

4 RATING TABLE

Table 1

Output speed (r/min)		5		10		15		20		25		30		40		50	
Model	Speed ratio of a discrete reduction gear (R _i)	Output torque	Input capacity	Output torque	Input capacity	Output torque	Input capacity	Output torque	Input capacity	Output torque	Input capacity	Output torque	Input capacity	Output torque	Input capacity	Output torque	Input capacity
		In-lb (Nm)	kW	In-lb (Nm)	kW	In-lb (Nm)	kW	In-lb (Nm)	kW	In-lb (Nm)	kW	In-lb (Nm)	kW	In-lb (Nm)	kW	In-lb (Nm)	kW
RV-10C	27	1,204 (136)	0.09	983 (111)	0.16	868 (98)	0.21	797 (90)	0.25	744 (84)	0.29	709 (80)	0.34	647 (73)	0.41	602 (68)	0.47
RV-27C	36.57 (1,390/38)	3,259 (368)	0.26	2,648 (299)	0.42	2,347 (265)	0.55	2,152 (243)	0.68	2,010 (227)	0.79	1,904 (215)	0.90	1,745 (197)	1.10	1,630 (184)	1.29
RV-50C	32.54 (1,985/61)	6,031 (681)	0.48	4,907 (554)	0.77	4,340 (490)	1.03	3,985 (450)	1.26	3,720 (420)	1.47	3,525 (398)	1.67	3,242 (366)	2.04	3,020 (341)	2.38
RV-100C	36.75	12,063 (1362)	0.95	9,804 (1107)	1.55	8,679 (980)	2.05	7,962 (899)	2.51	7,448 (841)	2.94	7,050 (796)	3.33	6,465 (730)	4.08		
RV-200C	34.86 (1,499/43)	24,125 (2,724)	1.90	19,617 (2,215)	3.09	17,368 (1,961)	4.11	15,968 (1,803)	5.04	14,932 (1,686)	5.88	14,144 (1,597)	6.69				
RV-320C	35.61 (2,778/78)	38,624 (4,361)	3.04	31,335 (3,538)	4.94	27,774 (3,136)	6.57	25,516 (2,881)	8.05	23,824 (2,690)	9.41						
RV-500C	37.34	60,322 (6,811)	4.75	49,039 (5,537)	7.73	43,397 (4,900)	10.26	39,837 (4,498)	12.56								

- Notes: 1. The overall speed ratio is calculated with the formula in page 56.
 2. Set maximum input shaft speed to a value equal to or lower than the value of maximum allowable output speed multiplied by the overall speed ratio for each type.
 3. The input capacity (KW) in the above table is determined by the efficiency of these reduction gears.
 4. The output torque (In-lb) is so determined that the service life may be maintained constant for any output revolutions. ($N \cdot T^{\frac{10}{3}} = \text{Constant}$)
 5. The rated torque is a torque at an output speed of 15 r/min, which is used as a basis for service life calculations. (Refer to the rated service life, page 61.)

60		Moment rigidity Typical Value In-lb/ arc.min. (Nm/arc.min.)	Allowable moment In-lb (Nm)	Momentary max. allowable moment (Shockload) In-lb (Nm)	Allowable max. output speed (Continuous) r/min	Allowable acceleration/ deceleration torque In-lb (Nm)	Momentary max. allowable torque (E-stop) In-lb (Nm)	Lost motion MAX. arc.min.	Torsional rigidity (Stiffness) Typical Value In-lb/ arc.min. (Nm/arc.min.)	$I(=\frac{GD^2}{4})$ (Inertia of reduction gear unit) kg-m ²	$I(=\frac{GD^2}{4})$ (Inertia of center gear) kg-m ²	Weight lb (kg)
Output torque In-lb (Nm)	Input capacity kW											
576 (65)	0.54	3,726 (421)	6,076 (686)	12,151 (1,372)	80	2,170 (245)	4,340 (490)	1	416 (47)	1.34×10^{-5}	0.678×10^{-3}	10.1 (4.6)
1,541 (174)	1.46	9,452 (1,068)	8,679 (980)	17,359 (1,960)	60	5,863 (662)	11,717 (1,323)	1	1,302 (147)	0.628×10^{-4}	0.563×10^{-3}	18.7 (8.5)
		17,346 (1,960)	15,623 (1,764)	31,246 (3,528)	50	10,849 (1,225)	Bolt joint 21,699 (2,450) Through-bolt joint 17,359 (1,960)	1	2,258 (255)	1.82×10^{-4}	0.363×10^{-2}	33.1 (15)
		24,895 (2,813)	21,699 (2,450)	43,397 (4,900)	40	21,699 (2,450)	Bolt joint 43,397 (4,900) Through-bolt joint 30,378 (3,430)	1	4,517 (510)	0.47×10^{-3}	0.953×10^{-2}	43.0 (19.5)
		86,730 (9,800)	78,115 (8,820)	156,230 (17,640)	30	43,397 (4,900)	Bolt joint 86,795 (9,800) Through-bolt joint 65,096 (7,350)	1	8,679 (980)	0.995×10^{-3}	1.94×10^{-2}	125.7 (57)
		112,830 (12,740)	182,269 (20,580)	347,179 (39,200)	25	69,436 (7,840)	138,872 (15,680)	1	17,359 (1,960)	0.68×10^{-2}	0.405×10^{-1}	176.4 (80)
		216,990 (24,500)	303,781 (34,300)	694,358 (78,400)	20	108,493 (12,250)	216,987 (24,500)	1	30,378 (3,430)	0.98×10^{-2}		352.7 (160)

6. The $\frac{GD^2}{4}$ value is a value for a discrete reduction gear, and the $\frac{GD^2}{4}$ for center and input gears is not included. Therefore, refer to the following equation regarding the $\frac{GD^2}{4}$ converted to motor shaft.

$$\frac{\frac{GD^2}{4} \text{ of reduction gear unit} + \frac{GD^2}{4} \text{ of center gear}}{(\text{Number of teeth on large center gear} / \text{Number of teeth on input gear})^2} + \frac{GD^2}{4} \text{ of input gear}$$

7. If a higher speed than the above allowable maximum output speed is required, contact Nabtesco for further information.

8. The output revolution is for forward-reverse changeover applications and not applicable for continuous rotation in a single direction. Contact Nabtesco when using the reduction gear for continuous single-direction rotation.