



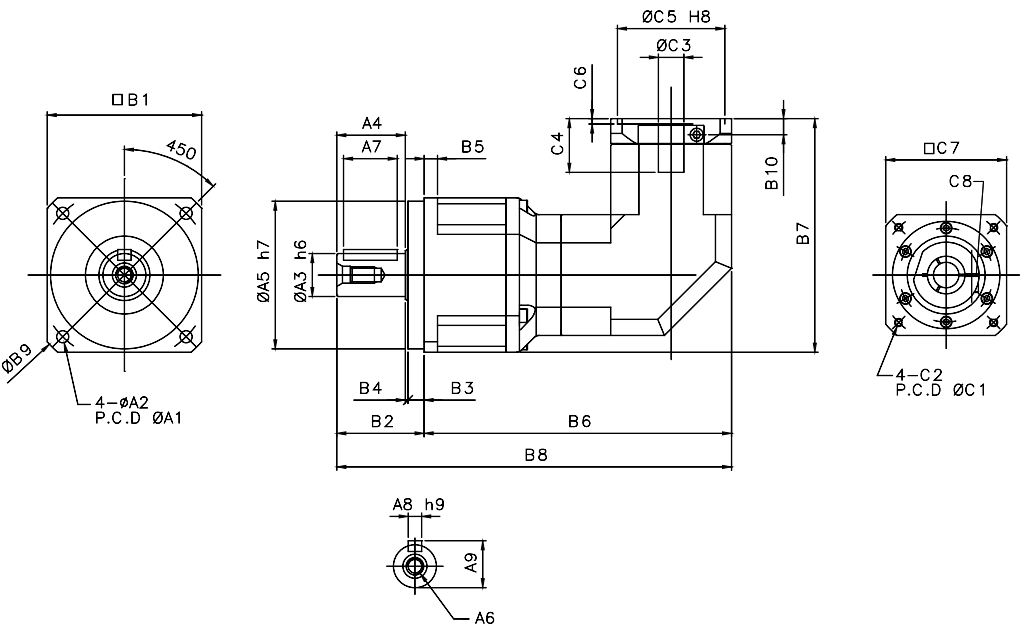
Dimensions



Features

MODEL : NPR Series

(2stage reducer, Reduction ratio I = 25,30,35,40,45,50,60,70,80,90,100,120,140,160,180,200)



Unit : mm

CODE	MODEL	042	060	090	115	142	180	220
A	A1	50	70	100	130	165	215	250
	A2	3,4	5,5	6,8	9	11	13	17
	A3	13	16	22	32	40	55	75
	A4	19,5	28,5	36,5	51	79	82	105
	A5	35	50	80	110	130	160	180
	A6	M4xP0,7	M5xP0,8	M8	M12	M16	M20	M20
	A7	16	25	32	40	65	70	90
	A8	5	5	6	10	12	16	20
	A9	15	18	24,5	35	43	59	79,5
B ²⁾	B1	42	60	90	115	142	180	220
	B2	26	37	48	65	97	105	138
	B3	5,5	7	10	12	15	20	30
	B4	1	1,5	1,5	2	3	3	3
	B5	4	6	8	10	12	15	20
	B6	133,8	139,8	174,5	234	286	339	414,5
	B7 *	87,5	96,5	131,5	173,5	210	264	330
	B8	159,8	176,8	222,5	299	383	444	557,5
	B9	56	80	116	152	185	240	292
	B10 *	9	9	14	12	15	17,5	22,5
C ²⁾	C1 *	46	46	70	100	130	165	215
	C2 *	M4xP0,7	M4xP0,7	M5xP0,8	M6	M8	M10	M12
	C3 * ¹⁾	≤ 11(12)	≤ 11(12)	≤ 14(16)	≤ 19(22,24)	≤ 28(32)	≤ 38	≤ 48
	C4 *	25	25	34	40	50	60	85
	C5 *	30	30	50	80	110	130	180
	C6 *	3,5	3,5	8	4	5	6	6
	C7 *	42	42	60	90	115	142	190
	C8 *	M3xP0,5	M3xP0,5	M5xP0,8	M6	M8	M10	M10

1. () on request, 2. * : applied according to motor sizes
3. Dimensions are subject to be changed for improvement. Please contact NARA DRIVE for more information.



NP Series

- Helical gear applied for low noise and high efficiency
- Flange type precision reducer



NPR Series

- Helical gear applied for low noise and high efficiency
- Angular type precision reducer
- For space saving



NF Series

- Helical gear applied for low noise and high efficiency
- Flange type precision reducer



NFR Series

- Helical gear applied for low noise and high efficiency
- Angular flanged precision reducer
- For space saving

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*Dimensions are subject to alteration without notice.

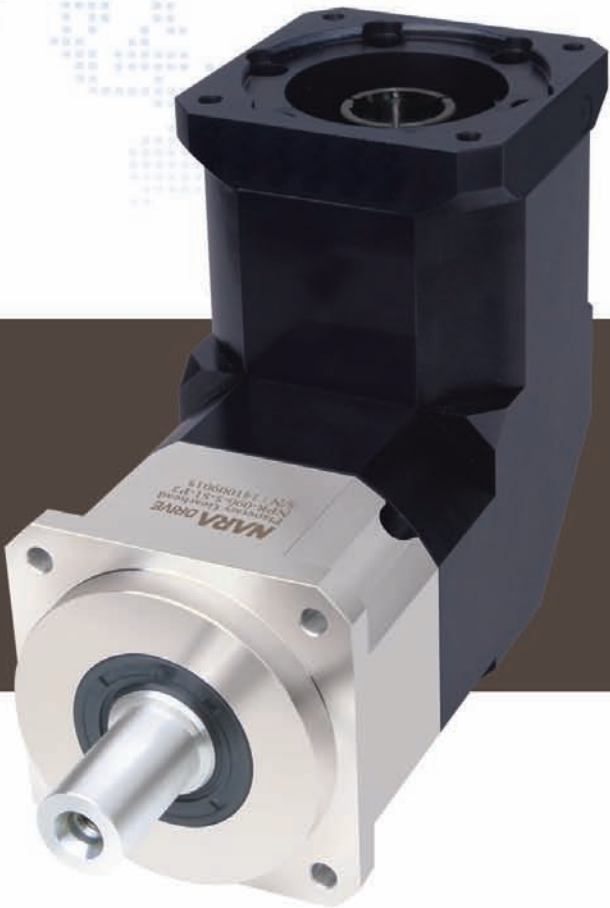
NARA DRIVE
MOTION & CONTROL

NPR Series

For servo motor and stepping motor

PRECISION PLANETARY GEARHEADS

Backlash 3min / 5min / 10min



NARA DRIVE
www.naradr.com





Features



LOW NOISE

Low noise is performed by using helical planetary reduction gear for low noise and smooth operation.

HIGH STRENGTH

High strength is achieved with ring gear directly toothed at housing, and compact size also achieved.

HIGH PRECISION

5min or 3min high precision backlash makes precise position control and performs the best operation of servo motor.

LONG LIFE

More than 20,000 operating hours and maintenance free.

EASY MOUNTING

Easy mounting for all kinds of servo motors with using set collars and bushes.

HELICAL GEAR APPLIED

For servo motors, high torque and smooth, silent operation are achieved by helical gear with higher tooth contact ratio than spur gear.



Specifications

Model No	Unit	Stage	Ratio	NPR042	NPR060	NPR090	NPR115	NPR142	NPR180	NPR220
Nominal Output Torque T _{2N}	Nm	1	3	9	36	90	195	342	588	1140
			4	12	48	120	260	520	1040	1680
			5	15	60	150	325	650	1200	2000
			6	18	55	150	310	600	1100	1900
			7	19	50	140	300	550	1100	1800
			8	17	45	120	260	500	1000	1600
			9	14	40	100	230	450	900	1500
			10	14	40	100	230	450	900	1500
			12	18	55	150	310	600	1100	1900
			14	19	42	140	300	550	1100	1800
			16	17	45	120	260	500	1000	1600
			18	14	40	100	230	450	900	1500
		2	20	14	40	100	230	450	900	1500
			25	15	60	150	325	650	1200	2000
			30	20	55	150	310	600	1100	1900
			35	19	50	140	300	550	1100	1800
			40	17	45	120	260	500	1000	1600
			45	14	40	100	230	450	900	1500
			50	14	60	100	230	650	1200	2000
			60	20	55	150	310	600	1100	1900
			70	19	50	140	300	550	1100	1800
			80	17	45	120	260	500	1000	1600
			90	14	40	100	230	450	900	1500
			100	14	40	100	230	450	900	1500
			120	20	55	150	310	600	1100	1900
			140	19	42	140	300	550	1100	1800
			160	17	45	120	260	500	1000	1600
			180	14	40	100	230	450	900	1500
			200	14	40	100	230	450	900	1500
Emergency Stop Torque T _{2NOT} ⁴	Nm		3~200	3times of nominal output torque						
Nominal Input Speed n _{IN}	rpm		3~200	3,000	3,000	3,000	3,000	3,000	3,000	2,000
Max Input Speed n _{imax}	rpm		3~200	6,000	6,000	5,000	5,000	5,000	5,000	4,000
Precision Backlash P ₁	arcmin		3~20	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
Low Backlash P ₂	arcmin		25~200	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8
			3~20	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
Standard Backlash P ₃	arcmin		25~200	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
			3~200	≤ 12	≤ 12	≤ 12	≤ 12	≤ 12	≤ 12	≤ 12
Max. Radial Load F _r ²	N		3~200	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15
			3~200	710	1,210	2,710	5,490	7,710	12,260	127,140
Max. Axial Load	F _{1A} ² F _{2A} ²	N	3~200	470	770	1,550	3,200	4,830	7,110	13,560
Service Life	hr		3~200	20000 ⁵						
Noise Level (n1=3000rpm,No Load)	dB(A)		3~200	≤ 61	≤ 63	≤ 65	≤ 68	≤ 70	≤ 72	≤ 75
Efficiency η	%		3~20	≤ 95						
			25~200	≤ 92						
Weight	kg		3~20	0,95	2,34	6,8	12,5	23,9	47	82
Operating Temperature ³	℃		25~200	1,23	1,85	5,3	11,8	22,2	40	78
			3~200	-10℃ ~ +90℃						
Lubrication			3~200	Grease						
Degree of Protection			3~200	IP65						
Mounting Position			3~200	All directions						

- Ratio=Nin/Nout
- Ambient temperature 0~40℃
- Service life 10,000hrs (S1: Continuous operating condition)

* Specifications are subject to be changed for improvement. Please contact NARADRIVE for more information.

NPR Series Inertia

Model No	Unit	Stage	Ratio	NFR047	NFR064	NFR090	NFR110	NFR140	NFR200	NFR255
Mass Moments of Inertia J	kg-cm ²	1	5	0,09	0,36	-	6,85	23,50	68,90	135,40
			7	0,09	0,36	2,28	6,85	23,50	68,90	135,40
			10	0,09	0,36	2,28	6,85	23,50	68,90	135,40
			14	0,03	0,08	1,88	6,25	21,80	65,60	119,80
			20	0,03	0,08	1,88	6,25	21,80	65,60	119,80
			25	0,09	0,10	-	2,31	6,85	23,40	68,90
		2	35	0,09	0,10	0,40	2,31	6,85	23,40	68,90
			50	0,09	0,10	-	2,31	6,85	23,40	68,90
			70	0,09	0,10	0,40	2,31	6,85	23,40	68,90
			100	0,09	0,10	0,40	2,31	6,85	23,40	68,90
			140	0,03	0,06	0,32	1,92	6,20	21,80	65,60
			200	0,03	0,06	0,32	1,92	6,20	21,80	65,60

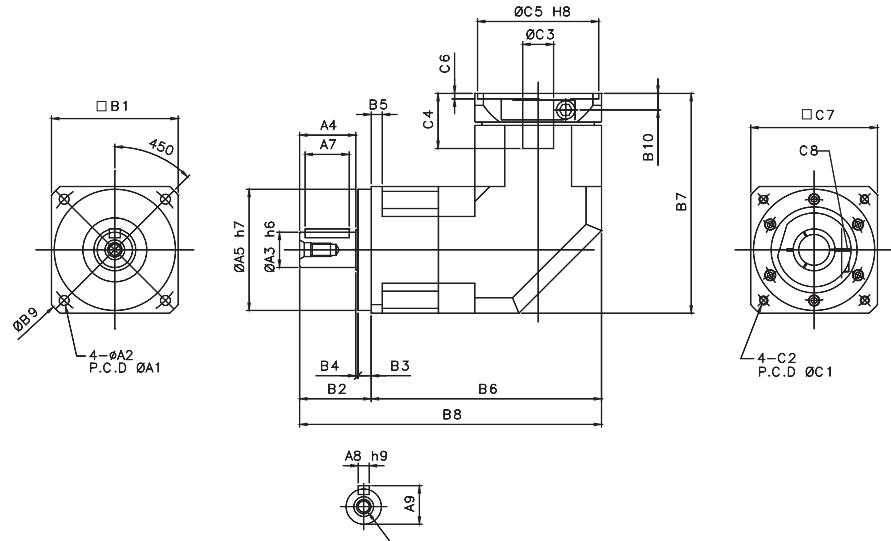
* Specifications are subject to be changed for improvement. Please contact NARADRIVE for more information.



Dimensions

MODEL : NPR Series

(1stage reducer, Reduction ratio I = 3,4,5,6,7,8,9,10,12,14,16,18,20)



Unit : mm

CODE	MODEL	042	060	090	115	142	180	220
A	A1	50	70	100	130	165	215	250
	A2	3,4	5,5	6,8	9	11	13	17
	A3	13	16	22	32	40	55	75
	A4	19,5	28,5	36,5	51	79	82	105
	A5	35	50	80	110	130	160	180
	A6	M4xP0,7	M4xP0,8	M8	M12	M16	M20	M20
	A7	16	25	32	40	65	70	90
	A8	5	5	6	10	12	16	20
	A9	15	18	24,5	35	43	59	79,5
B ²⁾	B1	42	60	90	115	142	180	220
	B2	26	37	48	65	97	105	138
	B3	5,5	7	10	12	15	20	30
	B4	1	1,5	1,5	2	3	3	3
	B5	4	6	8	10	12	15	20
	B6	103,8	131,5	176	214	259	328,5	385,2
	B7 *	87,5	116,5	161	196,5	245	310	393
	B8	129,8	168,5	224	279	356	433,5	523,2
	B9	56	80	116	152	185	240	292
C ²⁾	B10 *	9	14	12	15	17,5	22,5	53,5
	C1 *	46	70	100	130	165	215	235
	C2 *	M4xP0,7	M5xP0,8	M6	M8	M10	M12	M12
	C3 * ¹⁾	≤ 11(12)	≤ 14(16)	≤ 19(22,24)	≤ 28(32)	≤ 38	≤ 48	≤ 55
	C4 *	25	34	40	50	60	85	116
	C5 *	30	50	80	110	130	180	200
	C6 *	3,5	8	4	5	6	6	6
	C7 *	42	60	90	115	142	190	220
	C8 *	M3xP0,5	M5xP0,8	M6	M8	M10	M10	M10

- () on request.
- * : applied according to motor sizes
- Dimensions are subject to be changed for improvement. Please contact NARA DRIVE for more information.