

[Yaskawa] Driver Auto Tuning.

본 Technical Note는 Yaskawa사의 SigmaWin+을 사용한 Auto Tuning 참고 문서입니다.

1. 상단 Menu -> Tuning 선택합니다.

SigmaWin+ AXIS#21 : SGDV-R90A21A Sign	naV Component	COMPACT NAME	and the second second second	
File(E) Parameters(U) Alarm(A) Monitor(N	/) Setup(<u>S</u>) Trace() Tuning(<u>G</u>)	Test Run(R) Edit Table(I) Solu	ution(O) Help(<u>H</u>)	
🗸 🕅 🎿 📲 🔕 🚇 🚍 🖷 🚳 🛎 🛎	💽 🕄 🗐 🔒 📈 🖓 🎹 Tuning(g 🔽 🎭 🖏 🕞 🕼 🤇	0 🚵 🛒 📇 🎦 🖼 😵 🕻	
× <u>_</u>				
Motor Power on Position Reference Motor Running Position	Main Circuit M	otor running (RUN)		

▶ Tuning Mode 들어가기 전 Servo Off 상태에서 실행합니다.

WARNING			
This function executes to carefully read the Signal	ning for the Servispack. Using this Vin+ Operation Manual before exe	function while the motor is running is dan cuting this function. Special care must be	gerous. Be sure to taken for the following
Satety Precautions>			Chier Pro-
Defore executing this fun	coor, make sure that the energen	cy stop (power off) can be actuated who	an needed.
Before executing this fund	clion, make sure that the emergence	cy stop (power off) can be activated whe	n needed.
Continuitie safety of the	area adjusted the drive unit		
Before executing this fund	ction, always confirm that the area	within the motor motion range	
and direction is clear for a	safe operation. Provide protective :	devices to ensure safety in	
the event of overtraveling	or other unexpected movement.		
Always confirm that then	e le no position error before runni	ig the mater	
Be sure to return to the pr	rigin and reset the postion prior to	normal operation.	
Running the motor without	Eresetting the origin can lead to an	overrun and is extremely dangerous.	
When the moment of mer	tia (mass) identification function is	used for a vertical axis, check the safety	of the system.
When the moment of item	ia (masa) identification function is	used for a vertical axis,	
confirm that the axis level	does not drop when the servo is	turned off.	
Tuning Precautione>			
Set the moment of merca	(mann) ratio first		
The moment of interfak (ma	asa) ratio must be set to achieve o	orrect tuning	
the sure to set the rate. It	is setting can be performed intent	the surring window.	
If vibration is generalist.	esecute custom tuning		
Lower the gain until there	is no vibration by executing custo	m tuning.	
icle: While tuning, you can	read the precautions related to the	r process.	
Click the Precautions I	button provided in each tuning win	dow.	
	the second se		



- 2. Moment of Inertia ratio Setting
 - 1) Execute 선택합니다.

Tuning	×
Set the moment of inertia (mass.) ratio before executing autotuning.	Precautions
Moment of inertia (mass) ratio identification	
Execute.	
334 % Edit	
Autotuning	
Reference input from host controller	
Autofuning	
C No reference input] -
Advanced adjustment	Finish

2) Test 환경 설정.



■ Motor가 구동하는 Test이니 간섭이 최대한 없는 위치로 이동 후 진행하십시오.



- 3) Test 진행.
 - ① Start를 선택합니다.



② Next를 선택합니다.



③ Servo On을 선택합니다.





④ Forward를 선택합니다.



⑤ Forward 진행이 완료되면 Reverse를 선택합니다.



⑥ Reverse 진행이 완료되면 Forward를 선택합니다. (Next 버튼이 활성화될 때까지 반복Test 니다.





⑦ 반복 Test가 완료됐으면 Next를 선택합니다



⑧ 관성비가 구해졌으면 Writing Result 선택으로 Driver에 적용시킵니다.



⑨ Finish 선택합니다.





10 Parameter가 정상적용 될 수 있도록 Software Reset 합니다.

The software reset function will be executed. The Servopack will stop responding for approximately 5 seconds after the fuction begins.
0%

- 3. Auto Tuning
 - 1) Auto Tuning Mode
 - ① Position reference input: 상위 컨트롤러로 구동 진행하며 Tuning 진행
 - ② No reference input: Driver 내에서 구동 진행하여 Auto Tuning 진행

Tuning	
Set the moment of inertia (mass) ratio before executing autotuning.	Precautions
Moment of inertia (mass) ratio identification	
Pn103 : Moment of Inertia Ratio	
Execute.	
334 % Edit	
•	
Autotuning	
Reference input from host controller	
Autotuning	-
io reference input	
Advanced adjustment	Finish

Mode 선택 후 Auto Tuning 선택.



- 2) Tuning 진행
 - ① Servo On을 선택합니다.

Waiting for execution	-Servo ON/OFF operation	Servo ON
	Servo (
Oscillation level		
	Tuning	
		Start tuning
Gain search behaviour evaluation		-
		~
Trains searched		
Tuning completed	Mode selection	
Tuning completed	Mode selection 1:Standard	
Tuning completed	Mode selection 1:Standard Mechanism selectio	n
Tuning completed	Mode selection 1:Standard Mechanism selectio 2:Ball screw mecha	n anism or linear motor
Tuning completed	Mode selection 1:Standard Mechanism selectio 2:Ball screw mecha Distance	n anism or linear motor
Tuning completed	Mode selection 1:Standard Mechanism selectio 2:Ball screw mecha Distance 30000	n anism or linear motor [reference units]
Tuning completed Notch filter Anti-res Adj Vib Suppress	Mode selection 1:Standard Mechanism selectio 2:Ball screw mecha Distance 30000 3.0	n anism or linear motor [reference units] [Rotation]

② Start Tuning을 선택하여 Tuning을 진행합니다.

27/17/2017 XX	Servo ON/OFF ope	eration	
Waiting for execution		Servo OFF	
	O Se		
Oscillation level			
measurement			
	-		
Gain search behaviour evaluation		Start tuning	9
Tuning completed	Mode selection		
	1:Standard	<u>.</u>	
	Mechanism sel	ection	
	2:Ball screw m	echanism or linear motor	1
	Distance		
		[reference units]	
Notch filter	30000	[reference units]	

- Position reference input: 상위 컨트롤러로 +/- Jog 이동하여 Tuning 진행
- No reference input: Driver 내에서 Auto Tuning 진행.



③ Tuning 진행 상태

	Servo ON/OFF operation
Vaiting for execution	Servo OFF
	Servo ON
Oscillation level	
medaurement	_ Tuning
Gain search behaviour evaluation	Cancel
	4
-	
Tuning completed	Mode selection
Tuning completed	Mode selection 1:Standard
Tuning completed	Mode selection 1:Standard Mechanism selection
Tuning completed	Mode selection 1-Standard Mechanism selection 2-Ball screw mechanism or linear motor
Tuning completed	Mode selection 1:Standard Mechanism selection 2:Ball screw mechanism or linear motor Distance
Tuning completed	Mode selection 1:Standard Mechanism selection 2:Ball screw mechanism or linear motor Distance 30000 [reference units]

④ Tuning 완료.

Waiting for execution	Servo ON/OFF Operation
Oscillation level measurement	-
	Tuning
Gain search behaviour evaluation	Start tuning
Tuning completed	Mode selection
Tuning completed	Mode selection 1:Standard
Tuning completed	Mode selection [1:Standard Mechanism selection
Tuning completed	Mode selection 1:Standard Mechanism selection 2:Bail screw mechanism or linear motor Distance
Tuning completed	Mode selection 1:Standard Mechanism selection 2:Ball screw mechanism or linear motor Distance 30000 [reference units]

