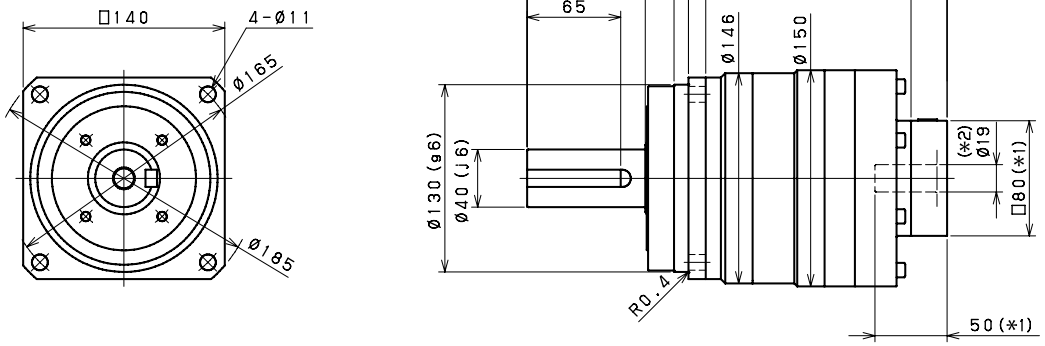
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

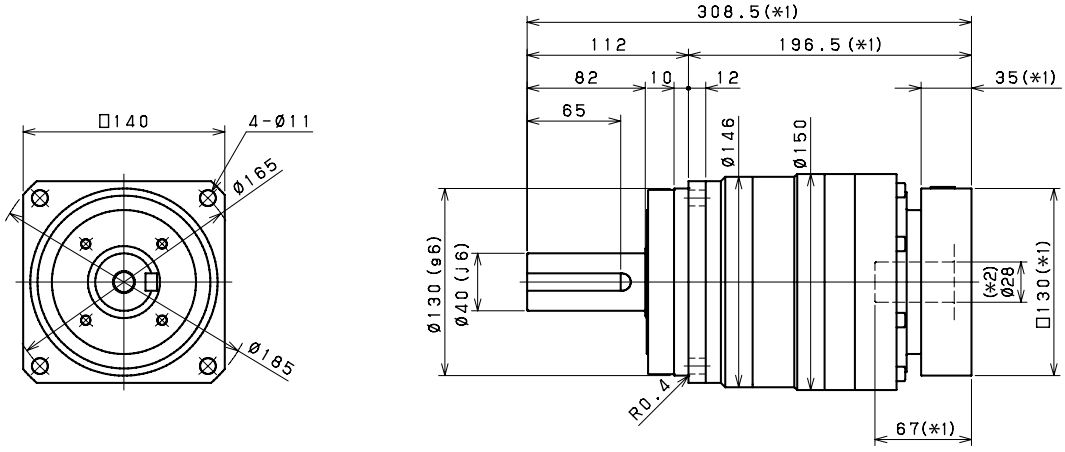
*2) Bushing will be inserted to adapt to motor shaft

VRS 140 2-Stage Dimensions

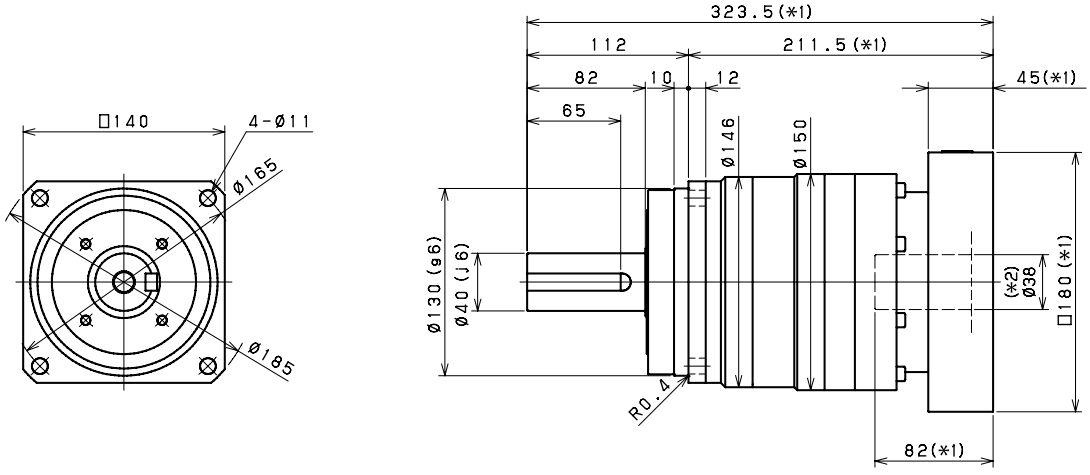
Input bore size ≦φ19 mm

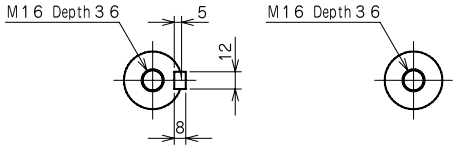


Input bore size ≦φ28 mm



Input bore size ≦φ38 mm





Keyed shaft　　Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS 180 1-Stage Specifications

Frame Size	180									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	2.68							
Permitted Radial Load	[N]	*7	12000	13000	14000	15000	16000	17000	17000	18000
Permitted Axial Load	[N]	*8	16000	17000	17000	17000	17000	17000	17000	17000
Maximum Radial Load	[N]	*9	19000							
Maximum Axial Load	[N]	*10	17000							
Moment of Inertia (≤Ø 28)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	42.000	27.000	21.000	18.000	16.000	15.000	14.000	14.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	64.000	49.000	43.000	40.000	38.000	37.000	36.000	36.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	120.000	110.000	100.000	100.000	98.000	97.000	96.000	96.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	39							

VRS 180 2-Stage Specifications

Frame Size	180									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	750	750
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	1400	1400
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2750	2750
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	1.39							
Permitted Radial Load	[N]	*7	19000	19000	19000	19000	19000	19000	19000	19000
Permitted Axial Load	[N]	*8	17000	17000	17000	17000	17000	17000	17000	17000
Maximum Radial Load	[N]	*9	19000							
Maximum Axial Load	[N]	*10	17000							
Moment of Inertia (≤Ø 28)	[kgcm2]	--	4.700	5.400	4.300	4.200	4.900	3.200	4.100	3.200
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	12.000	13.000	12.000	12.000	13.000	11.000	12.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	34.000	35.000	34.000	34.000	35.000	33.000	34.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 67							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	39							

VRS 180 2-Stage Specifications

Frame Size			**180**						
Stage			**2-Stage**						
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500						
Maximum Input Speed	[rpm]	*5	3000						
No Load Running Torque	[Nm]	*6	1.39						
Permitted Radial Load	[N]	*7	19000	19000	19000	19000	19000	19000	19000
Permitted Axial Load	[N]	*8	17000	17000	17000	17000	17000	17000	17000
Maximum Radial Load	[N]	*9	19000						
Maximum Axial Load	[N]	*10	17000						
Moment of Inertia (≤Ø 28)	[kgcm2]	--	4.000	3.100	3.100	3.100	3.100	3.100	3.100
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	34.000	33.000	33.000	33.000	33.000	33.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	175						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	39						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

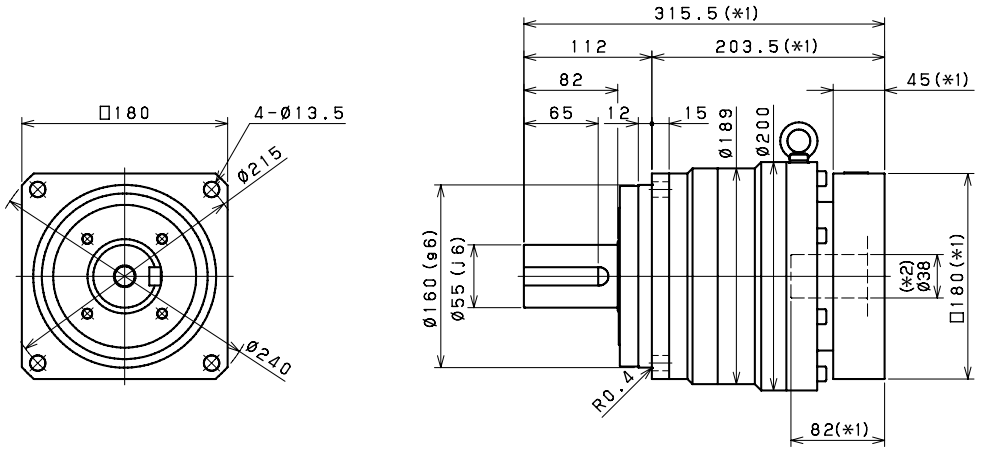
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

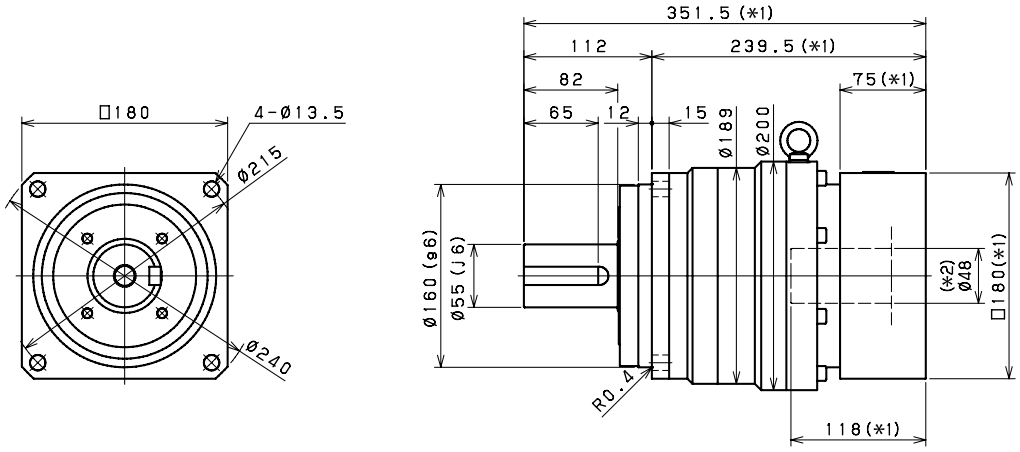
*15) The weight may vary slightly between models

VRS 180 1-Stage Dimensions

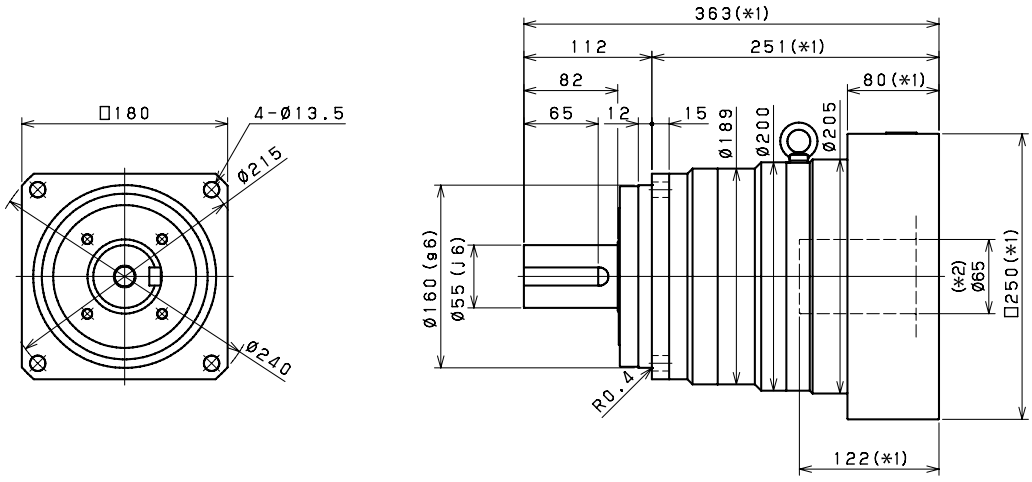
Input bore size ≦φ38 mm

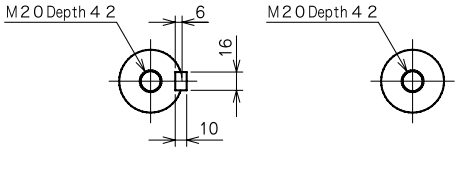


Input bore size ≦φ48 mm



Input bore size ≦φ65 mm





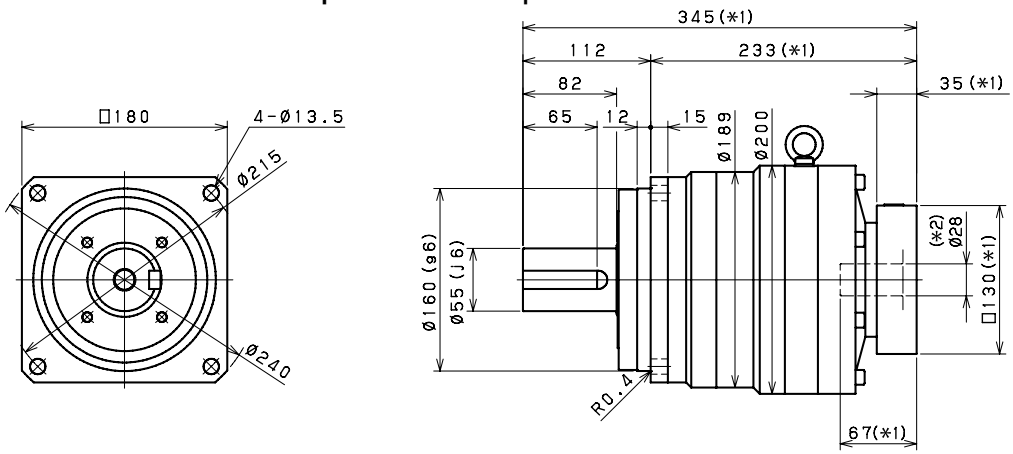
Keyed shaft Smooth shaft

*1) Length will vary depending on motor

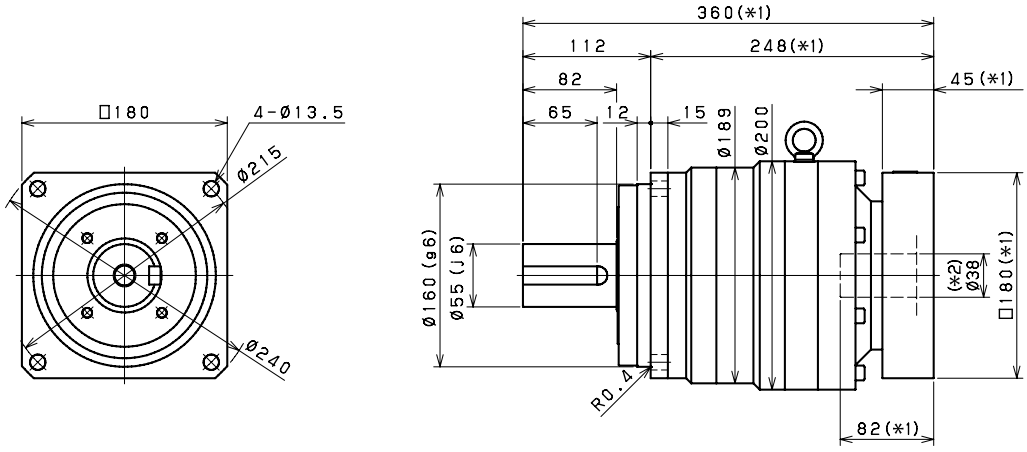
*2) Bushing will be inserted to adapt to motor shaft

VRS 180 2-Stage Dimensions

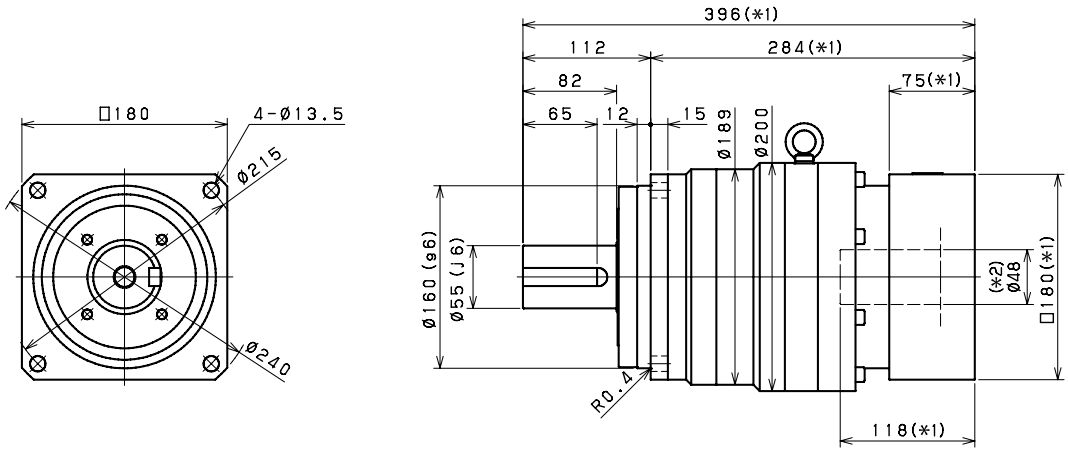
Input bore size ≦φ28 mm

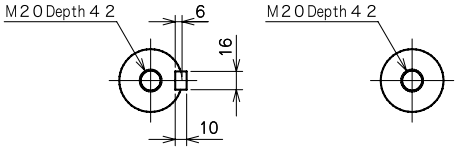


Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





Keyed shaft Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS 210 1-Stage Specifications

Frame Size	210									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1500	1000	1000
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	2200	1900	1600
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	2.92							
Permitted Radial Load	[N]	*7	17000	18000	20000	21000	22000	23000	24000	24000
Permitted Axial Load	[N]	*8	22000	22000	22000	22000	22000	22000	22000	22000
Maximum Radial Load	[N]	*9	24000							
Maximum Axial Load	[N]	*10	22000							
Moment of Inertia (≤Ø 38)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	92.000	63.000	53.000	47.000	43.000	40.000	39.000	38.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	150.000	120.000	110.000	110.000	100.000	100.000	99.000	98.000
Efficiency	[%]	*11	97							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	59							

VRS 210 2-Stage Specifications

Frame Size	210									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1500	1500
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	1600	2300	2300
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	5000	5000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	1.14							
Permitted Radial Load	[N]	*7	24000	24000	24000	24000	24000	24000	24000	24000
Permitted Axial Load	[N]	*8	22000	22000	22000	22000	22000	22000	22000	22000
Maximum Radial Load	[N]	*9	24000							
Maximum Axial Load	[N]	*10	22000							
Moment of Inertia (≤Ø 38)	[kgcm2]	--	14.000	16.000	14.000	14.000	15.000	12.000	13.000	12.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	36.000	37.000	36.000	35.000	36.000	34.000	35.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 61							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	60							

VRS 210 2-Stage Specifications

Frame Size	**210**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1000
Maximum Acceleration Torque	[Nm]	*2	1300	2300	2300	2300	1800	1300	1200
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	*4	1000						
Maximum Input Speed	[rpm]	*5	2000						
No Load Running Torque	[Nm]	*6	1.14						
Permitted Radial Load	[N]	*7	24000	24000	24000	24000	24000	24000	24000
Permitted Axial Load	[N]	*8	22000	22000	22000	22000	22000	22000	22000
Maximum Radial Load	[N]	*9	24000						
Maximum Axial Load	[N]	*10	22000						
Moment of Inertia (≤Ø 38)	[kgcm2]	--	13.000	12.000	12.000	12.000	12.000	12.000	12.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	35.000	33.000	33.000	33.000	33.000	33.000	33.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92						
Torsional Rigidity	[Nm/arc-min]	*12	400						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 61						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	60						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

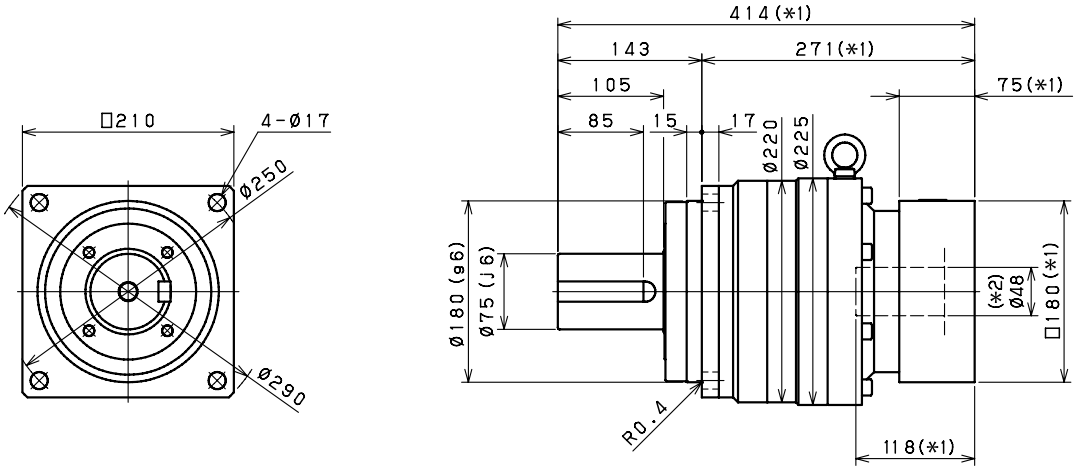
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

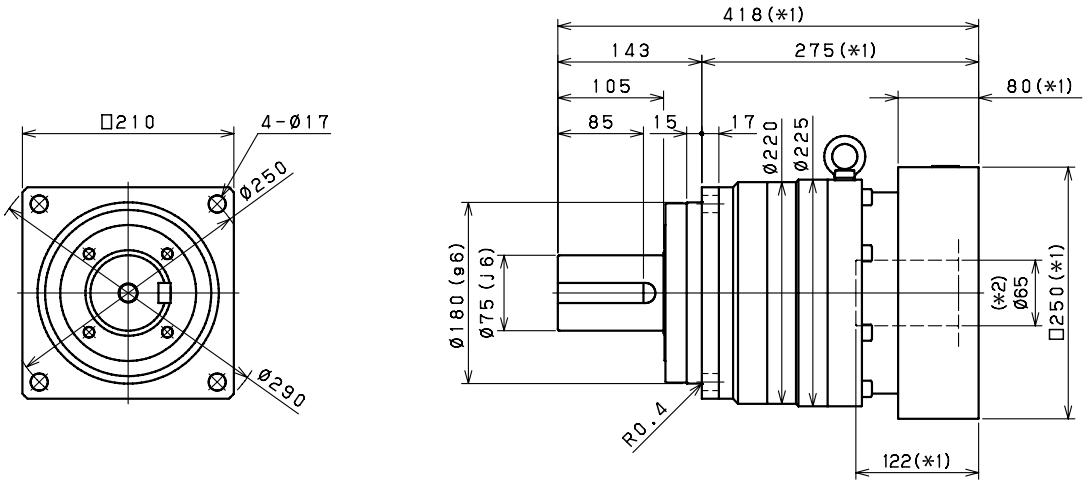
*15) The weight may vary slightly between models

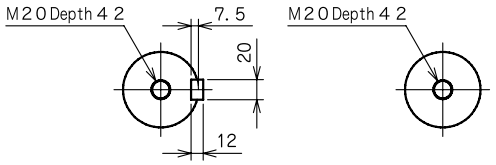
VRS 210 1-Stage Dimensions

Input bore size ≦φ48 mm



Input bore size ≦φ65 mm





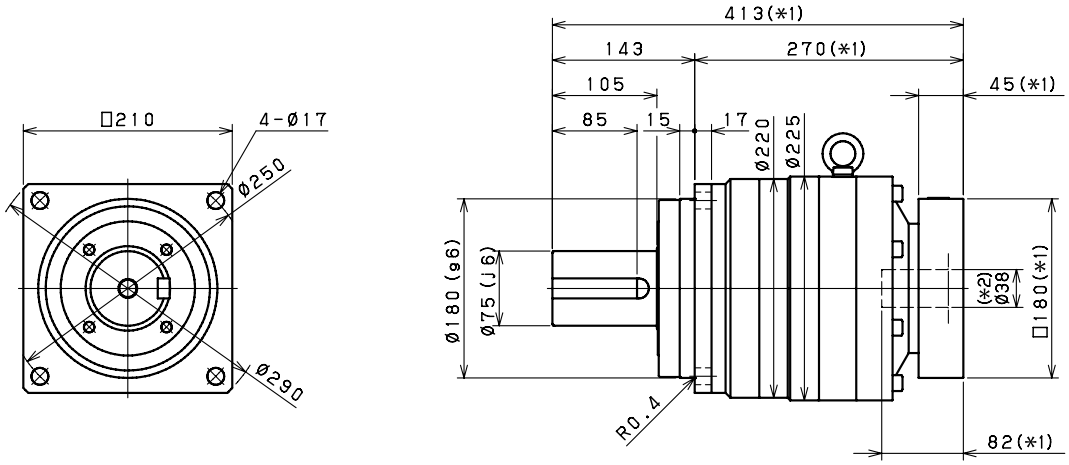
Keyed shaft Smooth shaft

*1) Length will vary depending on motor.

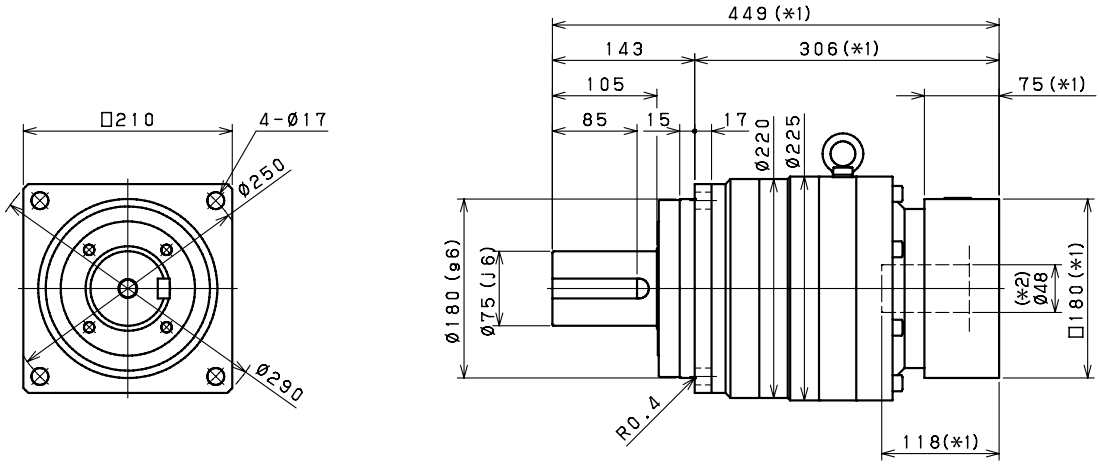
*2) Bushing will be inserted to adapt to motor shaft

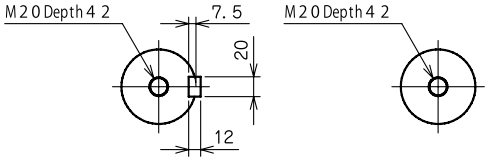
VRS 210 2-Stage Dimensions

Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





Keyed shaft　　Smooth shaft

*1) Length will vary depending on motor.

*2) Bushing will be inserted to adapt to motor shaft

VRS

VRS 240 1-Stage Specifications

Frame Size	240									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	1600	2400	2400	2400	2400	2400	1600	1600
Maximum Acceleration Torque	[Nm]	*2	2500	3700	3700	3700	3700	3600	3000	2600
Emergency Stop Torque	[Nm]	*3	6000	8000	8000	8000	8000	8000	6000	6000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	5.96							
Permitted Radial Load	[N]	*7	21000	22000	24000	25000	26000	28000	29000	29000
Permitted Axial Load	[N]	*8	27000	27000	27000	27000	27000	27000	27000	27000
Maximum Radial Load	[N]	*9	30000							
Maximum Axial Load	[N]	*10	27000							
Moment of Inertia (≤Ø 48)	[kgcm2]	--	--	--	--	--	--	--	--	--
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	220.000	160.000	130.000	120.000	110.000	110.000	110.000	100.000
Efficiency	[%]	*11	97							
Torsional Rigidity	[Nm/arc-min]	*12	550							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 62							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	85							

VRS 240 2-Stage Specifications

Frame Size	240									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	1600	2400	2400	2400	2400	1600	2400	2400
Maximum Acceleration Torque	[Nm]	*2	2500	3700	3700	3700	3700	2500	3700	3700
Emergency Stop Torque	[Nm]	*3	6000	8000	8000	8000	8000	6000	8000	8000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	1.28							
Permitted Radial Load	[N]	*7	30000	30000	30000	30000	30000	30000	30000	30000
Permitted Axial Load	[N]	*8	27000	27000	27000	27000	27000	27000	27000	27000
Maximum Radial Load	[N]	*9	30000							
Maximum Axial Load	[N]	*10	27000							
Moment of Inertia (≤Ø 48)	[kgcm2]	--	40.000	43.000	39.000	39.000	41.000	35.000	38.000	35.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92							
Torsional Rigidity	[Nm/arc-min]	*12	550							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	dB [A]	*13	≤ 62							
Protection Class	--	*14	IP54 (IP65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	89							

VRS 240 2-Stage Specifications

Frame Size	**240**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	1600	2400	2400	2400	2400	1600	1600
Maximum Acceleration Torque	[Nm]	*2	2100	3700	3700	3700	2700	2100	1800
Emergency Stop Torque	[Nm]	*3	6000	8000	8000	8000	8000	6000	6000
Nominal Input Speed	[rpm]	*4	1000						
Maximum Input Speed	[rpm]	*5	2000						
No Load Running Torque	[Nm]	*6	1.28						
Permitted Radial Load	[N]	*7	30000	30000	30000	30000	30000	30000	30000
Permitted Axial Load	[N]	*8	27000	27000	27000	27000	27000	27000	27000
Maximum Radial Load	[N]	*9	30000						
Maximum Axial Load	[N]	*10	27000						
Moment of Inertia (≤Ø 48)	[kgcm2]	--	38.000	35.000	35.000	34.000	34.000	34.000	34.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92						
Torsional Rigidity	[Nm/arc-min]	*12	550						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 62						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0-40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	89						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

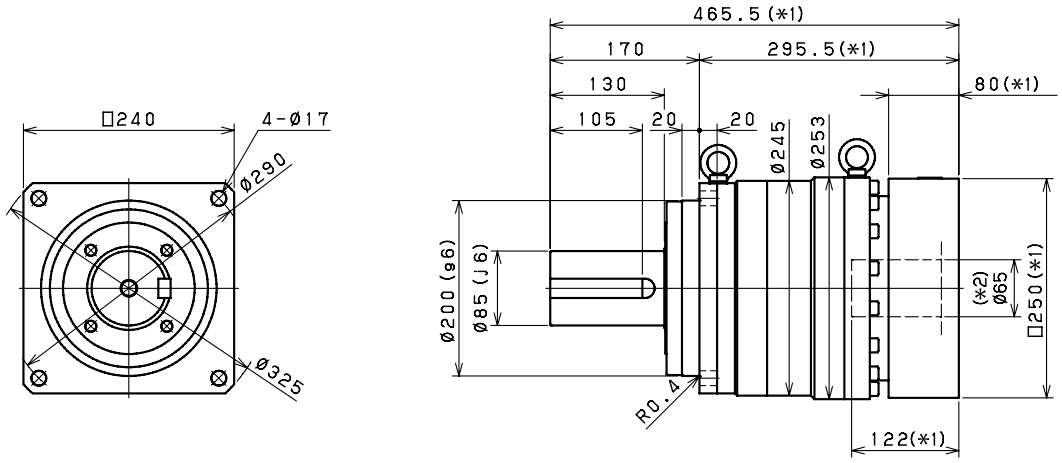
*13) Contact SIT S.p.A. for the testing conditions and environment

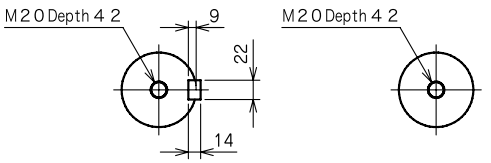
*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*15) The weight may vary slightly between models

VRS 240 1-Stage Dimensions

Input bore size ≦φ65 mm





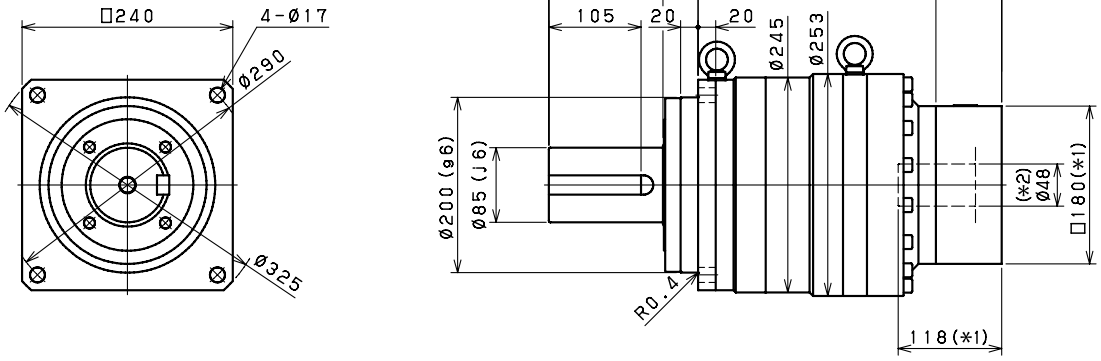
Keyed shaft Smooth shaft

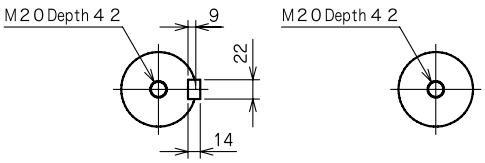
*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS 240 2-Stage Dimensions

Input bore size ≦φ48 mm





Keyed shaft Smooth shaft

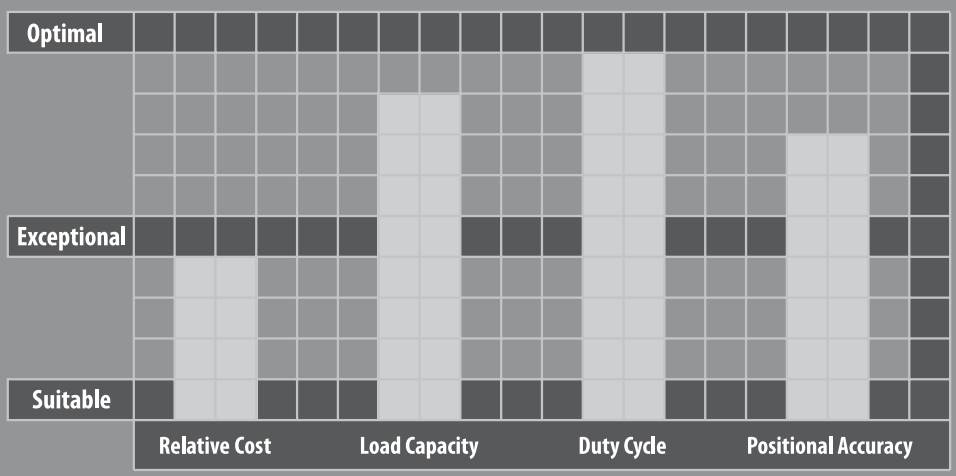
*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT SERIES

The VRT series sets the new standard in applications requiring extremely high torque density and rigidity. Its compact design and robotic industry ISO flange is ideal for equipment requiring high speed, high precision indexing movement and streamlined installation. The remarkable torsional stiffness and ultra low backlash combine to provide outstanding positioning accuracy.

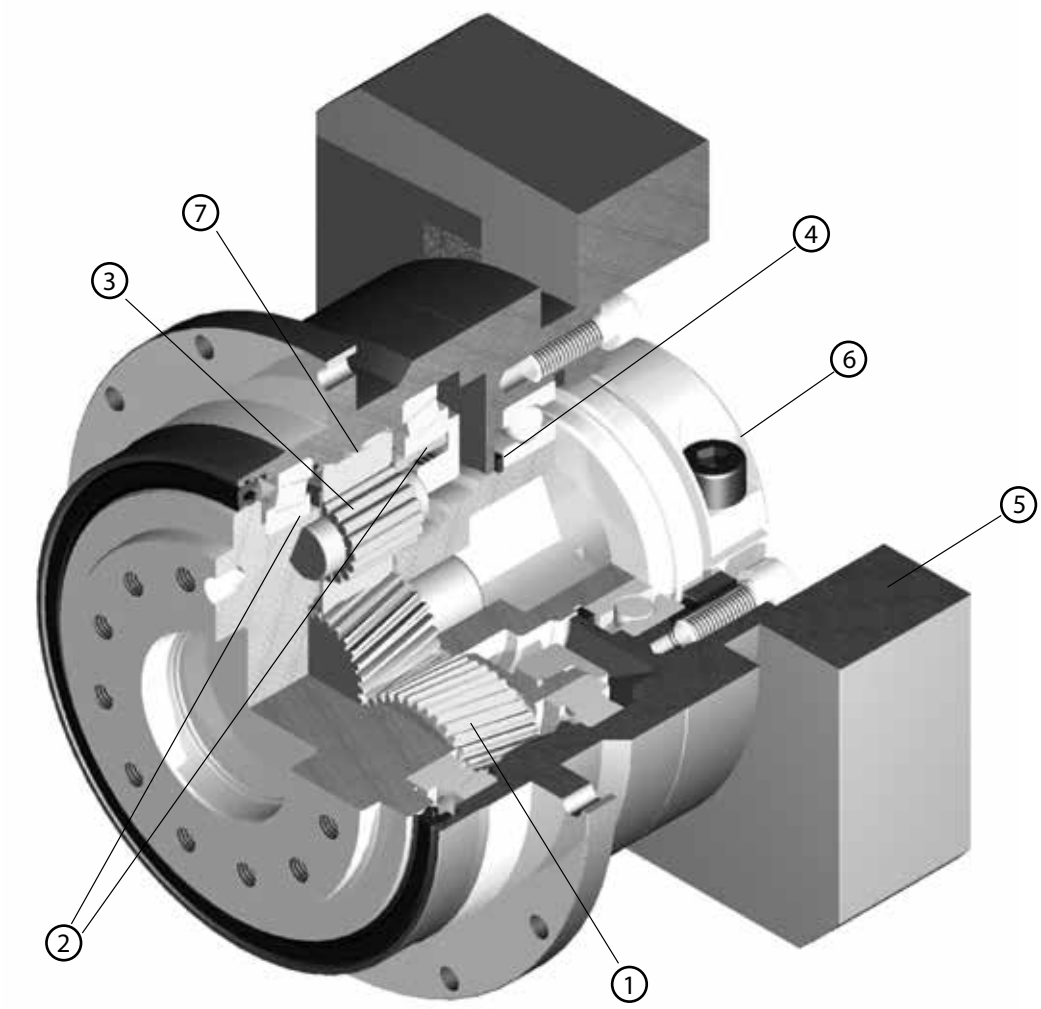
This product comes standard with <3 arc-min backlash, but is also available with reduced options down to <1 arc-min. The VRT is the most robust planetary solution in the marketplace and is used across a numerous range of applications including 7th axis robot shuttles, dial tables, end of arm tooling and any other axis where installation space, reduced assembly time and torque density play an important role.



VRT SERIES

- The most compact and robust option for machine builders. Tapered roller bearings allow for high radial and axial loading
- ISO robotic mounting interface for superior flexibility and direct mounting of pinions, pulleys and turntables
- Exceptional torsional rigidity for high positional accuracy needs
- Best-In-class standard backlash (≤3 arc-min) with reduced backlash options available
- 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

VRT Series Features



1. Carburized, case hardened helical gears with proprietary secondary finishing process for higher accuracy and smooth, quiet operation
2. One piece output shaft and planet carrier with two robust tapered bearings straddling the planet gears. Higher radial/axial load capacity, stiffness, torque density and safety factor, with guaranteed alignment of gearing
3. Uncaged needle roller bearings provide excellent torque density and torsional rigidity
4. Unique labyrinth input seal design greatly reduces heat and increases system efficiency. IP65 protection is available for wash down applications
5. Optimized mounting system with active centering on motor pilot diameter guarantees alignment of motor. Motor can be installed in any orientation
6. True concentric motor shaft clamping connection, optimized for your specific motor. Reduced inertia for dynamic performance and balanced for high speed operation
7. Ring gear machined directly into the housing, not welded or pressed in. Provides greater concentricity and elimination of speed fluctuation

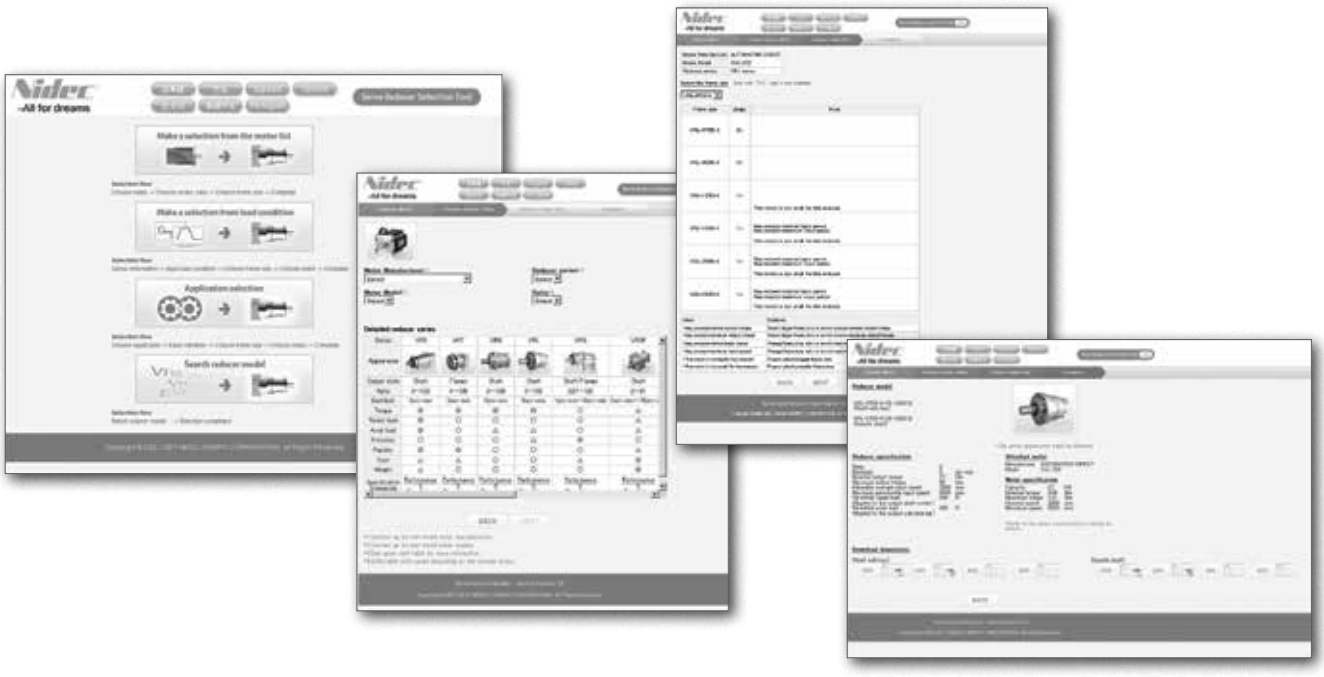
VRT Series Model Code

VRT – 110 C – 7 – F 3 – 19HB16

- **19HB16** — Motor mounting code (*1)
- **3** — Backlash: ≤ 3 arc-min
- **F** — Output mounting style: F: Flange
- **7** — Ratio: 1-Stage: 4, 5, 7, 10; 2-Stage: 16, 20, 25, 28, 35, 40, 50, 70, 100
- **C** — Design version
  B design version in exhaustion. Available in demand.
- **110** — Frame size: 047, 064, 090, 110, 140, 200, 255, 285
- **VRT** — Series

*1) Motor mounting code varies depending on the motor. Use the selection tool link below to configure the code.

Contact us for additional information or refer to our online gearbox selection tool.
Selection tool http://sitspa.com/tools-online/



VRT 047 1-Stage Specifications

Frame Size	047								
Stage	1-Stage								
Ratio	Unit	Notes	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	9	9	9	9	9	6	6
Maximum Acceleration Torque	[Nm]	*2	18	18	18	18	18	12	12
Emergency Stop Torque	[Nm]	*3	35	35	35	35	35	30	30
Nominal Input Speed	[rpm]	*4	4000						
Maximum Input Speed	[rpm]	*5	8000						
No Load Running Torque	[Nm]	*6	0.03						
Permitted Radial Load	[N]	*7	270	300	310	330	350	360	370
Permitted Axial Load	[N]	*8	300	330	360	390	410	430	450
Maximum Radial Load	[N]	*9	1100						
Maximum Axial Load	[N]	*10	550						
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	0.052	0.043	0.038	0.036	0.034	0.033	0.032
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.090	0.081	0.077	0.074	0.072	0.071	0.071
Efficiency	[%]	*11	95						
Torsional Rigidity	[Nm/arc-min]	*12	2						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 61						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	0.7						

VRT 047 2-Stage Specifications

Frame Size	047								
Stage	2-Stage								
Ratio	Unit	Notes	16	20	25	28	35	40	45
Nominal Output Torque	[Nm]	*1	9	9	9	9	9	9	6
Maximum Acceleration Torque	[Nm]	*2	18	18	18	18	18	18	12
Emergency Stop Torque	[Nm]	*3	35	35	35	35	35	35	30
Nominal Input Speed	[rpm]	*4	4000						
Maximum Input Speed	[rpm]	*5	8000						
No Load Running Torque	[Nm]	*6	0.01						
Permitted Radial Load	[N]	*7	440	470	510	530	570	590	620
Permitted Axial Load	[N]	*8	550	550	550	550	550	550	550
Maximum Radial Load	[N]	*9	1100						
Maximum Axial Load	[N]	*10	550						
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	0.039	0.035	0.034	0.038	0.034	0.030	0.034
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	2						
Maximum Torsional Backlash	[arc-min]	--	≤ 5						
Noise Level	dB [A]	*13	≤ 61						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	0.8						

VRT 047 2-Stage Specifications

Frame Size	**047**							
Stage	**2-Stage**							
Ratio	Unit	Notes	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	9	9	9	9	6	6
Maximum Acceleration Torque	[Nm]	*2	18	18	18	18	12	12
Emergency Stop Torque	[Nm]	*3	35	35	35	35	30	30
Nominal Input Speed	[rpm]	*4	4000					
Maximum Input Speed	[rpm]	*5	8000					
No Load Running Torque	[Nm]	*6	0.01					
Permitted Radial Load	[N]	*7	640	680	710	750	780	800
Permitted Axial Load	[N]	*8	550	550	550	550	550	550
Maximum Radial Load	[N]	*9	1100					
Maximum Axial Load	[N]	*10	550					
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	0.030	0.030	0.030	0.030	0.030	0.030
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	--	--	--	--	--	--
Efficiency	[%]	*11	90					
Torsional Rigidity	[Nm/arc-min]	*12	2					
Maximum Torsional Backlash	[arc-min]	--	≤ 5					
Noise Level	dB [A]	*13	≤ 61					
Protection Class	--	*14	IP54 (IP65)					
Ambient Temperature	[°C]	--	0 - 40					
Permitted Housing Temperature	[°C]	--	90					
Weight	[kg]	*15	0.8					

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

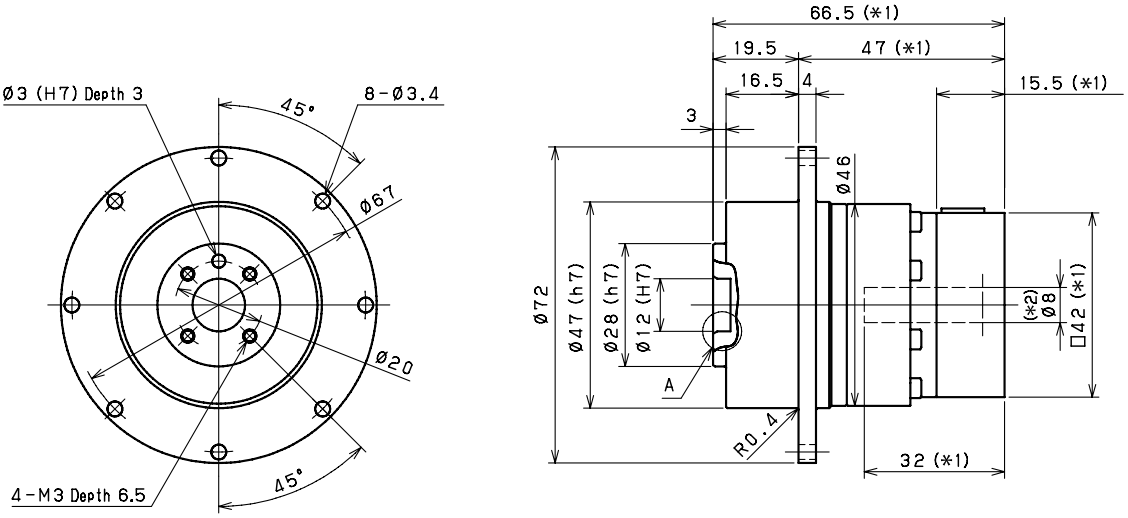
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

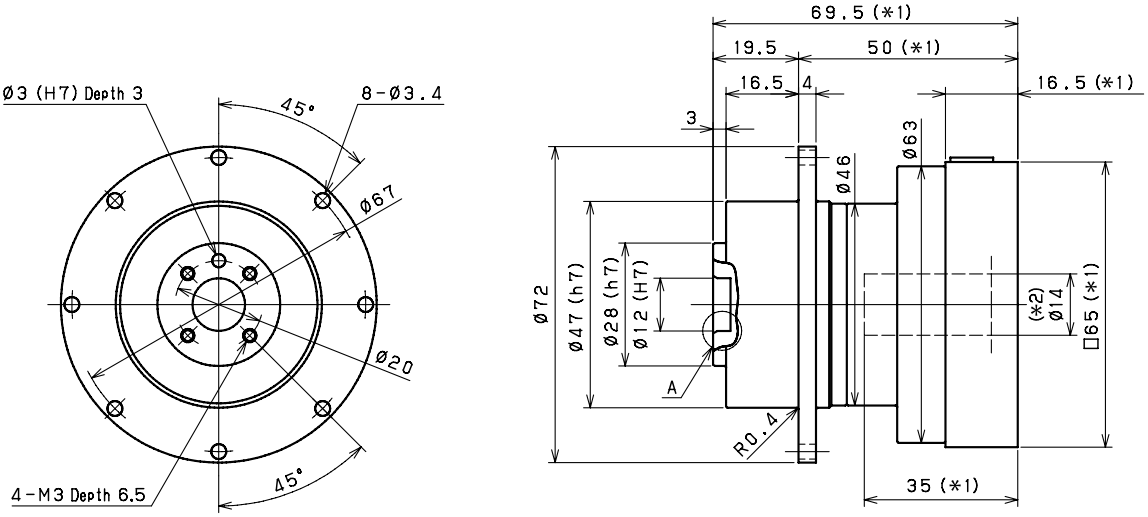
*15) The weight may vary slightly between models

VRT 047 1-Stage Dimensions

Input bore size ≦φ8 mm

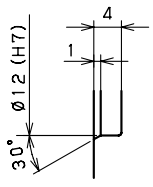


Input bore size ≦φ14 mm



*1) Length will vary depending on motor

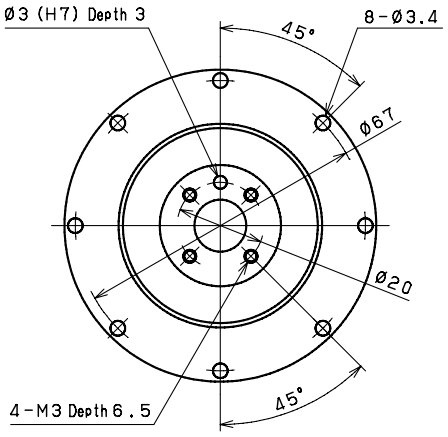
*2) Bushing will be inserted to adapt to motor shaft

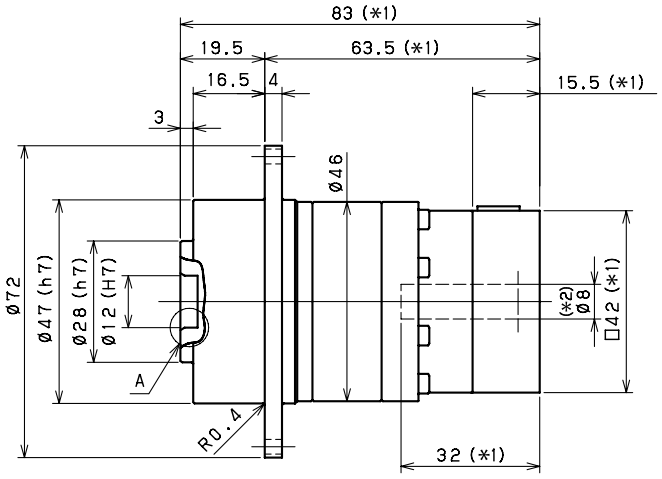


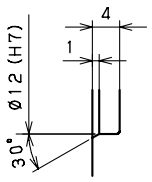
Enlarged detail A

VRT 047 2-Stage Dimensions

Input bore size ≦φ8 mm







Enlarged detail A

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT

VRT 064 1-Stage Specifications

Frame Size			064						
Stage			1-Stage						
Ratio	Unit	Note	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	27	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	50	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	100	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.08						
Permitted Radial Load	[N]	*7	370	400	420	440	460	480	500
Permitted Axial Load	[N]	*8	360	390	430	460	480	510	530
Maximum Radial Load	[N]	*9	1500						
Maximum Axial Load	[N]	*10	750						
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	0.130	0.100	0.085	0.075	0.068	0.064	0.062
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.210	0.180	0.170	0.150	0.150	0.140	0.140
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.400	0.400	0.400	0.400	0.400	0.400	0.400
Efficiency	[%]	*11	95						
Torsional Rigidity	[Nm/arc-min]	*12	7.5						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 66						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	1.4						

VRT 064 2-Stage Specifications

Frame Size			064						
Stage			2-Stage						
Ratio	Unit	Note	16	20	25	28	35	40	45
Nominal Output Torque	[Nm]	*1	27	27	27	27	27	27	18
Maximum Acceleration Torque	[Nm]	*2	50	50	50	50	50	50	35
Emergency Stop Torque	[Nm]	*3	100	100	100	100	100	100	80
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.04						
Permitted Radial Load	[N]	*7	580	630	680	700	760	790	820
Permitted Axial Load	[N]	*8	650	720	750	750	750	750	750
Maximum Radial Load	[N]	*9	1500						
Maximum Axial Load	[N]	*10	750						
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	0.059	0.055	0.054	0.056	0.053	0.049	0.530
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.140	0.140	0.130	0.140	0.130	0.130	0.130
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.360	0.350	0.350	0.360	0.350	0.340	0.350
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	7.5						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 66						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	1.6						

VRT 064 2-Stage Specifications

Frame Size	**064**							
Stage	**2-Stage**							
Ratio	Unit	Note	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000					
Maximum Input Speed	[rpm]	*5	6000					
No Load Running Torque	[Nm]	*6	0.04					
Permitted Radial Load	[N]	*7	850	910	950	1000	1000	1100
Permitted Axial Load	[N]	*8	750	750	750	750	750	750
Maximum Radial Load	[N]	*9	1500					
Maximum Axial Load	[N]	*10	750					
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	0.049	0.049	0.049	0.049	0.049	0.049
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.130	0.130	0.130	0.130	0.130	0.130
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.340	0.340	0.340	0.340	0.340	0.340
Efficiency	[%]	*11	90					
Torsional Rigidity	[Nm/arc-min]	*12	7.5					
Maximum Torsional Backlash	[arc-min]	--	≤ 3					
Noise Level	dB [A]	*13	≤ 66					
Protection Class	--	*14	IP54 (IP65)					
Ambient Temperature	[°C]	--	0 - 40					
Permitted Housing Temperature	[°C]	--	90					
Weight	[kg]	*15	1.6					

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

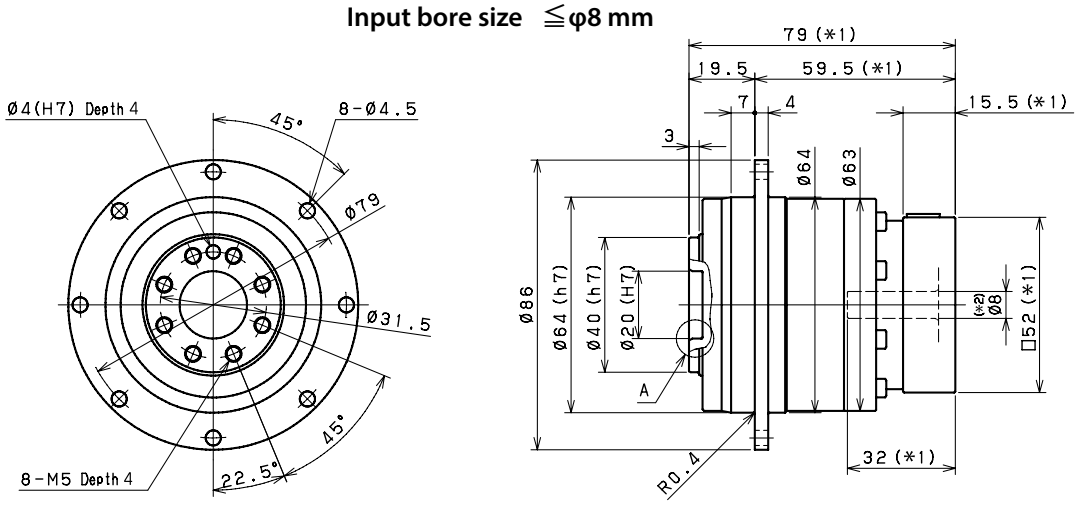
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

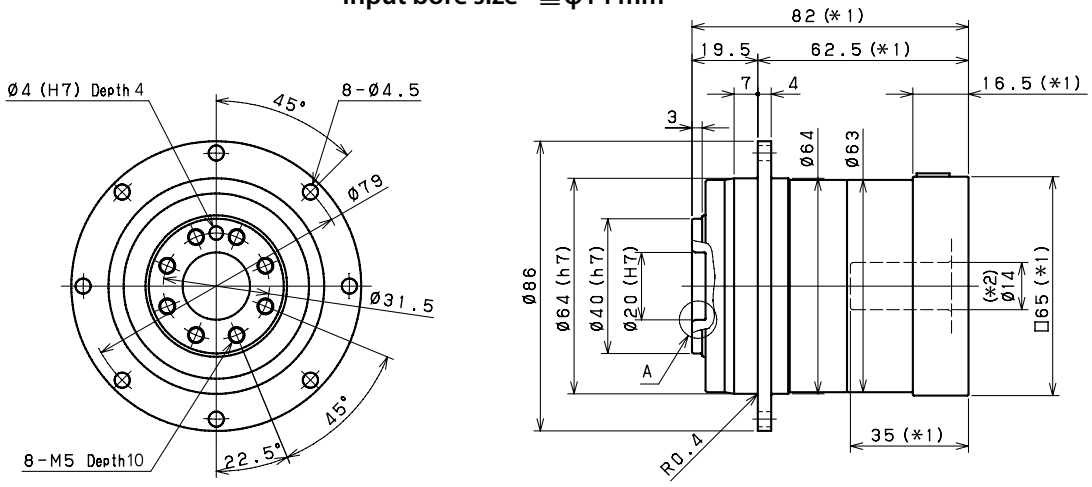
*15) The weight may vary slightly between models

VRT 064 1-Stage Dimensions

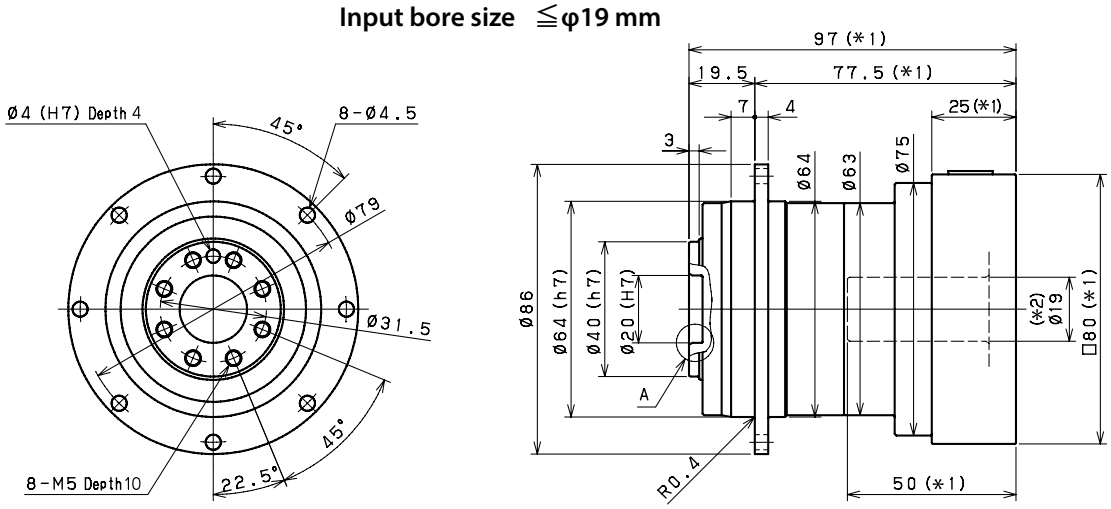
Input bore size ≦φ8 mm

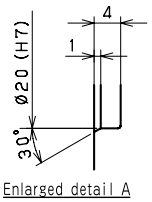


Input bore size ≦φ14 mm



Input bore size ≦φ19 mm



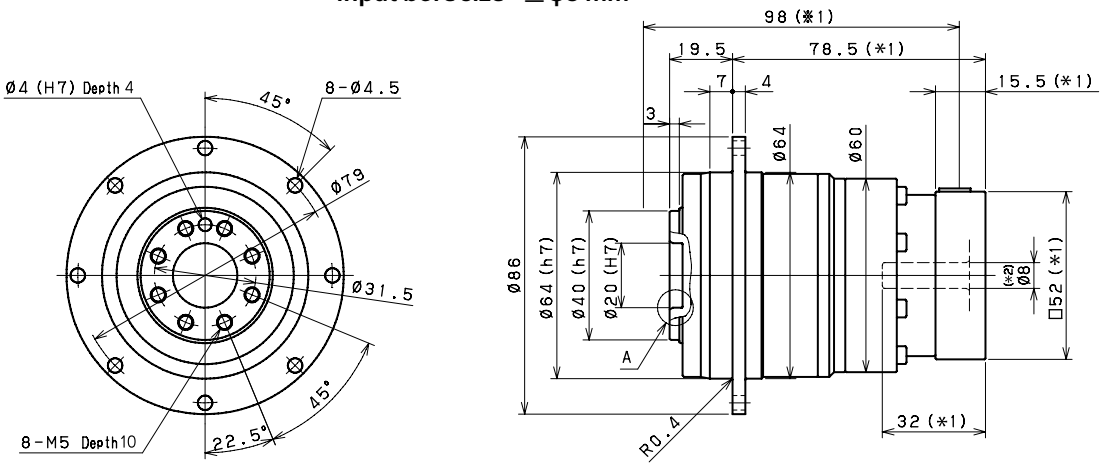


*1) Length will vary depending on motor

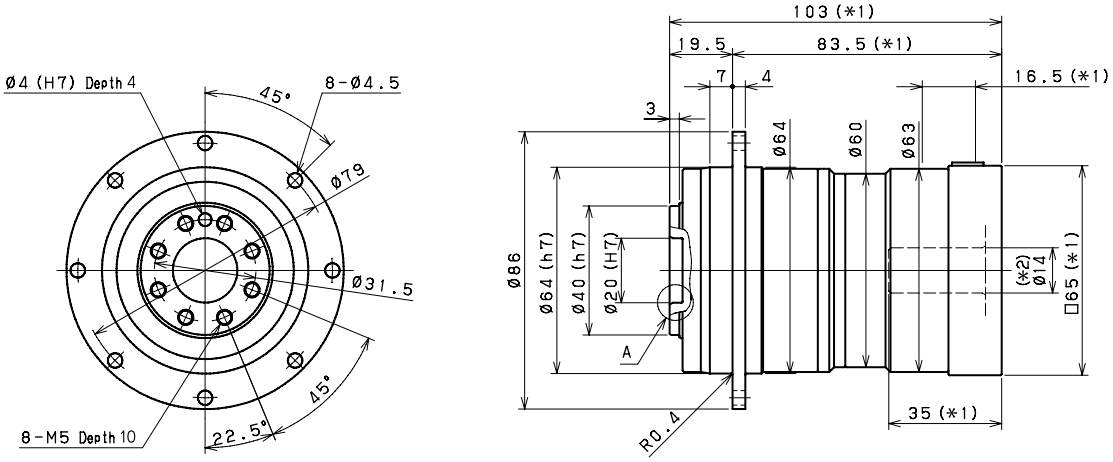
*2) Bushing will be inserted to adapt to motor shaft

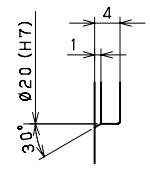
VRT 064 2-Stage Dimensions

Input bore size ≦φ8 mm



Input bore size ≦φ14 mm





Enlarged detail A

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT 090 1-Stage Specifications

Frame Size			090						
Stage			1-Stage						
Ratio	Unit	Note	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	75	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	125	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	250	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.17						
Permitted Radial Load	[N]	*7	720	780	830	870	910	950	980
Permitted Axial Load	[N]	*8	620	680	740	790	830	880	920
Maximum Radial Load	[N]	*9	3300						
Maximum Axial Load	[N]	*10	1700						
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	-	-	-	-	-	-	-
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.770	0.580	0.480	0.410	0.370	0.350	0.330
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	1.200	1.000	0.940	0.880	0.840	0.810	0.800
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.900	2.900	2.800	2.800	2.800	2.800	2.800
Efficiency	[%]	*11	95						
Torsional Rigidity	[Nm/arc-min]	*12	22						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	3.6						

VRT 090 2-Stage Specifications

Frame Size			090					
Stage			2-Stage					
Ratio	Unit	Note	16	20	25	28	35	40
Nominal Output Torque	[Nm]	*1	75	75	75	75	75	75
Maximum Acceleration Torque	[Nm]	*2	125	125	125	125	125	125
Emergency Stop Torque	[Nm]	*3	250	250	250	250	250	250
Nominal Input Speed	[rpm]	*4	3000					
Maximum Input Speed	[rpm]	*5	6000					
No Load Running Torque	[Nm]	*6	0.05					
Permitted Radial Load	[N]	*7	1200	1200	1300	1400	1500	1600
Permitted Axial Load	[N]	*8	1100	1200	1400	1400	1600	1700
Maximum Radial Load	[N]	*9	3300					
Maximum Axial Load	[N]	*10	1700					
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	0.160	0.140	0.130	0.140	0.130	0.100
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.310	0.290	0.280	0.300	0.280	0.250
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.750	0.730	0.720	0.730	0.720	0.700
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.800	2.700	2.700	2.800	2.700	2.600
Efficiency	[%]	*11	90					
Torsional Rigidity	[Nm/arc-min]	*12	22					
Maximum Torsional Backlash	[arc-min]	--	≤ 3					
Noise Level	dB [A]	*13	≤ 67					
Protection Class	--	*14	IP54 (IP65)					
Ambient Temperature	[°C]	--	0 - 40					
Permitted Housing Temperature	[°C]	--	90					
Weight	[kg]	*15	4					

VRT 090 2-Stage Specifications

Frame Size	**090**								
Stage	**2-Stage**								
Ratio	Unit	Note	45	50	60	70	80	90	100
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.05						
Permitted Radial Load	[N]	*7	1600	1700	1800	1900	2000	2000	2100
Permitted Axial Load	[N]	*8	1700	1700	1700	1700	1700	1700	1700
Maximum Radial Load	[N]	*9	3300						
Maximum Axial Load	[N]	*10	1700						
Moment of Inertia (≤ Ø 8)	[kgcm2]	--	0.120	0.100	0.099	0.098	0.098	0.098	0.098
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	0.710	0.700	0.700	0.690	0.690	0.690	0.690
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	2.700	2.600	2.600	2.600	2.600	2.600	2.600
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	22						
Maximum Torsional Backlash	[arc-min]	--	≤3						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	4						

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

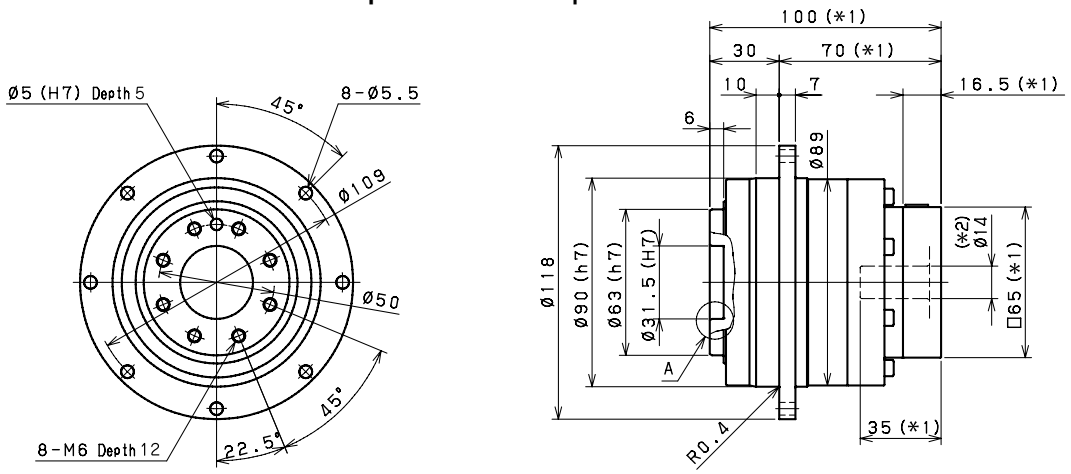
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

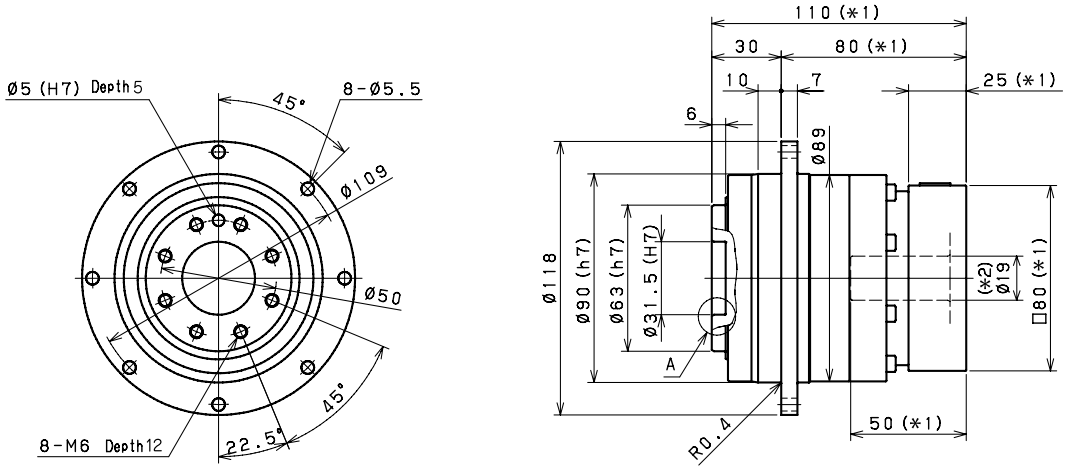
*15) The weight may vary slightly between models

VRT 090 1-Stage Dimensions

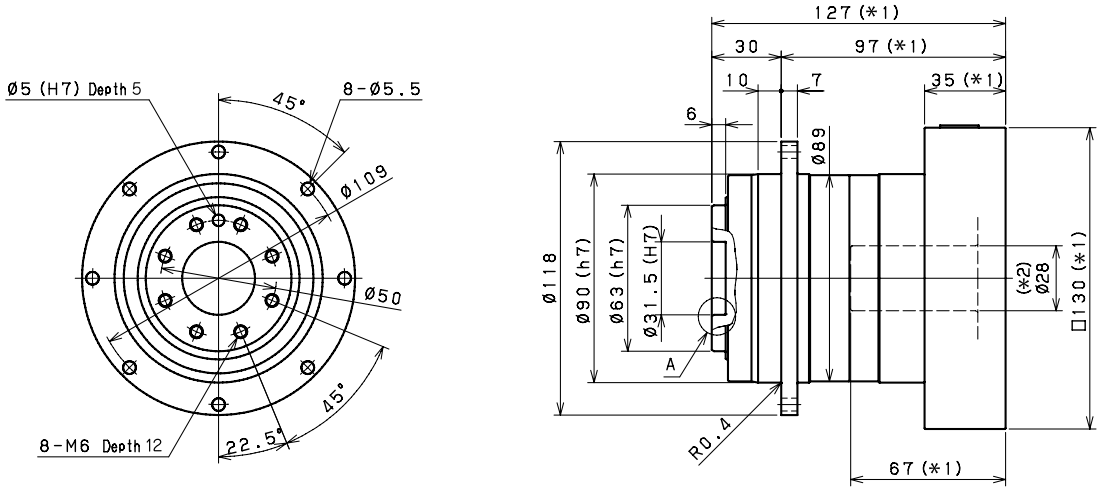
Input bore size ≦φ14 mm

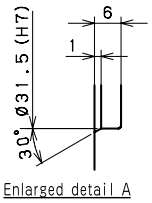


Input bore size ≦φ19 mm



Input bore size ≦φ28 mm





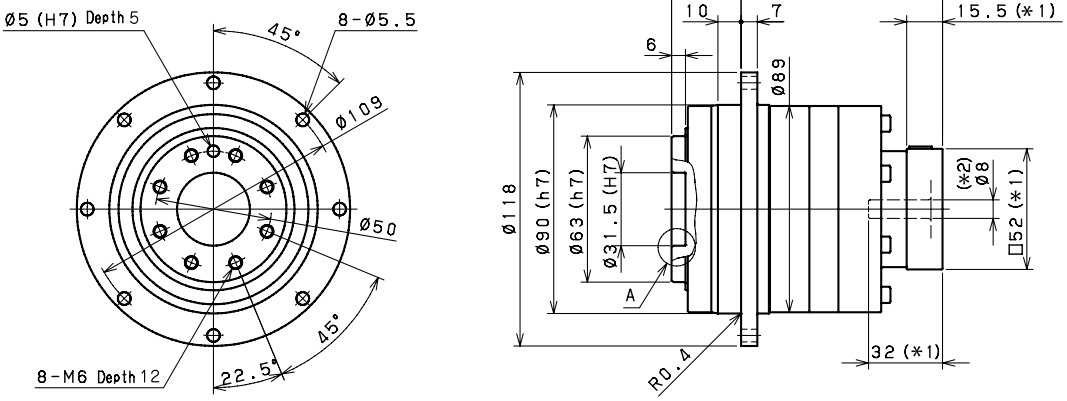
Enlarged detail A

*1) Length will vary depending on motor

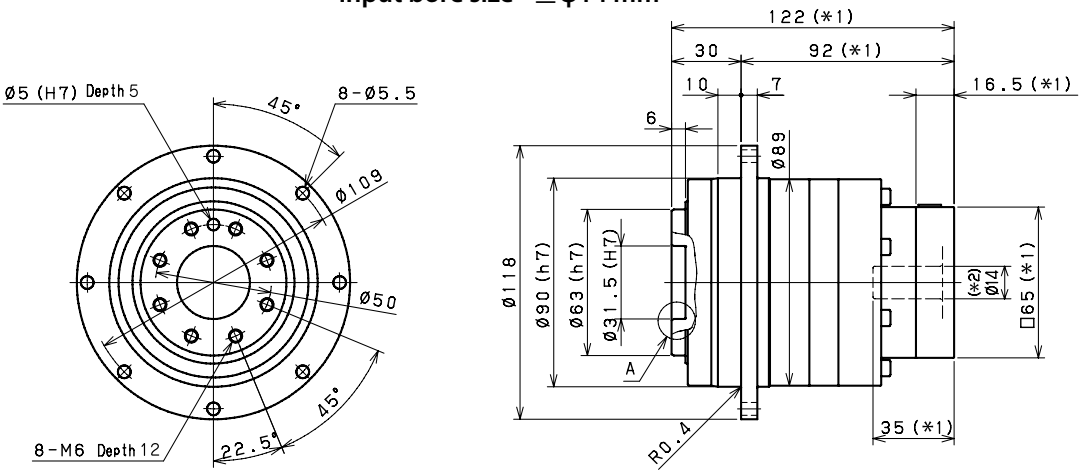
*2) Bushing will be inserted to adapt to motor shaft

VRT 090 2-Stage Dimensions

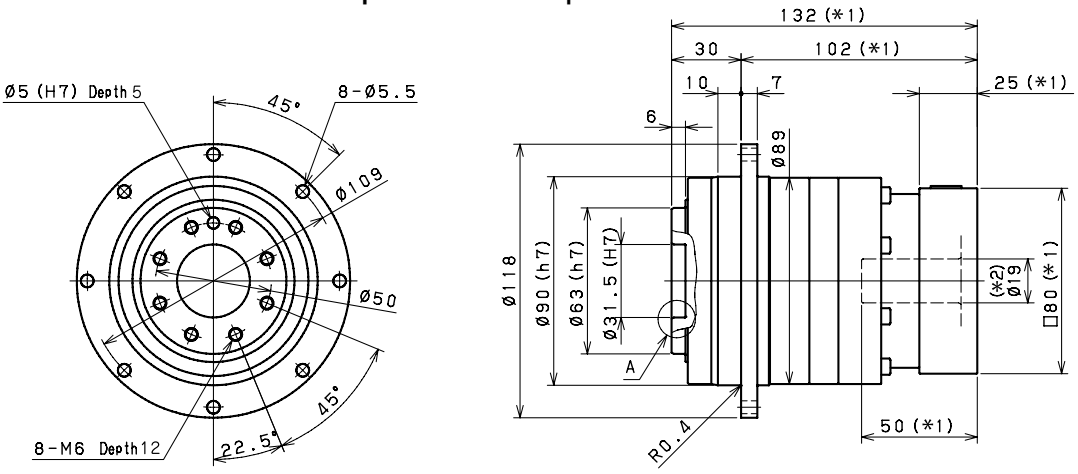
Input bore size ≦φ8 mm

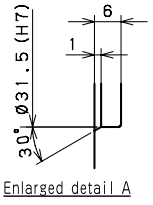


Input bore size ≦φ14 mm



Input bore size ≦φ19 mm





*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT 110 1-Stage Specifications

Frame Size	110					
Stage	1-Stage					
Ratio	Unit	Note	4	5	7	10
Nominal Output Torque	[Nm]	*1	120	180	180	120
Maximum Output Torque	[Nm]	*2	330	330	330	225
Emergency Stop Torque	[Nm]	*3	625	625	625	500
Nominal Input Speed	[rpm]	*4	3000			
Maximum Input Speed	[rpm]	*5	6000			
No Load Running Torque	[Nm]	*6	0.77			
Permitted Radial Load	[N]	*7	4700	5000	5600	6200
Permitted Axial Load	[N]	*8	3200	3400	3800	4200
Maximum Radial Load	[N]	*9	12000			
Maximum Axial Load	[N]	*10	8800			
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	--	--	--	--
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	3.100	2.300	1.500	1.100
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	5.100	4.300	3.500	3.100
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	13.000	12.000	11.000	11.000
Efficiency	[%]	*11	95			
Torsional Rigidity	[Nm/arcmin]	*12	60			
Maximum Torsional Backlash	[Arc-min]	--	≤ 3			
Noise Level	dB [A]	*13	≤ 71			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	7.8			

VRT 110 2-Stage Specifications

Frame Size	110					
Stage	2-Stage					
Ratio	Unit	Note	16	20	25	28
Nominal Output Torque	[Nm]	*1	180	180	180	180
Maximum Output Torque	[Nm]	*2	330	330	330	330
Emergency Stop Torque	[Nm]	*3	625	625	625	625
Nominal Input Speed	[rpm]	*4	3000			
Maximum Input Speed	[rpm]	*5	6000			
No Load Running Torque	[Nm]	*6	0.17			
Permitted Radial Load	[N]	*7	7100	7600	8200	8500
Permitted Axial Load	[N]	*8	4800	5200	5500	5700
Maximum Radial Load	[N]	*9	12000			
Maximum Axial Load	[N]	*10	8800			
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	1.000	0.800	0.700	0.900
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	1.500	1.200	1.200	1.400
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.400	3.100	3.100	3.300
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	11.000	11.000	11.000	11.000
Efficiency	[%]	*11	90			
Torsional Rigidity	[Nm/arcmin]	*12	60			
Maximum Torsional Backlash	[Arc-min]	--	≤ 3			
Noise Level	dB [A]	*13	≤ 71			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	8.6			

VRT 110 2-Stage Specifications

Frame Size	**110**						
Stage	**2-Stage**						
Ratio	Unit	Note	35	40	50	70	100
Nominal Output Torque	[Nm]	*1	180	180	180	180	120
Maximum Output Torque	[Nm]	*2	330	330	330	330	225
Emergency Stop Torque	[Nm]	*3	625	625	625	625	500
Nominal Input Speed	[rpm]	*4	3000				
Maximum Input Speed	[rpm]	*5	6000				
No Load Running Torque	[Nm]	*6	0.17				
Permitted Radial Load	[N]	*7	9000	9400	10000	11000	12000
Permitted Axial Load	[N]	*8	6100	6400	6800	7500	8400
Maximum Radial Load	[N]	*9	12000				
Maximum Axial Load	[N]	*10	8800				
Moment of Inertia (≤ Ø 14)	[kgcm2]	--	0.700	0.400	0.400	0.400	0.400
Moment of Inertia (≤ Ø 19)	[kgcm2]	--	1.100	0.800	0.800	0.800	0.800
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	3.100	2.800	2.800	2.700	2.700
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	11.000	10.000	10.000	10.000	10.000
Efficiency	[%]	*11	90				
Torsional Rigidity	[Nm/arcmin]	*12	60				
Maximum Torsional Backlash	[Arc-min]	--	≤ 3				
Noise Level	dB [A]	*13	≤ 71				
Protection Class	--	*14	IP54 (IP65)				
Ambient Temperature	[°C]	--	0 - 40				
Permitted Housing Temperature	[°C]	--	90				
Weight	[kg]	*15	8.6				

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

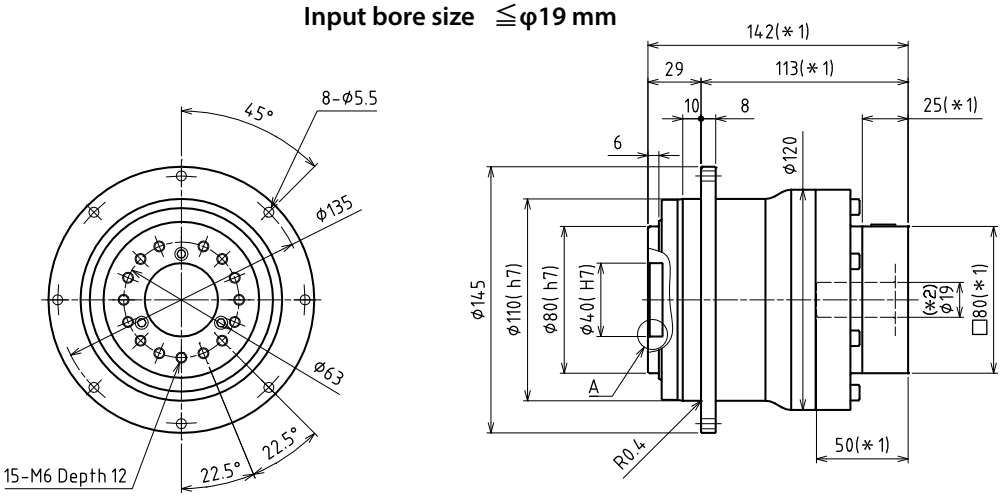
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

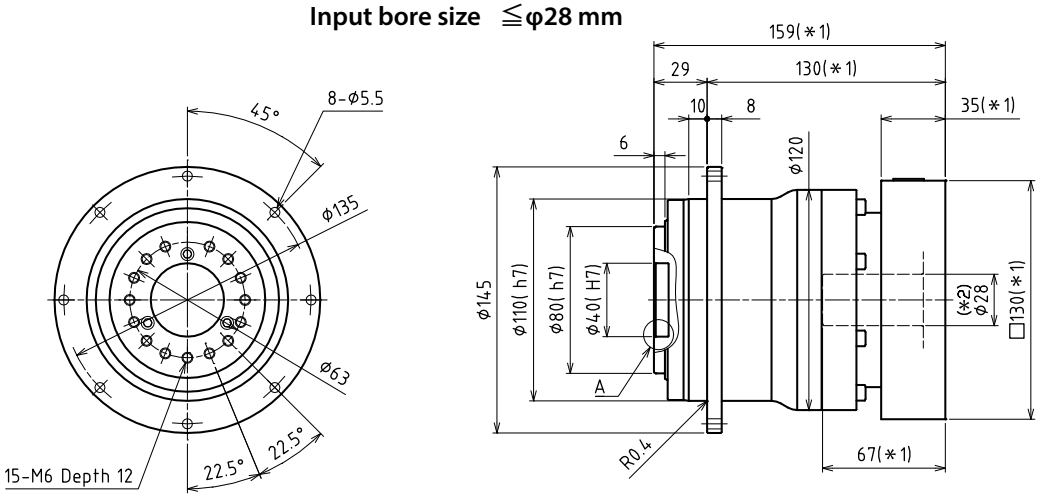
*15) The weight may vary slightly between models

VRT 110 1-Stage Dimensions

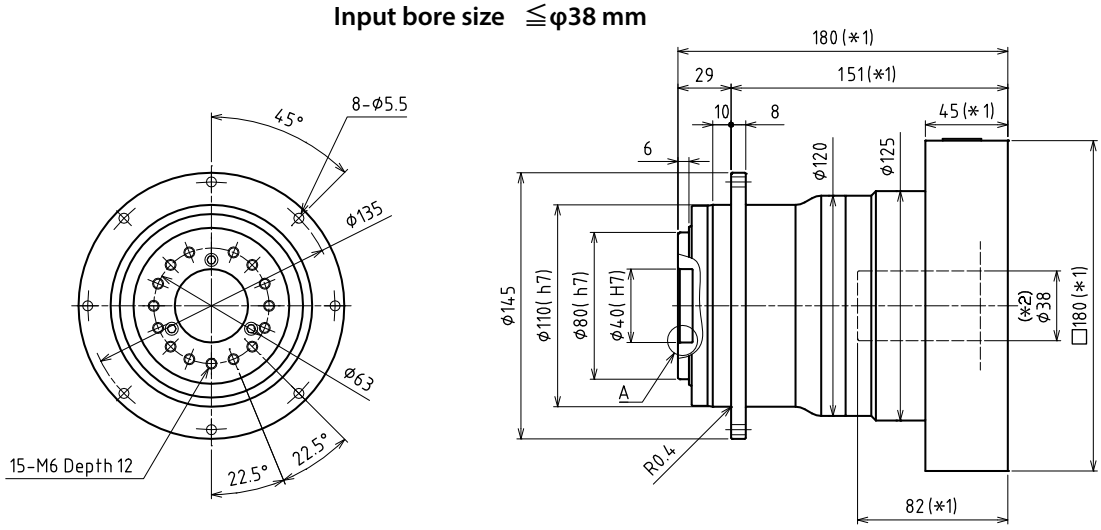
Input bore size ≦φ19 mm

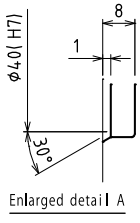


Input bore size ≦φ28 mm



Input bore size ≦φ38 mm



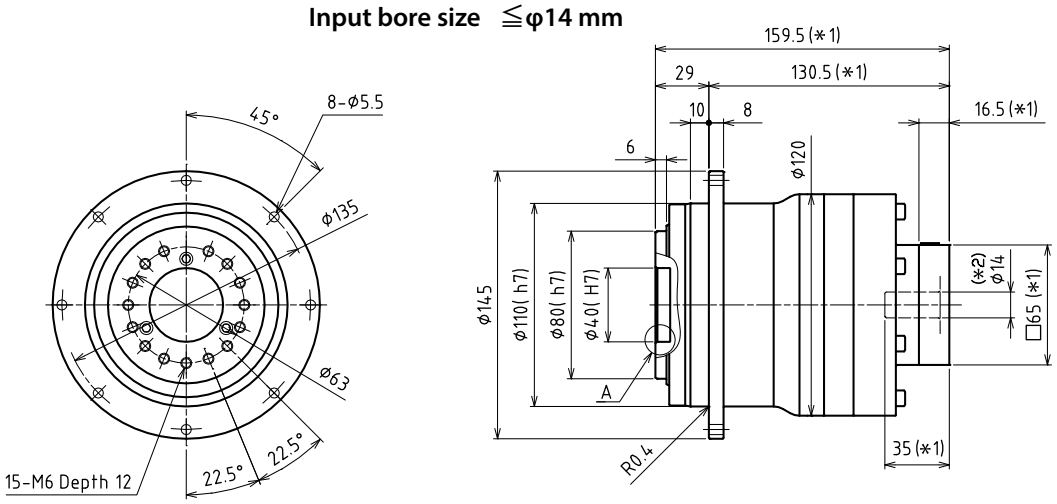


*1) Length will vary depending on motor

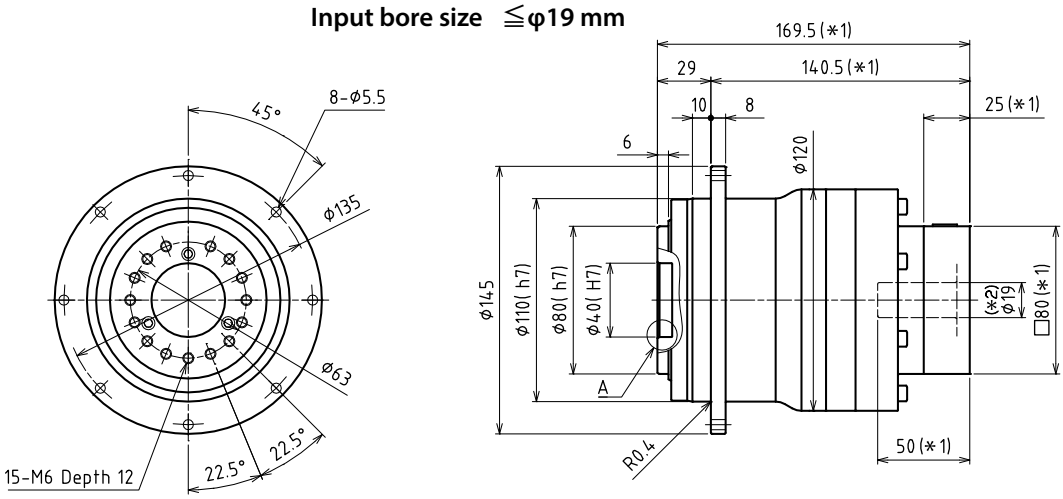
*2) Bushing will be inserted to adapt to motor shaft

VRT 110 2-Stage Dimensions

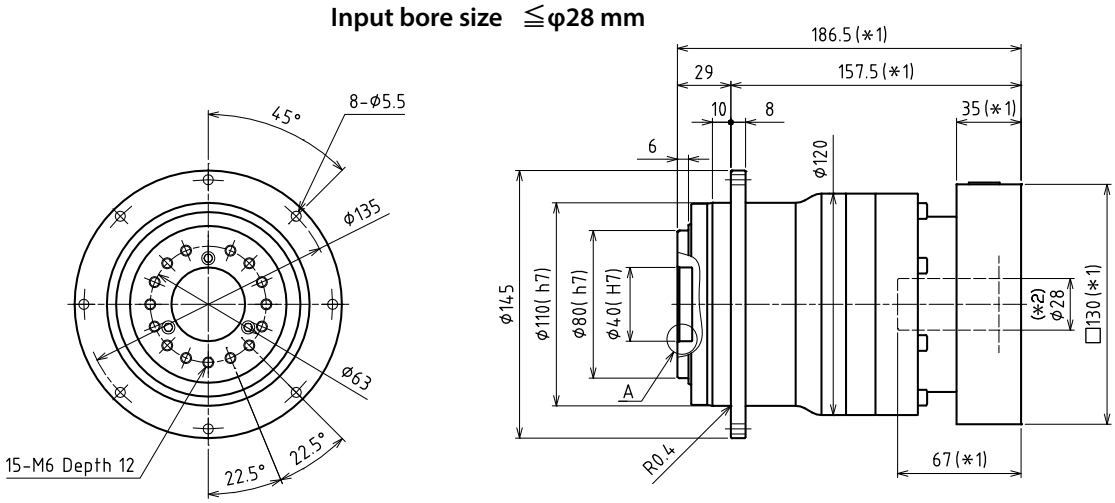
Input bore size ≦φ14 mm

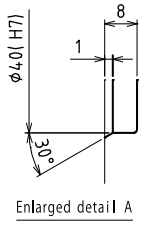


Input bore size ≦φ19 mm



Input bore size ≦φ28 mm





*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT

VRT 140 1-Stage Specifications

Frame Size	140					
Stage	1-Stage					
Ratio	Unit	Note	4	5	7	10
Nominal Output Torque	[Nm]	*1	240	360	360	240
Maximum Output Torque	[Nm]	*2	700	700	700	470
Emergency Stop Torque	[Nm]	*3	1250	1250	1250	1000
Nominal Input Speed	[rpm]	*4	2000			
Maximum Input Speed	[rpm]	*5	4000			
No Load Running Torque	[Nm]	*13	1.00			
Permitted Radial Load	[N]	*6	8000	8500	9400	10000
Permitted Axial Load	[N]	*7	5600	6000	6700	7400
Maximum Radial Load	[N]	*8	19000			
Maximum Axial Load	[N]	*9	14000			
Moment of Inertia (≤ Ø 19)	[kgcm2]	*10	--	--	--	--
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	11.000	8.400	5.400	4.100
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	19.000	16.000	13.000	12.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	41.000	38.000	35.000	34.000
Efficiency	[%]	--	95			
Torsional Rigidity	[Nm/arcmin]	*11	140			
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3			
Noise Level	dB [A]	--	≤ 67			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	15			

VRT 140 2-Stage Specifications

Frame Size	140					
Stage	2-Stage					
Ratio	Unit	Note	16	20	25	28
Nominal Output Torque	[Nm]	*1	360	360	360	360
Maximum Output Torque	[Nm]	*2	700	700	700	700
Emergency Stop Torque	[Nm]	*3	1250	1250	1250	1250
Nominal Input Speed	[rpm]	*4	2000			
Maximum Input Speed	[rpm]	*5	4000			
No Load Running Torque	[Nm]	*13	0.54			
Permitted Radial Load	[N]	*6	12000	13000	14000	14000
Permitted Axial Load	[N]	*7	8500	9100	9800	10000
Maximum Radial Load	[N]	*8	19000			
Maximum Axial Load	[N]	*9	14000			
Moment of Inertia (≤ Ø 19)	[kgcm2]	*10	3.800	2.600	2.500	3.400
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	5.800	4.600	4.500	5.400
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	13.000	12.000	12.000	13.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	35.000	34.000	34.000	35.000
Efficiency	[%]	--	90			
Torsional Rigidity	[Nm/arcmin]	*11	140			
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3			
Noise Level	dB [A]	--	≤ 67			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	17			

VRT 140 2-Stage Specifications

Frame Size	**140**						
Stage	**2-Stage**						
Ratio	Unit	Note	35	40	50	70	100
Nominal Output Torque	[Nm]	*1	360	360	360	360	240
Maximum Output Torque	[Nm]	*2	700	700	700	700	470
Emergency Stop Torque	[Nm]	*3	1250	1250	1250	1250	1000
Nominal Input Speed	[rpm]	*4	2000				
Maximum Input Speed	[rpm]	*5	4000				
No Load Running Torque	[Nm]	*13	0.54				
Permitted Radial Load	[N]	*6	15000	16000	17000	19000	19000
Permitted Axial Load	[N]	*7	11000	11000	12000	13000	14000
Maximum Radial Load	[N]	*8	19000				
Maximum Axial Load	[N]	*9	14000				
Moment of Inertia (≤ Ø 19)	[kgcm2]	*10	2.400	1.200	1.100	1.100	1.100
Moment of Inertia (≤ Ø 28)	[kgcm2]	--	4.400	3.100	3.100	3.100	3.100
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	12.000	11.000	11.000	11.000	11.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	34.000	33.000	33.000	33.000	33.000
Efficiency	[%]	--	90				
Torsional Rigidity	[Nm/arcmin]	*11	140				
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3				
Noise Level	dB [A]	--	≤ 67				
Protection Class	--	*14	IP54 (IP65)				
Ambient Temperature	[°C]	--	0 - 40				
Permitted Housing Temperature	[°C]	--	90				
Weight	[kg]	*15	17				

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

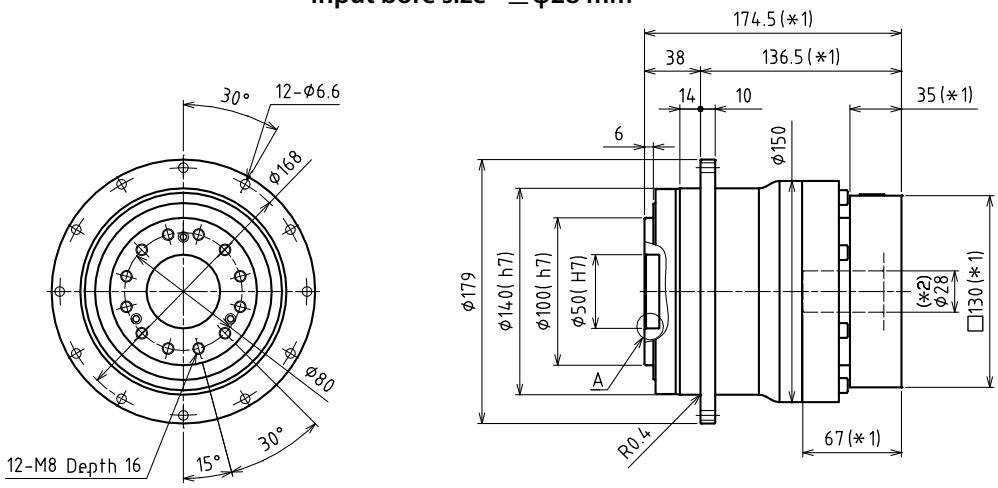
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

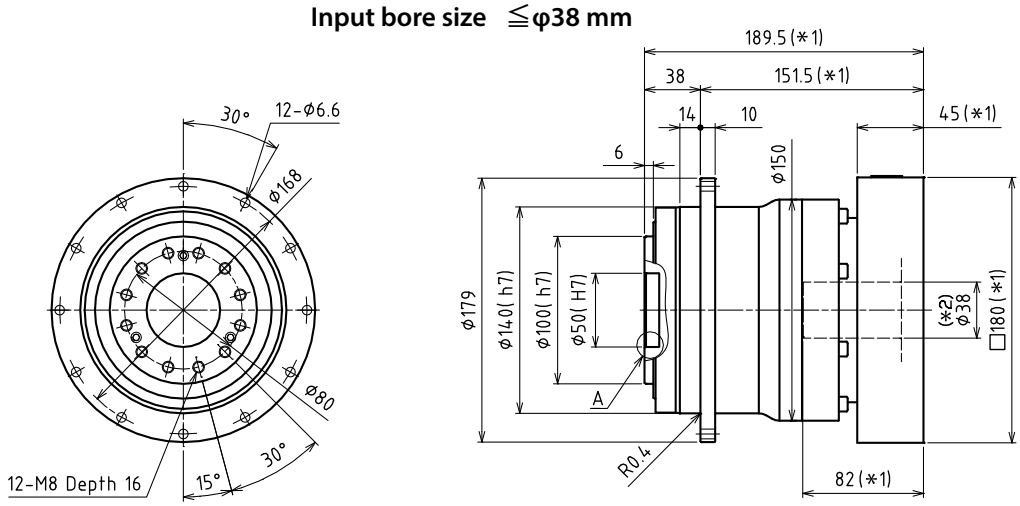
*15) The weight may vary slightly between models

VRT 140 1-Stage Dimensions

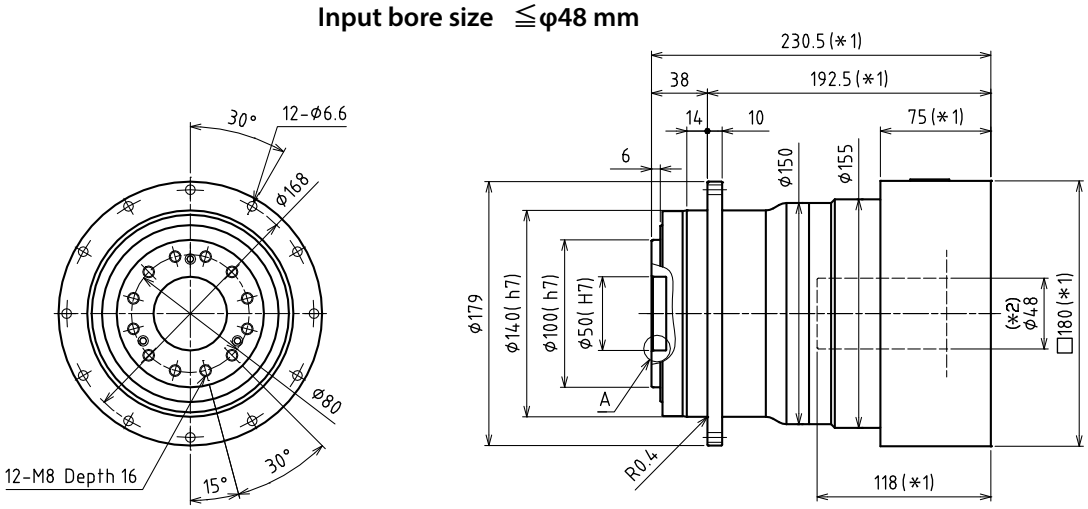
Input bore size ≦φ28 mm

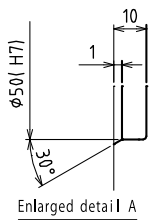


Input bore size ≦φ38 mm



Input bore size ≦φ48 mm



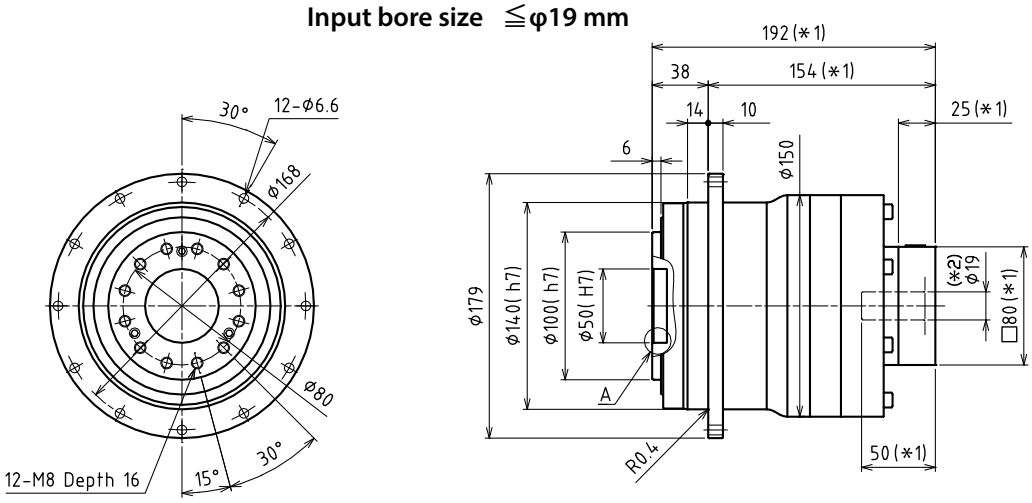


*1) Length will vary depending on motor.

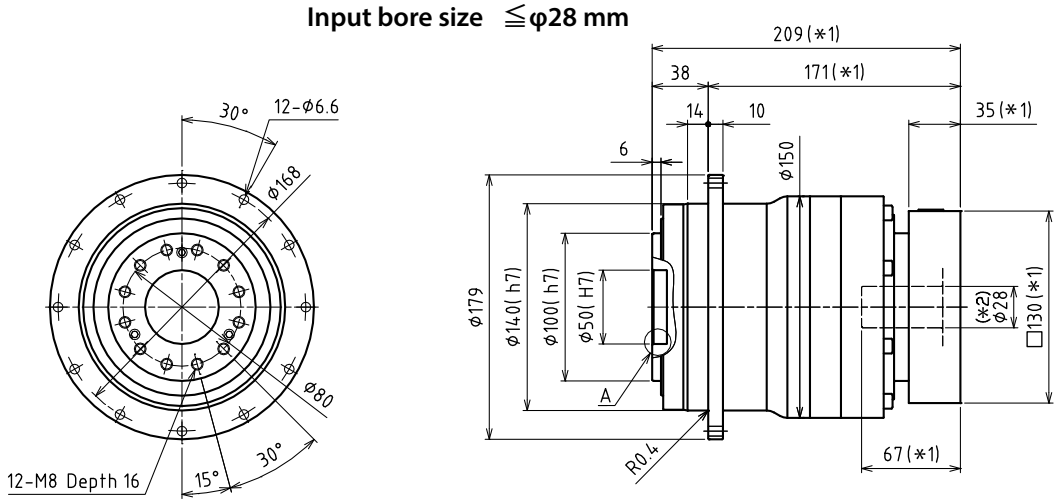
*2) Bushing will be inserted to adapt to motor shaft

VRT 140 2-Stage Dimensions

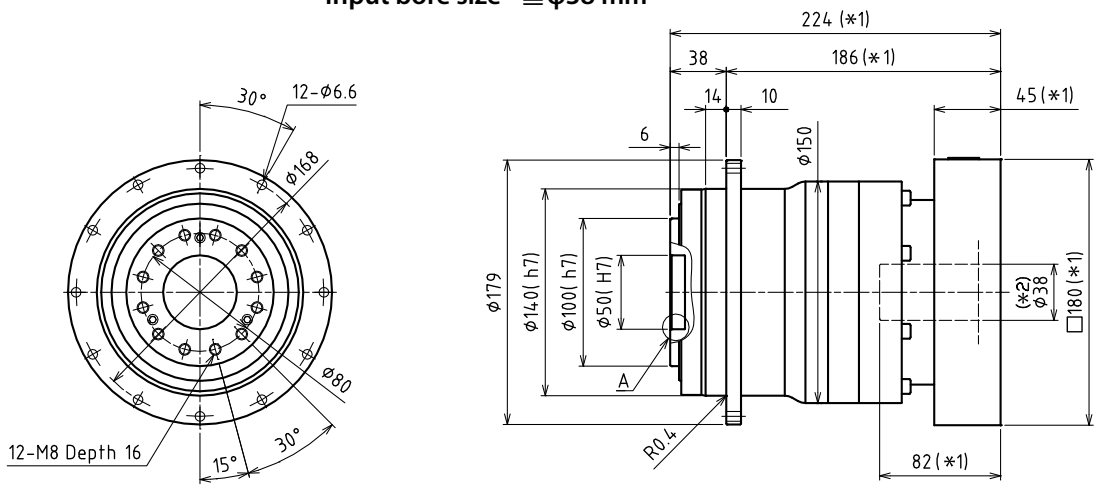
Input bore size ≦φ19 mm

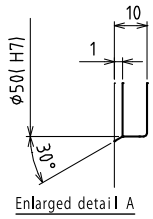


Input bore size ≦φ28 mm



Input bore size ≦φ38 mm





*1) Length will vary depending on motor.

*2) Bushing will be inserted to adapt to motor shaft

VRT

VRT 200 1-Stage Specifications

Frame Size	200					
Stage	1-Stage					
Ratio	Unit	Note	4	5	7	10
Nominal Output Torque	[Nm]	*1	750	750	750	500
Maximum Output Torque	[Nm]	*2	1400	1400	1400	970
Emergency Stop Torque	[Nm]	*3	2750	2750	2750	2200
Nominal Input Speed	[rpm]	*4	1500			
Maximum Input Speed	[rpm]	*5	3000			
No Load Running Torque	[Nm]	*13	1.9			
Permitted Radial Load	[N]	*6	18000	19000	21000	23000
Permitted Axial Load	[N]	*7	12000	13000	14000	16000
Maximum Radial Load	[N]	*8	40000			
Maximum Axial Load	[N]	*9	30000			
Moment of Inertia (≤ Ø 28)	[kgcm2]	*10	--	--	--	--
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	54.000	39.000	25.000	18.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	76.000	61.000	47.000	40.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	140.000	120.000	110.000	100.000
Efficiency	[%]	--	95			
Torsional Rigidity	[Nm/arcmin]	*11	320			
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3			
Noise Level	dB [A]	--	≤ 67			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	42			

VRT 200 2-Stage Specifications

Frame Size	200					
Stage	2-Stage					
Ratio	Unit	Note	16	20	25	28
Nominal Output Torque	[Nm]	*1	750	750	750	750
Maximum Output Torque	[Nm]	*2	1400	1400	1400	1400
Emergency Stop Torque	[Nm]	*3	2750	2750	2750	2750
Nominal Input Speed	[rpm]	*4	1500			
Maximum Input Speed	[rpm]	*5	3000			
No Load Running Torque	[Nm]	*13	1.3			
Permitted Radial Load	[N]	*6	27000	28000	30000	31000
Permitted Axial Load	[N]	*7	18000	19000	21000	21000
Maximum Radial Load	[N]	*8	40000			
Maximum Axial Load	[N]	*9	30000			
Moment of Inertia (≤ Ø 28)	[kgcm2]	*10	13.000	9.400	8.800	11.000
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	21.000	17.000	16.000	19.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	43.000	39.000	38.000	41.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--
Efficiency	[%]	--	90			
Torsional Rigidity	[Nm/arcmin]	*11	320			
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3			
Noise Level	dB [A]	--	≤ 67			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	43			

VRT 200 2-Stage Specifications

Frame Size	**200**						
Stage	**2-Stage**						
Ratio	Unit	Note	35	40	50	70	100
Nominal Output Torque	[Nm]	*1	750	750	750	750	500
Maximum Output Torque	[Nm]	*2	1400	1400	1400	1400	970
Emergency Stop Torque	[Nm]	*3	2750	2750	2750	2750	2200
Nominal Input Speed	[rpm]	*4	1500				
Maximum Input Speed	[rpm]	*5	3000				
No Load Running Torque	[Nm]	*13	1.3				
Permitted Radial Load	[N]	*6	34000	35000	37000	40000	40000
Permitted Axial Load	[N]	*7	23000	24000	25000	28000	30000
Maximum Radial Load	[N]	*8	40000				
Maximum Axial Load	[N]	*9	30000				
Moment of Inertia (≤ Ø 28)	[kgcm2]	*10	8.200	4.400	4.200	4.100	4.000
Moment of Inertia (≤ Ø 38)	[kgcm2]	--	16.000	12.000	12.000	12.000	12.000
Moment of Inertia (≤ Ø 48)	[kgcm2]	--	38.000	34.000	34.000	34.000	34.000
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--
Efficiency	[%]	--	90				
Torsional Rigidity	[Nm/arcmin]	*11	320				
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3				
Noise Level	dB [A]	--	≤ 67				
Protection Class	--	*14	IP54 (IP65)				
Ambient Temperature	[°C]	--	0 - 40				
Permitted Housing Temperature	[°C]	--	90				
Weight	[kg]	*15	43				

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

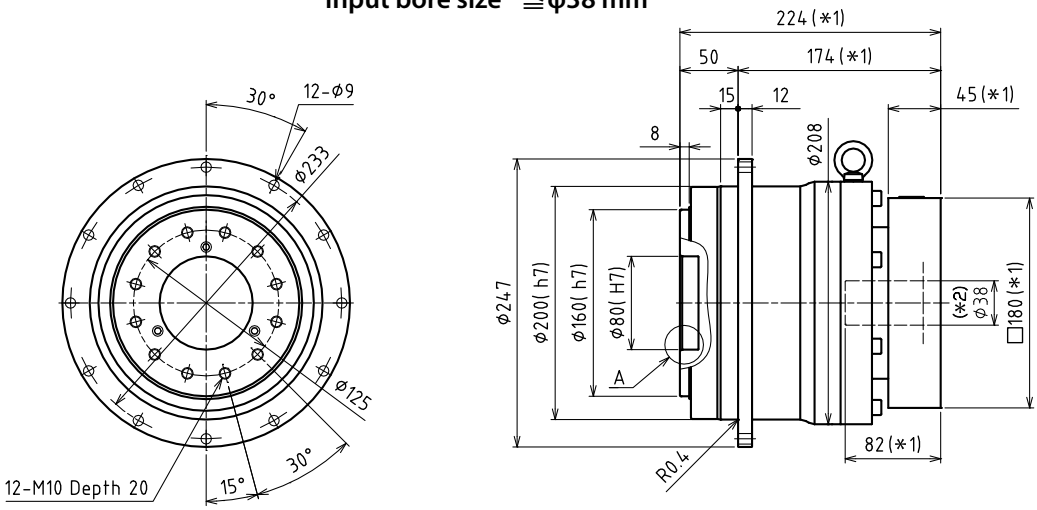
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

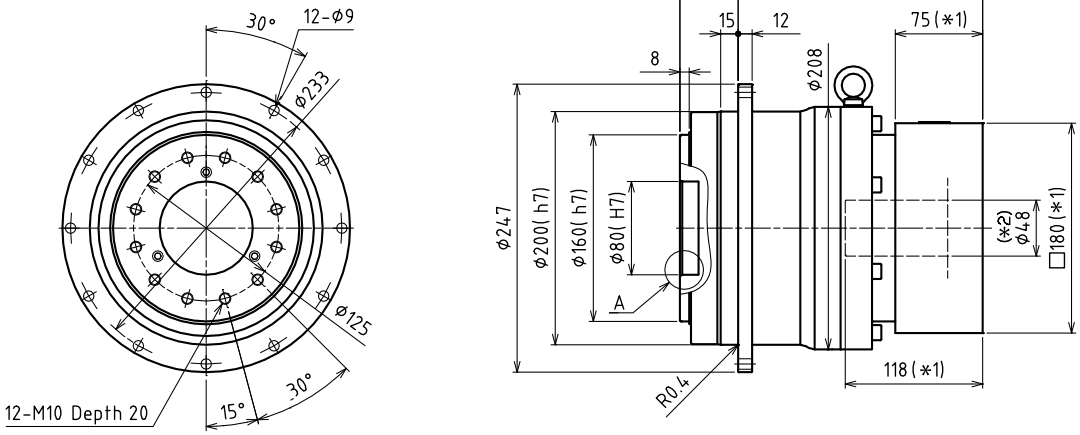
*15) The weight may vary slightly between models

VRT 200 1-Stage Dimensions

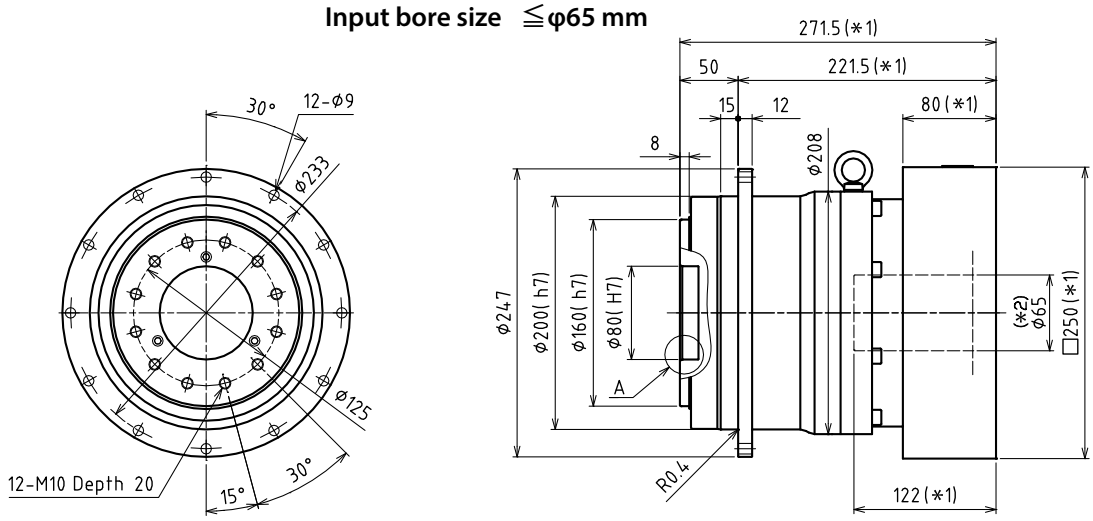
Input bore size ≦φ38 mm

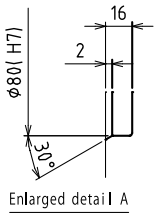


Input bore size ≦φ48 mm



Input bore size ≦φ65 mm



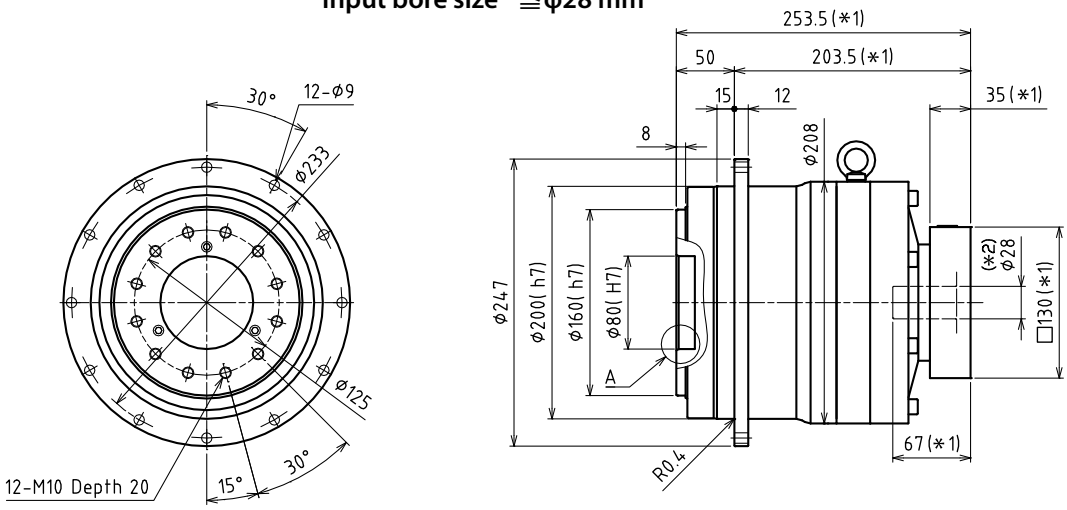


*1) Length will vary depending on motor

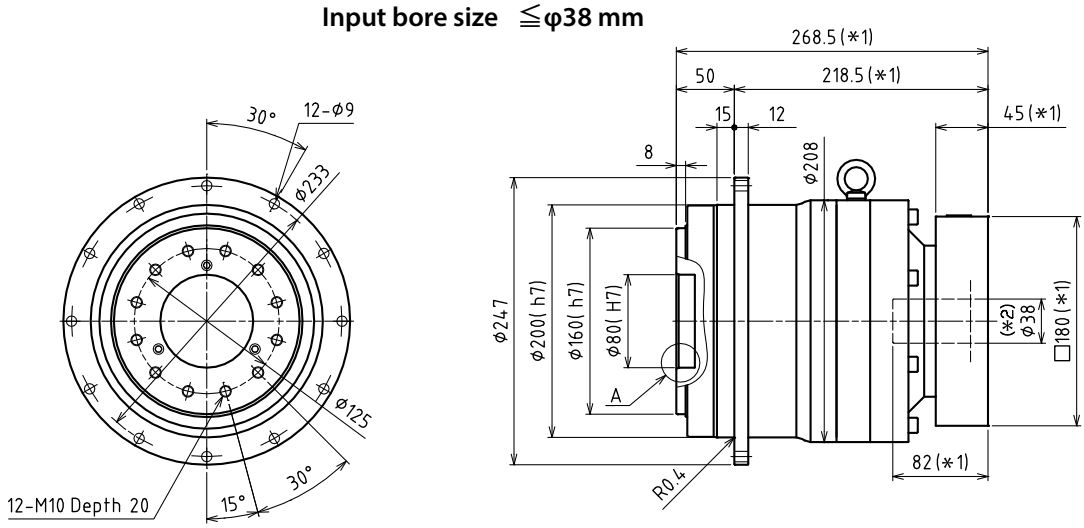
*2) Bushing will be inserted to adapt to motor shaft

VRT 200 2-Stage Dimensions

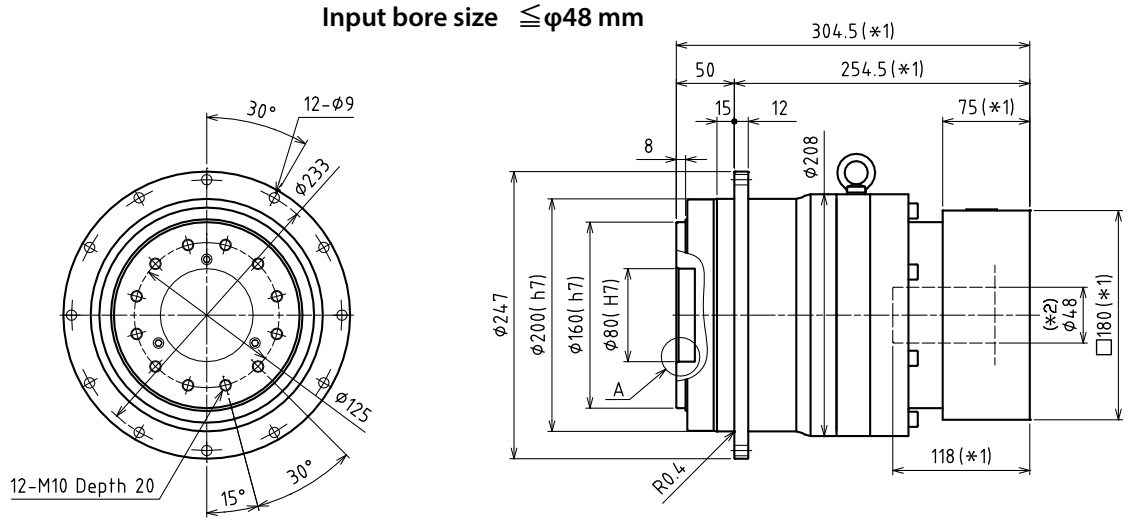
Input bore size ≦φ28 mm

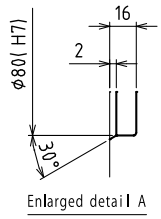


Input bore size ≦φ38 mm



Input bore size ≦φ48 mm





*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT

VRT 255 1-Stage Specifications

Frame Size	255					
Stage	1-Stage					
Ratio	Unit	Note	4	5	7	10
Nominal Output Torque	[Nm]	*1	2400	2400	2400	1600
Maximum Output Torque	[Nm]	*2	3700	3700	3700	2600
Emergency Stop Torque	[Nm]	*3	8000	8000	8000	6000
Nominal Input Speed	[rpm]	*4	1000			
Maximum Input Speed	[rpm]	*5	2000			
No Load Running Torque	[Nm]	*13	2.5			
Permitted Radial Load	[N]	*6	31000	33000	36000	40000
Permitted Axial Load	[N]	*7	22000	24000	26000	29000
Maximum Radial Load	[N]	*8	64000			
Maximum Axial Load	[N]	*9	48000			
Moment of Inertia (≤ Ø 48)	[kgcm2]	*10	--	--	--	--
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	200	170	130	110
Efficiency	[%]	--	95			
Torsional Rigidity	[Nm/arcmin]	*11	840			
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3			
Noise Level	dB [A]	--	≤ 62			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	84			

VRT 255 2-Stage Specifications

Frame Size	255					
Stage	2-Stage					
Ratio	Unit	Note	16	20	25	28
Nominal Output Torque	[Nm]	*1	2400	2400	2400	2400
Maximum Output Torque	[Nm]	*2	3700	3700	3700	3700
Emergency Stop Torque	[Nm]	*3	8000	8000	8000	8000
Nominal Input Speed	[rpm]	*4	1000			
Maximum Input Speed	[rpm]	*5	2000			
No Load Running Torque	[Nm]	*13	1.0			
Permitted Radial Load	[N]	*6	46000	49000	53000	55000
Permitted Axial Load	[N]	*7	34000	36000	38000	40000
Maximum Radial Load	[N]	*8	64000			
Maximum Axial Load	[N]	*9	48000			
Moment of Inertia (≤ Ø 48)	[kgcm2]	*10	64.0	53.0	51.0	59.0
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--
Efficiency	[%]	--	90			
Torsional Rigidity	[Nm/arcmin]	*11	840			
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3			
Noise Level	dB [A]	--	≤ 62			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	89			

VRT 255 2-Stage Specifications

Frame Size	**255**						
Stage	**2-Stage**						
Ratio	Unit	Note	35	40	50	70	100
Nominal Output Torque	[Nm]	*1	2400	2400	2400	2400	1600
Maximum Output Torque	[Nm]	*2	3700	3700	3700	3700	1800
Emergency Stop Torque	[Nm]	*3	8000	8000	8000	8000	6000
Nominal Input Speed	[rpm]	*4	1000				
Maximum Input Speed	[rpm]	*5	2000				
No Load Running Torque	[Nm]	*13	1.0				
Permitted Radial Load	[N]	*6	59000	61000	64000	64000	64000
Permitted Axial Load	[N]	*7	42000	44000	47000	48000	48000
Maximum Radial Load	[N]	*8	64000				
Maximum Axial Load	[N]	*9	48000				
Moment of Inertia (≤ Ø 48)	[kgcm2]	*10	50.0	38.0	38.0	37.0	37.0
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--
Efficiency	[%]	--	90				
Torsional Rigidity	[Nm/arcmin]	*11	840				
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3				
Noise Level	dB [A]	--	≤ 62				
Protection Class	--	*14	IP54 (IP65)				
Ambient Temperature	[°C]	--	0 - 40				
Permitted Housing Temperature	[°C]	--	90				
Weight	[kg]	*15	89				

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side shaft center)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output side bearing)

*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

*12) This does not include lost motion

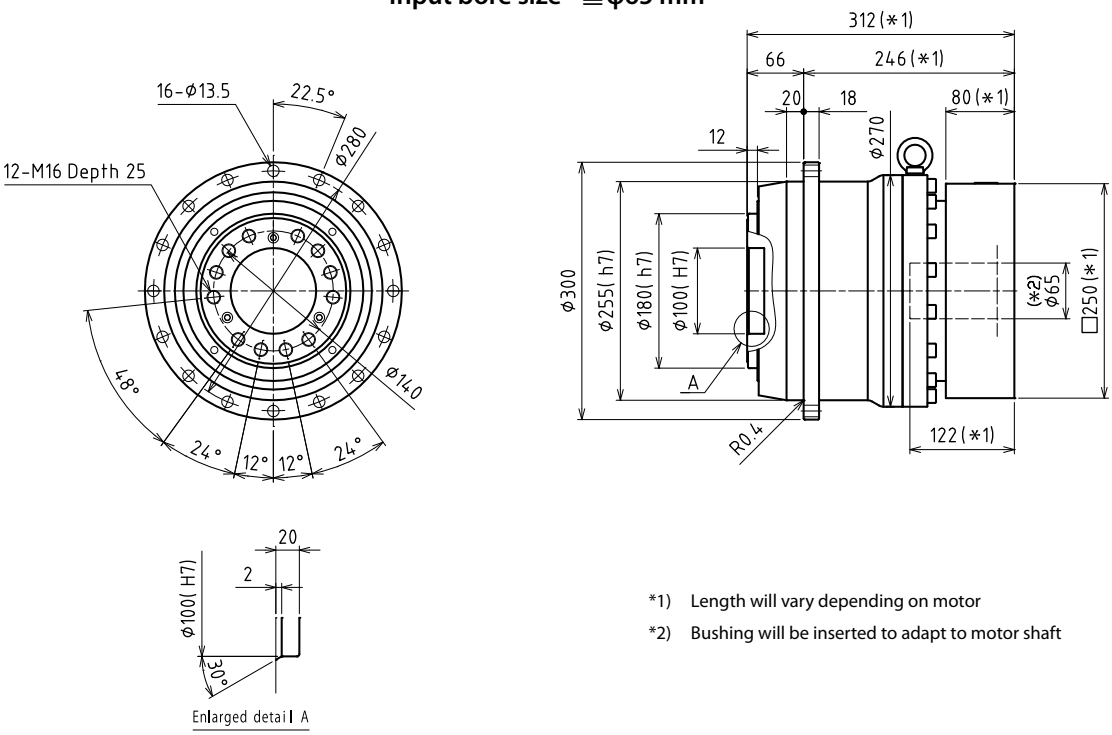
*13) Contact SIT S.p.A. for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*15) The weight may vary slightly between models

VRT 255 1-Stage Dimensions

Input bore size ≦φ65 mm

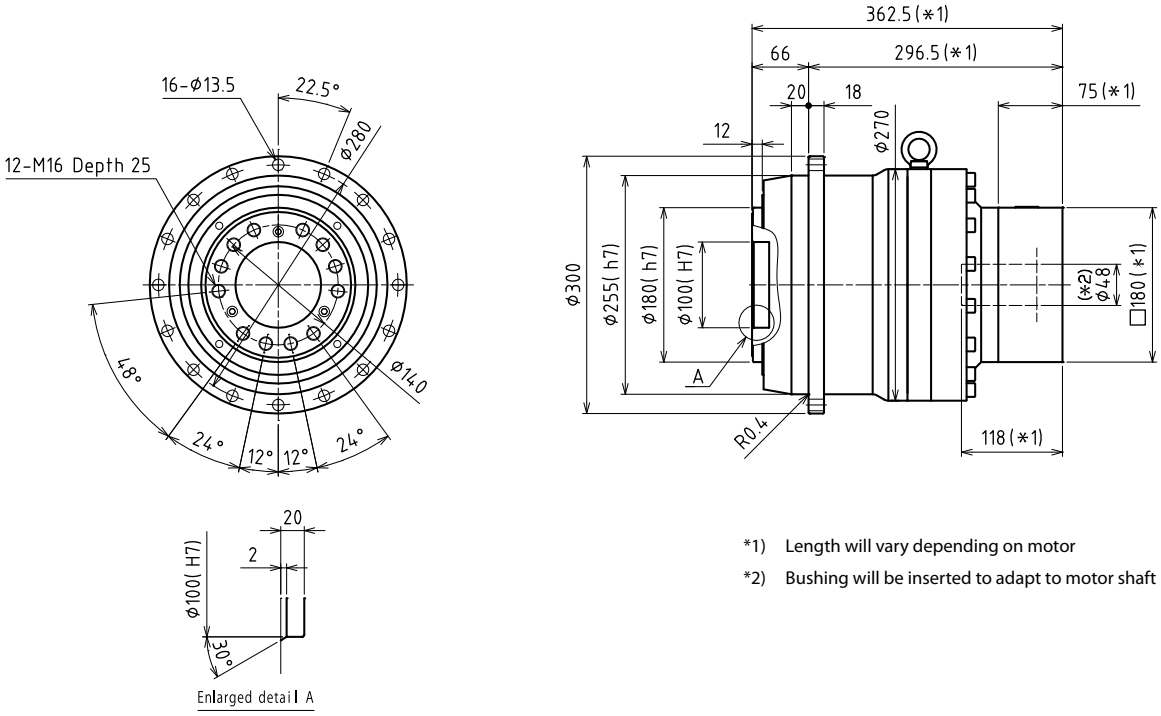


*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT 255 2-Stage Dimensions

Input bore size ≦φ48 mm



*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT

VRT 285 1-Stage Specifications

Frame Size	285					
Stage	1-Stage					
Ratio	Unit	Note	4	5	7	10
Nominal Output Torque	[Nm]	*1	3300	3300	3300	2200
Maximum Output Torque	[Nm]	*2	5300	5300	5300	3700
Emergency Stop Torque	[Nm]	*3	12000	12000	12000	10000
Nominal Input Speed	[rpm]	*4	1000			
Maximum Input Speed	[rpm]	*5	2000			
No Load Running Torque	[Nm]	*13	2.7			
Permitted Radial Load	[N]	*6	40000	42000	47000	52000
Permitted Axial Load	[N]	*7	34000	36000	40000	45000
Maximum Radial Load	[N]	*8	86000			
Maximum Axial Load	[N]	*9	64000			
Moment of Inertia (≤ Ø 48)	[kgcm2]	*10	--	--	--	--
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	250	200	140	120
Efficiency	[%]	--	95			
Torsional Rigidity	[Nm/arcmin]	*11	1200			
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3			
Noise Level	dB [A]	--	≤ 63			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	110			

VRT 285 2-Stage Specifications

Frame Size	285					
Stage	2-Stage					
Ratio	Unit	Note	16	20	25	28
Nominal Output Torque	[Nm]	*1	2750	3300	3300	3300
Maximum Output Torque	[Nm]	*2	5300	5300	5300	5300
Emergency Stop Torque	[Nm]	*3	12000	12000	12000	12000
Nominal Input Speed	[rpm]	*4	1000			
Maximum Input Speed	[rpm]	*5	2000			
No Load Running Torque	[Nm]	*13	0.6			
Permitted Radial Load	[N]	*6	60000	64000	69000	71000
Permitted Axial Load	[N]	*7	51000	55000	59000	61000
Maximum Radial Load	[N]	*8	86000			
Maximum Axial Load	[N]	*9	64000			
Moment of Inertia (≤ Ø 48)	[kgcm2]	*10	48.0	42.0	41.0	42.0
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--
Efficiency	[%]	--	90			
Torsional Rigidity	[Nm/arcmin]	*11	1200			
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3			
Noise Level	dB [A]	--	≤ 63			
Protection Class	--	*14	IP54 (IP65)			
Ambient Temperature	[°C]	--	0 - 40			
Permitted Housing Temperature	[°C]	--	90			
Weight	[kg]	*15	120			

VRT 285 2-Stage Specifications

Frame Size	**285**						
Stage	**2-Stage**						
Ratio	Unit	Note	35	40	50	70	100
Nominal Output Torque	[Nm]	*1	3300	3300	3300	3300	2200
Maximum Output Torque	[Nm]	*2	5300	5300	5300	5300	2500
Emergency Stop Torque	[Nm]	*3	12000	12000	12000	12000	10000
Nominal Input Speed	[rpm]	*4	1000				
Maximum Input Speed	[rpm]	*5	2000				
No Load Running Torque	[Nm]	*13	0.6				
Permitted Radial Load	[N]	*6	76000	79000	85000	86000	86000
Permitted Axial Load	[N]	*7	64000	64000	64000	64000	64000
Maximum Radial Load	[N]	*8	86000				
Maximum Axial Load	[N]	*9	64000				
Moment of Inertia (≤ Ø 48)	[kgcm2]	*10	39.0	36.0	35.0	35.0	35.0
Moment of Inertia (≤ Ø 65)	[kgcm2]	--	--	--	--	--	--
Efficiency	[%]	--	90				
Torsional Rigidity	[Nm/arcmin]	*11	1200				
Maximum Torsional Backlash	[Arc-min]	*12	≤ 3				
Noise Level	dB [A]	--	≤ 63				
Protection Class	--	*14	IP54 (IP65)				
Ambient Temperature	[°C]	--	0 - 40				
Permitted Housing Temperature	[°C]	--	90				
Weight	[kg]	*15	120				

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The average input speed

*5) The maximum intermittent input speed

*6) Torque at no load applied to the input shaft at nominal input speed

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*9) The maximum radial load that the gearbox can accept

*10) The maximum axial load that the gearbox can accept

*11) The efficiency at the nominal output torque rating

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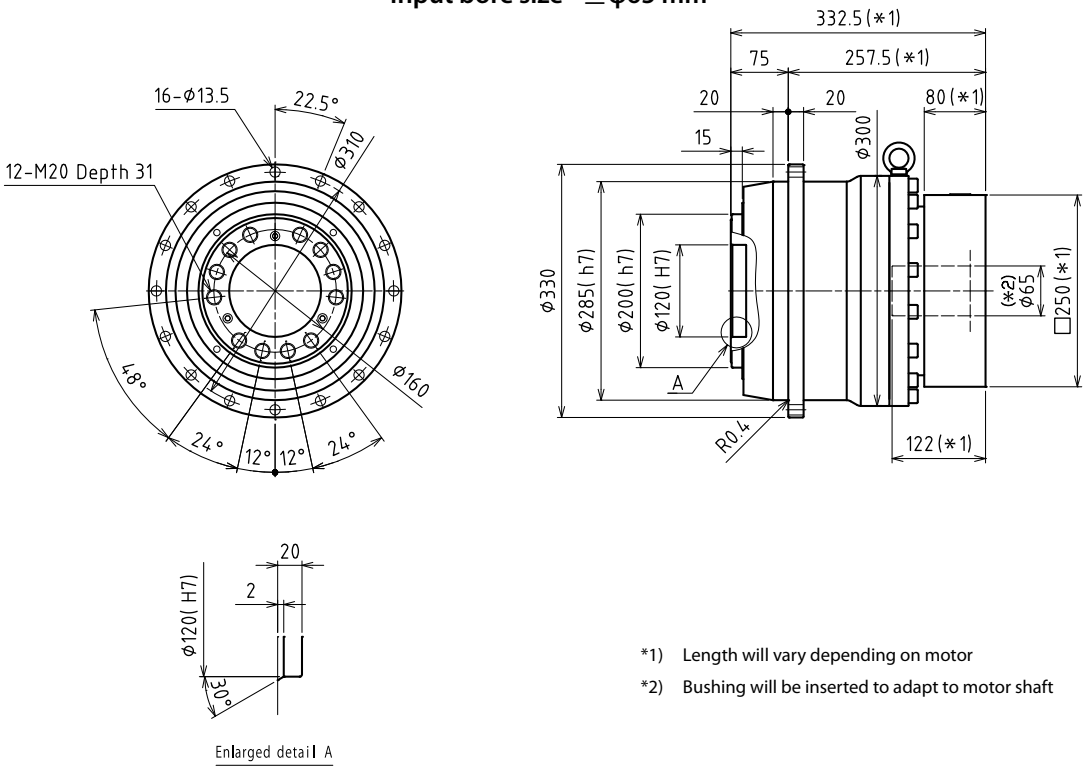
*14) IP65 (wash-down) is available as an option. Contact SIT S.P.A. for more details

*15) The weight may vary slightly between models

VRT 285 1-Stage Dimensions

Input bore size ≦φ65 mm

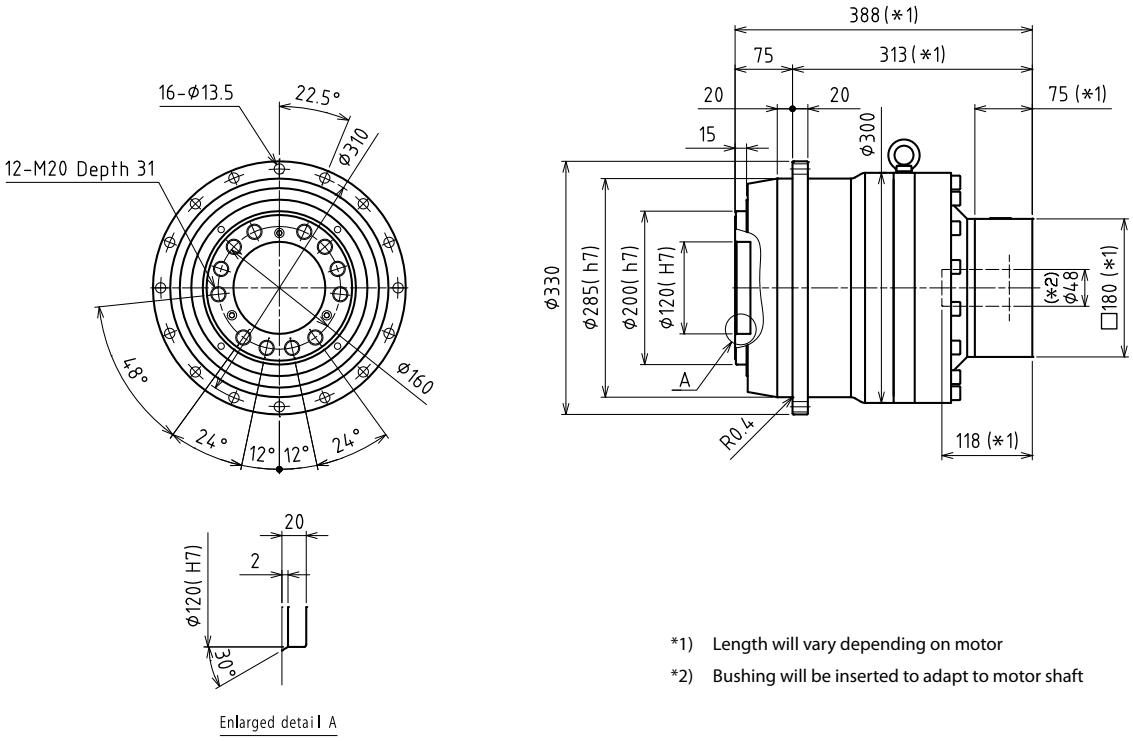


*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT 285 2-Stage Dimensions

Input bore size ≦φ48 mm



*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft