

## 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 ( $\leq \emptyset 8$ )	[kgcm <sup>2</sup> ]	--	--	--	--	--	--	--	--	--	0.10
Moment of Inertia ( $\leq \emptyset 14$ )	[kgcm <sup>2</sup> ]	--	1.30	0.59	0.38	0.37	0.35	0.34	0.30	0.29	0.29
Moment of Inertia ( $\leq \emptyset 19$ )	[kgcm <sup>2</sup> ]	--	1.80	1.10	0.90	0.86	0.84	0.83	0.79	0.78	0.77
Moment of Inertia ( $\leq \emptyset 28$ )	[kgcm <sup>2</sup> ]	--	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]	--	$\leq 15$			$\leq 15$					
Backlash (Low)	[Arc-min]	--	$\leq 5$			$\leq 5$					
Backlash (Precision)	[Arc-min]	--	$\leq 3$			$\leq 3$					
Noise Level	[dB]	*10	$\leq 72$			$\leq 65$					
Protection Class	--	*11	IP65			IP65					
Ambient Temperature	[°C]	--	0-40			0-40					
Permitted Housing Temperature	[°C]	--	90			90					
Weight ( $\leq \emptyset 8$ )	[kg]	*12	--			2.8					
Weight ( $\leq \emptyset 14$ )	[kg]	*12	2.8			3.3					
Weight ( $\leq \emptyset 19$ )	[kg]	*12	3.2			3.7					
Weight ( $\leq \emptyset 28$ )	[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 NIDEC-SHIMPO for the testing conditions and environment

\*11) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details

\*12) The weight may vary slightly between models