

# 4 RATING TABLE

Table 1

Output speed (r/min)			5		10		15		20		25		30		40	
Model	Speed ratio		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
	Shaft rotation	Case rotation	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-6E	31	30	895 (101)	0.07	717 (81)	0.11	638 (72)	0.15	585 (66)	0.19	549 (62)	0.22	514 (58)	0.25	478 (54)	0.30
	43	42														
	53.5	52.5														
	59	58														
	79	78														
	103	102														
RV-20E	57	56	2,046 (231)	0.16	1,665 (188)	0.26	1,479 (167)	0.35	1,355 (153)	0.43	1,266 (143)	0.50	1,196 (135)	0.57	1,098 (124)	0.70
	81	80														
	105	104														
	121	120														
	141	140														
	161	160														
RV-40E	57	56	5,066 (572)	0.40	4,118 (465)	0.65	3,649 (412)	0.86	3,339 (377)	1.05	3,126 (353)	1.23	2,958 (334)	1.40	2,719 (307)	1.71
	81	80														
	105	104														
	121	120														
	153	152														
RV-80E	57	56	9,636 (1,088)	0.76	7,838 (885)	1.24	6,944 (784)	1.64	6,368 (719)	2.01	5,952 (672)	2.35	5,642 (637)	2.67	5,172 (584)	3.26
	81	80														
	101	100														
	121	120														
	※1 (153)	※1 (152)														
RV-110E	81	80	13,276 (1,499)	1.05	10,761 (1,215)	1.70	9,547 (1,078)	2.26	8,768 (990)	2.76	8,192 (925)	3.23	7,750 (875)	3.67	7,121 (804)	4.49
	111	110														
	161	160														
	※2 175.28	174.28														
RV-160E	81	80	19,272 (2,176)	1.52	15,712 (1,774)	2.48	13,887 (1,568)	3.28	12,762 (1,441)	4.02	11,894 (1,343)	4.69	11,283 (1,274)	5.34		
	101	100														
	129	128														
	145	144														
	171	170														
RV-320E	81	80	38,624 (4,361)	3.04	31,335 (3,538)	4.94	27,774 (3,136)	6.57	25,516 (2,881)	8.05	23,869 (2,695)	9.41	22,567 (2,548)	10.7		
	101	100														
	118.5	117.5														
	129	128														
	141	140														
	171	170														
	185	184														
RV-450E	81	80	54,335 (6,135)	4.28	44,088 (4,978)	6.95	39,058 (4,410)	9.24	35,843 (4,047)	11.3	33,505 (3,783)	13.2				
	101	100														
	118.5	117.5														
	129	128														
	※2 154.8	153.8														
	171	170														
	※2 192.4	191.4														

Notes: 1. Set maximum input shaft revolutions to a value equal to or lower than the value of maximum allowable output revolutions multiplied by the above speed ratio for each type.

2. The input capacity (kW) in the above table is determined by the efficiency of these reduction gears.

3. The output torque (In-lb) is so determined that the service life may be maintained constant for any output revolutions. ( $N \cdot T^{10} = \text{Constant}$ )

4. 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 15) The RV-6E, however, has its rated torque determined as the output torque at an output speed of 30 r/min.

5. The  $\frac{GD^2}{4}$  value is a value considering both gear tooth widths of reduction gear assembly and input gear. The  $\frac{GD^2}{4}$  value at the shaft of the input gear is not included.

50		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(= $\frac{GD^2}{4}$ ) (Input inertia)		Weight  lb (kg)
Output torque	Input capacity	Output torque	Input capacity									Tooth width mm	kg-m <sup>2</sup>	
In-lb (Nm)	kW	In-lb (Nm)	kW											
443 (50)	0.35	416 (47)	0.40	1,036 (117)	1,736 (196)	3,472 (392)	100	1,036 (117)	2,604 (294)	1.5'	177 (20)	6	3.75×10 <sup>-6</sup>	5.5 (2.5)
													2.60×10 <sup>-6</sup>	
													1.84×10 <sup>-6</sup>	
													1.63×10 <sup>-6</sup>	
													1.09×10 <sup>-6</sup>	
0.79×10 <sup>-6</sup>														
1,019 (115)	0.81	974 (110)	0.92	3,295 (372)	7,812 (882)	15,623 (1,764)	75	3,649 (412)	7,378 (833)	1'	434 (49)	8	1.08×10 <sup>-5</sup>	9.68 (4.4)
													0.65×10 <sup>-5</sup>	
													0.45×10 <sup>-5</sup>	
													0.37×10 <sup>-5</sup>	
													0.29×10 <sup>-5</sup>	
0.24×10 <sup>-5</sup>														
2,542 (287)	2.00	2,400 (271)	2.27	8,245 (931)	14,755 (1,666)	29,510 (3,332)	70	9,113 (1,029)	18,227 (2,058)	1'	957 (108)	10	3.75×10 <sup>-5</sup>	20.9 (9.5)
													2.40×10 <sup>-5</sup>	
													1.72×10 <sup>-5</sup>	
													1.43×10 <sup>-5</sup>	
													1.03×10 <sup>-5</sup>	
4,836 (546)	3.81	4,579 (517)	4.33	10,415 (1,176)	Bolt joint 19,095 (2,156) Pin/bolt joint 15,366 (1,735)	Bolt joint 38,190 (4,312) Pin/bolt joint 19,095 (2,156)	70	17,359 (1,960)	Bolt joint 34,718 (3,920) Pin/bolt joint 28,208 (3,185)	1'	1,736 (196)	10	8.28×10 <sup>-5</sup>	27.9 (12.7)
													5.65×10 <sup>-5</sup>	
													4.40×10 <sup>-5</sup>	
													3.53×10 <sup>-5</sup>	
													2.63×10 <sup>-5</sup>	
				13,019 (1,470)	26,038 (2,940)	52,077 (5,880)	50	23,869 (2,695)	47,737 (5,390)	1'	2,604 (294)	13	1.08×10 <sup>-4</sup>	39.6 (18.0)
													0.73×10 <sup>-4</sup>	
													0.45×10 <sup>-4</sup>	
													0.40×10 <sup>-4</sup>	
				26,038 (2,940)	34,718 (3,920)	Bolt joint 69,436 (7,840) Pin/bolt joint 59,888 (6,762)	45	34,718 (3,920)	Bolt joint 69,436 (7,840) Pin/bolt joint 58,586 (6,615)	1'	3,472 (392)	15	1.96×10 <sup>-4</sup>	61.6 (28)
													1.51×10 <sup>-4</sup>	
													1.11×10 <sup>-4</sup>	
													0.90×10 <sup>-4</sup>	
0.76×10 <sup>-4</sup>														
				43,397 (4,900)	Bolt joint 62,492 (7,056) Pin/bolt joint 54,681 (6,174)	Bolt joint 124,984 (14,112) Pin/bolt joint 97,210 (10,976)	35	69,436 (7,840)	Bolt joint 138,872 (15,680) Pin/bolt joint 108,493 (12,250)	1'	8,679 (980)	16	5.23×10 <sup>-4</sup>	103.4 (47)
													4.00×10 <sup>-4</sup>	
													3.28×10 <sup>-4</sup>	
													2.95×10 <sup>-4</sup>	
													2.63×10 <sup>-4</sup>	
2.01×10 <sup>-4</sup>														
1.79×10 <sup>-4</sup>														
				65,964 (7,448)	78,115 (8,820)	Bolt joint 156,230 (17,640) Pin/bolt joint 119,777 (13,524)	25	97,644 (11,025)	Bolt joint 195,288 (22,050) Pin/bolt joint 164,910 (18,620)	1'	10,415 (1,176)	18	8.93×10 <sup>-4</sup>	151.8 (69)
													6.95×10 <sup>-4</sup>	
													5.75×10 <sup>-4</sup>	
													5.18×10 <sup>-4</sup>	
													4.08×10 <sup>-4</sup>	
3.58×10 <sup>-4</sup>														
3.03×10 <sup>-4</sup>														

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

7. If other speed ratio than the above list is required, contact Nabtesco for further information.

8. \*1 RV-80E, R=153 is used only for output shaft bolt-on type. (page 25)

\*2 These reduction gear ratios are indivisible figures. Actually, 175.2=1,227/7, 154.8=2,013/13 and 192.4=1,347/7.

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