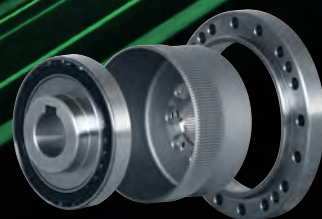


Nidec
All for dreams



High Precision
Gearbox



WP series

FLEXWAVE

NIDEC DRIVE TECHNOLOGY CORPORATION

High - Precision Gearbox

Compact and flexible

FLEXWAVE's compact, lightweight build delivers high torque and superior accuracy — making it the perfect choice for robotics and automation systems requiring high efficiency and precision for smooth operation.

The FLEXWAVE series showcases exceptional versatility in the joint axes of robots – particularly humanoid robots – enabling intricate and complex movements. This innovation plays a crucial role in advancing technology and its impact on society.



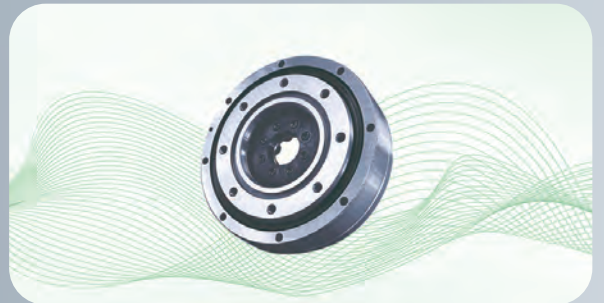
HIGH TORQUE for Maximum Efficiency

Nidec's advance gear systems deliver superior torque density and unmatched reliability, optimizing power transmission for peak performance.



HIGH ACCURACY for Precision and Reliability

Nidec's zero-backlash ensures precise positional accuracy and smooth motion.



COMPACT and LIGHT WEIGHT for Easy Integration

Compact and Lightweight Design: Enables seamless integration into space-constrained applications.

Relentless Refinement of Technology

FLEXWAVE

FLEXWAVE

Series Lineup

High Torque Type B2
and Flat Type D

Closed Type



WPC-□-□-CR
Component type
High Torque Type B2



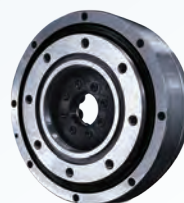
WPU-□-□-CD
Unit type
Flat Type D



WPC-□-□-CD
Component type
Flat Type D



WPU-□-□-CR
Unit type
High Torque Type B2,
Flat Type D

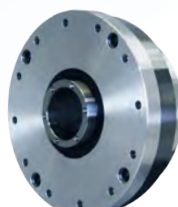


WPU-□-□-CDH
Unit type
High Torque Type B2,
Flat Type D

Open Type



WPS-□-□-SR
Simple unit type
High Torque Type B2,
Flat Type D



WPU-□-□-SRH
Unit type (hollow shaft type),
High Torque Type B2,
Flat Type D



WPU-□-□-SRJ
Unit type (input Shaft Unit)
High torque Type B2



WPS-□-□-SD
Simple unit type
Flat Type D



WPU-□-□-SDH
Unit (hollow shaft)
Flat Type D

Model Nomenclature

WP				
Series name	Type	Size	Ratio	Code
WP Series	C : Component type S : Simple unit type U : Unit type, Hollow shaft type Input shaft type	35, 42, 50, 63, 80, 100	50, 80, 100, 120, 160	CR, SR, SRH, SRJ, CD, CDH, SD, SDH

New Product Features



Smart-FLEXWAVE

Smart-FLEXWAVE represents the next evolution in gearbox technology, seamlessly integrating our proven FLEXWAVE gearbox features with an advance built-in multi-sensor. This innovative sensor monitors both output torque and internal temperature, enhancing performance, reliability, and predictive maintenance capabilities.



Sensor Technology

- Detects Output Torque
- Detects Internal Temperature of Gearbox

The Smart-FLEXWAVE's safety torque sensor is TÜV SÜD Safety Certified.

Applicable Standards :
 EN ISO 13849-1:2023
 IEC 61508: 2010
 EN IEC 62061: 2021



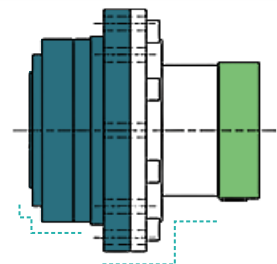
Model Nomenclature

WP	U				BD
Series name	Type	Size	Ratio	Shaft code	Sensor code
WP Series	Unit type • Hollow shaft type • Input shaft type	35, 42, 50, 63, 80	50, 80, 100, 120, 160	SRH, SRJ	BD

Gearhead Type

Easy To Handle

WPG series gearheads seamlessly integrate the industry-leading accuracy, repeatability, and exceptional torque-to-weight ratio of our WPU high-torque strain wave units with the modularity, easy installation, and universal motor mounting of our Able planetary gearboxes.



Same design as "WPU-□-□-CR"

Same paint as "Able Reducer"

Same design as "Able Reducer"

Model Nomenclature

WP	G			CR	
Series name	Type	Size	Ratio	Code	Mount code*
WP Series	G:Gearhead type	35, 42, 50, 63, 80	50, 80, 100, 120, 160		

*Mount code varies depending on the motor selection. Please refer to the 'Reducer Selection Tool' found on our website for further details, or alternatively please contact us for more information.

Dimensions Table

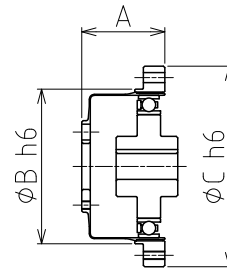
High Torque Type B2,
Flat Type D



Refer to catalog for more details

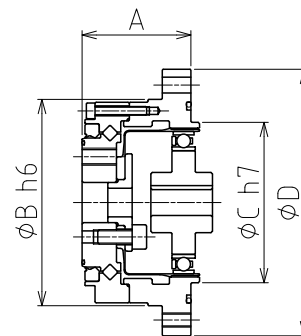
WPC-□-□-CR

Size	35	42	50	63	80
A	23.5	26.5	29	34	42
B	38	48	54	67	90
C	50	60	70	85	110



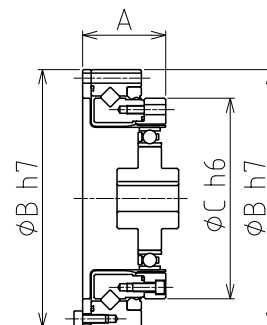
WPU-□-□-CR

Size	35	42	50	63	80
A	34	37	38	46	57
B	56	63	72	86	113
C	38	48	56	67	90
D	73	79	93	107	138



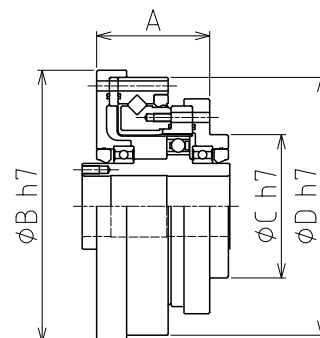
WPS-□-□-SR

Size	35	42	50	63	80	100
A	23.5	26.5	29	34	42	51
B	70	80	90	110	142	170
C	50	60	70	85	110	135



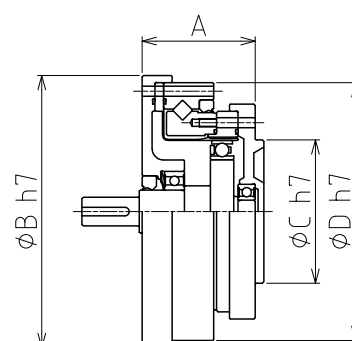
WPU-□-□-SRH

Size	35	42	50	63	80	100
A	33	36	39.5	43.5	53.5	64
B	74	84	95	115	147	175
C	36	45	50	60	85	100
D	70	80	90	110	142	170



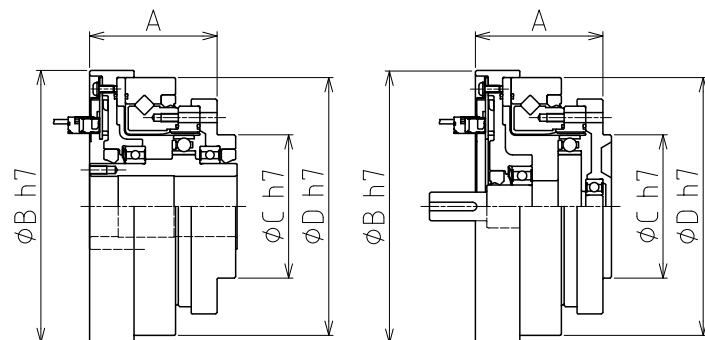
WPU-□-□-SRJ

Size	35	42	50	63	80	100
A	33	36	39.5	43.5	53.5	64
B	74	84	95	115	147	175
C	36	45	50	60	85	100
D	70	80	90	110	142	170



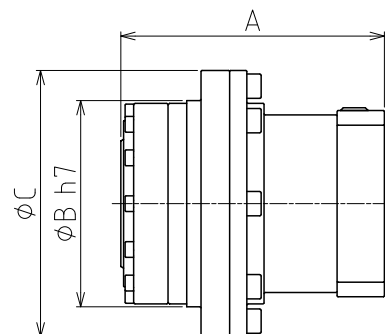
■ WPU-□-□-BD-SRH/SRJ Smart-FLEXWAVE

Size	35	42	50	63	80
A	40	43	44.5	48.5	58.5
B	78	88	95	115	147
C	35	45	50	60	85
D	70	80	90	110	142



■ WPG-□-□-CR Gearhead type

Size	35	42	50	63	80
A*	81.5	84.5	87	100	118
B	56	63	72	86	113
C	73	79	93	107	138



* The length depends on the motor.

Specification

High torque 'type B2', Flat Type D

Size	Ratio	Nominal output torque	Maximum output torque	Emergency stop torque	Nominal input speed	Maximum input speed	Life
		[Nm]	[Nm]	[Nm]	[r/min]	[r/min]	[hours]
35	50	7	23	46	3000	8500	10000 (7692 for Smart- FLEXWAVE)
	80	10	30	61			
	100	10	36	70			
42	50	21	44	91	3000	7300	
	80	29	56	113			
	100	31	70	143			
	120	31	70	112			
50	50	33	73	127	3000	6500	
	80	44	96	165			
	100	52	107	191			
	120	52	113	191			
	160	52	120	191			
63	50	51	127	242	3000	5600	
	80	82	178	332			
	100	87	204	369			
	120	87	217	395			
	160	87	229	408			
80	50	99	281	497	3000	4800	
	80	153	395	738			
	100	178	433	841			
	120	178	459	892			
	160	178	484	892			
100	50	178	523	892	3000	4000	
	80	268	675	1270			
	100	345	738	1400			
	120	382	802	1530			
	160	382	841	1530			

Dimensions Table

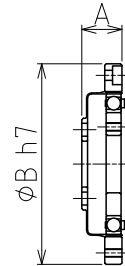
High Torque Type B2,
Flat Type D



Refer to catalog for more details

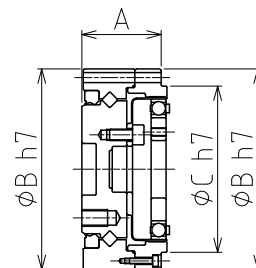
WPC-□-□-CD

Size	35	42	50	63	80
A	11	12.5	14	17	22
B	50	60	70	85	110



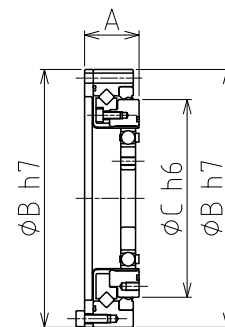
WPU-□-□-CD

Size	35	42	50	63	80
A	23	24.5	27.7	34.1	40
B	55	62	70	85	112
C	42.5	49.5	58	73	96



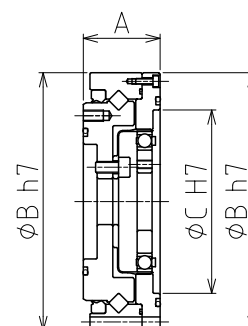
WPU-□-□-CDH

Size	35	42	50	63	80
A	22	22.7	26.8	31.5	37
B	70	80	90	110	142
C	48	56	64	80	106



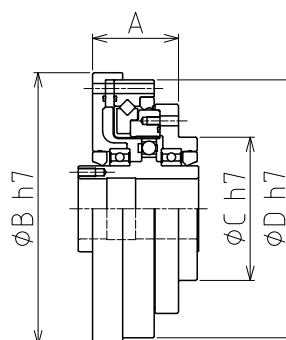
WPS-□-□-SD

Size	35	42	50	63	80
A	17.5	18.5	19	22	27.9
B	70	80	90	110	142
C	49	59	69	84	110



■ WPU-□-□-SDH

Size	35	42	50	63	80
A	27	29	30	34.5	40.5
B	74	84	95	115	147
C	36	45	50	60	75
D	70	80	90	110	142



Specification

High Torque Type B2, Flat Type D

Size	Ratio	Nominal output torque	Maximum output torque	Emergency stop torque	Nominal input speed	Maximum input speed	Life
		[Nm]	[Nm]	[Nm]	[r/min]	[r/min]	[hours]
35	50	3.7	12	24	3000	8500	7000
	80	5.4	16	29			
	100	5.4	19	31			
42	50	11	23	48	3000	7300	
	80	15	29	52			
	100	16	37	55			
	120	16	37	55			
50	50	17	39	69	3000	6500	
	80	24	51	75			
	100	28	57	76			
	120	28	57	76			
63	50	27	69	127	3000	5600	
	80	44	96	147			
	100	47	110	152			
	120	47	110	152			
80	50	53	151	268	3000	4800	
	100	82	212	334			
	100	96	233	359			
	120	96	233	359			

Applications

In addition to the recommended models shown here, we can also propose models based on customer designs. Please contact us for details.

Articulated Robots



Recommended models

- High Torque Type B2
- Flat Type D
- Smart-FLEXWAVE

FLEXWAVE provides high precision, zero backlash, and a high torque-to-weight ratio, essential for smooth and accurate motion.

SCARA



Recommended models

- High Torque Type B2
- Flat Type D
- Smart-FLEXWAVE

FLEXWAVE ensure excellent repeatability, high torsional stiffness, and compact design, optimizing speed and precision in assembly tasks.

Medical Equipment



Recommended models

- High Torque Type B2
- Flat Type D
- Smart-FLEXWAVE
- Gearhead Type

FLEXWAVE enables precise control in robotic surgery and provide smooth movement for rehabilitation devices, improving accuracy and reducing backlash.

Space



Recommended models

- High Torque Type B2
- Flat Type D

In space applications, FLEXWAVE offers precise, compact motion control for robotic arms, rovers, and telescopes in harsh environments.

Humanoid Robots

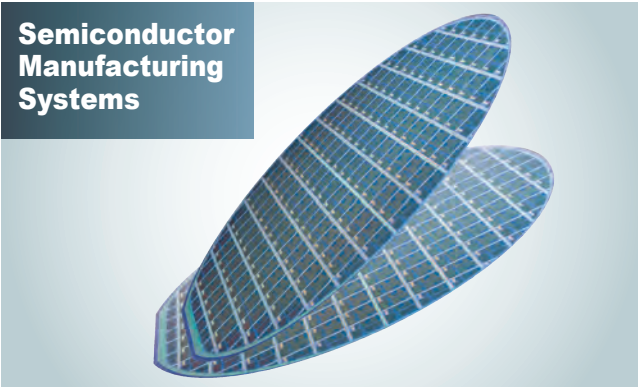


Recommended models

High Torque Type B2
Flat Type D
Smart-FLEXWAVE

FLEXWAVE helps humanoid robots achieve smooth human-like movements with high torque density and a lightweight design.

Semiconductor Manufacturing Systems



Recommended models

High Torque Type B2
Flat Type D
Smart-FLEXWAVE
Gearhead Type

FLEXWAVE provides extremely accurate and repeatable movements at micrometer scales required in Semiconductor Manufacturing Systems.

Machine Tools



Recommended models

High Torque Type B2
Gearhead Type

FLEXWAVE provides high-torque, precise transmission in CNC (Computer Numerical Control) machines, maintaining accuracy with minimal backlash in industrial machining tasks.

Power Assist Suits



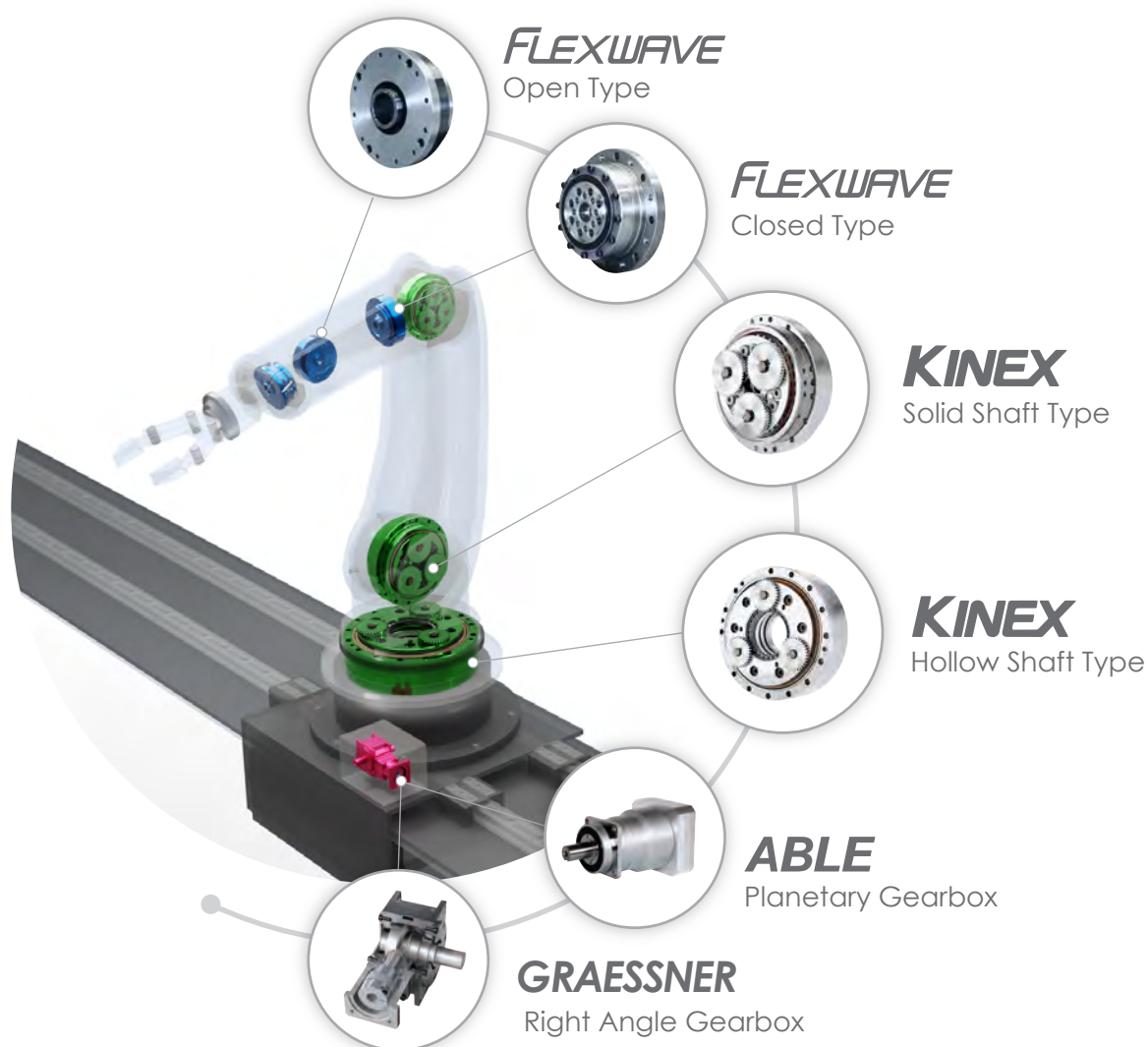
Recommended models

High Torque Type B2
Flat Type D
Smart-FLEXWAVE

FLEXWAVE provides high-torque, smooth joint movements in power assist suits, enhancing mobility or rehabilitation with minimal backlash.

One-Stop Gearbox Solutions

Nidec provides gearboxes from one resource for all axes, from drive axes in robots to conveyor axes.



We are a member of the
International Federation of Robotics.

YouTube



@NIDEC
DRIVE TECHNOLOGY

Instagram



@desch_group

Europe

LinkedIn



@NIDEC
DRIVE TECHNOLOGY

FLEXWAVE Web Page



NIDEC DRIVE TECHNOLOGY CORPORATION

〈Web Page Information〉



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