

# VRS-SERIES Inline 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 ( $\leq \emptyset 28$ )	[kgcm <sup>2</sup> ]	--	--	--	--	--	--	--	--	--
Moment of Inertia ( $\leq \emptyset 38$ )	[kgcm <sup>2</sup> ]	--	42.000	27.000	21.000	18.000	16.000	15.000	14.000	14.000
Moment of Inertia ( $\leq \emptyset 48$ )	[kgcm <sup>2</sup> ]	--	64.000	49.000	43.000	40.000	38.000	37.000	36.000	36.000
Moment of Inertia ( $\leq \emptyset 65$ )	[kgcm <sup>2</sup> ]	--	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]	--	$\leq 3$							
Noise Level	[dB]	*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 ( $\leq \emptyset 28$ )	[kgcm <sup>2</sup> ]	--	4.700	5.400	4.300	4.200	4.900	3.200	4.100	3.200
Moment of Inertia ( $\leq \emptyset 38$ )	[kgcm <sup>2</sup> ]	--	12.000	13.000	12.000	12.000	13.000	11.000	12.000	11.000
Moment of Inertia ( $\leq \emptyset 48$ )	[kgcm <sup>2</sup> ]	--	34.000	35.000	34.000	34.000	35.000	33.000	34.000	33.000
Moment of Inertia ( $\leq \emptyset 65$ )	[kgcm <sup>2</sup> ]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	$\leq 3$							
Noise Level	[dB]	*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 ( $\leq \varnothing 28$ )	[kgcm <sup>2</sup> ]	--	4.000	3.100	3.100	3.100	3.100	3.100	3.100		
Moment of Inertia ( $\leq \varnothing 38$ )	[kgcm <sup>2</sup> ]	--	12.000	11.000	11.000	11.000	11.000	11.000	11.000		
Moment of Inertia ( $\leq \varnothing 48$ )	[kgcm <sup>2</sup> ]	--	34.000	33.000	33.000	33.000	33.000	33.000	33.000		
Moment of Inertia ( $\leq \varnothing 65$ )	[kgcm <sup>2</sup> ]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	175								
Maximum Torsional Backlash	[arc-min]	--	$\leq 3$								
Noise Level	[dB]	*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) This is the torque at no load applied on the input shaft. The input speed is 1,5000 rpm for VRS180

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

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

\*9) The maximum radial load that the reducer can accept

\*10) The maximum axial load that the reducer can accept

\*11) The efficiency at the nominal torque rating

\*12) This does not include the lost motion

\*13) Contact NIDEC-SHIMPO for the testing conditions and environment

\*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

\*15) The weight may vary slightly between models