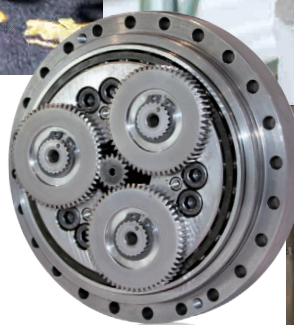
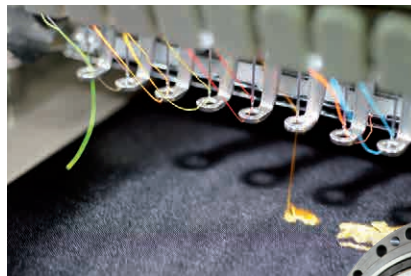


Sumitomo Drive Technologies



PRECISION DRIVES





Keeping pace with a high-speed future

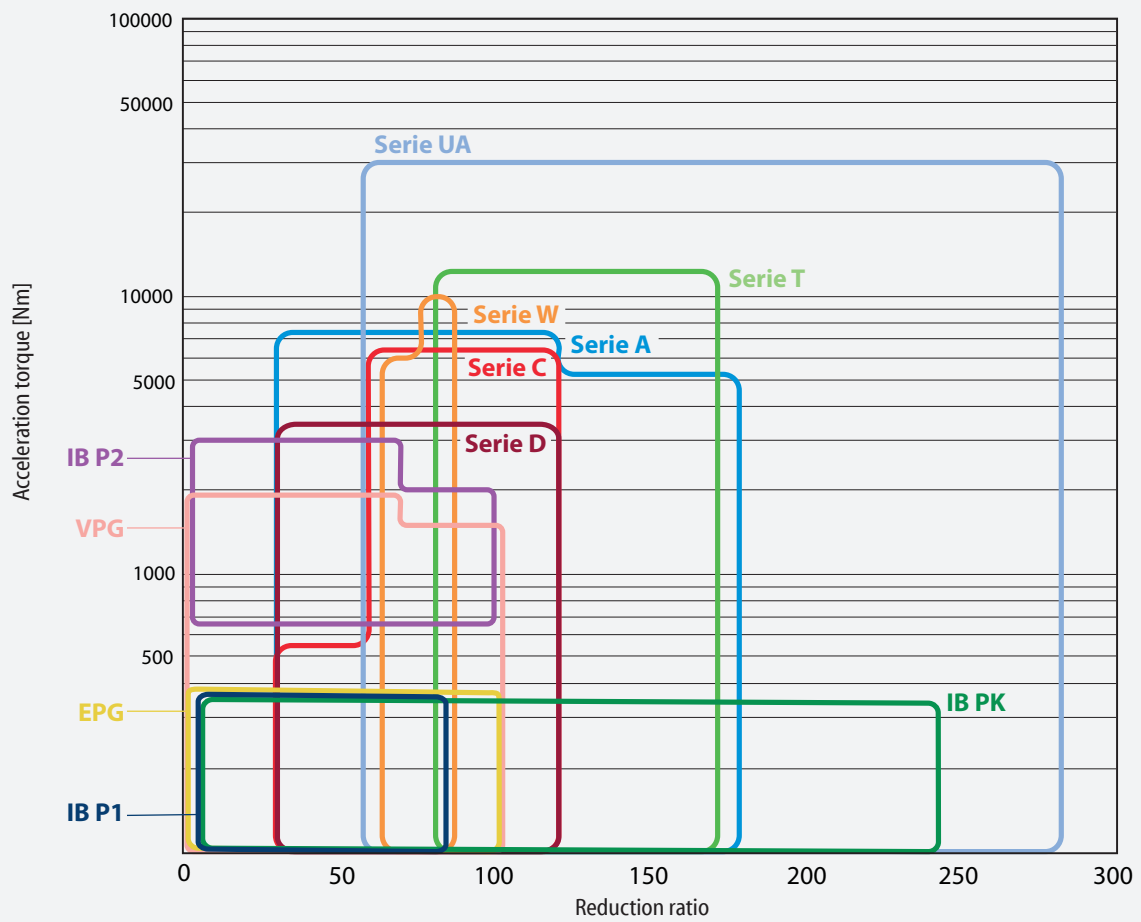
Lifestyle in general has always been changing because of the fast development of information technologies. Internet, social media, online shopping, video on demand, smart phones, and a high level of connectivity speed up our lives. Products need to be available everywhere and at any time. This has a strong influence on the development of high-speed logistic systems and infrastructure such as factories, storage, ports and terminals, railroads etc. In the industrial sector, the development of Industry 4.0 has greatly changed machine and plant engineering in recent years.

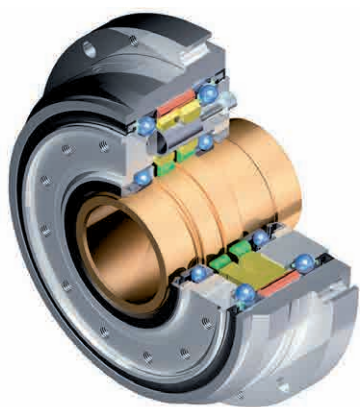
The industrial world is increasingly entering an era of automation and labour saving. Companies that want to remain competitive need to optimize their operational and manufacturing processes. Robots, machine tools, and automated factories must be flexible, fast, and individual. This trend to automate all processes even affects the development of modern health equipment. Speed and precision is key. Most industrial processes need high performance precision drives with low and zero backlash.

We, Sumitomo Drive Technologies, understand these growing challenges and offer a comprehensive range of products for high performance tasks. We support our customers with the creation of tailor-made differentiating solutions.

Selection chart

To preselect the right series for your application, please define needed ratio and acceleration torque.





C-Series

Features & Benefits

High precision gearbox with large hollow bore

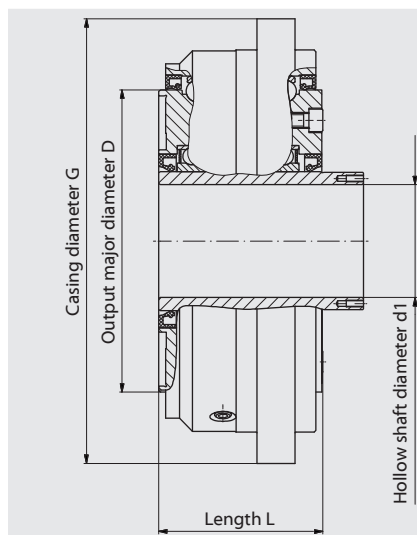
Angular contact ball bearings or taper roller bearings directly integrated in the gearbox housing. Very large hollow bore for easy routing of cables etc.

Relevant characteristics

- Zero mechanical backlash / 1 arcmin Lost Motion
- 6 sizes
- Reduction ratios 1:29; 1:59, 1:89, 1:119
- Acceleration torque up to 6278 Nm
- Input speed up to 4000 rpm
- Torsional stiffness up to 1030 Nm/arcmin
- Maintenance free for life
- Motor connection with belt transmission or spur gear

FINE CYCLO SERIES C

Main dimensions and mass



Size	Length L [mm]	Diameter G [mm]	Diameter D [mm]	Diameter d1 [mm]	Mass [kg]
C15	67.5	160	114	40	6
C25	80.5	186	140	49	12.5
C35	94.5	256	174	65	21
C45	109	292	200	79	32
C55	121	325	230	92	45
C65	131	362	260	99	62

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Accel. / decel. torque [Nm]	Mean input speed (2) [rpm]	Max input speed [rpm]
C15	225	540	3200	4000
C25	432	1030	2900	3500
C35	822	1962	2100	2500
C45	1336	3188	1800	2100
C55	2055	4316	1500	1800
C65	3713	6278	1400	1700

- (1) at input speed $n_1=1500$ rpm; for C65 at input speed $n_1=1000$ rpm
 (2) at 50% ED

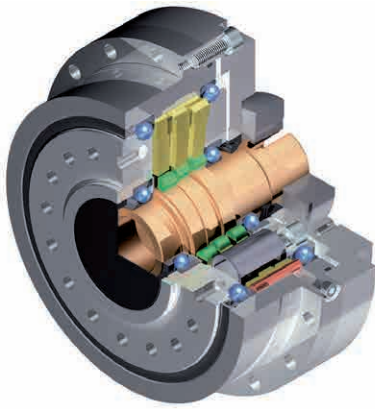
Output bearing capacity

Size	Max permissible bending moment [Nm]	Max permissible axial load [N]
C15	1069	3924
C25	1850	7848
C35	2850	10791
C45	3924	8339
C55	6082	10791
C65	8829	13734

Available ratios

Size	Ratios
C15	29 / 59 / 89 / 119
C25	59 / 89 / 119
C35	59 / 89 / 119
C45	59 / 89 / 119
C55	59 / 89 / 119
C65	59 / 89 / 119

Above technical specifications are intended for rough preselection only.



D-Series

Features & Benefits

Ready to use high precision gearbox with motor adapter and clamp ring

Angular contact ball bearings directly integrated in the gearbox housing.
Improved design providing very accurate motion quality and increased torque density and bearing capacity.

Relevant characteristics

- Zero mechanical backlash / 1 arcmin Lost Motion
- 5 sizes
- Reduction ratios 1:29, 1:41, 1:59, 1:89, 1:119 (availability depending on size)
- Acceleration torque up to 3188 Nm
- Input speed up to 6150 rpm
- Torsional stiffness up to 450 Nm/arcmin
- Maintenance free for life
- Input ready for motor connection with clamping system and motor adapter

FINE CYCLO SERIES D

Main dimensions and mass

Size	Length L (1) [mm]	Diameter G [mm]	Diameter D [mm]	Diameter d1 (2) [mm]	Mass (3) [kg]
D15	84	145	90	19	7
D25	97.5	169	114	24	12
D30	112.5	187	140	32	15.5
D35	110	204	140	35	20.5
D45	127	256	174	38	35.5

(1) the total length is dependent upon the motor adaptor
 (2) maximum values, adjusted to customer motor
 (3) average value, depending on motor adaptor

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Accel. / decel. torque [Nm]	Mean input speed (2) [rpm]	Max input speed [rpm]
D15	171	417	5600	6150
D25	370	883	4200	5050
D30	483	1226	3800	4550
D35	683	1717	3300	3950
D45	1334	3188	2600	3150

- (1) at input speed $n_1=1500$ rpm
 (2) at 50% ED

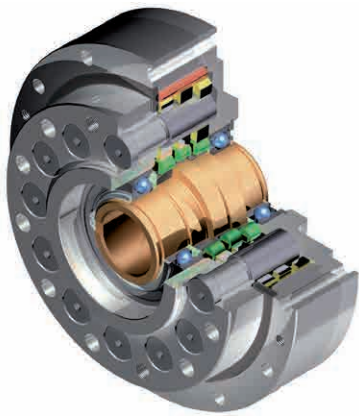
Output bearing capacity

Size	Max permissible bending moment [Nm]	Max permissible axial load [N]
D15	883	3924
D25	1177	3924
D30	1668	5199
D35	1962	7848
D45	2943	10791

Available ratios

Size	Ratios
D15	41 / 59 / 89
D25	41 / 59 / 89 / 119
D30	59 / 89 / 119
D35	29 / 59 / 89 / 119
D45	29 / 59 / 89 / 119

Above technical specifications are intended for rough preselection only.



FC-A

Features & Benefits

Cost effective high precision reduction kit

For use in combination with customer's own output bearing.

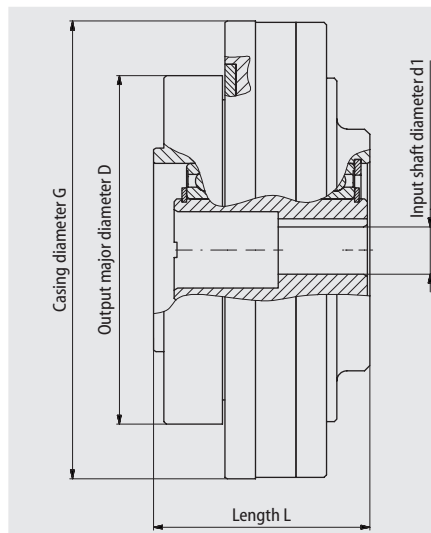
Maximum freedom for installation of specific bearings and for integration in customer's machine design.

Relevant characteristics

- Zero mechanical backlash / 1 arcmin Lost Motion
- 6 sizes
- Reduction ratios 1:29, 1:59, 1:89, 1:119, 1:179 (availability depending on size)
- Acceleration torque up to 7610 Nm
- Input speed up to 6150 rpm
- Torsional stiffness up to 1100 Nm/arcmin
- Maintenance free for life
- Motor connection with keyway or clamping system / coupling on request
- Motor adapter on request

FINE CYCLO SERIES A

Main dimensions and mass



Size	Length L [mm]	Diameter G [mm]	Diameter D [mm]	Diameter d1 (1) [mm]	Mass [kg]
A15	57	115	87	14	2.7
A25	73	145	112	22	5.2
A35	85	180	137	30	9.6
A45	97.5	220	172	38	18
A65	117	270	212	55	30
A75	131	310	237	64	46

(1) maximum values, adjusted to customer motor

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Accel. / decel torque [Nm]	Mean input speed (2) [rpm]	Max input speed [rpm]	
A15	(i 59, 89)	149	335	5600	6150
A25	(i 29)	283	721	3100	4350
	(i 59...119)	349		4200	5050
A35	(i 29)	499	1390	2500	3500
	(i 59...119)	668		3300	3950
A45	(i 29)	1060	2910	1900	2700
	(i 59...179)	1390		2600	3150
A65	(i 29)	1870	5130	1500	2200
	(i 59...179)	2570		2000	2350
A75	(i 29)	3580	7610	1200	1950
	(i 59...119)	3900		1750	2000

(1) at input speed $n_1=1500$ rpm; for A75 (i 29) at input speed $n_1=1000$ rpm

(2) at 50% ED

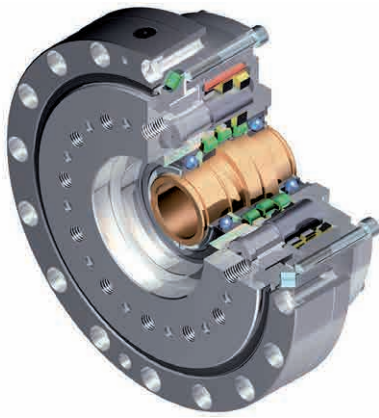
Output bearing capacity

Gearbox without output side bearing

Available ratios

Size	Ratios
A15	59 / 89
A25	29 / 59 / 89 / 119
A35	29 / 59 / 89 / 119
A45	29 / 59 / 89 / 119 / 179
A65	29 / 59 / 89 / 119 / 179
A75	29 / 59 / 89 / 119

Above technical specifications are intended for rough preselection only.



F1C-A

Features & Benefits

Unit with high capacity cross roller bearing on output shaft

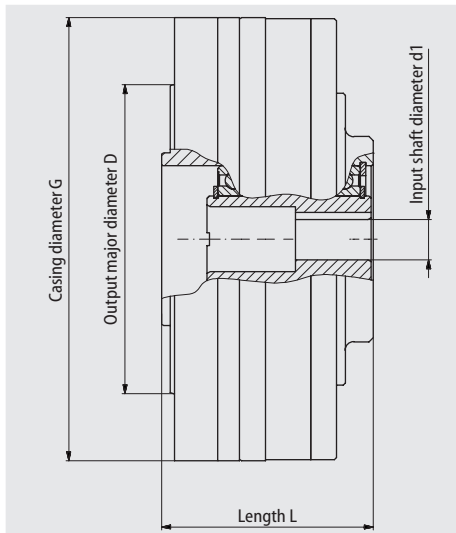
Combination of zero backlash gearbox and precision cross roller bearing.
 Sizes 45, 65 and 75 provide extremely high support capacity at output shaft.

Relevant characteristics

- Zero mechanical backlash / 1 arcmin Lost Motion
- 6 sizes
- Reduction ratios 1:29, 1:59, 1:89, 1:119, 1:179 (availability depending on size)
- Acceleration torque up to 7610 Nm
- Input speed up to 6150 rpm
- Torsional stiffness up to 1100 Nm/arcmin
- Maintenance free for life (cross roller bearing regreasing requested on sizes 45, 65 and 75)
- Motor connection with keyway or clamping system / coupling on request
- Motor adapter on request

FINE CYCLO SERIES A

Main dimensions and mass



Size	Length L [mm]	Diameter G [mm]	Diameter D [mm]	Diameter d1 (1) [mm]	Mass [kg]
A15	67	140	96	14	6
A25	81	170	117	22	9.5
A35	98	205	143	30	16.5
A45	112.5	265	198	38	30
A65	150	350	269	55	64
A75	164	430	313	64	107

(1) maximum values, adjusted to customer motor

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Accel. / decel torque [Nm]	Mean input speed (2) [rpm]	Max input speed [rpm]
A15	(i 59, 89) 149	335	5600	6150
A25	(i 29) 283	721	3100	4350
	(i 59...119) 349			
A35	(i 29) 499	1390	2500	3500
	(i 59...119) 668			
A45	(i 29) 1060	2910	1900	2700
	(i 59...179) 1390			
A65	(i 29) 1870	5130	1500	2200
	(i 59...179) 2570			
A75	(i 29) 3580	7610	1200	1950
	(i 59...119) 3900			

(1) at input speed n1=1500 rpm; for A75 (i 29) at input speed n1=1000 rpm
 (2) at 50% ED

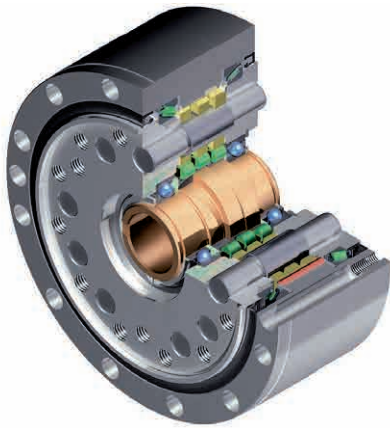
Output bearing capacity

Size	Max permissible bending moment [Nm]
A15	460
A25	770
A35	1350
A45	3350
A65	6700
A75	14400

Available ratios

Size	Ratios
A15	59 / 89
A25	29 / 59 / 89 / 119
A35	29 / 59 / 89 / 119
A45	29 / 59 / 89 / 119 / 179
A65	29 / 59 / 89 / 119 / 179
A75	29 / 59 / 89 / 119

Above technical specifications are intended for rough preselection only.



F2C-A

Features & Benefits

Extremely compact and fully sealed high precision gearbox

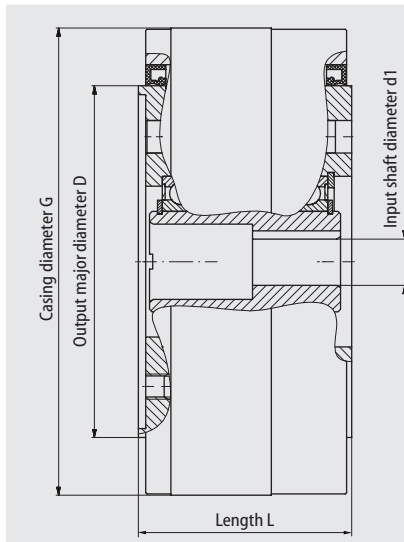
Taper roller bearings for output shaft directly integrated in the gearbox housing.
Maximum compactness and power density.

Relevant characteristics

- Zero mechanical backlash / 1 arcmin Lost Motion
- 4 sizes
- Reduction ratios 1:29, 1:59, 1:89, 1:119, 1:179 (availability depending on size)
- Acceleration torque up to 2910 Nm
- Input speed up to 6150 rpm
- Torsional stiffness up to 445 Nm/arcmin
- Maintenance free for life
- Motor connection with keyway or clamping system / coupling on request
- Motor adapter on request

FINE CYCLO SERIES A

Main dimensions and mass



Size	Length L [mm]	Diameter G [mm]	Diameter D [mm]	Diameter d1 (1) [mm]	Mass [kg]
A15	65.5	126	90	14	5
A25	70	156	114	22	7.3
A35	85	186	140	30	13
A45	101	231	174	38	24

(1) maximum values, adjusted to customer motor

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Accel. / decel. torque [Nm]	Mean input speed (2) [rpm]	Max input speed [rpm]
A15	(i 59, 89) 149	335	5600	6150
A25	(i 29) 283 (i 59...119) 349	721	3100 4200	4350 5050
A35	(i 29) 499 (i 59...119) 668	1390	2500 3300	3500 3950
A45	(i 29) 1060 (i 59...179) 1390	2910	1900 2600	2700 3150

(1) at input speed $n_1=1500$ rpm

(2) at 50% ED

Output bearing capacity

Size	Max permissible bending moment [Nm]	Max permissible axial load push / pull [N]
A15	608	3920 / 2450
A25	1030	5400 / 3920
A35	1620	7850 / 5400
A45	2550	11800 / 6870

Available ratios

Size	Ratios
A15	59 / 89
A25	29 / 59 / 89 / 119
A35	29 / 59 / 89 / 119
A45	29 / 59 / 89 / 119 / 179

Above technical specifications are intended for rough preselection only.

F3C-A

Features & Benefits

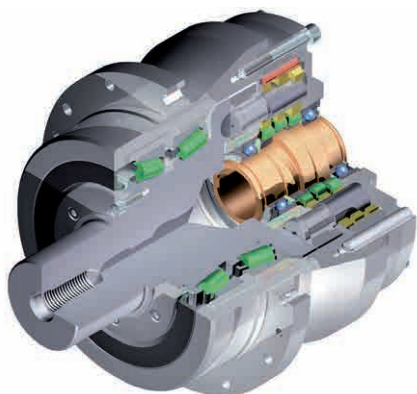
High precision gearbox with solid output shaft

Combination of zero backlash gearbox and heavy duty taper roller bearings supporting a solid output shaft.

Provides extremely high radial capacity at output shaft.

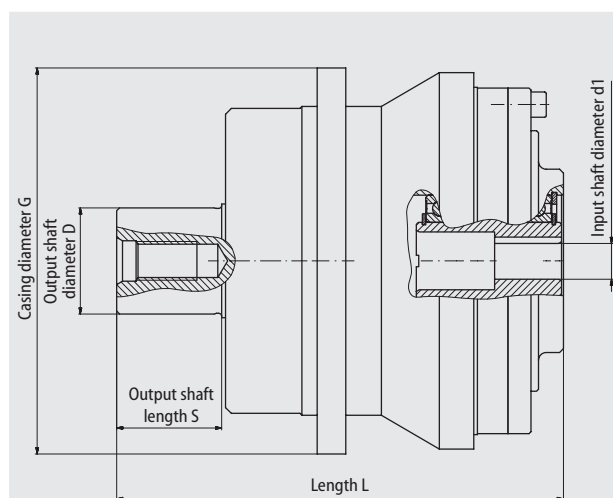
Relevant characteristics

- Zero mechanical backlash / 1 arcmin Lost Motion
- 6 sizes
- Reduction ratios 1:29, 1:59, 1:89, 1:119, 1:179 (availability depending on size)
- Acceleration torque up to 7610 Nm
- Input speed up to 6150 rpm
- Torsional stiffness up to 910 Nm/arcmin
- Maintenance free for life
- Motor connection with keyway or clamping system / coupling on request
- Motor adapter on request



FINE CYCLO SERIES A

Main dimensions and mass



Size	Length L [mm]	Diameter G [mm]	Diameter D [mm]	Length S [mm]	Diameter d1 (1) [mm]	Mass [kg]
A15	164	140	35	35	14	8.5
A25	196	170	45	45	22	15.5
A35	234	200	55	55	30	27
A45	280	250	70	70	38	48
A65	347	300	90	90	55	94
A75	387	350	100	100	64	134

(1) maximum values, adjusted to customer motor

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Accel. / decel. torque [Nm]	Mean input speed (2) [rpm]	Max input speed [rpm]	
A15	(i 59, 89)	149	335	5600	6150
A25	(i 29)	283	721	3100	4350
	(i 59...119)	349		4200	5050
A35	(i 29)	499	1390	2500	3500
	(i 59...119)	668		3300	3950
A45	(i 29)	1060	2910	1900	2700
	(i 59...179)	1390		2600	3150
A65	(i 29)	1870	5130	1500	2200
	(i 59...179)	2570		2000	2350
A75	(i 29)	3580	7610	1200	1950
	(i 59...119)	3900		1750	2000

(1) at input speed $n_1=1500$ rpm; for A75 (i 29) at input speed $n_1=1000$ rpm
 (2) at 50% ED

Output bearing capacity

Size	Max permissible radial load (1) [kN]
A15	17.4
A25	31.8
A35	44.4
A45	71.7
A65	114
A75	135

(1) to the middle of output shaft and at 15 rpm output speed

Available ratios

Size	Ratios
A15	59 / 89
A25	29 / 59 / 89 / 119
A35	29 / 59 / 89 / 119
A45	29 / 59 / 89 / 119 / 179
A65	29 / 59 / 89 / 119 / 179
A75	29 / 59 / 89 / 119

Above technical specifications are intended for rough preselection only.



UA-Series

Features & Benefits

Double stage high precision gearbox with advanced bearing design and higher torque

Angular contact ball bearings or taper roller bearings for output shaft directly integrated in the gearbox housing.

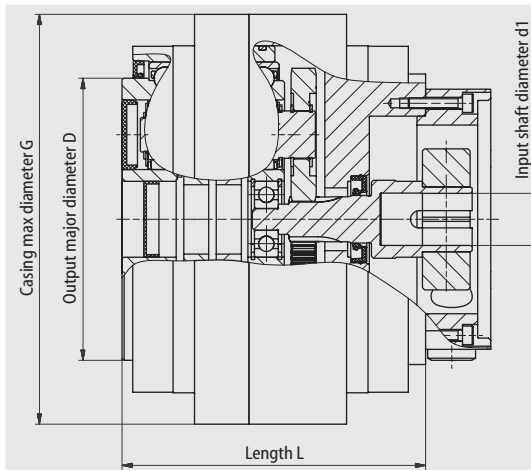
Planetary prestage and three to four (UA115) eccentrics providing highest transmission accuracy, minimum speed ripples and minimum vibration.

Relevant characteristics

- Zero mechanical backlash / 0.5 arcmin Lost Motion
- 6 sizes
- Reduction ratios 1:30 to 1:283 (availability depending on size)
- Acceleration torque up to 30000 Nm
- Output speed up to 50 rpm
- Torsional stiffness up to 6000 Nm/arcmin
- Motor connection with keyway or clamping system on request

FINE CYCLO SERIES UA

Main dimensions and mass



Size	Length L (1) [mm]	Diameter G [mm]	Diameter D [mm]	Diameter d1 (2) [mm]	Mass (1) [kg]
UA15	104	133	90	14	8.5
UA25	109	165	110	19	13
UA35	140	189	130	24	20
UA45	138	224	155	32	30
UA55	coming soon				
UA65	170	295	210	38	55
UA80	194	325	238	48	90
UA115	272	570	400	on request	260

(1) dependent upon the input design

(2) please contact us for alternative diameters

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Max Accel. / decel. torque [Nm]	Max output speed [rpm]
UA15	250	625	60
UA25	500	1250	50
UA35	900	2250	40
UA45	1320	3300	30
UA55	coming soon		
UA65	3430	8575	30
UA80	5000	12500	25
UA115	12000	30000	20

(1) at output speed $n_2=15$ rpm

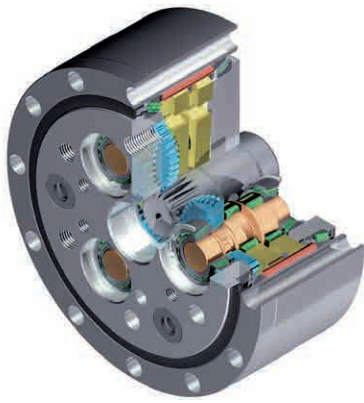
Output bearing capacity

Size	Max permissible bending moment [Nm]	Max permissible axial load [N]
UA15	883	3924
UA25	1666	5194
UA35	2156	7840
UA45	3430	8820
UA55	coming soon	
UA65	7056	11000
UA80	10000	13734
UA115	44000	29000

Available ratios

Size	Ratios
UA15	60 / 78 / 116 / 139 / 154 / 171
UA25	78 / 88 / 115 / 124 / 145 / 173
UA35	82 / 87 / 121 / 152 / 166
UA45	62 / 82 / 99 / 121 / 130 / 152 / 166
UA55	coming soon
UA65	89 / 121 / 136 / 144 / 163 / 171 / 199 / 249
UA80	93 / 103 / 122 / 155 / 166 / 190 / 239 / 283
UA115	depending on prestage

Above technical specifications are intended for rough preselection only.



T-Series

Features & Benefits

Double stage high precision gearbox

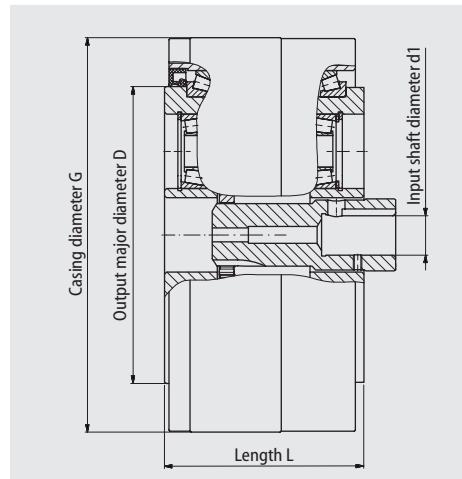
Taper roller bearings for output shaft directly integrated in the gearbox housing.
Planetary prestage and three eccentrics providing highest transmission accuracy, minimum speed ripples and minimum vibration.

Relevant characteristics

- Zero mechanical backlash / 0.5 arcmin Lost Motion
- 7 sizes
- Reduction ratios 1:81, 1:118.5, 1:141, 1:171 (availability depending on size)
- Acceleration torque up to 11000 Nm
- Input speed up to 8460 rpm
- Torsional stiffness up to 1280 Nm/arcmin
- Motor connection with keyway or clamping system on request
- Motor adapter on request

FINE CYCLO SERIES T

Main dimensions and mass



Size	Length L [mm]	Diameter G [mm]	Diameter D [mm]	Diameter d1 (1) [mm]	Mass [kg]
T155	68	126	90	14	4.8
T255	78.5	156	114	16	8.4
T355	94	186	140	19	14
T455	97	231	174	28	24
T555	107	261	200	28	34
T655	121.5	296	230	35	48
T755	135	331	260	35	71

(1) please contact us for alternative diameters

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Max Accel. / decel. torque [Nm]	Max output speed [rpm]
T155	167	417	60
T255	412	1030	50
T355	785	1960	40
T455	1280	3190	30
T555	1960	4910	30
T655	3140	7850	25
T755	4410	11000	25

(1) at output speed $n_2=15$ rpm

Output bearing capacity

Size	Max permissible bending moment [Nm]	Max permissible axial load push / pull [N]
T155	883	3920 / 3920
T255	1180	5400 / 3920
T355	1820	7850 / 5400
T455	2750	11800 / 6870
T555	4170	15700 / 8340
T655	6380	19600 / 10800
T755	9570	24500 / 13700

Available ratios

Size	Ratios
T155	81 / 118.5 / 141
T255	81 / 118.5 / 141
T355	81 / 118.5 / 141
T455	81 / 118.5 / 141 / 171
T555	81 / 118.5 / 141 / 171
T655	81 / 118.5 / 141 / 171
T755	81 / 118.5 / 141 / 171

Above technical specifications are intended for rough preselection only.

W-Series



FINE CYCLO SERIES W

Features & Benefits

Multi stage high precision gearbox with extremely large hollow shaft

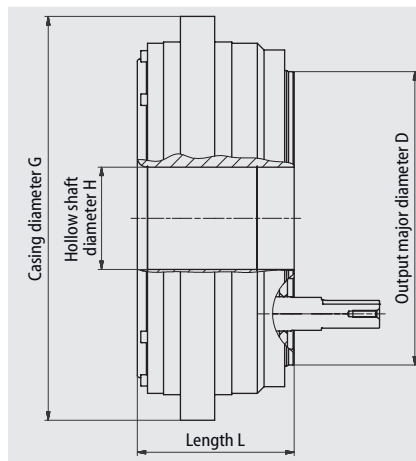
Angular contact ball bearings or taper roller bearings for output shaft directly integrated in the gearbox housing.

Very large central bore for easy routing of cables etc.

Relevant characteristics

- Zero mechanical backlash / 1 arcmin Lost Motion
- 2 sizes
- Reduction ratios 1:64 (size W55) and 1:87 (size W70)
- Acceleration torque up to 10000 Nm
- Output speed up to 30 rpm
- Torsional stiffness up to 1960 Nm/arcmin
- Motor connection with coupling on request
- Motor adapter on request

Main dimensions and mass



Size	Length L [mm]	Diameter G [mm]	Diameter D [mm]	Diameter H [mm]	Mass [kg]
W55	129.5	355	258	90	68
W70	175.5	470	390	138	95

Design of input stage on customer request

Torque & Speed main data

Size	Nominal output torque (1) [Nm]	Max Accel. / decel. torque [Nm]	Max output speed [rpm]
W55	2453	6130	30
W70	4000	10000	25

(1) at output speed $n_2=15$ rpm

Output bearing capacity

Size	Max permissible bending moment [Nm]	Max permissible axial load [N]
W55	9565	13734
W70	22000	29400

Available ratios

Size	Ratios
W55	64
W70	87.3

Additional ratios depending on prestage

Above technical specifications are intended for rough preselection only.

IB P1 TYPE

Features & Benefits

The smallest gearbox for precise applications

High torque density unit with angular ball bearings for high load capacity.
Adaptable servo motor connection.



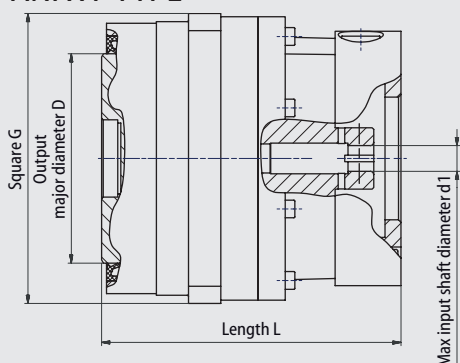
Servo planetary gear IB P1 Type

Relevant characteristics

- Mechanical backlash 3 arcmin or 15 arcmin
- 3 sizes
- Simple motor assembly with clamp ring
- Reduction ratios from 3.7 up to 81
- Acceleration torque from 35 Nm up to 380 Nm
- Input speed up to 6000 rpm
- Axial / radial load up to 4500 N / 9400 N
- Maintenance free for life

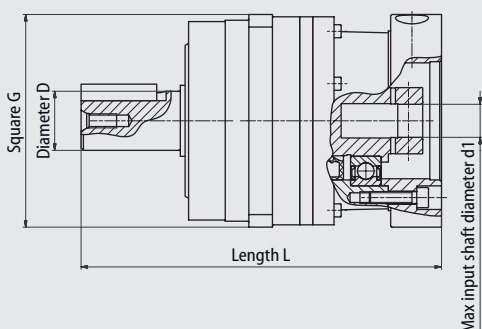
Main dimensions and mass

ANFX F TYPE



Size	Max length	Square	Output major diameter D	Max input shaft diameter d1	Mass maximum value (2)
	L (1) (2) [mm]	G [mm]	D [mm]	d1 [mm]	(2) [kg]
P110	82 / 124.5	□ 60	42	16	1.26 / 1.36
P120	145.5 / 165	□ 90	65	24	3 / 3.5
P130	179.5 / 150	□ 120	90	35	6.6 / 7.5

ANFX N/W TYPE



Size	Max length	Square	Diameter D	Max input shaft diameter d1	Mass maximum value (2)
	L (1) (2) [mm]	G [mm]	D [mm]	d1 [mm]	(2) [kg]
P110	107.5 / 125.5	□ 60	16	16	1.3 / 1.4
P120	189.5 / 203	□ 90	25	24	3.3 / 3.7
P130	220 / 236	□ 120	40	35	6.8 / 7.9

- (1) depending on motor flange
(2) single stage / double stage

Torque & Speed main data

Size	Max nominal output torque (1) [Nm]	Max accel. / decl. torque [Nm]	Max output speed [rpm]
P110	22.5	45	6000
P120	69	190	6000
P130	153	380	5000

- (1) depending on reduction ratio
Please contact us for detailed data

Output bearing capacity

Size	Max bending moment [Nm]	Max radial load / axial load (2) [N]
P110	70	2160 / 1050
P120	300	4800 / 2900
P130	620	9400 / 4500

- (2) at input speed n1= 1000 rpm

Available ratios

Size	Ratios
P110	3.7 / 5 / 9 / 11 / 15 / 21 / 33 / 45 / 81
P120	
P130	

Above technical specifications are intended for rough preselection only.

IB P2 TYPE

Features & Benefits

The precise drive for high torque demands

Compact gearbox with angular ball bearings for high load capacity.
Helical gear concept for the best torque transmission and lowest vibration and noise.



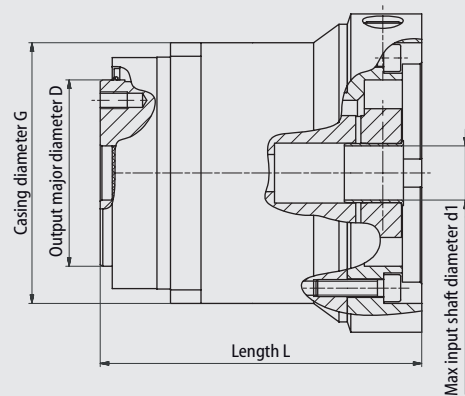
Servo planetary gear IB P2 Type

Relevant characteristics

- Mechanical backlash 3 arcmin
- 2 sizes
- Simple motor assembly with clamp ring
- Reduction ratios from 4 up to 100
- Acceleration torque from 900 Nm up to 3000 Nm
- Input speed up to 6000 rpm
- Axial / radial load up to 8100 N / 18385 N
- Maintenance free for life

Main dimensions and mass

ANFX F TYPE



Size	Max length L (1) (2) [mm]	Square G [mm]	Output major diameter D [mm]	Max input shaft diameter d1 (2) [mm]	Mass approx. value (2) [kg]
P240	237 / 238	□ 154	110	55	20 / 21
P250	258 / 337	□ 212	155	55	36 / 49

- (1) depending on motor flange
(2) single stage / double stage

Alternative version available with cylindrical outputshaft.

Torque & Speed main data

Size	Max nominal output torque (1) (2) [Nm]	Max accel. / decel. torque [Nm]	Max input speed [rpm]
P240	500	900	6000
P250	1500	3000	5000

- (1) depending on reduction ratio
Please contact us for detailed datas
(2) at input speed $n_1 = 1500$ rpm

Output bearing capacity

Size	Max bending moment [Nm]	Max radial / axial load [N]
P240	1177	10245 / 5200
P250	2000	18385 / 8100

Above technical specifications are intended only for rough preselection

Available ratios

Size	Ratios
P240	4 / 5 / 7 / 10 /
P250	16 / 20 / 25 / 28 / 35 / 40 / 50 / 70 / 100

Above technical specifications are intended for rough preselection only.



IB PK TYPE

Features & Benefits

Right angle version of the smallest gearbox for precise application

Angular contact output ball bearings for high load capacity.
Extensive range of servomotor connections available.

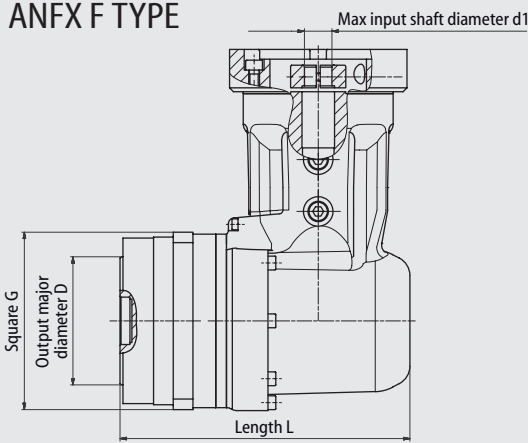
Relevant characteristics

- Mechanical backlash 6 arcmin or 15 arcmin
- 3 sizes with double or triple reduction system
- Simple motor assembly with clamp ring
- Reduction ratios from 6 up to 243
- Acceleration torque from 35 Nm up to 380 Nm
- Input speed up to 6000 rpm
- Axial / radial load up to 9400 N / 4500 N
- Maintenance free for life

Servo planetary gear IB PK Type

Main dimensions and mass

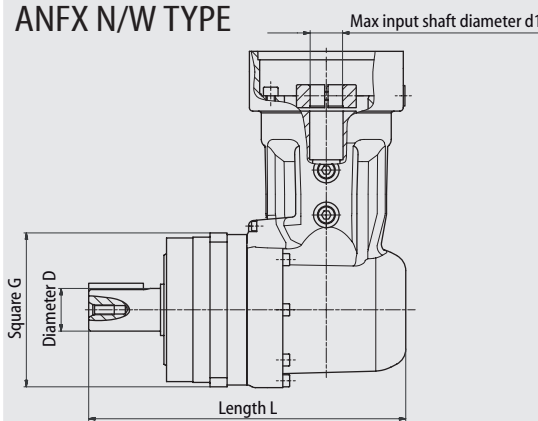
ANFX F TYPE



Size	Max length L (1) (2) [mm]	Square G [mm]	Output major diameter D [mm]	Max input shaft diameter d1 (2) [mm]	Mass (2) [kg]
PK110	100 / 111	□ 60	42	16	2 / 2.2
PK120	141.5 / 147	□ 90	65	24	5.8 / 6
PK130	176.5 / 183.5	□ 120	90	35	12.2 / 12.3

- (1) depending on motor flange
(2) single stage / double stage

ANFX N/W TYPE



Size	Max length L (1) (2) [mm]	Square G [mm]	Diameter D [mm]	Max input shaft diameter d1 (2) [mm]	Max mass (2) [kg]
PK110	130 / 141	□ 60	16	16	2.2 / 2.2
PK120	185.5 / 191	□ 90	25	24	5.8 / 6.2
PK130	262.5 / 269.5	□ 120	40	35	12.3 / 13.1

- (1) depending on motor flange
(2) single stage / double stage

Torque & Speed main data

Size	Max nominal output torque (1) (2) [Nm]	Max accel. / decel. torque (1) [Nm]	Max input speed [rpm]
PK110	22.5	45	6000
PK120	69	190	6000
PK130	153	380	5000

- (1) depending on reduction ratio
Please contact us for detailed datas
(2) at input speed $n_1 = 1000$ rpm

Output bearing capacity

Size	Max bending moment [Nm]	Max radial / axial load [N]
PK110	70	1050 / 3140
PK120	300	2900 / 4800
PK130	620	4500 / 9400

Available ratios

Size	Ratios
PK110	6 / 8 / 11 / 15 / 23 /
PK120	27 / 33 / 45 / 50 / 63 /
PK130	68 / 99 / 122 / 135 / 243

Above technical specifications are intended for rough preselection only.

ENGX-Series



Features & Benefits

Economy planetary gearbox

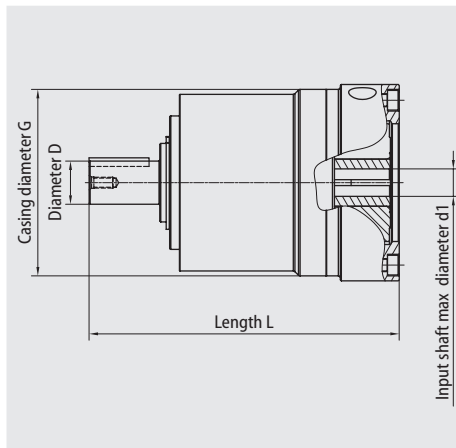
Coaxial design with solid output shaft with key.
Adaptable servo motor connection.

Relevant characteristics

- Mechanical backlash from 8 arcmin to 12 arcmin
- 5 sizes
- Easy motor connection with clamp ring
- Reduction ratios from 3 up to 100
- Acceleration torque from 12 Nm up to 500 Nm
- Input speed up to 6000 rpm
- Torsional rigidity up to 50 Nm/arcmin
- Axial / radial load up to 6000 N / 7500 N
- Maintenance free for life

Servo planetary gear EPG

Main dimensions and mass



Size	Length L (1) (2) [mm]	Diameter G [mm]	Diameter D [mm]	Max input shaft diameter d1 [mm]	Mass (2) [kg]
05	105.5 / 122.5	55	12	11	0.8 / 1
07	143 / 165	75	16	19	1.8 / 2.2
09	181 / 211	95	22	24	4 / 4.9
12	238 / 278	125	32	38	9 / 11
15	289.5 / 331.5	160	40	38	19 / 24

- (1) depending on motor flange
(2) single stage / double stage

Torque & Speed main data

Size	Max nominal output torque (1) [Nm]	Max accel. / decel. torque (1) [Nm]	Max mean input speed (1) [rpm]	Max input speed [rpm]
05	11	25	5500	6000
07	35	76	4500	6000
09	98	200	4200	5500
12	230	480	3200	4800
15	360	500	3900	4500

- (1) depending on reduction ratio
Please contact us for detailed data

Output bearing capacity

Size	Max radial load [N]	Max axial load [N]
05	650	700
07	1450	1550
09	2400	1900
12	4600	4000
15	7500	6000

Available ratios

Size	Ratios
05	3 / 4 / 5 / 7 / 9 / 10 /
07	12 / 15 / 16 / 20 / 25 / 28 / 30 / 35 / 40 / 45 /
09	50 / 63 / 70 / 81 / 90 / 100
12	
15	3 / 4 / 5 / 7 / 10 /
	12 / 16 / 20 / 28 / 35 / 50 / 70 / 100

Above technical specifications are intended for rough preselection only.



VPG-Series

Features & Benefits

Compact solution for low backlash applications

- Coaxial design with output shaft or flange.
- Complete new design with helical gear and high bearing capacity.
- Adaptable servo motor connection.

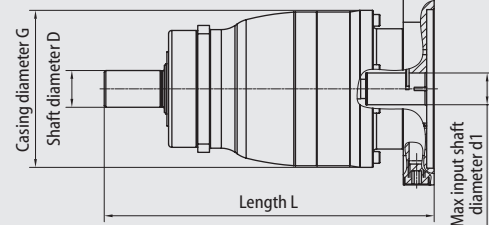
Relevant characteristics

- Mechanical backlash from 1 arcmin to 8 arcmin
- 7 sizes
- Easy motor connection with clamp ring
- Reduction ratios from 3 up to 100
- Acceleration torque from 32 Nm up to 4500 Nm
- Input speed up to 6000 rpm
- Torsional rigidity up to 180 Nm/arcmin
- Axial / radial load up to 30000 N / 50000 N
- Maintenance free for life
- Alternative versions available with cylindrical shaft, shaft with keyway and with spline to DIN5480

Servo planetary gear VPG

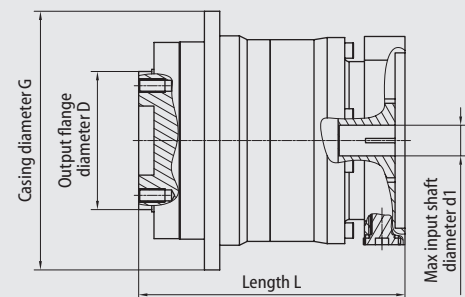
Main dimensions and mass

VNGX TYPE



Size	Length L (1) (2) [mm]	Diameter G (3) [mm]	Diameter D (2) [mm]	Max diameter d1 (2) [mm]	Mass (2) [kg]
045	146 / 165.5	72	16	19 / 14	2.1 / 2.7
080	178.5 / 188.5	94	22	24 / 14	3.1 / 4.4
250	250.8 / 239.8	120	32	38 / 19	7.3 / 8.3
450	329.5 / 314	154 / 152	40	48 / 32	17.3 / 19
1250	367 / 383	210	55	55 / 38	44 / 43
2600	410 / 486	227	75	55 / 55	58 / 73
4500	450.5 / 534.5	255	85	60 / 55	80 / 94

VNFX TYPE



Size	Length L (1) (2) [mm]	Diameter G (3) [mm]	Diameter D [mm]	Max diameter d1 (2) [mm]	Mass (2) [kg]
045	89 / 108.5	86	40	19 / 14	1.5 / 2.1
080	111.5 / 121.5	118	63	24 / 14	3.9 / 4.3
250	155 / 144	145	80	38 / 19	6.6 / 7
450	199 / 183.5	179	100	48 / 32	13.5 / 14.4
1250	232.5 / 248.5	247	160	55 / 38	39 / 38
2600	248.5 / 324.5	300	180	55 / 55	60 / 75
4500	267.5 / 342.5	330	200	60 / 55	80 / 93

- (1) please contact us for different diameters
- (2) single stage / double stage
- (3) Keyed or splined output shaft available on request

Torque & Speed main data

Size	Max nominal output torque (1) [Nm]	Max accel. / decel. torque (1) [Nm]	Max mean input speed (1) [rpm]	Max input speed [rpm]
045	29	44	5500	6000
080	83	120	4500	6000
250	200	330	4200	4500
450	390	660	3900	4000
1250	1000	1650	3400	4000
2600	2200	3000	3000	3500
4500	3250	4500	2800	3500

- (1) depending on reduction ratio
Please contact us for detailed data

Output bearing capacity

Size	VNGX TYPE		VNFX TYPE	
	Max bending moment [Nm]	Max radial / axial load [N]	Max bending moment [Nm]	Max axial load [N]
045	147	2700 / 2400	115	2200
080	261	4000 / 3350	250	3600
250	547	6300 / 5650	463	4200
450	1111	9450 / 9870	1337	8000
1250	2008	15500 / 14200	3530	10000
2600	3171	21000 / 30000	5758	33000
4500	5205	30000 / 33000	8739	50000

Available ratios

Size	Ratios
045 - 1250	3* / 4 / 5 / 7 / 10 / 12* / 16 / 20 / 25 / 28 / 35 / 40 / 50 / 70 / 100
2600 & 4500	3* / 4* / 5 / 7 / 10 / 12* / 16* / 20 / 25 / 28* / 35 / 40* / 50 / 70 / 100

(* Available only on VNGX type)

Above technical specifications are intended for rough preselection only.

Servorun sizing software

As part of our support in the design phase of new applications, we provide a detailed calculation of the gearbox.

Starting from the basic details of the application, our sizing software 'Servorun' verifies the gearbox selection as well as motor suitability for the application. In fact, in addition to gearbox specifications our Servorun database also includes a wide range of the most commonly used motors.

The screenshot displays the Servorun software interface for a 'Turntable' application. The main window is titled 'Servorun | Turntable - MCE-SIGN Sumitomo Servorun'. The interface is divided into several sections:

- Input Page:** Contains 'Working Cycle Data Description' with fields for acceleration time (IA = 0,3 s), uniform motion time (IR = 0,3 s), braking time (IB = 0,3 s), pause duration (IP = 0,6 s), and load duty cycle (ED = 60 %). It also includes 'Is the turntable directly or indirectly driven?' (set to Directly) and 'ENTER of gearbox data' (gear unit designation: FC-A45G, total reduction ratio: iGet = 119).
- Output Page:** Shows 'Results: Servo-design (according to WTS IV 5.12) Turntable direct'. It includes a 'Resulting matrix' table and a summary of 'Equiv. torque T2 [N*m]'.
- Operation Diagram:** A graph showing angular velocity (ω [rpm]) versus time (t [s]). The velocity starts at 0, increases linearly to 600 rpm at 0.3s, remains constant until 0.6s, decreases linearly to 0 rpm at 0.9s, and remains at 0 rpm until 1.2s.

Resulting matrix (Output Page):

Designation	Start	Uniform time	Braking	Total/mean	Max
t [s]	0,300	0,300	0,300	0,900	~
α [°]	90,0	180,0	90,0	360,0	~
ω [rpm]	~	600,000	~	400,000	600,000
α'' [°/s²]	2000,00	0,00	-2000,00	2000,00	~
T2 [N*m]	5236,0	0,0	-5236,0	4155,8	5236,0
FR2 [N]	-	-	-	-	-
n2 [1/min]	~	100,00	~	66,67	100,00
n1 [1/min]	~	11900	~	7933	11900
nMot [1/min]	~	11900	~	7933	11900
TMot [N*m]	67,06	3,10	-41,62	35,33	67,06

Moment of inertia of the application at gear unit output: J2Red = 150,00 kg*m²

Resulting matrix (Summary):

Gear unit load	actual	allowable	SF	Status
Equiv. torque T2 [N*m]	4155,8	0,0	0,00	to be verified

Application Turning Table Direct:

Generality
This computing model is used for computing turning tables with vertical pivot shaft. When the friction moments and other additional torque strengths influence the gear system, they are constant. If it does not take place (horizontal axis, variable lifting moment with the angle of the load), you must calculate with the application Revolute Arm. Driving the turning table is performed directly through the gear system power output. Using the parameter $T_{q,alt}$ the friction moment of the turning table bearing can be specified. Using the parameter T_{ZUS} , an additional constant torque strength can be specified on the turning table.

Computing the Output Number of Rotations n_2 at the Gear System
Countershaft speed values and the number of rotations n_2 on the power shaft are computed from the total motion angle α_{Ges} and the motion time Σt .

$$\omega_{Avg} = \frac{\alpha_{Ges}}{\Sigma t}$$

Customised is our Standard

Sumitomo design and production possibilities allow standard gearboxes to be turned into deeply tailored solutions.

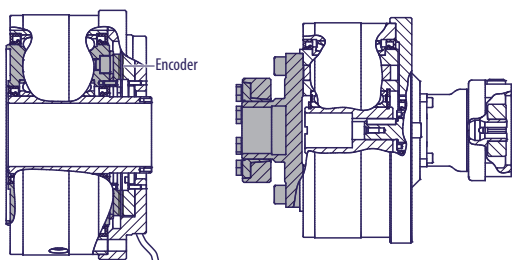
Customisations may regard non-standard motor adaptations, combination of different gearboxes, integration of brakes and feedback devices, realisation of specific interfaces with the machine, fine performance tuning and many others.

Especially at project startup, we offer a side by side co-engineering of the application where we can bring our experience grown on a very wide and long case history.

Our highly skilled sales force and engineers are ready to visit you to find the most competitive solution to your application demand together.

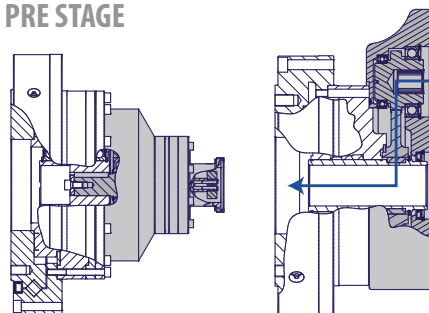
After sales service is also available for quick reaction in case of gearbox maintenance, repair or modification, also thanks to the worldwide network of Sumitomo production facilities and sales offices.

OUTPUT



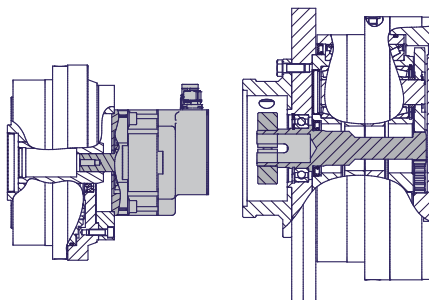
The ideal output geometries of a gearbox are as diverse as your applications.
We adjust to your needs, not the other way round!

PRE STAGE



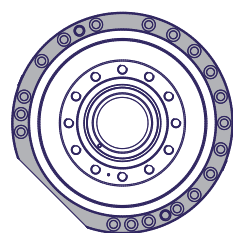
You are in need of extreme ratios?
Input speed couldn't be high enough?
Pairing the right gearbox stages is our business.
Of course "Made by Sumitomo"!

MOTOR ADAPTION



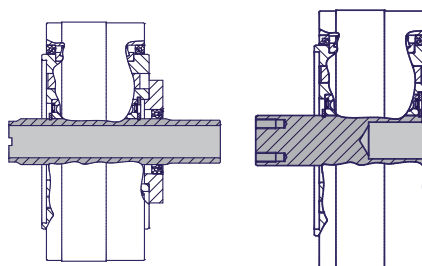
You have your favorite motor brand?
We have the gearbox which can be directly coupled to it.
No matter whether it is for 1000 units or just 1!

HOUSING

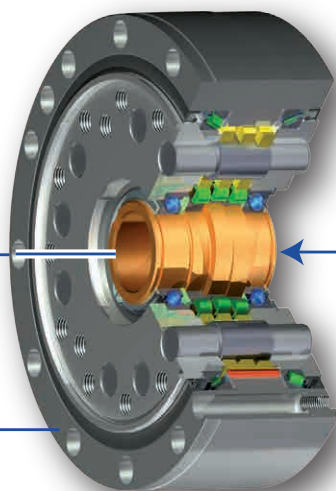


Do you have space restriction?
Does your machine design demand a unique drivetrain?
We have the solution.

INPUT SHAFT



No matter which input you prefer, we can provide a solution!



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