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Sumitomo Drive Technologies

Always on the Move

Motion Control Drives IB Series P Type

CW11



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IB Series P Type

● Product Lineup: 50W~1500W

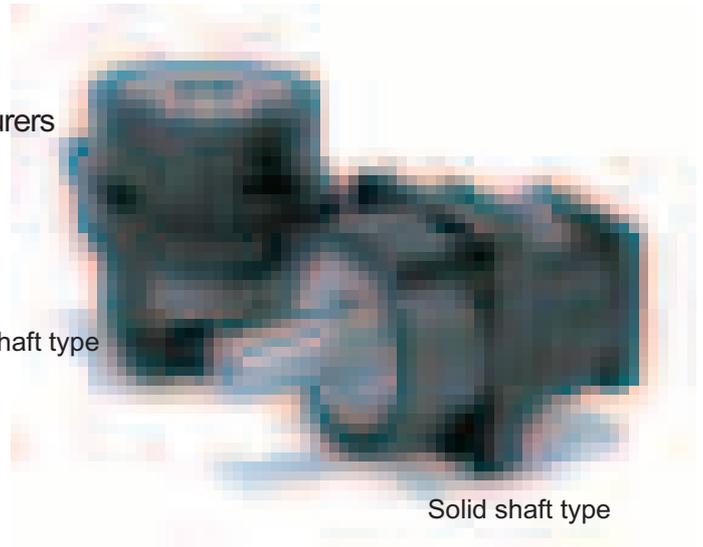
● Reduction Ratio: 5, 9, 15, 21, 33, 45

Adoption of the newly developed planetary float mechanisms improve the evenness of load distribution!
Low noise and high efficiency!

Features

- **Leading industry with high torque transmission capacity**
- Low backlash: 3 min, 10 min
- Compact
- Low noise: 70dB(A)/0.5m
- High efficiency: 90% and greater*
- All reduction ratio: Integer
- Input speed: Capable of 5000r/min
- Compatible with major servo motor manufacturers
- Lineup for flange output type available

*Efficiency at Rated output torque (with reduction ratio 5 and 9)



Flange shaft type

Solid shaft type

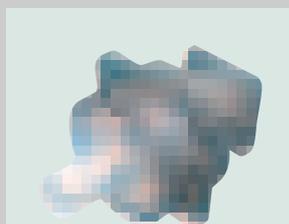
Purpose

- Transfer robots
- Peripheral equipment for robots
- FA equipment related
- Liquid crystal glass transfer robot
- Semi-conductor production machine
- Machine tools
- Loader drive and shaft motion
- Wrapping machines (bag making and pillow wrapping)
- Wood-working machine
- Laser processing machine
- Medical equipment (CT)
- Monitoring camera
- Vending machine
- Analyzing machine
- Measuring equipment

IB Series P Type

Variation

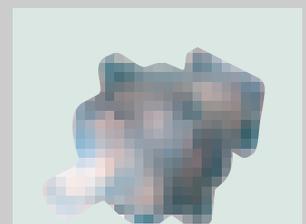
Three variations available to match customers' needs.



Keyless solid shaft type



Flange shaft type



Solid shaft type with keyway

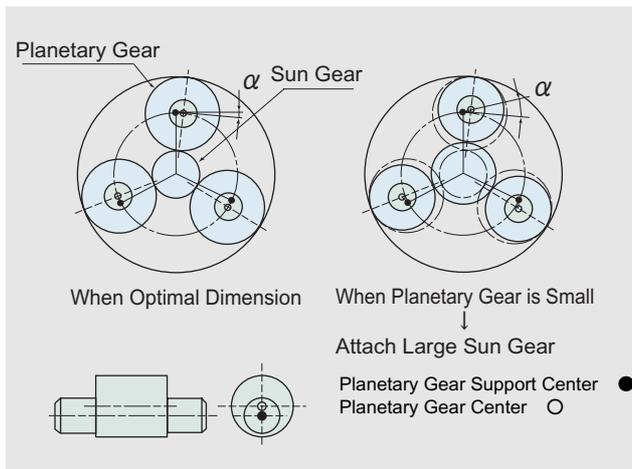
New Original Technology

We have developed reducers for various fields, from low backlash planetary gear reducers to COMPOWER[®] planetary gear reducers, commonly used for general industrial machines.

The new IB Series P Type contains remarkable new technology. Its performance will exceed your expectations!

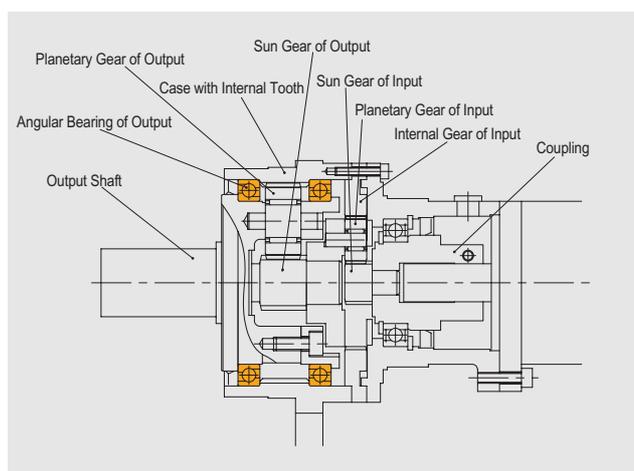
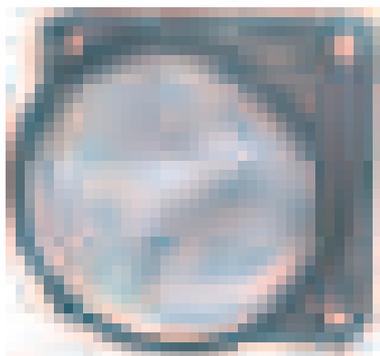
(1) Original Planetary Float Mechanism by Eccentric Planetary Pin

The newly developed eccentric planetary pin has been adopted for the IB Series P Type. By replacing the sun gear, it enables for the most simple backlash adjustments ever. In addition, excellent load balance of three planetary gears enables us to provide stable performance and quality with short delivery.



(2) Large Diameter Angular Ball Bearing Adoption for High Moment Capacity

Large diameter angular ball bearing is used to support output shaft. Although compact, it is capable of handling large radial load.



Assembly

Simple assembly. Directly connect servo motor and reducer with bolt (provided by customer) after delivery. Tighten motor shaft with hexagon wrench. Ready for immediate use.



Keyless Type Servo Motor



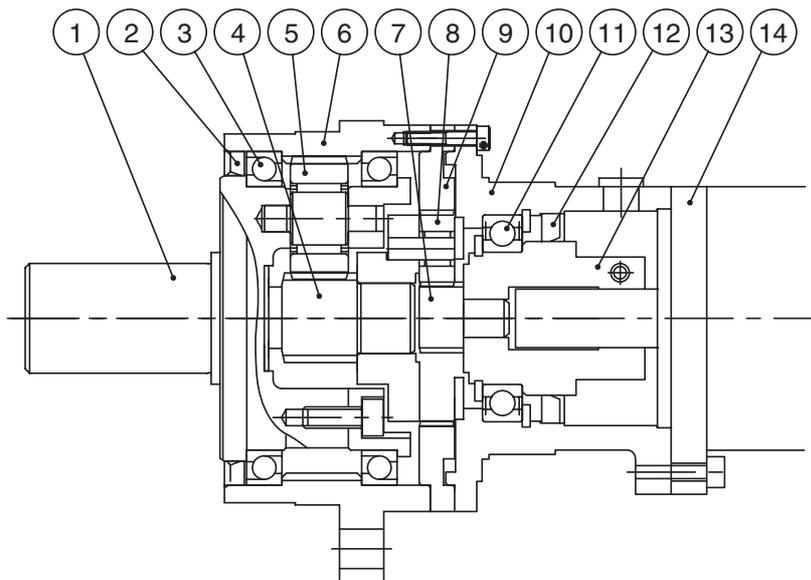
Input Side Clamp

Standard Specification, Construction, and Mechanism

Standard Specification

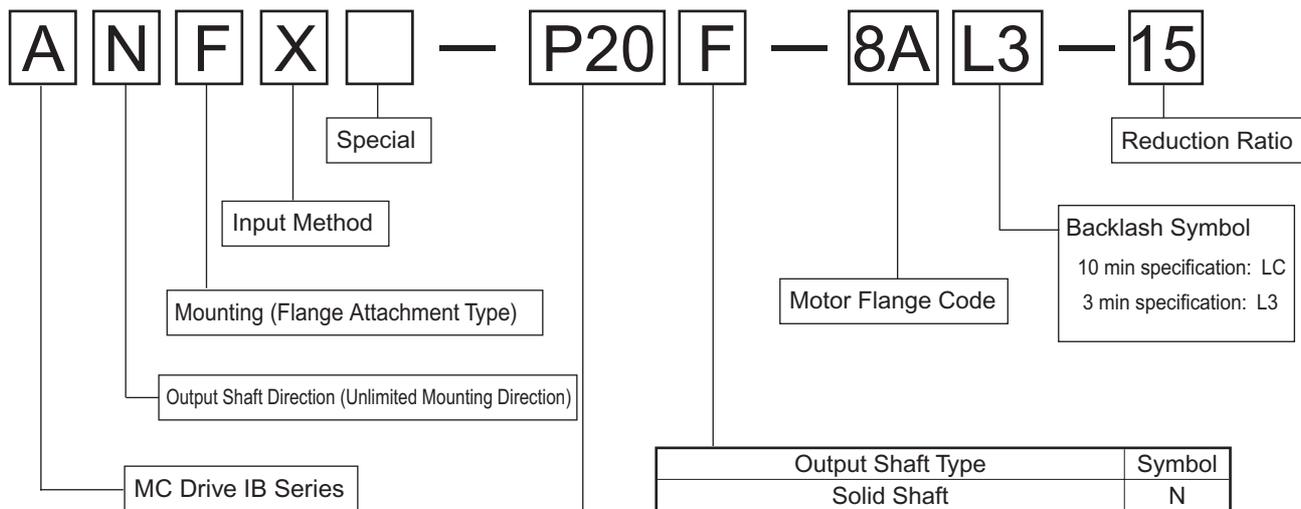
Backlash	10 min or 3 min specification
Efficiency	90% or more at rated output torque (with reduction ratio 5 or 9)
Noise Level	70dB(A) 0.5m *Varies depending on models and mounting condition.
Lubrication system	Grease lubrication The unit is filled with grease at the time of shipping. It is ready for immediate use.
Reduction system	Planetary gear mechanism Single Stage Type (Reduction Ratio 5, 9) Double Stage Type (Reduction Ratio 15, 21, 33, 45)
Output shaft rotation direction	Same direction as the rotation direction of input gear.
Material	Case with internal gear and gear: Chrome-Molybdenum Steel Joint cover: Aluminum alloy Output and input shaft: S45C
Mounting location	Indoor (without dust and water)
Ambient temperature	0~40°C Consult us when the operation condition exceeds the above and when special grease is necessary such as food manufacturing machine.
Ambient humidity	85% or less. There should be no condensation.
Altitude	1000m or below
Ambient atmosphere	There should be no corrosive gases, explosive gases, vapor, or dust.
Mounting angle	All angles possible (no limitation)
Paint	Black (with alumite and black color processing) Output shaft comes with rustproof treatment at the time of shipping.
Actual reduction ratio	Integer reduction ratio as in the catalog.
Surface temperature of the reducer	80°C or below. Consult us when operating continuously.

Construction Drawing

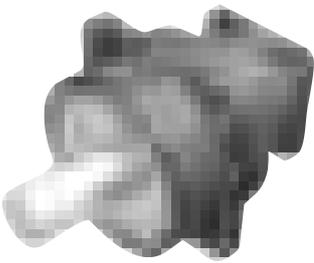
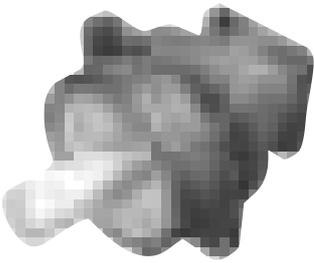
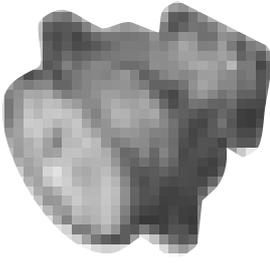


Number	Part Name
1	Output Shaft
2	Oil Seal
3	Bearing of Output
4	Sun Gear of Output
5	Planetary Gear of Output
6	Casing with Internal Gear
7	Sun Gear of Input
8	Planetary Gear of Input
9	Internal Gear of Input
10	Joint Cover
11	Input Shaft Bearing
12	Oil Seal
13	Coupling
14	Motor (Provided by Customers)

Nomenclature



Type and Frame Size	
P	10
	15
	20
	25
	30
	35

Output Shaft Type	Symbol
Solid Shaft	N
	
Solid Shaft (with Keyway)	W
	
Flange Shaft	F
	

Lineup

(At input speed 3000r/min)

Frame size: P10, P15

Reduction Ratio	5	9	15 (5 × 3)	21 (5 × 4.2)	33 (3.7 × 9)	45 (5 × 9)	Motor PCD (mm)	Motor Shaft Diameter (mm)	Maximum Motor Shaft Diameter (mm)
Output Speed (r/min)									
Motor Capacity (W)	600	333	200	143	90.9	66.7			
50	(Note 1)		(Note 1)				45, 46, 60	6, 8	(Note 3) 14
100	P10						45, 46, 60, 70	8	
200			P15				70	11, 14	
400							70	14	

Frame size: P20, P25

Reduction Ratio	5	9	15 (5 × 3)	21 (5 × 4.2)	33 (3.7 × 9)	45 (5 × 9)	Motor PCD (mm)	Motor Shaft Diameter (mm)	Maximum Motor Shaft Diameter (mm)
Output Speed (r/min)									
Motor Capacity (W)	600	333	200	143	90.9	66.7			
100							40, 60, 70	8	(Note 3) 19
200	(Note 1)		(Note 1)				60, 70, 90	9, 11, 14	
300			P20				90, 100, 115	10, 11, 14	
400					P25		70, 90, 100, 115	10, 14, 16	
500					(Note 2)		100, 115	10, 14, 16	
600			P25		P25		115	16	
750							90, 100	16, 19	

Frame size: P30, P35

Reduction Ratio	5	9	15 (5 × 3)	21 (5 × 4.2)	33 (3.7 × 9)	45 (5 × 9)	Motor PCD (mm)	Motor Shaft Diameter (mm)	Maximum Motor Shaft Diameter (mm)
Output Speed (r/min)									
Motor Capacity (W)	600	333	200	143	90.9	66.7			
300							90, 100, 115	10, 11, 14	(Note 3) 24
400							70, 90, 100, 115	10, 14, 16	
500							100, 115	10, 14, 6	
600							115	16	
750			P30				90, 100, 115, 145	16, 19	
900							145	19	
1000					P35		100, 115, 145	16, 19, 24	
1400							145	19	
1500		P35					115, 145	19, 24	

- Note: 1. Check no load running torque indicated in page 7 before selecting combination in dotted square.
 2. Use at allowable acceleration torque or less in the selection table in page 7 when using frame size P25 for reduction ratio 33 with 500W or 600W motor.
 3. Use reducer with larger frame size when your motor shaft exceeds the indicated maximum motor shaft diameter.
 4. Refer to page 10 to 14 for selection tables for each servo motor manufacturer.
 5. Consult us for applications with input speed less than 3000r/min.

Selection Table

(At input speed 3000r/min)

Frame Size	Reduction Ratio	Rated Output Torque at Input Speed 3000r/min		Allowable Acceleration Torque at startup and stop		Allowable Radial Load at Input Speed 3000r/min		Allowable Maximum Input Speed (r/min)	Page with Dimension	
		(Nm)	(kgfm)	(Nm)	(kgfm)	(N)	(kgf)		Solid Shaft	Flange Shaft
P10	5	8.3	0.83	25	2.5	310	31.6	5000	15	37
	9	8.3	0.83	25	2.5	377	38.4			
	15	8.3	0.83	25	2.5	447	45.6		16	38
	21	8.3	0.83	25	2.5	500	51			
P15	5	15	1.5	45	4.6	310	31.6	5000	17	39
	9	13	1.4	40	4.1	377	38.4			
	15	15	1.5	45	4.6	447	45.6	5000	18~19	40~41
	21	15	1.5	45	4.6	500	51			
	33	15	1.5	45	4.6	582	59.3			
	45	15	1.5	45	4.6	645	65.8			
P20	5	33	3.4	100	10.2	948	96.7	5000	21	43
	9	33	3.4	100	10.2	1153	118			
	15	33	3.4	100	10.2	1367	139		22	44
	21	33	3.4	100	10.2	1529	156			
	33	33	3.4	100	10.2	1777	181	5000	23	45
	45	33	3.4	100	10.2	1971	201	5000	24	46
P25	5	63	6.5	190	19.4	948	96.7	5000	25	47
	9	55	5.6	165	16.8	1153	118			
	15	63	6.5	190	19.4	1367	139		26	48
	21	63	6.5	190	19.4	1529	156			
	33	63	6.5	138	14.1	1777	181	5000	27	49
	45	63	6.5	190	19.4	1971	201	5000	28	50
P30	5	83	8.5	250	25.5	1257	128	5000	29	51
	9	83	8.5	250	25.5	1529	156			
	15	83	8.5	250	25.5	1813	185		30	52
	21	83	8.5	250	25.5	2029	207			
	33	83	8.5	250	25.5	2358	240	5000	31	53
	45	83	8.5	250	25.5	2615	267	5000	32	54
P35	5	127	12.9	380	38.7	1257	128	5000	33	55
	9	110	11.2	330	33.7	1529	156			
	15	127	12.9	380	38.7	1813	185		34	56
	21	127	12.9	380	38.7	2029	207			
	33	127	12.9	380	38.7	2358	240	5000	35	57
	45	127	12.9	380	38.7	2615	267	5000	36	58

- Allowable radial load indicates value at the midpoint of output shaft.
- Do not exceed indicated rated output torque during operation. Do not exceed allowable acceleration torque indicated above at startup and stop.

【No Load Running Torque】

(Unit) Top row: Nm, Bottom row: kgfm

Reduction Ratio / Frame Size	5	9	15	21	33	45
P10, P15	0.13	0.06	0.13	0.08	0.06	0.04
	0.013	0.006	0.013	0.008	0.006	0.004
P20, P25	0.47	0.20	0.45	0.25	0.12	0.07
	0.048	0.020	0.046	0.025	0.012	0.007
P30, P35	0.56	0.25	0.54	0.30	0.14	0.08
	0.057	0.025	0.055	0.031	0.014	0.008

*Average value when the ambient temperature is 20°C.

Selection Procedure

Size of the gearhead is determined depending on your motor specification

【Motor Specification】

Rated torque of motor: $T_k(\text{kgfm}) =$
 $T_s(\text{Nm}) =$

Rated speed of motor: $N_o(\text{r/min}) =$

【Usage Condition】

Input speed of reducer (by motor): $N_1(\text{r/min}) =$
 Necessary output shaft speed of reducer: $N_2(\text{r/min}) =$

Reduction ratio of gearhead $= \frac{N_1}{N_2} =$

$\Rightarrow \left\{ \begin{array}{l} \text{Motor (W)} = \frac{T_k \cdot N_o \cdot 10^3}{974 \cdot \eta} \\ \text{Motor (W)} = \frac{T_s \cdot N_o \cdot 10^3}{9550 \cdot \eta} \end{array} \right.$

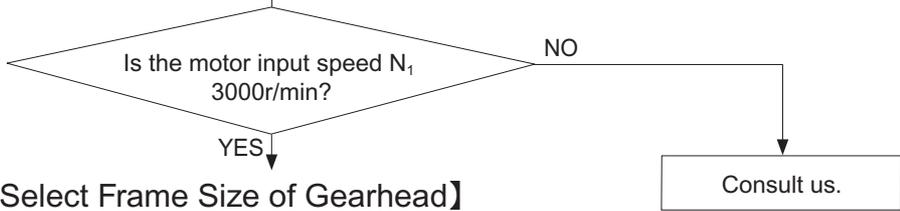
η indicates efficiency of the reducer (at ambient temperature 20°C and rated torque indicated in the catalog). Efficiency varies depending on the reduction ratio as below.

5~9 = 0.92
 15~45 = 0.85

*Efficiency varies depending on the ambient temperature and load condition (when load torque is smaller than the allowable output torque indicated in the catalog). Consult as when exact selection is necessary.

【Usage Condition】

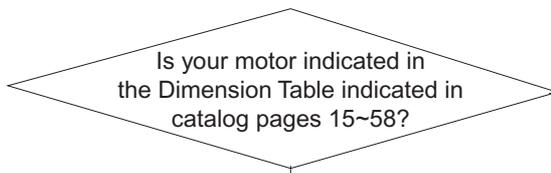
Reduction ratio =
 Motor (W) =



【Select Frame Size of Gearhead】

Select frame size referring to Selection Table on page 7 or Combination Table in page 6. (Smaller frame size is selected in general.)

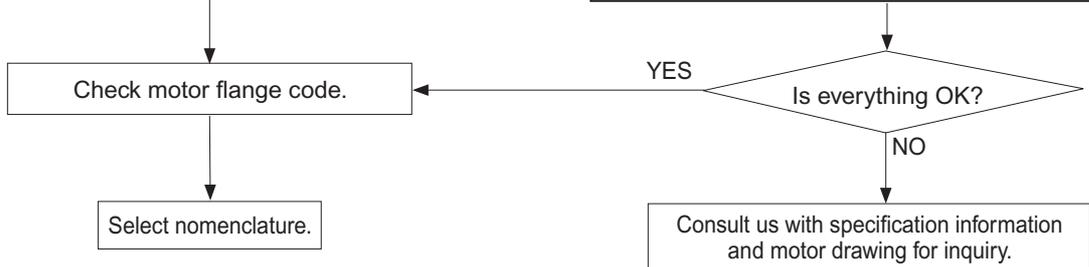
【Check Motor and Gearhead Connection】



【Check Attachment Dimension of Servo Motor】

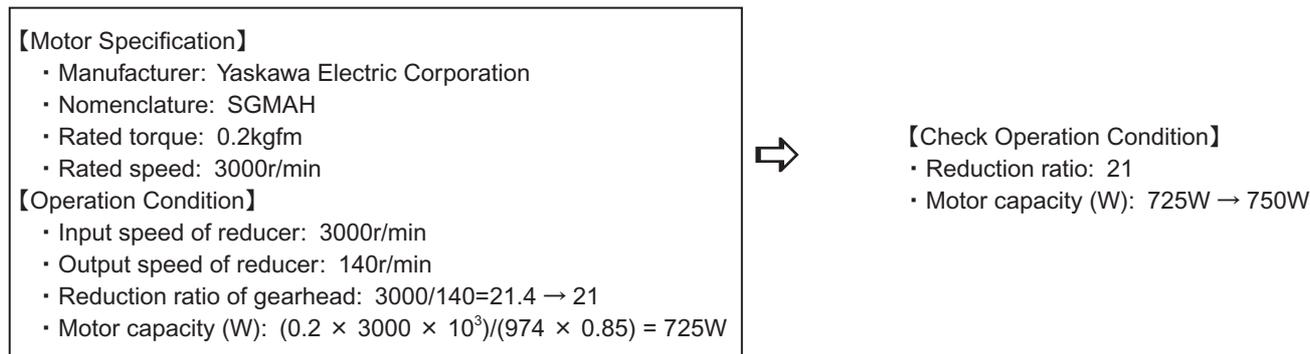
Checklist of Servo Motor Dimension

- LA = Diameter of attachment bolt pitch of motor
- LB = Diameter of motor pilot
- LE ≥ Height of motor pilot
- LF - 1 ≥ Distance between motor attachment surface and shoulder of the shaft
- LR - 1 ≥ Distance between motor attachment surface and tip of the shaft
- LZ = Size of attachment bolt
- S = Diameter of motor shaft



*Consult us when operation condition is harsh, with specified radial load or operation pattern (%ED).

《Selection Example》

**【Selection Gearhead Frame Size】**

Select P25 from the combination table in page 6 because motor input speed is 3000r/min.

【Check Connection of Motor and Gearhead】

Gearhead P25 with reduction ratio 21 was selected. Refer to page 26 with relevant frame size and reduction ratio. "750W SGMAH by Yaskawa" has motor flange code 7P.

【Determine Nomenclature】

Nomenclature of the selected model is the following.

ANFX – P25 □ – 7P □ – 21

□ — Backlash symbol (10 min specification: LC, 3 min specification: L3)
 □ — Shape of output shaft (Solid shaft without keyway: N,
 Solid shaft with keyway: W,
 Flange shaft: F)

Servo Motor Standard Combination Table on pages 10~14 may be used for selection.

Standard Combination for Each Servo Motor Manufacturers

1. Yasukawa Electric Corporation

Σ II Series SGMAH Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	SGMAH-A5***2*	*P10	P10	*P10	*P10			7J
						P15	P15	7J
100	SGMAH-01***2*	P10	P10	P15	P15	P15	P15	2D
						P20	P20	2D
200	SGMAH-02***2*	P15	P15	P15	P15			2S
		*P20	P20	*P20	P20	P20	P20	2R
400	SGMAH-04***2*	P15	P15					2S
		P20	P20	P20	P20	P25	P25	2R
				P30	P30	P30	P30	2R
750	SGMAH-08***2*	P25	P25	P25	P25			7P
		P30	P30	P30	P30	P30	P35	7P

Σ II Series SGMPH Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
100	SGMPH-01***2*	*P10	P10	P15	P15	P15	P15	2G
						P20	P20	2G
200	SGMPH-02***2*	*P20	P20	*P20	P20	P20	P20	2T
400	SGMPH-04***2*	P20	P20	P20	P20	P25	P25	2T
				P30	P30	P30	P30	2T
750	SGMPH-08***2*	P30	P30	P30	P30	P30	P35	7R
1500	SGMPH-15***2*	P35	P35	P35	P35			7X

Σ Series SGM Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	SGM-A5***2*	*P10	P10	*P10	*P10			7J
						P15	P15	7J
100	SGM-01***2*	P10	P10	P15	P15	P15	P15	2D
						P20	P20	2D
200	SGM-02***2*	P15	P15	P15	P15			2S
		*P20	P20	*P20	P20	P20	P20	2R
300	SGM-04***2*	P20	P20	P20	P20	P25	P25	2R
				P30	P30	P30	P30	2R
400	SGM-04***2*	P15	P15					2S
		P20	P20	P20	P20	P25	P25	2R
				P30	P30	P30	P30	2R
750	SGM-08***2*	P25	P25	P25	P25			7P
		P30	P30	P30	P30	P30	P35	7P

Σ Series SGMP Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
100	SGMP-01***2*	*P10	P10	P15	P15	P15	P15	2G
						P20	P20	2G
200	SGMP-02***2*	*P20	P20	*P20	P20	P20	P20	2T
400	SGMP-04***2*	P20	P20	P20	P20	P25	P25	2T
				P30	P30	P30	P30	2T
750	SGMP-08***2*	P30	P30	P30	P30	P30	P35	7R
1500	SGMP-15***2*	P35	P35	P35	P35			7X

- Note: 1. Check no load running torque on page 7 for frame sizes with asterisk "*" "※".
 2. Consult us for servo motor nomenclature other than the ones indicated above.
 3. Consult us for products compatible to servo motors other than the ones indicated above. They may be produced by order.

Standard Combination for Each Servo Motor Manufacturers

2. Mitsubishi Electric Corporation

HC-KFS Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	HC-KFS053	*P10	P10	*P10	*P10			2D
						P15	P15	2D
100	HC-KFS13	P10	P10	P15	P15	P15	P15	2D
						P20	P20	2D
200	HC-KFS23	P15	P15	P15	P15			2S
		*P20	P20	*P20	P20	P20	P20	2R
400	HC-KFS43	P15	P15					2S
		P20	P20	P20	P20	P25	P25	2R
				P30	P30	P30	P30	2R
750	HC-KFS73	P25	P25	P25	P25			7T
		P30	P30	P30	P30	P30	P35	7T

HC-MFS Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	HC-MFS053	*P10	P10	*P10	*P10			2D
						P15	P15	2D
100	HC-MFS13	P10	P10	P15	P15	P15	P15	2D
						P20	P20	2D
200	HC-MFS23	P15	P15	P15	P15			2S
		*P20	P20	*P20	P20	P20	P20	2R
400	HC-MFS43	P15	P15					2S
		P20	P20	P20	P20	P25	P25	2R
				P30	P30	P30	P30	2R
750	HC-MFS73	P25	P25	P25	P25			7T
		P30	P30	P30	P30	P30	P35	7T

HA-SFS Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
1000	HC-SFS103	P30	P30	P30	P30	P35		7Z
1500	HC-SFS153	P35	P35	P35	P35			7Z

HA-FF Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	HA-FF053	*P10	P10	*P10	*P10			2E
						P15	P15	2E
100	HA-FF13	P10	P10	P15	P15	P15	P15	2E
						P20	P20	2E
200	HA-FF23	*P20	P20	*P20	P20	P20	P20	8A
		P20	P20	P20	P20	P25	P25	8A
300	HA-FF33			P30	P30	P30	P30	8A
		P20	P20	P20	P20	P25	P25	7A
400	HA-FF43			P30	P30	P30	P30	7A
		P25	P25	P25	P25	P25	P30	7A
600	HA-FF63			P30	P30	P30		7A

Note: 1. Check no load running torque on page 7 for frame sizes with asterisk "*"."

2. Consult us for servo motor nomenclature other than the ones indicated above.

3. Consult us for products compatible to servo motors other than the ones indicated above. They may be produced by order.

Standard Combination for Each Servo Motor Manufacturers

3. Matsushita Electric Industrial Co., Ltd.

MSMA Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	MSMA5A**1A	*P10	P10	*P10	*P10			2C
						P15	P15	2C
100	MSMA01**1A	P10	P10	P15	P15	P15	P15	2C
200	MSMA02**1A	P15	P15	P15	P15			2M
		*P20	P20	*P20	P20	P20	P20	2L
400	MSMA04**1A	P15	P15					2Q
		P20	P20	P20	P20	P25	P25	2P
				P30	P30	P30	P30	2P
750	MSMA08**1A	P25	P25	P25	P25			7S
		P30	P30	P30	P30	P30	P35	7S
1000	MSMA10**1A	P30	P30	P30	P30	P35		7V
1500	MSMA15**1A	P35	P35	P35	P35			7B

MQMA Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
100	MQMA022A1A	*P10	P10	P15	P15	P15	P15	2F
						P20	P20	2F
200	MQMA022A1A	*P20	P20	*P20	P20	P20	P20	8A
400	MQMA042A1A	P20	P20	P20	P20	P25	P25	8B
				P30	P30	P30	P30	8B

- Note: 1. Check no load running torque on page 7 for frame sizes with asterisk "*"."
2. Consult us for servo motor nomenclature other than the ones indicated above.
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Standard Combination for Each Servo Motor Manufacturers

4. Sanyo Denki Co., Ltd.

P3 Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	P30B04005H***	*P10	P10	*P10	*P10	P15	P15	2D
100	P30B04010H***	P10	P10	P15	P15	P15	P15	2D
						P20	P20	2D
200	P30B06020H***	P15	P15	P15	P15			2S
		*P20	P20	*P20	P20	P20	P20	2R
400	P30B06040H***	P15	P15					2S
		P20	P20	P20	P20	P25	P25	2R
				P30	P30	P30	P30	2R
750	P30B08075H***	P25	P25	P25	P25			7P
		P30	P30	P30	P30	P30	P35	7P

P5 Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	P50B05005H***	*P10	P10	*P10	*P10	P15	P15	2E
								2E
100	P50B05010H***	P10	P10	P15	P15	P15	P15	2E
						P20	P20	2E
200	P50B05020H***	*P20	P20	*P20	P20	P20	P20	2K
	P50B07020H***	*P20	P20	*P20	P20	P20	P20	8B
300	P50B07030H***	P20	P20	P20	P20	P25	P25	8B
				P30	P30	P30	P30	8B
400	P50B07040H***	P20	P20	P20	P20	P25	P25	8B
				P30	P30	P30	P30	8B
500	P50B08050H***	P20	P20	P25	P25	P25		8E
				P30	P30	P30	P30	7Q
750	P50B08075H***	P25	P25	P25	P25			8E
		P30	P30	P30	P30	P30	P35	7Q
1000	P50B08100H***	P30	P30	P30	P30	P30		7Q

Q1 Series (Rated speed: 3000r/min)

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	Q1AA04005***	*P10	P10	*P10	*P10	P15	P15	2D
100	Q1AA04010***	P10	P10	P15	P15	P15	P15	2D
						P20	P20	2D
200	Q1AA06020***	P15	P15	P15	P15			2S
		*P20	P20	*P20	P20	P20	P20	2R
400	Q1AA06040***	P15	P15					2S
		P20	P20	P20	P20	P25	P25	2R
				P30	P30	P30	P30	2R
750	Q1AA07075***	P25	P25	P25	P25			7S
		P30	P30	P30	P30	P30	P35	7S

Note: 1. Check no load running torque on page 7 for frame sizes with asterisk "*" ."

2. Consult us for servo motor nomenclature other than the ones indicated above.

3. Consult us for products compatible to servo motors other than the ones indicated above. They may be produced by order.

Standard Combination for Each Servo Motor Manufacturers

5. Fuji Electric FA Components & Systems

GYS Motor (Rated speed: 3000r/min)

FALDIC- α , β Series Cubic Type

FALDIC-W Low Inertia Series

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
50	GYS500DC*-**B-*	*P10	P10	*P10	*P10			7J
						P15	P15	7J
100	GYS101DC*-**B-*	P10	P10					7J
				P15	P15	P20	P20	2D
200	GYS201DC*-**B-*	P15	P15	P15	P15			2S
		*P20	P20	*P20	P20	P20	P20	2R
400	GYS401DC*-**B-*	P15	P15					2S
		P20	P20	P20	P20	P25	P25	2R
750	GYS751DC*-**B-*			P30	P30	P30	P30	2R
		P25	P25	P25	P25			7P
1000	GYS102DC*-**B-*	P30	P30	P30	P30	P30	P35	7P
								7Y
1500	GYS152DC*-**B-*	P35	P35	P35	P35			7Y

GYS Motor (Rated speed: 3000r/min)

FALDIC- α , β Series Slim Type

Servo motor Capacity (W)	Nomenclature of Servo Motor	Reduction Ratio						Motor Flange Code
		5	9	15	21	33	45	
100	GYC101DC*-**B-*	P10	P10					2G
				P15	P15	P15	P15	2G
200	GYC201DC*-**B-*					P20	P20	2G
		P15	P15	P15	P15			2S
400	GYC401DC*-**B-*	*P20	P20	*P20	P20	P20	P20	2T
		P15	P15					2S
750	GYC751DC*-**B-*	P20	P20	P20	P20	P25	P25	2T
				P30	P30	P30	P30	2T
1000	GYC102DC*-**B-*	P25	P25	P25	P25			7P
		P30	P30	P30	P30	P30	P35	7A
1500	GYC152DC*-**B-*	P30	P30	P30	P30	P35		7Z
1500	GYC152DC*-**B-*	P35	P35	P35	P35			7Z

- Note: 1. Check no load running torque on page 7 for frame sizes with asterisk "*"."
 2. Consult us for servo motor nomenclature other than the ones indicated above.
 3. Consult us for products compatible to servo motors other than the ones indicated above. They may be produced by order.

Dimension Drawings

Frame size: P10
 Reduction ratio: 5, 9
 Motor capacity: 50W~100W
 Solid shaft (without keyway)

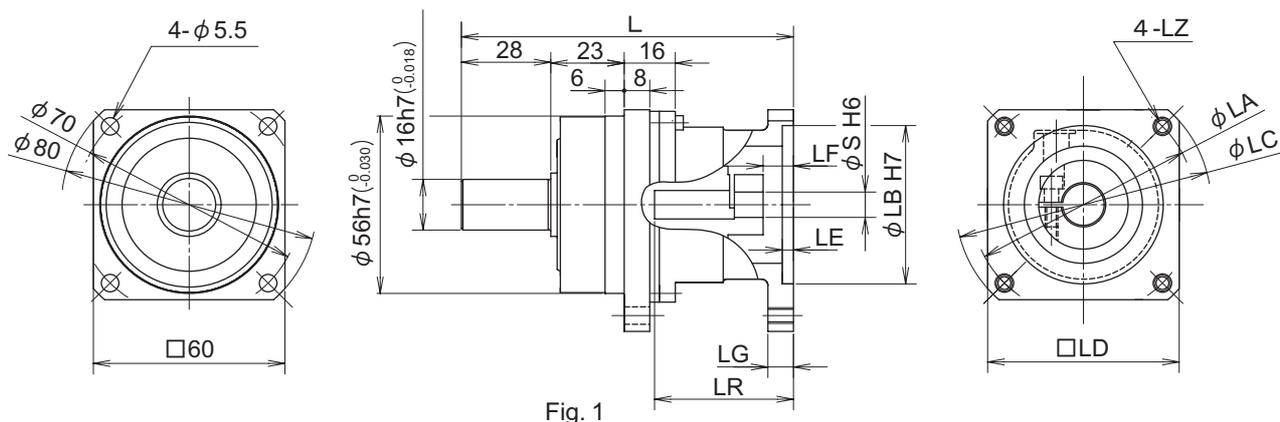


Fig. 1

Nomenclature
 ANFX-P10N- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code				
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S		
2C					MSMA	50 100					1	98	45	30	54	40	4	3.5	7	M3	37.5	8	0.74	2C		
7J	SGMAH SGM	50 50							GYS	50			46	30	54	40	4	3.5	7	M4	37.5	6	0.74	7J		
2D	SGMAH SGM	100 100	HC-KFS	50 100			P30B04	50 100	GYS	100			46	30	54	40	4	3.5	7	M4	37.5	8	0.74	2D		
			HC-MFS	50 100			Q1AA04	50 100					60	50	70	54	3	9.5	7	M4	43.5	8	0.74	2E		
2E			HA-FF	50 100			P50B05	50 100					104	104	70	50	80	60	3.5	9.5	8	M4	43.5	8	0.74	2F
2F					MQMA	100									70	50	80	60	3.5	9.5	8	M4	43.5	8	0.74	2F
2G	SGMPH SGMP	100 100							GYS	100					70	50	80	60	3.5	9.5	8	M5	43.5	8	0.74	2G

Dimension Drawings

Frame size: P10
 Reduction ratio: 15, 21
 Motor capacity: 50W
 Solid shaft (without keyway)

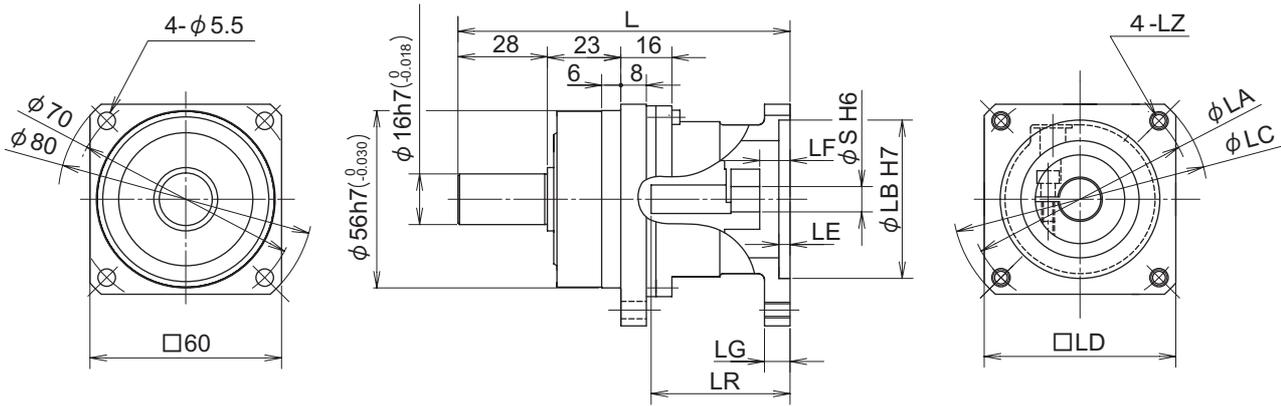


Fig. 1

Nomenclature
 ANFX-P10N- Motor flange code Backlash — Reduction ratio (15, 21)

10 min: LC
 3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2C					MSMA	50					1	109	45	30	54	40	4	3.5	7	M3	27	8	0.94	2C
7J	SGMAH	50							GYS	50			46	30	54	40	4	3.5	7	M4	27	6	0.94	7J
2D			HC-KFS	50			P30B04	50					46	30	54	40	4	3.5	7	M4	27	8	0.94	2D
			HC-MFS	50			Q1AA04	50																
2E			HA-FF	50			P50B05	50			115	60	50	70	54	3	9.5	7	M4	33	8	0.94	2E	

Dimension Drawings

Frame size: P15
 Reduction ratio: 5, 9
 Motor capacity: 200W-400W
 Solid shaft (without keyway)

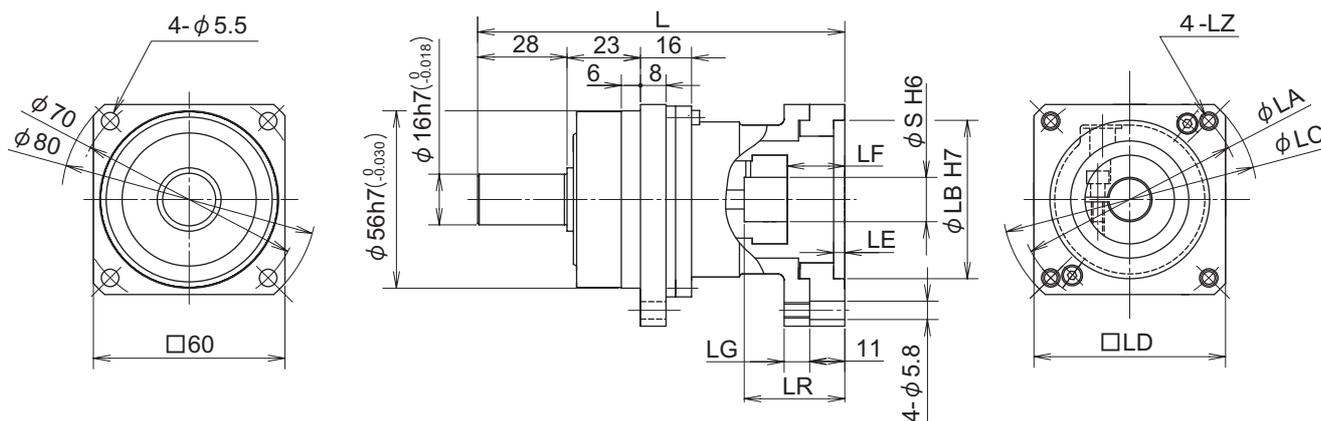


Fig. 2

Nomenclature
 ANFX-P15N- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
 3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2M					MSMA	200					2	115	70	50	80	60	3.5	18	8	M4	31.5	11	0.87	2M
2Q					MSMA	400							70	50	80	60	3.5	18	8	M4	31.5	14	0.87	2Q
2S	SGMAH	200	HC-KFS	200			P30B06	200	Q1AA06	400			GYS	200	400									
	SGM	400									HC-MFS	200												

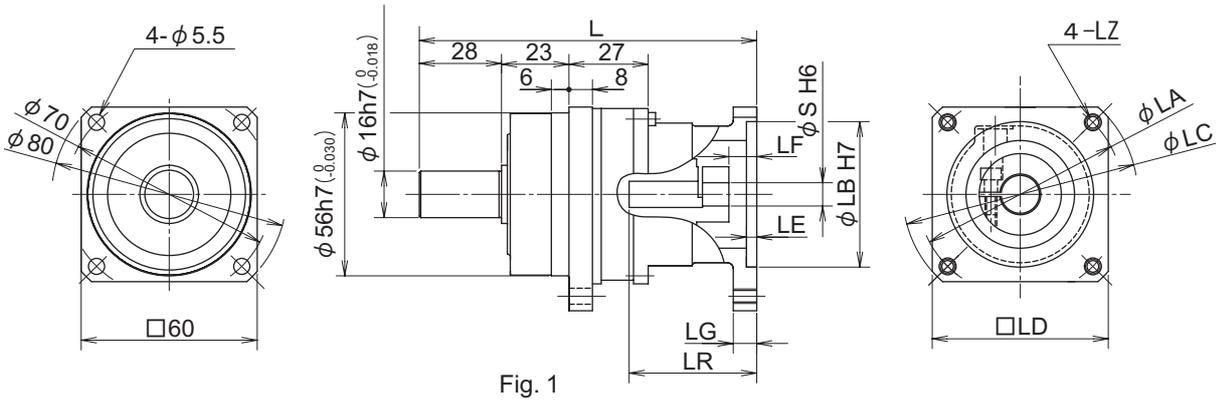
Dimension Drawings

Frame size: P15

Reduction ratio: 15, 21

Motor capacity: 100W

Solid shaft (without keyway)



Nomenclature
 ANFX-P15N- Motor flange code Backlash — Reduction ratio (15, 21)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code	
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S			
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity															
2C					MSMA	100					1	109	45	30	54	40	4	3.5	7	M3	27	8	0.94	2C	
2D	SGMAH	100	HC-KFS	100			P30B04	100	Q1AA04	100			GYS	100	46	30	54	40	4	3.5	7	M4	27	8	0.94
2E			HA-FF	100			P50B05	100						60	50	70	54	3	9.5	7	M4	33	8	0.94	2E
2F					MQMA	100							115	70	50	80	60	3.5	9.5	8	M4	33	8	0.94	2F
2G	SGMPH	100								GYC		100			70	50	80	60	3.5	9.5	8	M5	33	8	0.94

Dimension Drawings

Frame size: P15
 Reduction ratio: 15, 21
 Motor capacity: 200W
 Solid shaft (without keyway)

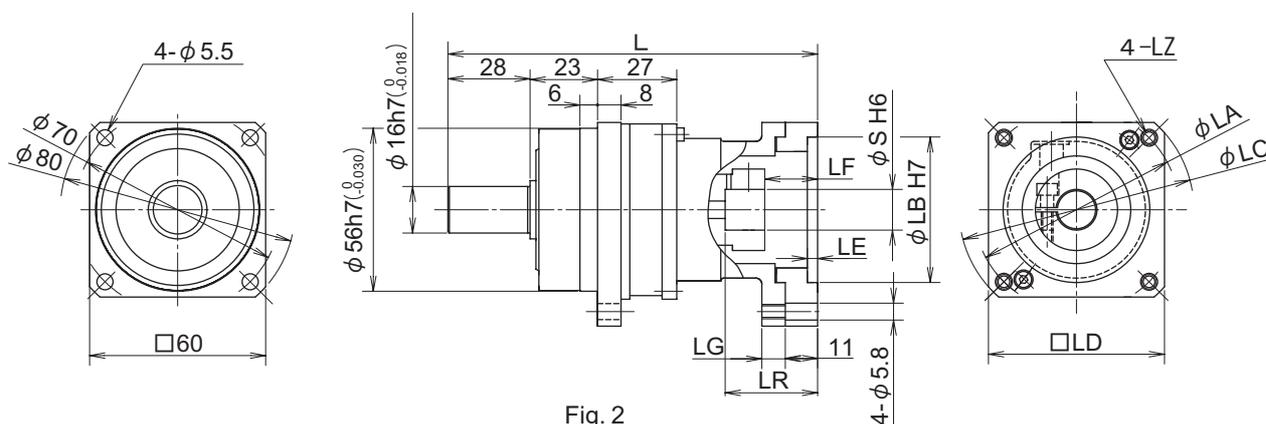


Fig. 2

Nomenclature
 ANFX-P15N- Motor flange code Backlash — Reduction ratio (15, 21)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2M					MSMA	200					2	126	70	50	80	60	3.5	18	8	M4	31.5	11	1.1	2M
2S	SGMAH	200	HC-KFS	200			P30B06	200	GYS	200			70	50	80	60	3.5	18	8	M5	31.5	14	1.1	2S

Dimension Drawings

Frame size: P15

Reduction ratio: 33, 45

Motor capacity: 50W-100W

Solid shaft (without keyway)

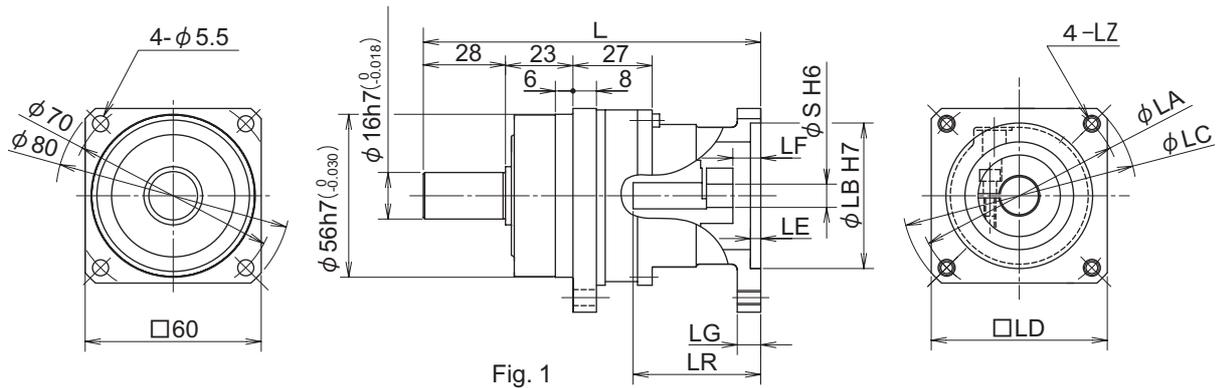


Fig. 1

Nomenclature
 ANFX-P15N- Motor flange code Backlash — Reduction ratio (33, 45)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code				
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity																
2C					MSMA	50 100					1	109	45	30	54	40	4	3.5	7	M3	27	8	0.94	2C		
7J	SGMAH	50							GYS	50					46	30	54	40	4	3.5	7	M4	27	6	0.94	7J
2D	SGMAH	100	HC-KFS	50			P30B04	50	GYS	100					46	30	54	40	4	3.5	7	M4	27	8	0.94	2D
	SGM	100		100																						
2E			HA-FF	50			P50B05	50							60	50	70	54	3	9.5	7	M4	33	8	0.94	2E
2F					MQMA	100									70	50	80	60	3.5	9.5	8	M4	33	8	0.94	2F
2G	SGMPH	100							GYS	100					70	50	80	60	3.5	9.5	8	M5	33	8	0.94	2G
	SGMP	100																								

Dimension Drawings

Frame size: P20
 Reduction ratio: 5, 9
 Motor capacity: 200W-500W
 Solid shaft (without keyway)

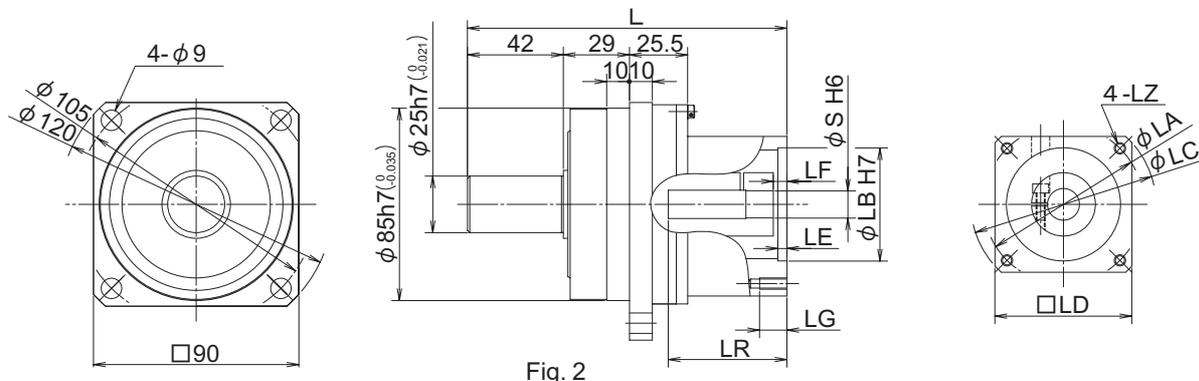


Fig. 2

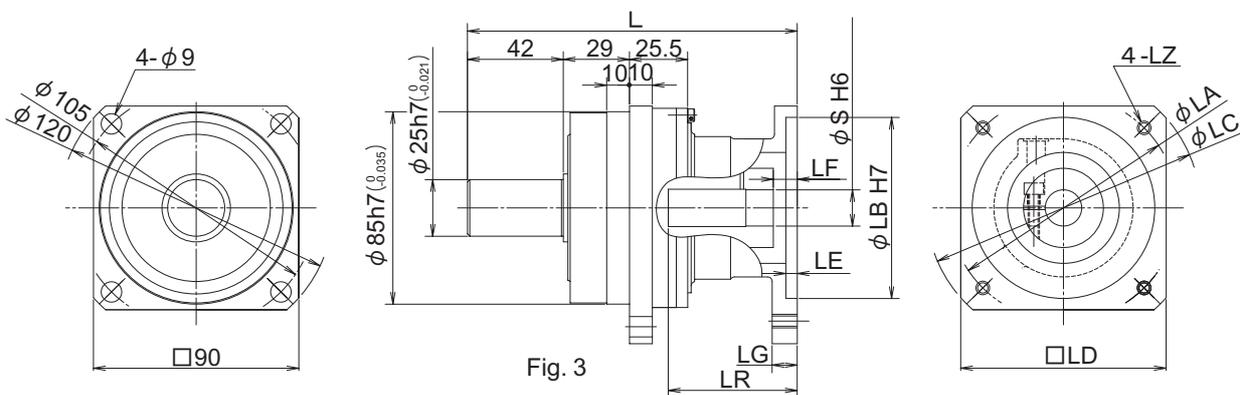


Fig. 3

Nomenclature
 ANFX-P20N- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
 3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code	
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S			
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity															
2K							P50B05	200			2	140	60	50	72	54	3.5	6	10	M4	52	11	2.6	2K	
2L					MSMA	200							70	50	80	60	3.5	6	8	M4	52	11	2.4	2L	
2P					MSMA	400							70	50	80	60	3.5	6	8	M4	52	14	2.4	2P	
2R	SGMAH SGM	200 400	HC-KFS HC-MFS	200 400			P30B06 Q1AA06	200 400	GYS	200 400				70	50	80	60	3.5	6	8	M5	52	14	2.4	2R
8A			HA-FF	200 300	MQMA	200					3	144.5	90	70	107	80	6	10.5	11	M5	56.5	11	2.8	8A	
8B					MQMA	400	P50B07	200 300 400					90	70	107	80	6	10.5	11	M5	56.5	14	2.7	8B	
2T	SGMPH SGMP	200 400							GYS	200 400				90	70	107	80	6	10.5	11	M6	56.5	14	2.7	2T
8E							P50B08	500					100	80	120	90	6	10.5	11	M6	56.5	16	2.9	8E	
7A			HA-FF	400								115	95	135	100	6	10.5	15	M8	56.5	16	2.9	7A		

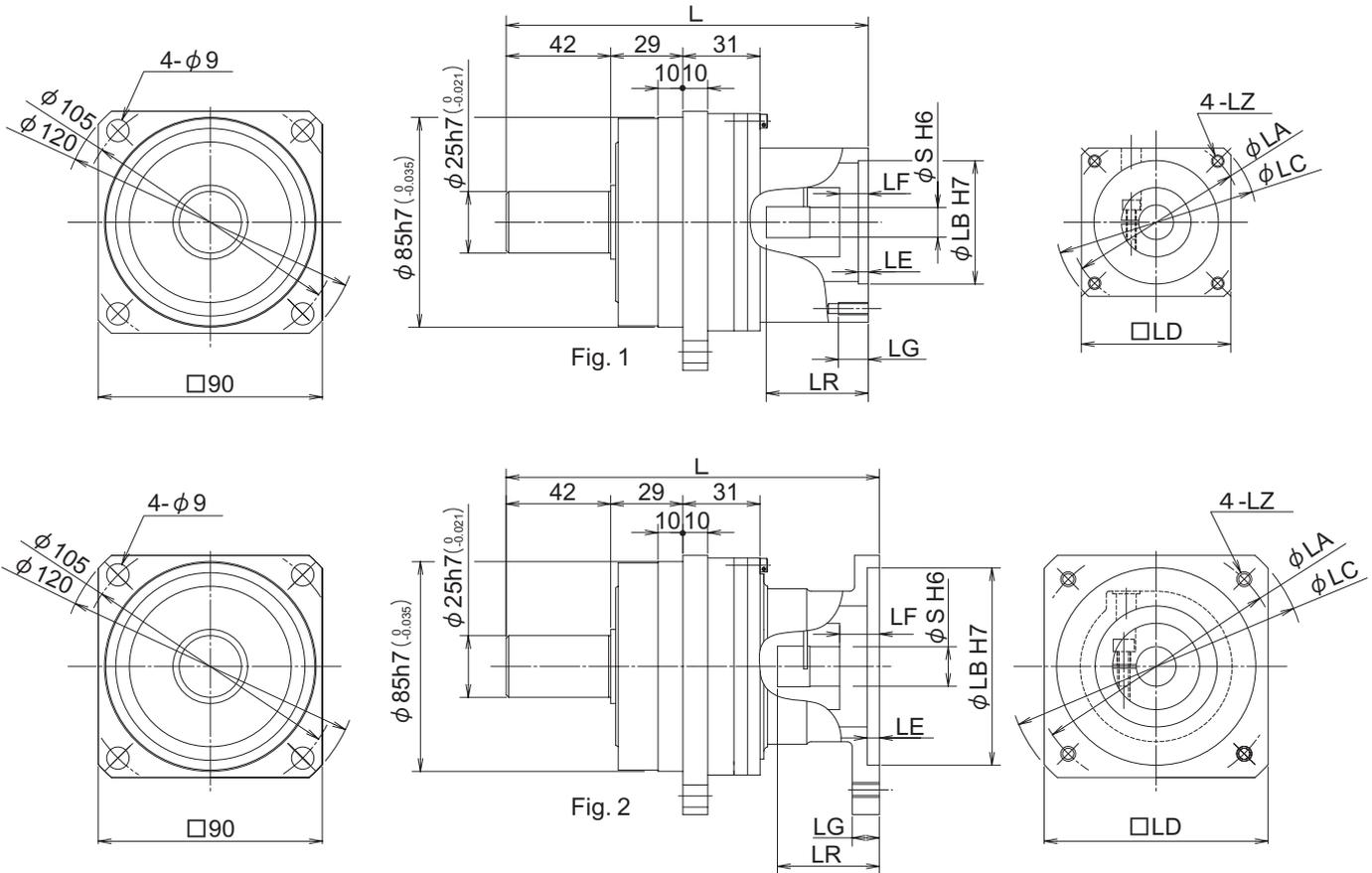
Dimension Drawings

Frame size: P20

Reduction ratio: 15, 21

Motor capacity: 200W-400W

Solid shaft (without keyway)

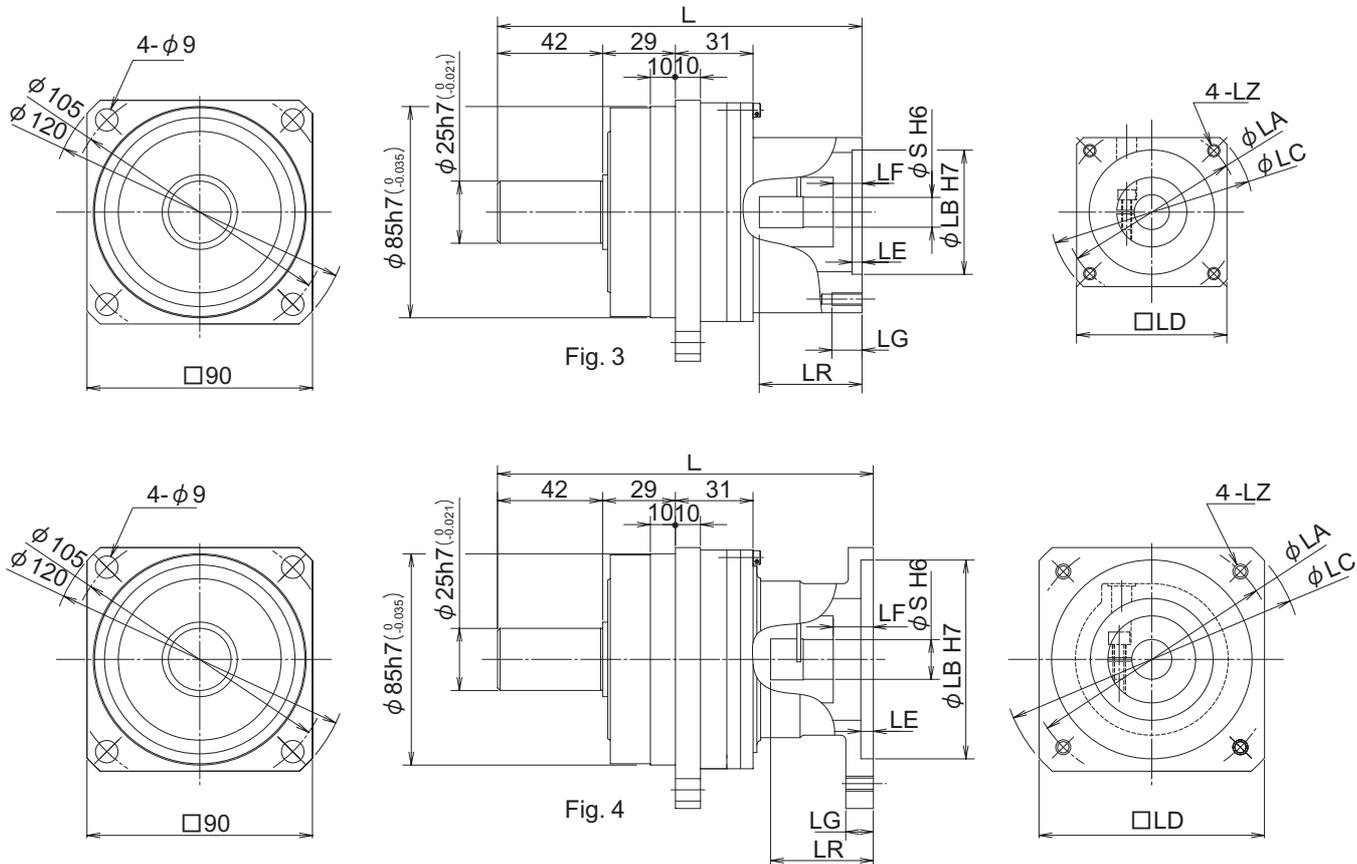


Nomenclature
 ANFX-P20N- Motor flange code Backlash — Reduction ratio (15, 21)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type								Fig.	L	Dimensions										Mass (kg)	Motor Flange Code	
	Yaskawa Series	Yaskawa Capacity	Mitsubishi Series	Mitsubishi Capacity	Matsushita Series	Matsushita Capacity	Sanyo Series	Sanyo Capacity			Fuji Series	Fuji Capacity	LA	LB	LC	LD	LE	LF	LG	LZ			LR
2K						P50B05	200			1	145.5	60	50	72	54	3.5	6	10	M4	36.5	11	2.9	2K
2L					MSMA	200				2		70	50	80	60	3.5	6	8	M4	36.5	11	2.7	2L
2P					MSMA	400						70	50	80	60	3.5	6	8	M4	36.5	14	2.7	2P
2R	SGMAH	200	HC-KFS	200		P30B06	200	GYS	200	2	150	70	50	80	60	3.5	6	8	M5	36.5	14	2.7	2R
	SGM	400	HC-MFS	200				400				70	50	80	60	3.5	6	8	M5	36.5	14	2.7	2R
8A			HA-FF	200	MQMA	200				90		70	107	80	6	10.5	11	M5	41	11	3.1	8A	
8B					MQMA	400	P50B07			90	70	107	80	6	10.5	11	M5	41	14	3.1	8B		
2T	SGMPH	200					200	GYC	200	2	150	90	70	107	80	6	10.5	11	M6	41	14	3.1	2T
7A	SGMP	400					300					90	70	107	80	6	10.5	11	M6	41	14	3.1	2T
			HA-FF	400			400			115		95	135	100	6	10.5	15	M8	41	16	3.2	7A	

Dimension Drawings

Frame size: P20
 Reduction ratio: 33
 Motor capacity: 100W-200W
 Solid shaft (without keyway)



Nomenclature
 ANFX-P20N- Motor flange code Backlash — Reduction ratio (33)

10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2D	SGMAH	100	HC-KFS	100			P30B04	100	GYS	100	4	145.5	46	30	54	40	4	13	7	M4	36.5	8	2.5	2D
2E	SGM	100	HC-MFS	100			Q1AA04				3		60	50	72	54	3.5	6	10	M4	36.5	8	2.9	2E
2K			HA-FF	100			P50B05	200			60		50	72	54	3.5	6	10	M4	36.5	11	2.9	2K	
2F					MQMA	100					145.5	70	50	80	60	3.5	6	8	M4	36.5	8	2.7	2F	
2G	SGMPH	100							GYC	100		70	50	80	60	3.5	6	8	M5	36.5	8	2.7	2G	
2L	SGMP	100			MSMA	200						70	50	80	60	3.5	6	8	M4	36.5	11	2.7	2L	
2R	SGMAH	200	HC-KFS	200			P30B06	200	GYS	200	4	150	70	50	80	60	3.5	6	8	M5	36.5	14	2.7	2R
8A	SGM	200	HC-MFS	200	MQMA	200	Q1AA06				90		70	107	80	6	10.5	11	M5	41	11	3.1	8A	
8B			HA-FF	200			P50B07	200			90		70	107	80	6	10.5	11	M5	41	14	3.1	8B	
2T	SGMPH	200							GYC	200	150	90	70	107	80	6	10.5	11	M6	41	14	3.1	2T	
	SGMP	200										90	70	107	80	6	10.5	11	M6	41	14	3.1		

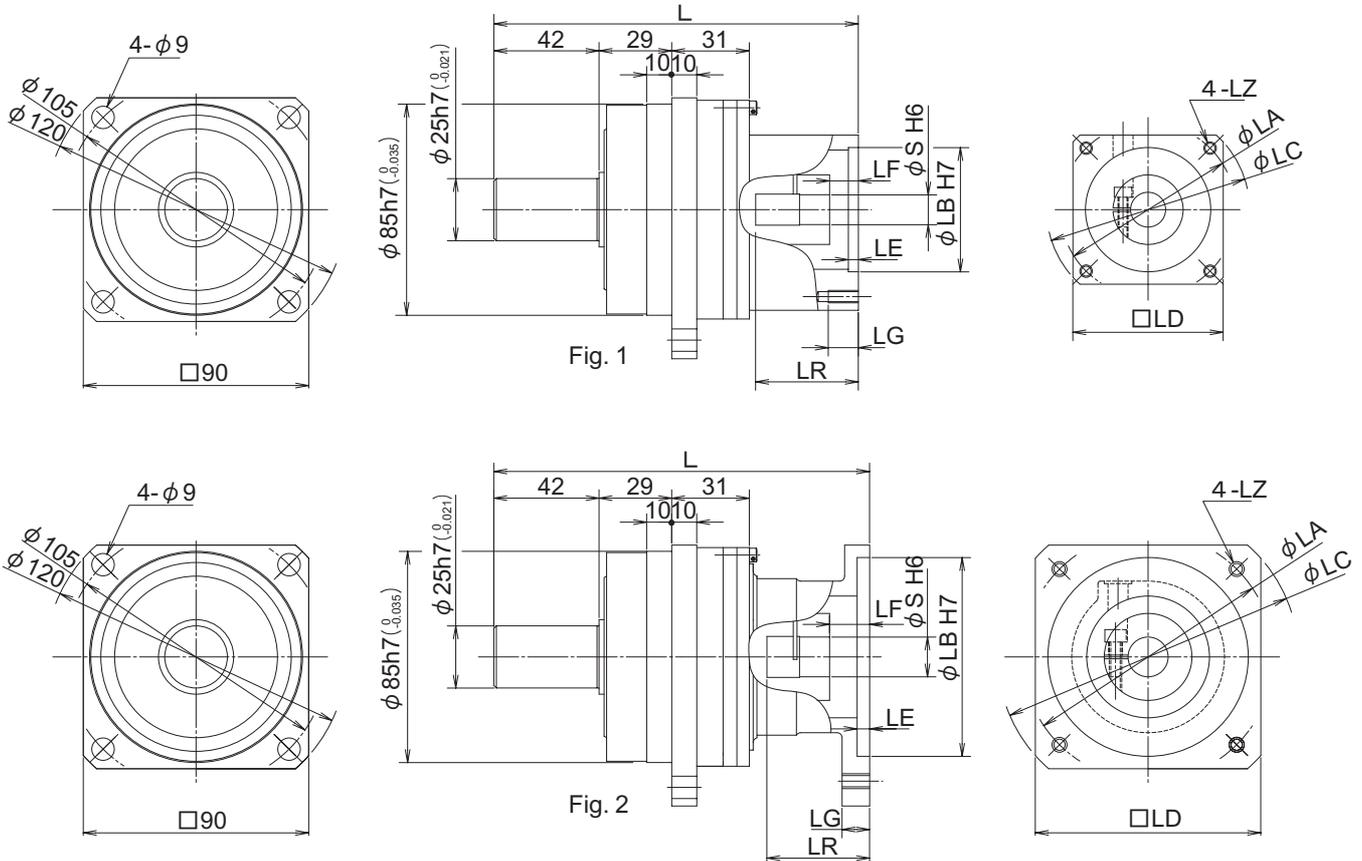
Dimension Drawings

Frame size: P20

Reduction ratio: 45

Motor capacity: 100W-200W

Solid shaft (without keyway)

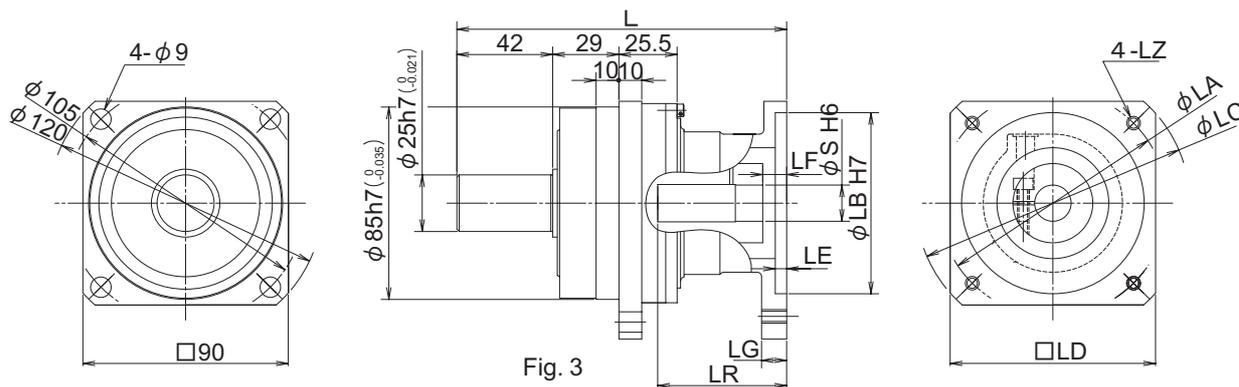


Nomenclature
 ANFX-P20N- Motor flange code Backlash — Reduction ratio (45)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code		
	Yaskawa Series	Yaskawa Capacity	Mitsubishi Series	Mitsubishi Capacity	Matsushita Series	Matsushita Capacity	Sanyo Series	Sanyo Capacity	Fuji Series	Fuji Capacity			LA	LB	LC	LD	LE	LF	LG	LZ			LR	S
2D	SGMAH 100	100	HC-KFS 100	100			P30B04	100	GYS 100	100	2	145.5	46	30	54	40	4	13	7	M4	36.5	8	2.5	2D
2E			HA-FF 100	100			P50B05	100			1		60	50	72	54	3.5	6	10	M4	36.5	8	2.9	2E
2K							P50B05	200			1		60	50	72	54	3.5	6	10	M4	36.5	11	2.9	2K
2F					MQMA	100					145.5		70	50	80	60	3.5	6	8	M4	36.5	8	2.7	2F
2G	SGMPH 100	100							GYC 100		145.5		70	50	80	60	3.5	6	8	M5	36.5	8	2.7	2G
2L					MSMA	200					145.5		70	50	80	60	3.5	6	8	M4	36.5	11	2.7	2L
2R	SGMAH 200	200	HA-KFS 200	200			P30B06	200	GYS 200	200	2		70	50	80	60	3.5	6	8	M5	36.5	14	2.7	2R
8A			HA-FF 200	200	MQMA	200					150		90	70	107	80	6	10.5	11	M5	41	11	3.1	8A
8B							P50B07	200			150		90	70	107	80	6	10.5	11	M5	41	14	3.1	8B
2T	SGMPH 200	200							GYC 200		150		90	70	107	80	6	10.5	11	M6	41	14	3.1	2T

Dimension Drawings

Frame size: P25
 Reduction ratio: 5, 9
 Motor capacity: 600W-750W
 Solid shaft (without keyway)



Nomenclature
 ANFX-P25N- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code				
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity																
7S					MSMA	750	Q1AA07	750			3	144.5	90	70	107	80	6	10.5	11	M5	56.5	19	3.1	7S		
7P	SGMAH	750					P30B08	750	GYS	750					90	70	107	80	6	10.5	11	M6	56.5	16	3.1	7P
7T			HC-KFS	750											90	70	107	80	6	10.5	11	M6	56.5	19	3.1	7T
			HC-MFS	750																						
8E							P50B08	750							100	80	120	90	6	10.5	11	M6	56.5	16	3.2	8E
7A			HA-FF	600									115	95	135	100	6	10.5	15	M8	56.5	16	3.2	7A		

Dimension Drawings

Frame size: P25

Reduction ratio: 15, 21

Motor capacity: 500W-750W

Solid shaft (without keyway)

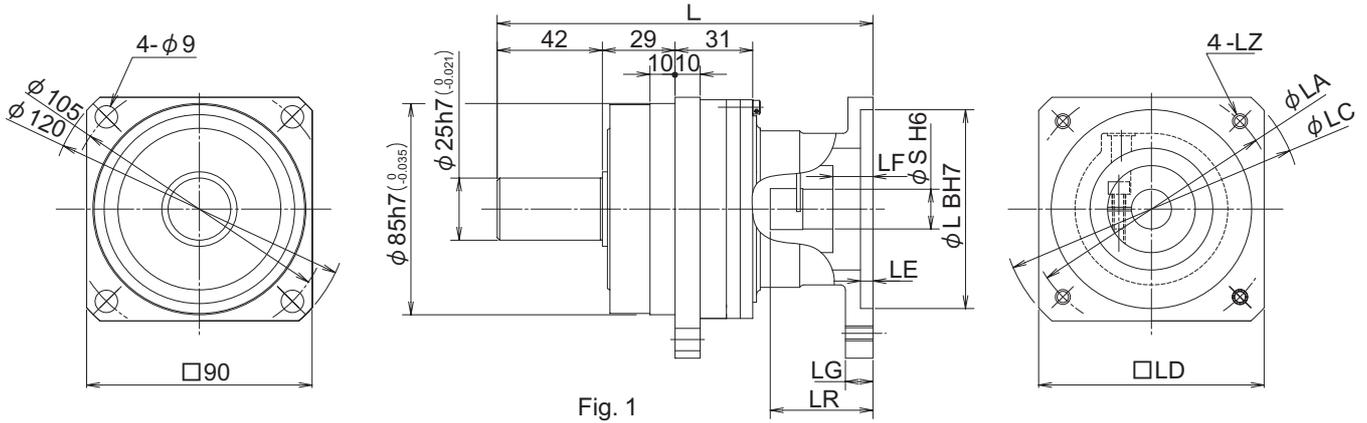


Fig. 1

Nomenclature
 ANFX-P25N- Motor flange code Backlash — Reduction ratio (15, 21)

10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S				
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity																
7S					MSMA	750	Q1AA07	750			1	150	90	70	107	80	6	10.5	11	M5	41	19	3.1	7S		
7P	SGMAH	750					P30B08	750	GYS	750			90	70	107	80	6	10.5	11	M6	41	16	3.1	7P		
7T			HC-KFS	750									90	70	107	80	6	10.5	11	M6	41	19	3.1	7T		
			HC-MFS	750																						
8E							P50B08	500 750					100	80	120	90	6	10.5	11	M6	41	16	3.2	8E		
7A			HA-FF	600							115	95	135	100	6	10.5	15	M8	41	16	3.2	7A				

Dimension Drawings

Frame size: P25
 Reduction ratio: 33
 Motor capacity: 300W-600W
 Solid shaft (without keyway)

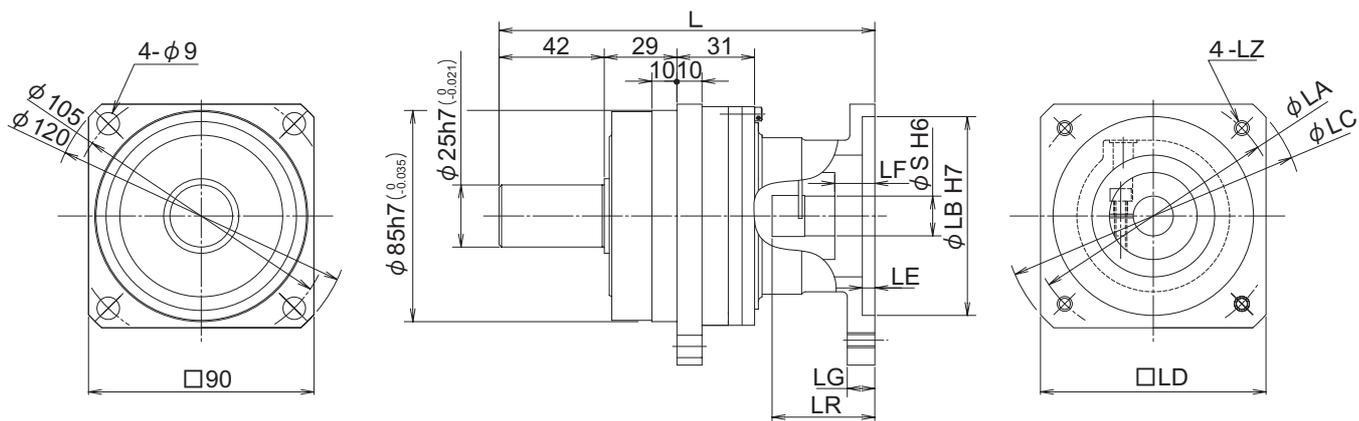


Fig. 2

Nomenclature
 ANFX-P25N- Motor flange code Backlash — Reduction ratio (33)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code	
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S			
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity															
2P					MSMA	400					2	144.5	70	50	80	60	3.5	6	8	M4	36.5	14	2.7	2P	
2R	SGMAH	400	HC-KFS	400			P30B06	400	Q1AA06	400			GYS	400	70	50	80	60	3.5	6	8	M5	36.5	14	2.7
8A			HA-FF	300							2	150	90	70	107	80	6	10.5	11	M5	41	11	3.1	8A	
8B					MQMA	400	P50B07	300		400					90	70	107	80	6	10.5	11	M5	41	14	3.1
2T	SGMPH	400								GYS	400	2	150	90	70	107	80	6	10.5	11	M6	41	14	3.1	2T
8E							P50B08	500							100	80	120	90	6	10.5	11	M6	41	16	3.2
7A			HA-FF	400						GYS	750	2	150	115	95	135	100	6	10.5	15	M8	41	16	3.2	7A
				600																					

Dimension Drawings

Frame size: P25

Reduction ratio: 45

Motor capacity: 300W-400W

Solid shaft (without keyway)

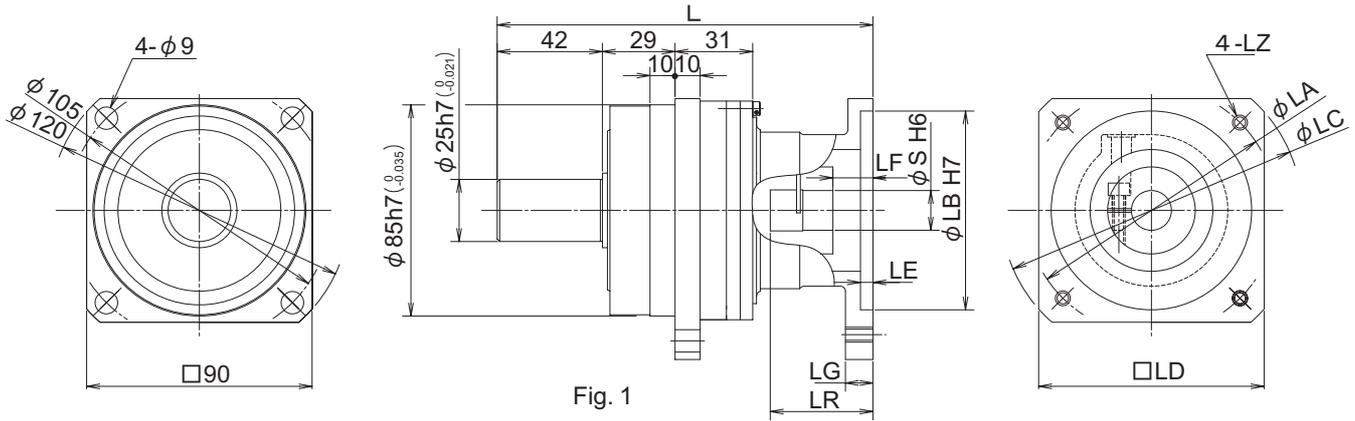


Fig. 1

Nomenclature
 ANFX-P25N- Motor flange code Backlash — Reduction ratio (45)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code				
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity																
2P					MSMA	400					1	145.5	70	50	80	60	3.5	6	8	M4	36.5	14	2.7	2P		
2R	SGMAH	400	HC-KFS	400			P30B06	400	Q1AA06	400			GYS	400	70	50	80	60	3.5	6	8	M5	36.5	14	2.7	2R
8A			HA-FF	300								150	90	70	107	80	6	10.5	11	M5	41	11	3.1	8A		
8B					MQMA	400	P50B07	300		400					90	70	107	80	6	10.5	11	M5	41	14	3.1	8B
2T	SGMPH	400								GYS			400		90	70	107	80	6	10.5	11	M6	41	14	3.1	2T
	SGMP	400													90	70	107	80	6	10.5	11	M6	41	14	3.1	
7A			HA-FF	400									115	95	135	100	6	10.5	15	M8	41	16	3.2	7A		

Dimension Drawings

Frame size: P30

Reduction ratio: 15, 21

Motor capacity: 300W-1000W

Solid shaft (without keyway)

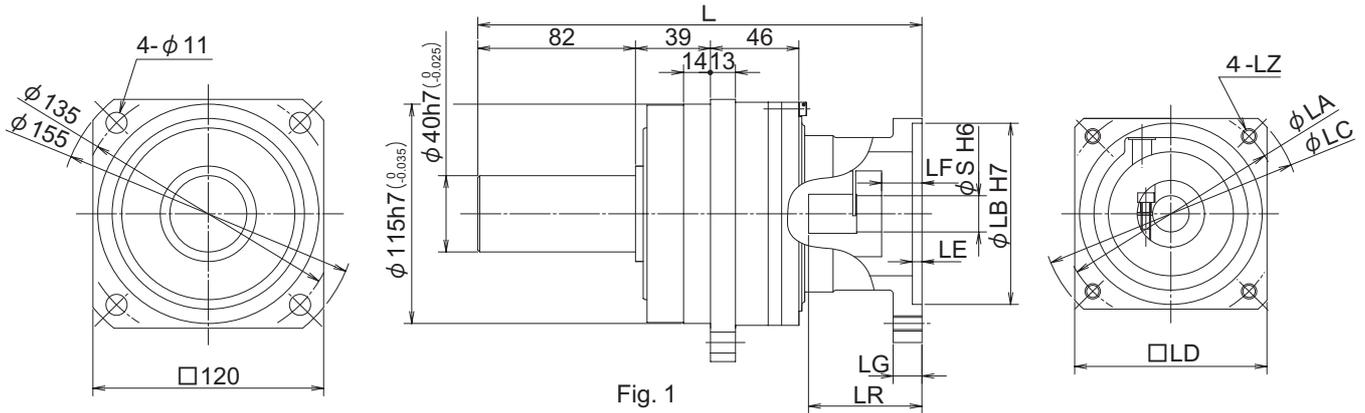


Fig. 1

Nomenclature
 ANFX-P30N- Motor flange code Backlash — Reduction ratio (15, 21)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
8B					MQMA	400	P50B07	300 400			216	90	70	107	80	6	6	10	M5	44	14	7.2	8B	
7S					MSMA	750	Q1AA07	750				90	70	107	80	6	6	10	M5	44	19	7.2	7S	
2T	SGMPH	400							GYC	400		90	70	107	80	6	6	10	M6	44	14	7.2	2T	
7P	SGMAH	750					P30B08	750	GYS	750		90	70	107	80	6	6	10	M6	44	16	7.2	7P	
7T			HC-KFS	750								90	70	107	80	6	6	10	M6	44	19	7.2	7T	
7Q							P50B08	500 750 1000			1	100	80	115	86	5	21	10	M6	59	16	7.4	7Q	
7V					MSMA	1000						100	80	115	86	5	21	10	M6	59	19	7.4	7V	
7A			HA-FF	400 600					GYC	750		115	95	135	100	5	21	15	M8	59	16	7.4	7A	
7Y									GYS	1000		115	95	135	100	5	21	15	M8	59	24	7.4	7Y	
7R	SGMPH	750										145	110	165	120	7	21	15	M8	59	16	7.5	7R	
7X												145	110	165	120	7	21	15	M8	59	19	7.5	7X	
7Z			HC-SFS	1000					GYC	1000		145	110	165	120	7	21	15	M8	59	24	7.5	7Z	

Dimension Drawings

Frame size: P30
 Reduction ratio: 33
 Motor capacity: 300W-1000W
 Solid shaft (without keyway)

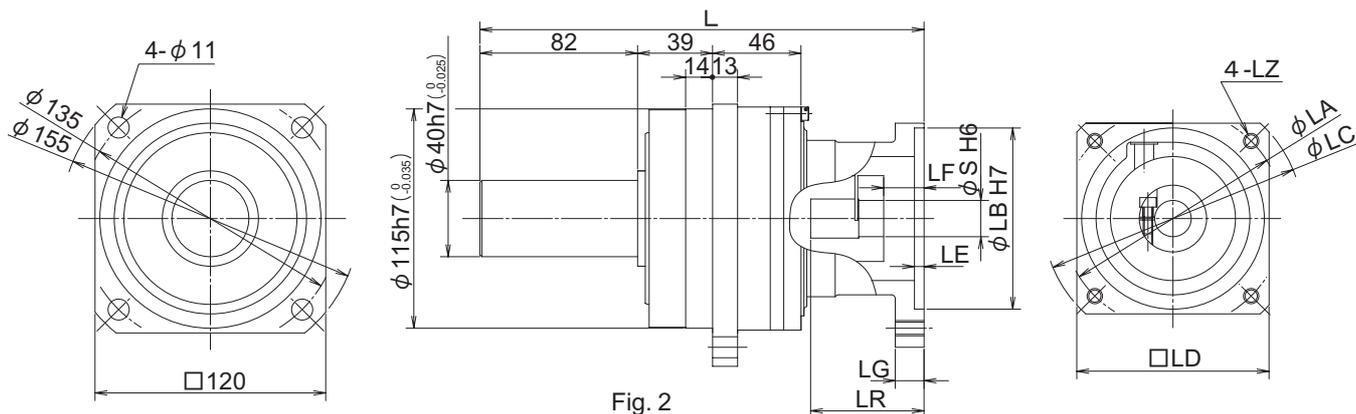


Fig. 2

Nomenclature
 ANFX-P30N- Motor flange code Backlash — Reduction ratio (33)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2P					MSMA	400					2	216	70	50	80	60	3.5	15	8	M4	44	14	7.2	2P
2R	SGMAH	400	HC-KFS	400			P30B06	400	GYS	400			70	50	80	60	3.5	15	8	M5	44	14	7.1	2R
8A			HA-FF	300									90	70	107	80	6	6	10	M5	44	11	7.2	8A
8B					MQMA	400	P50B07	300					90	70	107	80	6	6	10	M5	44	14	7.2	8B
7S					MSMA	750	Q1AA07	750					90	70	107	80	6	6	10	M5	44	19	7.2	7S
2T	SGMPH	400							GYS	400			90	70	107	80	6	6	10	M6	44	14	7.2	2T
7P	SGMAH	750					P30B08	750	GYS	750			90	70	107	80	6	6	10	M6	44	16	7.2	7P
7T			HC-KFS	750									90	70	107	80	6	6	10	M6	44	19	7.2	7T
7Q							P05B08	500					100	80	115	86	5	21	10	M6	59	16	7.4	7Q
7A			HA-FF	400					GYS	750			115	95	135	100	5	21	15	M8	59	16	7.4	7A
7R	SGMPH	750									145	110	165	120	7	21	15	M8	59	16	7.5	7R		
7X	SGMP	750									145	110	165	120	7	21	15	M8	59	19	7.5	7X		

Dimension Drawings

Frame size: P30
 Reduction ratio: 45
 Motor capacity: 300W-600W
 Solid shaft (without keyway)

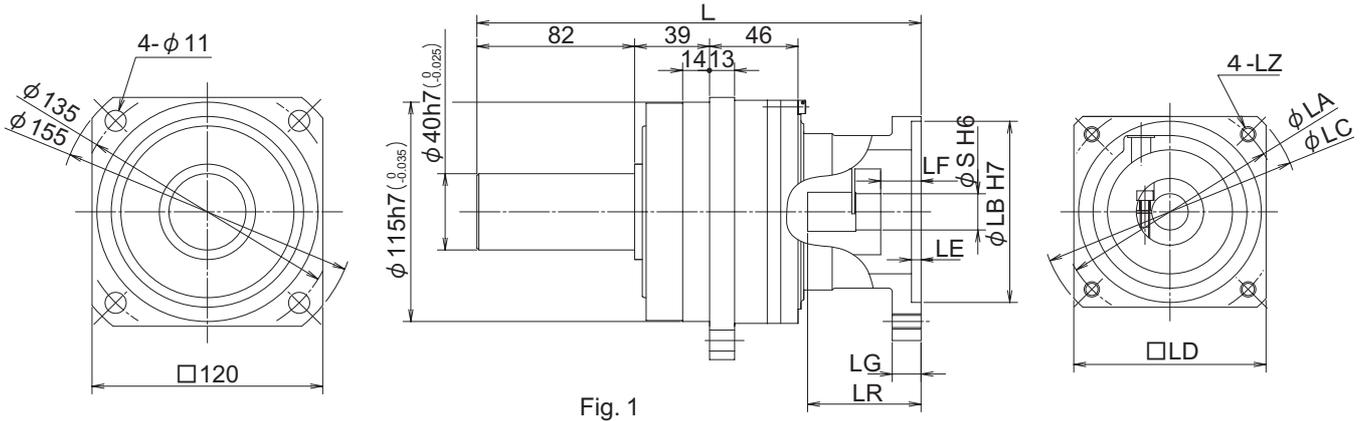


Fig. 1

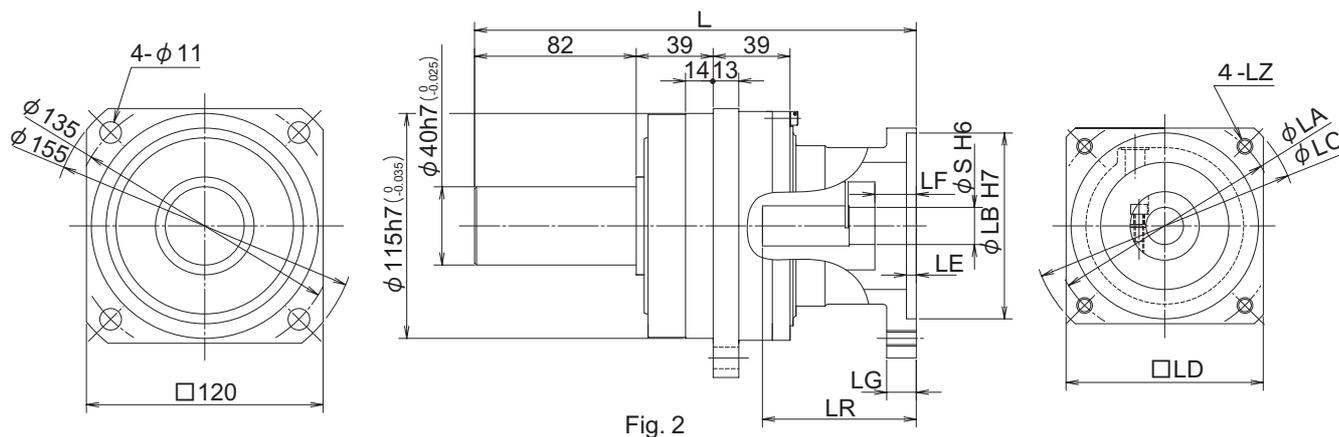
Nomenclature
 ANFX-P30N- Motor flange code Backlash — Reduction ratio (45)

10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S				
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity																
2P					MSMA	400					1	216	70	50	80	60	3.5	15	8	M4	44	14	7.1	2P		
2R	SGMAH	400	HC-KFS	400			P30B06	400	Q1AA06	400			GYS	400	70	50	80	60	3.5	15	8	M5	44	14	7.1	2R
8A			HA-FF	300										90	70	107	80	6	6	10	M5	44	11	7.2	8A	
8B					MQMA	400	P50B07	300		400					90	70	107	80	6	6	10	M5	44	14	7.2	8B
2T	SGMPH	400											GYS	400	90	70	107	80	6	6	10	M6	44	14	7.2	2T
7Q							P50B08	500							100	80	115	86	5	21	10	M6	59	16	7.4	7Q
7A			HA-FF	400											115	95	135	100	5	21	15	M8	59	16	7.4	7A

Dimension Drawings

Frame size: P35
 Reduction ratio: 5, 9
 Motor capacity: 1500W
 Solid shaft (without keyway)



Nomenclature
 ANFX-P35N- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
7B					MSMA	1500					2	224	115	95	135	100	5	21	15	M8	78	19	6.2	7B
7Y									GYS	1500			115	95	135	100	5	21	15	M8	78	24	6.2	7Y
7X	SGMPH	1500											145	110	165	120	7	21	15	M8	78	19	6.3	7X
7Z			HC-SFS	1500					GYC	1500			145	110	165	120	7	21	15	M8	78	24	6.3	7Z

Dimension Drawings

Frame size: P35

Reduction ratio: 15, 21

Motor capacity: 1500W

Solid shaft (without keyway)

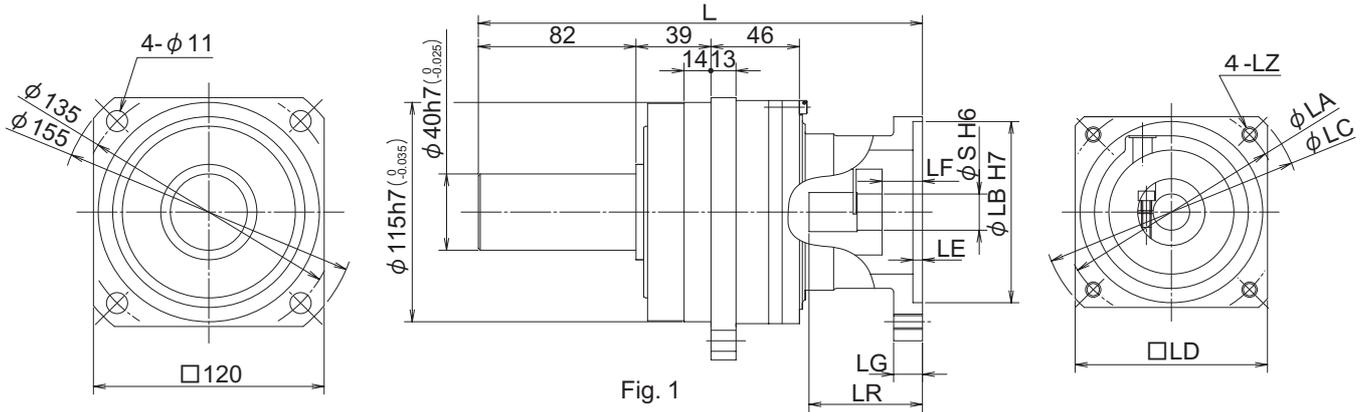


Fig. 1

Nomenclature
 ANFX-P35N- Motor flange code Backlash — Reduction ratio (15, 21)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
7B					MSMA	1500					1	231	115	95	135	100	5	21	15	M8	59	19	7.4	7B
7Y									GYS	1500			115	95	135	100	5	21	15	M8	59	24	7.4	7Y
7X	SGMPH	1500											145	110	165	120	7	21	15	M8	59	19	7.5	7X
7Z			HC-SFS	1500					GYC	1500			145	110	165	120	7	21	15	M8	59	24	7.5	7Z

Dimension Drawings

Frame size: P35
 Reduction ratio: 33
 Motor capacity: 1000W
 Solid shaft (without keyway)

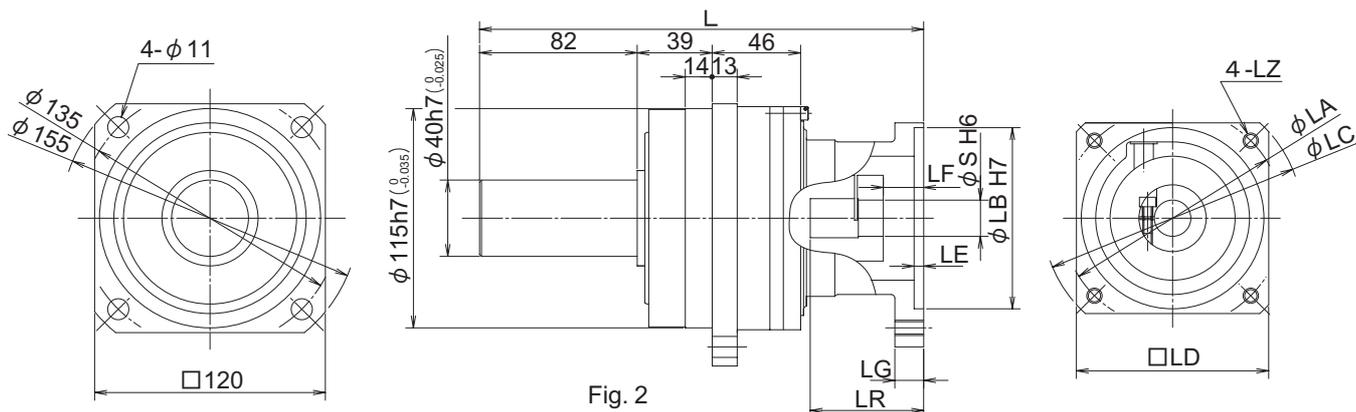


Fig. 2

Nomenclature
 ANFX-P35N- Motor flange code Backlash — Reduction ratio (33)

10 min: LC
 3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
7Q							P50B08	1000			2	231	100	80	115	86	5	21	10	M6	59	16	7.4	7Q
7V					MSMA	1000							100	80	115	86	5	21	10	M6	59	19	7.4	7V
7Y									GYS	1000			115	95	135	100	5	21	15	M8	59	24	7.4	7Y
7X													145	110	165	120	7	21	15	M8	59	19	7.5	7X
7Z			HC-SFS	1000					GYC	1000			145	110	165	120	7	21	15	M8	59	24	7.5	7Z

Dimension Drawings

Frame size: P10
 Reduction ratio: 5, 9
 Motor capacity: 50W-100W
 Flange shaft

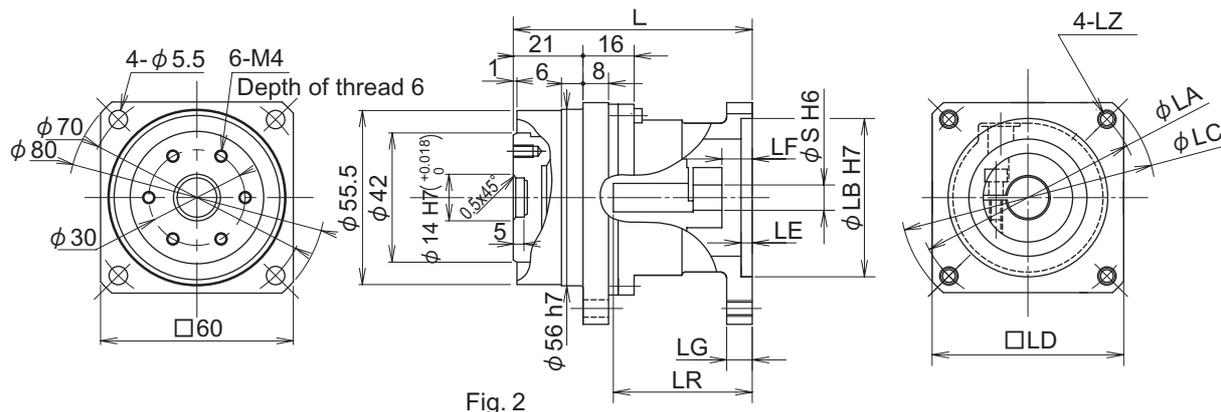


Fig. 2

Nomenclature
 ANFX-P10F- Motor flange code Backlash — Reduction ratio (5, 9)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code				
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S		
2C					MSMA	50	100				2	68	45	30	54	40	4	3.5	7	M3	37.5	8	0.70	2C		
7J	SGMAH	50								GYS			50	46	30	54	40	4	3.5	7	M4	37.5	6	0.70	7J	
2D	SGMAH	100	HC-KFS	50			P30B04	50		GYS			100	46	30	54	40	4	3.5	7	M4	37.5	8	0.70	2D	
	SGM	100	HC-MFS	50			Q1AA04	50						60	50	70	54	3	9.5	7	M4	43.5	8	0.70	2E	
2E			HA-FF	50			P50B05	50						74	70	50	80	60	3.5	9.5	8	M4	43.5	8	0.70	2F
2F					MQMA	100									70	50	80	60	3.5	9.5	8	M5	43.5	8	0.70	2G
2G	SGMPH	100								GYC			100		70	50	80	60	3.5	9.5	8	M5	43.5	8	0.70	2G

Dimension Drawings

Frame size: P15
 Reduction ratio: 5, 9
 Motor capacity: 200W-400W
 Flange shaft

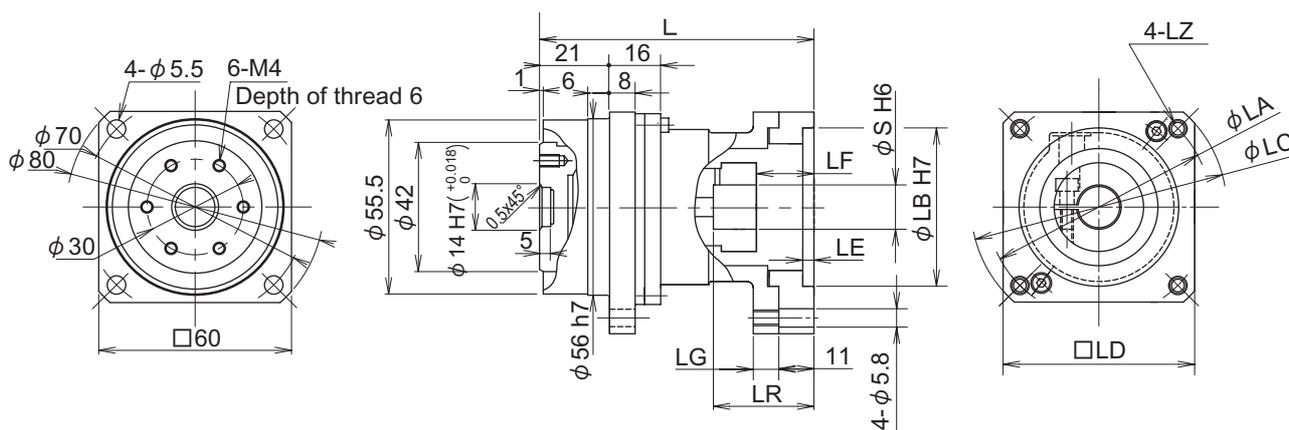


Fig. 2

Nomenclature
 ANFX-P15F- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2M					MSMA	200					2	85	70	50	80	60	3.5	18	8	M4	31.5	11	0.83	2M
2Q					MSMA	400							70	50	80	60	3.5	18	8	M4	31.5	14	0.83	2Q
2S	SGMAH	200	HC-KFS	200			P30B06	200	GSY	200					70	50	80	60	3.5	18	8	M5	31.5	14
	SGM	400	HC-MFS	200			Q1AA06	400		400														

Dimension Drawings

Frame size: P15
 Reduction ratio: 15, 21
 Motor capacity: 200W
 Flange shaft

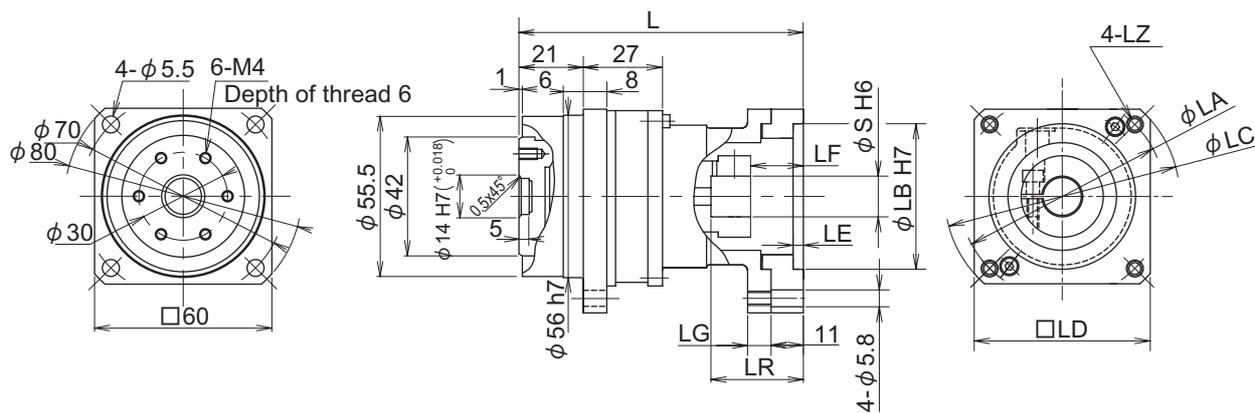


Fig. 2

Nomenclature
 ANFX-P15F- Motor flange code Backlash — Reduction ratio (15, 21)

10 min: LC
 3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2M					MSMA	200					2	96	70	50	80	60	3.5	18	8	M4	31.5	11	1.03	2M
2S	SGMAH	200	HC-KFS	200			P30B06	200	GYS	200			70	50	80	60	3.5	18	8	M5	31.5	14	1.02	2S

Dimension Drawings

Frame size: P15

Reduction ratio: 33, 45

Motor capacity: 50W-100W

Flange shaft

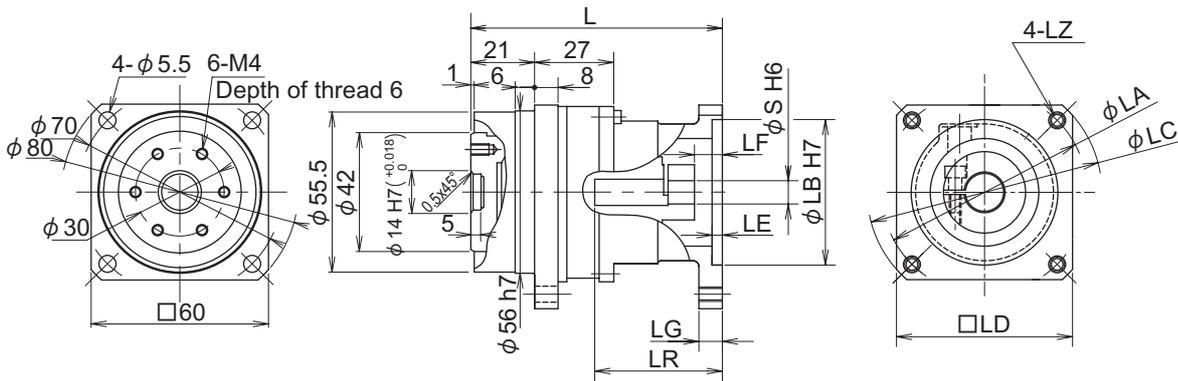


Fig. 1

Nomenclature
 ANFX-P15F- Motor flange code Backlash — Reduction ratio (33, 45)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code			
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S	
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity															
2C					MSMA	50 100						79	45	30	54	40	4	3.5	7	M3	27	8	0.90	2C	
7J	SGMAH	50								GYS	50			46	30	54	40	4	3.5	7	M4	27	6	0.90	7J
2D	SGMAH	100	HC-KFS	50			P30B04	50	Q1AA04	100	GYS		100	46	30	54	40	4	3.5	7	M4	27	8	0.90	2D
		SGM		50	100																				
2E			HA-FF	50			P50B05	50		100				60	50	70	54	3	9.5	7	M4	33	8	0.90	2E
2F					MQMA	100								70	50	80	60	3.5	9.5	8	M4	33	8	0.90	2F
2G	SGMPH	100								GYS	100		70	50	80	60	3.5	9.5	8	M5	33	8	0.90	2G	

Dimension Drawings

Frame size: P20
 Reduction ratio: 5, 9
 Motor capacity: 200W-500W
 Flange shaft

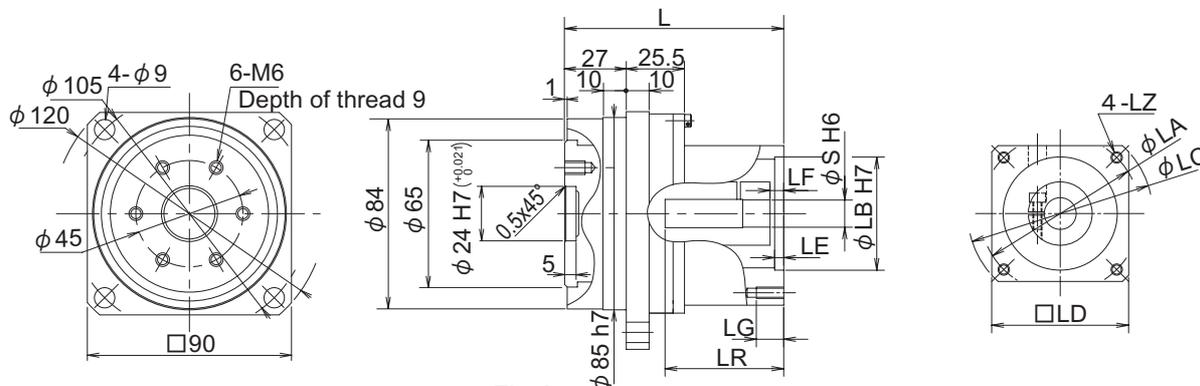


Fig. 2

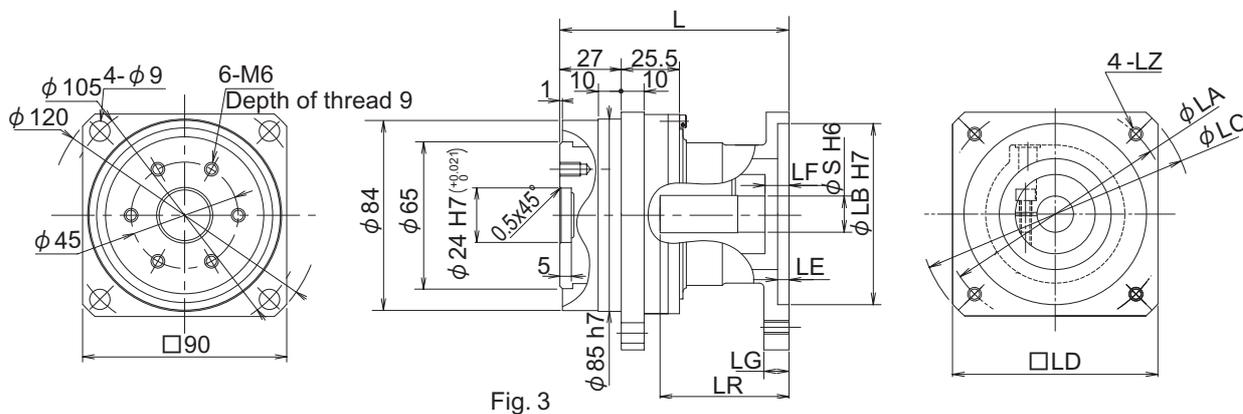


Fig. 3

Nomenclature
 ANFX-P20F- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
 3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2K							P50B05	200			2		60	50	72	54	3.5	6	10	M4	52	11	2.4	2K
2L					MSMA	200							70	50	80	60	3.5	6	8	M4	52	11	2.3	2L
2P					MSMA	400					96		70	50	80	60	3.5	6	8	M4	52	14	2.2	2P
2R	SGMAH	200	HC-KFS	200			P30B06	200	GYS	200			70	50	80	60	3.5	6	8	M5	52	14	2.2	2R
	SGM	400		400			400	Q1AA06		400		400												
8A			HA-FF	200	MQMA	200					3		90	70	107	80	6	10.5	11	M5	56.5	11	2.6	8A
8B					MQMA	400	P50B07	200					90	70	107	80	6	10.5	11	M5	56.5	14	2.6	8B
2T	SGMPH	200							GYS	200	100.5		90	70	107	80	6	10.5	11	M6	56.5	14	2.6	2T
8E							P50B08	500					100	80	120	90	6	10.5	11	M6	56.5	16	2.7	8E
7A			HA-FF	400									115	95	135	100	6	10.5	15	M8	56.5	16	2.7	7A

Dimension Drawings

Frame size: P20

Reduction ratio: 15, 21

Motor capacity: 200W-400W

Flange shaft

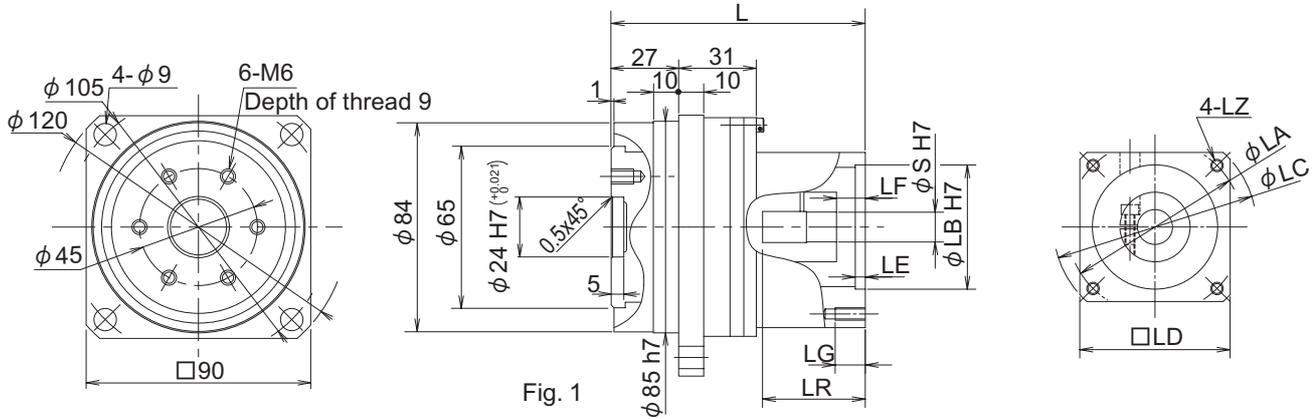


Fig. 1

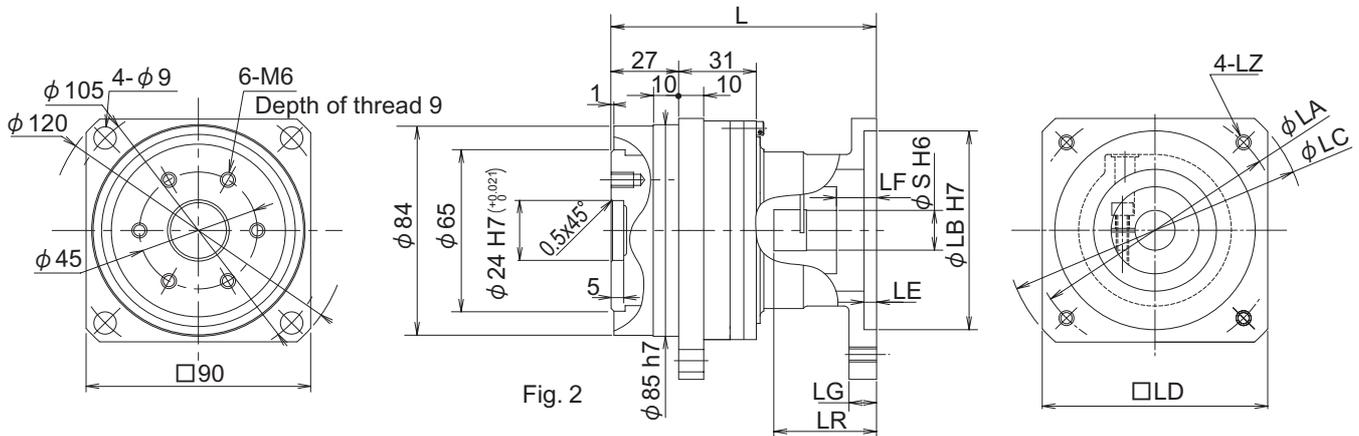


Fig. 2

Nomenclature
 ANFX-P20F- Motor flange code Backlash — Reduction ratio (15, 21)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
2K							P50B05	200			1		60	50	72	54	3.5	6	10	M4	36.5	11	2.7	2K
2L					MSMA	200							70	50	80	60	3.5	6	8	M4	36.5	11	2.5	2L
2P					MSMA	400						101.5	70	50	80	60	3.5	6	8	M4	36.5	14	2.6	2P
2R	SGMAH	200 400	HC-KFS	200 400			P30B06 Q1AA06	400	GYS	200 400			70	50	80	60	3.5	6	8	M5	36.5	14	2.6	2R
			HC-MFS	200 400																				
8A			HA-FF	200 300	MQMA	200					2		90	70	107	80	6	10.5	11	M5	41	11	2.9	8A
8B					MQMA	400	P50B07	200 300 400				106	90	70	107	80	6	10.5	11	M5	41	14	2.9	8B
2T	SGMPH	200 400							GYC	200 400			90	70	107	80	6	10.5	11	M6	41	14	2.9	2T
7A			HA-FF	400									115	95	135	100	6	10.5	15	M8	41	16	3.0	7A

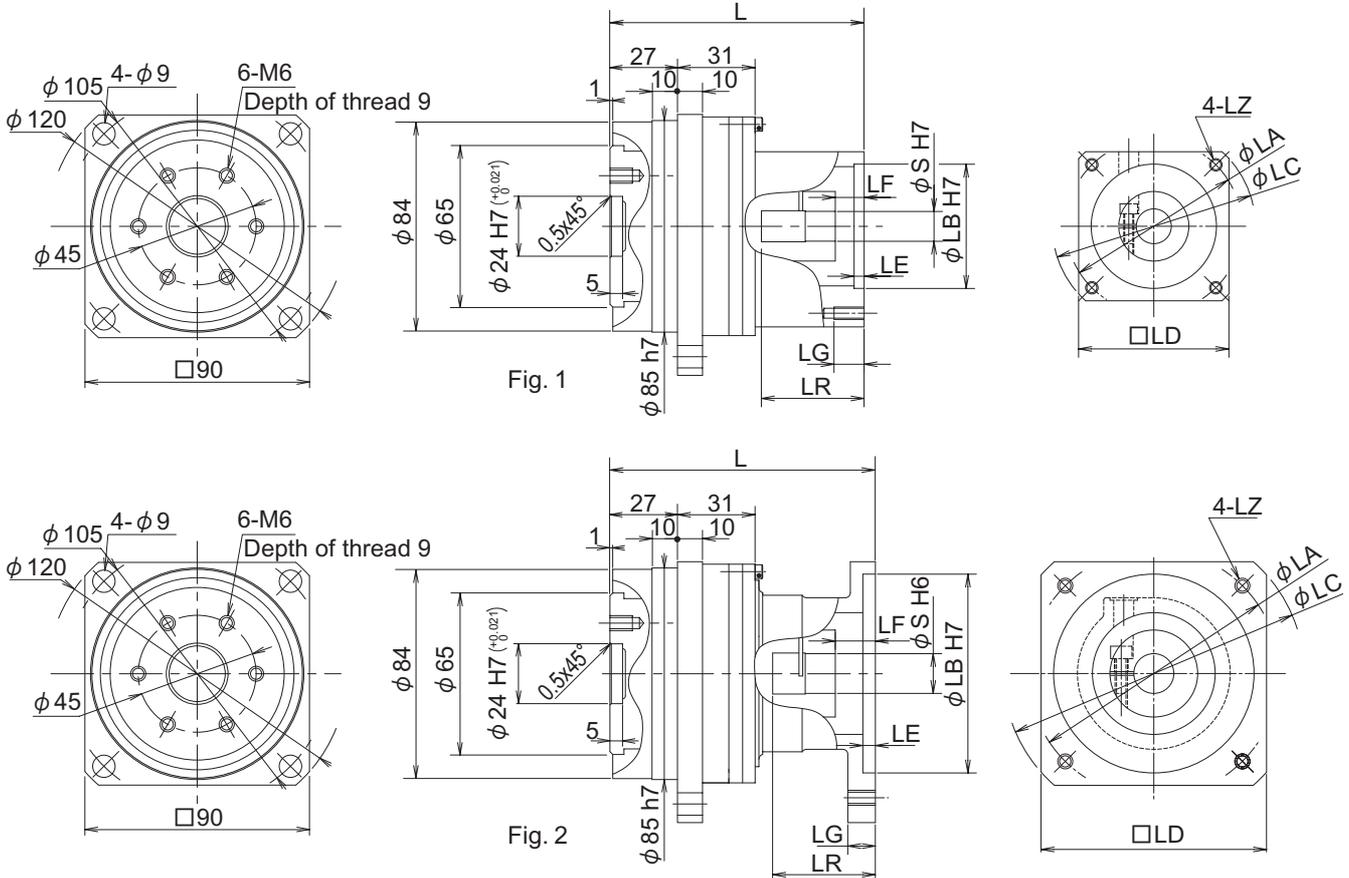
Dimension Drawings

Frame size: P20

Reduction ratio: 45

Motor capacity: 100W-200W

Flange shaft



Nomenclature
 ANFX-P20F- Motor flange code Backlash — Reduction ratio (45)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code			
	Yaskawa Series	Yaskawa Capacity	Mitsubishi Series	Mitsubishi Capacity	Matsushita Series	Matsushita Capacity	Sanyo Series	Sanyo Capacity	Fuji Series	Fuji Capacity			LA	LB	LC	LD	LE	LF	LG	LZ			LR	S	
2D	SGMAH 100	100	HC-KFS 100	100			P30B04	100	GYS 100	100	2	101.5	46	30	54	40	4	13	7	M4	36.5	8	2.4	2D	
2E			HA-FF 100	100			P50B05	100			1		60	50	72	54	3.5	6	10	M4	36.5	8	2.7	2E	
2K							P50B05	200			1		60	50	72	54	3.5	6	10	M4	36.5	11	2.7	2K	
2F					MQMA	100					1		70	50	80	60	3.5	6	8	M4	36.5	8	2.5	2F	
2G	SGMPH 100	100							GYC 100	100	1		70	50	80	60	3.5	6	8	M5	36.5	8	2.5	2G	
2L					MSMA	200					1		70	50	80	60	3.5	6	8	M4	36.5	11	2.5	2L	
2R	SGMAH 200	200	HA-KFS 200	200			P30B06	200	GYS 200	200	2		106	70	50	80	60	3.5	6	8	M5	36.5	14	2.6	2R
8A			HA-FF 200	200	MQMA	200					2			90	70	107	80	6	10.5	11	M5	41	11	2.9	8A
8B							P50B07	200			2			90	70	107	80	6	10.5	11	M5	41	14	2.9	8B
2T	SGMPH 200	200							GYC 200	200	2			90	70	107	80	6	10.5	11	M6	41	14	2.6	2T
	SGMP 200	200									2	90		70	107	80	6	10.5	11	M6	41	14	2.6		

Dimension Drawings

Frame size: P25
 Reduction ratio: 5, 9
 Motor capacity: 600W-750W
 Flange shaft

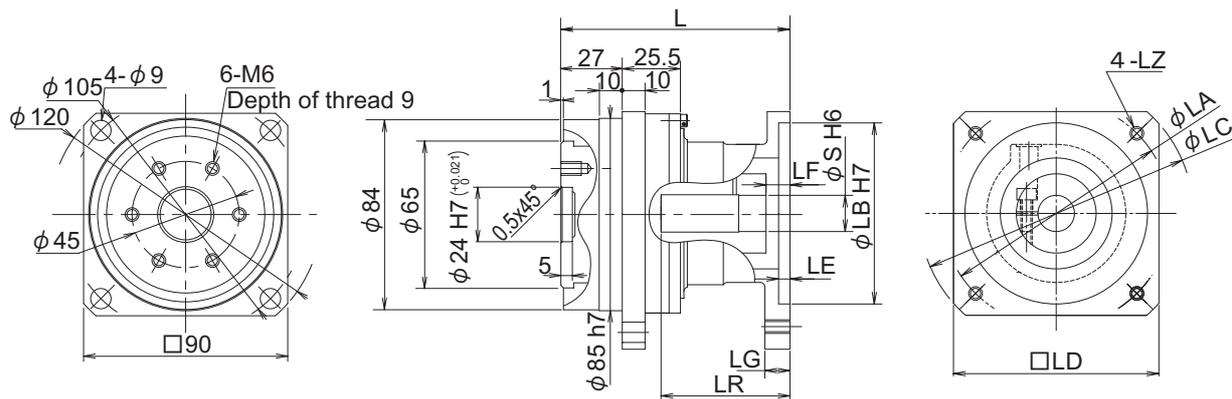


Fig. 3

Nomenclature
 ANFX-P25F- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
 3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code			
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S					
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity																	
7S					MSMA	750	Q1AA07	750			3	100.5	90	70	107	80	6	10.5	11	M5	56.5	19	2.6	7S			
7P	SGMAH	750					P30B08	750	GYS	750					90	70	107	80	6	10.5	11	M6	56.5	16	2.6	7P	
7T			HC-KFS	750											90	70	107	80	6	10.5	11	M6	56.5	19	2.6	7T	
			HC-MFS	750																							
8E							P50B08	750							100	80	120	90	6	10.5	11	M6	56.5	16	2.7	8E	
7A			HA-FF	600									115	95	135	100	6	10.5	15	M8	56.5	16	2.7	7A			

Dimension Drawings

Frame size: P25

Reduction ratio: 15, 21

Motor capacity: 500W-750W

Flange shaft

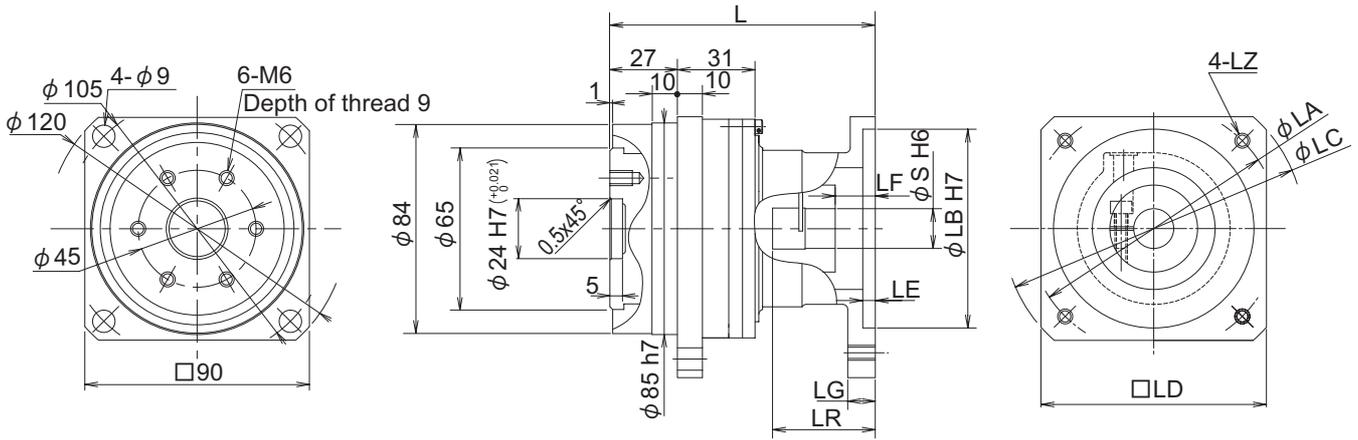


Fig. 1

Nomenclature
 ANFX-P25F- Motor flange code Backlash — Reduction ratio (15, 21)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
7S					MSMA	750	Q1AA07	750			1	106	90	70	107	80	6	10.5	11	M5	41	19	2.9	7S
7P	SGMAH	750					P30B08	750	GYS	750			90	70	107	80	6	10.5	11	M6	41	16	2.9	7P
7T			HC-KFS	750									90	70	107	80	6	10.5	11	M6	41	19	2.9	7T
8E							P50B08	500 750					100	80	120	90	6	10.5	11	M6	41	16	3.0	8E
7A			HA-FF	600									115	95	135	100	6	10.5	15	M8	41	16	3.0	7A

Dimension Drawings

Frame size: P25
 Reduction ratio: 33
 Motor capacity: 300W-600W
 Flange shaft

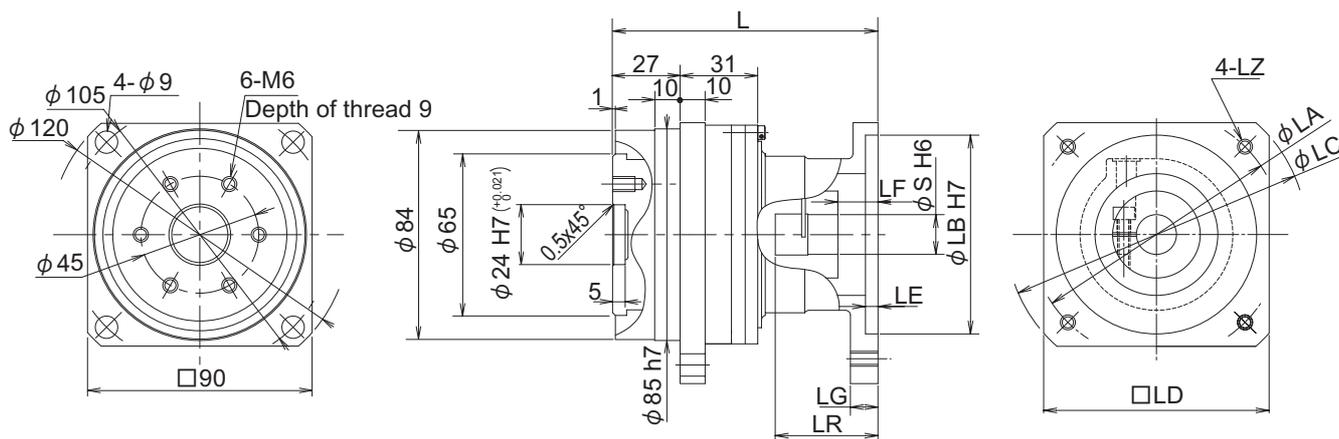


Fig. 2

Nomenclature
 ANFX-P25F- Motor flange code Backlash — Reduction ratio (33)

10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code	
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S			
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity															
2P					MSMA	400					2	101.5	70	50	80	60	3.5	6	8	M4	36.5	14	2.6	2P	
2R	SGMAH	400	HC-KFS	400			P30B06	400	Q1AA06	400			GYS	400	70	50	80	60	3.5	6	8	M5	36.5	14	2.6
8A			HA-FF	300							2	106	90	70	107	80	6	10.5	11	M5	41	11	2.9	8A	
8B					MQMA	400	P50B07	300		400					90	70	107	80	6	10.5	11	M5	41	14	2.9
2T	SGMPH	400								GYS	400	2	106	90	70	107	80	6	10.5	11	M6	41	14	2.9	2T
8E							P50B08	500							100	80	120	90	6	10.5	11	M6	41	16	3.0
7A			HA-FF	400						GYS	750	2	106	115	95	135	100	6	10.5	15	M8	41	16	3.0	7A
				600																					

Dimension Drawings

Frame size: P25

Reduction ratio: 45

Motor capacity: 300W-400W

Flange shaft

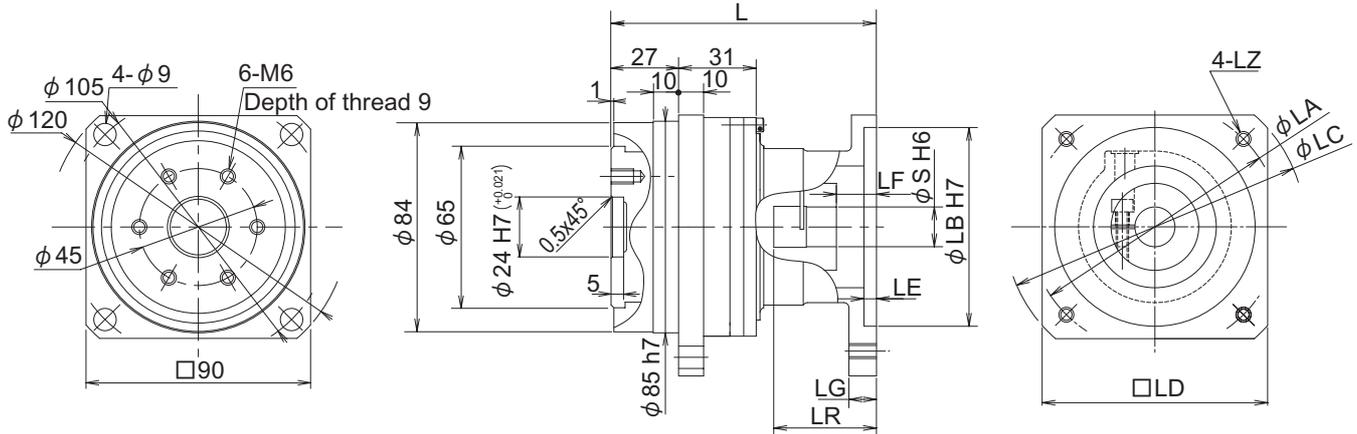


Fig. 1

Nomenclature
 ANFX-P25F- Motor flange code Backlash — Reduction ratio (45)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S				
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity																
2P					MSMA	400					1	101.5	70	50	80	60	3.5	6	8	M4	36.5	14	2.6	2P		
2R	SGMAH	400	HC-KFS	400			P30B06	400	GYS	400					70	50	80	60	3.5	6	8	M5	36.5	14	2.6	2R
8A			HA-FF	300											90	70	107	80	6	10.5	11	M5	41	11	2.9	8A
8B					MQMA	400	P50B07	300 400							90	70	107	80	6	10.5	11	M5	41	14	2.9	8B
2T	SGMPH	400							GYC	400				106	90	70	107	80	6	10.5	11	M6	41	14	2.9	2T
7A			HA-FF	400												115	95	135	100	6	10.5	15	M8	41	16	3.0

Dimension Drawings

Frame size: P30

Reduction ratio: 15, 21

Motor capacity: 300W-1000W

Flange shaft

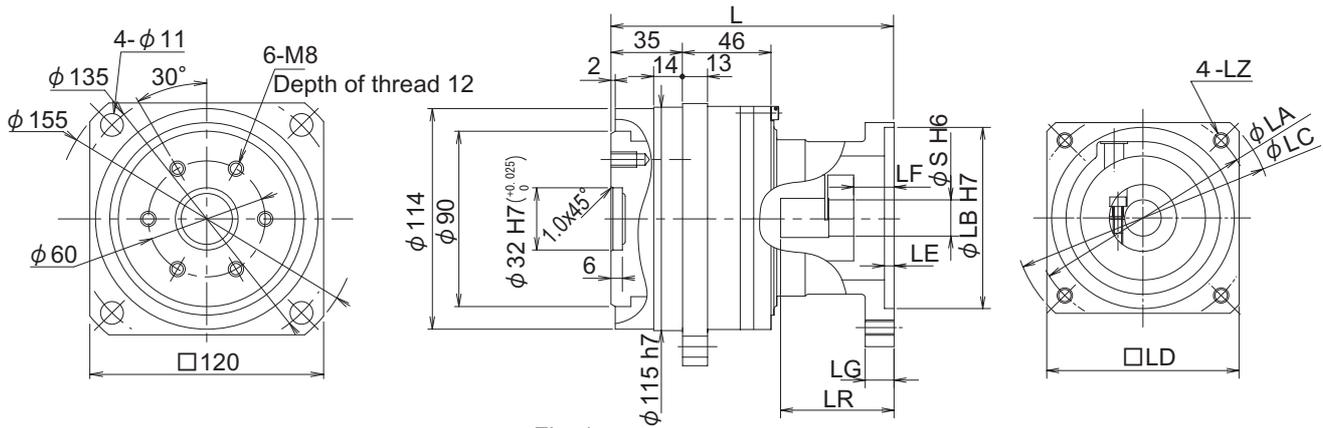
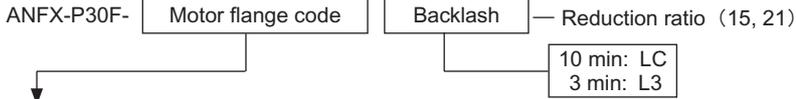


Fig. 1

Nomenclature



Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa Series	Yaskawa Capacity	Mitsubishi Series	Mitsubishi Capacity	Matsushita Series	Matsushita Capacity	Sanyo Series	Sanyo Capacity	Fuji Series	Fuji Capacity			LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
8B					MQMA 400		P50B07 300 400				130	90	70	107	80	6	6	10	M5	44	14	6.4	8B	
7S					MSMA 750		Q1AA07 750					90	70	107	80	6	6	10	M5	44	19	6.4	7S	
2T	SGMPH 400 SGMP 400								GYC 400			90	70	107	80	6	6	10	M6	44	14	6.4	2T	
7P	SGMAH 750 SGM 750						P30B08 750		GYS 750			90	70	107	80	6	6	10	M6	44	16	6.4	7P	
7T			HC-KFS 750 HC-MFS 750									90	70	107	80	6	6	10	M6	44	19	6.4	7T	
7Q							P50B08 500 750 1000				145	100	80	115	86	5	21	10	M6	59	16	6.6	7Q	
7V					MSMA 1000							100	80	115	86	5	21	10	M6	59	19	6.6	7V	
7A				HA-FF 400 600					GYC 750			115	95	135	100	5	21	15	M8	59	16	6.6	7A	
7Y									GYS 1000			115	95	135	100	5	21	15	M8	59	24	6.6	7Y	
7R	SGMPH 750 SGMP 750											145	110	165	120	7	21	15	M8	59	16	6.7	7R	
7X											145	110	165	120	7	21	15	M8	59	19	6.7	7X		
7Z				HC-SFS 1000					GYC 1000		145	110	165	120	7	21	15	M8	59	24	6.7	7Z		

Dimension Drawings

Frame size: P30
 Reduction ratio: 33
 Motor capacity: 300W-750W
 Flange shaft

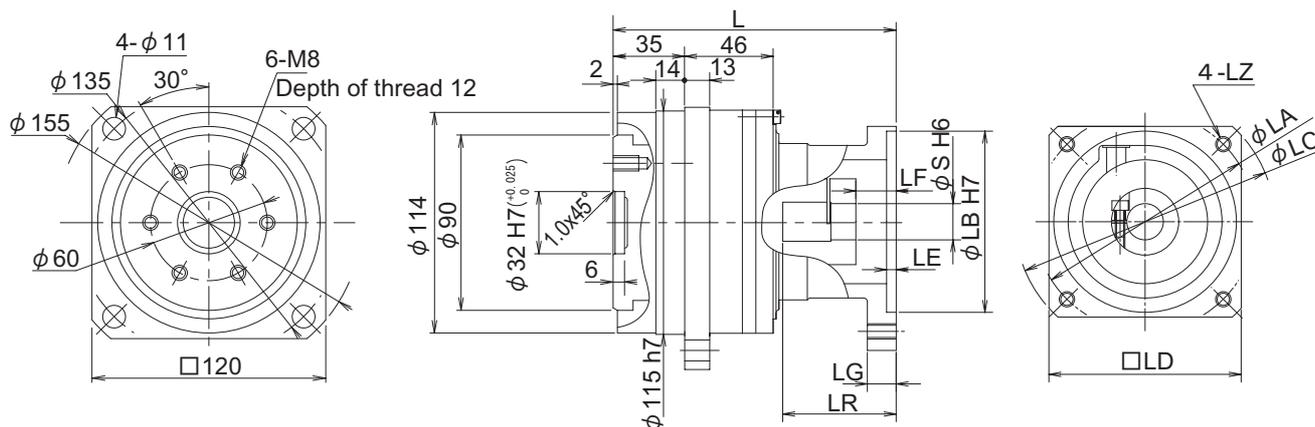


Fig. 2

Nomenclature
 ANFX-P30F- Motor flange code Backlash — Reduction ratio (33)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code			
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S	
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity															
2P					MSMA	400					2	130	70	50	80	60	3.5	15	8	M4	44	14	6.3	2P	
2R	SGMAH	400	HC-KFS	400			P30B06	400		GYS			400	70	50	80	60	3.5	15	8	M5	44	14	6.3	2R
8A			HA-FF	300									90	70	107	80	6	6	10	M5	44	11	6.4	8A	
8B					MQMA	400	P50B07	300 400					90	70	107	80	6	6	10	M5	44	14	6.4	8B	
7S					MSMA	750	Q1AA07	750					90	70	107	80	6	6	10	M5	44	19	6.4	7S	
2T	SGMPH	400								GYS			400	90	70	107	80	6	6	10	M6	44	14	6.4	2T
7P	SGMAH	750					P30B08	750		GYS			750	90	70	107	80	6	6	10	M6	44	16	6.4	7P
7T			HC-KFS	750									90	70	107	80	6	6	10	M6	44	19	6.4	7T	
7Q							P50B08	500 750					100	80	115	86	5	21	10	M6	59	16	6.6	7Q	
7A			HA-FF	400 600						GYS			750	115	95	135	100	5	21	15	M8	59	16	6.6	7A
7R	SGMPH	750											145	110	165	120	7	21	15	M8	59	16	6.7	7R	
7X													145	110	165	120	7	21	15	M8	59	19	6.7	7X	

Dimension Drawings

Frame size: P30

Reduction ratio: 45

Motor capacity: 300W-600W

Flange shaft

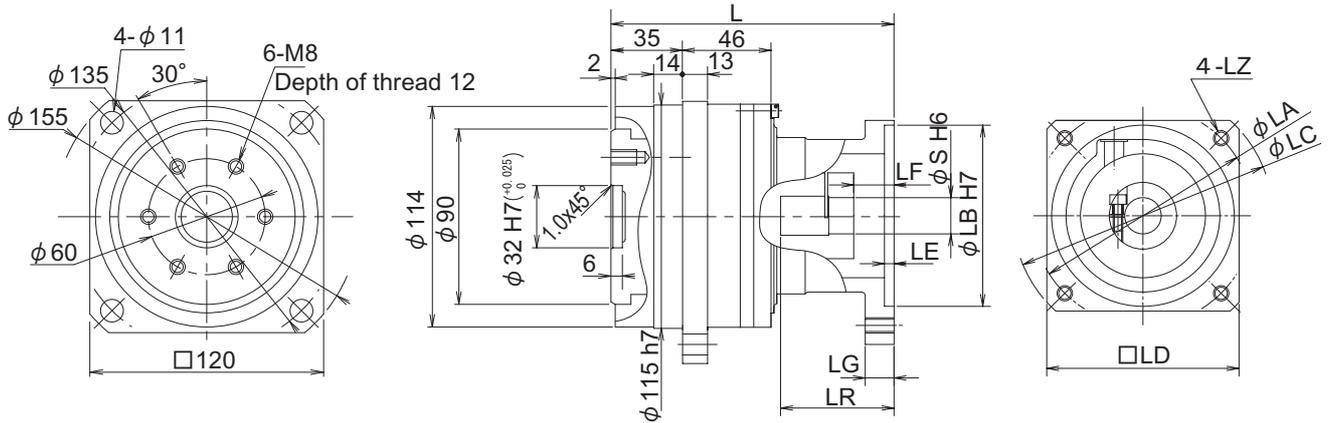


Fig. 1

Nomenclature
 ANFX-P30F- Motor flange code Backlash — Reduction ratio (45)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S				
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity																
2P					MSMA	400					1	130	70	50	80	60	3.5	15	8	M4	44	14	6.3	2P		
2R	SGMAH	400	HC-KFS	400			P30B06	400	Q1AA06	400			GYS	400	70	50	80	60	3.5	15	8	M5	44	14	6.3	2R
8A			HA-FF	300										90	70	107	80	6	6	10	M5	44	11	6.4	8A	
8B					MQMA	400	P50B07	300		400					90	70	107	80	6	6	10	M5	44	14	6.4	8B
2T	SGMPH	400											GYS	400	90	70	107	80	6	6	10	M6	44	14	6.4	2T
7Q							P50B08	500							100	80	115	86	5	21	10	M6	59	16	6.6	7Q
7A			HA-FF	400		600									115	95	135	100	5	21	15	M8	59	16	6.6	7A

Dimension Drawings

Frame size: P35
 Reduction ratio: 5, 9
 Motor capacity: 1500W
 Flange shaft

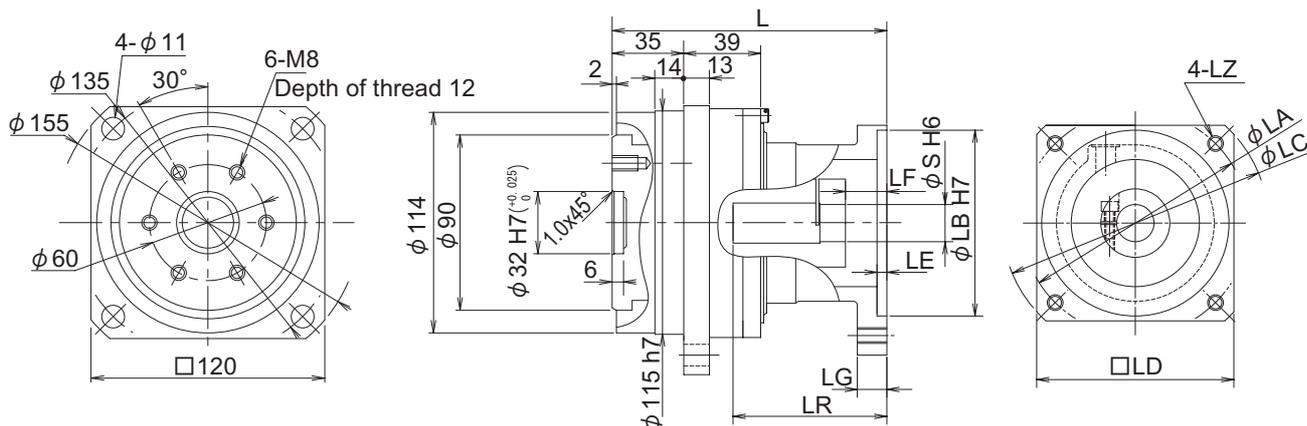


Fig. 2

Nomenclature
 ANFX-P35F- Motor flange code Backlash — Reduction ratio (5, 9)

10 min: LC
 3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions										Mass (kg)	Motor Flange Code
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ	LR	S		
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
7B					MSMA	1500					2	138	115	95	135	100	5	21	15	M8	78	19	5.4	7B
7Y									GYS	1500			115	95	135	100	5	21	15	M8	78	24	5.4	7Y
7X	SGMPH	1500											145	110	165	120	7	21	15	M8	78	19	5.5	7X
7Z			HC-SFS	1500					GYC	1500			145	110	165	120	7	21	15	M8	78	24	5.5	7Z

Dimension Drawings

Frame size: P35
 Reduction ratio: 15, 21
 Motor capacity: 1500W
 Flange shaft

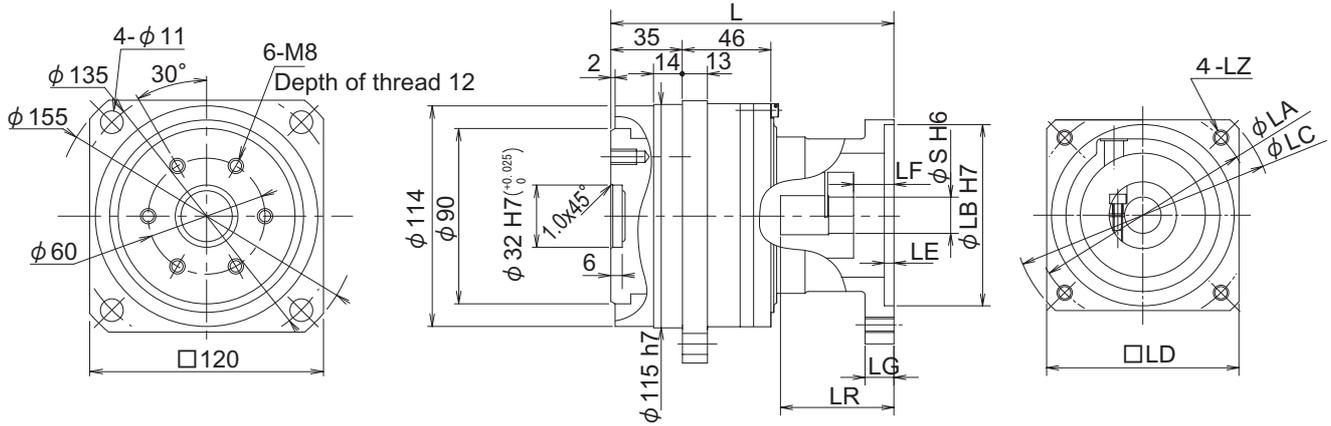


Fig. 1

Nomenclature
 ANFX-P35F- Motor flange code Backlash — Reduction ratio (15, 21)
10 min: LC
3 min: L3

Motor Flange Code	Servo Motor Type										Fig.	L	Dimensions								Mass (kg)	Motor Flange Code		
	Yaskawa		Mitsubishi		Matsushita		Sanyo		Fuji				LA	LB	LC	LD	LE	LF	LG	LZ			LR	S
	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity	Series	Capacity														
7B					MSMA	1500					1	145	115	95	135	100	5	21	15	M8	59	19	6.6	7B
7Y									GYS	1500			115	95	135	100	5	21	15	M8	59	24	6.6	7Y
7X	SGMPH	1500											145	110	165	120	7	21	15	M8	59	19	6.7	7X
7Z			HC-SFS	1500					GYC	1500			145	110	165	120	7	21	15	M8	59	24	6.7	7Z

Technical Information

Strength Check of Output Shaft Part

All of our IB Series P Type contains angular bearing to enable large maximum load torque. Check whether your application is within the allowable value through the following procedure.

1. Check Largest Load Moment

- Calculation of largest load moment.

$$M_{max} = \frac{(F_{rmax} (L_c + L_r) + F_{amax} \cdot L_a)}{10^3}$$

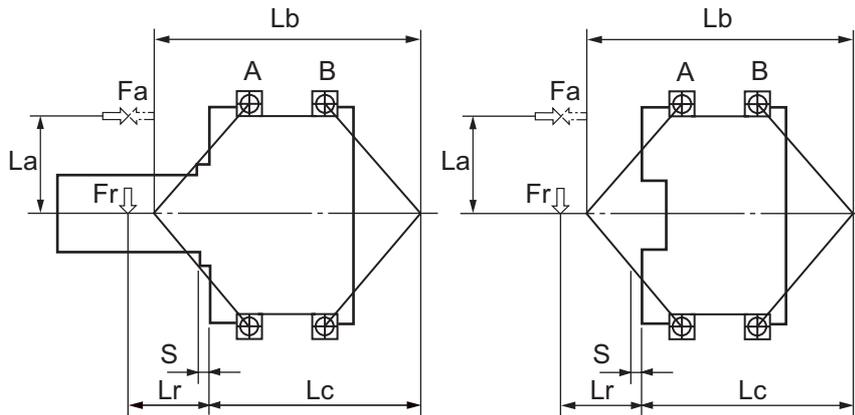
Check that $M_{max} \leq M_c$

Table 1 Allowable Moment M_c for P Type

Frame Size	Allowable Moment M_c	
	Nm	kgfm
P10, P15	37.3	3.80
P20, P25	173	17.6
P30, P35	339	34.6

Table 2 External Load Relationship Drawing

Frame Size	Dimension (mm)		
	L_b	L_c	S
P10, P15	52.76	41.88	2
P20, P25	83.06	64.53	2
P30, P35	107.52	84.76	4



Span between Each Load (P Type)

Table 3 Specification of Bearing of Output

Frame Size	Basic Rated Load		Load Factor				e
	Dynamic Rated Load C	Static Rated Load C_0	X		Y		
	N (kgf)	N (kgf)	$K_a/K_r \leq e$	$K_a/K_r > e$	$K_a/K_r \leq e$	$K_a/K_r > e$	
P10 P15	3050 (310)	3500 (360)	1	0.35	0	0.57	1.14
P20 P25	8950 (910)	9350 (950)					
P30 P35	13600 (1390)	16300 (1660)					

2. Check Equivalent Load and Bearing Lifetime

Calculation of Equivalent Load

- Equivalent speed: N

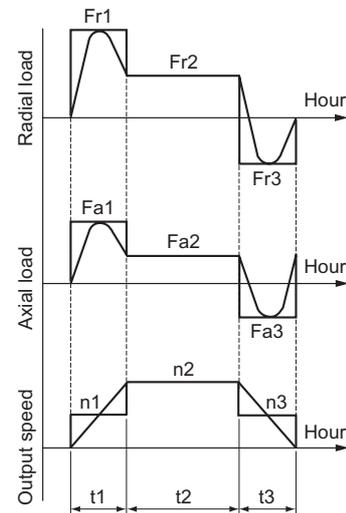
$$N = \frac{t_1 \cdot n_1 + t_2 \cdot n_2 + t_3 \cdot n_3}{t_1 + t_2 + t_3}$$

- Equivalent radial load: K_r

$$K_r = \sqrt[3]{\frac{t_1 \cdot n_1 \cdot |Fr_1|^3 + t_2 \cdot n_2 \cdot |Fr_2|^3 + t_3 \cdot n_3 \cdot |Fr_3|^3}{t_1 \cdot n_1 + t_2 \cdot n_2 + t_3 \cdot n_3}}$$

- Equivalent axial load: K_a

$$K_a = \sqrt[3]{\frac{t_1 \cdot n_1 \cdot |Fa_1|^3 + t_2 \cdot n_2 \cdot |Fa_2|^3 + t_3 \cdot n_3 \cdot |Fa_3|^3}{t_1 \cdot n_1 + t_2 \cdot n_2 + t_3 \cdot n_3}}$$



Example of Operation Pattern

Precision of Attached Motor

Table 4 Output Shaft Part Load Direction and Calculation Formula

Direction of Axial Load	Load Condition	Bearing Category	Axial Load Ka_T	Dynamic Equivalent Load P
	$\frac{Kr_B}{2Y_B} + Ka \geq \frac{Kr_A}{2Y_A}$	Bearing A	$\frac{Kr_B}{2Y_B} + Ka$	$P_A = XKr_A + Y_A \left(\frac{Kr_B}{2Y_B} + Ka \right)$ Note that $P_A < Kr_A$ when $P_A = Kr_A$.
		Bearing B	-	$P_B = Kr_B$
	$\frac{Kr_B}{2Y_B} + Ka < \frac{Kr_A}{2Y_A}$	Bearing A	-	$P_A = Kr_A$
		Bearing B	$\frac{Kr_A}{2Y_A} - Ka$	$P_B = XKr_B + Y_B \left(\frac{Kr_A}{2Y_A} - Ka \right)$ Note that $P_B < Kr_B$ when $P_B = Kr_B$.
	$\frac{Kr_B}{2Y_B} \leq \frac{Kr_A}{2Y_A} + Ka$	Bearing A	-	$P_A = Kr_A$
		Bearing B	$\frac{Kr_A}{2Y_A} + Ka$	$P_B = XKr_B + Y_B \left(\frac{Kr_A}{2Y_A} + Ka \right)$ Note that $P_B < Kr_B$ when $P_B = Kr_B$.
	$\frac{Kr_B}{2Y_B} > \frac{Kr_A}{2Y_A} + Ka$	Bearing A	$\frac{Kr_B}{2Y_B} - Ka$	$P_A = XKr_A + Y_A \left(\frac{Kr_B}{2Y_B} - Ka \right)$ Note that $P_A < Kr_A$ when $P_A = Kr_A$.
		Bearing B	-	$P_B = Kr_B$

Lifetime L_{10h}

$$L_{10h} = \frac{16666}{N} \left(\frac{C}{C_f \times F_s \times P} \right)^3$$

Table 5 Coupling Factor C_f

Coupling Method	C_f
Chain	1
Gears	1.25
V-Belt	1.5

Table 6 Shock Factor F_s

Degree of shock	F_s
Practically no shock	1
Light shock	1~1.2
Severe shock	1.4~1.6

Moment of Inertia (at Motor Shaft)

Unit: kg·cm²

Frame Size	Input Shaft Hollow Diameter	Motor Flange Code	Reduction Ratio												
			5		9		15		21		33		45		
			With Shaft	Flange	With Shaft	Flange	With Shaft	Flange	With Shaft	Flange	With Shaft	Flange	With Shaft	Flange	
P10 P15	6	7J	0.102	0.102	0.085	0.085	0.117	0.117	0.087	0.087	0.072	0.072	0.073	0.073	
	7	2B					0.117	0.117	0.087	0.087	0.072	0.072	0.072	0.072	
	8	2C 2D													
		2E 2F 2G	0.127	0.126	0.084	0.084	0.116	0.116	0.087	0.086	0.071	0.071	0.072	0.072	
		11	2M	0.175	0.174	0.132	0.131	0.164	0.164	0.134	0.134				
	14	2Q	0.173	0.172	0.129	0.129	-	-	-	-	-	-	-	-	
2S		-	-	-	-	0.161	0.161	0.131	0.131						
P20 P25	8	2D 2E 2F 2G	-	-	-	-	-	-	-	-	0.291	0.291	0.289	0.289	
		9	2H	0.625	0.620	0.493	0.492	0.428	0.428	0.377	0.376	0.349	0.348	0.346	0.346
		10	2J	0.625	0.619	0.492	0.490	0.427	0.427	0.376	0.376	0.348	0.348	0.345	0.345
	11	2K 2L 8A	0.625	0.619	0.490	0.488	0.426	0.426	0.375	0.374	0.346	0.346	0.344	0.344	
		14	2P 2R 8B 2T 2V	0.623	0.617	0.481	0.479	0.420	0.420	0.369	0.368	0.340	0.340	0.338	0.338
	16		7P 7A	0.736	0.730	0.586	0.584	0.529	0.528	0.477	0.477	0.449	0.449	0.446	0.446
			8E	0.736	0.730	0.586	0.584	0.529	0.528	0.477	0.477	0.449	0.449		
	19	7T	0.711	0.706	0.561	0.560	-	-	-	-	-	-	-	-	
		7S	-	-	-	-	0.513	0.512	0.461	0.460	-	-			
	P30 P35	10	2J	-	-	-	-	1.605	1.597	1.315	1.311	1.177	1.175	1.166	1.165
11		8A	-	-	-	-	-	-	-	-	1.175	1.173	1.164	1.163	
14		2P 2R	-	-	-	-	-	-	-	-	0.396	0.394	0.385	0.384	
		8B 2T	-	-	-	-	-	-	-	-	1.168	1.166	1.156	1.156	
		2V	-	-	-	-	1.602	1.594	1.313	1.309	1.168	1.166	1.156	1.156	
16		7P 7Q 7A 7R	2.510	2.438	1.885	1.863	1.720	1.712	1.430	1.426	1.279	1.277	1.268	1.267	
		19	7S 7T	2.504	2.431	1.855	1.832	1.700	1.692	1.410	1.406	1.259	1.257	1.247	1.247
7V			2.504	2.431	1.855	1.832	1.700	1.692	1.410	1.406	1.259	1.257			
7B			2.504	2.431	1.855	1.832	1.700	1.692	1.410	1.406	-	-			
7X			2.504	2.431	1.855	1.832	1.700	1.692	1.410	1.406	1.259	1.257	-	-	
24		7Y 7Z	2.798	2.725	2.138	2.116	2.015	2.007	1.725	1.721	1.635	1.633			

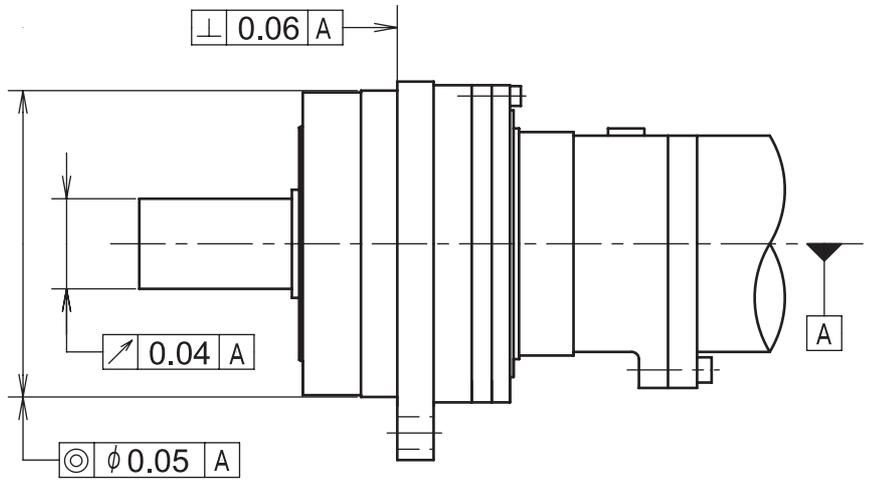
GD² (at Motor Shaft)

Unit: kgf·cm²

Frame Size	Input Shaft Hollow Diameter	Motor Flange Code	Reduction Ratio											
			5		9		15		21		33		45	
			With Shaft	Flange	With Shaft	Flange	With Shaft	Flange	With Shaft	Flange	With Shaft	Flange	With Shaft	Flange
P10 P15	6	7J	0.408	0.408	0.340	0.340	0.468	0.466	0.348	0.347	0.288	0.288	0.292	0.291
	7	2B	—	—	—	—	0.468	0.466	0.348	0.346	0.288	0.287	0.288	0.290
	8	2C	0.508	0.505	0.336	0.336	0.464	0.466	0.348	0.346	0.284	0.284	0.288	0.287
		2D												
		2E												
	11	2F	0.700	0.697	0.528	0.525	0.656	0.654	0.536	0.535	-	-	-	-
2G														
14	2M	0.692	0.687	0.516	0.515	-	-	-	-	-	-	-	-	
	2Q													
	2S	-	-	-	-	0.644	0.645	0.524	0.525	-	-	-	-	
P20 P25	8	2D	-	-	-	-	-	-	-	-	1.164	1.165	1.156	1.155
		2E												
		2F												
		2G												
	9	2H	2.500	2.479	1.972	1.966	1.712	1.711	1.508	1.506	1.396	1.394	1.384	1.384
	10	2J	2.500	2.478	1.968	1.961	1.708	1.707	1.504	1.502	1.392	1.390	1.380	1.380
	11	2K	2.500	2.476	1.960	1.953	1.704	1.703	1.500	1.497	1.384	1.385	1.376	1.376
		2L												
	14	8A	2.492	2.468	1.924	1.916	1.680	1.678	1.476	1.473	1.360	1.361	1.352	1.351
		2P												
2R														
8B														
16	2T	2.944	2.921	2.344	2.336	2.116	2.112	1.908	1.907	1.796	1.795	1.784	1.785	
	2V													
19	7P	2.844	2.824	2.244	2.240	-	-	-	-	-	-	-	-	
	7A													
	8E	2.944	2.921	2.344	2.336	2.116	2.112	1.908	1.907	1.796	1.795	-	-	
	7T	-	-	-	-	2.052	2.048	1.844	1.840	-	-	-	-	
	7S	-	-	-	-	-	-	-	-	-	-	-	-	
P30 P35	10	2J	-	-	-	-	6.420	6.386	5.260	5.243	4.708	4.700	4.664	4.659
	11	8A	-	-	-	-	-	-	-	-	4.700	4.694	4.656	4.653
	14	2P	-	-	-	-	-	-	-	-	1.584	1.576	1.540	1.535
		2R												
		8B												
	16	2T	10.04	9.751	7.540	7.451	6.880	6.847	5.720	5.704	5.116	5.108	5.072	5.067
		2V												
	19	7P	10.02	9.725	7.420	7.329	6.800	6.767	5.640	5.624	5.036	5.028	4.988	4.986
		7T												
		7V												
		7B												
	24	7X	10.02	9.725	7.420	7.329	6.800	6.767	5.640	5.624	-	-	-	-
7Y		10.02	9.725	7.420	7.329	6.800	6.767	5.640	5.624	5.036	5.028	-	-	
	7Z	11.19	10.90	8.552	8.463	8.060	8.027	6.900	6.884	6.540	6.532	-	-	

Dimension of Output Shaft

1. Location Precision of Output Shaft (Value Compared to Reducer Shaft Center)

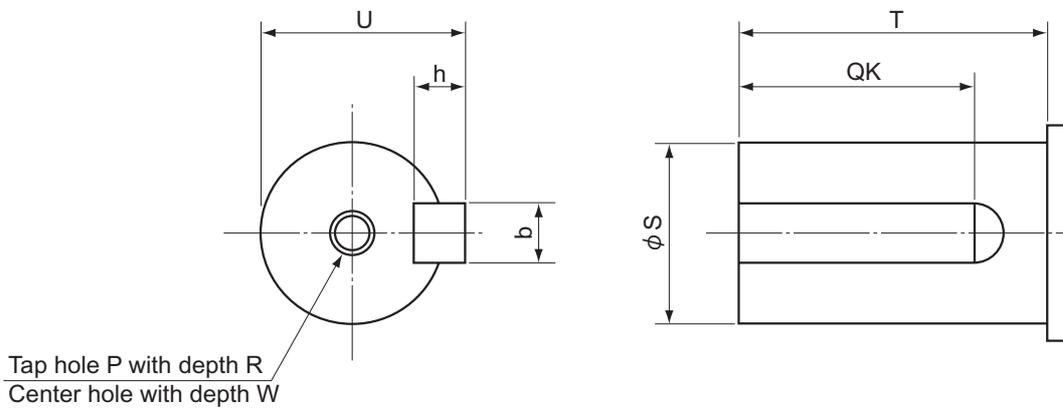


2. Output Shaft Dimension

Standard shaft: Straight shaft without key

Shaft with keyway may be produced by order (Dimension tolerance conforms to JIS B 1301-1996 "Parallel Key" Tightening Type).

Frame Size	ϕS	T	QK	U	b x h	P	R	W
P10, P15	16	28	22	18	5 x 5	M4	11	3.2
P20, P25	25	42	32	28	8 x 7	15	3.4	
P30, P35	40	82	63	43	12 x 8	M10	22	4.5



Precision of Attached Motor

Motor attached should have Grade B precision or higher.

Unit: mm

Type	Measuring item	Measuring method	Sketch of measurement	Measuring Instrument	Work accuracy		
					Grade AA	Grade A	Grade B
Foot-mount type and flange type	Run-out of shaft end	Secure the dial gauge on the floor or flange surface. Place the probe of the dial gauge on the circumference close to the shaft end. Turn the shaft once. Difference between the observed maximum and minimum values is the measured value.		Dial gauge	Work accuracy = 0.01 when $l \leq 100$ As in the below when $l > 100$	Work accuracy = 0.02 when $l \leq 100$ As in the below when $l > 100$	Work accuracy = 0.04 when $l \leq 100$ As in the below when $l > 100$
Flange type	Eccentricity of flange engagement O.D.	Secure the dial gauge on the shaft close to the flange surface. Place the probe of the dial gauge on the circumference of flange connection. Turn the shaft once. Half of the difference between the observed maximum and minimum values is the measured value.		Dial gauge	Work accuracy = 0.01 when $D \leq 200$ As in the below when $D > 200$	Work accuracy = 0.02 when $D \leq 200$ As in the below when $D > 200$	Work accuracy = 0.03 when $D \leq 200$ As in the below when $D > 200$
	Perpendicularity with respect to flange surface	Secure the dial gauge on the shaft close to the flange surface. Place the probe of the dial gauge on the flange surface close to flange circumference. Turn the shaft once. The difference between the observed maximum and minimum values is the measured value.		Dial gauge	Work accuracy = 0.03 when $D \leq 250$ As in the below when $D > 250$	Work accuracy = 0.04 when $D \leq 250$ As in the below when $D > 250$	Work accuracy = 0.06 when $D \leq 250$ As in the below when $D > 250$

Warranty

Warranty Period	The warranty period for the Products shall be 18 months after the commencement of delivery or 18 months after the shipment of the Products from the seller's works or 12 months from the Products coming into operation, whichever comes first.
Warranty Condition	In the event that any problem or damage to the Product arises during the "Warranty Period" from defects in the Product whenever the Product is properly installed and combined with the Buyer's equipment or machines, maintained as specified in the maintenance manual, and properly operated under the conditions described in the catalog or as otherwise agree upon in writing between the Seller and the Buyer or its customers; the Seller will provide, at its sole discretion, appropriate repair or replacement of the Product without charge at a designated facility, except as stipulated in the "Warranty Exclusions" as described below. However, if the Product is installed or integrated into the Buyer's equipment or machines, the Seller shall not reimburse the cost of: removal or re-installation of the Product or other incidental costs related thereto, any lost opportunity, any profit loss or other incidental or consequential losses or damages incurred by the Buyer or its customers.
Warranty Exclusions	Notwithstanding the above warranty, the warranty as set forth herein shall not apply to any problem or damage to the Product that is caused by: <ol style="list-style-type: none"> 1. installation, connection, combination or integration of the Product in or to the other equipment or machine that is rendered by any person or entity other than the Seller; 2. insufficient maintenance or improper operation by the Buyer or its customers, such that the Product is not maintained in accordance with the maintenance manual provided or designated by the Seller; 3. improper use or operation of the Product by the Buyer or its customers that is not informed to the Seller, including, without limitation, the Buyer's or its customers, operation of the Product not in conformity with the specifications, or use of lubricating oil in the Product that is not recommended by the Seller; 4. any problem or damage on any equipment or machine to which the Product is installed, connected or combined or on any specifications particular to the Buyer or its customers; 5. any changes, modifications, improvements or alterations to the Product or those functions that are rendered on the Product by any person or entity other than the Seller; 6. any parts in the Product that are supplied or designated by the Buyer or its customers; 7. earthquake, fire, flood, sea-breeze, gas, thunder, acts of God or any other reasons beyond the control of the Seller; 8. normal wear and tear, or deterioration of the Product, s parts, such as bearings, oil-seals; 9. any other troubles, problems or damage to the Product that are not attributable to the Seller.



SAFETY PRECAUTIONS

- Observe the safety rules for the installation site and equipment strictly (Industrial safety and health law, technical standard for electric facilities, extension rules, plant explosion guidelines, building standards law, etc).
- Read the maintenance manual carefully before use. Request one from the distributor of the Product or our Sales Department if the maintenance manual is not handy. A copy of maintenance manual should always reach the actual user of the Product.
- Select a sufficient product for the usage condition and application.
- Install protective equipment on the machine side when the machine is used for applications which may cause loss of human life or significant loss in facility, such as use for human transportation or elevators.
- Install an oil pan or other preventive devices incase of oil leakage due to failure or termination of service life when the machine is used for food processing equipment, clean room, or other applications that are sensitive to oil.

