

## VRT 140 1-Stage Specifications

Frame Size	140					
Ratio	Unit	Note	4	5	7	10
Nominal Output Torque	[Nm]	*1	280	380	380	380
Maximum Acceleration Torque	[Nm]	*2	840	840	840	610
Maximum Torque	[Nm]	*3	1000	1000	950	730
Emergency Stop Torque	[Nm]	*4	1250	1250	1250	1000
Nominal Input Speed	[rpm]	*5	2100	2100	2600	2600
Maximum Input Speed	[rpm]	*6	5000	5000	5000	5000
No Load Running Torque	[Nm]	*7	1.00			
Maximum Radial Load	[N]	*8	19000			
Maximum Axial Load	[N]	*9	14000			
Maximum Tilting Moment	[Nm]	*10	2000			
Moment of Inertia ( $\leq \varnothing 14$ )	[kgcm <sup>2</sup> ]	--	--	--	--	--
Moment of Inertia ( $\leq \varnothing 19$ )	[kgcm <sup>2</sup> ]	--	--	--	--	--
Moment of Inertia ( $\leq \varnothing 28$ )	[kgcm <sup>2</sup> ]	--	11	7.7	5.1	3.8
Moment of Inertia ( $\leq \varnothing 38$ )	[kgcm <sup>2</sup> ]	--	18	14	12	10
Moment of Inertia ( $\leq \varnothing 48$ )	[kgcm <sup>2</sup> ]	--	33	29	27	25
Efficiency	[%]	*11	95			
Torsional Rigidity	[Nm/arcmin]	*12	190	187	159	140
Maximum Torsional Backlash	[Arc-min]	*13	Standard $\leq 3$ / Reduced $\leq 1$			
Noise Level	dB [A]	--	$\leq 67$			
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					
Ratio	Unit	Note	16	20	25	28
Nominal Output Torque	[Nm]	*1	380	410	590	590
Maximum Acceleration Torque	[Nm]	*2	840	840	840	840
Maximum Torque	[Nm]	*3	840	840	840	840
Emergency Stop Torque	[Nm]	*4	1250	1250	1250	1250
Nominal Input Speed	[rpm]	*5	2900	2900	2900	2900
Maximum Input Speed	[rpm]	*6	6000	6000	6000	6000
No Load Running Torque	[Nm]	*7	0.54			
Maximum Radial Load	[N]	*8	19000			
Maximum Axial Load	[N]	*9	14000			
Maximum Tilting Moment	[Nm]	*10	2000			
Moment of Inertia ( $\leq \varnothing 14$ )	[kgcm <sup>2</sup> ]	--	--	--	--	--
Moment of Inertia ( $\leq \varnothing 19$ )	[kgcm <sup>2</sup> ]	--	3.8	2.6	2.5	3.4
Moment of Inertia ( $\leq \varnothing 28$ )	[kgcm <sup>2</sup> ]	--	5.5	4.3	4.2	5.1
Moment of Inertia ( $\leq \varnothing 38$ )	[kgcm <sup>2</sup> ]	--	12	11	11	11
Moment of Inertia ( $\leq \varnothing 48$ )	[kgcm <sup>2</sup> ]	--	27	26	25	26
Efficiency	[%]	*11	90			
Torsional Rigidity	[Nm/arcmin]	*12	180	185	180	180
Maximum Torsional Backlash	[Arc-min]	*13	Standard $\leq 3$ / Reduced $\leq 1$			
Noise Level	dB [A]	--	$\leq 67$			
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							
Ratio	Unit	Note	35	40	50	70	100	
Nominal Output Torque	[Nm]	*1	590	500	590	590	440	
Maximum Acceleration Torque	[Nm]	*2	840	840	840	840	610	
Maximum Torque	[Nm]	*3	840	840	840	840	610	
Emergency Stop Torque	[Nm]	*4	1250	1250	1250	1250	1000	
Nominal Input Speed	[rpm]	*5	2900	2900	3200	3900	3900	
Maximum Input Speed	[rpm]	*6	6000	6000	6000	6000	6000	
No Load Running Torque	[Nm]	*7	0.54					
Maximum Radial Load	[N]	*8	19000					
Maximum Axial Load	[N]	*9	14000					
Maximum Tilting Moment	[Nm]	*10	2000					
Moment of Inertia ( $\leq \varnothing 14$ )	[kgcm <sup>2</sup> ]	--	--	--	0.68	0.65	0.64	
Moment of Inertia ( $\leq \varnothing 19$ )	[kgcm <sup>2</sup> ]	--	2.4	1.1	1.1	1.1	1.1	
Moment of Inertia ( $\leq \varnothing 28$ )	[kgcm <sup>2</sup> ]	--	4.1	2.9	2.9	2.8	2.8	
Moment of Inertia ( $\leq \varnothing 38$ )	[kgcm <sup>2</sup> ]	--	10	9.2	9.1	9.1	9.1	
Moment of Inertia ( $\leq \varnothing 48$ )	[kgcm <sup>2</sup> ]	--	25	24	24	24	24	
Efficiency	[%]	*11	90					
Torsional Rigidity	[Nm/arcmin]	*12	175	175	175	145	140	
Maximum Torsional Backlash	[Arc-min]	*13	Standard $\leq 3$ / Reduced $\leq 1$					
Noise Level	dB [A]	--	$\leq 67$					
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. Apply Cycle Factor  $f_0$ , found on page 468, for higher duty cycle applications

\*3 Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft

\*4 The maximum torque allowed under a stress situation. Permitted 1,000 times during service life

\*5 The average input speed at nominal input torque. Maintain housing temperature below permitted value

\*6 The maximum intermittent input speed

\*7 Torque at no load applied to the input shaft at nominal input speed

\*8 The maximum radial load that the gearbox can accept

\*9 The maximum axial load that the gearbox can accept

\*10 The maximum load at output flange surface

\*11 The efficiency at the nominal output torque rating

\*12 This does not include lost motion

\*13 Contact Nidec Drive Technology for the testing conditions and environment

\*14 IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details

\*15 Weight may vary slightly between models

VRSF

PRE

PRF

VRL

VRB

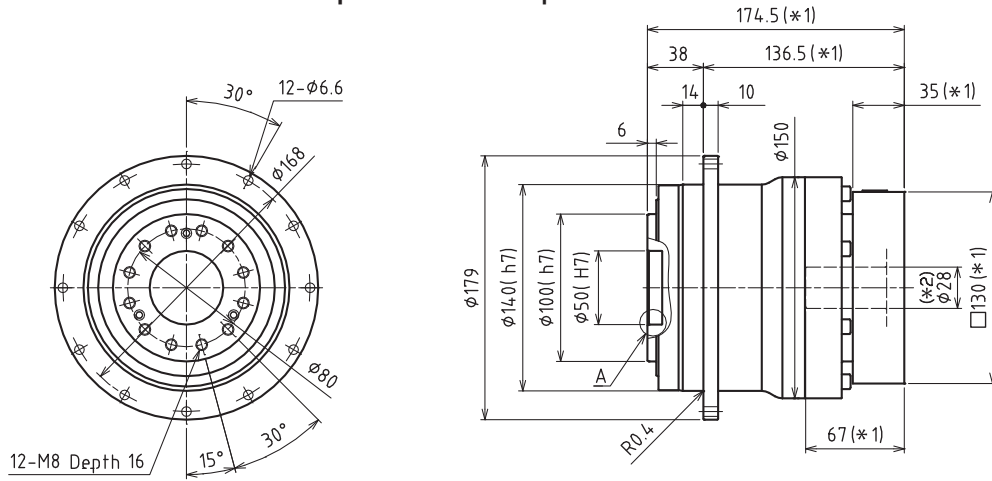
VRS

VRT

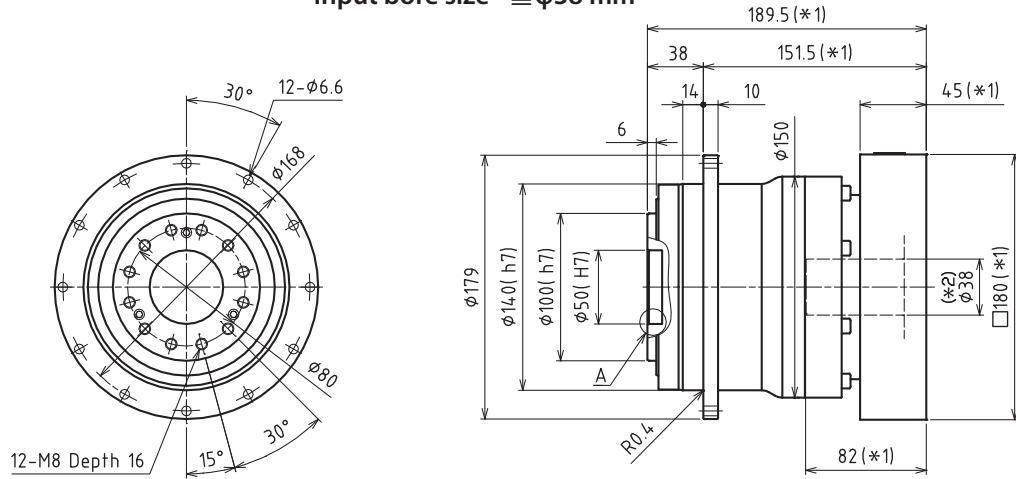
# PLANETARY Inline Gear Reducers

## VRT 140 1-Stage Dimensions

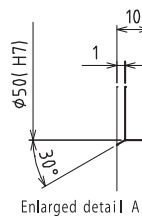
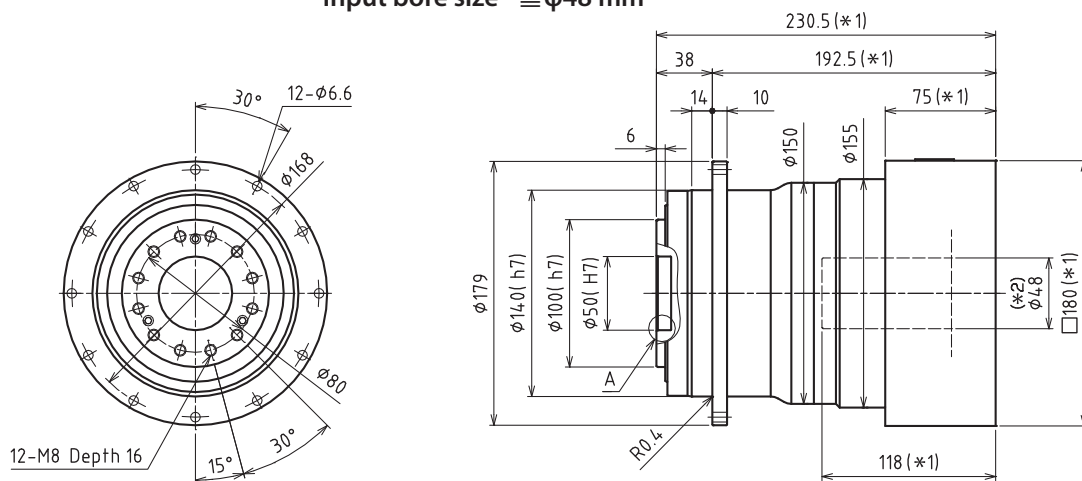
Input bore size  $\leq \phi 28$  mm



Input bore size  $\leq \phi 38$  mm



Input bore size  $\leq \phi 48$  mm



- \*1 Length will vary depending on motor.
- \*2 Bushing will be inserted to adapt to motor shaft

