

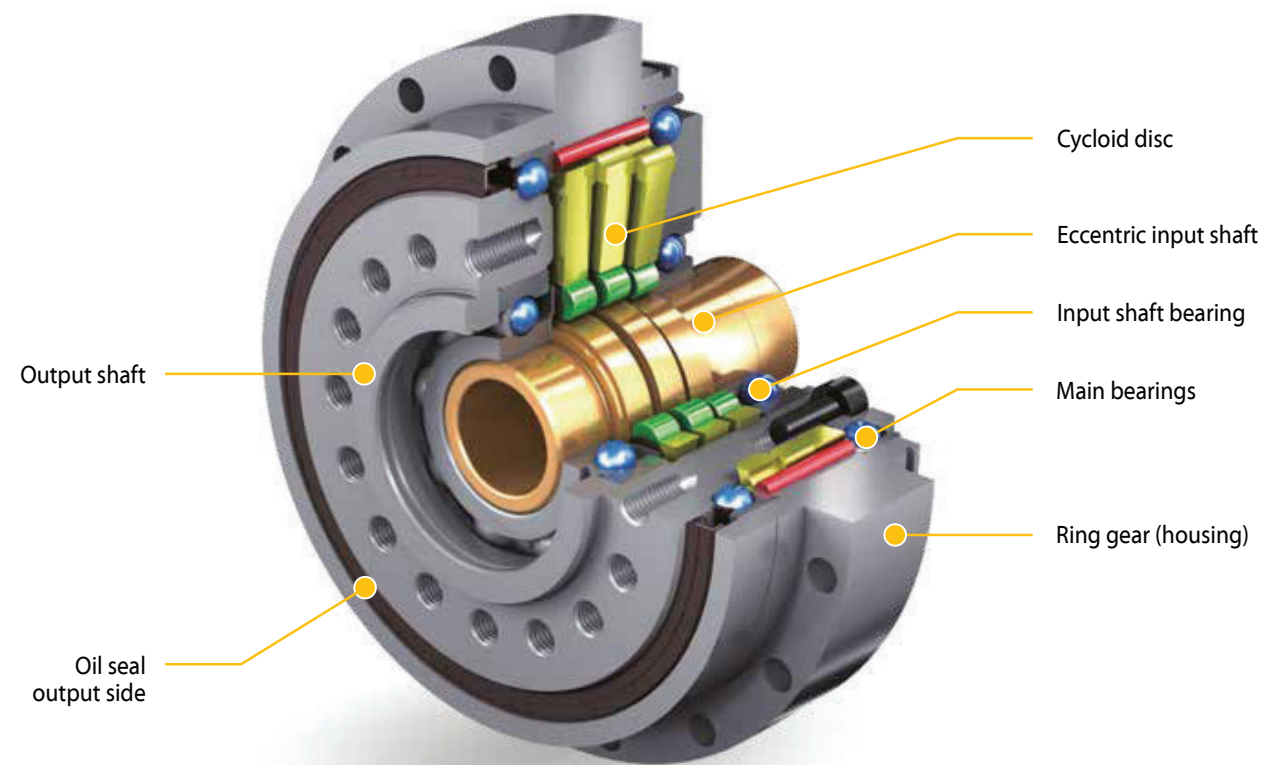


Sumitomo Drive Technologies

MOTION CONTROL
PRECISION GEARS

THE UNIQUE CYCLO PRINCIPLE

Delivering performance and quality since 1925.



There are essentially four major components in the FINE CYCLO gearbox:

1. Eccentric input shaft
2. Cycloid discs
3. Ring gear (housing)
4. Output shaft

As the eccentric input shaft rotates, it rolls the cycloid discs around the internal circumference of the stationary ring gear. The resulting action is like that of a wheel rolling around the inside of a ring.

As the wheel (cycloid disc) travels in a clockwise path around the ring (ring gear housing), the wheel itself turns slowly on its own axis in a counterclockwise direction.

In the FINE CYCLO system the cycloidal profile around the outer edge of the disc engages progressively with the rollers of the fixed ring gear housing to produce a reverse rotation at reduced speed. For each complete revolution of the high-speed shaft the cycloid disc turns one cycloidal tooth pitch in the opposite direction.

In general, there is one less cycloidal tooth around the disc than there are pins in the fixed ring gear housing, which results in reduction ratios being numerically equal to the number of cycloidal teeth on the disc.

The reduced rotation of the cycloid discs is transmitted to the slow speed shaft by means of drive pins and rollers which engage with holes located around the middle of each disc. The rotation of the cycloid discs is transmitted to the slow speed shaft via the pins and rollers projecting through holes in the cycloid discs.

MOTION CONTROL DRIVES APPLICATIONS

Pre-select the right series for your application.

Compact design

The high reduction ratios, in one or a maximum of two stages, allow for extremely compact designs with a long lifetime. Moreover, due to the different versions available, these gearboxes can be optimally integrated into the machine environment.

Simple installation

The Series A, DA and C gearboxes are lubricated for life in the factory and are completely sealed and are therefore maintenance-free. Convenient and simple motor mounting has been taken into account and is an easy option across all ranges.

Precision gearbox with large hollow shaft bore and high capacity bearing

The E Series, C Series and W Series gearboxes were specifically developed with an extra-large hollow bore inputshaft through which supply lines, shafts, and other media can be passed. The integrated bearings can handle high loads on the output side that may arise when using machine tools, in positioning or during robotics applications.

The right size for every application

The wide range of gearbox series and the many sizes available within each series enables easy selection of the right gearbox for any precision application. Gearboxes with external diameters ranging from 74 mm to 570 mm are available. With these, a range of acceleration torques from below 100 Nm up to 30,000 Nm can be covered. In the event of an emergency stop situation occurring this precision gearbox can even be safely subjected to a load of 60,000 Nm.

High torsional stiffness and low mass moments of inertia

For these application areas, Sumitomo Drive Technologies has developed highly accurate series of backlash-free precision gearboxes. Compared with conventional gearboxes, the construction principle offers the highest torsional stiffness as well as low mass moments of inertia - ideal for highly dynamic tasks.



FINE CYCLO PRODUCTS

Precise. Compact. Durable.

Our world would be very different without automation and robotic applications. Wherever there is a need to move something be it mechanically, automatically or by machine there is a need for a drive.

Differing duty requirements dictate that a drive must have a number of performance characteristics to meet the application. Our range of high precision gear drives allow solutions for the smallest of installation spaces to high torque drives for large systems. The requirements can however be particularly demanding and diverse in the field of factory automation and robotics.

As the inventor of the cycloidal principle, allowing the highest precision, we offer solutions for each and every application with its versatile (FINE CYCLO) zero backlash precision gear drive units.

Visit the Motion Control Drives product page and configure the product to your needs:



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E Cyclo (ECY)

- 3 sizes
- Ratio 50 / 80 / 100
- Lost motion < 1 arcmin
- Acceleration torque up to 157 Nm

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A-Series

- 6 sizes
- Ratio 29 / 59 / 89 / 119 / 179
- Lost motion < 1 arcmin
- Acceleration torque up to 7,610 Nm

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C-Series

- 6 sizes
- Ratio 29 / 59 / 89 / 119
- Lost motion < 1 arcmin
- Acceleration torque up to 6,278 Nm

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DA-Series

- 7 sizes
- Ratio 29 / 41 / 59 / 89 / 119
- Lost motion < 1 arcmin
- Acceleration torque up to 4,000 Nm

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UA-Series

- 8 sizes
- Ratio 60-283:1
- Lost motion < 0.5 arcmin
- Acceleration torque up to 30,000 Nm

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W-Series

- 2 sizes
- Ratio depending on pre-stage
- Lost motion < 1 arcmin
- Acceleration torque up to 10,000 Nm

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IB-Series P1 Type

- 3 sizes
- Ratio 3.7-81:1
- Lost motion < 3 arcmin
- Acceleration torque up to 380 Nm

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IB-Series P2 Type

- 2 sizes
- Ratio 4-100:1
- Lost motion < 3 arcmin
- Acceleration torque up to 3,000 Nm

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IB-Series PK Type

- 3 sizes
- Ratio 5.5-243:1
- Lost motion < 6 arcmin
- Acceleration torque up to 380 Nm

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E CYCLO - (ECY)

Features and advantages.

Highly precise shaft gearing with hollow shaft

Complete set with integrated cross roller bearing and hollow shafts up to 25.5 mm

Important features

- High stiffness
- Lost motion 1.0 arcmin
- Transmission error 0.75 arcmin
- Maximum input speed 8,500 rpm
- Acceleration torque up to 157 Nm
- Radial loads up to 2,050 N
- Axial loads up to 3,000 N
- Fully sealed including cross roller main bearing
- Fully sealed and plug & play version in modular design



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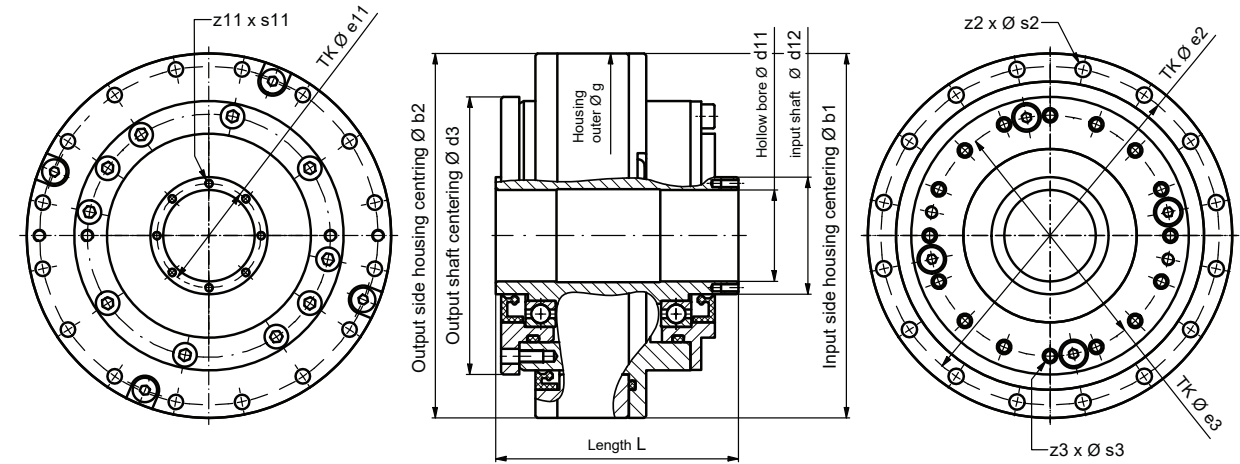
Available ratios

SIZE	RATIOS		
	50	80	100
ECY 203	●	●	●
ECY 205	●	●	●
ECY 107	●	●	●

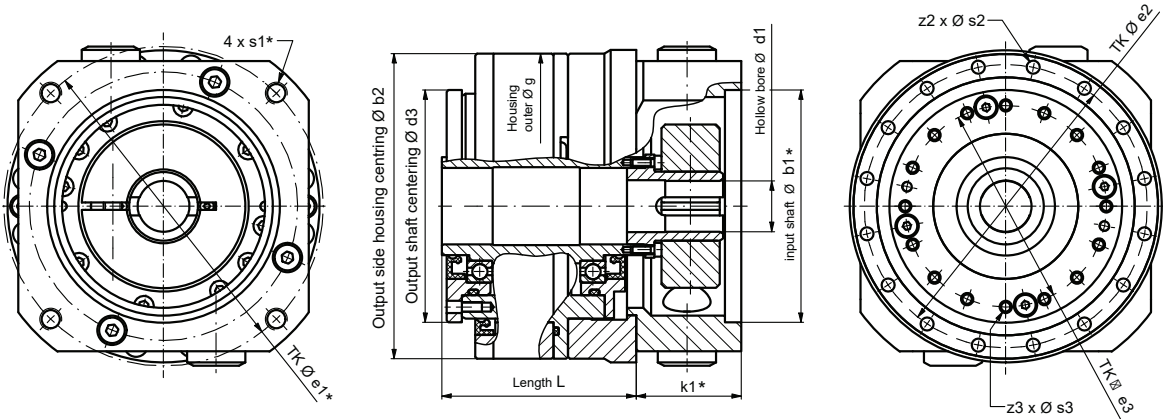
Output bearing capacity

SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]	MAX. PERMISSIBLE AXIAL LOAD PUSH / PULL [N]
ECY 203	105	1590
ECY 205	159	1590
ECY 107	219	3000

Main dimensions and weight



SIZE	L [mm]	g [mm]	b2 h7 [mm]	e2 [mm]	z2	s2 [mm]	b1 h7 [mm]	d3 h7 [mm]	e3 [mm]	z3	s3 Thread	d11 H7 [mm]	d12 h7 [mm]	e1 [mm]	z1	s11 Thread	WEIGHT [kg]
ECY 203	52,5	74	74	68	16	3,4	74	54	48	16	M3	19	24,9	22	6	M2	0,9
ECY 205	56	84	84	78	16	3,4	84	64	55,5	16	M3	21	27	24	8	M2	1,2
ECY 107	58	95	95	87,5	16	4,5	95	72	63	16	M4	25,5	34,5	30	8	M3	1,6



* k1, b1, s1, e1 and d1 individual, refer FINE CYCLO catalogue

Also available with plug and play design with motor adaptor.

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]		ACCELERATION / BRAKE TORQUE [NM]	MEAN INPUT SPEED (2) [RPM]	MAX INPUT SPEED [RPM]
ECY 203	(i 50)	23	44	2500	8500
	(i 80)	32	56		
	(i 100)	34	70		
ECY 205	(i 50)	36	73	2500	7300
	(i 80)	48	96		
	(i 100)	57	107		
ECY 107	(i 50)	43	98	2000	6500
	(i 80)	69	137		
	(i 100)	73	157		

(1) at input speed n1=1500 rpm
(2) at 50% ED

The above technical data is intended to enable a rough pre-selection only.

A - SERIES (FC)

Features and advantages.

More cost-efficient, high-precision reduction kit

For use in conjunction with the customer's output bearing.
Maximum freedom for installation of specific bearings and for integration into the customer's machine design.

Important features

- Zero mechanical backlash / 1 arcmin lost motion
- 6 sizes
- Reduction ratios 1:29, 1:59, 1: 89, 1:119, 1:179 (availability depends on size)
- Acceleration torque up to 7,610 Nm
- Input speed up to 6,150 rpm
- Torsional stiffness up to 1,100 Nm / arcmin
- Maintenance-free
- Motor mounting with key, clamp ring, or splined input shaft / coupling on request
- Motor adapter on request



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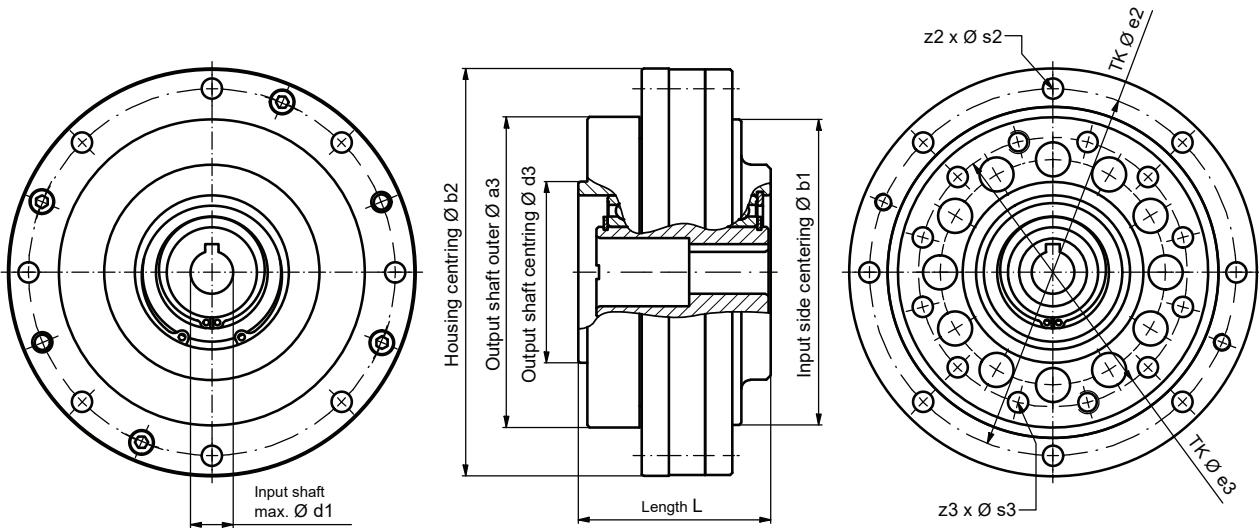
Available ratios

SIZE	RATIOS				
	29	59	89	119	179
A15		●	●		
A25	●	●	●	●	
A35	●	●	●	●	
A45	●	●	●	●	●
A65	●	●	●	●	●
A75	●	●	●	●	

Output bearing capacity

GEARBOX WITHOUT BEARING ON THE OUTPUT SIDE

Main dimensions and weight



	L	ø b2 h7	ø e2	z2	ø s2	ø b1 h7	ø d3 h7	ø e3	z3	ø s3	ø a3	ø d1 max.	WEIGHT
SIZE	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[kg]
A15	57	115	103	8	5,5	85	45	74	10	5.5	87	14	2.7
A25	73	145	130	8	6.6	110	60	97	10	6.6	112	22	5.2
A35	85	180	162	8	9	135	80	119	10	9	137	30	9.6
A45	97.5	220	202	12	9	170	100	150	10	11	172	38	18
A65	117	270	249	12	11	210	130	187	10	14	212	55	30
A75	131	310	287	12	11	235	150	210	10	14	237	64	46

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE 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
A65	(i 29) 1870 (i 59...179) 2570	5130	1500 2000	2200 2350
A75	(i 29) 3580 (i 59...119) 3900	7610	1200 1750	1950 2000

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

The above technical data is intended to enable a rough pre-selection only.

A - SERIES (F1C)

Features and advantages.

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.

Important features

- 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 required on sizes 45, 65 and 75)
- Motor mounting with key, clamp ring, or splined input shaft / coupling on request
- Motor adapter on request



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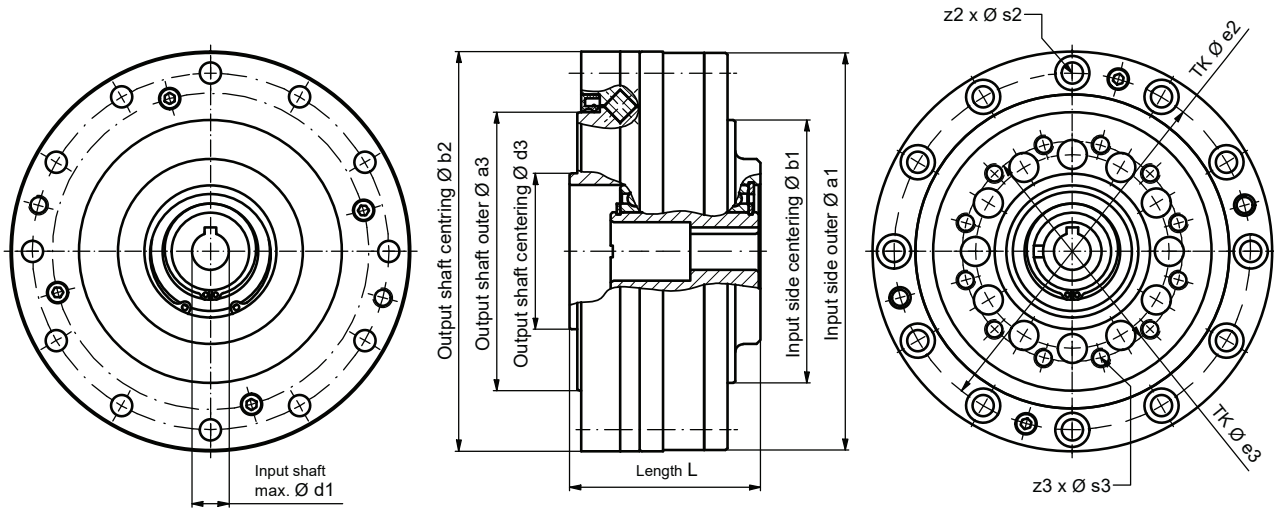
Available ratios

SIZE	RATIOS				
	29	59	89	119	179
A15		●	●		
A25	●	●	●	●	
A35	●	●	●	●	
A45	●	●	●	●	●
A65	●	●	●	●	●
A75	●	●	●	●	

Output bearing capacity

SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]
A15	460
A25	770
A35	1350
A45	3350
A65	6700
A75	14400

Main dimensions and weight



	L	ø b2 h7	ø e2	z2	ø s2	ø b1 h7	ø d3 h7	ø e3	z3	ø s3	ø a3	ø d1 max.	WEIGHT
SIZE	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[kg]
A15	57	115	103	8	5,5	85	45	74	10	5.5	87	14	2.7
A25	73	145	130	8	6.6	110	60	97	10	6.6	112	22	5.2
A35	85	180	162	8	9	135	80	119	10	9	137	30	9.6
A45	97.5	220	202	12	9	170	100	150	10	11	172	38	18
A65	117	270	249	12	11	210	130	187	10	14	212	55	30
A75	131	310	287	12	11	235	150	210	10	14	237	64	46

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE 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
A65	(i 29) 1870 (i 59...179) 2570	5130	1500 2000	2200 2350
A75	(i 29) 3580 (i 59...119) 3900	7610	1200 1750	1950 2000

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

The above technical data is intended to enable a rough pre-selection only.

A - SERIES (F2C)

Features and advantages.

Extremely compact and fully sealed precision gearbox

Tapered roller bearing integrated directly in the gearbox housing.
Extremely compact design and maximum power density.

Important features

- Zero mechanical backlash / 1 arcmin lost motion
- 4 sizes
- Reduction ratio 1:29, 1:59, 1: 89, 1:119, 1:179 (availability depends on size)
- Acceleration torque up to 2,910 Nm
- Input speed up to 6,150 rpm
- Torsional stiffness up to 445 Nm / arcmin
- Maintenance-free
- Motor mounting with key, clamp ring, or splined input shaft / coupling on request
- Motor adapter on request



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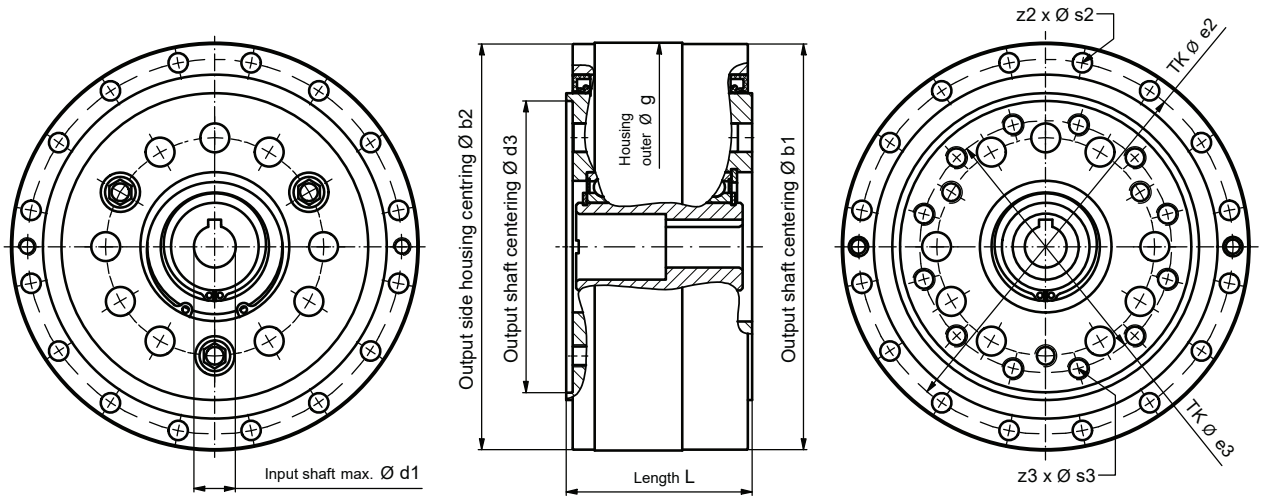
Available ratios

SIZE	RATIOS				
	29	59	89	119	179
A15		●	●		
A25	●	●	●	●	
A35	●	●	●	●	
A45	●	●	●	●	●

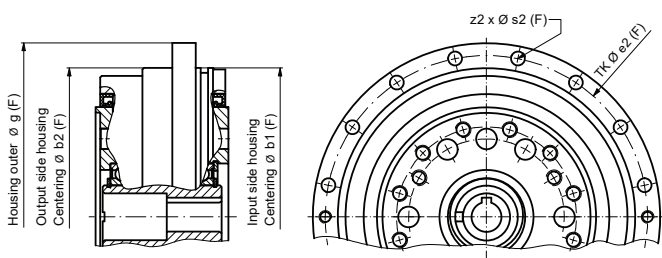
Output bearing capacity

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

Main dimensions and weight



	L	g	b2 h7	e2	z2	s2	b1 h7	d3 H7	e3	z3	s3	d1 max.	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]		Thread	[mm]	[kg]
A15	65.5	126	125	114	16	6.6	125	84	72	12	M6	14	5
A25	70	156	155	142	12	9	155	106	90	12	M8	22	7.3
A35	85	186	185	171	16	9	185	133	115	12	M10	30	13
A45	101	231	230	210	12	14	230	167	146	12	M14	38	24



	g	b2 h7	b1 h7	s2	e2	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
A15	145	124	123	6.8	135	5.5
A25	190	160	160	9	175	9.2
A35	222	190	190	9	206	13.6
A45	256	220	220	11	238	24.7

Main data torque & speed

SIZE		NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE TORQUE [NM]	MEAN INPUT SPEED (2) [RPM]	MAX INPUT SPEED [RPM]
A15	(i 59, 89)	149	335	5600	6150
A25	(i 29) (i 59...119)	283 349	721	3100 4200	4350 5050
A35	(i 29) (i 59...119)	499 668	1390	2500 3300	3500 3950
A45	(i 29) (i 59...179)	1060 1390	2910	1900 2600	2700 3150

(1) at input speed n1=1500 rpm
(2) at 50% ED

The above technical data is intended to enable a rough pre-selection only.

A - SERIES (F2CK)

Features and advantages.

Precision gearbox with angle prestage

Direct installation of the angle prestage for compact design.
Combination of two excellent gearboxes with high input speeds and a high load capacity possible.

Important features

- No mechanical backlash / < 2 arcmin lost motion
- 4 sizes
- Reduction ratios 1:44, 1:87, 1:89, 1:134, 1:177, 1:179, 1:267, 1:269, 1:357, 1:537 (availability depends on size)
- Acceleration torque up to 2,910 Nm
- Input speed up to 6,000 rpm
- Torsional stiffness up to 445 Nm / arcmin
- Maintenance-free
- Motor mounting with motor adapter



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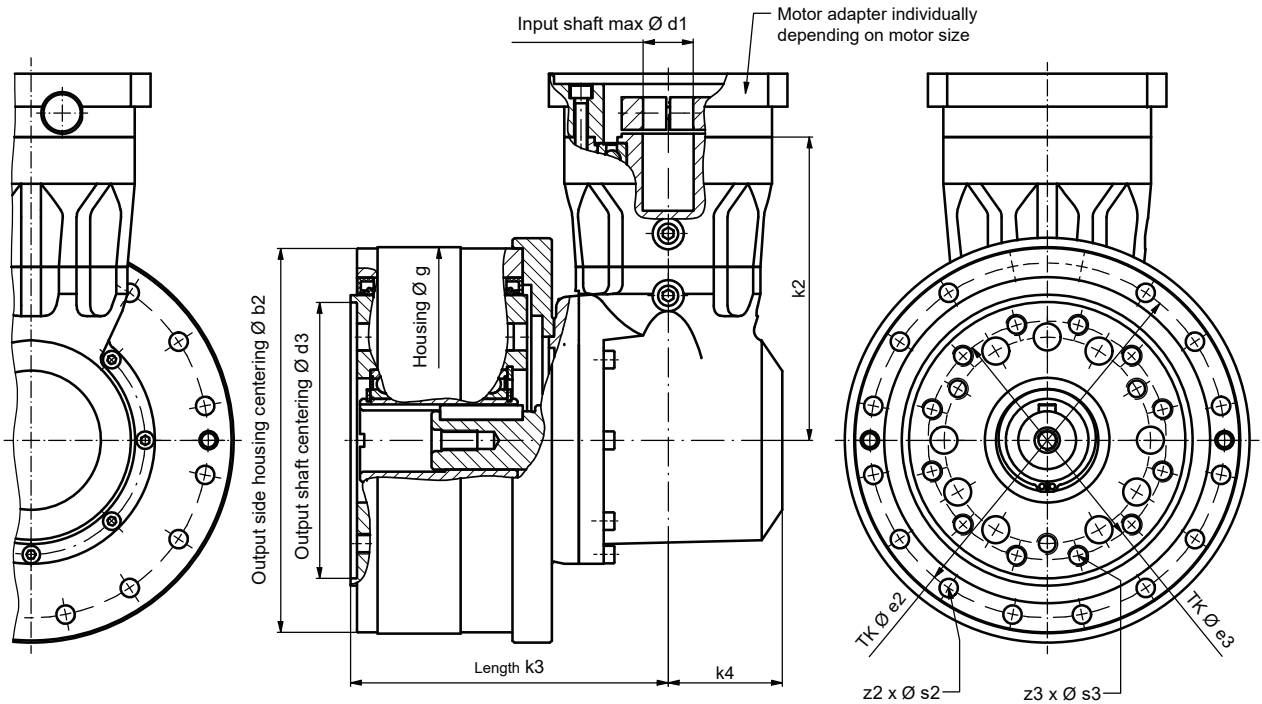
Available ratios

SIZE	RATIOS
A15	88.5 / 133.5 / 177 / 267
A25	43.5 / 87 / 88.5 / 133.5 / 177 / 178.5 / 267 / 357
A35	43.5 / 87 / 88.5 / 133.5 / 177 / 178.5 / 267 / 357
A45	43.5 / 87 / 88.5 / 133.5 / ... / 268.5 / 357 / 537

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

Main dimensions and weight



	k3	k4	k2	Ø g	Ø b2 h7	Ø e2	z2	Ø s2	Ø d3 H7	Ø e3	z3	s3	Ø d1 max.	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]			[mm]	[kg]
A15	123.5	46.5	115.2	126	125	114	12	6,6	84	72	12	M6	28	9
A25	128.5	46.5	115.2	156	155	142	10	9	106	90	12	M8	28	13
A35	153	55	146.2	186	185	171	14	9	133	115	12	M10	38	25
A45	169	55	146.2	231	230	210	12	14	167	146	12	M14	38	40

(*1) Weight varies depending on motor adapter

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE TORQUE [NM]	MEAN INPUT SPEED (2) [RPM]	MAX INPUT SPEED [RPM]
A15	196	335	5500	6000
A25	460	721	5500	6000
A35	879	1390	4600	5000
A45	1830	2910	4600	5000

(1) at input speed n1= 600 rpm
(2) at 50% ED

The above technical data is intended to enable a rough pre-selection only.

A - SERIES (F3C)

Features and advantages.

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.

Important features

- 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 mounting with key, clamp ring, or splined input shaft / coupling on request
- Motor adapter on request



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Available ratios

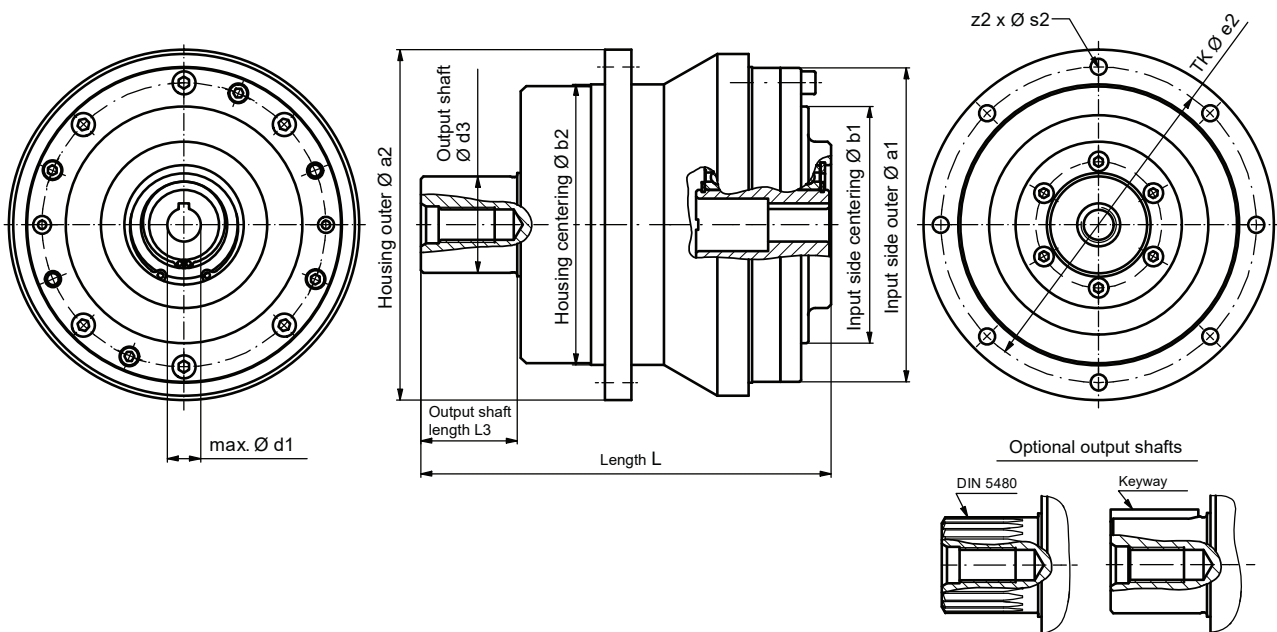
SIZE	RATIOS				
	29	59	89	119	179
A15		●	●		
A25	●	●	●	●	
A35	●	●	●	●	
A45	●	●	●	●	●
A65	●	●	●	●	●
A75	●	●	●	●	

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

Main dimensions and weight



	L	ø a2	ø b2 j6	ø e2	z2	ø s2	ø a1	ø b1 h7	ø d3 k6	L3	ø d1 max.	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
A15	164	140	110	125	8	6.6	114	85	35	35	14	8.5
A25	196	170	135	155	8	6.6	144	110	45	45	22	15.5
A35	234	200	160	180	8	9	179	135	55	55	30	27
A45	280	250	200	230	12	9	219	170	70	70	38	48
A65	347	300	240	275	12	11	269	210	90	90	55	94
A75	387	350	280	320	12	11	309	235	100	100	64	134

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [Nm]	ACCELERATION / BRAKE 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
A65	(i 29) 1870 (i 59...179) 2570	5130	1500 2000	2200 2350
A75	(i 29) 3580 (i 59...119) 3900	7610	1200 1750	1950 2000

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

The above technical data is intended to enable a rough pre-selection only.

C - SERIES

Features and advantages.

Precision gearbox with large hollow shaft

Tapered roller bearing or angular ball bearing integrated directly in the gearbox housing.
Very large hollow shaft for easy laying of cables or similar.

Important features

- 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



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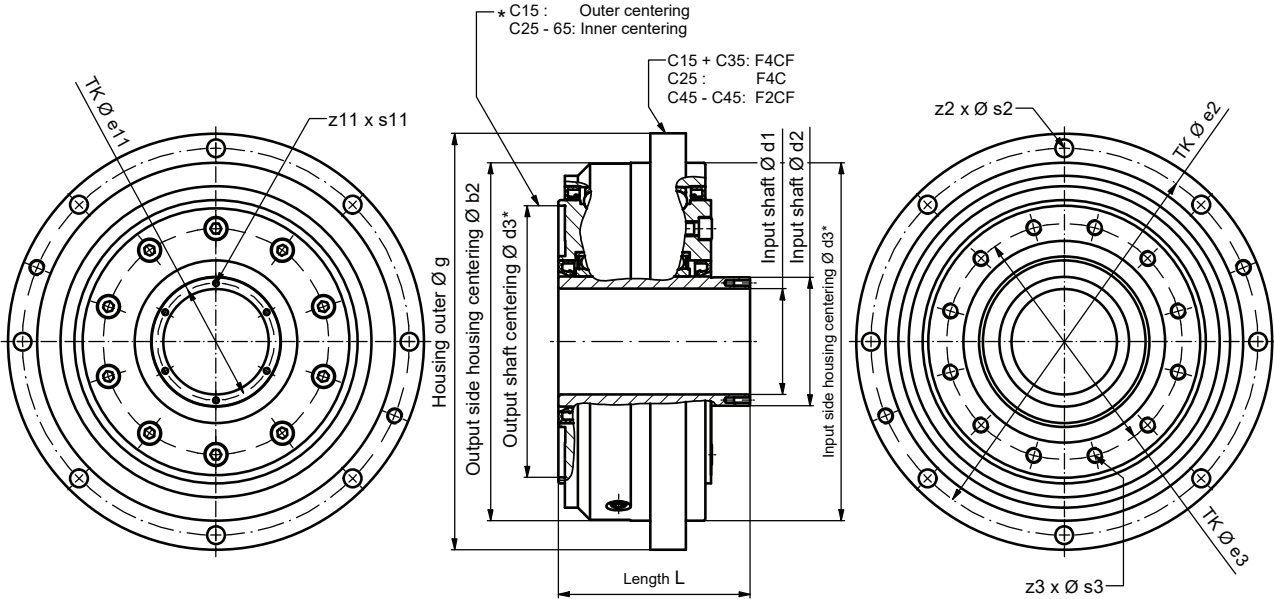
Available ratios

SIZE	RATIOS			
	29	59	89	119
C15	●	●	●	●
C25		●	●	●
C35		●	●	●
C45		●	●	●
C55		●	●	●
C65		●	●	●

Output bearing capacity

SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]	MAX. PERMISSIBLE AXIAL LOAD PUSH / PULL [N]
C15	1069	3924
C25	1850	7848
C35	2850	10791
C45	3924	8339
C55	6082	10791
C65	8829	13734

Main dimensions and weight



	L	ø g	ø b2 h7	ø e2	z2	ø s2	ø b1 h7	ø d3 h7/H7	ø e3	z3	ø s3	ø d1	ø d2	e11	ø s11	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	Thread	[mm]	[mm]			Thread	[kg]
C15	75.2	160	137	149	12	6.6	137	71	92	16	M6	40	49.5	45	M3	6
C25	96	186	185	171	12	9	185	133	112	12	M8	49	59	54	M3	12.5
C35	118	256	220	238	8	11	220	167	145	12	M10	65	79	72	M4	21
C45	138	292	250	272	8	13.5	250	192	168	12	M12	79	94	86.5	M4	32
C55	138	325	284	304	12	13.5	284	218	187	12	M14	92	109	100.5	M5	45
C65	149	362	320	340	16	13.5	320	245	212	12	M16	99	119	109	M5	62

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE 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 n1=1500 rpm; for C65 at input speed n1=1000 rpm
(2) at 50% ED
The above technical data is intended to enable a rough pre-selection only.

DA - SERIES

Features and advantages.

Precision gearbox for increased requirements

Angular ball bearings integrated directly in the gearbox housing.
Fully sealed and plug & play version in modular design.

Important features

- Zero mechanical backlash / 1 arcmin Lost Motion
- 7 sizes
- Reduction ratios 1:29, 1:59, 1:89, 1:119, 1:179 (availability depending on size)
- Acceleration torque up to 4000 Nm
- Input speed up to 6150 rpm
- Torsional stiffness up to 540 Nm / arcmin
- Maintenance free for life
- Fully sealed and plug & play version in modular design



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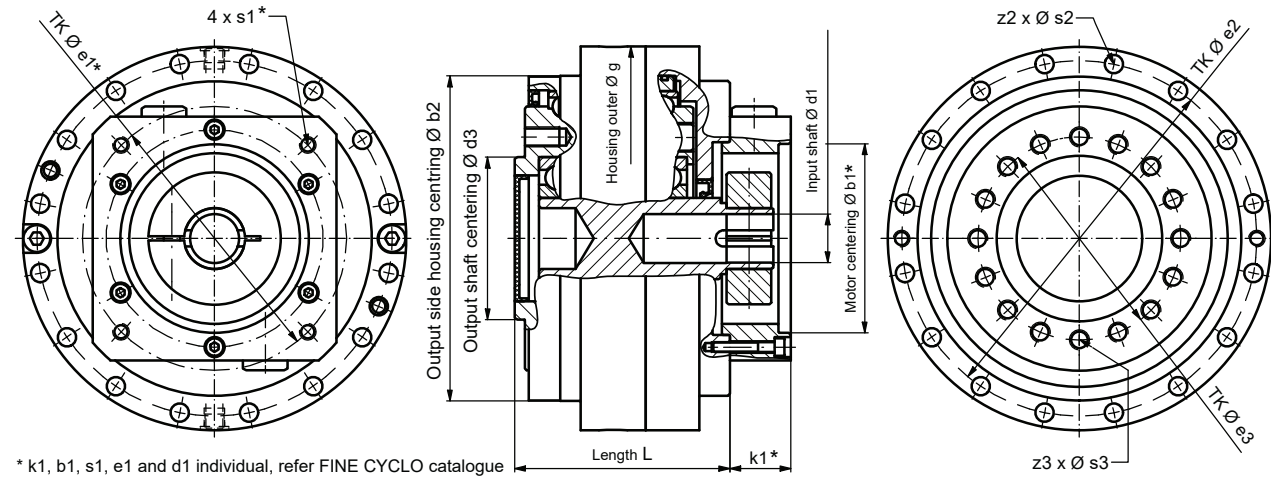
Available ratios

SIZE	RATIOS				
	29	41	59	89	119
DA10		●	●	●	
DA15		●	●	●	●
DA25	●	●	●	●	●
DA35	●	●	●	●	●
DA40		●	●	●	●
DA45	●	●	●	●	●
DA50		●	●	●	●

Output bearing capacity

SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]	MAX. PERMISSIBLE AXIAL LOAD PUSH / PULL [N]
DA10	450	2600/2600
DA15	883	3924/3924
DA25	1660	5220/5220
DA35	2150	6530/6530
DA40	2700	9000/9000
DA45	3430	13000/13000
DA50	4000	15000/15000

Main dimensions and weight



* k1, b1, s1, e1 and d1 individual, refer FINE CYCLO catalogue

	L	Ø g	Ø b2 h7	Ø e2	z2	Ø s2	Ø d3 h7	Ø e3	z3	s3	Ø d1 max.	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]		Thread	[mm]	[kg]
DA10	72.9	112	94	102	16	4.5	44	59	12	M6	14	4.5
DA15	84	133	113	123.5	16	5.5	47	68	12	M8	19	7
DA25	97.5	159	136	148	16	6.6	65	85	18	M8	24	11
DA35	106	189	160	175	16	9	80	100	16	M10	32	16
DA40	115.5	198	170	184	18	9	75	115	16	M10	32	20
DA45	121	221	186	204	16	11	90	124	18	M10	38	26
DA50	130	238	202	220	16	11	100	140	18	M12	38	32

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE TORQUE [NM]	MEAN INPUT SPEED (2) [RPM]	MAX INPUT SPEED [RPM]
DA10	126	300	5600	6150
DA15	257	613	5600	6150
DA25	431	1029	4200	5050
DA35	821	1960	3300	4550
DA40	1047	2500	2900	3950
DA45	1283	3062	2600	3550
DA50	1686	4000	2400	3150

(1) at input speed n1=1500 rpm
(2) at 50% ED

The above technical data is intended to enable a rough pre-selection only.

UA - SERIES

Features and advantages.

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

Tapered roller bearing or angular ball bearing for the output shaft integrated directly in the gearbox housing.

Important features

- No mechanical backlash / 0.5 arcmin lost motion
- 8 sizes
- Reduction ratios 1:30 to 1:283 (availability depends on size)
- Acceleration torque up to 30,000 Nm
- Output speed up to 60 rpm
- Torsional stiffness up to 6,000 Nm / arcmin
- Input preconfigured for motor mounting with clamp ring or key and motor adapter
- Fully sealed and plug & play version in modular design



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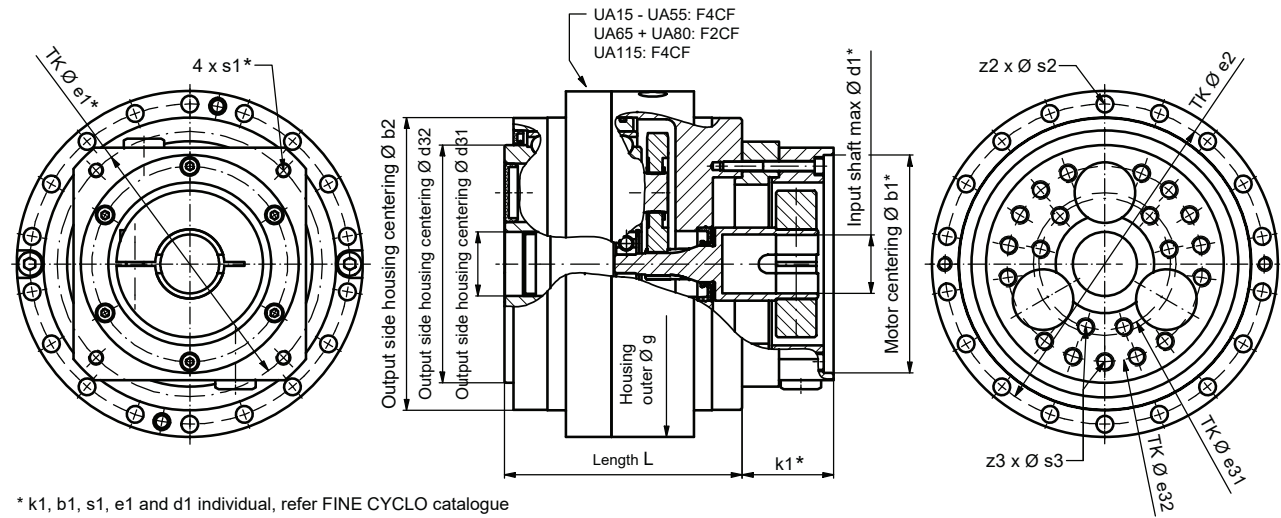
Available ratios

SIZE	RATIOS			
	55-99	100-149	150-199	200-300
UA15	●	●	●	
UA25	●	●	●	
UA35	●	●	●	
UA45	●	●	●	
UA55	●	●	●	●
UA65	●	●	●	●
UA80	●	●	●	●
UA115	available on request			

Output bearing capacity

SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]	MAX. PERMISSIBLE AXIAL LOAD PUSH / PULL [N]
UA15	883	3924
UA25	1666	5194
UA35	2156	7840
UA45	3430	8820
UA55	4000	10780
UA65	7056	11000
UA80	10000	13734
UA115	44000	29000

Main dimensions and weight



* k1, b1, s1, e1 and d1 individual, refer FINE CYCLO catalogue

SIZE	L [mm]	g [mm]	b2 h7 [mm]	e2 [mm]	z2	s2 [mm]	d31 H7 [mm]	d32 h7 [mm]	e31+e32 [mm]	z3	s3 Thread	d1 max. [mm]	WEIGHT [kg]
UA15	104	135	113	123.5	16	5.5	28	90	48 + 72	9 + 15	M6	28	8
UA25	109	165	137	151	24	9	32	110	50 + 86	6 + 9	M10	28	13
UA35	130	189	160	175	18	9	35	130	72 + 107	6 + 15	M10	38	18
UA45	138	224	188	206	18	11	47	155	93 + 131	9 + 18	M12+M10	38	33
UA55	158.5	244	208	226	20	11	42	174	97 + 140	9 + 15	M12	42	40
UA65	170	295	255	275	18	13	55	210	136 + 177	12 + 21	M12	42	64
UA80	194	325	284	305	24	13	62	238	139 + 193	9 + 15	M16	48	90
UA115	272	570	480	530	28	22	-	400	250 + 320	12 + 20	M 20	on Request	260

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE TORQUE [NM]	MAX OUTPUT SPEED [RPM]
UA15	250	625	60
UA25	500	1250	50
UA35	900	2250	40
UA45	1320	3300	30
UA55	2000	5000	30
UA65	3430	8575	30
UA80	5000	12500	25
UA115	12000	30000	20

(1) at output speed n2=15 rpm

The above technical data is intended to enable a rough pre-selection only.

W - SERIES

Features and advantages.

Multi stage high precision gearbox with extremely large hollow shaft

Tapered roller bearing or angular ball bearing integrated directly in the gearbox housing.
Very large hole for easy laying of cables or similar.

Important features

- 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



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Available ratios

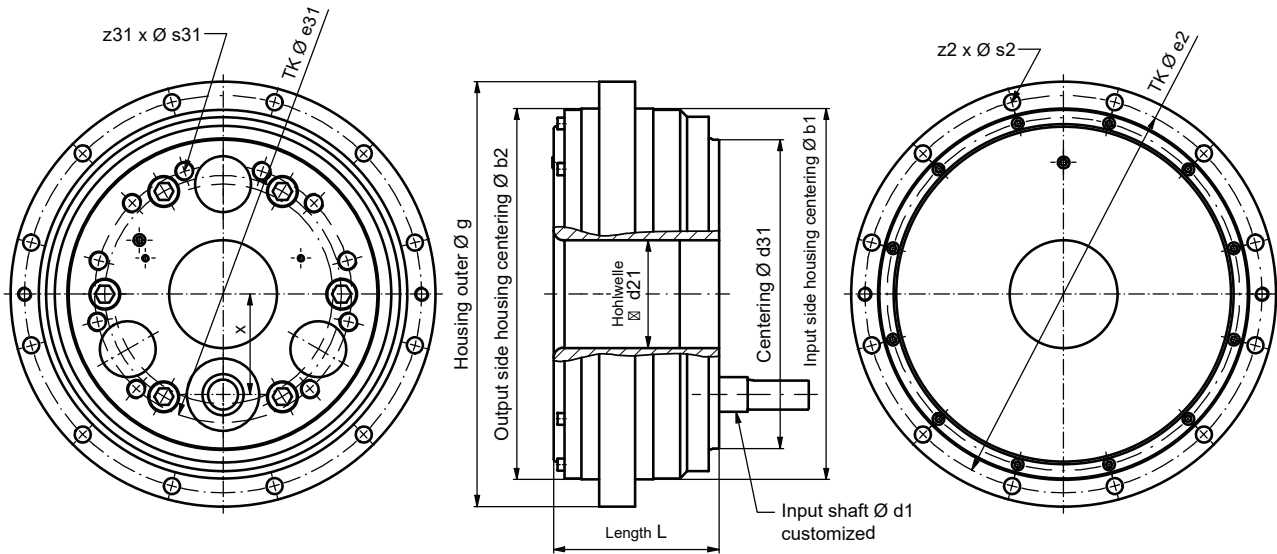
SIZE	RATIOS	
	64	87.3
W55	●	
W70		●

Other ratios depending on the prestage

Output bearing capacity

SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]	MAX. PERMISSIBLE AXIAL LOAD PUSH / PULL [N]
W55	9565	13734
W70	22000	29400

Main dimensions and weight



	L	Ø g	Ø b2	h7	Ø e2	z2	Ø s2	Ø b1 h8	Ø d31 h7	Ø e31	z31	Ø s31	Ø d21	WEIGHT
SIZE	[mm]	[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]		Thread	[mm]	[kg]
W55	138	355	310		332	12	13,5	310	258	215	10	M16	90	65
W70	192.5	470	383		447	16	13	425	390	358	15	M16	138	95

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE TORQUE [NM]	MAX OUTPUT SPEED [RPM]
W55	2453	6130	30
W70	4000	10000	25

(1) at output speed n2=15 rpm

The above technical data is intended to enable a rough pre-selection only.

IB - SERIES (P1)

Features and advantages.

The smallest gearbox for precise applications

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

Important features

- Mechanical backlash 3 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



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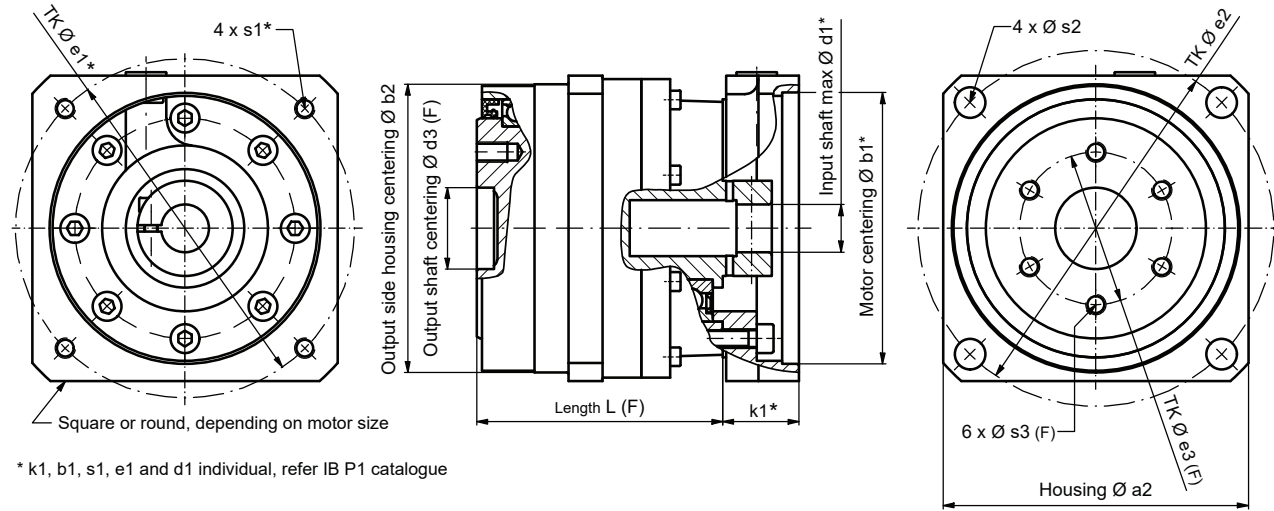
Available ratios

SIZE	RATIOS
P110	3.7 / 5 / 9 /
P120	11 / 15 / 21 / 33 / 45 / 81
P130	

Output bearing capacity

SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]	MAX. RADIAL / AXIAL LOAD [NM]
P110	70	1050 / 2160
P120	300	2900 / 4800
P130	620	4500 / 9400

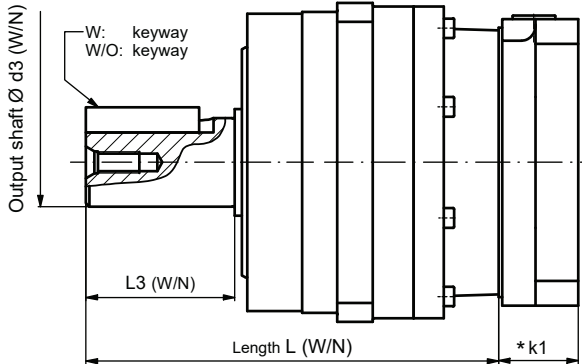
Main dimensions and weight



* k1, b1, s1, e1 and d1 individual, refer IB P1 catalogue

	L 1stage / 2stage		Ø a2	Ø b2 h7	Ø e2	Ø s2	Ø d3 H7	Ø e3	s3	Ø d1 max. 1stage / 2stage		WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	Thread	[mm]	[mm]	[kg]
P110F	55.5	73.5	60	56	70	5,5	14	30	M4	19	16	1.3
P120F	72.5	86	90	85	105	9	24	45	M6	24	28	3
P130F	97	113	120	115	135	11	32	60	M8	38	38	7

(*1) Weight varies depending on motor adapter



	L 1stage / 2stage		Ø d3 h7	L3	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]	[kg]
P110N/W	85.5	103.5	16	28	1.5
P120N/W	116.5	130	25	42	3.3
P130N/W	183	199	40	82	7.5

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE 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 Sumitomo Drive Technologies for details.

The above technical data is intended to enable a rough pre-selection only.

IB - SERIES (P2)

Features and advantages.

The precise input for high torque requirements

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

Important features

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



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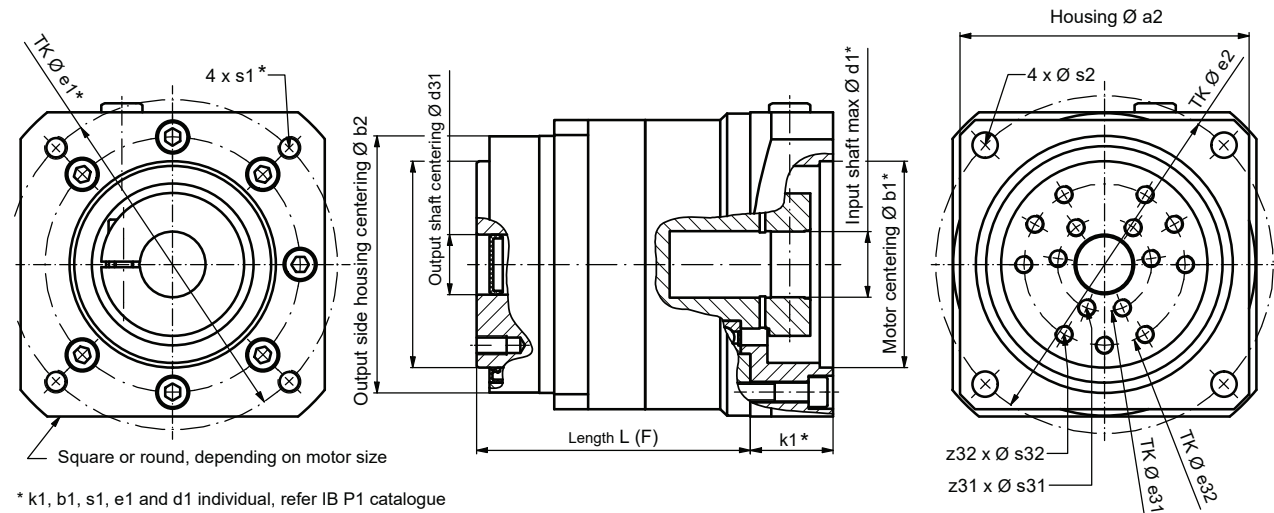
Available ratios

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

Output bearing capacity

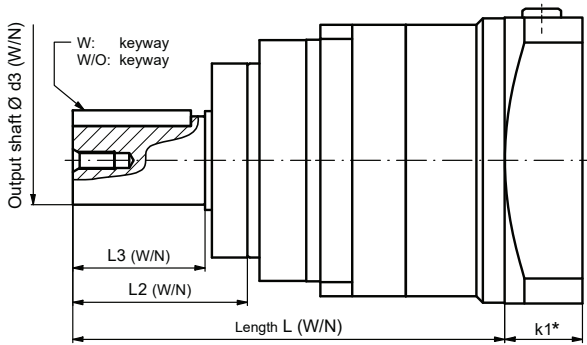
SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]	MAX. RADIAL / AXIAL LOAD [NM]
P240	1177	10245 / 5200
P250	2000	18385 / 8100

Main dimensions and weight



* k1, b1, s1, e1 and d1 individual, refer IB P1 catalogue

SIZE	L (*2) 1stage / 2stage		Ø a2	Ø b2 h7	Ø e2	Ø s2	Ø d31 H7	Ø d32 h7	Ø e31+ e32	z31+ z32	s31+ s32	Ø d1 1stage / 2stage	WEIGHT	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		Thread	[mm]	[mm]	[kg]
P240F	146	186.8	154	137	180	13,5	32	110	50 86	6 9	M10 M10	24	19	19
	to 167	to 192,8										to 55	to 42	to 21
P250F	182	246	212	188	250	22	47	155	93 131	9 18	M12 M10	35	24	35
	to 192	to 267										to 60	to 55	to 50



SIZE	L (*2) 1stage / 2stage		Ø d3 h7	L3	L2	WEIGHT
	[mm]	[mm]	[mm]	[mm]	[mm]	
P240N/W	245	285.8	50	75	99	22
	to 266	to				to 24
P250N/W	319	383	65	110	137	40
	to 329	to 404				to 56

(*1) Weight varies depending on motor adapter
(*2) Length varies depending on motor shaft diameter

Main data torque & speed

SIZE	MAX NOMINAL OUTPUT TORQUE (1) (2) [NM]	ACCELERATION / BRAKE TORQUE [NM]	MAX OUTPUT SPEED [RPM]
P240	500	900	6000
P250	1500	3000	5000

(1) depending on reduction ratio
Please contact Sumitomo Drive Technologies for details.
(2) at input speed n1= 1500 rpm

The above technical data is intended to enable a rough pre-selection only.

IB - SERIES (PK1)

Features and advantages.

Right-angled version of the smallest gearbox for precision applications

Angular ball bearing on output for high load.
Comprehensive range of servo motor connections available.

Important features

- Mechanical backlash 6 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



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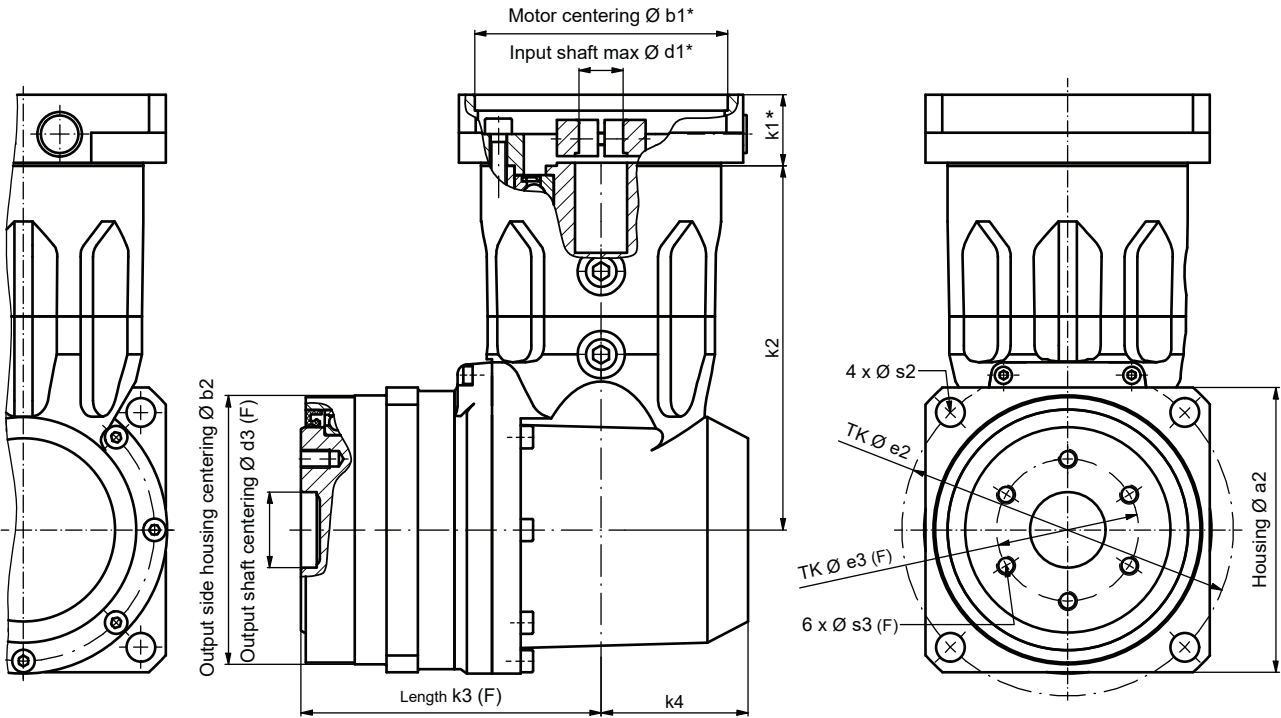
Available ratios

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

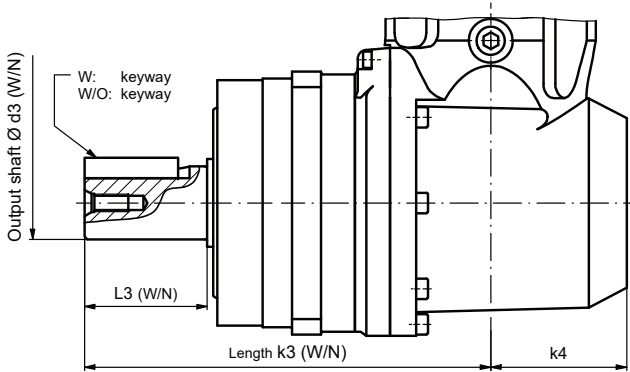
Output bearing capacity

SIZE	MAX. PERMISSIBLE BENDING MOMENT [NM]	MAX. RADIAL / AXIAL LOAD [NM]
PK110	70	1050 / 3140
PK120	300	2900 / 4800
PK130	620	4500 / 9400

Main dimensions and weight



	k3 1stage / 2stage		k4	k2	$\varnothing a2$	$\varnothing b2$ h7	$\varnothing e2$	$\varnothing s2$	$\varnothing d3$ H7	$\varnothing e3$	s3	$\varnothing d1$ max.	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	Thread	[mm]	[kg]
PK110F	67	78	33	95.7	60	56	70	5.5	14	30	M4	19	2
PK120F	95	100.5	46.5	115.2	90	85	105	9	24	45	M6	28	5.5
PK130F	121.5	128.5	55	146.2	120	115	135	11	32	60	M8	38	12.5



	k3 1stage / 2stage		$\varnothing d3$ h7	L3	WEIGHT
SIZE	[mm]	[mm]	[mm]	[mm]	[kg]
PK110N/W	97	108	16	28	2.2
PK120N/W	139	144.5	25	42	5.8
PK130N/W	207.5	214.5	40	82	13

(*1) Weight varies depending on motor adapter
(*2) Length varies depending on motor shaft diameter

Main data torque & speed

SIZE	NOMINAL OUTPUT TORQUE (1) [NM]	ACCELERATION / BRAKE TORQUE [NM]	MAX OUTPUT SPEED [RPM]
PK110	22.5	45	6000
PK120	69	190	6000
PK130	153	380	5000

(1) depending on reduction ratio
Please contact Sumitomo Drive Technologies for details.
(2) at input speed $n1 = 1000$ rpm

The above technical data is intended to enable a rough pre-selection only.



Find your closest Sumitomo Drive Technologies facility here.

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