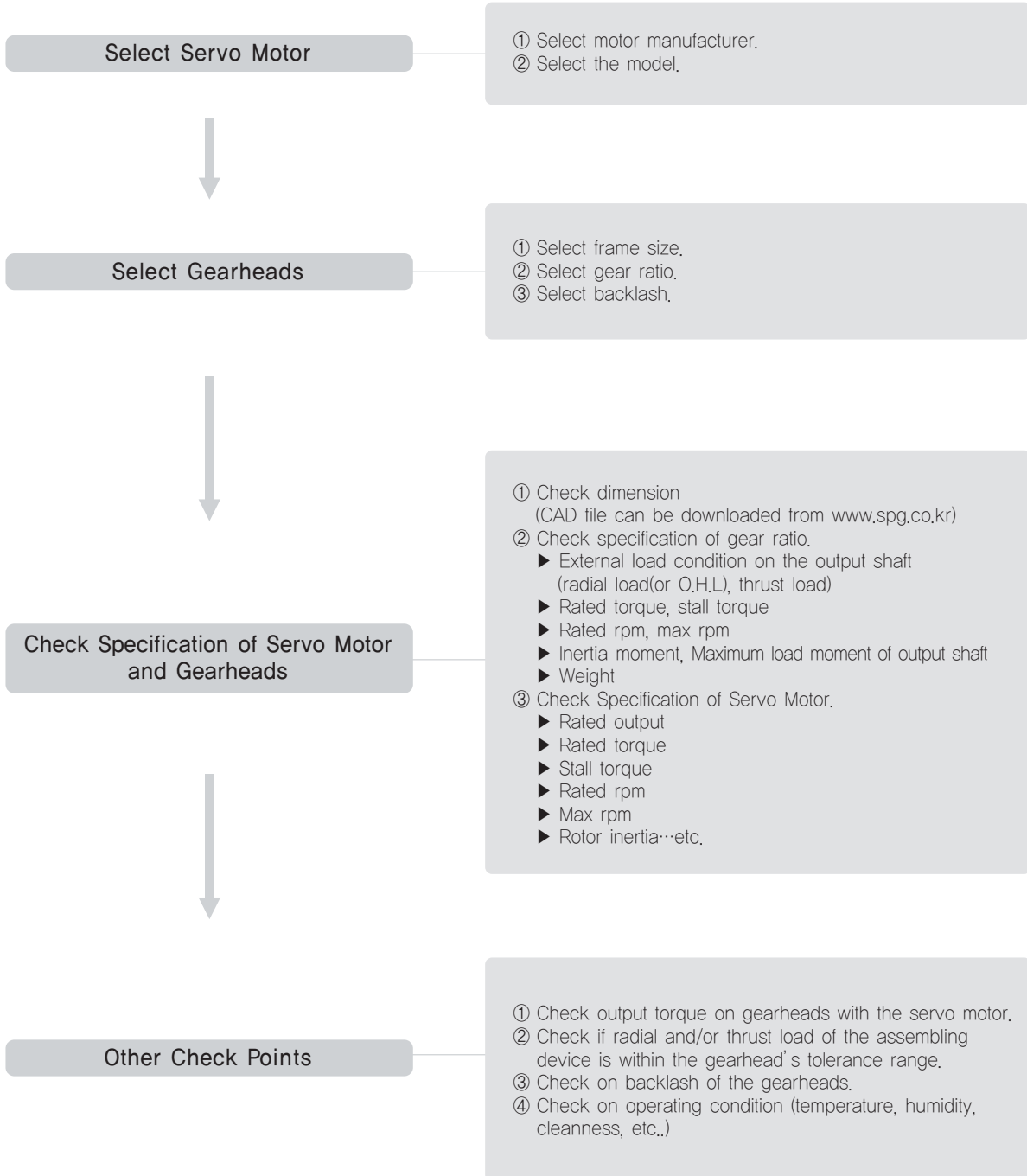


Gearheads Selection

■ Check points for gearheads selection



※ A planetary gearheads is designed under an assumption that its working load is run on an ideal and constant load condition. Therefore, select an appropriate product in consideration of a load factor if a working load is in change.

Gearheads Selection

■ Selecting gearheads <1-a>

Simple selection by servo motor capacity and gear ratio
(based on Rated input speed 3,000rpm motor)

Ratio Motor Capa.	3	5	10	20	30	40	50	81	100
50W	SPI□/SPL□ 042								
100W	SPI□/SPL□ 042								
200W	SPI□/SPL□ 060								
400W	SPI□/SPL□ 060								
750W	SPI□/SPL□ 090								
1,000W	SPI□/SPL□ 090								
1,500W	SPI□/SPL□ 090								
2,000W	SPI□/SPL□ 090								
3,000W	SPI□/SPL□ 115								
4,000W	SPI□/SPL□ 115								
5,000W	SPI□/SPL□ 115								
6,000W	SPI□/SPL□ 115								
7,000W	SPIH/SPLH 142								
8,000W	SPIH/SPLH 142								
11,000W	SPIH/SPLH 180								
12,000W	SPIH/SPLH 180								
15,000W	SPIH/SPLH 220								
22,000W	SPIH/SPLH 220								

■ Selecting gearheads <1-b>

Simple selection by servo motor capacity and gear ratio
(based on Rated input speed 2,000rpm motor)

Ratio Motor Capa.	3	5	10	20	30	40	50	81	100
50W	SPI□/SPL□ 042								
100W	SPI□/SPL□ 042								
200W	SPI□/SPL□ 060								
400W	SPI□/SPL□ 060								
750W	SPI□/SPL□ 090								
1,000W	SPI□/SPL□ 090								
1,500W	SPI□/SPL□ 090								
2,000W	SPI□/SPL□ 090								
3,000W	SPI□/SPL□ 115								
4,000W	SPI□/SPL□ 115								
5,000W	SPI□/SPL□ 115								
6,000W	SPIH/SPLH 142								
7,000W	SPIH/SPLH 142								
8,000W	SPIH/SPLH 142								
11,000W	SPIH/SPLH 180								
12,000W	SPIH/SPLH 180								
15,000W	SPIH/SPLH 220								
22,000W	SPIH/SPLH 220								

Note 1. 「Selecting gearheads <1-a> & <1-b>」 are the reference for simple selection of gearheads. See 「Selecting gearheads <2>」 for more accurate selection.

2. Select gearheads within the range (rated torque X gear ratio X efficiency of servo motor < rated torque of gearheads)

3. Above selection tables refer till 1/50 gear ratio. If in need of the gear ratio above 1/50, contact us for further information and if possible, raise frame size of gearheads by upper one size.

Gearheads Selection

How to select gearheads <2> For selection considering operation conditions

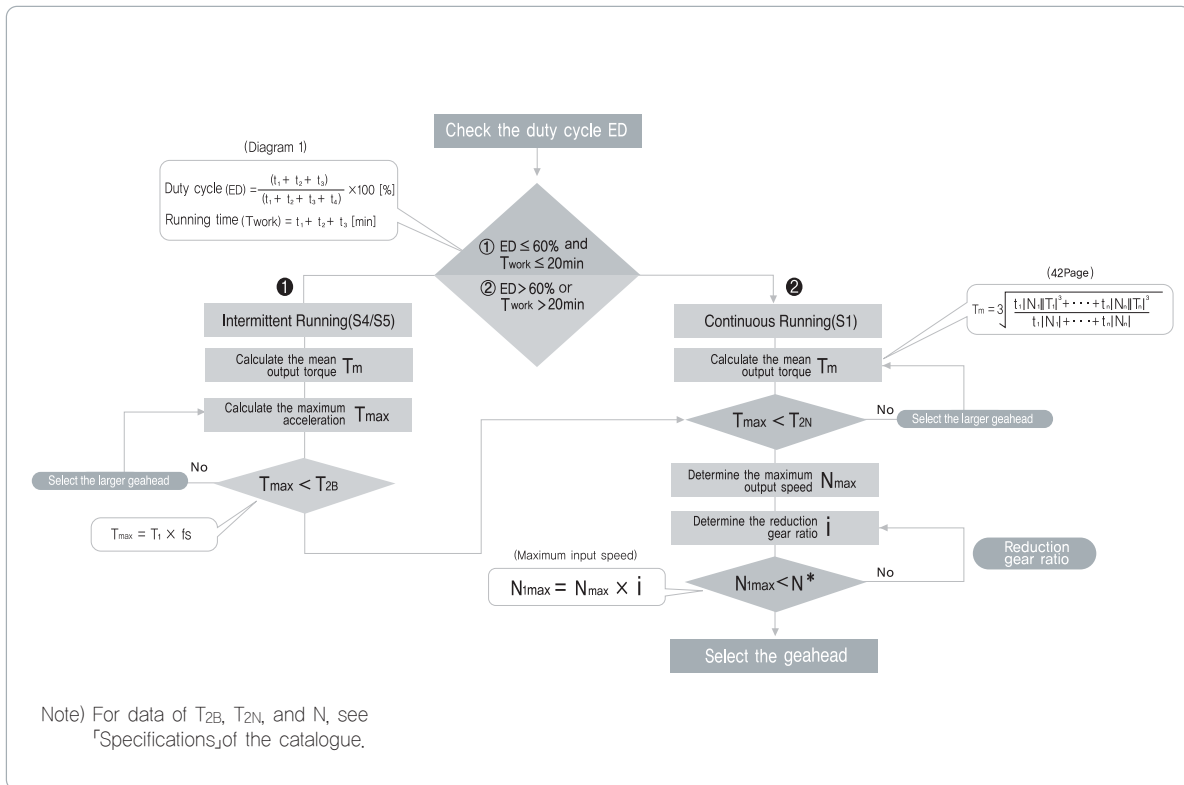
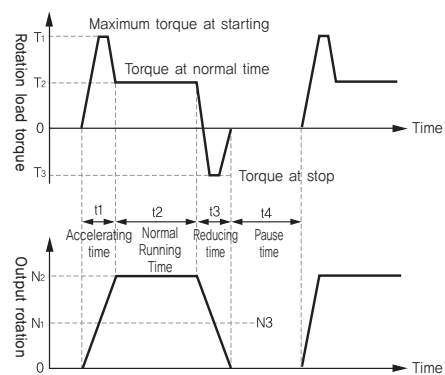


Table 1 is Table of factors

Number of Cycles/hr	f _s *
0~1,000	1
1,000~1,500	1.1
1,500~2,000	1.25
2,000~3,000	1.55
3,000~5,000	1.83

Note) f_s (shock factor) : Shock factor

Diagram 1 Load Cycle's line graph



A list of applicable servo motors by gearheads specification

■ A list of applicable servo motors by specification

Servo Motor Brand Frame Size of Gearheads	Higens	LS Mecapion	Mitsubishi	Panasonic
SPI(H) 042 SPIFH 042 SPL(H) 042 SPLFH 042	FMA-CKZ5	APM-SAR3A	HC-KFS053(B)	MSMD5AZP1□
	FMA-CK01	APM-SAR5A	HC-KFS13(B)	MSMD5AZS1□
		APM-SA01A	HC-MFS053(B)	MSMD01□P1□
			HC-MFS13(B)	MSMD01□S1□
SPI(H) 060 SPIFH 060 SPL(H) 060 SPLFH 060	FMA-CK02	APM-SB01A	HC-KFS23(B)	MAMA022P1□, S1□
	FMA-CK04	APM-SB02A	HC-KFS43(B)	MAMA042P1□, S1□
	FMA-CN01	APM-SB04A	HC-KFS-46	MSMD02□P1□, S1□
	FMA-CN02		HC-KFS-410	MSMD04□P1□, S1□
	FMA-CN03, 04, 05		HC-MFS23(B)	MQMA01□P1□, S1□
SPI(H) 090 SPIFH 090 SPL(H) 090 SPLFH 090	FMA-CN04A	APM-SC04A	HC-KFS73(B)	MAMA082P1□, S1□
	FMA-CN06	APM-SC06A	HC-MFS73(B)	MSMD08□P1□, S1□
	FMA-CN08	APM-SC08A	HC-UFS-23(B)	MQMA02□P1□, S1□
	FMA-CN10	APM-SC10A	HC-UFS-43(B)	MQMA04□P1□, S1□
	FMA-KN03, 05, 06, 07	APM-SC03, 05, 06, 07D		
SPI(H) 115 SPIFH 115 SPL(H) 115 SPLFH 115	FMA-CN09, 15, 22, 30	APM-SE09A, 15A	HC-LFS-52(B)	MSMA302P1□, S1□
	FMA-KN06A, 11, 16, 22	APM-SE22A, 30A	HC-LFS-102, 152(B)	MSMA402P1□, S1□
	FMA-TN05, 09, 13, 17	APM-SE06D, 11D	HC-SFS-81, 52(B)	MSMA502P1□, S1□
	FMA-LN03, 06, 09, 12	APM-SE16D, 22D	HC-SFS-102, 152(B)	MDMA102P1□, S1□
	FMA-KF08, 10, 15	APM-SE05G, 09G	HC-SFS-53, 103(B)	MDMA152P1□, S1□
	FMA-TF05, 09, 13	APM-SE13G, 17G	HC-SFS-153(B)	MDMA202P1□, S1□
	FMA-LF03, 06, 09	APM-SE03M, 06M	HC-SFS-524(B)	MDMA302P1□, S1□
		APM-SE09M, 12M	HC-SFS-1024(B)	MGMA092P1□, S1□
			HC-SFS-1524(B)	MFMA042P1□, S1□
			HC-RFS-353(B)	MHMA062P1□, S1□
SPIH 142 SPIFH 142 SPLH 142 SPLFH 142 (1 Stage)	FMA-CN30A, 50A	APM-SF30A, 50A	HC-LFS-202, 302(B)	MGMA202P1, S1□
	FMA-KN22A, 35	APM-SF22D, 35D	HC-SFS-121(B)	MGMA302P1, S1□
	FMA-TN20, 30	APM-SF20G, 30G	HC-SFS-201, 202(B)	MFMA152P1, S1□
	FMA-LN12A, 20, 30	APM-SF12M, 20M	HC-SFS-203(B)	MHMA202P1, S1□
	FMA-KF22, 35		HC-SFS-301, 352, 353(B)	MHMA402P1, S1□
	FMA-TF20, 30		HC-SFS-2024(B)	
	FMA-LF12, 20, 30		HC-SFS-3524(B)	
SPIH 180 SPIFH 180 SPLH 180 SPLFH 180 (1단)	FMA-KN55	APM-SF55, 75D	HC-SFS-502(B)	MDMA502P1, S1□
	FMA-TN44, 55	APM-SF44, 60G	HC-SFS-702(B)	MDMA752P1, S1□
	FMA-LN40	APM-SF40M	HC-SFS-5024(B)	MHMA502P1, S1□
	FMA-KF50		HC-SFS-7024(B)	MHMA752P1, S1□
	FMA-TF44			MGMA451P1, S1□
SPIH 220 SPIFH 220 SPLH 220 SPLFH 220 (1단)		APM-SG22, 35, 55, 75, 110D	HC-UFS-202(B)	MFMA252P1, S1□
		APM-SG20, 30, 44, 60G	HC-UFS-352(B)	MFMA452P1, S1□
		APM-SG85, 110, 150G	HC-UFS-502(B)	
		APM-SG12, 20, 60M		

Note) 1. See also 「How to select gearheads 1」 (32 Page) by servo motor capacity.

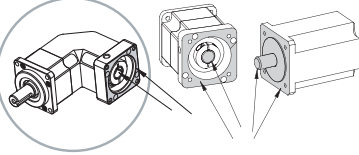
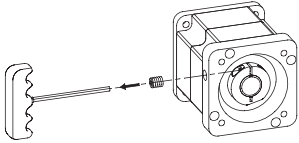
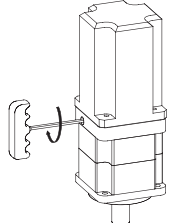
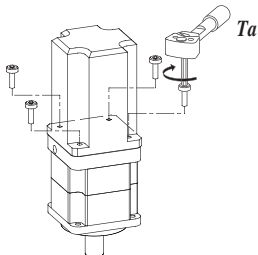
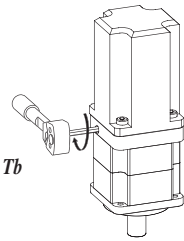
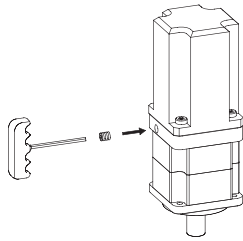
2. Check again specifications and dimensions of the servo motor of the maker after selecting the servo motor.

3. The model names of the above servo motors are arranged by reference to catalogues of each manufacturer, and for more details, contact the manufacturer.

Rockwell	Sanyo	Yaskawa	Fuji
CSMT-A3□□,A5□□,01□□	Q1AA04003D,005D	SGMAH-A3, A5, 01A	GYS500DC1-S8B (B)
SMZ-A3□□,A5□□,01□□	Q1AA04010D	SGMAH-A3, A5, 01B	GYS101DC1-SB (B)
RSMZ-A3□□,A5□□,01□□	Q1EA04003D,005D	SGMAS-A5, 01, C2A	
RSMZ-A8□□	Q1EA04010D	SGMAV-01A, C2A	
	R2AA04003F,05F	SGMJV-A5, 01A	
	R2AA04010F	SJME-01A	
CSMT-02□□,04□□	Q1AA06020D	SGMAH-02A, 02B, 03D, 04A	GYS101DC1-SA (B)
CSMR-01□□	Q2AA06040D	SGMAS-02, 04, 06A	GYS201DC1-SA (B)
CSMZ-02□□,04□□	Q1EA06020D	SGMAV-02, 04, 06A	GYS401DC1-SA (B)
CSMQ-01□□	R2AA06010F	SGMJV-02, 04A	
RSMZ-02□□,04□□	R2AA06020F	SGMPH-01A, 01B	
RSMZ-06□□,08□□,10□□	R2AA06040F	SGMPS-01A	
RSMQ-01□□		SJME-02, 04A	
CSMT-06□□,08□□	Q1AA07075D	SGMAH-07D, 08A	GYC201DC1-SA (B)
CSMR-02□□,04□□	Q2AA07020D	SGMAV-08, 12A	GYC401DC1-SA (B)
CSMZ-07□□	Q2AA07030D	SGMAV-08, 10A	GYS751DC1-SA (B)
CSMQ-02, 04□□	Q2AA07040D	SGMGV-03A, 03D, 05A, 05D	
RSMQ-02, 04□□	Q2AA07050D	SGMJV-08A	
	Q2EA07020D	SGMPS-02, 04A	
	R2AA08020F,40F,75F	SGMSh-10, 15, 20A(D)	
CSMD-07,10,15,20,25,30□□	Q1AA13300D	SGMGH-03, 05, 06, 09, 13A(D)	GYC102DC1-SA (B)
CSMS-30,35,40,45,50□□	Q1AA13400D	SGMGV-09, 13, 20A(D)	GYC152DC1-SA (B)
CSMH-05,10,15□□	Q1AA13500D	SGMPH-08, 15A(D)	GYC202DC1-SA (B)
CSMF-04□□	Q2AA13050H	SGMPS-08, 15A	GYA501BC1-SA (B)
CSMK-03,06,09□□	Q2AA13100H	SGMSh-30, 40, 50A(D)	GYA152BC1-SA (B)
RSMH-08,10,15,20,25,30□□	Q2AA13150H	SGMSS-30, 40, 50, 70A	GYA252BC1-SA (B)
RSMH-05,10,15□□	Q2AA13200H	SGMSV-30, 40, 50A(D)	GYS302DC1-SA (B)
RSMS-30,35,40,45,50□□	Q2CA13200H		GYS402DC1-SA (B)
RSMF-04□□			GYS502DC1-SA (B)
RSMK-03,06,09□□			
RSML-03,06,09□□			
CSMH-20, 30, 40□□	Q2AA18200H	SGMGH-12, 20, 30A(D)	
CSMF-08, 15□□	Q2CA18350H	SGMGV-30A, D	
CSMK-12, 20, 30□□	Q2AA18350H		
RSMH-20, 30, 40□□			
RSMF-08, 15□□			
RSMK-12, 20, 30□□			
RSML-12, 30□□			
CSMD-45, 50□□	Q1AA18450M	SGMGH-40, 44, 55, 75A	
CSMH-50□□	Q1AA18350H	SGMGH-44, 55, 75D	
CSMK-45, 60□□	Q2AA18450H	SGMGV-44, 55, 75A	
RSMH-45, 50□□	Q2AA18550R	SGMGV-44D	
RSMH-50□□	Q2AA18550H		
RSMK-45, 60□□	Q2AA18450L		
RSML-45, 60□□	Q2CA18450H		
CSMF-25,35,45□□	Q2AA22250H,Q2AA22350H	SGMDH-22, 32, 40A	
RSMF-25,35,45□□	Q2AA22450R	SGMDH-1AA, 1AD, 1EA, 1ED	
	Q2AA22550B	SGMGV-1AA, 1EA	
	Q2AA22700S		
	Q2AA2211KV,Q2AA2215KV		
	Q2CA22550H, Q2CA22700H		

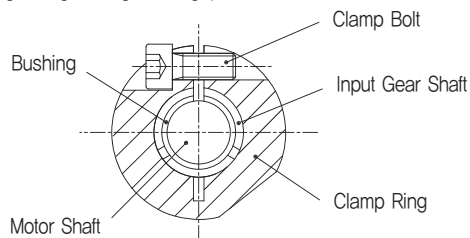
How to mount the servo motor

■ Mounting Instructions

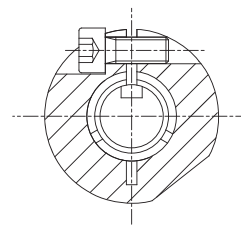
		
<p>1 Brush away and clean out any foreign substances on the surface after verifying the size of the motor and the gearhead. (Check the shaft diameter, use appropriate bushing if necessary)</p>	<p>2 Remove the screw plug from the adapter flange and adjust the position so that the clamp bolt is noticable. (See 「Appendix 1」.)</p>	<p>3 When mounting onto the motor, closely adhere the adapter flange of the gearhead and the motor mounting side and slightly tighten the clamping bolt so that the clamp ring not idle.</p>
		
<p>4 Bolts diagonally tighten based on the standard Ta. (See 「Appendix 2」.)</p>	<p>5 Tighten the clamp ring based on the standard Tb. (See 「Appendix 2」.)</p>	<p>6 Tighten the screw plug.</p>

■ Appendix 1 Proper servo motor shaft fixation method

If the servo motor shaft does not have a round shape but key way, remove the key and make sure that the key way of the servo motor shaft and the clamp bolt of the gearhead input shaft can be perpendicular as shown in 「Fig. B」 at mounting. Also, arrange each slot position of the Clamp Ring, the Input Gear Shaft, and the Bushing in a line to get higher tightening power.



(Figure A) Motor shaft without key



(Figure B) Motor shaft with key