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ISO9001:2015
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※It is subject to change without notice due to design change etc. Please contact us for the latest information.

Nut runner GSK・GKL General catalog

GIKEN INDUSTRIAL CO.,LTD.

Nut runner
GSK・GKL General catalog

GIKEN

2018.4

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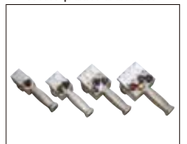
Operation handle with push button
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Nut runner simplified setting flowchart

STEP ①	STEP ②	STEP ③	STEP ④	STEP ⑤	
Tightening accuracy	Tightening cycle	Equipment / work conditions	Other	Environmental resistance	
				Vibration and others are few and the environment is good	The environment is severe due to many vibration and so on

Under 3% GSK controller

- The pitch between axes is wide
  - Yes → Straight type
    - ANZM → P.15
    - ANZMC → P.17
    - ANZRC → P.41
  - No → Offset type
    - ANZM-SFFT → P.19
    - ANZMC-SFFT → P.21
    - ANZRC-SFFT → P.43
    - ANZM-L → P.23
    - ANZMC-L → P.23
    - ANZRC-L → P.45
- There is a margin in cycle time
  - Yes → There is a margin in the mounting height of the nut runner
    - Yes → High speed straight type
      - ANZMH → P.25
      - ANZMCH → P.27
      - ANZRCH → P.47
    - No → High speed short type
      - ANZMSH → P.29
      - ANZRSH → P.49
  - No → High speed seating tightening required
    - Yes → Small clutch built-in type
      - ANZMCTH → P.33
    - Yes → Ball clutch built-in type
      - ANZMKH → P.31

Under 12% GKL controller

- The pitch between axes is wide
  - Yes → Straight type
    - ANM → P.91
    - ANR → P.95
  - No → Offset type
    - ANM-L → P.93
    - ANR-L → P.97

GSK torque sensor control nut runner system

Items

◆Outline of system

■"GSK"is a system that enables various types of tightening for a lot of models of objects to be tightened at high accuracy and high speed by torque sensor control.

◆ANZM(R)type nut runner

■Equipped with torque sensor to enable high-accuracy tightening.
■Nut runners meeting the needs of customer are lined up by expanding various series.
■For the rotation frequency, low rotation to high rotation can be arbitrarily set.
■Wide torque range from low torque to high torque is prepared for various models.
■For the torque sensor, resistance to noise is improved to realize high reliability of torque accuracy.
■Amplifier case for torque sensor is downsized to enable narrow-pitch tightening.

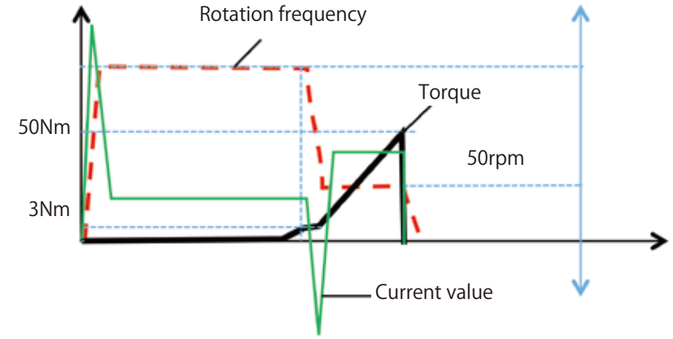
◆Interface unit (Common to series)

■The interface unitis a device communicating with an external unit such as sequencer, display, setting PC, and printer.
■GSK system can display the information related to tightening control such as setting data and tightening result by connecting PC to IF unit.
■ANYBUS supports various fieldbuses
■The interface unit is equipped with communication function supporting single axis and multi-axis controller 1-axis to 30-axis and 1 unit is attached to 1 set. (in case of 31-aixs or more, 2units are required.)
■Confirmation result data can be confirmed without connection with PC by connecting the dedicated printer.

◆Controller unit

■Tightening torque accuracy　3σ±2%
■Screw failure / seizure judgment by waveform integration operationis newly added.
■Torque sensor and deceleration part are checked before starting operation at every tightening for high reliability.
■Various tightening patterns can be easily implemented by setting rotation frequency and torque control with program.
■For the setting of tightening program, two patterns of setting methods; setting PC and full screen panel of controller are available.
■The cost performance can be improved by using GSKW (2-axis controller)for low-torque section.

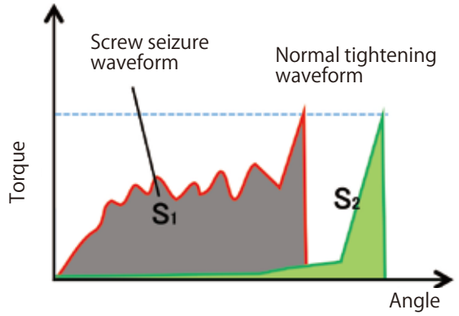
■Advanced mechanism and control realize the high-speed seating



Combination use of high-speed nut runner equipped with advanced mechanism (patented) assures the stable tightening accuracy even at high-speed (1,000rpm) seating.

Combination with positioning control function enables high-speed flexible control.

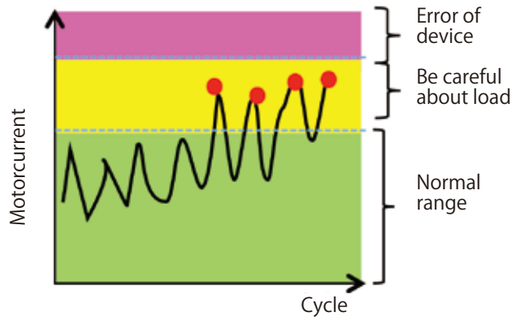
■Screw defect judgment/seizure judgment by waveform integration operation(Patent-pending)



Status of screw is judged by conducting integral computation for torque waveform and comparing the areas.
(S1≫S2)

Tightening cycle can be considerably shortened because the existing technology, inversion judgment is not necessary.

■Predictive maintenance function is mounted on the nut runner for the first time



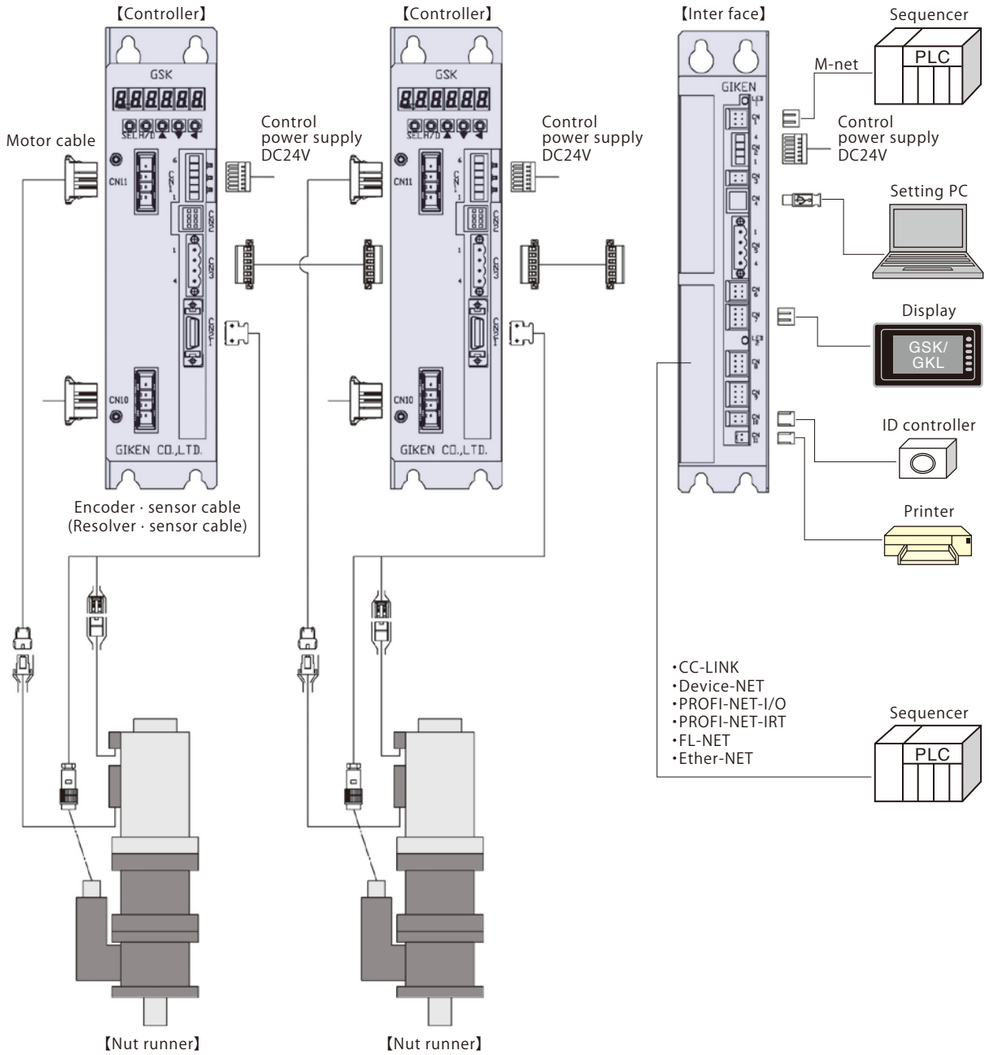
Prediction is output before stop by alarm of device error utilizing the status monitoring.

Stop of equipment due to failure can be prevented by forecasting heat generation of motor, degradation of bearing, damage of reduction gear etc. and outputting protection warning and outputting the life alarm of consumable parts mounted on controller such as capacitor, relay, EEPROM.

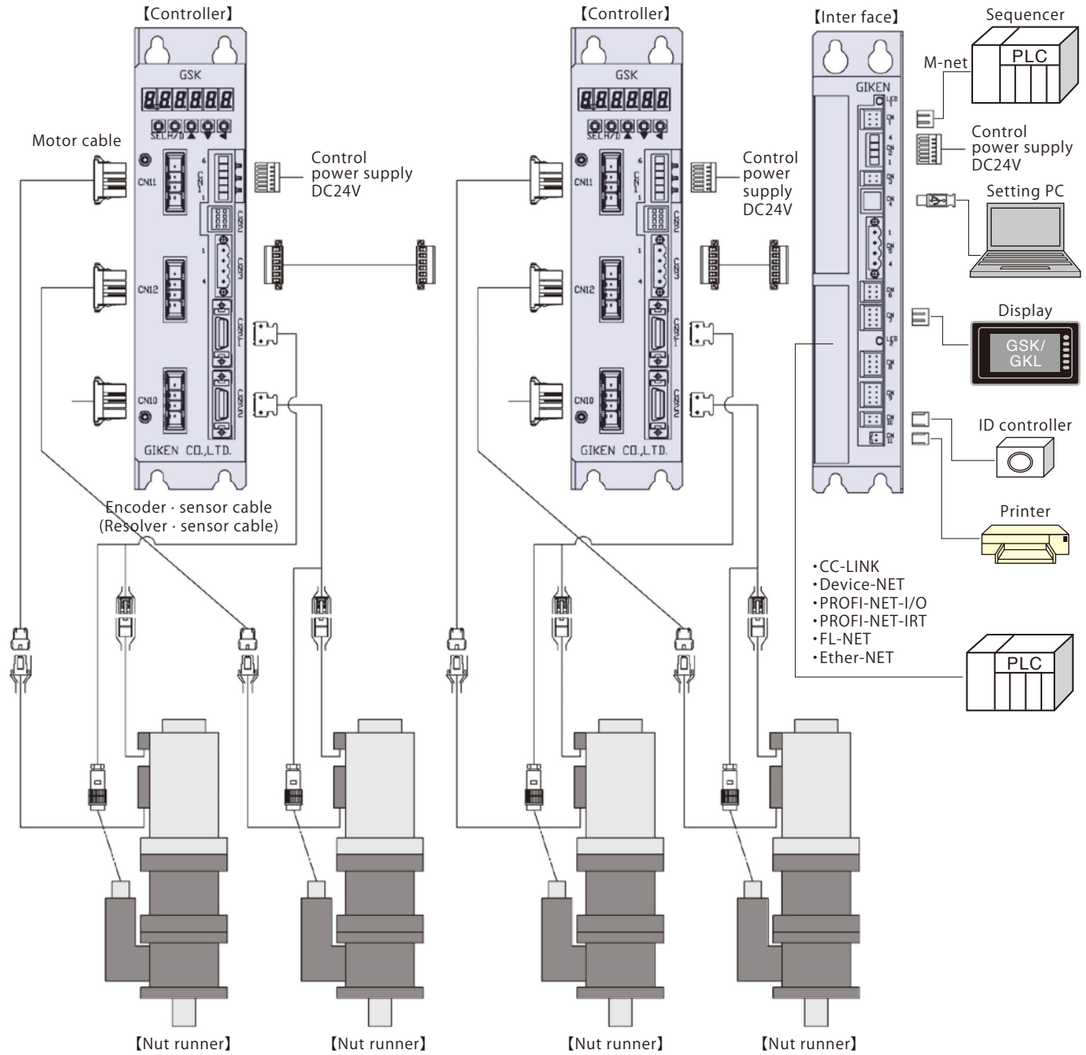
■Globalization of communication is supported

・M-NET
・CC-LINK
・Device-NET
・PROFI-NET-I/O
・PROFI-NET-IRT
・FL-NET
・Ether-NET
communication can be supported

■GSK system configuration



■GSKW system configuration



◆Nut runner model composition

AN Z M H – 400 SFFT

① ② ③ ④ ⑤ ⑥ ⑦

①Controlle type

Blank：Current sensor control
Z ：Torque sensor control

②Angle sensor type

M ：Encoder
R ：Resolver

※Resolver specification is semi-ordered.

③Torque sensor type

Blank：Standard
C ：Small size torque sensor amplifier

④Nut runner type

Blank：Standard
H ：High speed
SH ：Short high speed
KH ：Built-in ball clutch
TH ：Built-in small clutch

⑤Torque division

Notation unit kgf･cm

⑥Special symbol A

Blank：Standard
KS ：Amplifier case mounting changed angle

⑦Special symbol B

Blank：Straight type
SFFT：Built-in offset type
L ：External offset type
S ：Drive square size down
E※ ：Angle sensor high resolution type

※Angle sensor specifications are included in the column.

◆Series list

Series	Angle sensor type	Features	Specification/Dimension
ANZM	Encoder	Straight type	P.15
ANZMC		Straight type Small torque sensor amplifier	P.17
ANZM-SFFT		Offset type	P.19
ANZMC-SFFT		Offset type Small torque sensor amplifier	P.21
ANZM-L		External offset type	P.23
ANZMC-L		External offset type Small torque sensor amplifier	P.23
ANZMH		High speed straight type	P.25
ANZMCH		High speed straight type Small torque sensor amplifier	P.27
ANZMSH		Short high speed straight type Built-in small torque sensor amplifier	P.29
ANZMKH		High speed straight type Built-in ball clutch and high speed seated	P.31
ANZMCTH		High speed straight type Built-in small clutch and high speed seated	P.33
ANZRC	Resolver	Straight type Small torque sensor amplifier	P.41
ANZRC-SFFT		Offset type Small torque sensor amplifier	P.43
ANZRC-L		External offset type Small torque sensor amplifier	P.45
ANZRCH		High speed straight type Small torque sensor amplifier	P.47
ANZRSH	※1 Resolver specification is semi-ordered.	Short high speed straight type Built-in small torque sensor amplifier	P.49

◆Special nut runner series list

When choosing a special nut runner, please consult each business office.

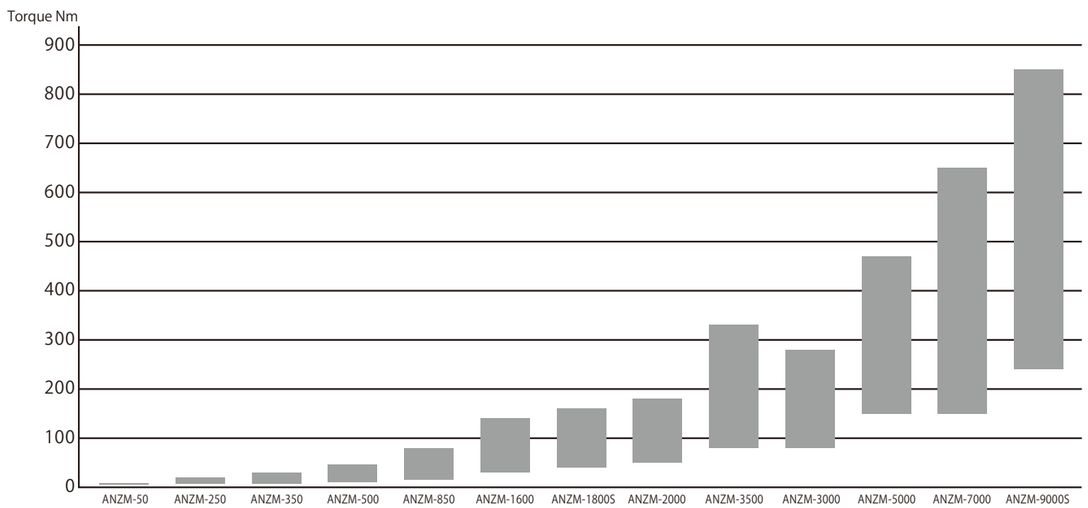
Series	Angle sensor type	Features	Specification/Dimension
ANCKHM(※2)	Encoder	Built-in clutch and high speed seated	P.35
ANZM		Large torque type	P.37
ANZM-SFFT-U		Turning type nut runnner	P.39
ANZMC-KS		Changed amplifier case mounting angle	P.39

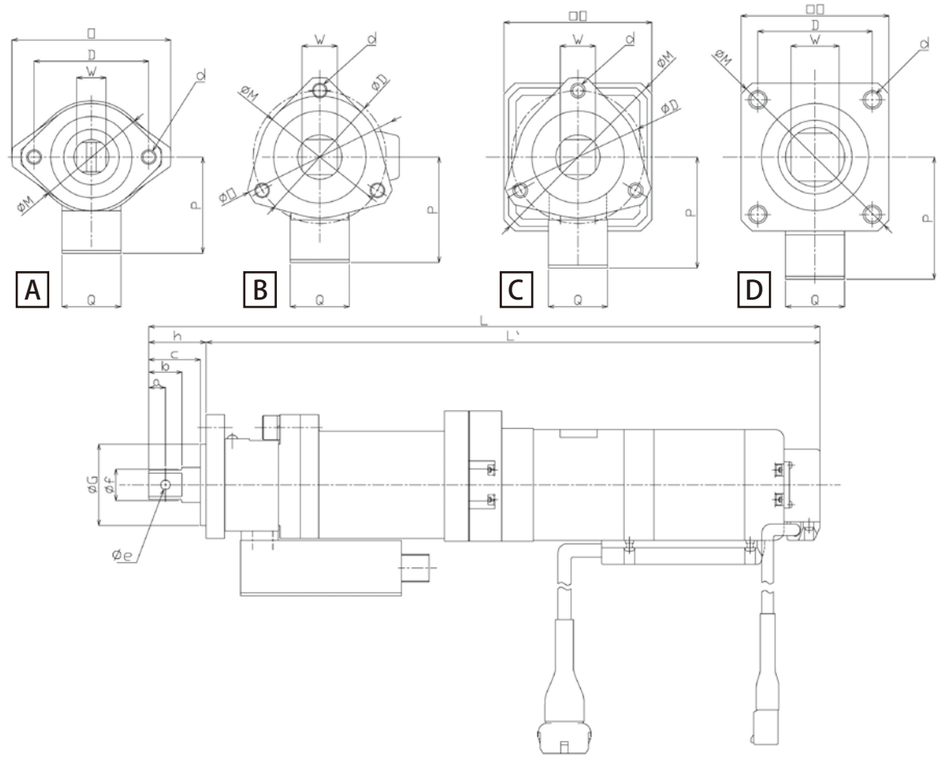
※2 "ANCKHM series" does not apply to the type configuration of the nut runner.

Specification/Dimension Table

■Straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZM-50	4.5	1700	1.0	0.6	AZM-100	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZM-250	20	310	1.6	0.6	AZM-350	
ANZM-350	30	430	2.2	1.2	AZM-350	
ANZM-500	45	310	2.2	1.2	AZM-500	
ANZM-850	80	420	3.9	2.3	AZM-850	
ANZM-1600	140	420	5.0	4.5	AZM-1500	GSK-15(T5)-E-N2 GSKW-15(T5)-E-N2
ANZM-1800S	160	420	5.0	4.5	AZM-2000	
ANZM-2000	180	290	5.8	4.5	AZM-2500	
ANZM-3500	330	200	10.0	4.5	AZM-4000	
ANZM-3000	280	235	9.0	8.5	AZM-4000	
ANZM-5000	470	250	10.5	8.5	AZM-7500	GSK-17(T7)-E-N2
ANZM-7000	650	175	10.5	8.5	AZM-7500	
ANZM-9000S	850	130	13.9	8.5	AZM-12000S	



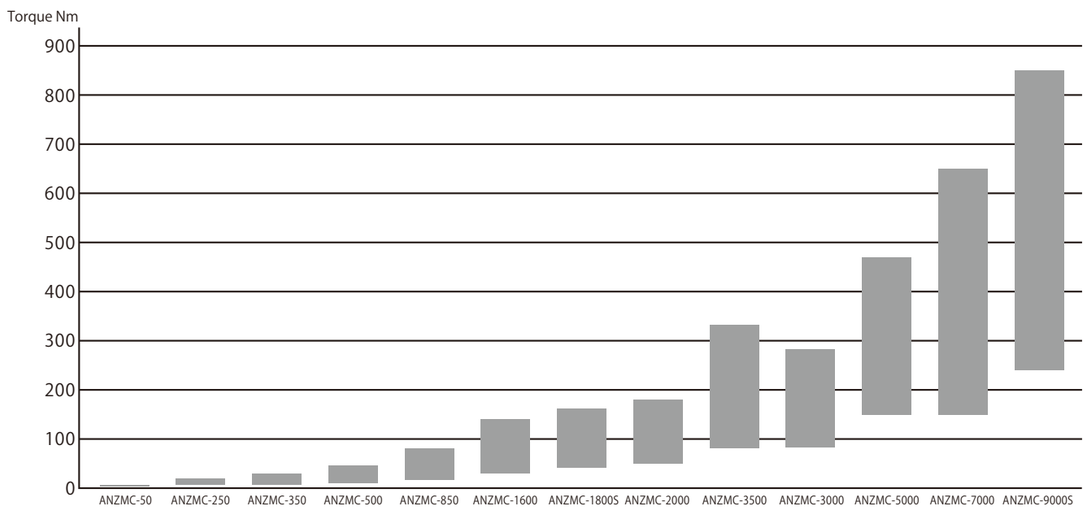


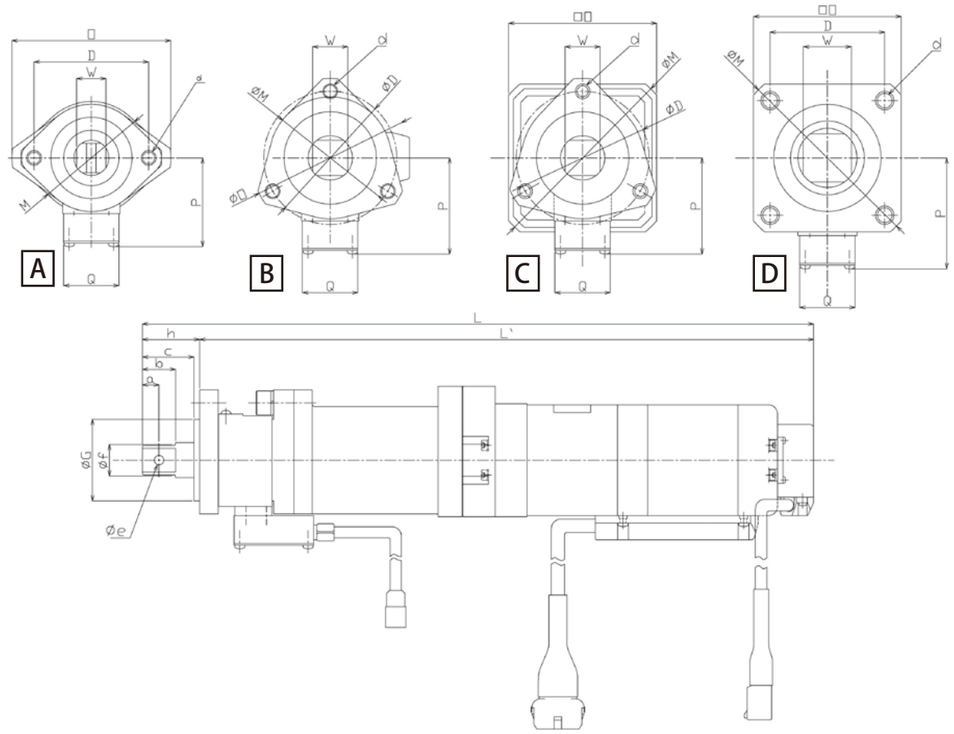
Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	P	Q	W Reference dimension
ANZM-50	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	201.4	180.4	21	42	64	52	32	9.52
ANZM-250	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	231.9	210.9	21	42	64	52	32	9.52
ANZM-350	A	8	16	23	51	2-M6	4.2	17	34	-0.025 -0.050	285.1	259.1	26	42	64	52	32	12.7
ANZM-500	A	8	16	23	51	2-M8	4.2	17	34	-0.025 -0.050	285.1	259.1	26	42	66	52	32	12.7
ANZM-850	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	297.9	266.9	31	61	80	60	32	15.87
ANZM-1600	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	60	32	15.87
ANZM-1800S	A	9	18	28	62	2-M10	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	60	32	15.87
ANZM-2000	B	13	25	36	68	3-M8	5.2	24	50	-0.03 -0.05	412.2	373.2	39	61	82	64	32	19.05
ANZM-3500	B	13	25	36	72	3-M8	5.2	24	50	-0.03 -0.05	417.2	378.2	39	66	86	64	32	19.05
ANZM-3000	C	13	25	36	72	3-M8	5.2	24	50	-0.03 -0.05	418.3	379.3	39	105	80	64	32	19.05
ANZM-5000	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	502.3	454.3	48	105	80	72	32	25.4
ANZM-7000	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	502.3	454.3	48	105	80	72	32	25.4
ANZM-9000S	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	494.3	446.3	48	105	80	72	32	25.4

Specification/Dimension Table

■Small torque sensor amplifier straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZMC-50	4.5	1700	1.0	0.6	AZMC-100	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZMC-250	20	310	1.6	0.6	AZMC-350	
ANZMC-350	30	430	2.2	1.2	AZMC-350	
ANZMC-500	45	310	2.2	1.2	AZMC-500	
ANZMC-850	80	420	3.9	2.3	AZMC-850	
ANZMC-1600	140	420	5.0	4.5	AZMC-1500	GSK-15(T5)-E-N2 GSKW-15(T5)-E-N2
ANZMC-1800S	160	420	5.0	4.5	AZMC-2000	
ANZMC-2000	180	290	5.8	4.5	AZMC-2500	
ANZMC-3500	330	200	10.0	4.5	AZMC-4000	
ANZMC-3000	280	235	9.0	8.5	AZMC-4000	
ANZMC-5000	470	250	10.5	8.5	AZMC-7500	GSK-17(T7)-E-N2
ANZMC-7000	650	175	10.5	8.5	AZMC-7500	
ANZMC-9000S	850	130	13.9	8.5	AZMC-12000S	



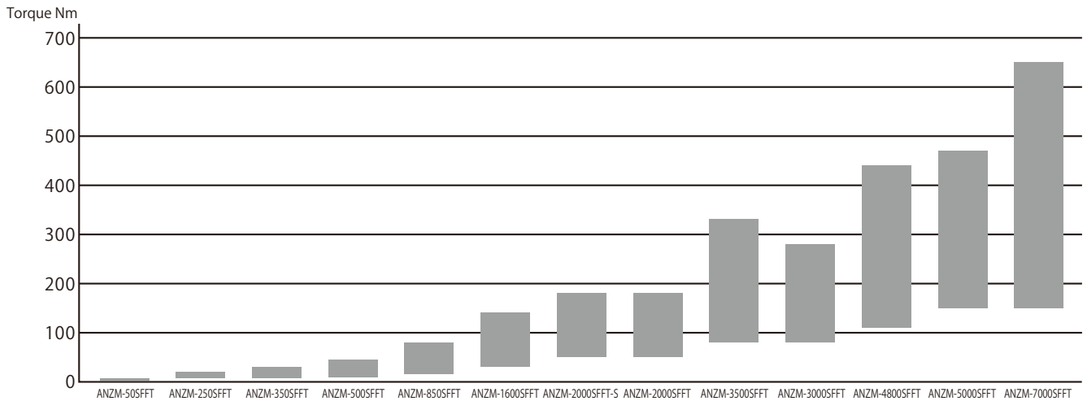


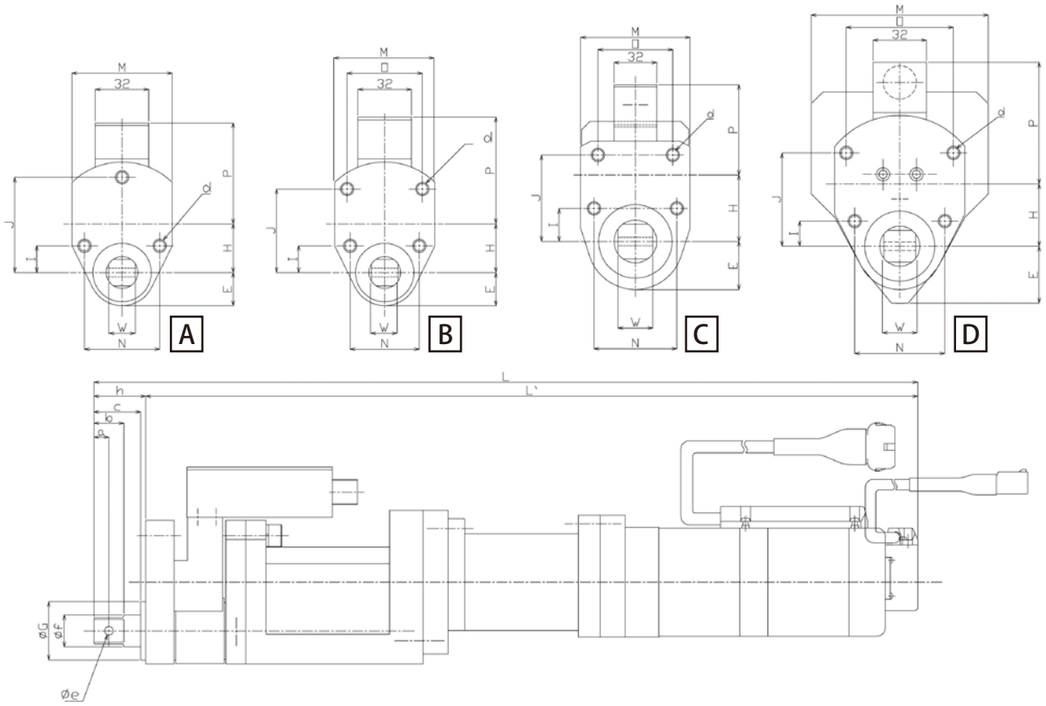
Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	P	Q	W Reference dimension
ANZMC-50	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	201.4	180.4	21	42	64	40	30	9.52
ANZMC-250	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	231.9	210.9	21	42	64	40	30	9.52
ANZMC-350	A	8	16	23	51	2-M6	4.2	17	34	-0.025 -0.050	285.1	259.1	26	42	64	40	30	12.7
ANZMC-500	A	8	16	23	51	2-M8	4.2	17	34	-0.025 -0.050	285.1	259.1	26	42	66	40	30	12.7
ANZMC-850	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	297.9	266.9	31	61	80	48	30	15.87
ANZMC-1600	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	48	30	15.87
ANZMC-1800S	A	9	18	28	62	2-M10	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	48	30	15.87
ANZMC-2000	B	13	25	36	ϕ68	3-M8	5.2	24	50	-0.03 -0.05	412.2	373.2	39	61	82	52	30	19.05
ANZMC-3500	B	13	25	36	ϕ72	3-M8	5.2	24	50	-0.03 -0.05	417.2	378.2	39	66	86	52	30	19.05
ANZMC-3000	C	13	25	36	ϕ72	3-M8	5.2	24	50	-0.03 -0.05	418.3	379.3	39	105	80	52	30	19.05
ANZMC-5000	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	502.3	454.3	48	105	80	60	30	25.4
ANZMC-7000	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	502.3	454.3	48	105	80	60	30	25.4
ANZMC-9000S	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	494.3	446.3	48	105	80	60	30	25.4

Specification/Dimension Table

■Offset type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZM-50SFFT	4.5	1700	1.8	0.6	ZFT-50	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZM-250SFFT	20	310	2.5	0.6	ZFT-351	
ANZM-350SFFT	30	430	2.8	1.2	ZFT-350	
ANZM-500SFFT	45	310	2.8	1.2	ZFT-500	
ANZM-850SFFT	80	420	7.8	2.3	ZFT-850	
ANZM-1600SFFT	140	420	8.9	4.5	ZFT-1500	GSK-15(T5)-E-N2 GSKW-15(T5)-E-N2
ANZM-2000SFFT-S	180	290	9.7	4.5	ZFTS-2500	
ANZM-2000SFFT	180	290	9.8	4.5	ZFT-2500	
ANZM-3500SFFT	330	200	12.5	4.5	ZFT-4000	
ANZM-3000SFFT	280	235	14.7	8.5	ZFT-4000	
ANZM-4800SFFT	440	253	15.0	8.5	ZFT-5500	GSK-17(T7)-E-N2
ANZM-5000SFFT	470	250	23	8.5	ZFT-7500	
ANZM-7000SFFT	650	175	23	8.5	ZFT-7500	



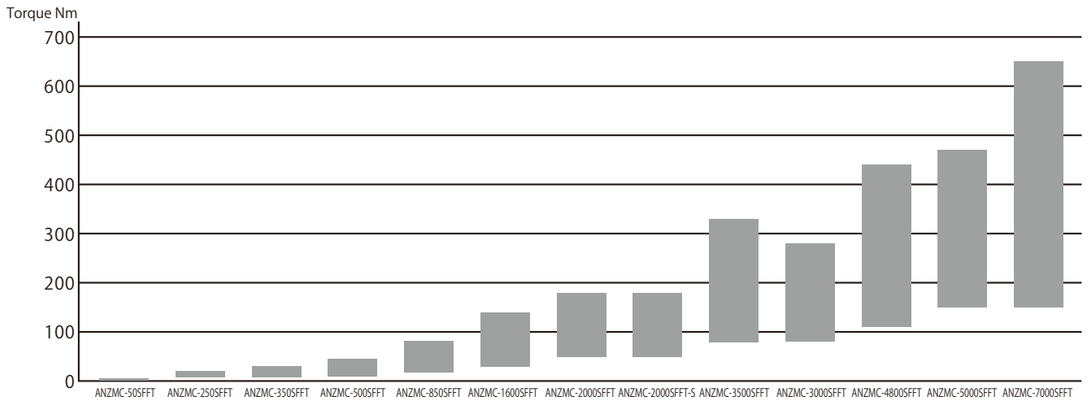


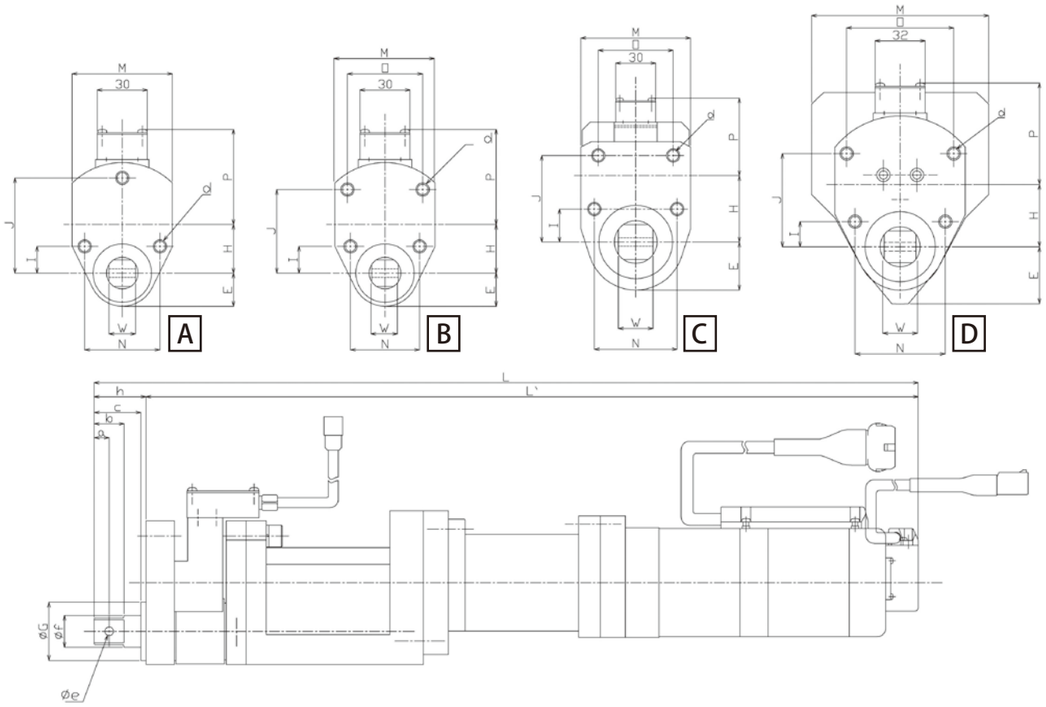
Nut runner model	Shape	a	b	c	l	J	N	d	O	e	f	G Reference dimension	G Tolerance	L	L'	P	h	M	E	H	W Reference dimension
ANZM-50SFFT	A	5	11	19	11	44.5	33	3-M6	–	3.2	12	30	-0.02 -0.04	261.4	239.4	65.5	22	44	15	22	9.52
ANZM-250SFFT	A	5	11	19	12	44.5	38	3-M6	–	3.2	12	28	-0.02 -0.04	312.5	290.5	60.5	22	50	15	22.5	9.52
ANZM-350SFFT	A	8	16	23	12	44.5	38	3-M6	–	4.2	17	30	-0.02 -0.04	364.7	338.7	61.5	26	50	15	22.5	12.7
ANZM-500SFFT	A	8	16	23	13.5	49.5	42	3-M6	–	4.2	17	30	-0.02 -0.04	376.7	350.7	61.5	26	54	17.5	25.5	12.7
ANZM-850SFFT	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	427.9	396.9	68.85	31	60	19.85	29.15	15.87
ANZM-1600SFFT	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	493.2	462.2	68.85	31	60	19.85	29.15	15.87
ANZM-2000SFFT-S	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	530.2	499.2	68.85	31	60	19.85	29.15	15.87
ANZM-2000SFFT	B	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	539.7	500.7	72.73	39	78	26	37.27	19.05
ANZM-3500SFFT	B	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	569.7	530.7	72.73	39	78	26	37.27	19.05
ANZM-3000SFFT	C	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	570.8	531.8	72.73	39	78	26	37.27	19.05
ANZM-4800SFFT	D	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	637.8	598.8	72.73	39	106	26	37.27	19.05
ANZM-5000SFFT	C	14.5	30	44	48	64.7	62	4-M10	56	6.3	32	55	-0.025 -0.050	665.3	617.3	68	48	82	36	49.7	25.4
ANZM-7000SFFT	C	14.5	30	44	48	64.7	62	4-M10	56	6.3	32	55	-0.025 -0.050	665.3	617.3	68	48	82	36	49.7	25.4

Specification/Dimension Table

■Small torque sensor amplifier offset type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZMC-50SFFT	4.5	1700	1.8	0.6	ZFTC-50	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZMC-250SFFT	20	310	2.5	0.6	ZFTC-351	
ANZMC-350SFFT	30	430	2.8	1.2	ZFTC-350	
ANZMC-500SFFT	45	310	2.8	1.2	ZFTC-500	
ANZMC-850SFFT	80	420	7.8	2.3	ZFTC-850	
ANZMC-1600SFFT	140	420	8.0	4.5	ZFTC-1500	GSK-15(T5)-E-N2 GSKW-15(T5)-E-N2
ANZMC-2000SFFT-S	180	290	9.7	4.5	ZFTSC-2500	
ANZMC-2000SFFT	180	290	9.8	4.5	ZFTC-2500	
ANZMC-3500SFFT	330	200	12.5	4.5	ZFTC-4000	
ANZMC-3000SFFT	280	235	14.7	8.5	ZFTC-4000	
ANZMC-4800SFFT	440	253	15.0	8.5	ZFTC-5500	GSK-17(T7)-E-N2
ANZMC-5000SFFT	470	250	23	8.5	ZFTC-7500	
ANZMC-7000SFFT	650	175	23	8.5	ZFTC-7500	



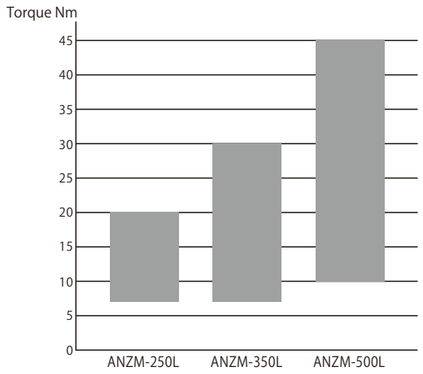


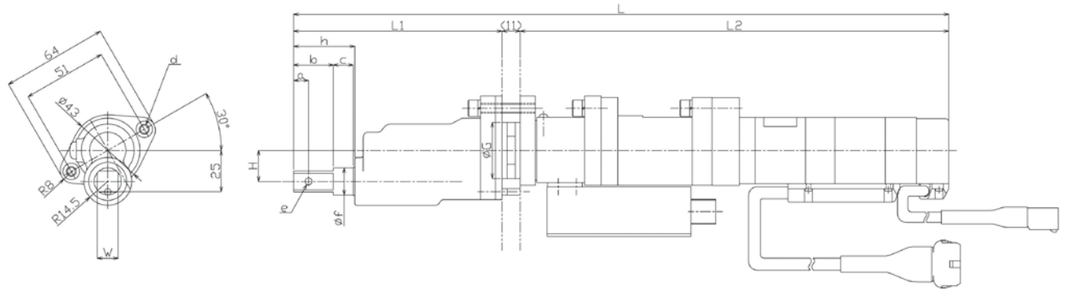
Nut runner model	Shape	a	b	c	I	J	N	d	O	e	f	G Reference dimension	G Tolerance	L	L'	P	h	M	E	H	W Reference dimension
ANZMC-50SFFT	A	5	11	19	11	44.5	33	3-M6	–	3.2	12	30	-0.02 -0.04	261.4	239.4	53.5	22	44	15	22	9.52
ANZMC-250SFFT	A	5	11	19	12	44.5	38	3-M6	–	3.2	12	28	-0.02 -0.04	312.5	290.5	48.5	22	50	15	22.5	9.52
ANZMC-350SFFT	A	8	16	23	12	44.5	38	3-M6	–	4.2	17	30	-0.02 -0.04	364.7	338.7	49.5	26	50	15	22.5	12.7
ANZMC-500SFFT	A	8	16	23	13.5	49.5	42	3-M6	–	4.2	17	30	-0.02 -0.04	376.7	350.7	49.5	26	54	17.5	25.5	12.7
ANZMC-850SFFT	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	427.9	396.9	56.85	31	60	19.85	29.15	15.87
ANZMC-1600SFFT	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	493.2	462.2	56.85	31	60	19.85	29.15	15.87
ANZMC-2000SFFT-S	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	530.2	499.2	56.85	31	60	19.85	29.15	15.87
ANZMC-2000SFFT	B	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	539.7	500.7	60.73	39	78	26	37.27	19.05
ANZMC-3500SFFT	B	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	569.7	530.7	70.73	39	78	26	37.27	19.05
ANZMC-3000SFFT	C	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	570.8	531.8	70.73	39	78	26	37.27	19.05
ANZMC-4800SFFT	D	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	637.8	598.8	60.73	39	106	26	37.27	19.05
ANZMC-5000SFFT	C	14.5	30	44	48	64.7	62	4-M10	56	6.3	32	55	-0.025 -0.050	665.3	617.3	56	48	82	36	49.7	25.4
ANZMC-7000SFFT	C	14.5	30	44	48	64.7	62	4-M10	56	6.3	32	55	-0.025 -0.050	665.3	617.3	56	48	82	36	49.7	25.4

Specification/Dimension Table

■External offset type

Model	Max torque [N·m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZM-250L	20	310	1.8	0.6	AZM-350	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZM-350L	30	430	3.5	1.2	AZM-350	
ANZM-500L	45	310	3.5	1.2	AZM-500	

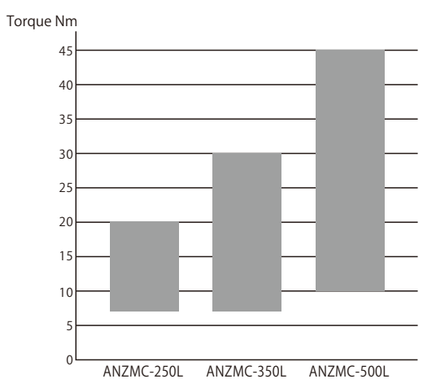


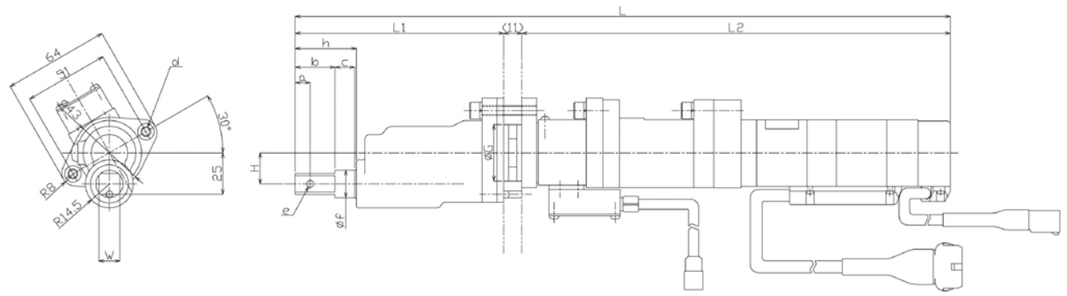


Nut runner model	a	b	c	d	e	f	G		L	L1	L2	h	H	W
							Reference dimension	Tolerance						Reference dimension
ANZM-250L	7.5	21	11	2-M6	3.2	11.5	34	-0.025 -0.050	335.5	117	208	33	18.8	9.52
ANZM-350L	9	24	12	2-M6	4.2	16.5	34	-0.025 -0.050	392.7	126	256	37	18.8	12.7
ANZM-500L	9	24	12	2-M8	4.2	16.5	34	-0.025 -0.050	392.7	126	256	37	18.8	12.7

■Small torque sencer amplifer external offset type

Model	Max torque [N·m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZMC-250L	20	310	1.8	0.6	AZMC-350	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZMC-350L	30	430	3.5	1.2	AZMC-350	
ANZMC-500L	45	310	3.5	1.2	AZMC-500	





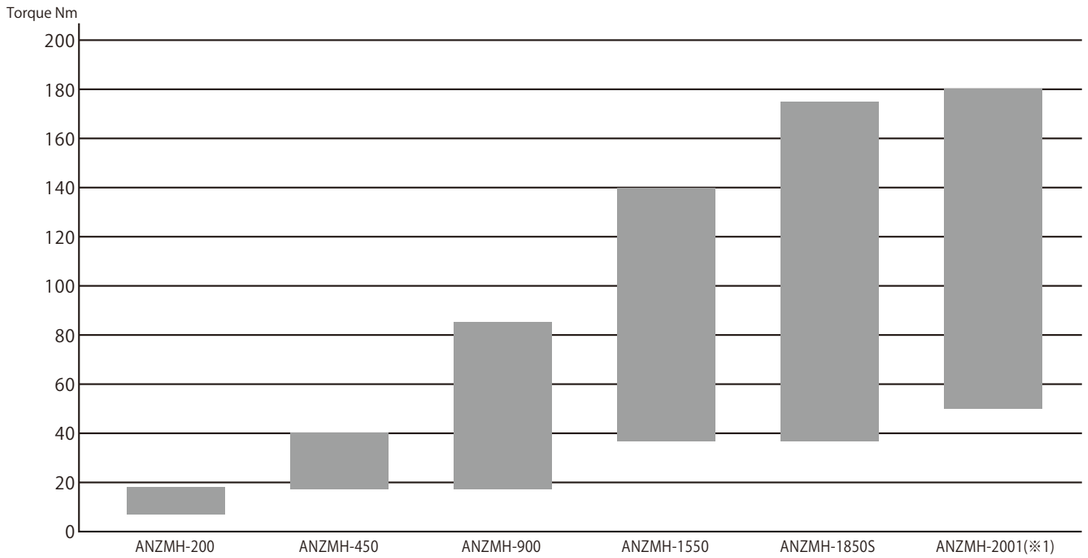
Nut runner model	a	b	c	d	e	f	G		L	L1	L2	h	H	W
							Reference dimension	Tolerance						Reference dimension
ANZMC-250L	7.5	21	11	2-M6	3.2	11.5	34	-0.025 -0.050	335.5	117	208	33	18.8	9.52
ANZMC-350L	9	24	12	2-M6	4.2	16.5	34	-0.025 -0.050	392.7	126	256	37	18.8	12.7
ANZMC-500L	9	24	12	2-M8	4.2	16.5	34	-0.025 -0.050	392.7	126	256	37	18.8	12.7

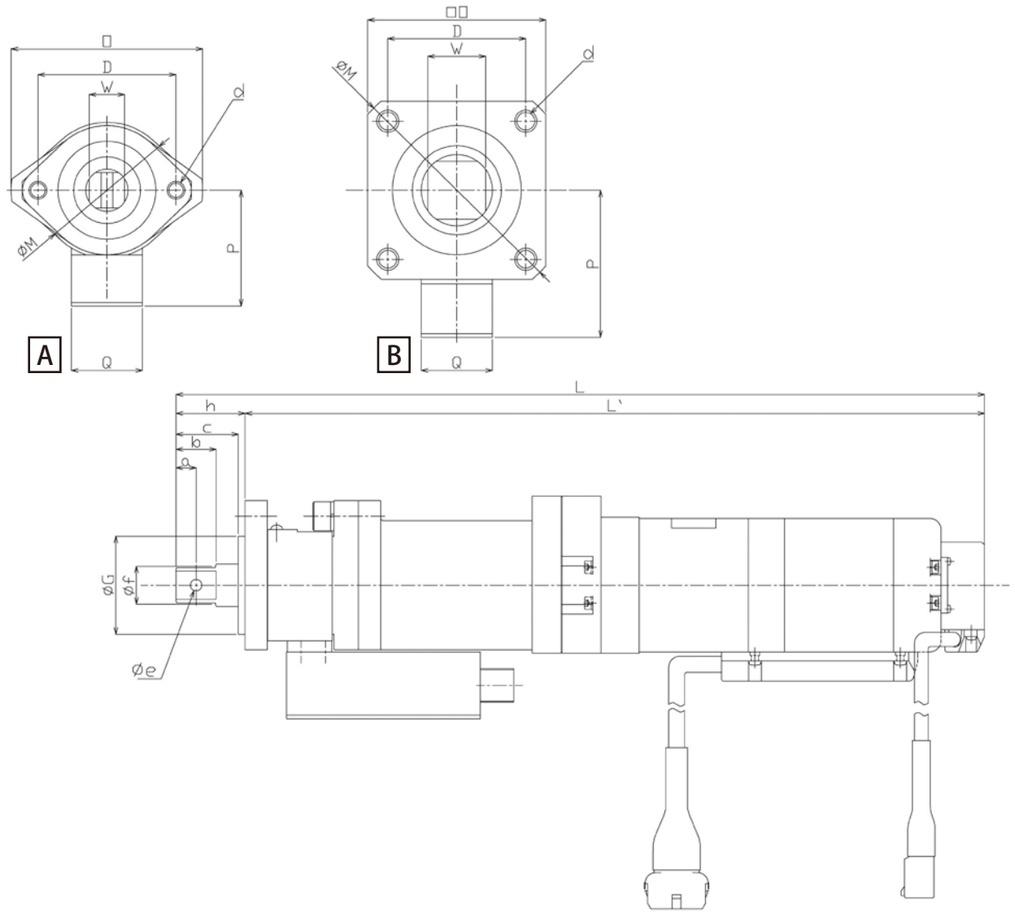
Specification/Dimension Table

■High speed straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZMH-200	18	830	1.6	1.2	AZM-350	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZMH-450	40	840	3.4	2.3	AZM-850	
ANZMH-900	85	840	4.5	4.5	AZM-1500	GSK-15(T5)-E-N2 GSKW-15(T5)-E-N2
ANZMH-1550	140	910	8.5	8.5	AZM-1850	GSK-17(T7)-E-N2
ANZMH-1850S	175	740	9.3	8.5	AZM-1850	
ANZMH-2001(※1)	180	740	9.0	8.5	AZM-2502	

※1 The mnemonic name of the model has changed.Old designation：ANZMH-2000→New designation：ANZMH-2001



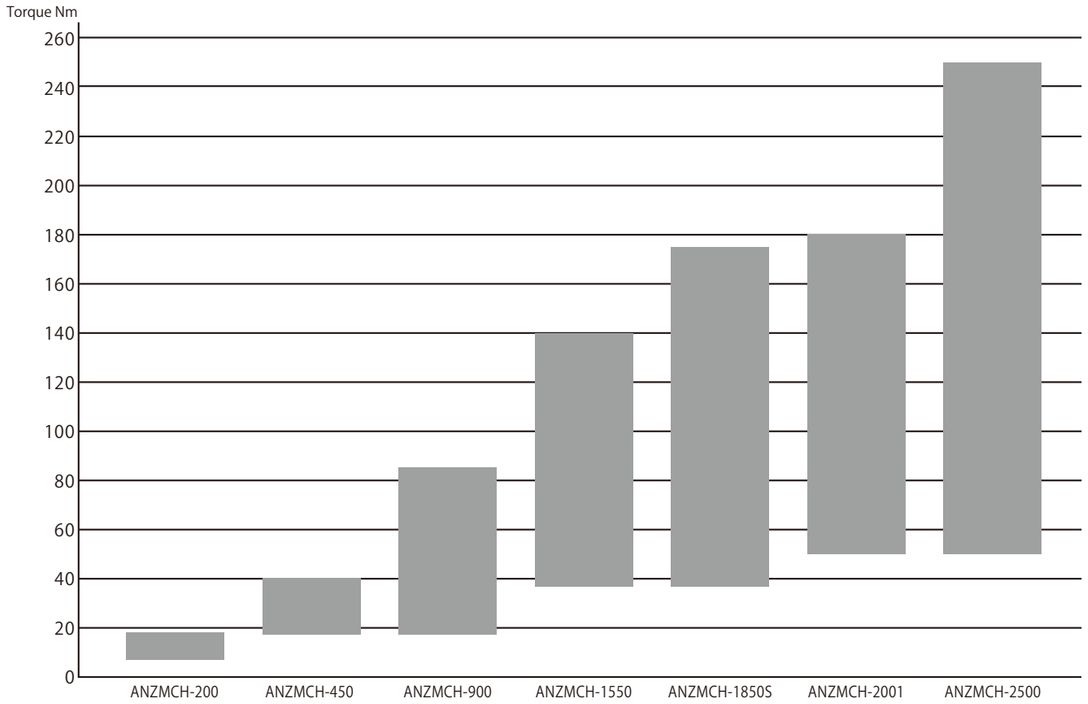


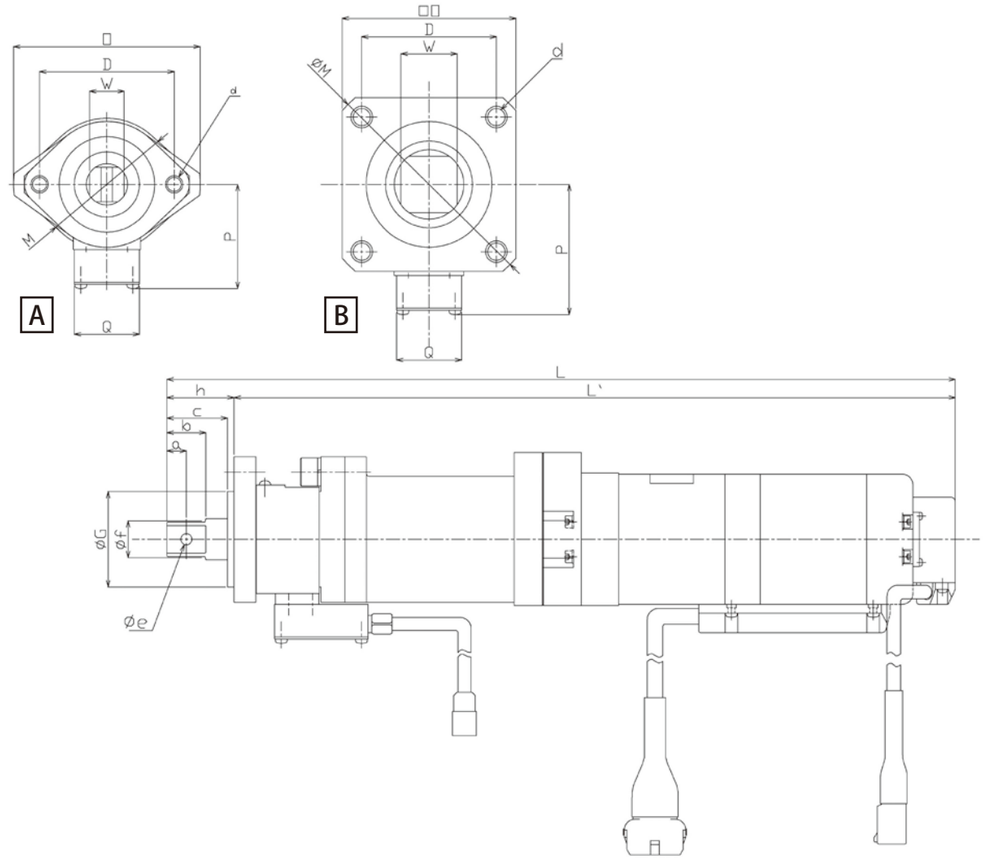
Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	P	Q	W Reference dimension
ANZMH-200	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	280.1	259.1	21	42	64	52	32	9.52
ANZMH-450	A	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	292.9	266.9	26	61	80	60	32	12.7
ANZMH-900	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	60	32	15.87
ANZMH-1550	B	9	18	28	62	4-M10	5.2	19	58	-0.025 -0.050	399.3	367.3	32	105	80	72	32	15.87
ANZMH-1850S	B	9	18	28	62	4-M10	5.2	19	58	-0.030 -0.060	399.3	367.3	32	105	80	72	32	15.87
ANZMH-2001	B	9	18	28	62	4-M10	5.2	19	58	-0.030 -0.060	399.3	367.3	32	105	80	72	32	15.87

Specification/Dimension Table

■Small torque sensor amplifier high speed straight type

Model	Max torque [N•m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZMCH-200	18	830	1.6	1.2	AZMC-350	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZMCH-450	40	840	3.4	2.3	AZMC-850	
ANZMCH-900	85	840	4.5	4.5	AZMC-1500	GSK-15(T5)-E-N2 GSKW-15(T5)-E-N2
ANZMCH-1550	140	910	8.5	8.5	AZMC-1850	GSK-17(T7)-E-N2
ANZMCH-1850S	175	740	9.3	8.5	AZMC-1850	
ANZMCH-2001	180	740	9.0	8.5	AZMC-2502	
ANZMCH-2500	250	546	11.0	8.5	AZMC-2501	





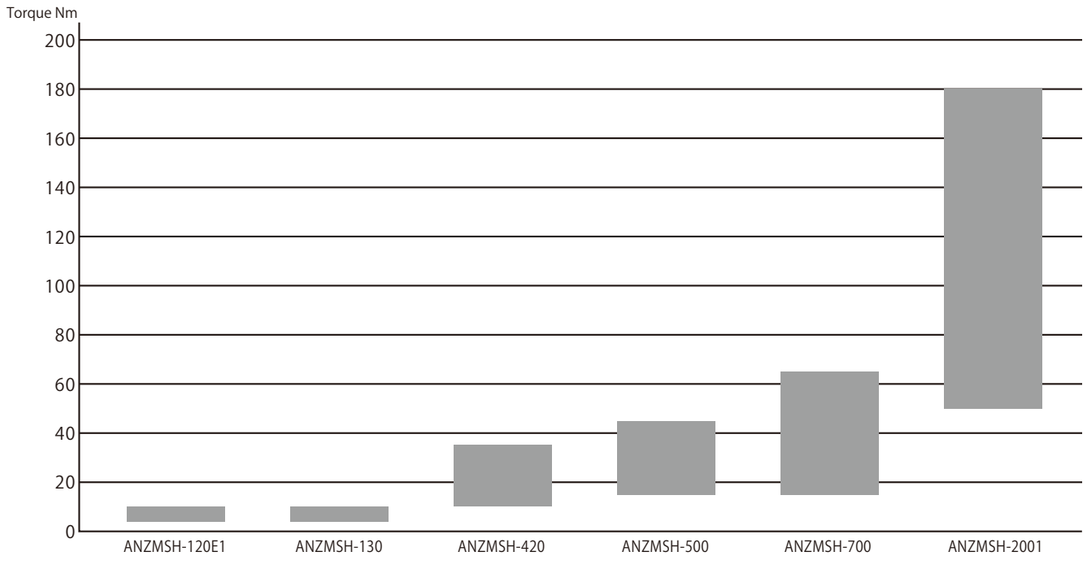
Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	P	Q	W Reference dimension
ANZMCH-200	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	280.1	259.1	21	42	64	40	30	9.52
ANZMCH-450	A	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	292.9	266.9	26	61	80	48	30	12.7
ANZMCH-900	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	48	30	15.87
ANZMCH-1550	B	9	18	28	62	4-M10	5.2	19	58	-0.025 -0.050	399.3	367.3	32	105	80	60	32	15.87
ANZMCH-1850S	B	9	18	28	62	4-M10	5.2	19	58	-0.030 -0.060	399.3	367.3	32	105	80	60	30	15.87
ANZMCH-2001	B	9	18	28	62	4-M10	5.2	19	58	-0.030 -0.060	399.3	367.3	32	105	80	60	30	15.87
ANZMCH-2500	B	12	25	35	62	4-M10	5.2	24	58	-0.030 -0.060	407.6	368.6	39	105	80	60	30	19.05

Specification/Dimension Table

■Built-in small torque sensor amplifier short high speed straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZMSH-120E1	10	1600	1.6	1.2	–	GSK-14(T4)-E1-N2 GSKW-14(T4)-E1-N2
ANZMSH-130	10	3300	2.7	2.3	–	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZMSH-420	35	965	4.5	2.3	–	
ANZMSH-500	45	770	4.5	2.3	–	
ANZMSH-700	65	547	4.4	2.3	–	
ANZMSH-2001(※1)	180	740	9.0	8.5	AZMSH-2500	GSK-17(T7)-E-N2

※1 The mnemonic name of the model has changed.Old designation：ANZMSH-2000→New designation：ANZMSH-2001



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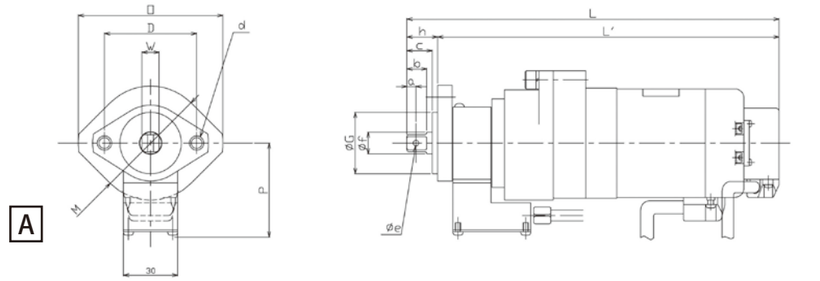

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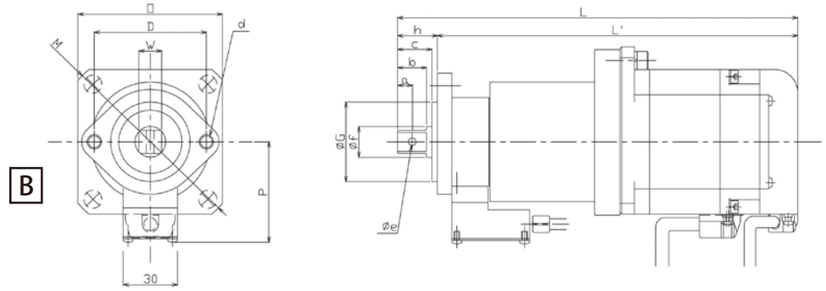

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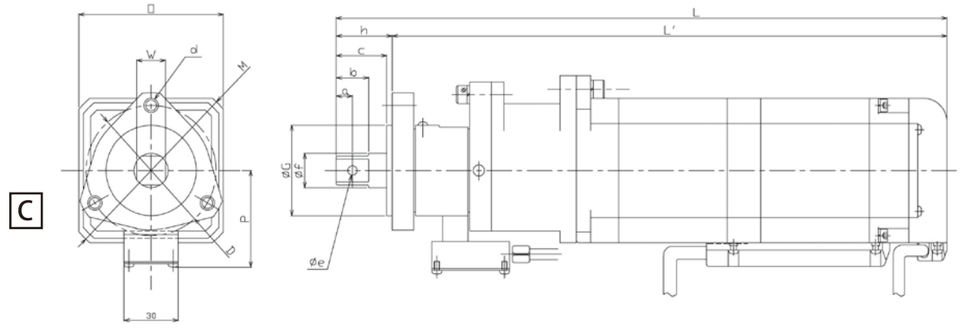


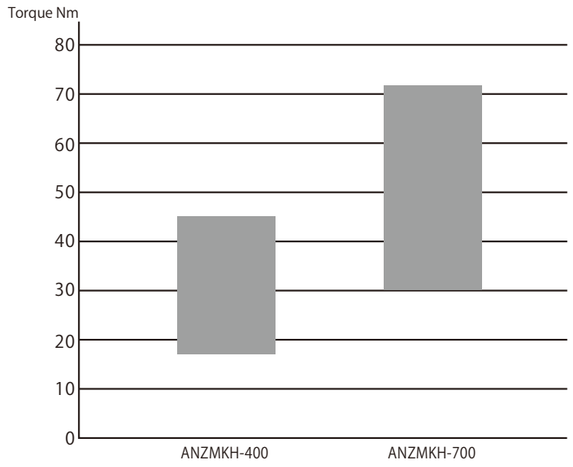
Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	P	W Reference dimension
ANZMSH-120E1	A	5	11	14	51	2-M6	3.2	12	34	-0.025 -0.050	218.1	201.1	17	42	64	40	9.52
ANZMSH-130	A	5	11	14	51	2-M6	3.2	12	34	-0.025 -0.050	205.9	188.9	17	63	80	52	9.52
ANZMSH-420	B	8	16	19	62	2-M8	4.2	17	44	-0.025 -0.050	221.4	199.4	17	105	80	55.5	12.7
ANZMSH-500	B	8	16	19	62	2-M8	4.2	17	44	-0.025 -0.050	221.4	199.4	22	105	80	55.5	12.7
ANZMSH-700	B	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	230.4	199.4	31	105	80	55.5	15.87
ANZMSH-2001	C	13	25	32	68	3-M8	5.2	24	50	-0.03 -0.05	408.3	373.3	35	105	80	58	19.05

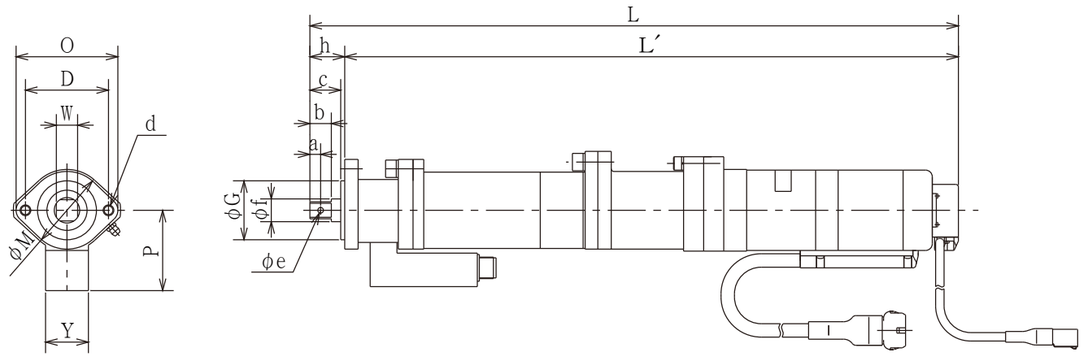
Specification/Dimension Table

■Built-in ball clutch and high speed seated high speed straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Seated response speed(criterion) [rpm]	Crosspounding controller
ANZMKH-400	45	1875	6.0	4.5	AZM-850	800	GSK-15(T5)-E-N2 GSKW-15(T5)-E-N2
ANZMKH-700	71.6	980	6.4	4.5	AZM-1500	800	

※The mnemonic name of the model has changed.Old designation：ANZKHM - ※※→ New designation：ANZMKH -※※



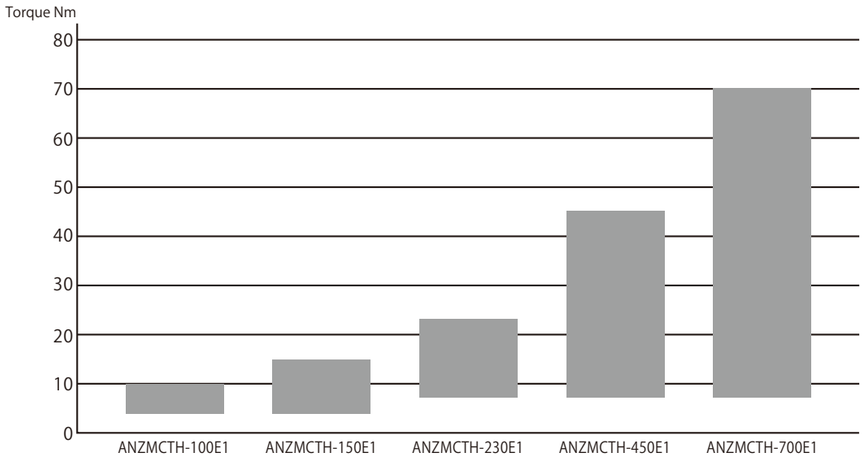


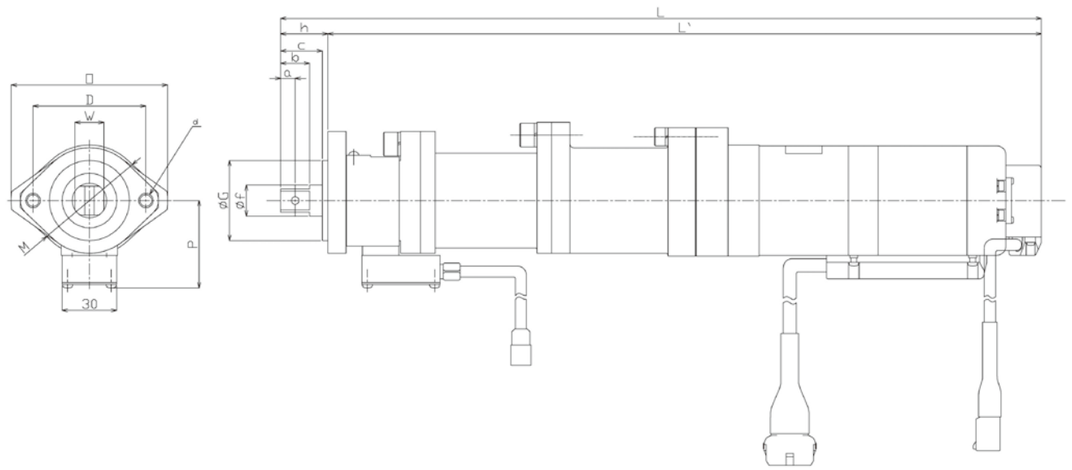
Nut runner model	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	P	Y	W Reference dimension
ANZMKH-400	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	421.2	395.2	26	61	86	57	30	12.7
ANZMKH-700	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	484.2	458.2	26	61	86	57	30	12.7

Specification/Dimension Table

■Small torque sensor amplifier built-in small clutch and high speed seated high speed straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Seated response speed(criterion) [rpm]	Crosspounding controller
ANZMCTH-100E1	10	1670	2.0	1.2	AZMC-350	800	GSK-14(T4)-E1-N2 GSKW-14(T4)-E1-N2
ANZMCTH-150E1	15	815	2.3	1.2	AZMC-350	800	
ANZMCTH-230E1	23	1770	4.0	2.3	AZMC-850	800	
ANZMCTH-450E1	45	1770	5.0	4.5	AZMC-850	800	GSK-15(T5)-E1-N2 GSKW-15(T5)-E1-N2
ANZMCTH-700E1	70	925	5.5	4.5	AZMC-850	800	



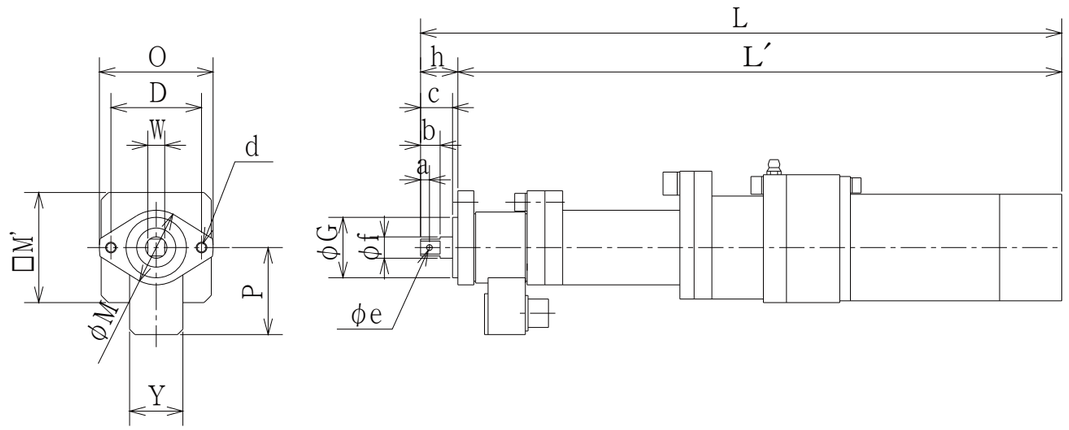


Nut runner model	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L′	h	M	O	P	W Reference dimension
ANZMCTH-100E1	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	310.6	289.6	21	42	64	40	9.52
ANZMCTH-150E1	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	331.6	310.6	21	42	64	40	9.52
ANZMCTH-230E1	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	314.9	288.9	26	61	80	48	12.7
ANZMCTH-450E1	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	380.2	354.2	26	61	80	48	12.7
ANZMCTH-700E1	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	418.2	392.2	26	61	86	48	12.7

Specification/Dimension Table (Special nut runner series)

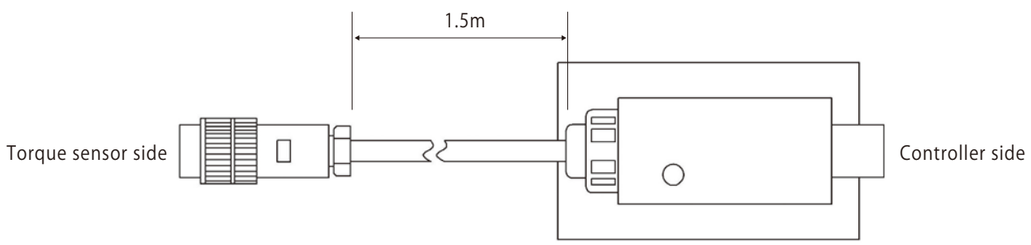
■Built-in ball clutch High speed seated high speed straight type Amplifier box separate type

Model	Max torque [N･m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Seated response speed(criterion) [rpm]	Crosspounding controller
ANCKHM-200	20	1500	3.9	3	ATM-350	800	GSK-14(T4)-E1-N2 GSKW-14(T4)-E1-N2
ANCKHM-500	50	1050	7.2	7.2	ATM-850	800	GSK-15(T5)-E1-N2 GSKW-15(T5)-E1-N2



Nut runner model	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L′	h	M	M′	O	P	Y	W Reference dimension
ANCKHM-200	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	361	340	21	42	62	86	49	30	9.52
ANCKHM-500	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	442	416	26	58	80	86	57	30	12.7

■Separate amplifier box



Model	Separate amplifie box modelr
ANCKHM-200	TAMC7-1.5
ANCKHM-500	

■ANCKHM exclusive motor cable

【Model list】

Nut runner model	Cable type	Model	Crosspounding controller
ANCKHM-200	Direct cable	GSM500WD4G-□M	GSK-14(T4)-E1-N2 GSKW-14(T4)-E1-N2
	Relay movable cable	GSM500CMWD4G-□M	
	Relay fixed cable	GSM500WD4G-□M	
ANCKHM-500	Direct cable	GSM1500WD4G-□M	GSK-15(T5)-E1-N2 GSKW-15(T5)-E1-N2
	Relay movable cable	GSM1500CMWD4G-□M	
	Relay fixed cable	GSM1500WD4G-□M	

Cable length

3M：3m	7M：7m	10M：10m	15M：15m	20M：20m

※1 Please fill in the length of cable in part□.
※2 Other than the above length is a custom item.

■ANCKHM exclusive encoder sensor cable

【Model list】

Cable type	Model
Direct cable	ETD16G-□M
Relay movable cable	ETCM16G-□M
Relay fixed cable	ETC16G-□M

Cable length

3M：3m	7M：7m	10M：10m	15M：15m	20M：20m

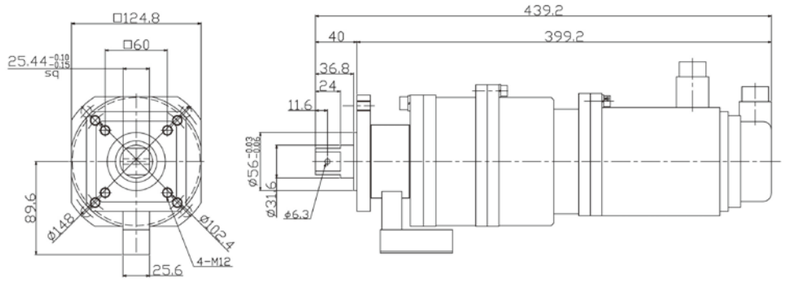
※1 Please fill in the length of cable in part□.
※2 Other than the above length is a custom item.

Specification/Dimension Table (Special nut runner series)

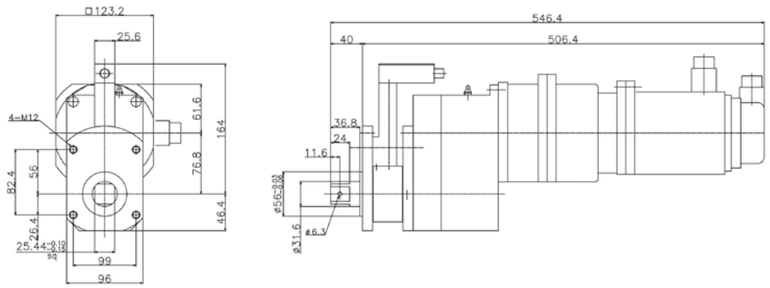
■High torque nut runner

Model	Max torque [N•m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZM-15000	1470	80	35.5	27	AZM-15000	GSK-17(T7)-E-N2
ANZM-15000SFFT	1372		70		ZFT-15000	
ANZM-28000SFFT	2600	38	120		ZFT-22000	

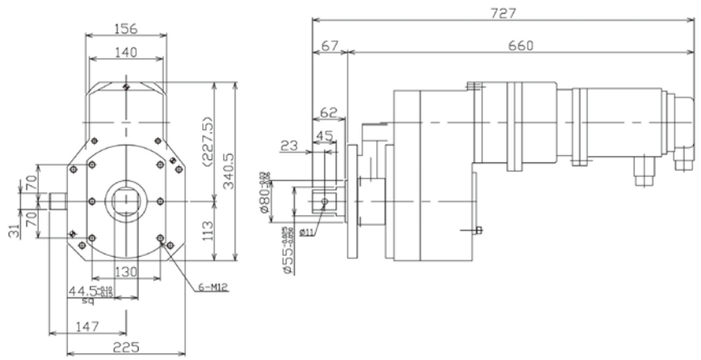
ANZM-15000 Dimensional drawing



ANZM-15000SFFT Dimensional drawing



ANZM-28000SFFT Dimensional drawing



■High torque nut runner exclusive motor cable

【Model list】

Cable type	Model
Direct cable	8M150D-4R-□M
Relay fixed cable	8M150T-4A-□M
Relay movable cable	8M150T-4R-□M

Cable length

3M：3m	7M：7m	10M：10m	15M：15m	20M：20m

※1 Please fill in the length of cable in part□.
※2 Other than the above length is a custom item.

■High torque nut runner exclusive encoder sensor cable

【Model list】

Cable type	Model
Direct cable	8ESD-150R-□M
Relay fixed cable	8EST-150A-□M
Relay movable cable	8EST-150R-□M

Cable length

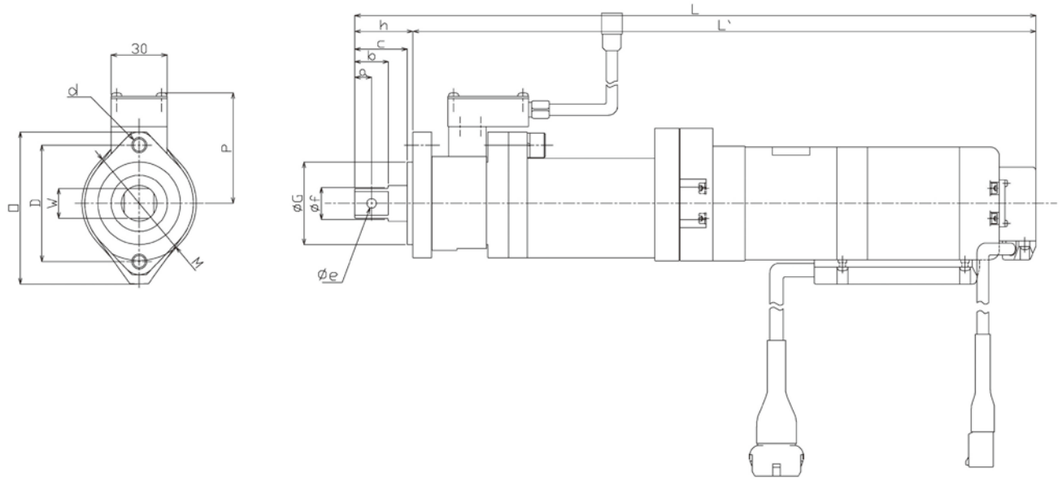
3M：3m	7M：7m	10M：10m	15M：15m	20M：20m

※1 Please fill in the length of cable in part□.
※2 Other than the above length is a custom item.

Specification/Dimension Table (Special nut runner series)

■Changing mounting angle of amplifier case of small torque sensor Encoder specification

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Crosspounding controller
ANZMC-250KS	20	310	1.6	0.6	GSK-14(T4)-E-N2 GSKW-14(T4)-E-N2
ANZMC-350KS	30	430	2.2	1.2	

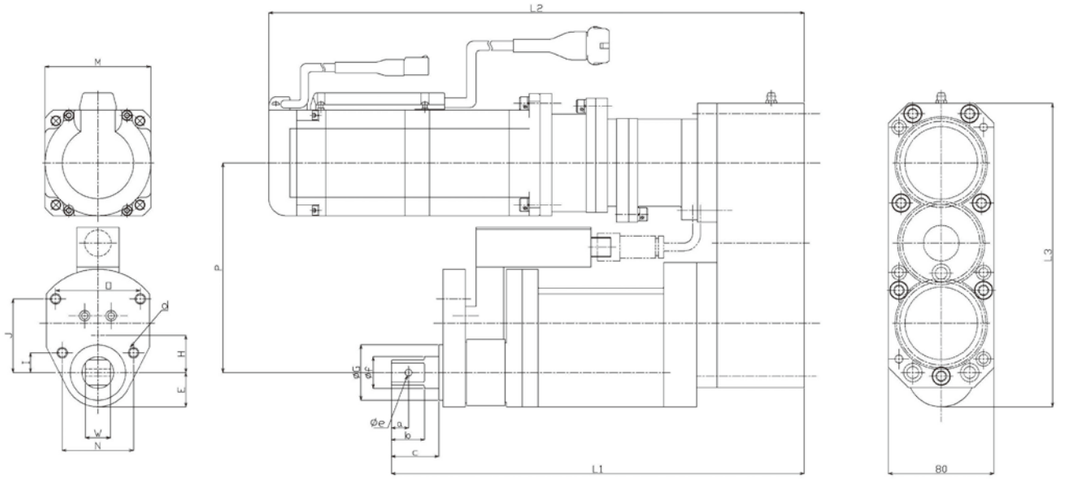


Nut runner model	a	b	c	D	d	e	f	G		L	L'	h	M	O	P	W
								Reference dimension	Tolerance							Reference dimension
ANZMC-250KS	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	231.9	210.9	21	42	64	51	9.52
ANZMC-350KS	8	16	23	51	2-M6	4.2	17	34	-0.025 -0.050	285.1	259.1	26	42	64	51	12.7

■Turning offset type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Crosspounding controller
ANZM-3000SFFT-U	300	235	–	8.5	GSK-15(T5)-E-N2 GSKW-15(T5)-E-N2

※Custom items



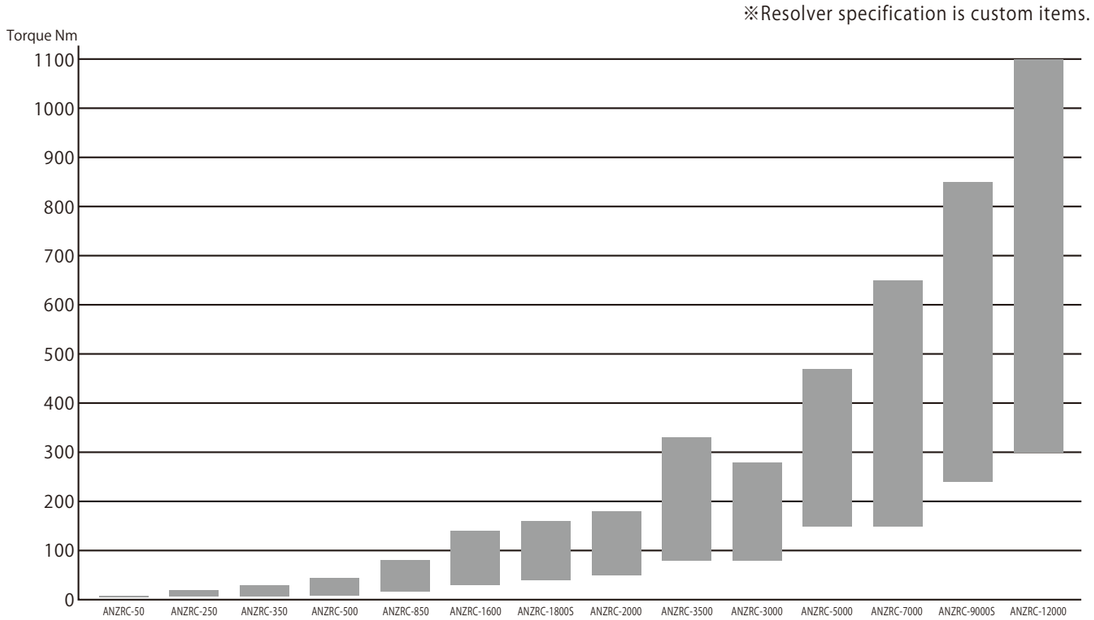
Nut runner model	a	b	c	d	e	f	G		H	I	J	L1	L2	L3	M	O	P	W
							Reference dimension	Tolerance										Reference dimension
ANZM-3000 SFFT-U	13	25	39	4-M8	5.2	24	42	-0.025 -0.050	37.27	15	55.77	312.5	405.3	230	□80	64	121.5	19.05

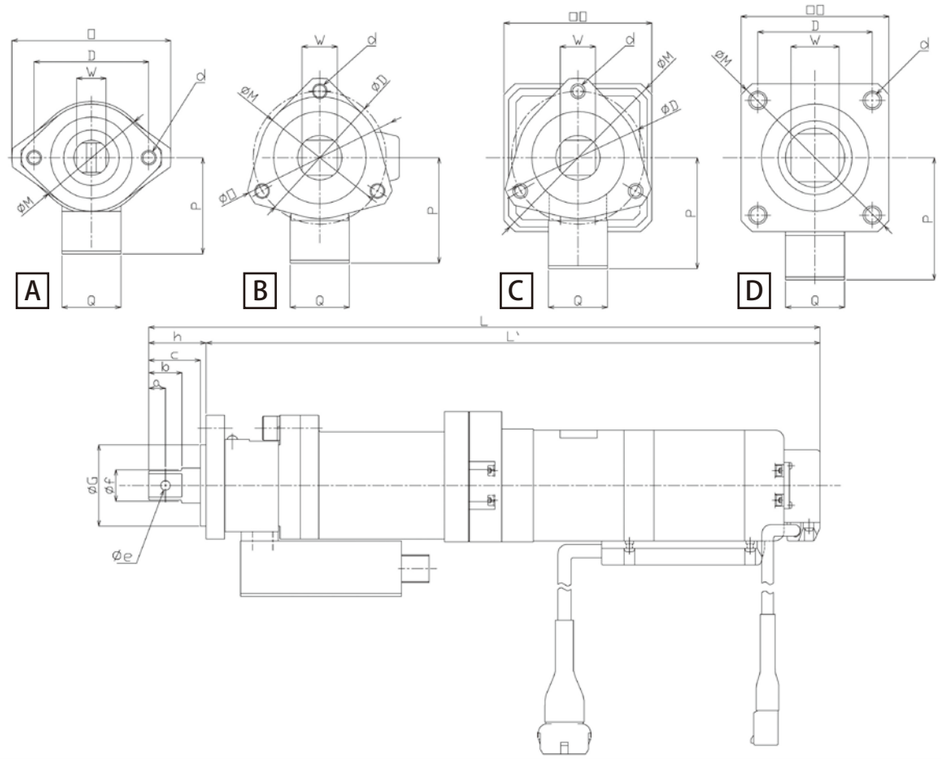
Specification/Dimension Table

■Small torque sensor amplifier straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZRC-50	4.5	1700	1.0	0.6	AZMC-100	GSK-14(T4)-R-N2 GSKW-14(T4)-R-N2
ANZRC-250	20	310	1.6	0.6	AZMC-350	
ANZRC-350	30	430	2.2	1.2	AZMC-350	
ANZRC-500	45	310	2.2	1.2	AZMC-500	
ANZRC-850	80	420	3.9	2.3	AZMC-850	
ANZRC-1600	140	420	5.0	4.5	AZMC-1500	GSK-15(T5)-R-N2 GSKW-15(T5)-R-N2
ANZRC-1800S	160	420	5.0	4.5	AZMC-2000	
ANZRC-2000	180	290	5.8	4.5	AZMC-2500	
ANZRC-3500	330	200	10.0	4.5	AZMC-4000	
ANZRC-3000	280	235	9.0	8.5	AZMC-4000	
ANZRC-5000	470	250	10.5	8.5	AZMC-7500	GSK-17(T7)-R-N2
ANZRC-7000	650	175	10.5	8.5	AZMC-7500	
ANZRC-9000S	850	130	13.9	8.5	AZMC-12000S	
ANZRC-12000	1100	85	18.5	8.5	AZM-15001	

※Resolver specification is custom items.





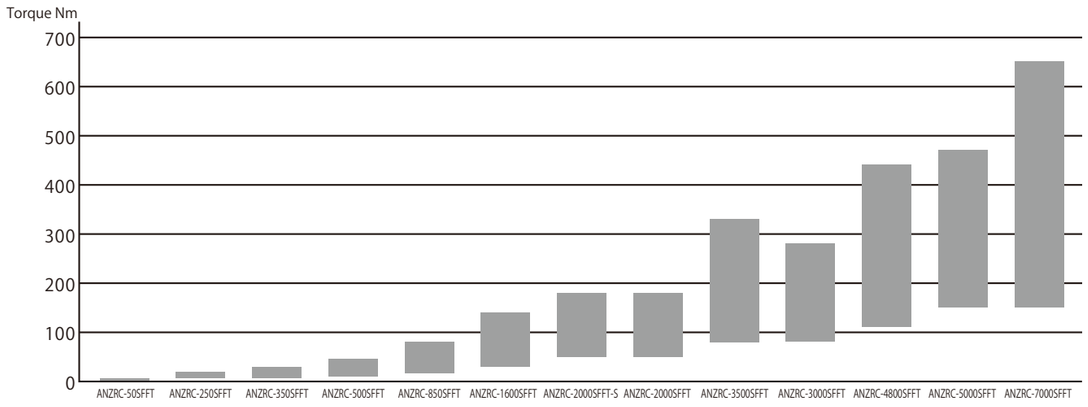
Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	P	Q	W Reference dimension
ANZRC-50	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	201.4	180.4	21	42	64	40	30	9.52
ANZRC-250	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	231.9	210.9	21	42	64	40	30	9.52
ANZRC-350	A	8	16	23	51	2-M6	4.2	17	34	-0.025 -0.050	285.1	259.1	26	42	64	40	30	12.7
ANZRC-500	A	8	16	23	51	2-M8	4.2	17	34	-0.025 -0.050	285.1	259.1	26	42	66	40	30	12.7
ANZRC-850	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	297.9	266.9	31	61	80	48	30	15.87
ANZRC-1600	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	48	30	15.87
ANZRC-1800S	A	9	18	28	62	2-M10	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	48	30	15.87
ANZRC-2000	B	13	25	36	ϕ68	3-M8	5.2	24	50	-0.03 -0.05	412.2	373.2	39	61	82	52	30	19.05
ANZRC-3500	B	13	25	36	ϕ72	3-M8	5.2	24	50	-0.03 -0.05	417.2	378.2	39	66	86	52	30	19.05
ANZRC-3000	C	13	25	36	ϕ72	3-M8	5.2	24	50	-0.03 -0.05	418.3	379.3	39	105	80	52	30	19.05
ANZRC-5000	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	502.3	454.3	48	105	80	60	30	25.4
ANZRC-7000	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	502.3	454.3	48	105	80	60	30	25.4
ANZRC-9000S	D	14.5	30	44	62	4-M10	6.3	32	58	-0.03 -0.05	494.3	446.3	48	105	80	60	30	25.4
ANZRC-12000	D	14.5	30	46	75	4-M12	6.3	39.5	70	-0.03 -0.05	533.3	483.3	50	128	97	82	30	31.75

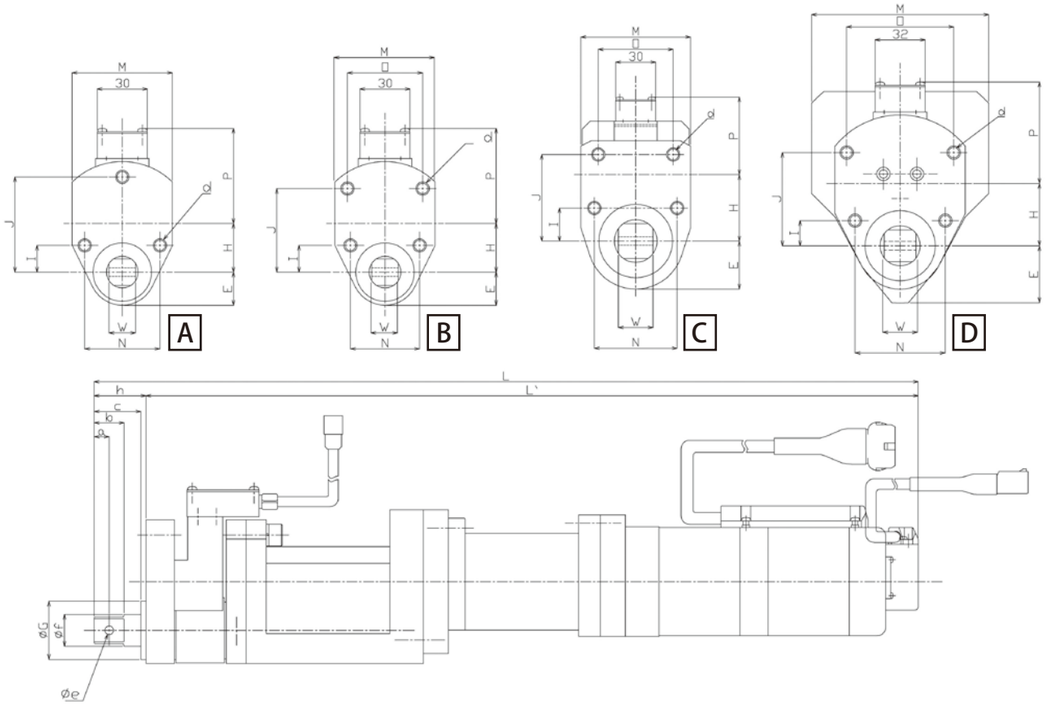
Specification/Dimension Table

■Small torque sensor amplifier offset type

Model	Max torque [N･m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZRC-50SFFT	4.5	1700	1.8	0.6	ZFTC-50	GSK-14(T4)-R-N2 GSKW-14(T4)-R-N2
ANZRC-250SFFT	20	310	2.5	0.6	ZFTC-351	
ANZRC-350SFFT	30	430	2.8	1.2	ZFTC-350	
ANZRC-500SFFT	45	310	2.8	1.2	ZFTC-500	
ANZRC-850SFFT	80	420	7.8	2.3	ZFTC-850	
ANZRC-1600SFFT	140	420	8.0	4.5	ZFTC-1500	GSK-15(T5)-R-N2 GSKW-15(T5)-E-N2
ANZRC-2000SFFT-S	180	290	9.7	4.5	ZFTSC-2500	
ANZRC-2000SFFT	180	290	9.8	4.5	ZFTC-2500	
ANZRC-3500SFFT	330	200	12.5	4.5	ZFTC-4000	
ANZRC-3000SFFT	280	235	14.7	8.5	ZFTC-4000	
ANZRC-4800SFFT	440	253	15.0	8.5	ZFTC-5500	GSK-17(T7)-R-N2
ANZRC-5000SFFT	470	250	23	8.5	ZFTC-7500	
ANZRC-7000SFFT	650	175	23	8.5	ZFTC-7500	

※Resolver specification is custom items.





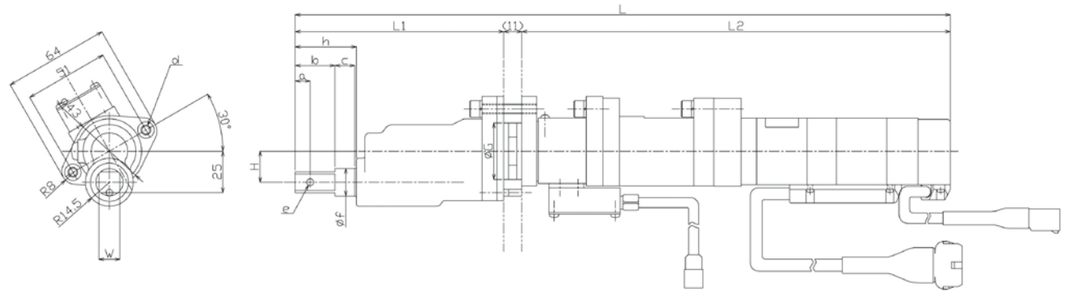
Nut runner model	Shape	a	b	c	I	J	N	d	O	e	f	G Reference dimension	G Tolerance	L	L'	P	h	M	E	H	W Reference dimension
ANZRC-50SFFT	A	5	11	19	11	44.5	33	3-M6	–	3.2	12	30	-0.02 -0.04	261.4	239.4	53.5	22	44	15	22	9.52
ANZRC-250SFFT	A	5	11	19	12	44.5	38	3-M6	–	3.2	12	28	-0.02 -0.04	312.5	290.5	48.5	22	50	15	22.5	9.52
ANZRC-350SFFT	A	8	16	23	12	44.5	38	3-M6	–	4.2	17	30	-0.02 -0.04	364.7	338.7	49.5	26	50	15	22.5	12.7
ANZRC-500SFFT	A	8	16	23	13.5	49.5	42	3-M6	–	4.2	17	30	-0.02 -0.04	376.7	350.7	49.5	26	54	17.5	25.5	12.7
ANZRC-850SFFT	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	427.9	396.9	56.85	31	60	19.85	29.15	15.87
ANZRC-1600SFFT	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	493.2	462.2	56.85	31	60	19.85	29.15	15.87
ANZRC-2000SFFT-S	A	9	18	28	16	57	45	3-M8	–	5.2	19	35	-0.025 -0.050	530.2	499.2	56.85	31	60	19.85	29.15	15.87
ANZRC-2000SFFT	B	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	539.7	500.7	60.73	39	78	26	37.27	19.05
ANZRC-3500SFFT	B	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	569.7	530.7	70.73	39	78	26	37.27	19.05
ANZRC-3000SFFT	C	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	570.8	531.8	70.73	39	78	26	37.27	19.05
ANZRC-4800SFFT	D	13	25	36	15	55.8	54	4-M8	64	5.2	24	42	-0.025 -0.050	637.8	598.8	60.73	39	106	26	37.27	19.05
ANZRC-5000SFFT	C	14.5	30	44	48	64.7	62	4-M10	56	6.3	32	55	-0.025 -0.050	665.3	617.3	56	48	82	36	49.7	25.4
ANZRC-7000SFFT	C	14.5	30	44	48	64.7	62	4-M10	56	6.3	32	55	-0.025 -0.050	665.3	617.3	56	48	82	36	49.7	25.4

Specification/Dimension Table

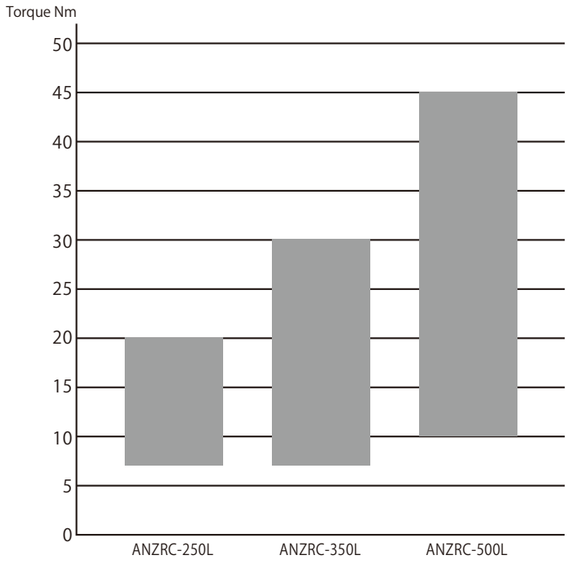
■Small torque sensor amplifier external offset type

Model	Max torque [N･m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZRC-250L	20	310	1.8	0.6	AZMC-350	GSK-14(T4)-R-N2 GSKW-14(T4)-R-N2
ANZRC-350L	30	430	3.5	1.2	AZMC-350	
ANZRC-500L	45	310	3.5	1.2	AZMC-500	

※Resolver specification is custom items.



Nut runner model	a	b	c	d	e	f	G		L	L1	L2	h	H	W
							Reference dimension	Tolerance						Reference dimension
ANZRC-250L	7.5	21	11	2-M6	3.2	11.5	34	-0.025 -0.050	335.5	117	208	33	18.8	9.52
ANZRC-350L	9	24	12	2-M6	4.2	16.5	34	-0.025 -0.050	392.7	126	256	37	18.8	12.7
ANZRC-500L	9	24	12	2-M8	4.2	16.5	34	-0.025 -0.050	392.7	126	256	37	18.8	12.7

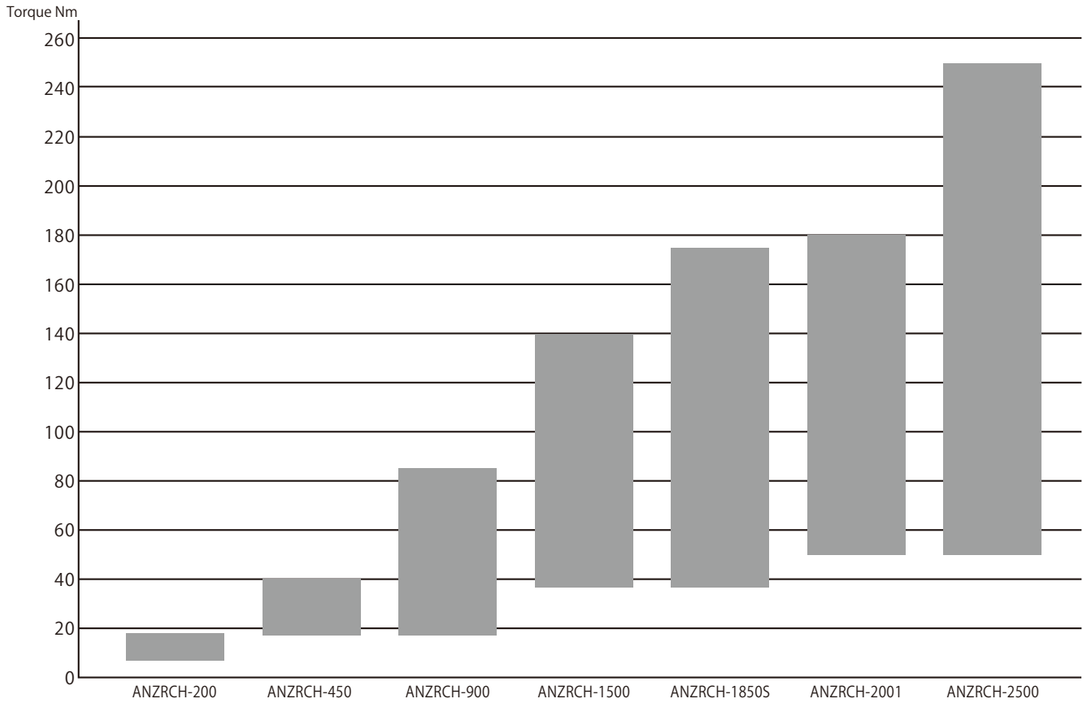


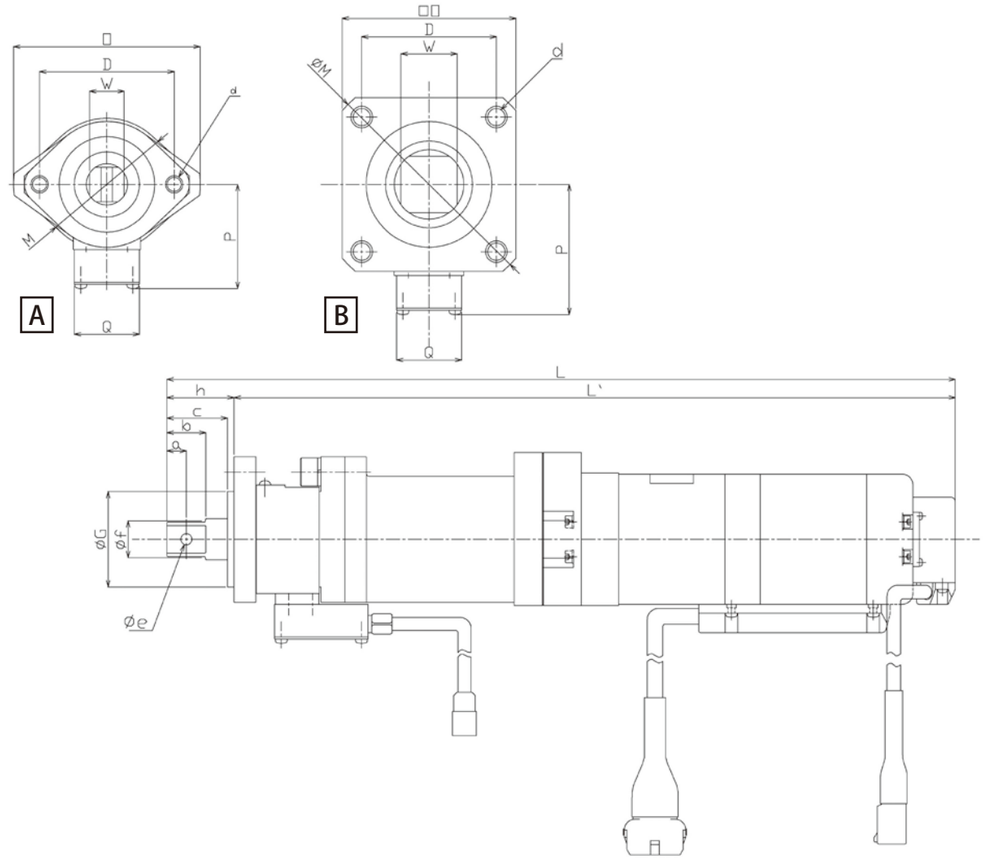
Specification/Dimension Table

■Small torque sensor amplifier high speed straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZRCH-200	18	830	1.6	1.2	AZMC-350	GSK-14(T4)-R-N2 GSKW-14(T4)-R-N2
ANZRCH-450	40	840	3.4	2.3	AZMC-850	
ANZRCH-900	85	840	4.5	4.5	AZMC-1500	GSK-15(T5)-R-N2 GSKW-15(T5)-R-N2
ANZRCH-1500	140	850	8.5	8.5	AZMC-1500	GSK-17(T7)-R-N2
ANZRCH-1850S	175	740	9.3	8.5	AZMC-1850	
ANZRCH-2001	180	740	9.0	8.5	AZMC-2502	
ANZRCH-2500	250	546	11.0	8.5	AZMC-2501	

※Resolver specification is custom items.





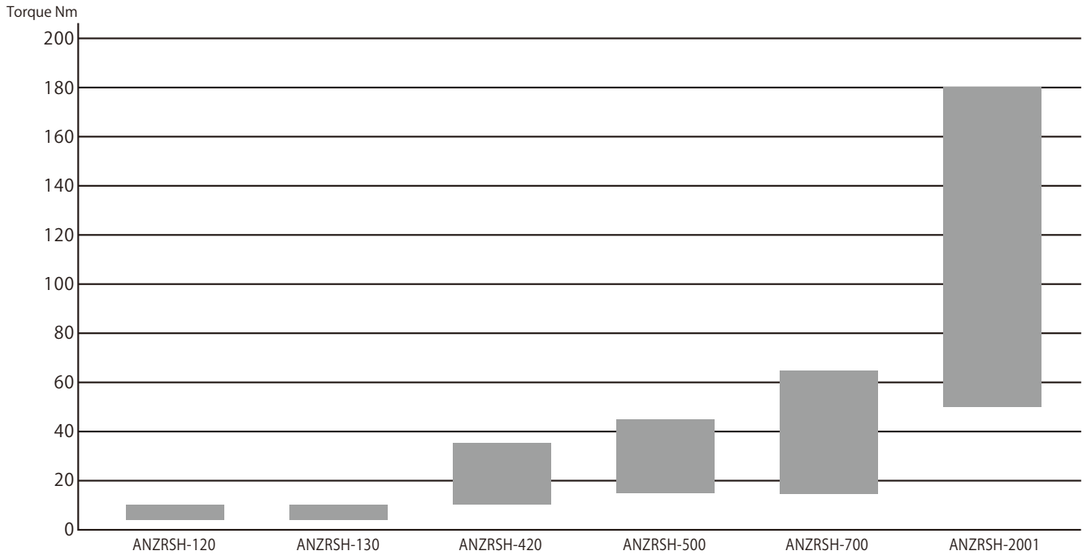
Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L′	h	M	O	P	Q	W Reference dimension
ANZRCH-200	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	280.1	259.1	21	42	64	40	30	9.52
ANZRCH-450	A	8	16	23	62	2-M8	4.2	17	44	-0.025 -0.050	292.9	266.9	26	61	80	48	30	12.7
ANZRCH-900	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	363.2	332.2	31	61	80	48	30	15.87
ANZRCH-1500	C	9	18	28	72	3-M8	5.2	19	50	-0.025 -0.050	415.3	384.3	31	105	80	60	30	15.87
ANZRCH-1850S	D	9	18	28	62	4-M10	5.2	19	58	-0.030 -0.060	399.3	367.3	32	105	80	60	30	15.87
ANZRCH-2001	D	9	18	28	62	4-M10	5.2	19	58	-0.030 -0.060	399.3	367.3	32	105	80	60	30	15.87
ANZRCH-2500	D	12	25	35	62	4-M10	5.2	24	58	-0.030 -0.060	407.6	368.6	39	105	80	60	30	19.05

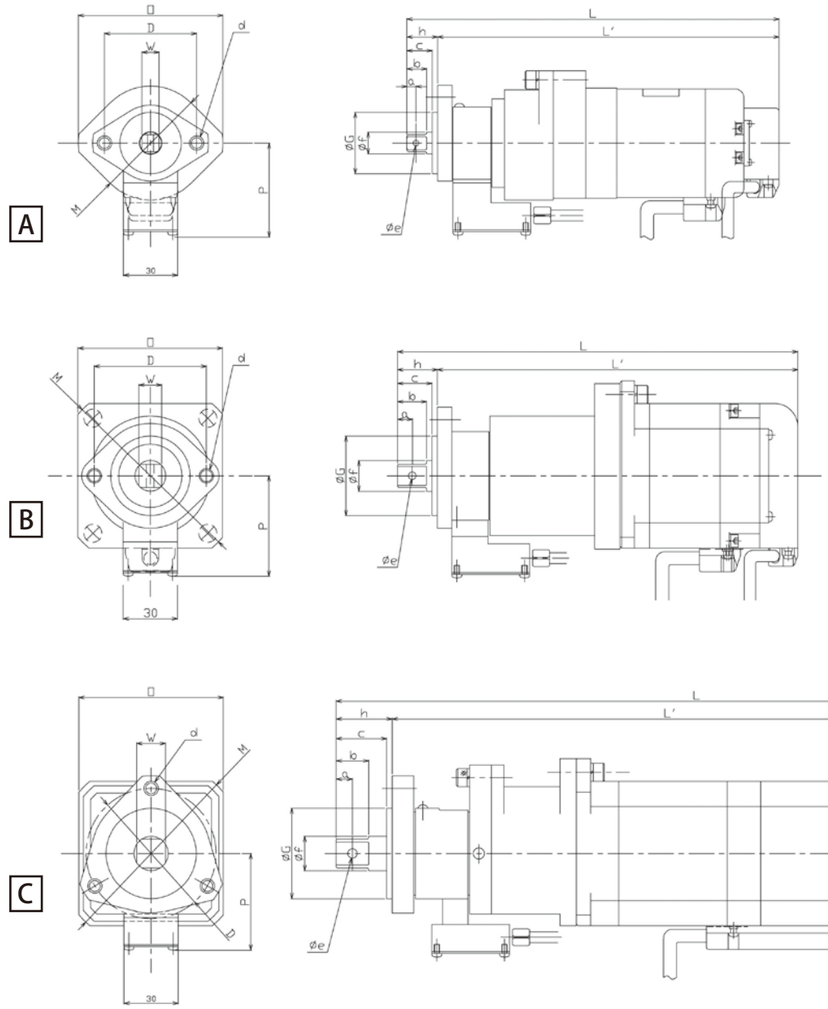
Specification/Dimension Table

■Built-in small torque sensor amplifier short high speed straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Torque sensor model	Crosspounding controller
ANZRSH-120	10	1600	1.6	1.2	–	GSK-14(T4)-R-N2 GSKW-14(T4)-R-N2
ANZRSH-130	10	3300	2.7	2.3	–	
ANZRSH-420	35	965	4.5	2.3	–	
ANZRSH-500	45	770	4.5	2.3	–	
ANZRSH-700	65	547	4.4	2.3	–	
ANZRSH-2001	180	740	9.0	8.5	AZMSH-2500	GSK-17(T7)-R-N2

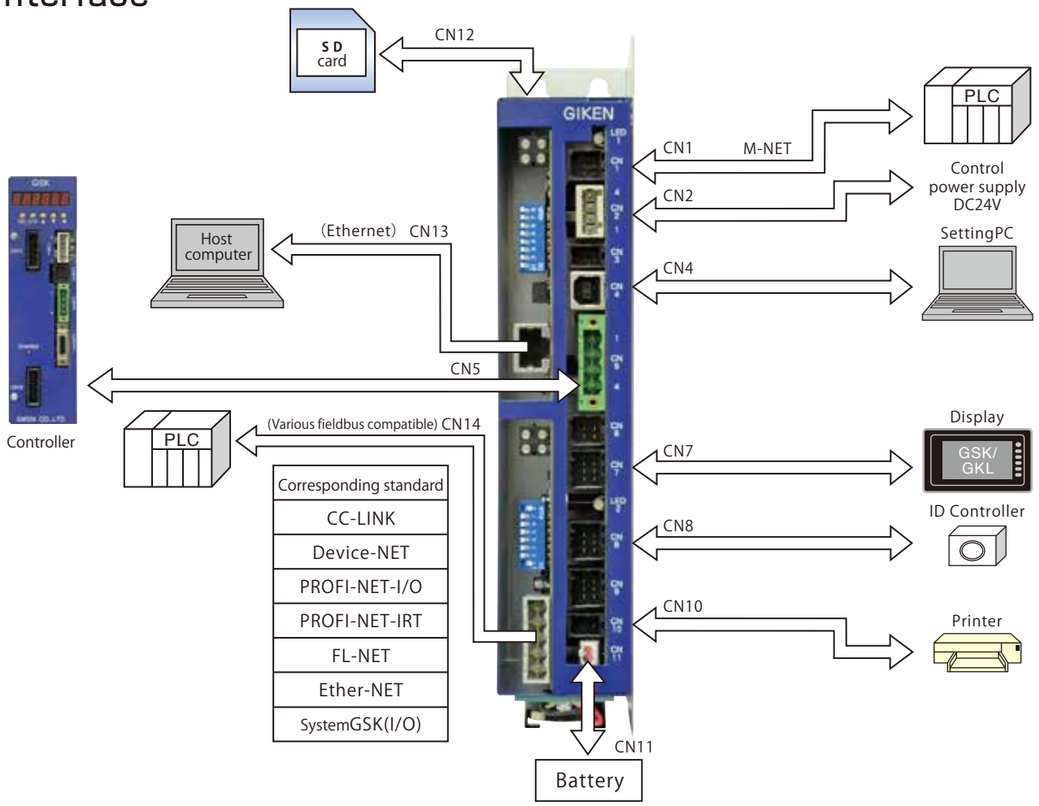
※Resolver specification is custom items.





Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L′	h	M	O	P	W Reference dimension
ANZRSH-120	A	5	11	14	51	2-M6	3.2	12	34	-0.025 -0.050	218.1	201.1	17	42	64	40	9.52
ANZRSH-130	A	5	11	14	51	2-M6	3.2	12	34	-0.025 -0.050	205.9	188.9	17	63	80	52	9.52
ANZRSH-420	B	8	16	19	62	2-M8	4.2	17	44	-0.025 -0.050	221.4	199.4	17	105	80	55.5	12.7
ANZRSH-500	B	8	16	19	62	2-M8	4.2	17	44	-0.025 -0.050	221.4	199.4	22	105	80	55.5	12.7
ANZRSH-700	B	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	230.4	199.4	31	105	80	55.5	15.87
ANZRSH-2001	C	13	25	32	68	3-M8	5.2	24	50	-0.03 -0.05	408.3	373.3	35	105	80	58	19.05

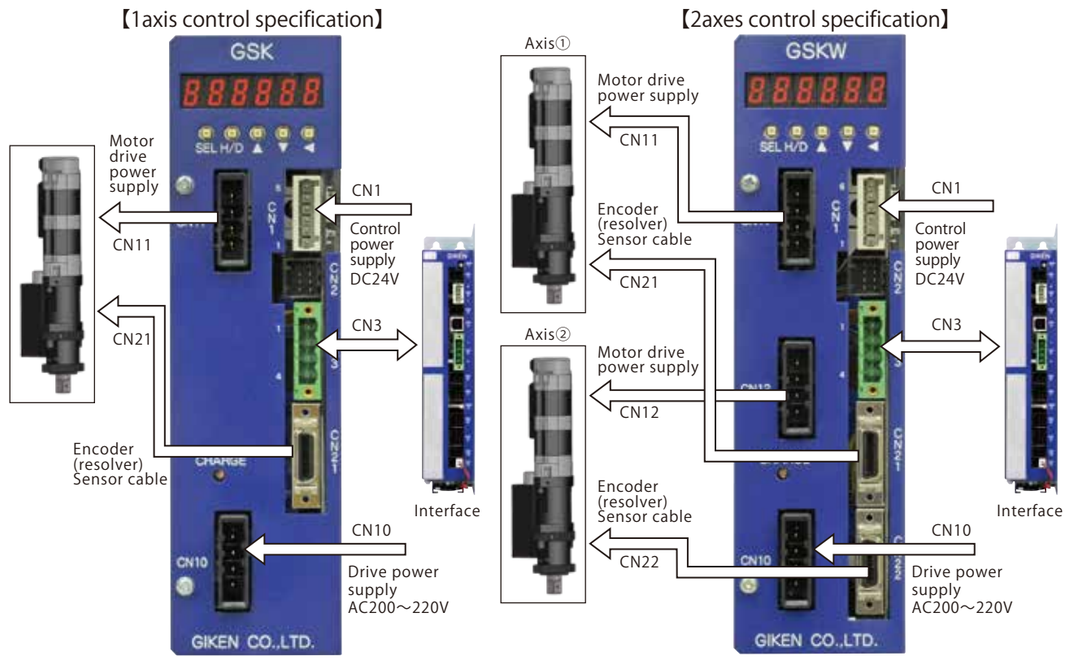
■Interface



GSK-IF□□-N□

Port NO.	Name	Connector model	Opponent's connector housing	Opponent's connector pin	Opponent's connector Accessories	Communication method	Remarks
CN1	Communication port with PLC	1-1827876-3 (TE Connectivity)	1-1827864-3 (TE Connectivity)	1827570-2 (TE Connectivity)	–	M-NET	
CN2	Control power supply input port	734-144 (WAGO)	734-104 (WAGO)	–	○	DC24V	
CN4	Communication port with setting PC	UBB-4R-D14T-4D (JST)	USB Type B	–	–	USB	Cable model:GK-SET-1.8M
CN5	Port for connecting to controller	MSTB2.5/4-GF-5.08 (PHOENIX CONTACT)	MSTB2.5/4-STF-5.08 (PHOENIX CONTACT)	–	○	ARC-NET	
CN7	Communication port for display	1-1827876-4 (TE Connectivity)	1-1827864-4 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS422	Cable model:GSK-DIS-10M :GSK-DIS-15M
CN8	Communication port for ID controller	1-1827876-4 (TE Connectivity)	1-1827864-4 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS422	
CN10	Communication port for printer	1-1827876-2 (TE Connectivity)	1-1827864-2 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS232C	Cable model:GK-PRN-1.5M :GK-PRN-3.0M
CN11	Battery	–	–	–	○	–	Battery type:CR2450/Panasonic Battery is included
CN12	SD card slot	–	–	–	–	–	It corresponds to SD and SDHC SD card model:GK-SD-32G
CN13	Communication port for anybus	–	–	–	–	Compatible with various communication methods	
CN14	Communication port for anybus	–	–	–	–		

■Controller



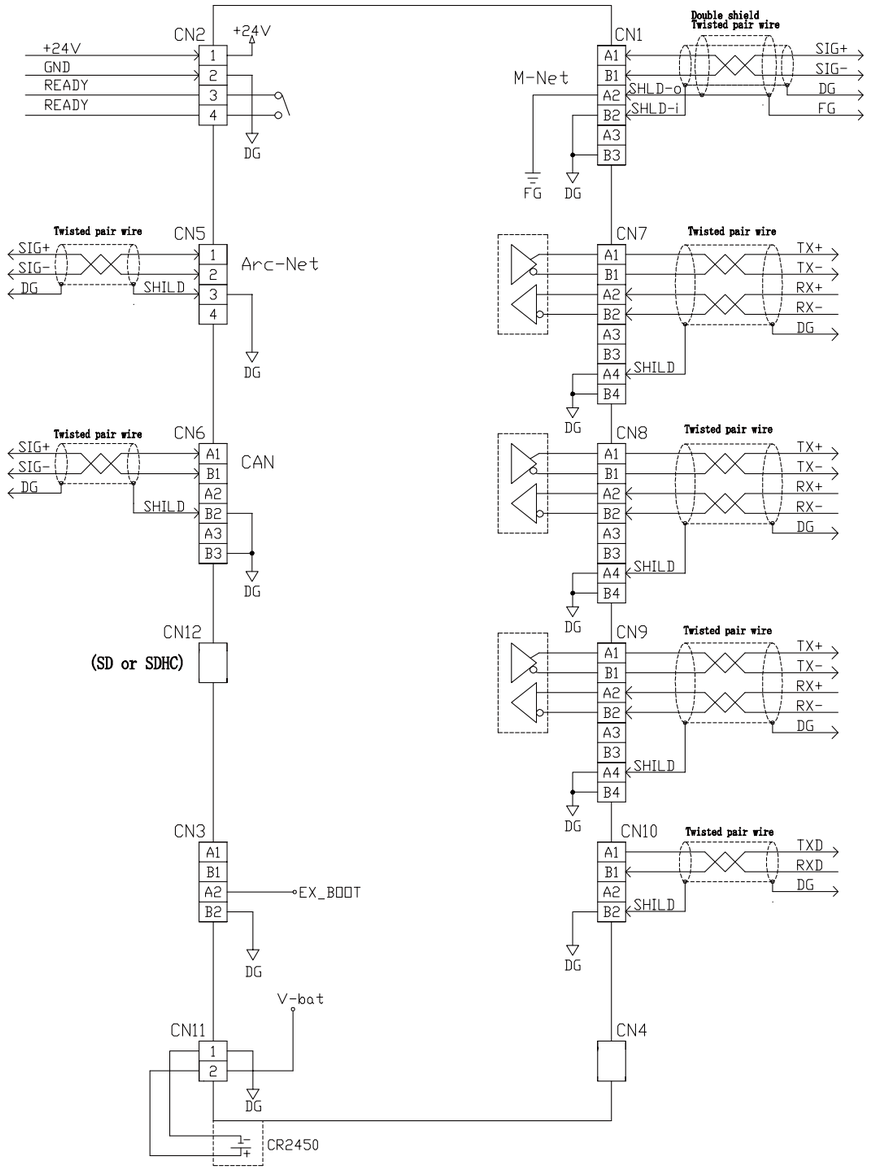
GSK-14-□□-N□

Port NO.	Name	Connector model	Opponent's connector housing	Opponent's connector pin	Opponent's connector Accessories	Remarks
CN1	Control power supply input port	734-166 (WAGO)	734-106 (WAGO)	–	○	DC24V
CN3	Interfaces and controller communication ports	MSTB2.5/4-GF-5.08 (PHOENIX CONTACT)	MSTB2.5/4-STF-5.08 (PHOENIX CONTACT)	–	○	ARC-NET
CN10	Input port for drive power supply	1-179277-2 (TE Connectivity)	1-178128-4 (TE Connectivity)	1-175218-2 (TE Connectivity)	○	AC200～220V
CN11	Ports that supply power to the first axis motor	2-179277-2 (TE Connectivity)	2-178128-4 (TE Connectivity)	1-353717-2 (TE Connectivity)	–	
CN12	Ports that supply power to the second axis motor	2-179277-2 (TE Connectivity)	2-178128-4 (TE Connectivity)	1-353717-2 (TE Connectivity)	–	
CN21	Port for connecting axis 1 sensor	10220-52-A2PL (Sumitomo 3M)	10320-5 A 0-008 (Sumitomo 3M)	10120-3000VE (Sumitomo 3M)	–	
CN22	Port for connecting axis 2 sensor	10220-52-A2PL (Sumitomo 3M)	10320-5 A 0-008 (Sumitomo 3M)	10120-3000VE (Sumitomo 3M)	–	

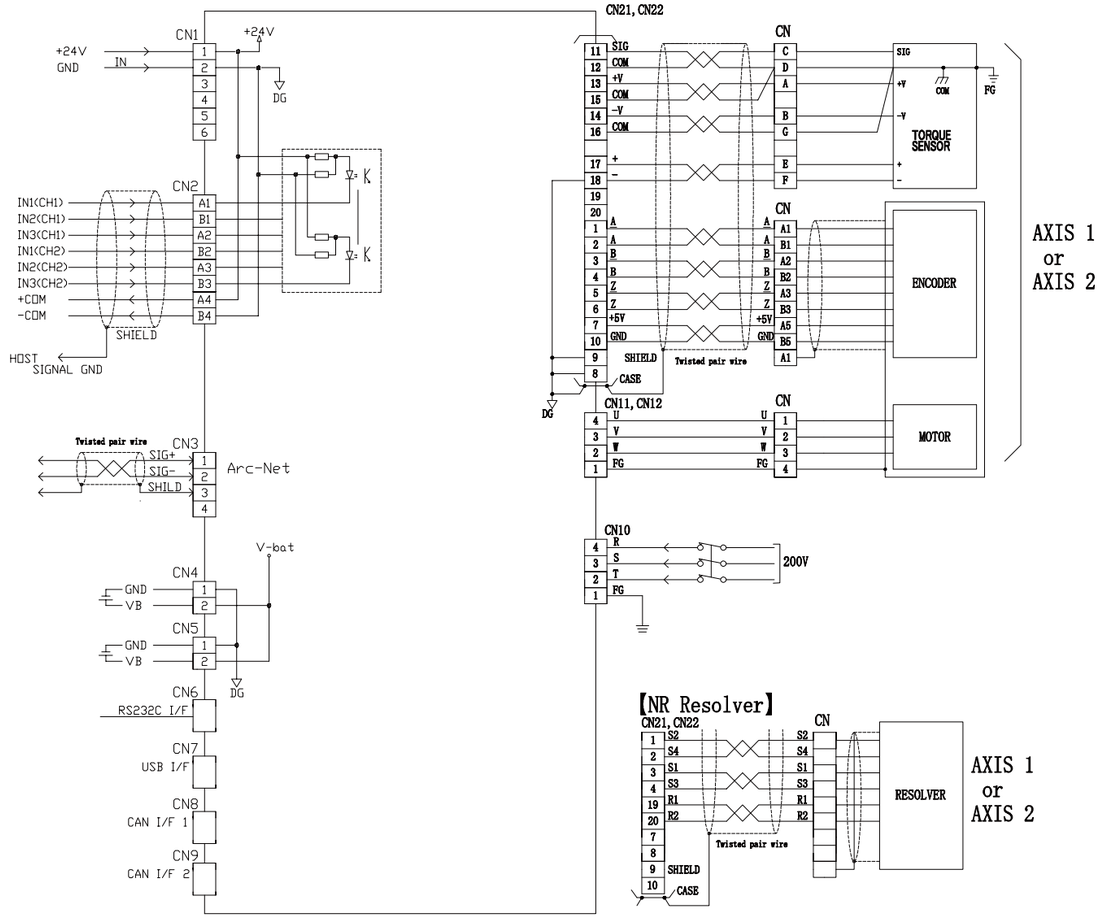
GSK-15(17)-□□-N□

CN10	Input port for drive power supply	2-917541-2 (TE Connectivity)	2-179958-4 (TE Connectivity)	316040-2 (TE Connectivity)	–	AC200～220V
CN11	Ports that supply power to the first axis motor	1-917541-2 (TE Connectivity)	1-179958-4 (TE Connectivity)	316040-2 (TE Connectivity)	–	
CN12	Ports that supply power to the second axis motor	1-917541-2 (TE Connectivity)	1-179958-4 (TE Connectivity)	316040-2 (TE Connectivity)	–	

■Interface
(Common with positioning GSK)



■Controller



■Interface

Model	GSK-IF-N1
Weight[kg]	0.54
Input of control power supply	DC24V±10% 1.0Amax
Start-up inrush current	5.0A
Control power supply rated current	0.2A
Number of nut runner controllable axes	Up to 30 axes
Supported SD card	SD and SDHC type
SD card record contents	Setting / Maximum 8000 items, Clamp history / Maximum 2 million items, Tightening waveform / Maximum 2 million items
Main body preserved content	Alarm history / 16 for each axis, Tightening history / 5000 for each axis, Tightening waveform / 1 for each axis
Available temperature and humidity	0～50℃ 90% RH or less (no condensation)
Fieldbus	Anybus
Battery	CR2450/Panasonic (lifespan is 5 years)

Corresponding fieldbus

Interface model	Corresponding standard
GSK-IF-N1	M-NET
GSK-IFCC-N1	CC-LINK
GSK-IFDN-N1	Device-NET
GSK-IFPNIO-N1	PROFI-NET-I/O
GSK-IFPNIRT-N1	PROFI-NET-IRT
GSK-IFFL-N1	FL-NET
GSK-IFET-N1	Ether-NET
GSK-IFSG-N1	SYSTEM GSK
GSK-IFDN(ET)-N1	Device-NET+ Ether-NET
GSK-IFCC(ET)-N1	CC-LINK+Ether-NET

Tightening result output by field bus

Corresponding standard	Output contents
Ether-NET	Tightening waveform All contents of the "online" item in the setting software

■Controller

Input of control power supply	DC24V±10% 1.0Amax
Input of drive power supply	3-phase AC160～264V 50/60Hz
Screen	6 digit 7 segment LED
Drive motor	AC Servo Motor
Drive power supply inrush current prevention mechanism	Inrush current prevention circuit
Analog monitor output	2 points ± 8 V (It Ooutputs the torque, speed and current tothe check terminal on panel surface.) (set by parameter)
Available temperature and humidity	0～50℃ 90% RH or less (no condensation)
Positioning battery	GSK-BATT(lifespan is 2 years)

Specification	Model	Weight[kg]	Heat sink mounting position
Standard type	GSK-14	1.3	No mounting
	GSK-15	2.4	Side mounting
	GSK-17	2.7	
Standard 2-axis type	GSKW-14	1.27	No mounting
	GSKW-15	4.0	Side mounting
T type	GSK-T4	1.3	No mounting
	GSK-T5	2.4	Rear mounting
	GSK-T7	2.4	
T 2-axis type	GSKW-T4	1.3	No mounting
	GSKW-T5	3.7	Rear mounting

■Interface

GSK - IF CC ( ) – N1
① ①※ ②

①Supported communication standard

Blank	: M-NET
CC	: CC-LINK
DN	: Device-NET
PNIO	: PROFI-NET-I/O
PNIRT	: PROFI-NET-IRT
FL	: FL-NET
ET	: Ether-NET
SG	: System GSK (I/O)
TA	: Tracer arm

②Corresponding series symbol

N1	: Standard item (Common to positioning and nut runner)
(SG-)N2	: Torx arm specification

※Please fill in the communication standard of channel 13 side when two Anybus are connected.
Example: GSK-IFDN (ET) -N 1

◆Model list

Model	Communication standard
GSK-IF-N1	M-NET
GSK-IFCC-N1	CC-LINK
GSK-IFDN-N1	Device-NET
GSK-IFPNIO-N1	PROFI-NET-I/O
GSK-IFPNIRT-N1	PROFI-NET-IRT
GSK-IFFL-N1	FL-NET
GSK-IFET-N1	Ether-NET
GSK-IFSG-N1	System GSK specification(I/O)
GSK-IFSG-N2	Torx arm specification
GSK-IFTA-N1	Tracer arm specification
GSK-IFDN(ET)-N1	Device-NET+Ether-NET
GSK-IFCC(ET)-N1	CC-LINK+Ether-NET

■Controller

GSK W – 1 4 – E – N2
① ② ③ ④ ⑤ ⑥

①Number of nut runners to be controlled

Blank	: 1 axis type
W	: 2 axis type

②Heat sink mounting position

1	: Side (Standard type)
T	: Back (T type)

③Nut runner rated value

4	This number will vary depending on the nut runner used. Please check the corresponding controller columnof Nut runner's Specification / Dimension Table for which number to use.
5	
7	

※ W specification correspond to only 4 and 5.

④Angle sensor type ※1

E	: Encoder
R	: Resolver

※1 Depending on the nut runner model.

⑤Angle sensor spec

Blank	: Standard type

⑥Corresponding series symbol

N2	: Standard item

◆Model list

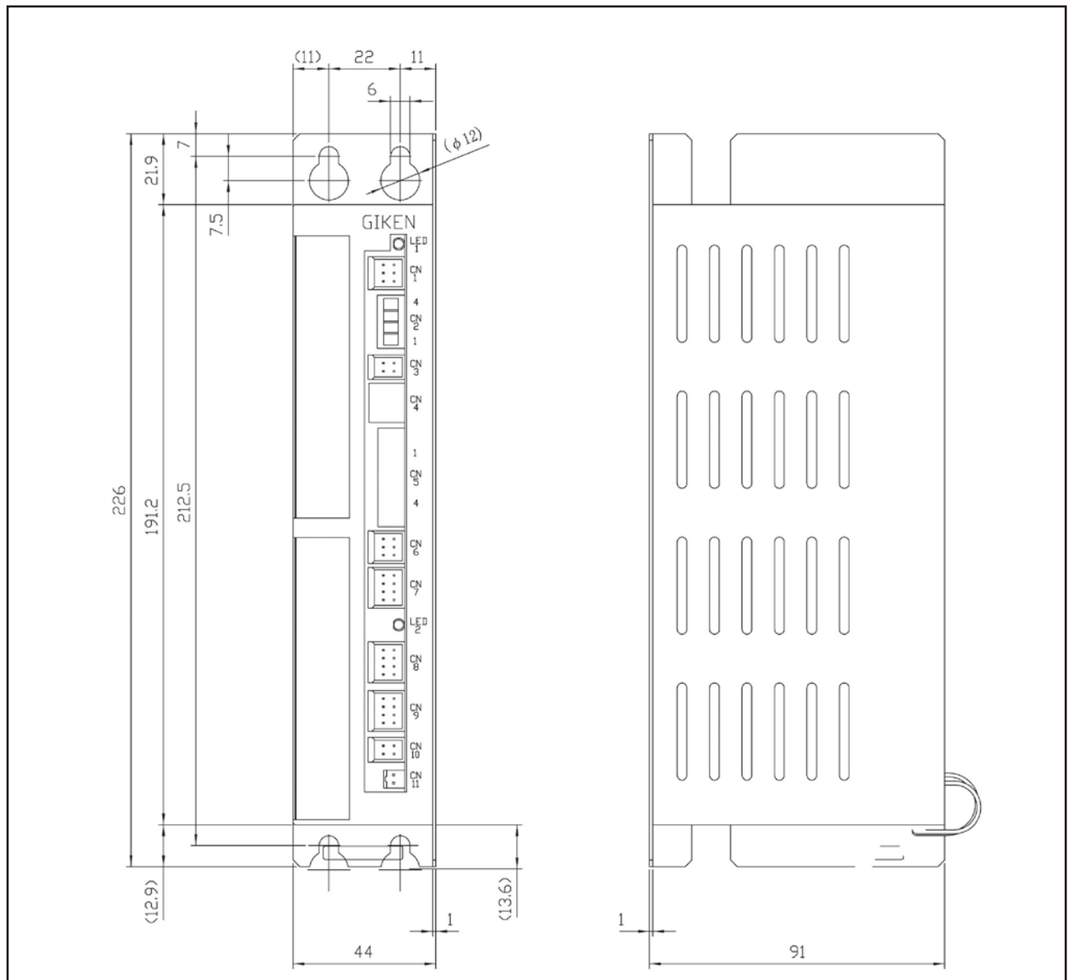
Model	Number of nut runners to be controlled	Heat sink mounting position
GSK-14-□□-N2	1 axis type	No mounting
GSK-15-□□-N2		Side mounting
GSK-17-□□-N2		
GSKW-14-□□-N2	2 axis type	No mounting
GSKW-15-□□-N2		Side mounting
GSK-T4-□□-N2	1 axis type	No mounting
GSK-T5-□□-N2		Rear mounting
GSK-T7-□□-N2		
GSKW-T4-□□-N2	2 axis type	No mounting
GSKW-T5-□□-N2		Rear mounting

■Interface

Model	Weight(kg)
GSK-IF-N1	0.54
GSK-IFCC-N1	0.59
GSK-IFDN-N1	
GSK-IFPNIO-N1	
GSK-IFPNIRT-N1	
GSK-IFFL-N1	

Model	Weight(kg)
GSK-IFET-N1	0.59
GSK-IFSG-N1	
GSK-IFSG-N2	
GSK-IFTA-N1	
GSK-IFDN(ET)-N1	0.64
GSK-IFCC(ET)-N1	

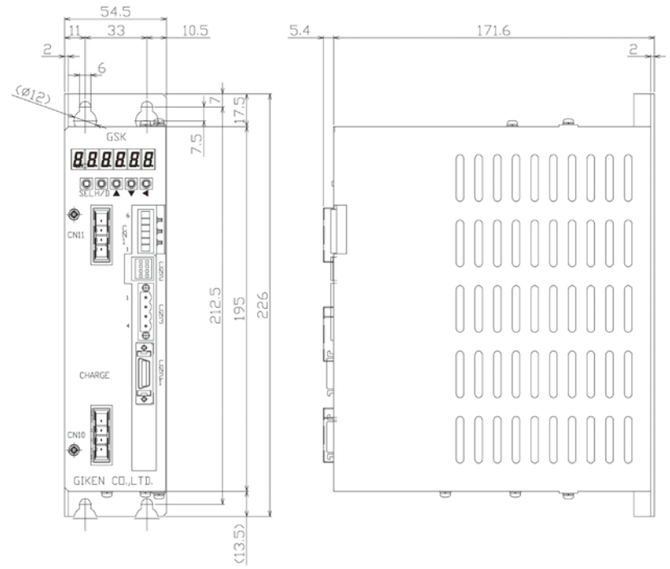
※ It is attached only to the top axis.



■Controller

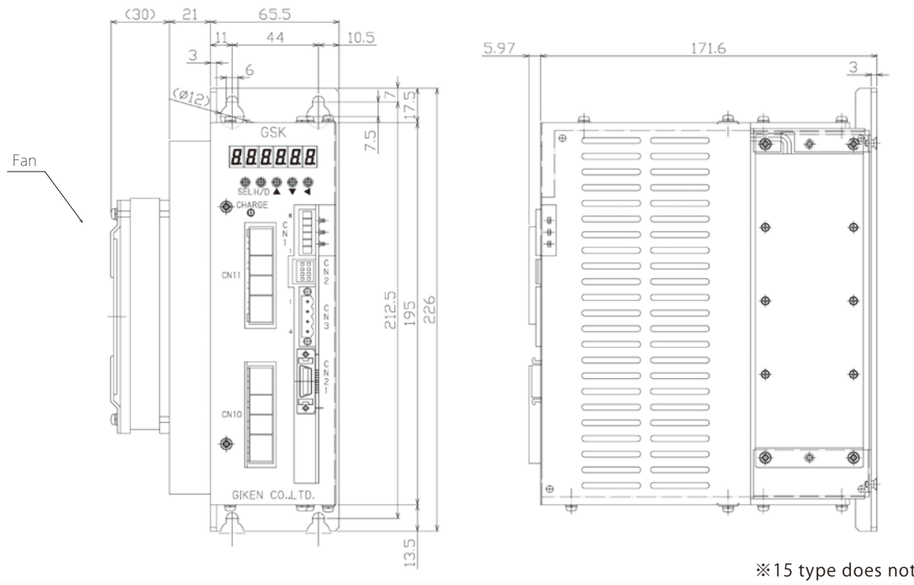
Standard type 1 axis specification

Model	Weight(kg)
GSK-14 (T4)-□□-N2	1.3



When the nut runner rated value is 4, there is no cooling plate so standard type and T type are same.

Model	Weight(kg)
GSK-15 (17)-□□-N2	2.4 (2.7)

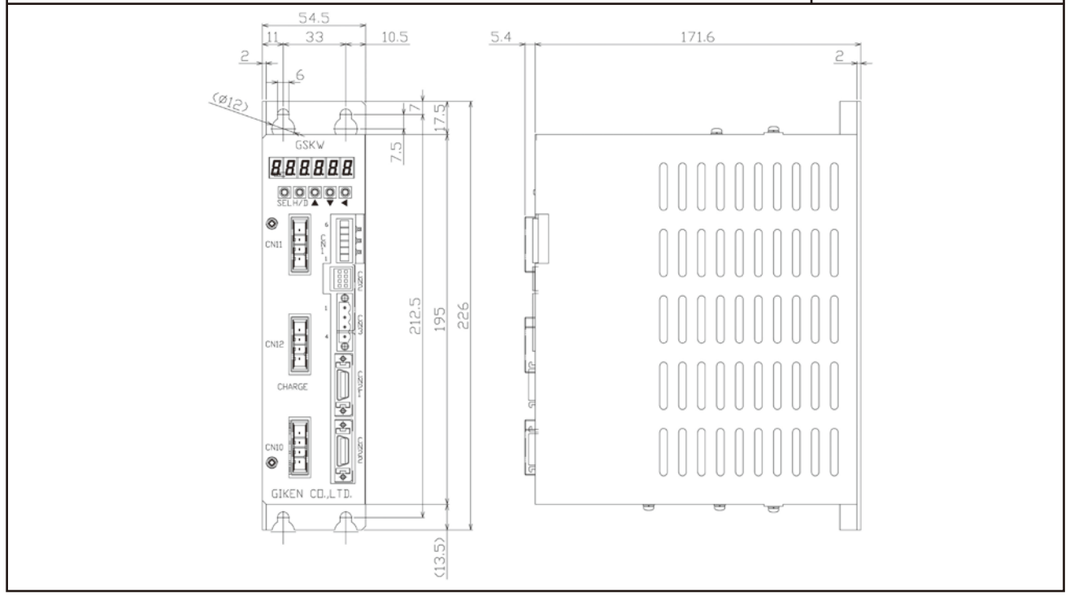


※15 type does not have a fan

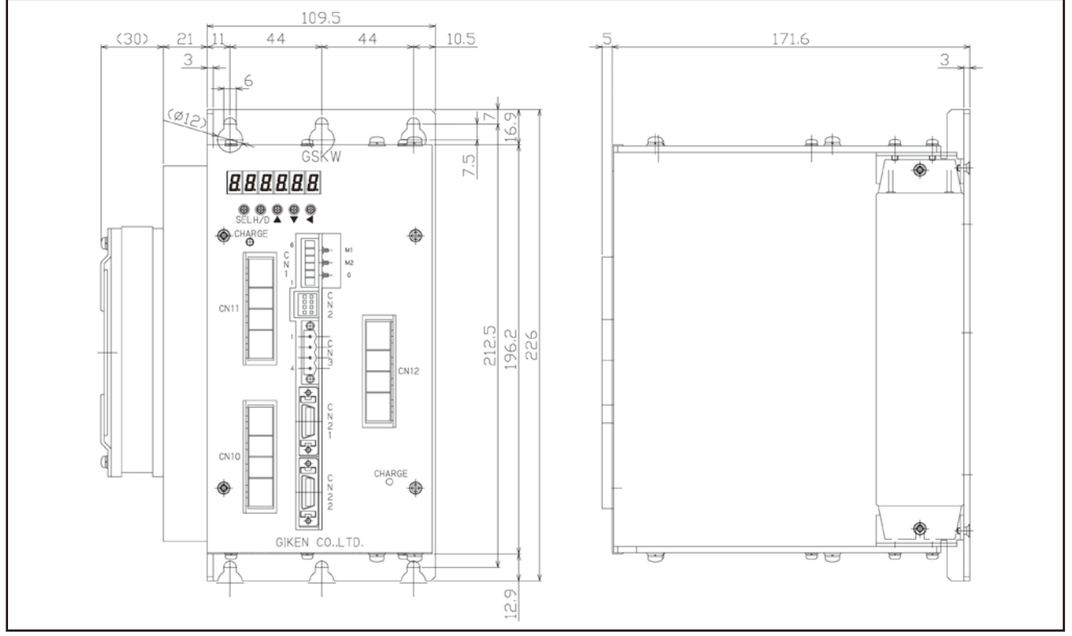
■Interface

Standard type 2 axis type

Model	Weight(kg)
GSKW-14 (T4)-□□-N2	1.3

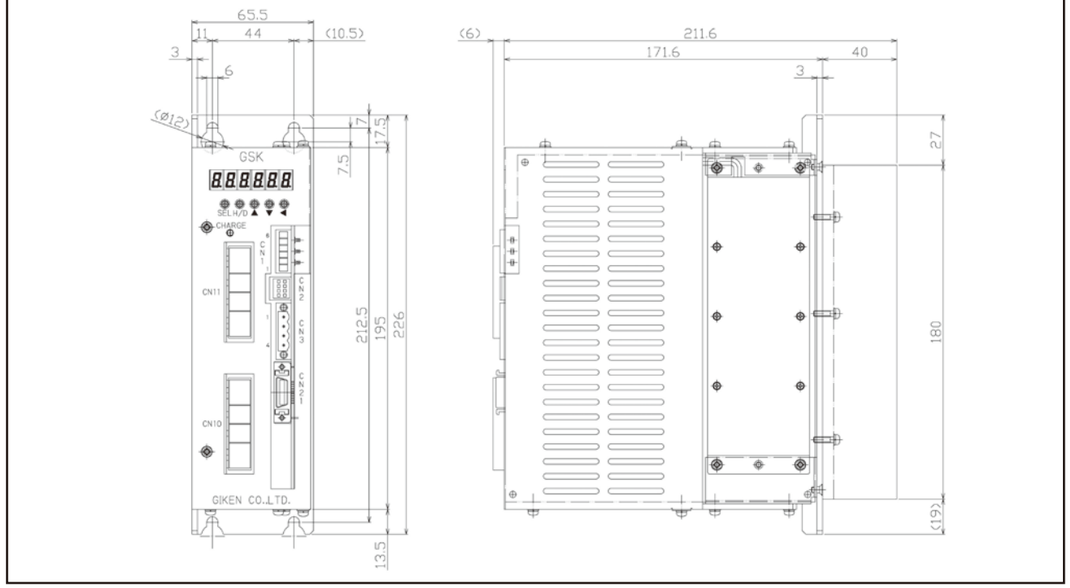


Model	Weight(kg)
GSKW-15-□□-N2	4.0



T type 1 axis type

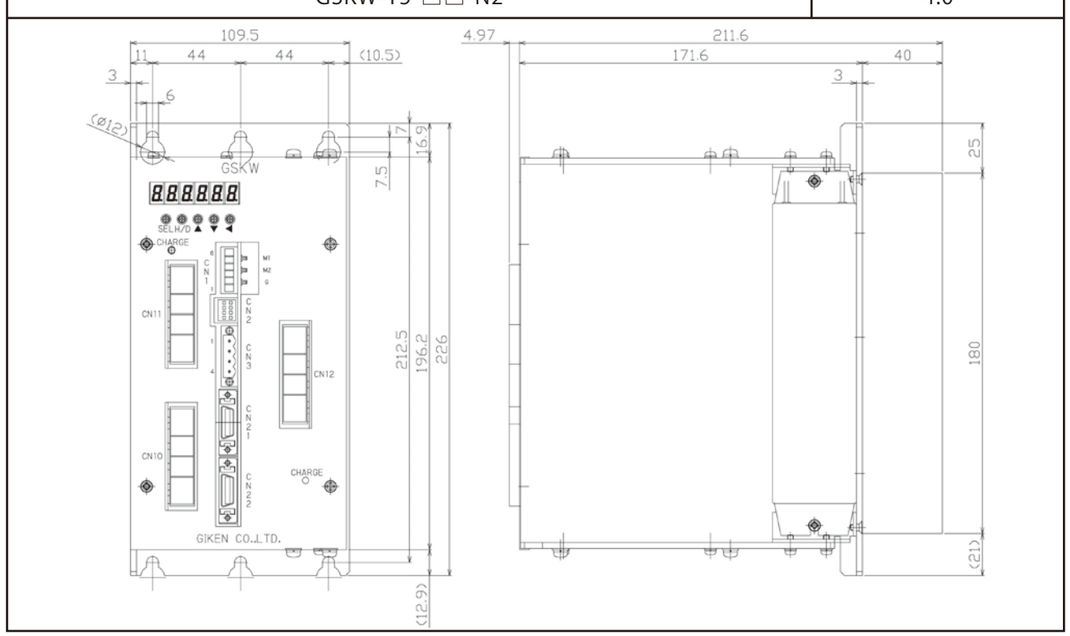
Model	Weight(kg)
GSK-T5 (T7)-□□-N2	2.4



Nutrunner Regarding the rated capacity 4 type, the cooling plate is unnecessary, so the standard and T type are common.

T type 2 axis type

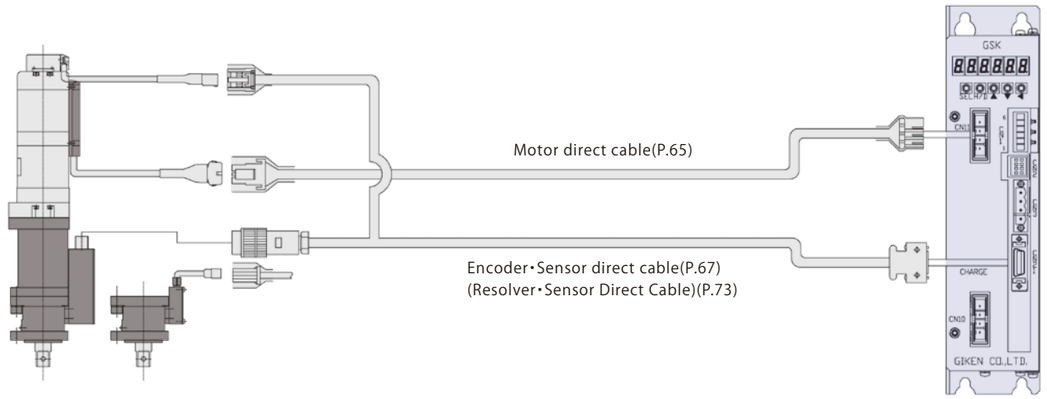
Model	Weight(kg)
GSKW-T5-□□-N2	4.0



■Cable configuration

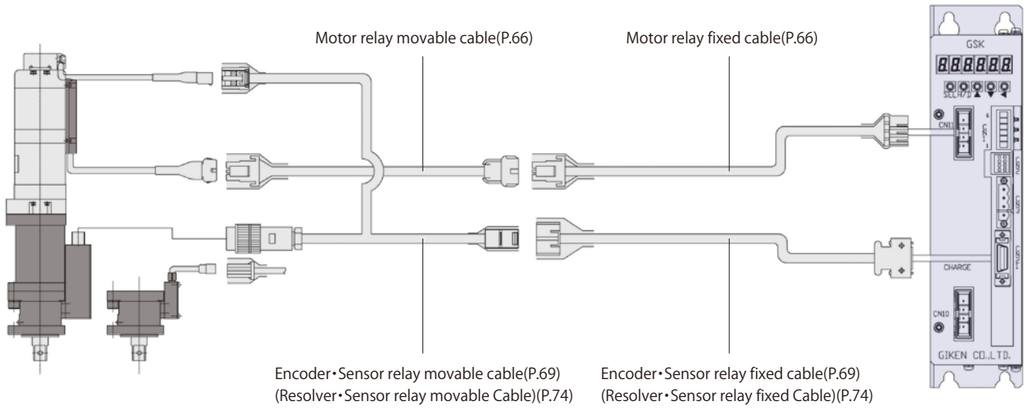
◆Direct cable

Connect from controller to nut runner with one.



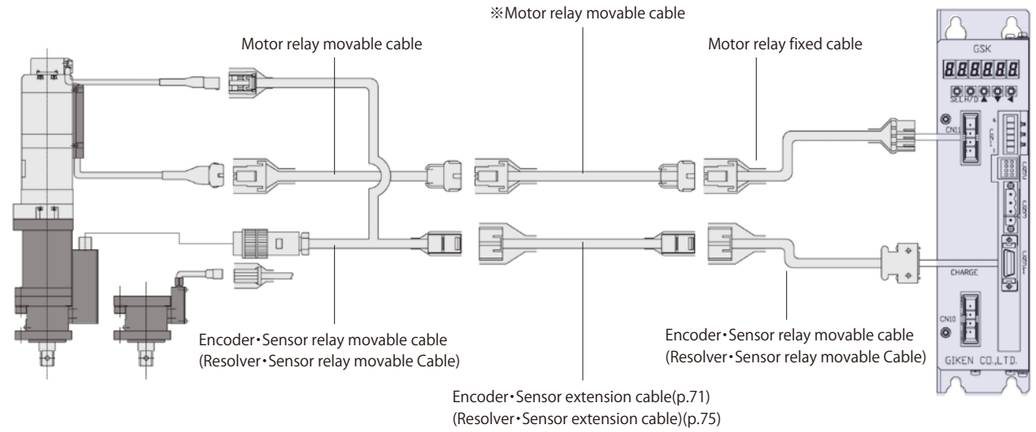
◆Relay cable

Connect two cables from the controller to the nut runner.



◆Extension cable

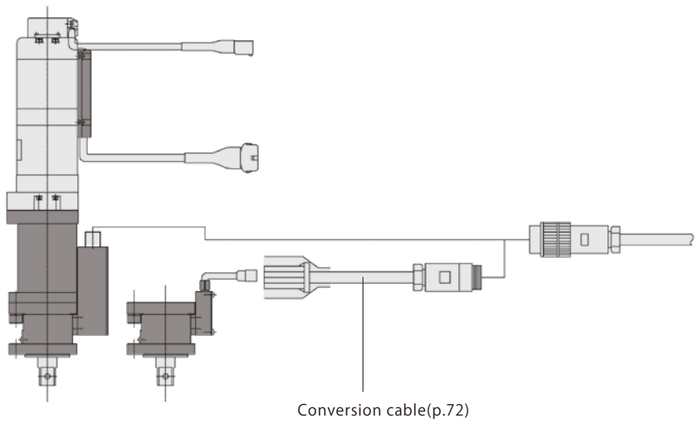
Connect three cables from the controller to the nut runner.



※The motor extension cable is the same specification as the motor relay movable cable.

◆Conversion cable

It is a cable to make it possible to connect a cable
for a standard torque sensor to a small torque sensor.



■Motor cable

◆Direct cable

【Model】

K8 M 5 D □ −4 R − □ M

① ② ③

①Electrical capacity classification

5	: GSK-14/GSK-T4
30	: GSK-15/GSK-T5
90	: GSK-17/GSK-T7

②Connector type

Blank	: GSK-15(17) GSK-T5(T7)
W	: GSK-14 GSK-T4

③Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable,
but operation guarantee is not possible. Please check the operation by the customer.
※3 All cables are flex cables.

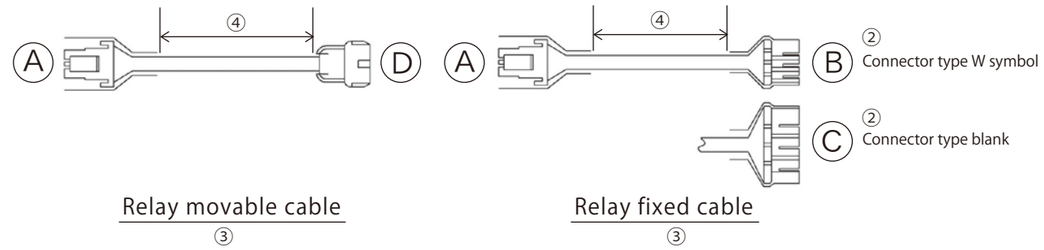
【Model list】

Name	Model	Corresponding controller
Direct cable	K8M5DW-4R-□M	GSK-14 GSK-T4
	K8M30D-4R-□M	GSK-15 GSK-T5
	K8M90D-4R-□M	GSK-17 GSK-T7

【Specification】

	Housing model	Contact type	Shape
A	350715-1 (AMP)	350550-1 (AMP)	凹
B	2-178128-4 (AMP)	1-353717-2 (AMP)	
C	2-179958-4 (AMP)	316040-2 (AMP)	

◆Relay cable



【Model】

K8 M 5 T □ −4 A − □ M

① ② ③ ④

①Electrical capacity classification

5	: GSK-14/GSKT4
30	: GSK-15/GSKT5
90	: GSK-17/GSKT7

②Connector type

Blank	: GSK-15(17) GSK-T5(T7)
W	: GSK-14 GSK-T4

③Cable segment

R	: Motor relay movable cable
A	: Motor relay fixed cable

④Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable,
but operation guarantee is not possible. Please check the operation by the customer.
※3 All cables are flex cables.

【Model list】

Name	Model	Corresponding controller
Relay movable cable	K8M5TW-4R-□M	GSK-14 GSK-T4
	K8M30T-4R-□M	GSK-15 GSK-T5
	K8M90T-4R□-M	GSK-17 GSK-T7

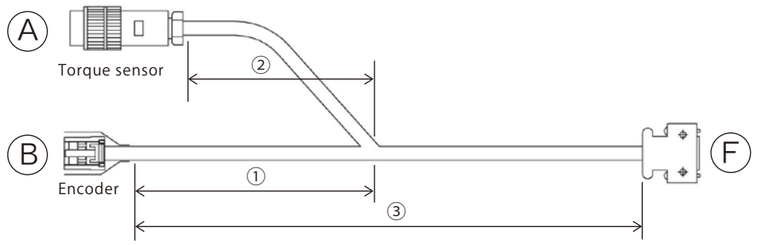
Name	Model	Corresponding controller
Relay fixed cable	K8M5TW-4A-□M	GSK-14 GSK-T4
	K8M30T-4A-□M	GSK-15 GSK-T5
	K8M90T-4A-□M	GSK-17 GSK-T7

【Specification】

	Housing model	Contact type	Shape
A	350715-1 (AMP)	350550-1 (AMP)	凹
B	2-178128-4 (AMP)	1-353717-2 (AMP)	
C	2-179958-4 (AMP)	316040-2 (AMP)	
D	350781-1 (AMP)	350547-3(AMP) (PinNo.1～3) 350669-1(AMP) (PinNo.4)	凸

■Encoder/Sensor cable

◆Direct cable(For standard torque sensor)



【Model】

8 E ① S ② D−16 R− ③ M

①Cable length of encoder part

Blank: 0.1m(Standard)

※1 Other than the above length will be a custom made item.

②Cable length of sensor part

Blank: 0.4m(Standard)

※2 Other than the above length will be a custom made item.

③Cable length

Designation of cable length (Specified unit:1m)

※3 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※4 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible. Please check the operation by the customer.
※5 All cables are flex cables.

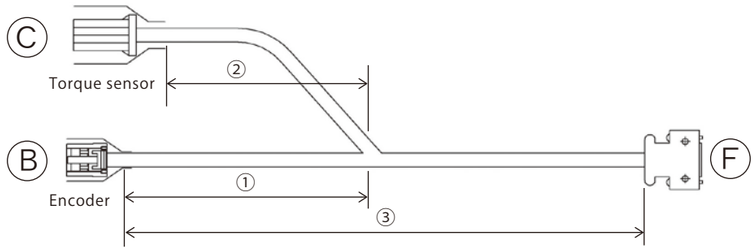
【Model list】

Name	Model
Direct cable	8ESD-16R-□M

【Specification】

Housing/connector model		Contact type	Shape
A	1108-12A10-7F8(TAZIMI)	–	凹
B	1-1318118-6 (AMP)	1318108-1 (AMP)	凸
F	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

◆Direct cable(For small torque sensor)



【Model】

8 E ① S ② DC−16 R− ③ M

①Cable length of encoder part

Blank: 0.1m(Standard)

※1 Other than the above length will be a custom made item.

②Cable length of sensor part

Blank: 0.1m(Standard)

※2 Other than the above length will be a custom made item.

③Cable length

Designation of cable length (Specified unit:1m)

※3 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※4 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible. Please check the operation by the customer.
※5 All cables are flex cables.

【Model list】

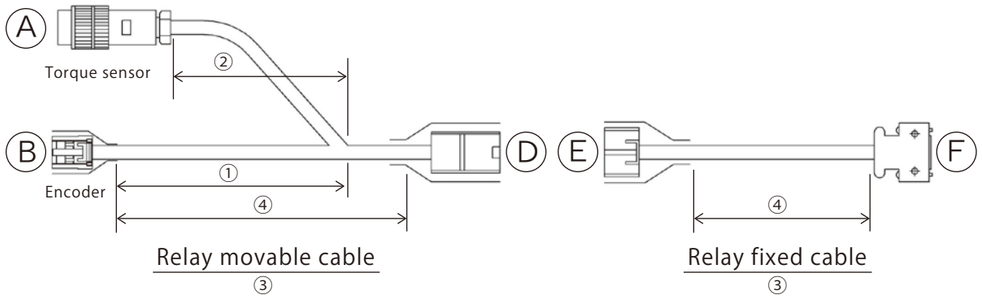
Name	Model
Direct cable	8ESDC-16R-□M

【Specification】

Housing/connector model		Contact type	Shape
B	1-1318118-6 (AMP)	1318108-1 (AMP)	凸
C	1-1318119-4 (AMP)	1318108-1 (AMP)	凹
F	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

■Encoder/Sensor cable

◆Relay cable(For standard torque sensor)



【Model】

8 E ① S ② T−16 ③ R − ④ M

①Cable length of encoder part	②Cable length of sensor part	③Cable segment
Blank: 0.1m(Standard)	Blank: 0.4m(Standard)	R ：Motor relay movable cable A ：Motor relay fixed cable
※1 Other than the above length will be a custom made item.	※2 Other than the above length will be a custom made item.	※3 All cables are flex cables.

④Cable length

Designation of cable length (Specified unit:1m)

※4 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※5 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.

【Model list】

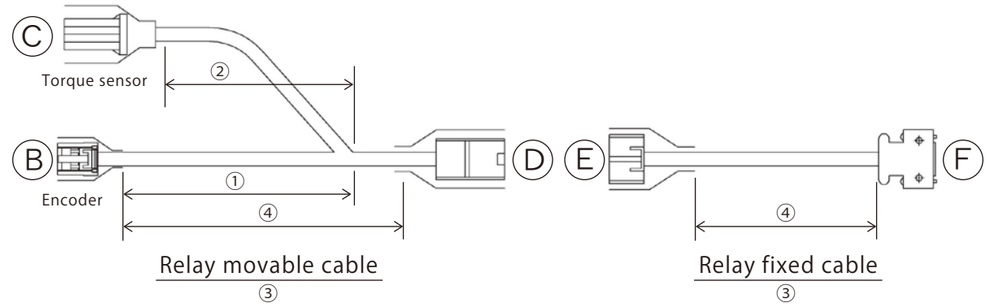
Name	Model
Relay movable cabl	8EST-16R-□M

Name	Model
Relay fixed cable	8EST-16A-□M

【Specification】

Housing/connector model		Contact type	Shape
A	1108-12A10-7F8(TAZIMI)	–	凹
B	1-1318118-6 (AMP)	1318108-1 (AMP)	凸
D	1-1318115-9 (AMP)	1318112-1 (AMP)	凸
E	1-1318118-9 (AMP)	1318108-1 (AMP)	凹
F	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

◆Relay cable(For small torque sensor)



【Model】

8 E ① S ② TC−16 ③ R − ④ M

①Cable length of encoder part	②Cable length of sensor part	③Cable segment
Blank: 0.1m(Standard)	Blank: 0.1m(Standard)	R ：Motor relay movable cable A ：Motor relay fixed cable
※1 Other than the above length will be a custom made item.	※2 Other than the above length will be a custom made item.	※3 All cables are flex cables.

④Cable length

Designation of cable length (Specified unit:1m)

※4 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※5 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.

【Model list】

Name	Model
Relay movable cabl	8ESTC-16R-□M

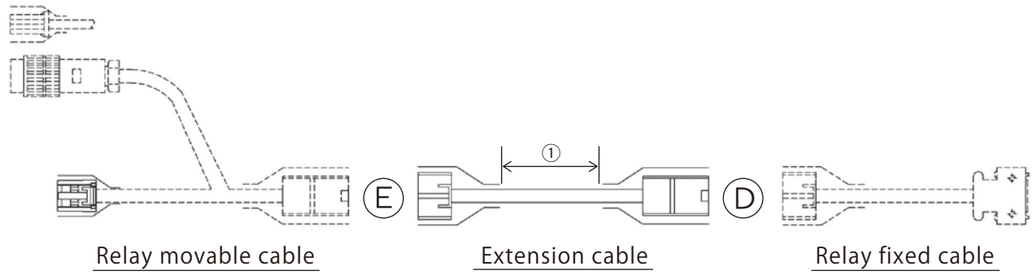
Name	Model
Relay fixed cable	8ESTC-16A-□M

【Specification】

Housing/connector model		Contact type	Shape
B	1-1318118-6 (AMP)	1318108-1 (AMP)	凸
C	1-1318119-4 (AMP)	1318108-1 (AMP)	凹
D	1-1318115—9 (AMP)	1318112-1 (AMP)	凸
E	1-1318118-9 (AMP)	1318108-1 (AMP)	凹
F	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

■Encoder/Sensor cable

◆Extension cable



【Model】

8 E S T－16 E X □ M

①

①Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.
※3 All cables are flex cables.

【Model list】

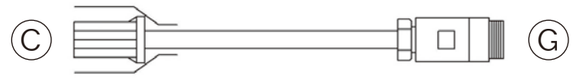
Name	Model
Extension cable	8EST-16REX□M

【Specification】

Housing/connector model		Contact type	Shape
D	1-1318115-9（AMP）	1318112-1（AMP）	凸
E	1-1318118-9（AMP）	1318108-1（AMP）	凹

◆Conversion cable（Common item of encoder/resolver）

It is a cable to make it possible to connect a cable for a standard torque sensor to a small torque sensor.



【Model list】

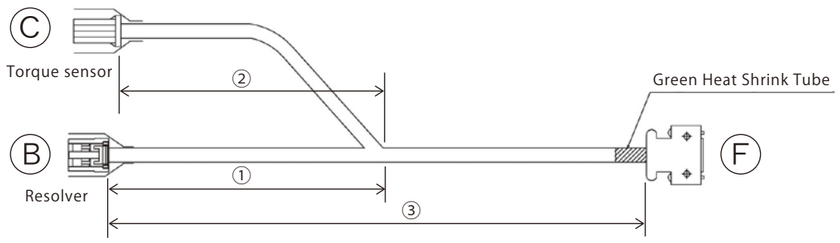
Model	Cable length
AZMC-CH-0.2M	0.2m

【Specification】

Housing/connector model		Contact type	Shape
C	1-1318119-4（AMP）	1318108-1（AMP）	凹
G	1108-32a10-7m10.0(TAZIMI)	–	凸

■Resolver/Sensor cable

◆Direct cable



【Model】

8 R ① S ② D C－16 R－ ③ M

①Cable length of resolver part

Blank: 0.1m(Standard)

※1 Other than the above length will be a custom made item.

②Cable length of sensor part

Blank: 0.4m(Standard)

※2 Other than the above length will be a custom made item.

③Cable length

Designation of cable length (Specified unit:1m)

※3 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※4 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible. Please check the operation by the customer.
※5 All cables are flex cables.

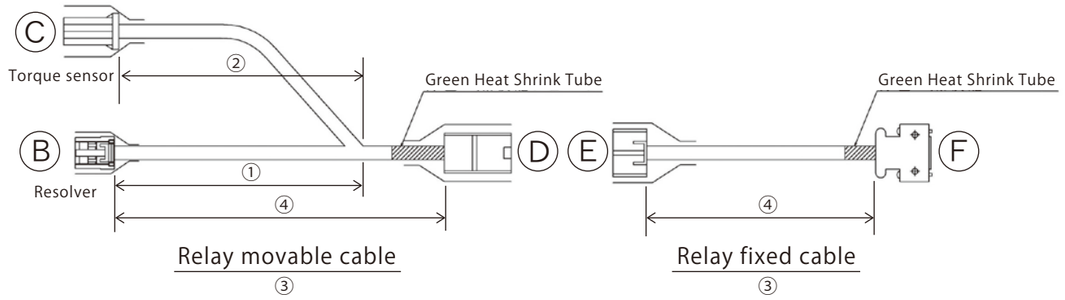
【Model list】

Name	Model
Direct cable	8RSDC-16R-□M

【Specification】

Housing/connector model		Contact type	Shape
B	1-1318118-6 (AMP)	1318108-1 (AMP)	凸
C	1-1318119-4 (AMP)	1318108-1 (AMP)	凹
F	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

◆Relay cable(For small torque sensor)



【Model】

8 R ① S ② T C－16 R ③ － ④ M

①Cable length of resolver part

Blank: 0.3m(Standard)

※1 Other than the above length will be a custom made item.

②Cable length of sensor part

Blank: 0.3m(Standard)

※2 Other than the above length will be a custom made item.

③Cable segment

R : Motor relay movable cable

A : Motor relay fixed cable

※3 All cables are flex cables.

④Cable length

Designation of cable length (Specified unit:1m)

※4 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※5 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible. Please check the operation by the customer.

【Model list】

Name	Model
Relay movable cabl	8RSTC-16R-□M

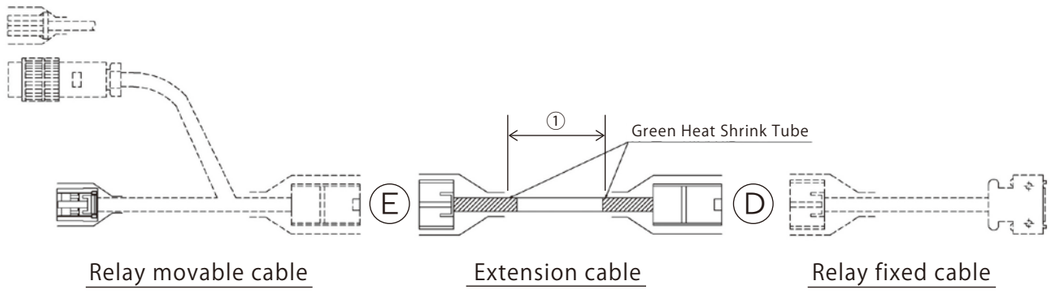
Name	Model
Relay fixed cable	8RSTC-16A-□M

【Specification】

Housing/connector model		Contact type	Shape
B	1-1318118-6 (AMP)	1318108-1 (AMP)	凸
C	1-1318119-4 (AMP)	1318108-1 (AMP)	凹
D	1-1318115-9 (AMP)	1318112-1 (AMP)	凸
E	1-1318118-9 (AMP)	1318108-1 (AMP)	凹
F	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

■Resolver/Sensor cable

◆Extension cable



【Model】

8 R S T－16 E X－ □ M
①

①Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.
※3 All cables are flex cables.

【Model list】

Name	Model
Extension cable	8RST-16REX-□M

【Specification】

Housing/connector model		Contact type	Shape
D	1-1318115-9（AMP）	1318112-1（AMP）	凸
E	1-1318118-9（AMP）	1318108-1（AMP）	凹

◆Conversion cable（Common item of encoder/resolver）

It is a cable to make it possible to connect a cable for a standard torque sensor to a small torque sensor.

【Model list】

Model	Cable length
AZMC-CH-0.2M	0.2m

【Specification】

Housing/connector model		Contact type	Shape
C	1-1318119-4（AMP）	1318108-1（AMP）	凹
G	1108-32a10-7m10.0(TAZIMI)	–	凸

■Cable specification list

◆Motor cable withstand voltage 600V North American specification compliant

Cable type	Type	Corresponding controller	Cable size	Cable outer diameter	Coating color	Cable allowable current	Cable type
K8M5DW-4R-□M	Direct	GSK(W)-14 GSK(W)-T4	0.5X4 AWG21 600V	8.8mm	Gray	5.2A	Flex cable
K8M30D-4R-□M		GSK(W)-15 GSK(W)-T5	0.75X4 AWG18 600V	9.5mm		14.4A	
K8M90D-4R-□M		GSK-17(T7)	1.5X4 AWG16 600V	10.5mm		19.0A	
K8M5TW-4A-□M	Relay fixed	GSK(W)-14 GSK(W)-T4	0.5X4 AWG21 600V	8.8mm		5.2A	
K8M5TW-4R-□M	Relay movable						
K8M30T-4A-□M	Relay fixed	GSK(W)-15 GSK(W)-T5	0.75X4 AWG18 600V	9.5mm		14.4A	
K8M30T-4R-□M	Relay movable						
K8M90T-4A-□M	Relay fixed	GSK-17 GSK-T7	1.5X4 AWG16 600V	10.5mm		19.0A	
K8M90T-4R-□M	Relay movable						

◆Encoder/Sensor cable

Cable type	Type	Corresponding controller	Cable size	Cable outer diameter	Coating color	Cable type
8ES□-16□-□M	Common to all models		AWG23	10.8mm	Black	Flex cable
8RS□-16□-□M						

■Setting software

To carry out various settings of GSK, a PC in which setting software is installed is required Various settings, communication status with upper device, tightening result, and tightening waveform can be confirmed with setting software.

◆Setting software model

Setting software model	Language	Controller type
GSK-SET-SOFT-J	Japanese	Common to GSK GSKW positioning GSK
GSK-SET-SOFT-E	English	

Supported OS win7/8/8.1/10

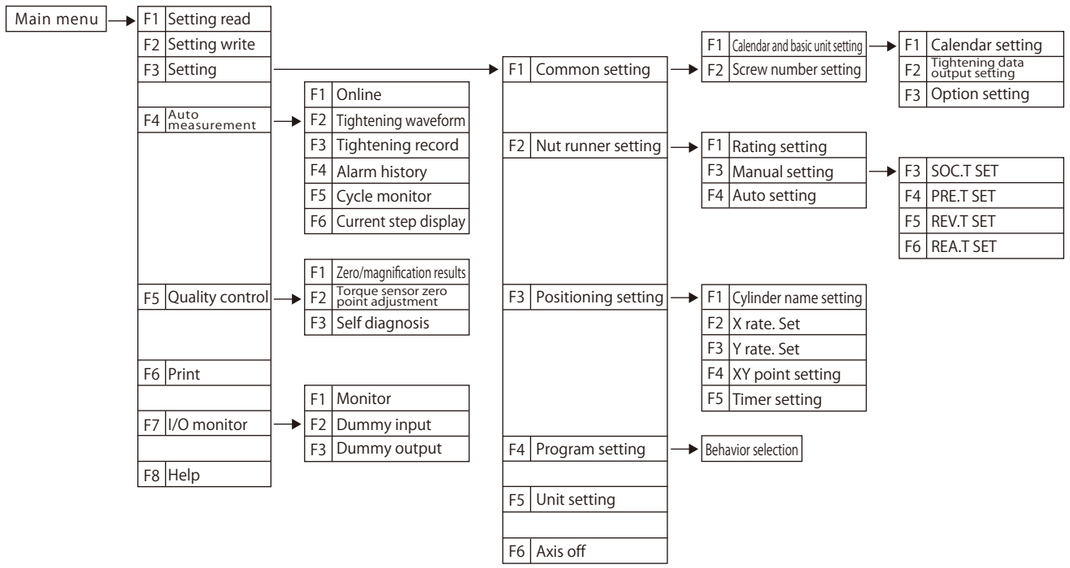
◆Setting cable model

Cable for connecting PC in which setting software of GSK is installed and interface.

Model	Cable length [m]
GK-SET-1.8M	1.8m

※ The setting cable is common to all setting software.

■Hierarchy of setting software



■Setting screen

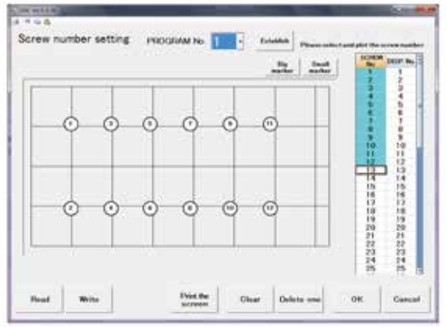
【Main menu】

Initial screen that is displayed when the setting software is activated

【Setting menu】

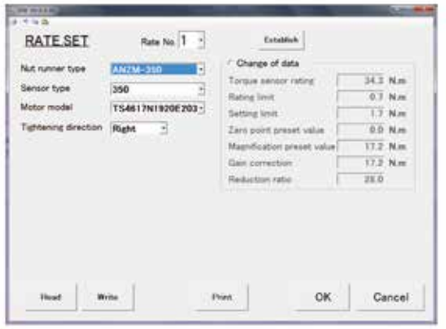
Screen for carrying out various settings

【Screw number Setting】



Screen for setting the screw No. array to be displayed on the display (GSK-D1/ GK-D1 series)

【Rate Setting】



Screen for setting the details of used nut runner

【SOC.T Setting】

Screen for setting the rotation for matching a bolt with a socket

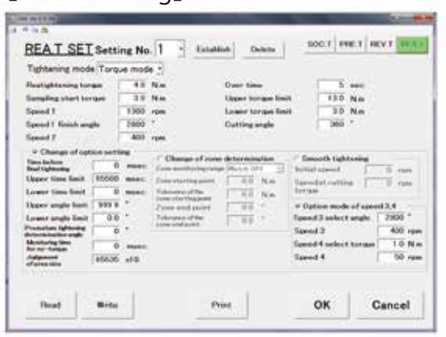
【PRE.T Setting】

Screen for setting bolt setting status to seating (temporary tightening)

【REV.T Setting】

Screen for setting seizure judgment after temporary tightening of bolt

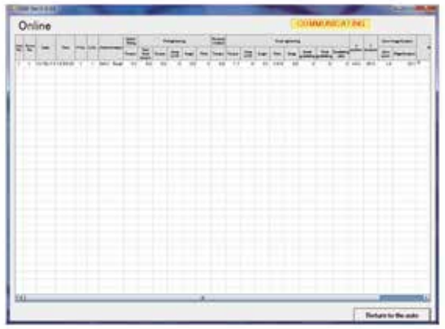
【REA.T Setting】



Screen for setting the final tightening For the type of final tightening, two types; torque method and angle method are available

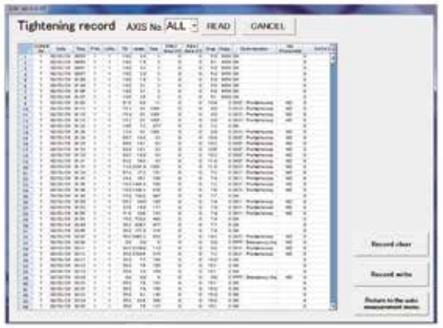
※For the final tightening setting, up to No. 50 can be set.

【Online】



Screen for saving the tightening result in PC by making a connection to controller

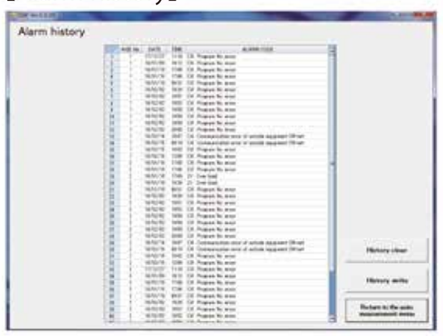
【Tightening history】



Screen for importing the saved in the controller in PC

※Maximum number of saved in tightening history per axis:5,000 item

【Alarm history】



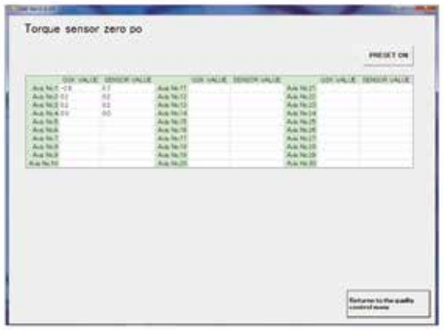
Screen for importing the alarm data saved in the controller in PC

※Maximum number of saved items in alarm history per axis:16 items

【 I/O monitor】

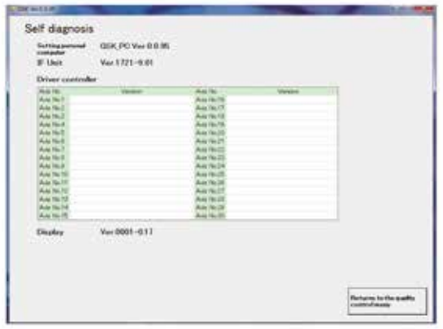
Screen for checking the I/O status with upper link

【Torque sensor Zero setting】



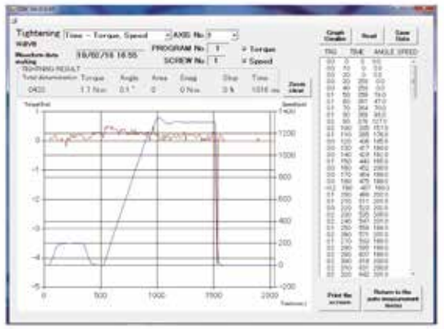
Check the Torque sensor Zero setting

【Self diagnosis】



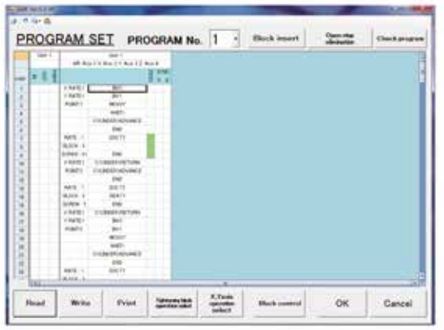
Screen for checking each version of currently conffigured parts

【Tightening waveform】



Screen for importing the tightening waveform in PC

【Program setting】

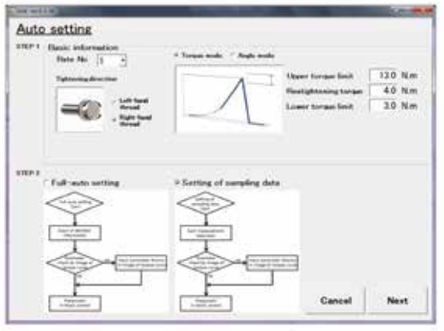


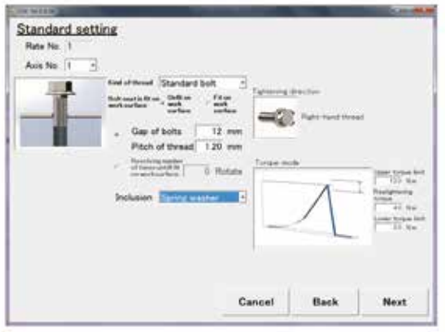
Screen for setting the combination of behaviors related to tightening(socket matching,temporary inversion,final tightening)for each axis tightening,

※Maximum number of programs

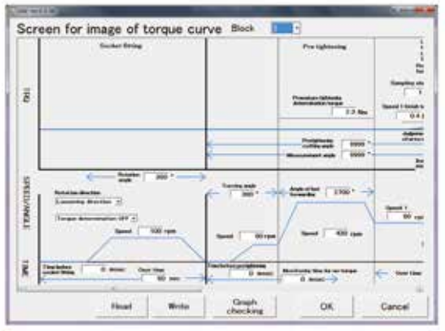
Max.number of axes	Number of programs	Number of steps
30	16	220
30	50	70
8	50	220

【Auto setting】





・In the full auto setting, it is a setting screen that creates tightening setting automatically when you enter necessary items.
・In the sampling setting, you can actually tighten the work and make detailed settings.



GKL current sensor control nut runner system

Items

GKL current sensor control nut runner system

◆Outline of system

■The current sensor feed back control system"GKL"is the torque control type nut runner system that enables the various tightening methods to many types of tightening objects.

◆ANM(R) Nut runner

■Torque sensor is not equipped due to the current sensor control system.
■Rotation number can be freely set in a range from low-speed to high-speed rotation.
■Wide torque range from low torque to high torque with a variety range of types.
■It is a low cost product line compared to GSK.
■Suitable for screw loosening equipment.

◆Interface unit (Common to series)

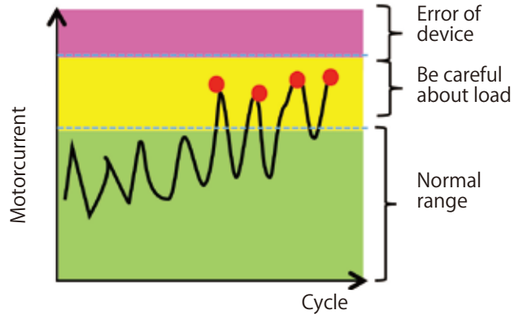
■The interface unit is a device communicating with an external unit such as sequencer, display, setting PC, and printer.
■GSK system can display the information related to tightening control such as setting data and tightening result by connecting PC to IF unit.
■ANYBUS supports various fieldbuses.
■The interface unit is equipped with communication function supporting single axis and multi-axis controller 1-axis to 30-axis and 1 unit is attached to 1 set. (in case of 31-aixs or more, 2units are required.)
■Confirmation result data can be confirmed without connection with PC by connecting the dedicated printer.

◆Controller unit

■Tightening torque accuracy(3σ/X)　Target torque ±10%～±12%
■It is possible with the stall control. which is suitable for keeping torque and soft-ioint tightening.
■High reliability makes it always possible to check the current sensor and gear re-duction part evry time. (Because of setting required.)
■Tightening program sets the rotation number and torque control, faciliating various tightening patterns.
■Two setup methods are provided to set up the tightening pogram:The input method from the set up personal computer:and that from the controller front panel.

※"GKL"There is no angle judgment control from snug torque.

■Predictive maintenance function is mounted on the nut runner for the first time



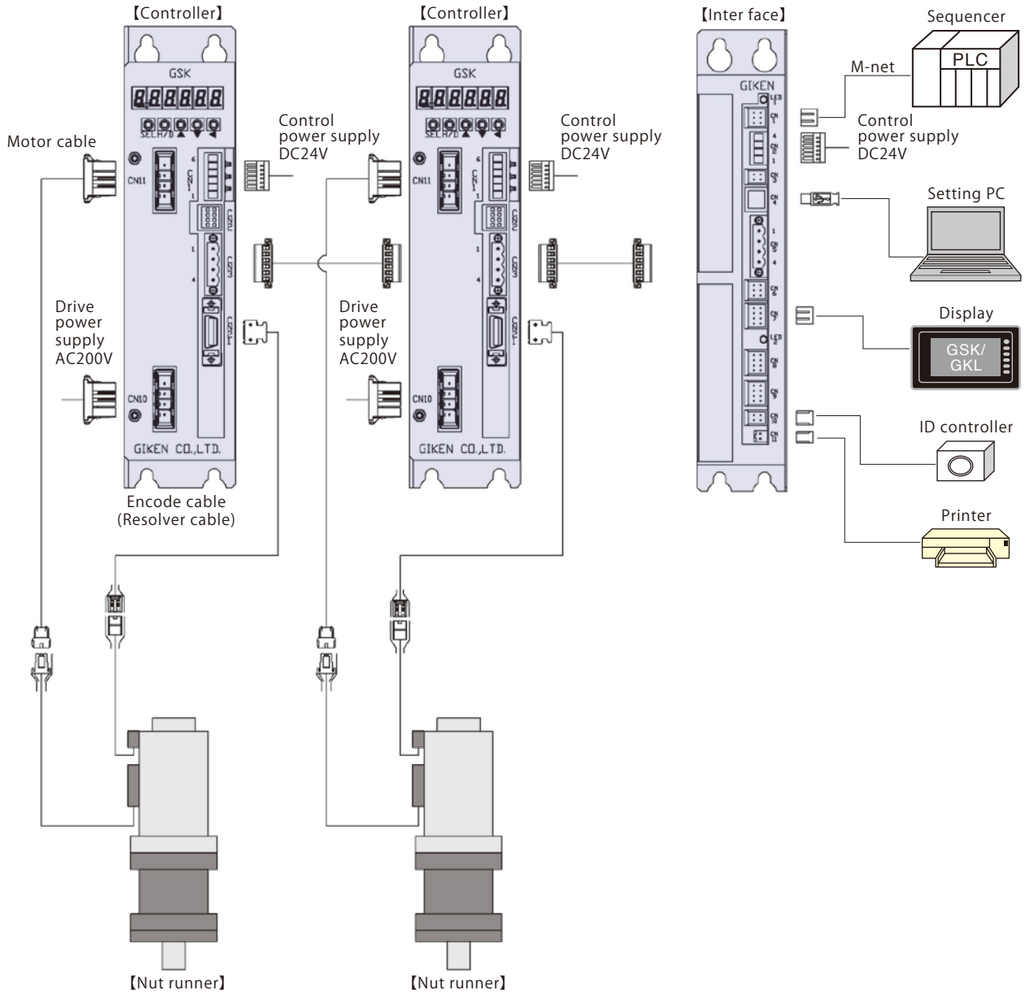
Prediction is output before stop by alarm of device error utilizing the status monitoring.

Stop of equipment due to failure can be prevented by forecasting heat generation of motor, degradation of bearing, damage of reduction gear etc. and outputting protection warning and outputting the life alarm of consumable parts mounted on controller such as capacitor, relay, EEPROM.

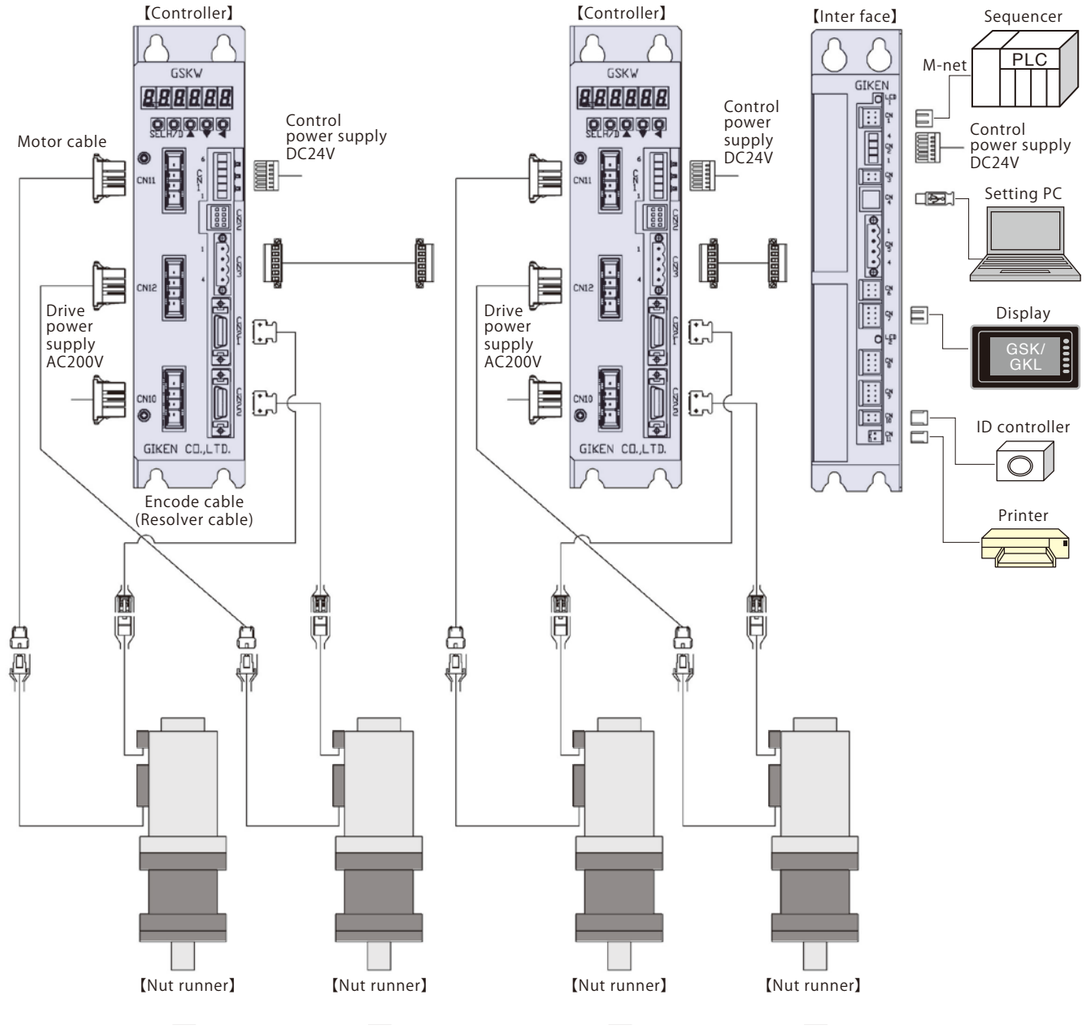
■Globalization of communication is supported

・M-NET
・CC-LINK
・Device-NET
・PROFI-NET-I/O
・PROFI-NET-IRT
・FL-NET
・Ether-NET
communication can be supported

■GKL system configuration



■GKLW system configuration



◆Nut runner model composition

AN M – 400 ( )
① ② ③

①Angle sensor type

M ：Encoder
R ：Resolver

※Resolver specification is semi-ordered.

②Torque division

Notation unit kgf･cm

③Special symbol A

Blank：Straight type
L ：External offset type

◆Series list

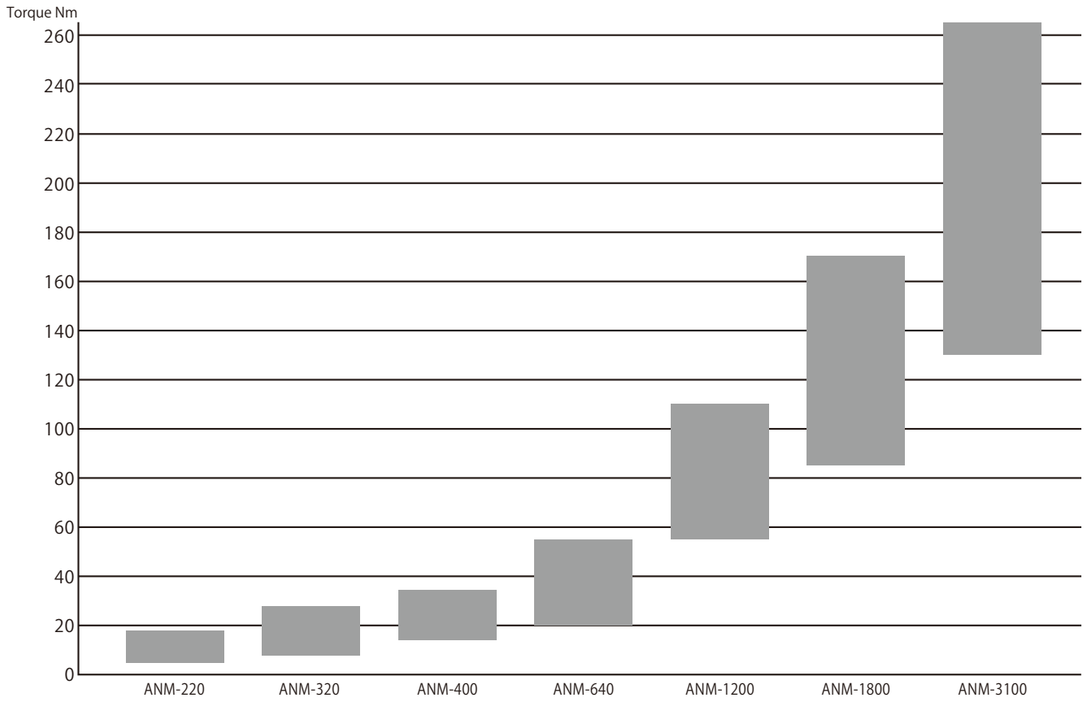
Series	Angle sensor type	Features
ANM	Encoder	Straight type
ANM-L		External offset type
ANR	Resolver	Straight type
ANR-L		External offset type

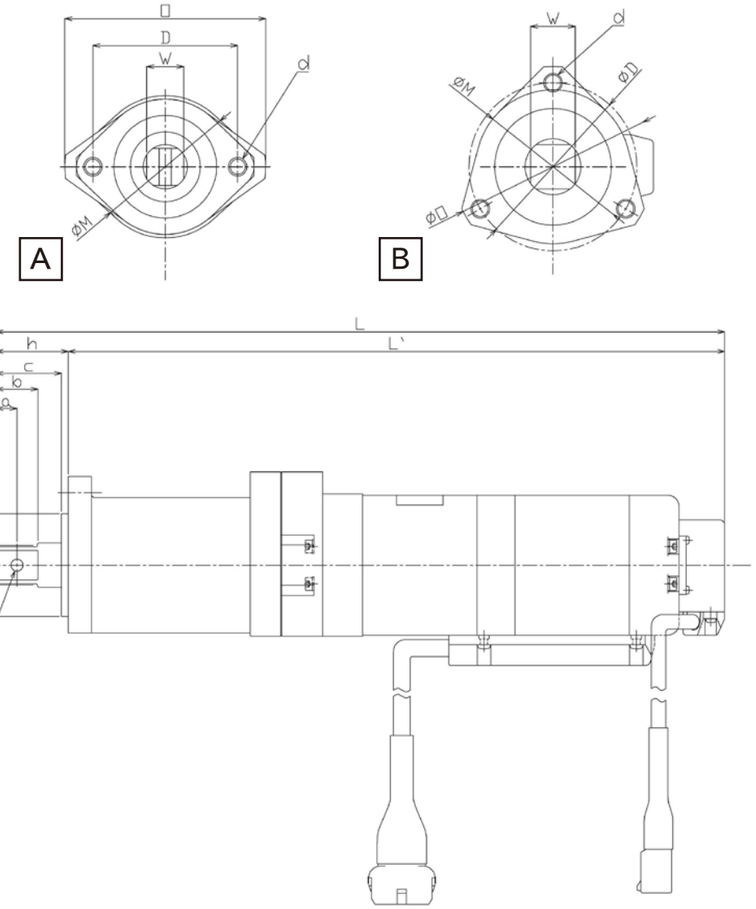
※Resolver specificationis is a custom item.

Specification/Dimension Table

■Straight type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Crosspounding controller
ANM-220	18	310	1.3	0.6	GKL-14(T4)-E-N2 GKLW-14(T4)-E-N2
ANM-320	28	430	1.6	1.2	
ANM-400	35	310	1.6	1.2	
ANM-640	55	420	3.4	2.3	
ANM-1200	110	420	4.2	4.5	GKL-15(T5)-E-N2 GKLW-15(T5)-E-N2
ANM-1800	170	285	5.2	4.5	
ANM-3100	265	235	8.5	8.5	



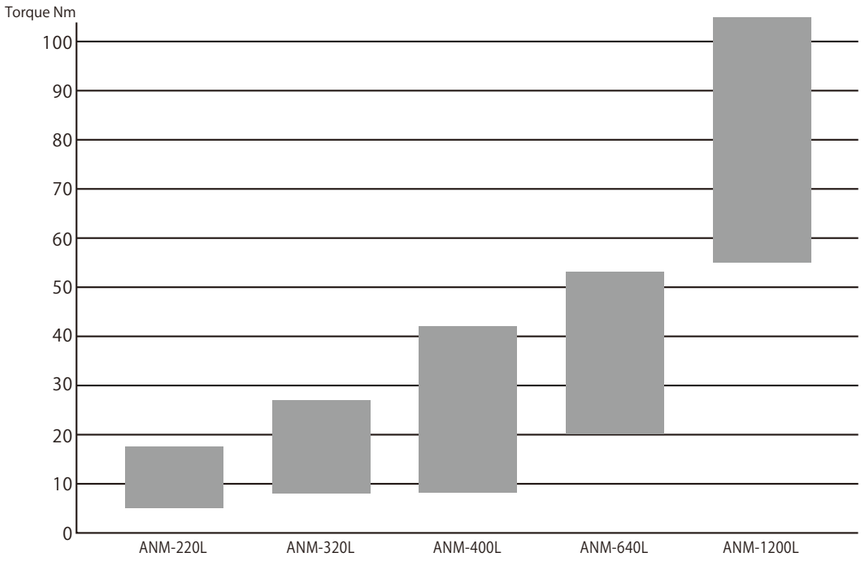


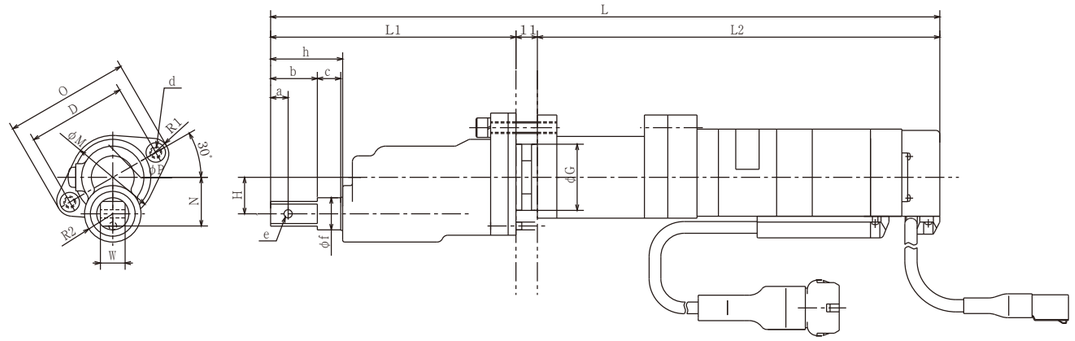
Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	W Reference dimension
ANM-220	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	179.5	158.5	21	42	64	9.52
ANM-320	A	8	16	23	51	2-M6	4.2	17	34	-0.025 -0.050	232.7	206.7	26	42	64	12.7
ANM-400	A	8	16	23	51	2-M8	4.2	17	34	-0.025 -0.050	232.7	206.7	26	42	64	12.7
ANM-640	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	246.9	215.9	31	61	80	15.87
ANM-1200	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	312.2	281.2	31	61	80	15.87
ANM-1800	B	13	25	36	68	3-M8	5.2	24	50	-0.03 -0.05	357.2	318.2	39	61	82	19.05
ANM-3100	B	13	25	36	72	3-M8	5.2	24	50	-0.03 -0.05	362.2	323.2	39	66	86	19.05

Specification/Dimension Table

■External offset type

Model	Max torque [N•m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Crosspounding controller
ANM-220L	17.5	305	1.5	0.6	GKL-14(T4)-E-N2 GKLW-14(T4)- E-N2
ANM-320L	27	420	2.9	1.2	
ANM-400L	41	310	2.9	1.2	
ANM-640L	53	410	4.2	2.3	
ANM-1200L	105	420	5.0	4.5	GKL-15(T5)-E-N2 GKLW-15(T5)-E-N2





Nut runner model	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L1	L2	h	M	N	O	P	R1	R2	H	W Reference dimension
ANM-220L	7.5	21	11	51	2-M6	3.2	11.5	34	-0.025 -0.050	286.5	117	158.5	33	43	25	64	4	8	14.5	18.75	9.52
ANM-320L	9	24	12	51	2-M6	4.2	16.5	34	-0.025 -0.050	343.7	126	206.7	37	43	25	64	4	8	14.5	18.75	12.7
ANM-400L	9	24	12	51	2-M8	4.2	16.5	34	-0.025 -0.050	343.7	126	206.7	37	43	25	64	4	8	14.5	18.75	12.7
ANM-640L	9.5	26	13.5	62	2-M8	5.2	19.5	44	-0.025 -0.050	344.9	118	215.9	40	61	30	76	5	9	20	30	15.87
ANM-1200L	9.5	26	13.5	62	2-M8	5.2	19.5	44	-0.025 -0.050	410.2	118	281.2	40	61	30	76	5	9	20	30	15.87

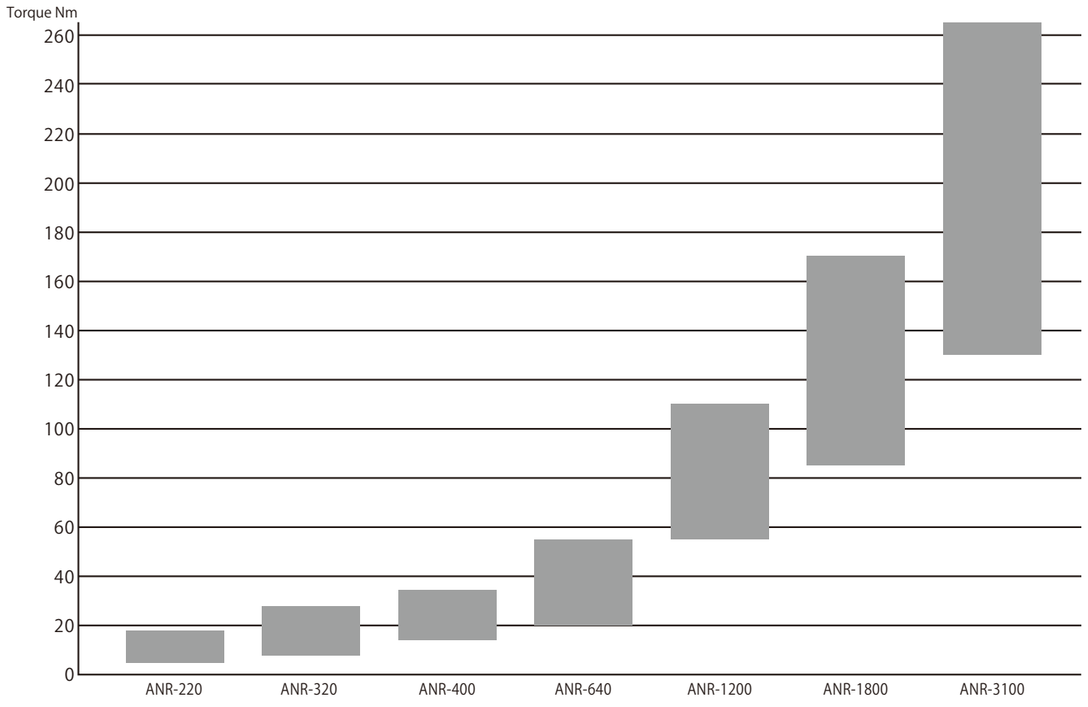
※Resolver specificationis is a custom item.

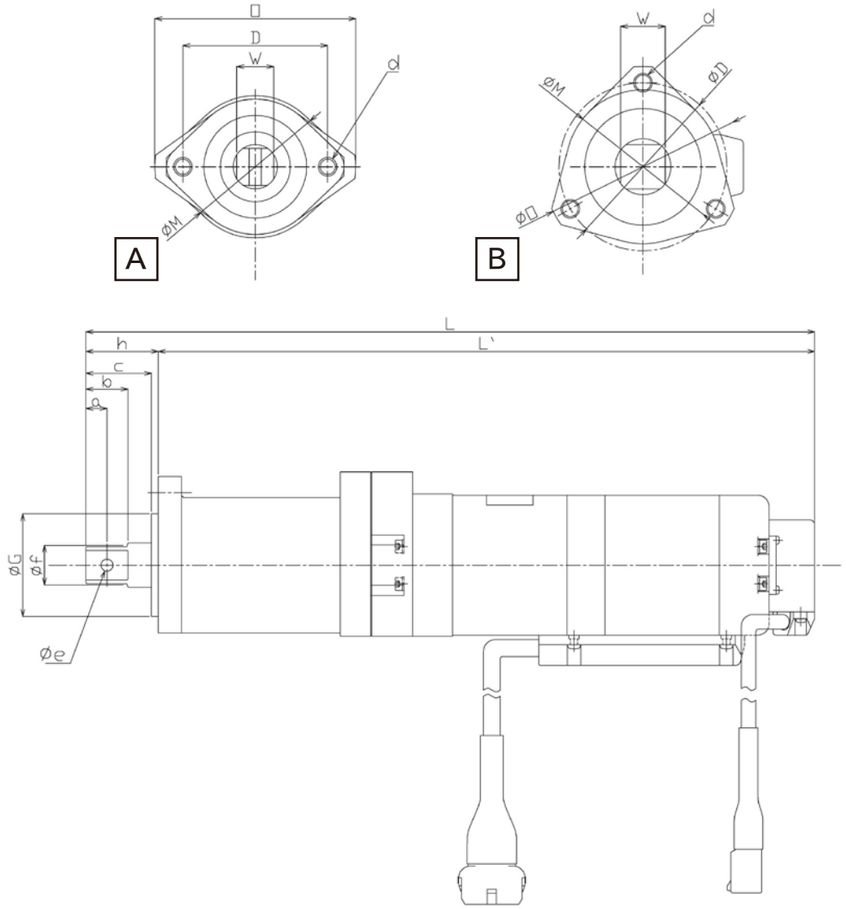
Specification/Dimension Table

■Straight type

Model	Max torque [N•m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Crosspounding controller
ANR-220	18	310	1.3	0.6	GKL-14(T4)-R-N2 GKLW-14(T4)-R-N2
ANR-320	28	430	1.6	1.2	
ANR-400	35	310	1.6	1.2	
ANR-640	55	420	3.4	2.3	
ANR-1200	110	420	4.2	4.5	GKL-15(T5)-R-N2 GKLW-15(T5)-R-N2
ANR-1800	170	285	5.2	4.5	
ANR-3100	265	235	8.5	8.5	

※Resolver specificationis is a custom item.





Nut runner model	Shape	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L'	h	M	O	W Reference dimension
ANR-220	A	5	11	18	51	2-M6	3.2	12	34	-0.025 -0.050	179.5	158.5	21	42	64	9.52
ANR-320	A	8	16	23	51	2-M6	4.2	17	34	-0.025 -0.050	232.7	206.7	26	42	64	12.7
ANR-400	A	8	16	23	51	2-M8	4.2	17	34	-0.025 -0.050	232.7	206.7	26	42	64	12.7
ANR-640	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	246.9	215.9	31	61	80	15.87
ANR-1200	A	9	18	28	62	2-M8	5.2	19	44	-0.025 -0.050	312.2	281.2	31	61	80	15.87
ANR-1800	B	13	25	36	68	3-M8	5.2	24	50	-0.03 -0.05	357.2	318.2	39	61	82	19.05
ANR-3100	B	13	25	36	72	3-M8	5.2	24	50	-0.03 -0.05	362.2	323.2	39	66	86	19.05

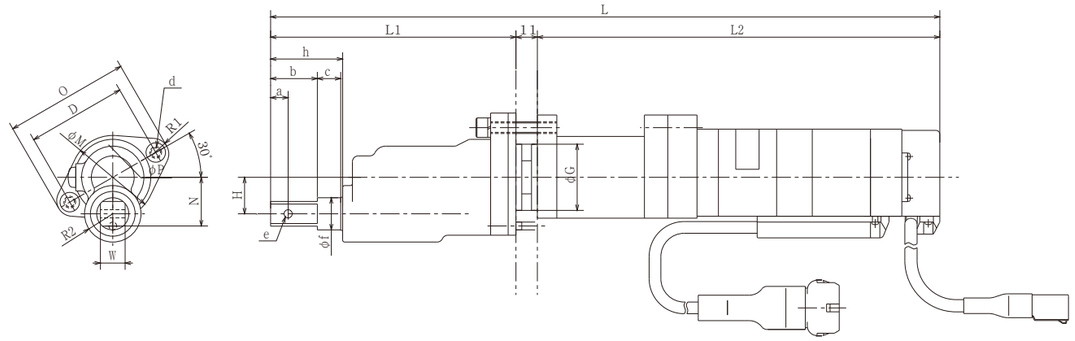
※Resolver specificationis is a custom item.

Specification/Dimension Table

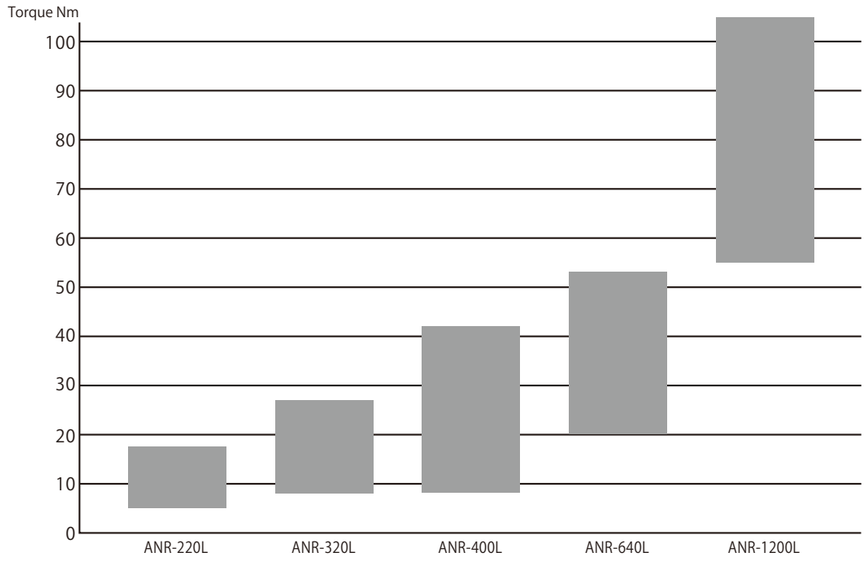
■External offset type

Model	Max torque [N・m]	Maximum rotational speed [rpm]	Weight [kg]	Drive power supply (AC200V) Supply current capacity Rated value [A rms]	Crosspounding controller
ANR-220L	17.5	305	1.5	0.6	GKL-14(T4)-R-N2 GKLW-14(T4)- R-N2
ANR-320L	27	420	2.9	1.2	
ANR-400L	41	310	2.9	1.2	
ANR-640L	53	410	4.2	2.3	
ANR-1200L	105	420	5.0	4.5	GKL-15(T5)-R-N2 GKLW-15(T5)-R-N2

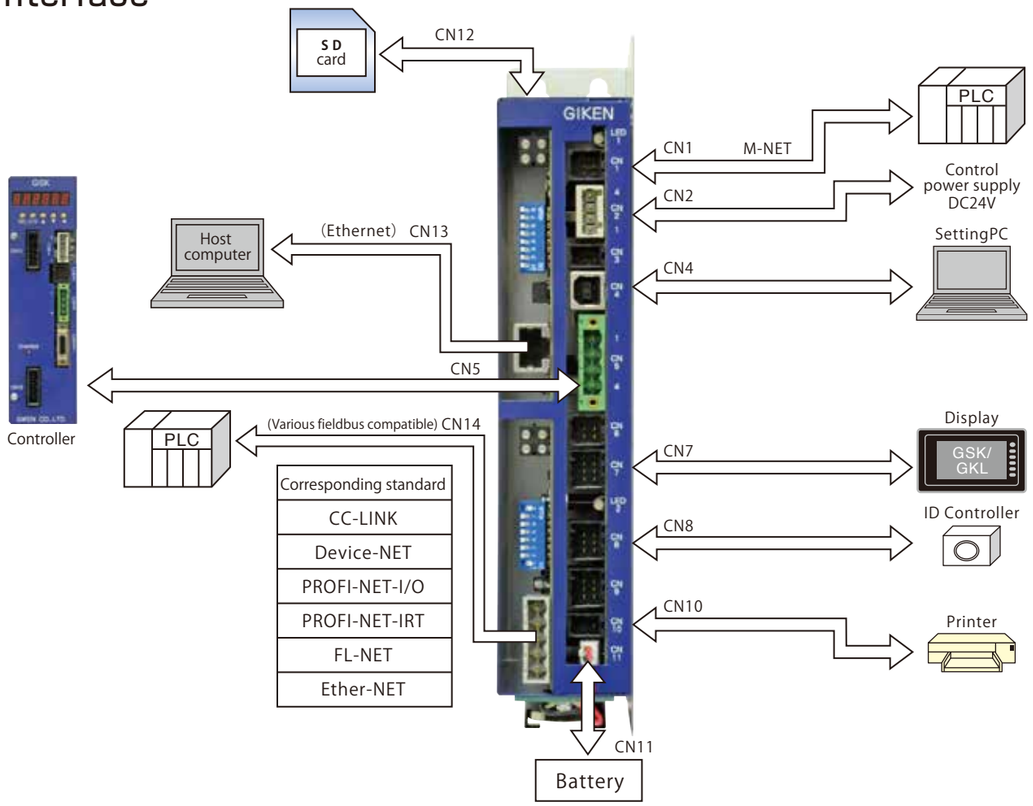
※Resolver specificationis is a custom item.



Nut runner model	a	b	c	D	d	e	f	G Reference dimension	G Tolerance	L	L1	L2	h	M	N	O	P	R1	R2	H	W Reference dimension
ANR-220L	7.5	21	11	51	2-M6	3.2	11.5	34	-0.025 -0.050	286.5	117	158.5	33	43	25	64	4	8	14.5	18.75	9.52
ANR-320L	9	24	12	51	2-M6	4.2	16.5	34	-0.025 -0.050	343.7	126	206.7	37	43	25	64	4	8	14.5	18.75	12.7
ANR-400L	9	24	12	51	2-M8	4.2	16.5	34	-0.025 -0.050	343.7	126	206.7	37	43	25	64	4	8	14.5	18.75	12.7
ANR-640L	9.5	26	13.5	62	2-M8	5.2	19.5	44	-0.025 -0.050	344.9	118	215.9	40	61	30	76	5	9	20	30	15.87
ANR-1200L	9.5	26	13.5	62	2-M8	5.2	19.5	44	-0.025 -0.050	410.2	118	281.2	40	61	30	76	5	9	20	30	15.87

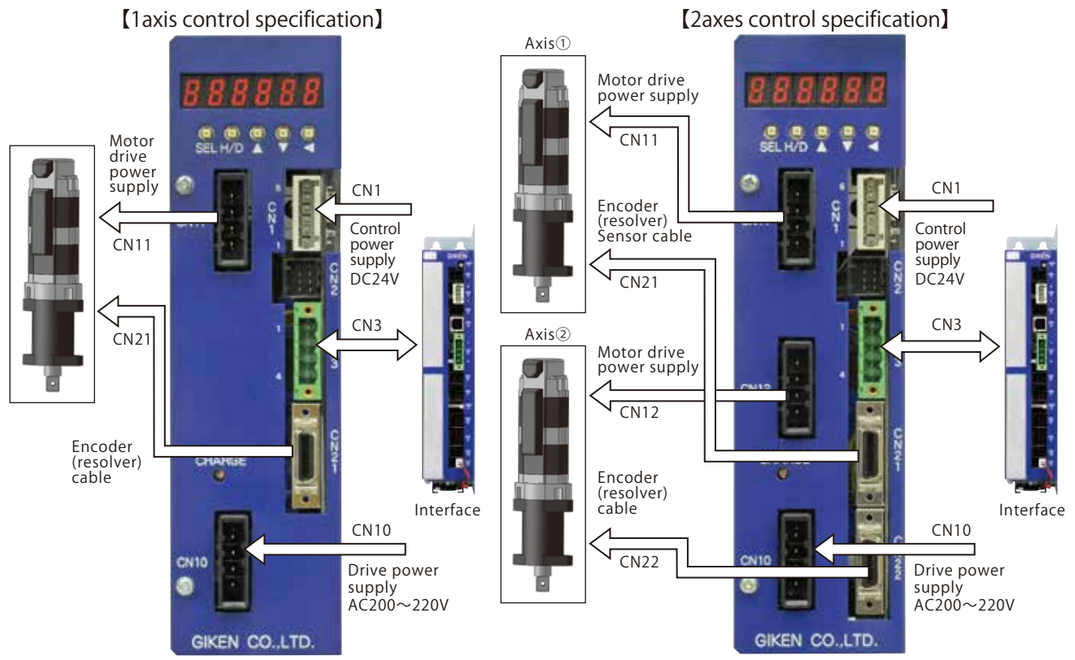


■Interface



Port NO.	Name	Connector model	Opponent's connector housing	Opponent's connector pin	Opponent's connector Accessories	Communication method	Remarks
CN1	Communication port with PLC	1-1827876-3 (TE Connectivity)	1-1827864-3 (TE Connectivity)	1827570-2 (TE Connectivity)	–	M-NET	
CN2	Control power supply input port	734-144 (WAGO)	734-104 (WAGO)	–	○	DC24V	
CN4	Communication port with setting PC	UBB-4R-D14T-4D (JST)	USB Type B	–		USB	Cable model:GK-SET-1.8M
CN5	Port for connecting to controller	MSTB2.5/4-GF-5.08 (PHOENIX CONTACT)	MSTB2.5/4-STF-5.08 (PHOENIX CONTACT)	–	○	ARC-NET	
CN7	Communication port for display	1-1827876-4 (TE Connectivity)	1-1827864-4 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS422	Cable model:GSK-DIS-10M :GSK-DIS-15M
CN8	Communication port for ID controller	1-1827876-4 (TE Connectivity)	1-1827864-4 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS422	
CN10	Communication port for printer	1-1827876-2 (TE Connectivity)	1-1827864-2 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS232C	Cable model:GK-PRN-1.5M :GK-PRN-3.0M
CN11	Battery	–	–	–	○	–	Battery type:CR2450/Panasonic Battery is included
CN12	SD card slot	–	–	–	–	–	It corresponds to SD and SDHC SD card model:GK-SD-32G
CN13	Communication port for anybus	–	–	–	–	Compatible with various communication methods	
CN14	Communication port for anybus	–	–	–	–		

■Controller



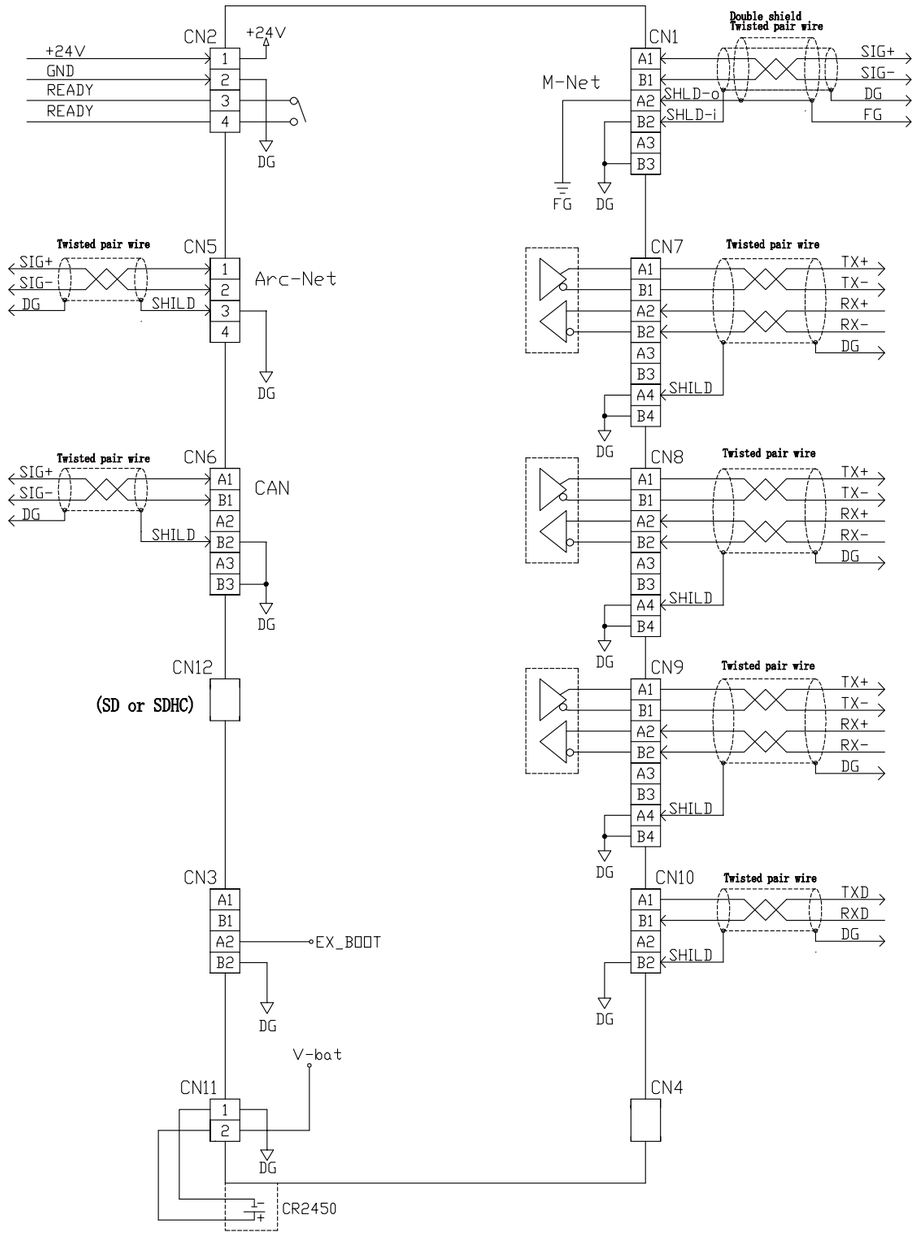
GKL-14-□□-N□

Port NO.	Name	Connector model	Opponent's connector housing	Opponent's connector pin	Opponent's connector Accessories	Remarks
CN1	Control power supply input port	734-166 (WAGO)	734-106 (WAGO)	–	○	DC24V
CN3	Interfaces and controller communication ports	MSTB2.5/4-GF-5.08 (PHOENIX CONTACT)	MSTB2.5/4-STF-5.08 (PHOENIX CONTACT)	–	○	ARC-NET
CN10	Input port for drive power supply	1-179277-2 (TE Connectivity)	1-178128-4 (TE Connectivity)	1-175218-2 (TE Connectivity)	○	AC200～220V
CN11	Ports that supply power to the first axis motor	2-179277-2 (TE Connectivity)	2-178128-4 (TE Connectivity)	1-353717-2 (TE Connectivity)	–	
CN12	Ports that supply power to the second axis motor	2-179277-2 (TE Connectivity)	2-178128-4 (TE Connectivity)	1-353717-2 (TE Connectivity)	–	
CN21	Port for connecting axis 1 sensor	10220-52-A2PL (Sumitomo 3M)	10320-5 A 0-008 (Sumitomo 3M)	10120-3000VE (Sumitomo 3M)	–	
CN22	Port for connecting axis 2 sensor	10220-52-A2PL (Sumitomo 3M)	10320-5 A 0-008 (Sumitomo 3M)	10120-3000VE (Sumitomo 3M)	–	

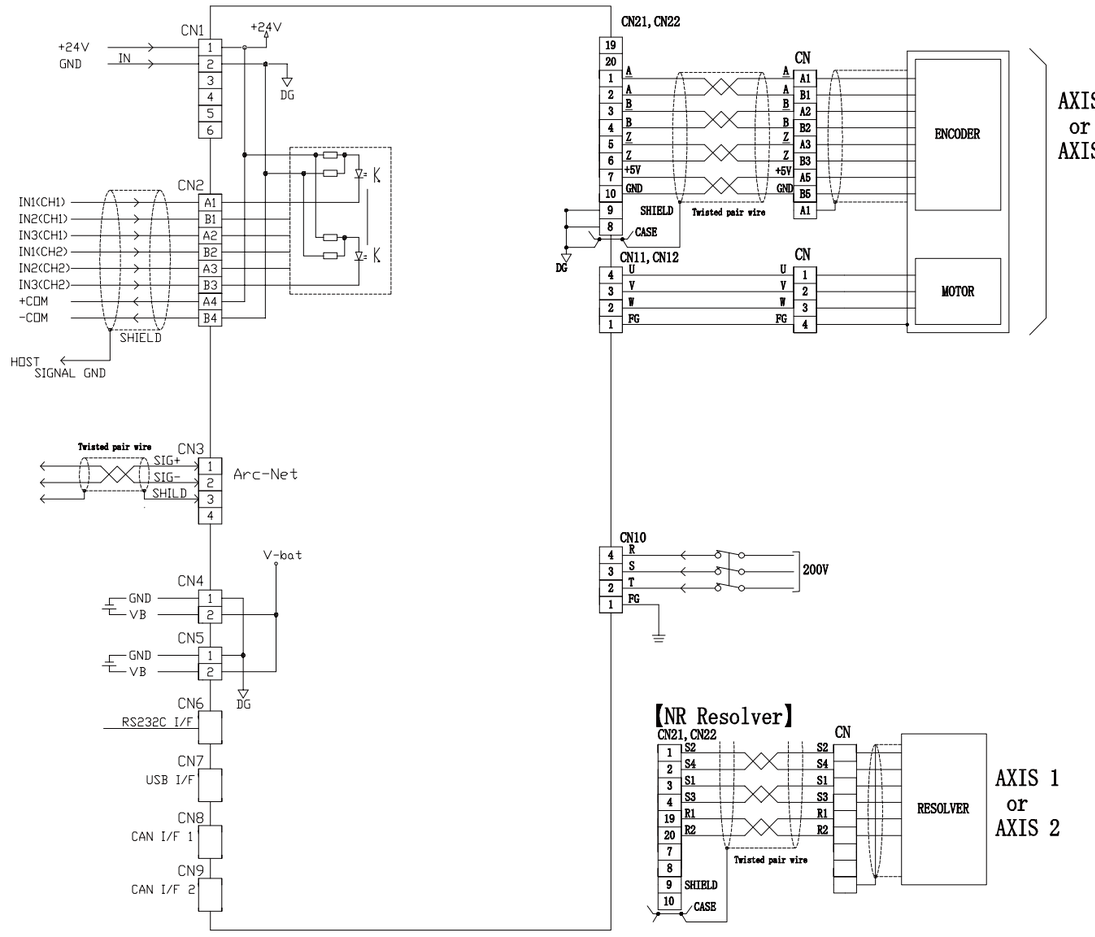
GKL-15(17)-□□-N□

CN10	Input port for drive power supply	2-917541-2 (TE Connectivity)	2-179958-4 (TE Connectivity)	316040-2 (TE Connectivity)	–	AC200～220V
CN11	Ports that supply power to the first axis motor	1-917541-2 (TE Connectivity)	1-179958-4 (TE Connectivity)	316040-2 (TE Connectivity)	–	
CN12	Ports that supply power to the second axis motor	1-917541-2 (TE Connectivity)	1-179958-4 (TE Connectivity)	316040-2 (TE Connectivity)	–	

■Interface
(Common to GSK/positioning GSK)



■Controller



■Interface(Common to GSK)

Model	GSK-IF-N1
Weight[kg]	0.54
Input of control power supply	DC24V±10% 1.0Amax
Start-up inrush current	5.0A
Control power supply rated current	0.2A
Number of nut runner controllable axes	Up to 30 axes
Supported SD card	SD and SDHC type
SD card record contents	Setting / Maximum 8000 items, Clamp history / Maximum 2 million items, Tightening waveform / Maximum 2 million items
Main body preserved content	Alarm history / 16 for each axis, Tightening history / 5000 for each axis, Tightening waveform / 1 for each axis
Available temperature and humidity	0～50℃ 90% RH or less (no condensation)
Fieldbus	Anybus
Battery	CR2450/Panasonic (lifespan is 5 years)

Corresponding fieldbus

Interface model	Corresponding standard
GSK-IF-N1	M-NET
GSK-IFCC-N1	CC-LINK
GSK-IFDN-N1	Device-NET
GSK-IFPNIO-N1	PROFI-NET-I/O
GSK-IFPNIRT-N1	PROFI-NET-IRT
GSK-IFFL-N1	FL-NET
GSK-IFET-N1	Ether-NET
GSK-IFSG-N1	SYSTEM GSK
GSK-IFDN(ET)-N1	Device-NET+ Ether-NET
GSK-IFCC(ET)-N1	CC-LINK+Ether-NET

Tightening result output by field bus

Corresponding standard	Output contents
Ether-NET	Tightening waveform All contents of the "online" item in the setting software

■Controller

Input of control power supply	DC24V±10% 1.0Amax
Input of drive power supply	3-phase AC160～264V 50/60Hz
Screen	6 digit 7 segment LED
Drive motor	AC Servo Motor
Drive power supply inrush current prevention mechanism	Inrush current prevention circuit
Analog monitor output	2 points ± 8 V (It Ooutputs the torque, speed and current tothe check terminal on panel surface.) (set by parameter)
Available temperature and humidity	0～50℃ 90% RH or less (no condensation)
Positioning battery	GSK-BATT(lifespan is 2 years)

Specification	Model	Weight[kg]	Heat sink mounting position
Standard type	GSK-14	1.3	No mounting
	GSK-15	2.4	Side mounting
	GSK-17	2.7	
Standard 2-axis type	GSKW-14	1.27	No mounting
	GSKW-15	4.0	Side mounting
T type	GSK-T4	1.3	No mounting
	GSK-T5	2.4	Rear mounting
	GSK-T7	2.4	
T 2-axis type	GSKW-T4	1.3	No mounting
	GSKW-T5	3.7	Rear mounting

■Interface (Common to GSK)

◆Model composition

GSK - IF CC ( ) – N1
① ①※ ②

①Supported communication standard

Blank	: M-NET
CC	: CC-LINK
DN	: Device-NET
PNIO	: PROFI-NET-I/O
PNIRT	: PROFI-NET-IRT
FL	: FL-NET
ET	: Ether-NET
SG	: System GSK (I/O)

②Corresponding series symbol

N1	: Standard item (Common to positioning and nut runner)

※Please fill in the communication standard of channel 13 side when two Anybus are connected.
Example: GSK-IFDN (ET) -N 1

◆Model list

Model	Communication standard
GSK-IF-N1	M-NET
GSK-IFCC-N1	CC-LINK
GSK-IFDN-N1	Device-NET
GSK-IFPNIO-N1	PROFI-NET-I/O
GSK-IFPNIRT-N1	PROFI-NET-IRT
GSK-IFFL-N1	FL-NET
GSK-IFET-N1	Ether-NET
GSK-IFSG-N1	System GSK specification(I/O)
GSK-IFDN(ET)-N1	Device-NET + Ether-NET
GSK-IFCC(ET)-N1	CC-LINK + Ether-NET

■Controller

◆Model composition

GKL W – 1 4 – E – N2
① ② ③ ④ ⑤ ⑥

①Number of nut runners to be controlled

Blank	: 1 axis type
W	: 2 axis type

②Heat sink mounting position

1	: Side (Standard type)
T	: Back (T type)

③Nut runner rated value

4	This number will vary depending on the nut runner used. Please check the corresponding controller columnof Nut runner's Specification / Dimension Table for which number to use.
5	
7	

※ W specification correspond to only 4 and 5.

④Angle sensor type ※1

E	: Encoder
R	: Resolver

※1 Depending on the nut runner model

⑤Angle sensor spec

Blank	: Standard type

⑥Corresponding series symbol

N2	: Standard item

◆Model list

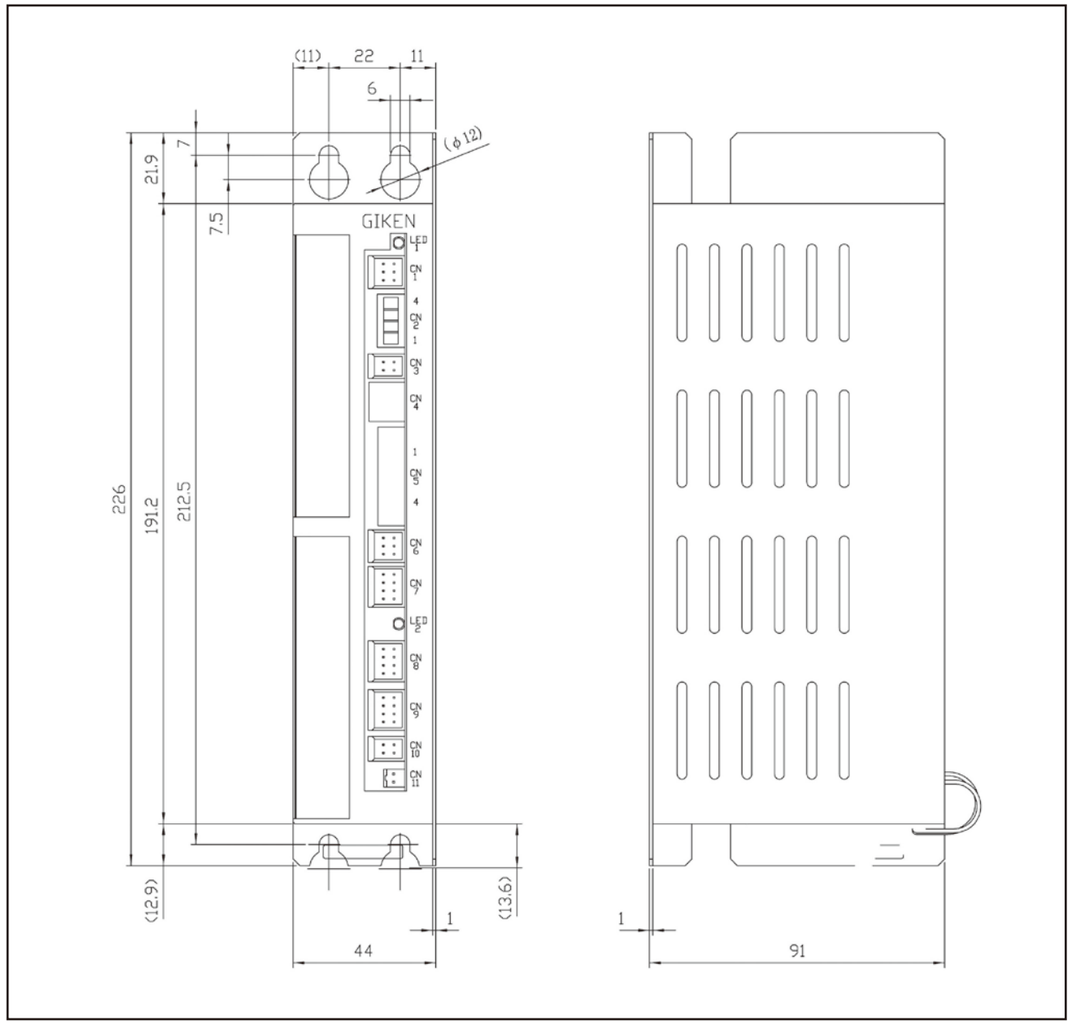
Model	Number of nut runners to be controlled	Heat sink mounting position
GKL-14-□□-N2	1 axis type	No mounting
GKL-15-□□-N2		Side mounting
GKL-17-□□-N2		
GKLW-14-□□-N2	2 axis type	No mounting
GKLW-15-□□-N2		Side mounting
GKL-T4-□□-N2	1 axis type	No mounting
GKL-T5-□□-N2		Rear mounting
GKL-T7-□□-N2		
GKLW-T4-□□-N2	2 axis type	No mounting
GKLW-T5-□□-N2		Rear mounting

■Interface (Common to GSK)

Model	Weight(kg)
GSK-IF-N1	0.54
GSK-IFCC-N1	0.59
GSK-IFDN-N1	
GSK-IFPNIO-N1	
GSK-IFPNIRT-N1	

Model	Weight(kg)
GSK-IFFL-N1	0.59
GSK-IFET-N1	
GSK-IFSG-N1	
GSK-IFDN(ET)-N1	0.64
GSK-IFCC(ET)-N1	

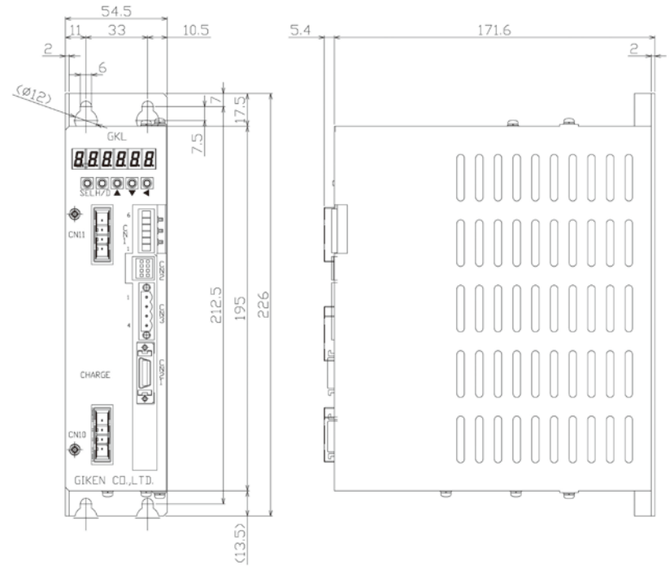
※ It is attached only to the top axis.



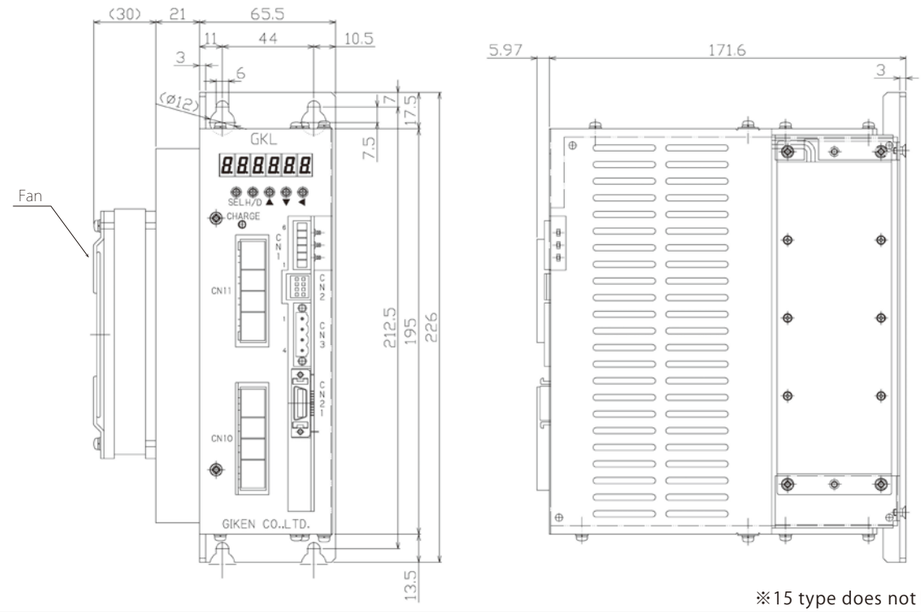
■Controller

Standard type 1 axis specification

Model	Weight(kg)
GKL-14 (T4)-□□-N2	1.3



Model	Weight(kg)
GKL-15 (17)-□□-N2	2.4 (2.7)

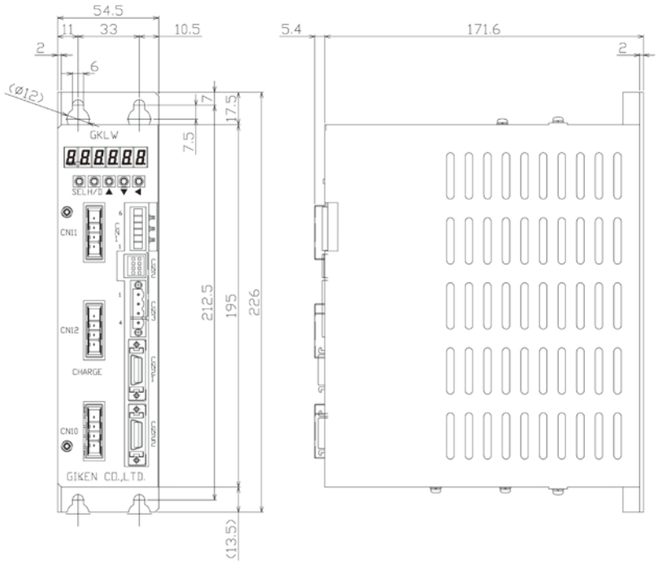


※15 type does not have a fan

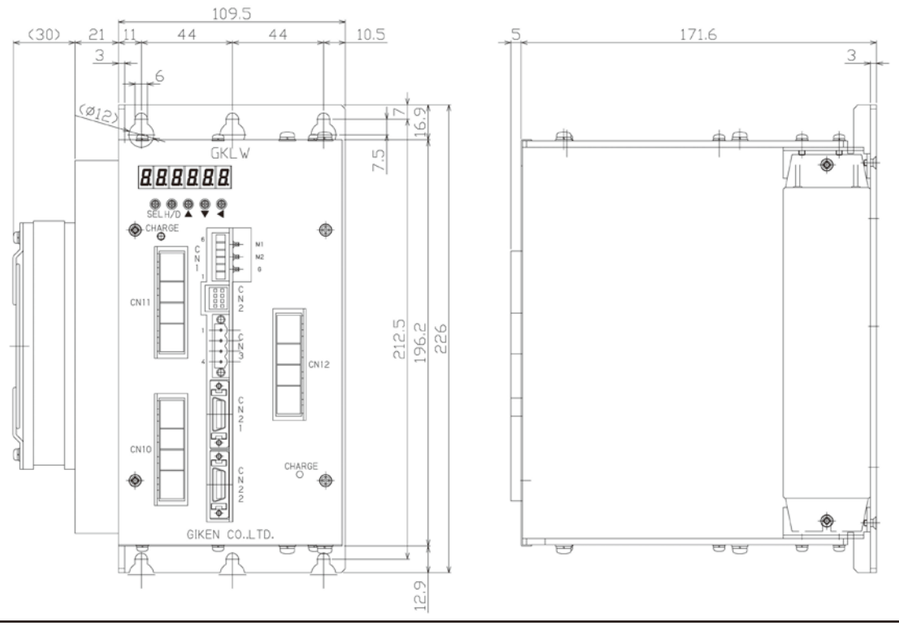
■Controller

Standard type 2 axis type

Model	Weight(kg)
GKLW-14 (T4)-□□-N2	1.3

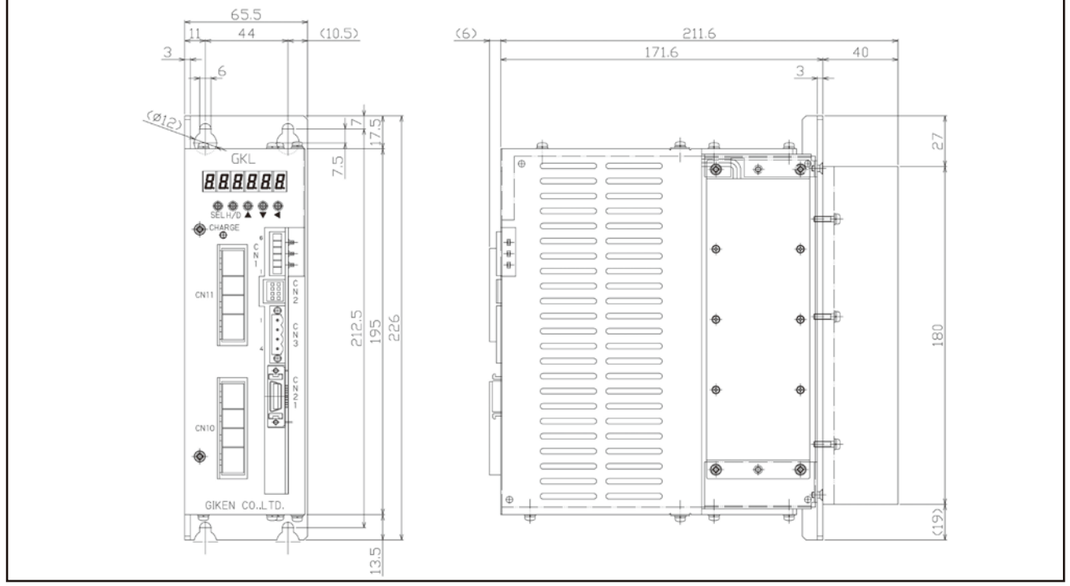


Model	Weight(kg)
GKLW-15-□□-N2	4.0



T type 1 axis type

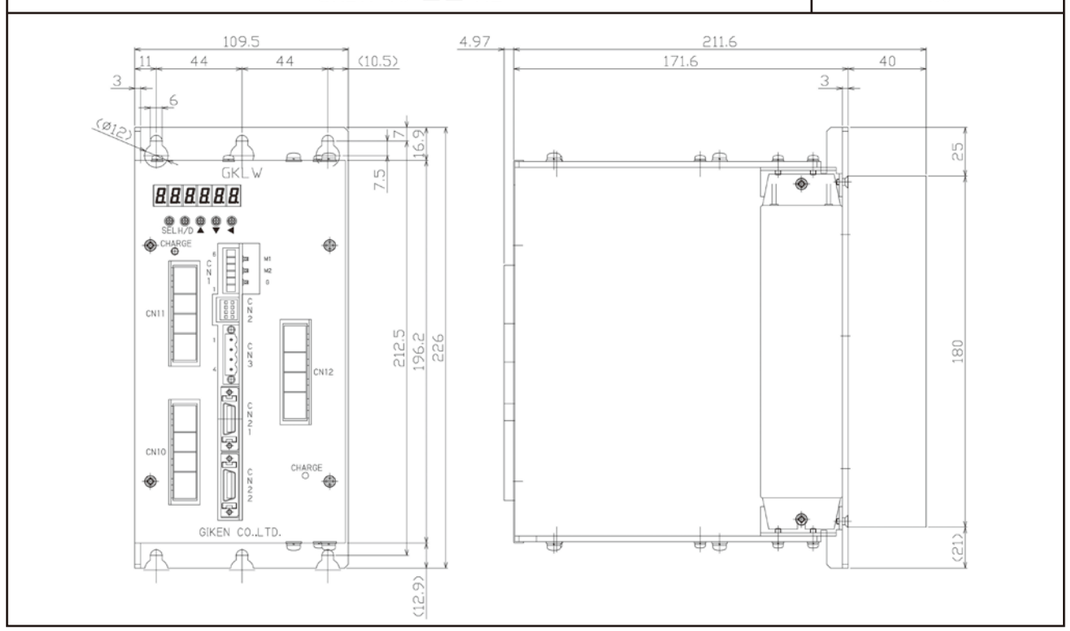
Model	Weight(kg)
GKL-T5 (T7)-□□-N2	2.4



Nutrunner Regarding the rated capacity 4 type, the cooling plate is unnecessary, so the standard and T type are common.

T type 2 axis type

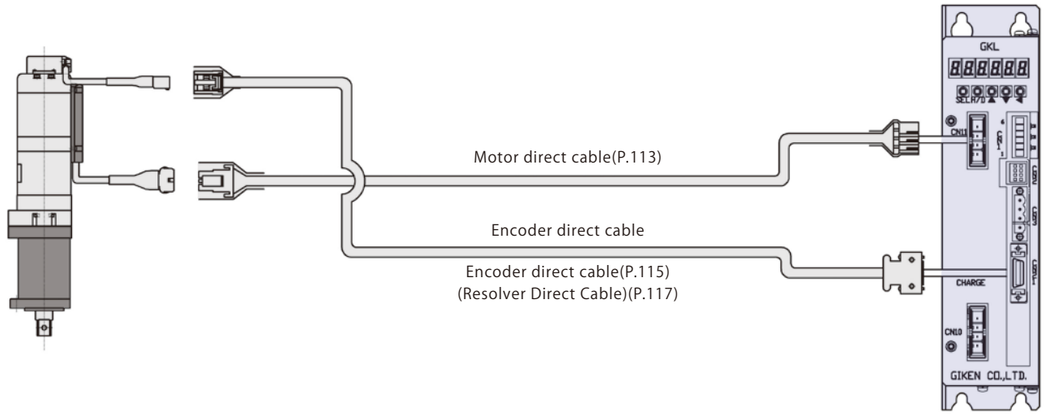
Model	Weight(kg)
GKLW-T5-□□-N2	4.0



■Cable configuration

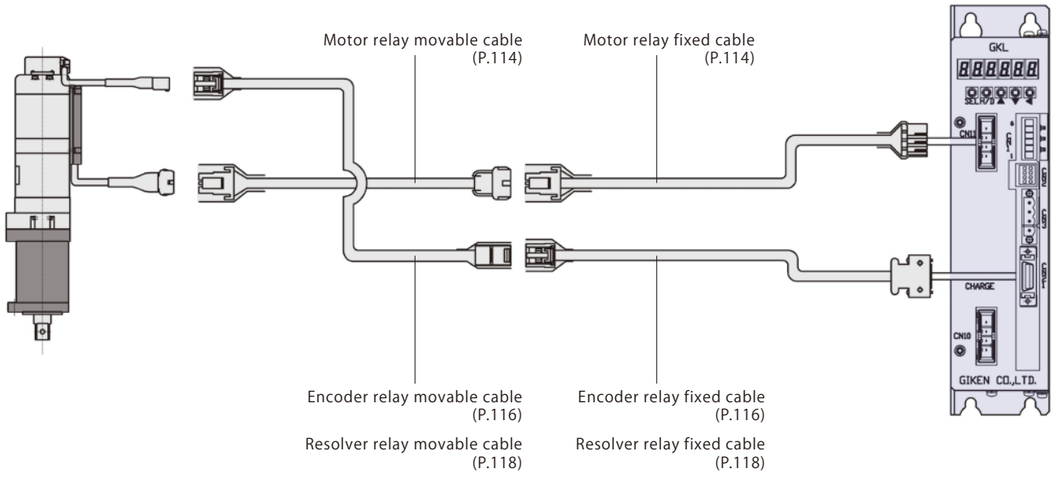
◆Direct cable

Connect from controller to nut runner with one.



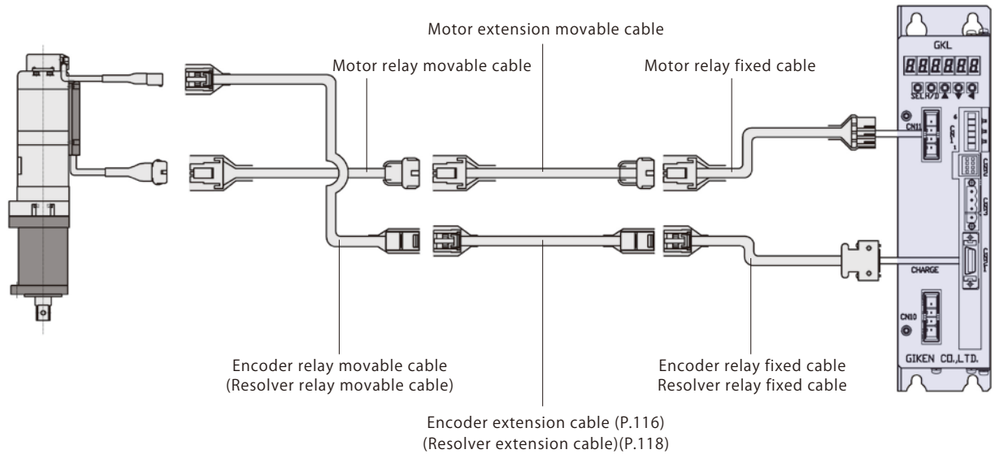
◆Relay cable

Connect from controller to nut runner with 2 pcs.



◆Extension cable (GKL is relay cables can be used.)

Connect from controller to nut runner with 3 pcs.



※It is equivalent to relay movable cable.

■Motor cable

◆Direct cable

【Model】

K8 M 3 D □ −4 R − □ M
① ② ③

①Nutrunner rated current

3 ：GKL-14 GKL-T4
12：GKL-15 GKL-T5

②Connector type

Blank：GKL-15(17) GKL-T5(T7)
W ：GKL-14 GKL-T4

③Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable,
but operation guarantee is not possible. Please check the operation by the customer.
※3 All cables are flex cables.

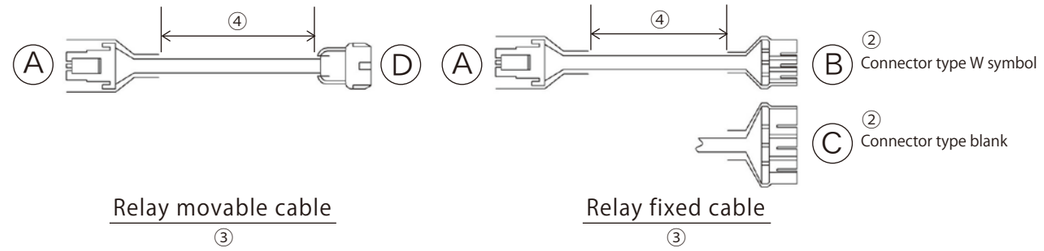
【Model list】

Name	Model	Corresponding controller
Direct cable	K8M3DW-4R-□M	GKL-14 GKL-T4
	K8M12D-4R-□M	GKL-15 GKL-T5

【Specification】

	Housing model	Contact type	Shape
A	350715-1 (AMP)	350550-1 (AMP)	凹
B	2-178128-4 (AMP)	1-353717-2 (AMP)	
C	2-179958-4 (AMP)	316040-2 (AMP)	

◆Relay cable



【Model】

K8 M 3 T □ −4 A − □ M
① ② ③ ④

①Nutrunner rated current

3 ：GKL-14 GKL-T4
12：GKL-15 GKL-T5

②Connector type

Blank：GKL-15(17) GKL-T5(T7)
W ：GKL-14 GKL-T4

③Cable segment

R ：Motor relay movable cable
A ：Motor relay fixed cable

④Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable,
but operation guarantee is not possible. Please check the operation by the customer.
※3 All cables are flex cables.

【Model list】

Name	Model	Corresponding controller
Relay movable cable	K8M3TW-4R-□M	GKL-14 GKL-T4
	K8M12T-4R-□M	GKL-15 GKL-T5

Name	Model	Corresponding controller
Relay fixed cable	K8M3TW-4A-□M	GKL-14 GKL-T4
	K8M12T-4A-□M	GKL-15 GKL-T5

【Specification】

	Housing model	Contact type	Shape
A	350715-1 (AMP)	350550-1 (AMP)	凹
B	2-178128-4 (AMP)	1-353717-2 (AMP)	
C	2-179958-4 (AMP)	316040-2 (AMP)	
D	350781-1 (AMP)	350547-3(AMP) (PinNo.1～3) 350669-1(AMP) (PinNo.4)	凸

■Encoder cable

◆Direct cable

【Model】

8 E D − 8 R − □ M
①

①Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.
※3 All cables are flex cables.

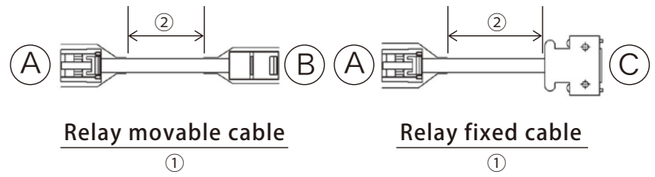
【Model list】

Name	Model
Direct cable	8ED-8R-□M

【Specification】

Housing/connector model		Contact type	Shape
A	1-1318118-6 (AMP)	1318108-1 (AMP)	凹
C	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

◆Relay cable



【Model】

8 E T − 8 R − □ M
① ②

①Cable division

R ：Relay movable cable
A ：Relay fixed cable

※1 All cables are fiex gables.

②Cable length

Designation of cable length (Specified unit:1m)

※2 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※3 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.

【Model list】

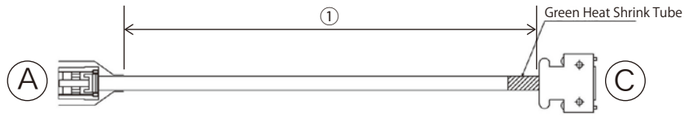
Name	Model
Relay movable cable	8ET-8R-□M
Relay fixed cable	8ET-8A-□M

【Specification】

Housing/connector model		Contact type	Shape
A	1-1318118-6 (AMP)	1318108-1 (AMP)	凹
B	1-1318115-6 (AMP)	1318112-1 (AMP)	凸
C	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

■Resolver cable

◆Direct cable



【Model】

8 R D − 8 R − □ M
①

①Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.
※3 All cables are flex cables.

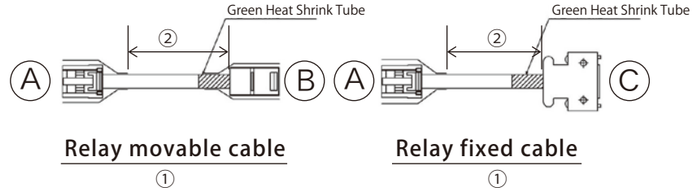
【Model list】

Name	Model
Direct cable	8RD-8R-□M

【Specification】

Housing/connector model		Contact type	Shape
A	1-1318118-6 (AMP)	1318108-1 (AMP)	凹
C	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

◆Relay cable



【Model】

8 R T − 8 R − □ M
① ②

①Cable division

R ：Relay movable cable
A ：Relay fixed cable

※1 All cables are flex cables.

②Cable length

Designation of cable length (Specified unit:1m)

※2 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※3 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.

【Model list】

Name	Model
Relay movable cable	8RT-8R-□M
Relay fixed cable	8RT-8A-□M

【Specification】

Housing/connector model		Contact type	Shape
A	1-1318118-6 (AMP)	1318108-1 (AMP)	凹
B	1-1318115-6 (AMP)	1318112-1 (AMP)	凸
C	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

■Cable specification list

◆Motor cable withstand voltage 600V North American specification compliant

Cable type	Type	Corresponding controller	Cable size	Cable outer diameter	Coating color	Cable allowable current	Cable type
K8M3DW-4R-□M	Direct	GKL(W)-14 GKL(W)-T4	0.5X4 AWG21 600V	8.8mm	Gray	5.2A	Flex cable
K8M12D-4R-□M		GKL(W)-15 GKL(W)-T5	0.75X4 AWG18 600V	9.5mm		14.4A	
K8M3TW-4A-□M	Relay fixed	GKL(W)-14 GKL(W)-T4	0.5X4 AWG21 600V	8.8mm		5.2A	
K8M3TW-4R-□M	Relay movable						
K8M12T-4A-□M	Relay fixed	GKL(W)-15 GKL(W)-T5	0.75X4 AWG18 600V	9.5mm		14.4A	
K8M12T-4R-□M	Relay movable						

◆Encoder/Resolver cable

Cable type	Type	Corresponding controller	Cable size	Cable outer diameter	Coating color	Cable type
8□□-8□-□M	Common to all models		AWG23	8.44mm	Black	Flex cable
8R□-8□-□M						

■Setting software

To carry out various settings of GKL, a PC in which setting software is installed is required Various settings, communication status with upper device, tightening result, and tightening waveform can be confirmed with setting software.

◆Setting software model

Setting software model	Language	Controller type
GKL-SET-SOFT-J	Japanese	GKL GKLW
GKL-SET-SOFT-E	English	

Supported OS win7/8/8.1/10

◆Setting cable model

Cable for connecting PC in which setting software of GSK is installed and interface.

Model	Cable length [m]
GK-SET-1.8M	1.8m

The setting cable is common to all setting software.

■Hierarchy of setting software

- Main menu
  - F1 Setting read
  - F2 Setting write
  - F3 Setting
    - F1 Common setting
      - F1 Calendar and basic unit setting
        - F1 Calendar setting
        - F2 Unit setting
        - F3 Option setting
      - F2 Screw number setting
    - F2 Nut runner setting
      - F1 Rating setting
      - F3 Manual setting
      - F4 Auto setting
        - F3 SOC.T SET
        - F4 PRE.T SET
        - F5 REV.T SET
        - F6 REA.T SET
    - F3 Positioning setting
      - F1 Cylinder name setting
      - F2 X rate. Set
      - F3 Y rate. Set
      - F4 XY point setting
      - F5 Timer setting
    - F4 Program setting
      - Behavior selection
    - F5 Unit setting
    - F6 Axis off
  - F4 Auto measurement
    - F1 Online
    - F2 Tightening waveform
    - F3 Tightening record
    - F4 Alarm history
    - F5 Cycle monitor
    - F6 Current step display
  - F5 Quality control
    - F1 Zero/magnification results
    - F2 Torque sensor zero point adjustment
    - F3 Self diagnosis
  - F6 Print
  - F7 I/O monitor
    - F1 Monitor
    - F2 Dummy input
    - F3 Dummy output
  - F8 Help

■Setting screen

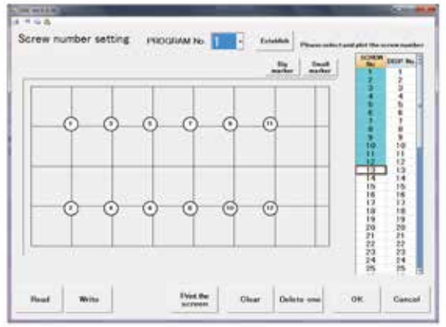
【Main menu】

Initial screen that is displayed when the setting software is activated

【Setting menu】

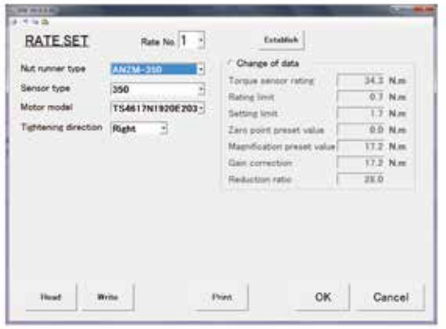
Screen for carrying out various settings

【Screw number Setting】



Screen for setting the screw No. array to be displayed on the display (GSK-D1/ GK-D1 series)

【Rate Setting】



Screen for setting the details of used nut runner

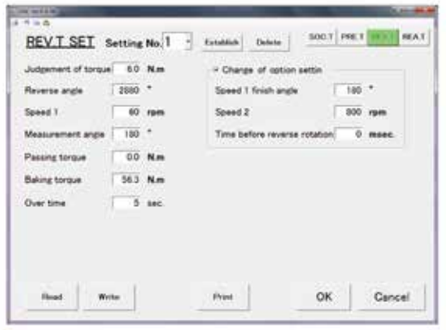
【SOC.T Setting】

Screen for setting the rotation for matching a bolt with a socket

【PRE.T Setting】

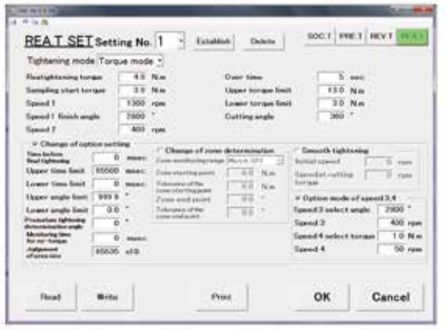
Screen for setting bolt setting status to seating (temporary tightening)

【REV.T Setting】



Screen for setting seizure judgment after temporary tightening of bolt

【REA.T Setting】



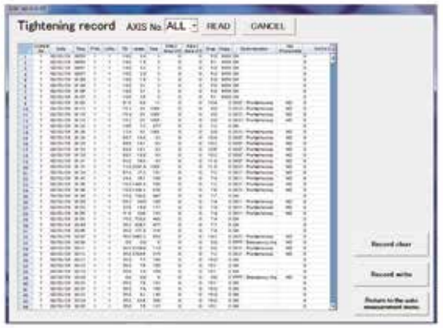
Screen for setting the final tightening For the type of final tightening, two types; torque method and angle method are available

※For the final tightening setting, up to No. 50 can be set.

【Online】

Screen for saving the tightening result in PC by making a connection to controller.

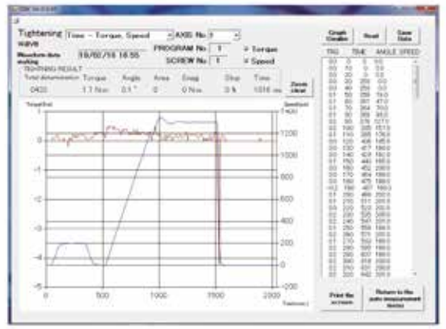
【Tightening history】



Screen for importing the saved in the controller in PC.

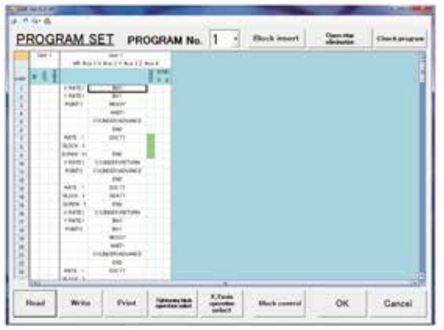
※Maximum number of saved in tightening history per axis:5,000 item

【Tightening waveform】



Screen for importing the tightening waveform in PC.

【Program setting】

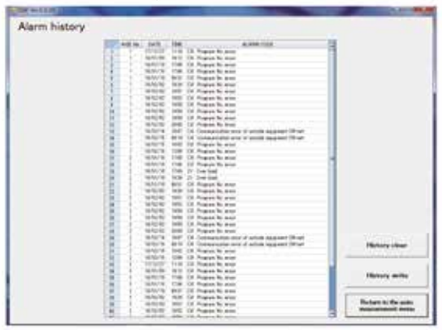


Screen for setting the combination of behaviors related to tightening(socket matching,temporary inversion,final tightening)for each axis tightening, final tightening) for each axis.

※Maximum number of programs

Max.number of axes	Number of programs	Number of steps
30	16	220
30	50	70
8	50	220

【Alarm history】



Screen for importing the alarm data saved in the controller in PC.

※Maximum number of saved items in alarm history per axis:16 items

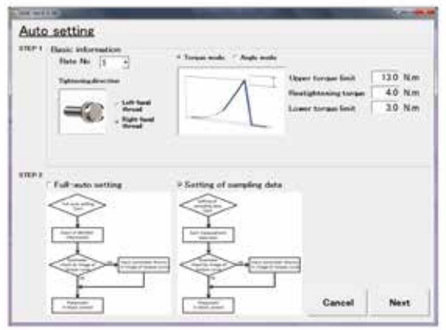
【I/O monitor】

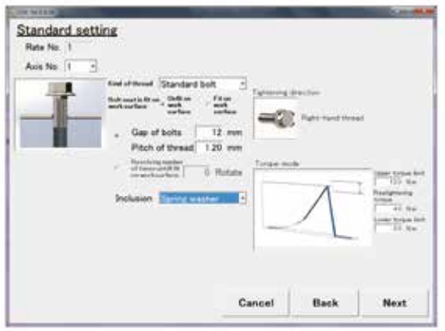
Screen for checking the I/O status with upper link.

【Self diagnosis】

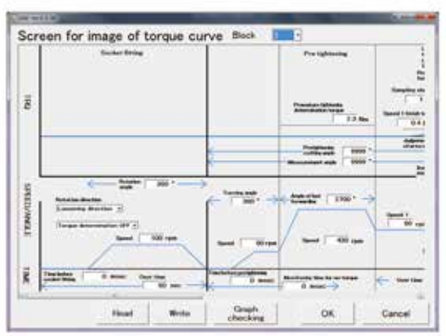
Screen for checking each version of currently conffigured parts.

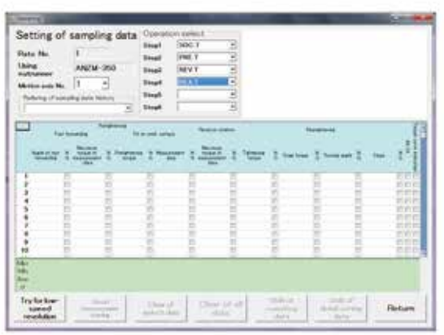
【Auto setting】





・In the full auto setting, it is a setting screen that creates tightening setting automatically when you enter necessary items.
・In the sampling setting, you can actually tighten the work and make detailed settings.



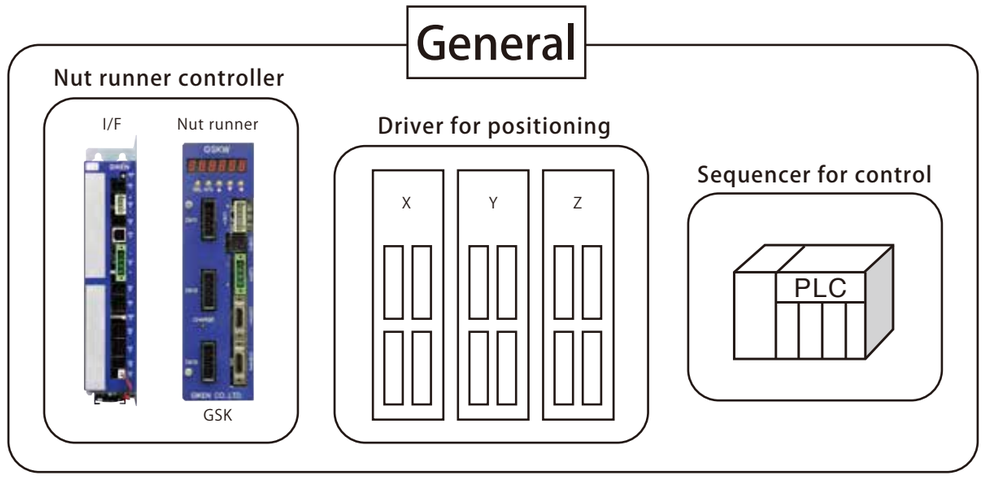


Positioning GSK motion control system

Items

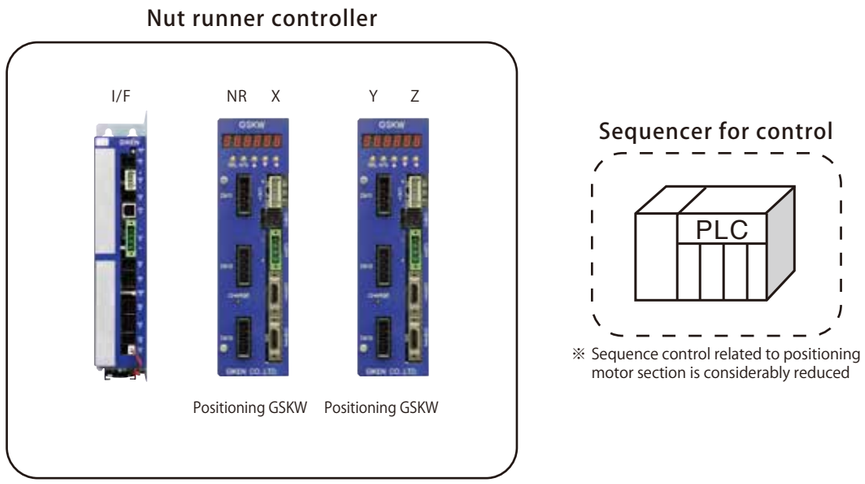
◆Positioning function is regularly mounted on the nut runner controller

■Regularly equipped with orthogonal axes control for X, Y, Z axes



Driver controller for orthogonal axes is not necessary
Downsizing of control panel and space saving

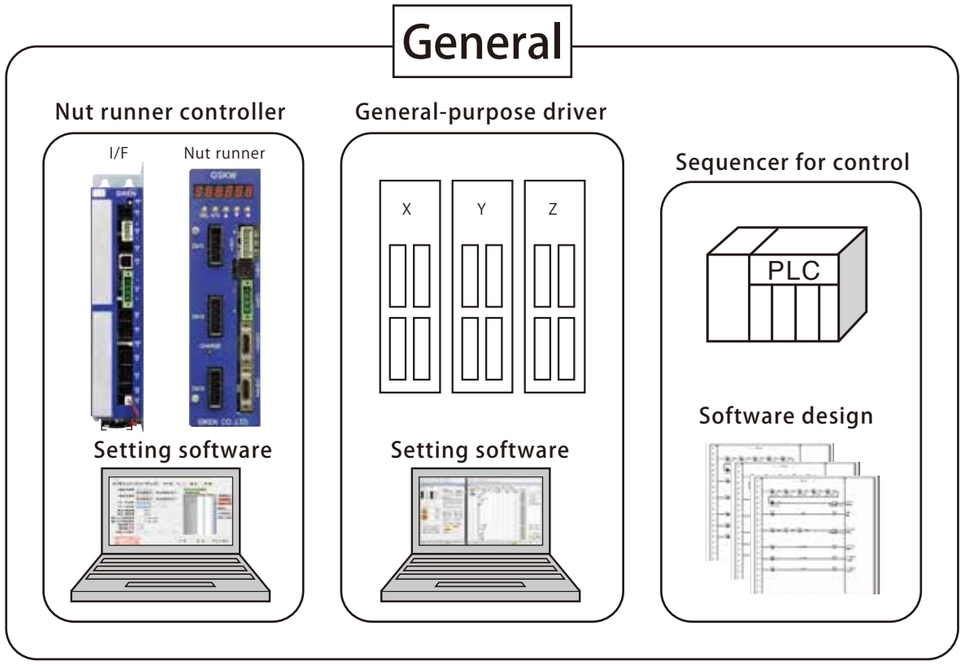
Positioning GSK



※ Sequence control related to positioning motor section is considerably reduced

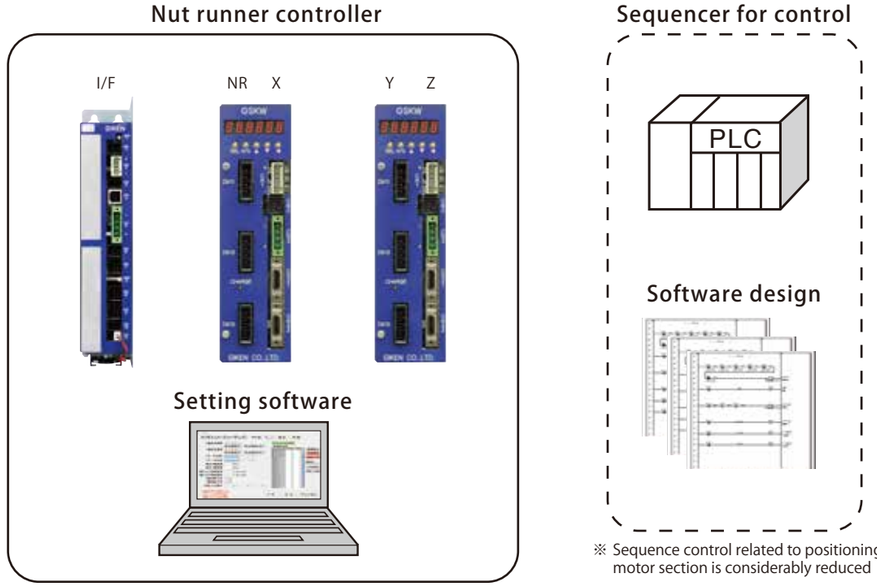
◆Simplification of software (circuit) design in positioning motor section

■Teaching (Coordinate setting) is enabled by using setting PC (Software)



Simplification of positioning control
Various models can be supported
Reduction of man-hour

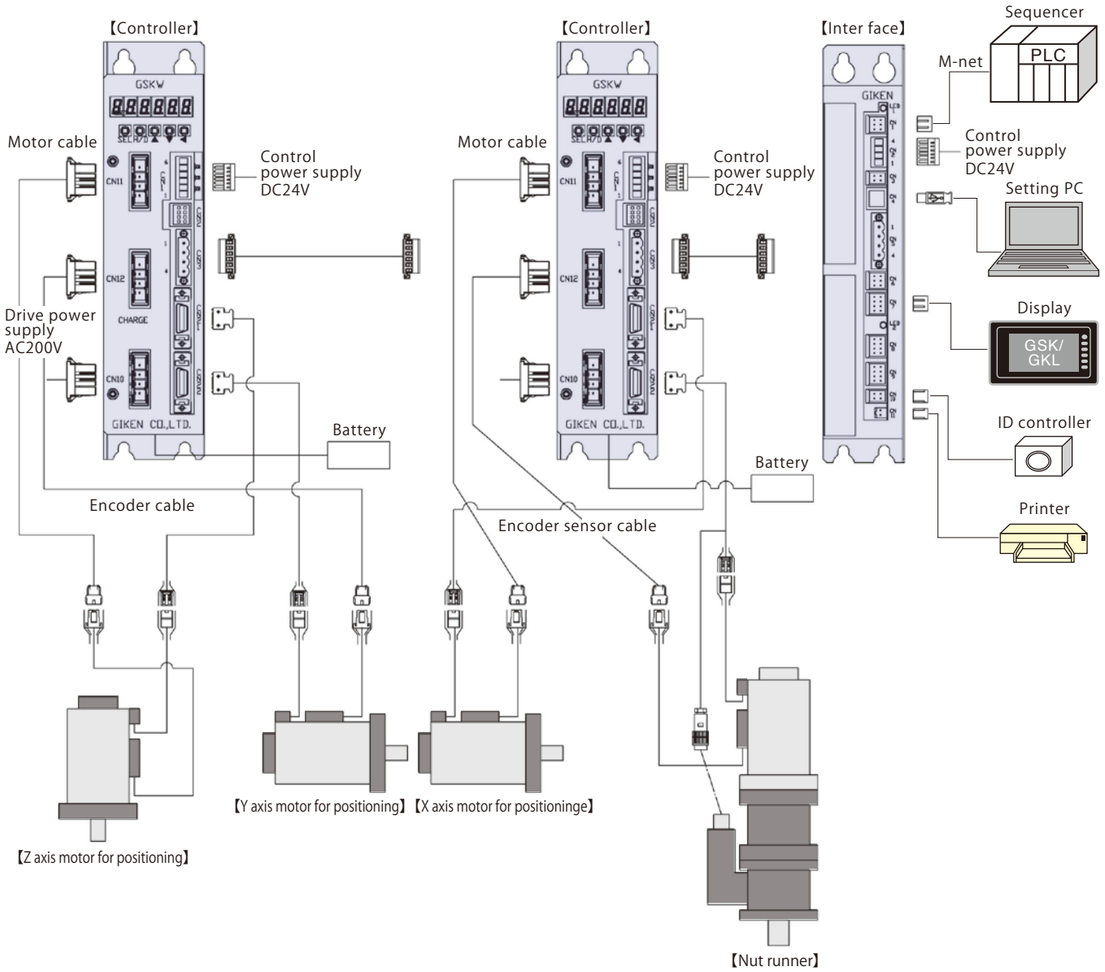
Positioning GSK



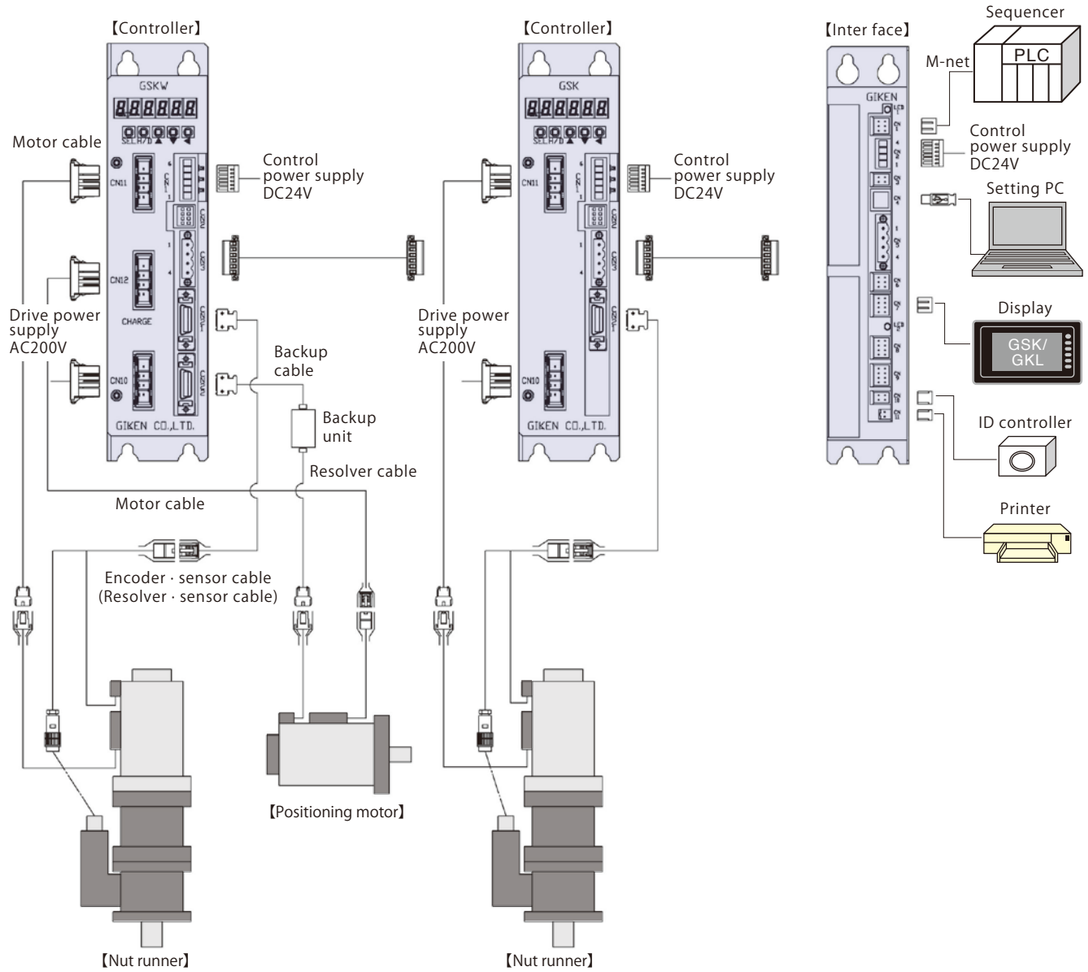
※ Sequence control related to positioning motor section is considerably reduced

■Positioning GSK system configuration

Specifications of positioning motor encoder (Standard specification)



Specifications of positioning motor resolver (Custom specification)



■Positioning Motor Model List

◆No brake type

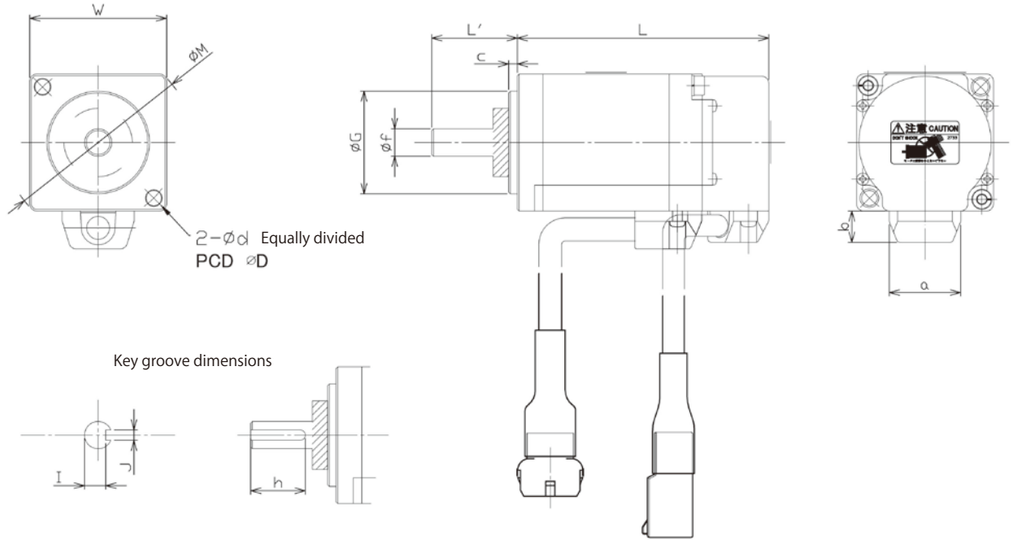
Model	Rated output (W)	Rated torque N·m (kgf·cm)	Instantaneous maximum torque N·m(kgf·cm)	Rated rotation speed r/min	Maximum rotation speed r/min	Drive power supply (AC200V) Supply current capacity Rated value [A rms]		Sensor type	Sensor resolution	□ Size	Key way		Corresponding driver
											Yes	No	
TS4603N2099E200	100	0.318 (3.25)	0.95 (9.7)	3000	5000	0.75		Absolute encoder	17 / 33 bit	□40	●		GSK-14-E-P2 GSK-T4-E-P2 GSKW-14-E-P2 GSKW-T4-E-P2
TS4603N2058E200	100	0.318 (3.25)	0.95 (9.7)	3000	5000	0.75		Absolute encoder	17 / 33 bit	□40		●	
TS4604N2023E200	150	0.477 (4.87)	1.43 (14.6)	3000	5000	1.2		Absolute encoder	17 / 33 bit	□40	●		
TS4604N2021E200	150	0.477 (4.87)	1.43 (14.6)	3000	5000	1.2		Absolute encoder	17 / 33 bit	□40		●	
TS4607N2120E200	200	0.64 (6.5)	1.91 (19.5)	3000	5000	1.5		Absolute encoder	17 / 33 bit	□60	●		
TS4607N2088E200	200	0.64 (6.5)	1.91 (19.5)	3000	5000	1.5		Absolute encoder	17 / 33 bit	□60		●	
TS4607N3222E200 ※	200	0.64 (6.5)	1.91 (19.5)	3000	5000	1.5		Resolver	±30′	□81		●	GSK-14-R-P2 GSK-14-R-P2 GSKW-14-R-P2 GSKW-14-R-P2
TS4609N2120E200	400	1.27 (13)	3.82 (39)	3000	5000	2.3		Absolute encoder	17 / 33 bit	□60	●		GSK-14-E-P2 GSK-T4-E-P2 GSKW-14-E-P2 GSKW-T4-E-P2
TS4609N2085E200	400	1.27 (13)	3.82 (39)	3000	5000	2.3				□60		●	

※Resolver specification is custom item.

◆Brake type

Model	Rated output (W)	Rated torque N·m (kgf·cm)	Instantaneous maximum torque N·m(kgf·cm)	Rated rotation speed r/min	Maximum rotation speed r/min	Drive power supply (AC200V) Supply current capacity Rated value [A rms]		Sensor type	Sensor resolution	□ Size	Key way		Corresponding driver
											Yes	No	
TS4603N7066E200	100	0.318 (3.25)	0.95 (9.7)	3000	5000	0.75		Absolute encoder	17/33 bit	□40	●		GSK-14-E-P2 GSK-T4-E-P2 GSKW-14-E-P2 GSKW-T4-E-P2
TS4603N7060E200	100	0.318 (3.25)	0.95 (9.7)	3000	5000	0.75		Absolute encoder	17/33 bit	□40		●	
TS4604N7023E200	150	0.477 (4.87)	1.43 (14.6)	3000	5000	1.2		Absolute encoder	17/33 bit	□40	●		
TS4604N7021E200	150	0.477 (4.87)	1.43 (14.6)	3000	5000	1.2		Absolute encoder	17/33 bit	□40		●	
TS4609N7084E200	400	1.27 (13)	3.82 (39)	3000	5000	2.3		Absolute encoder	17/33 bit	□60	●		
TS4609N7049E200	400	1.27 (13)	3.82 (39)	3000	5000	2.3		Absolute encoder	17/33 bit	□60		●	

■Positioning motor dimension table



◆No brake type

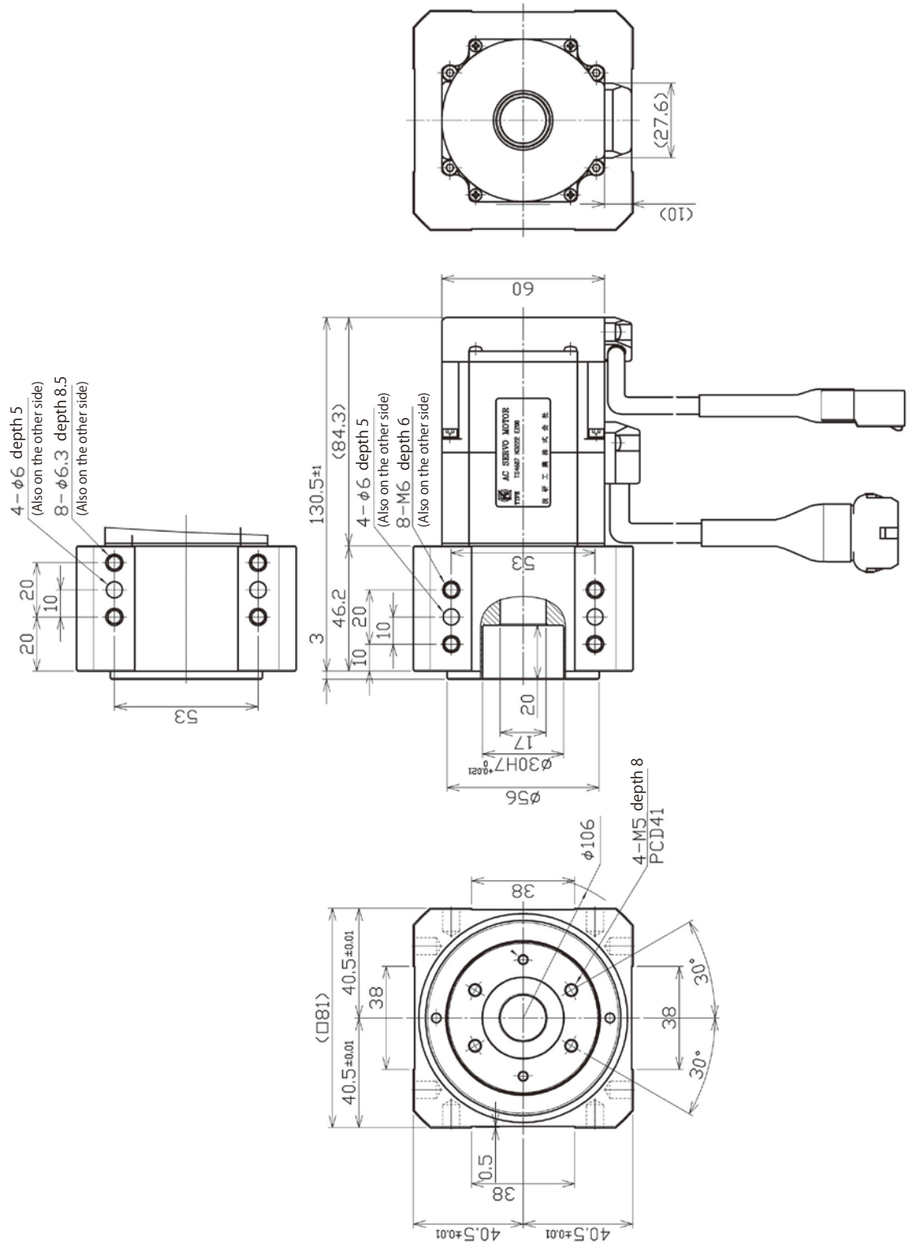
Positioning Motor Model	a	b	c	d	D	f		G		h	I		J		L		L'		M	W
						Dimension	Tolerance	Dimension	Tolerance		Dimension	Tolerance	Dimension	Tolerance	Dimension	Tolerance	Dimension	Tolerance		
TS4603N2099E200	21	9.2	2.5	4.5	46	8	0 -0.009	30	0 -0.021	16	6.2	0 -0.2	3	-0.006 -0.031	73.5	±1	25	±1	55	40
TS4603N2058E200										–	–	–	–	–						
TS4604N2023E200										16	6.2	0 -0.2	3	-0.006 -0.031	87.5					
TS4604N2021E200										–	–	–	–	–						
TS4607N2120E200	27.6	10	3	5.5	70	14	0 -0.011	50	0 -0.025	20	11	0 -0.2	5	-0.012 -0.042	76.1		30		80	60
TS4607N2088E200										–	–	–	–	–						
TS4607N3222E200	See the figure on the right																			
TS4609N2120E200	27.6	10	3	5.5	70	14	0 -0.011	50	0 -0.025	20	11	0 -0.2	5	-0.012 -0.042	98.1	±1	30	±1	80	60
TS4609N2085E200										–	–	–	–	–						

◆Brake type

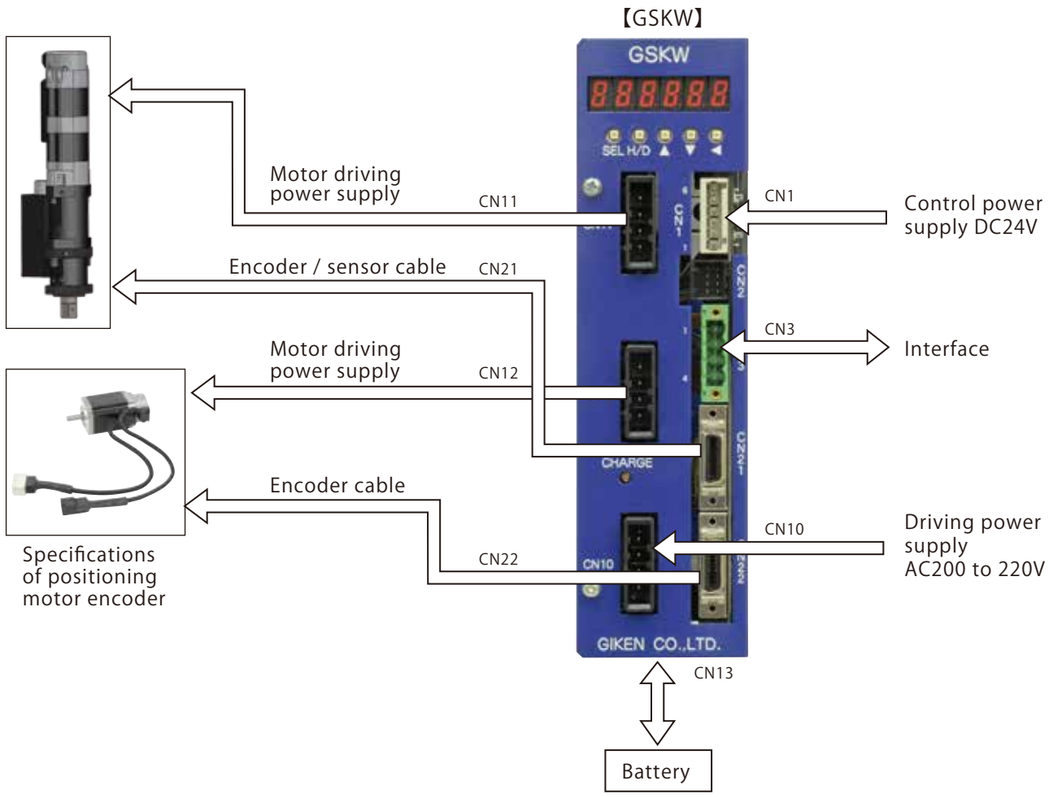
Positioning Motor Model	a	b	c	d	D	f		G		h	I		J		L		L'		M	W
						Dimension	Tolerance	Dimension	Tolerance		Dimension	Tolerance	Dimension	Tolerance	Dimension	Tolerance	Dimension	Tolerance		
TS4603N7066E200	21	9.2	2.5	4.5	46	8	0 -0.009	30	0 -0.021	16	6.2	0 -0.2	3.0	-0.006 -0.031	109.1	±1	25	±1	55	40
TS4603N7060E200										–	–	–	–	–						
TS4604N7023E200										16	6.2	0 -0.2	3.0	-0.006 -0.031	123.1					
TS4604N7021E200										–	–	–	–	–						
TS4609N7084E200	27.6	10	3	5.5	70	14	0 -0.011	50	0 -0.025	20	11	0 -0.2	5	-0.012 -0.042	132.7		30		80	60
TS4609N7049E200										–	–	–	–	–						

■Hollow Motor Dimension

(TS4607N3222E200)



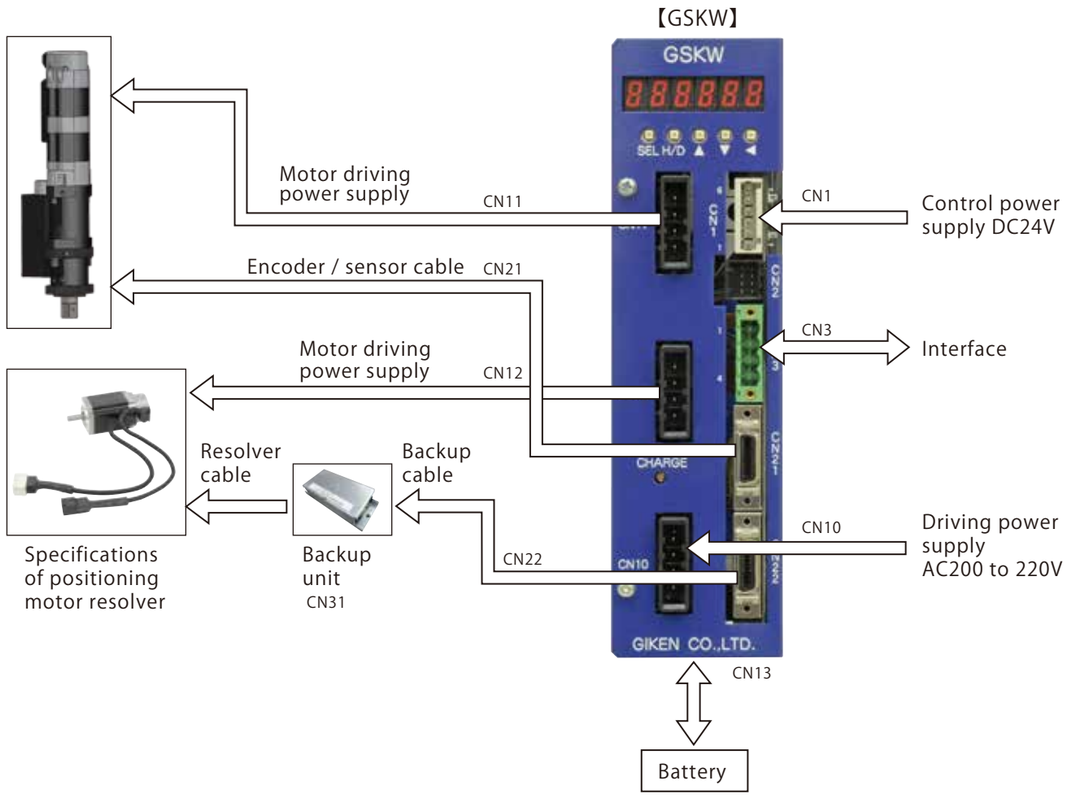
■Specifications of positioning motor encoder



GSK(W)-14-E□-P□

Port No.	Name	Used connector model	Opposing connector housing	Opposing connector pin	Opposing connector included	Remark
CN1	Control power supplyinput port	734-166 (WAGO)	734-106 (WAGO)	–	○	DC24V
CN3	Port for connecting interface / controller	MSTB2.5/4-GF-5.08 (PHOENIX CONTACT)	MSTB2.5/4-STF-5.08 (PHOENIX CONTACT)	–	○	ARC-NET
CN10	Port for inputting driving power supply	1-179277-2 (TE Connectivity)	1-178128-4 (TE Connectivity)	1-175218-2 (TE Connectivity)	○	AC200～220V
CN11	Port for connecting axis 1 motor driving power supply	2-179277-2 (TE Connectivity)	2-178128-4 (TE Connectivity)	1-353717-2 (TE Connectivity)	–	
CN12	Port for connecting axis 2 motor driving power supply	2-179277-2 (TE Connectivity)	2-178128-4 (TE Connectivity)	1-353717-2 (TE Connectivity)	–	
CN13	Battery	–	–	–	–	Battery type:GSK-BATT
CN21	Port for connecting axis 1 sensor	10220-52-A2PL (Sumitomo 3M)	10336-52A0-008 (Sumitomo 3M)	10136-3000VE (Sumitomo 3M)	–	
CN22	Port for connecting axis 2 sensor	10220-52-A2PL (Sumitomo 3M)	10336-52A0-008 (Sumitomo 3M)	10136-3000VE (Sumitomo 3M)	–	

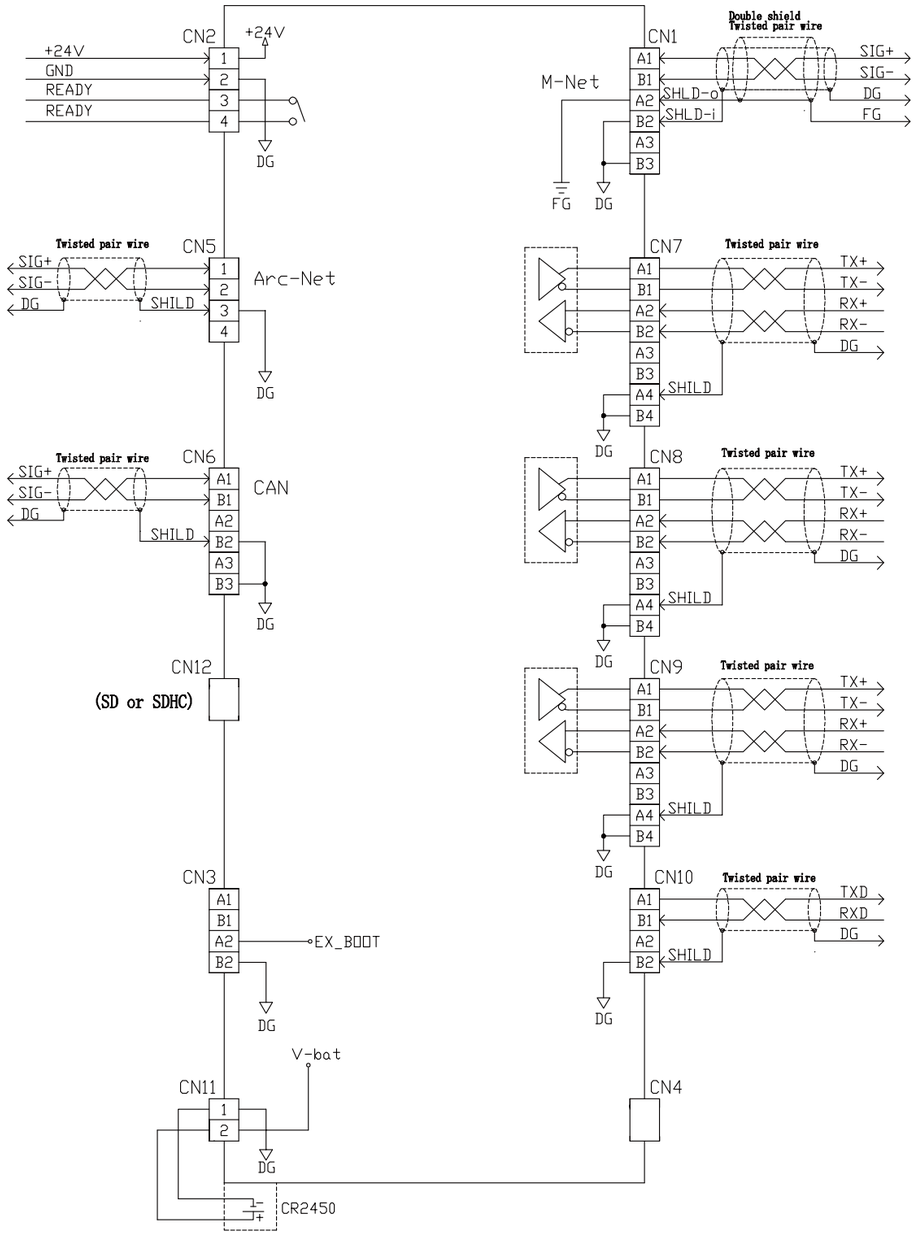
■Specifications of positioning motor resolver



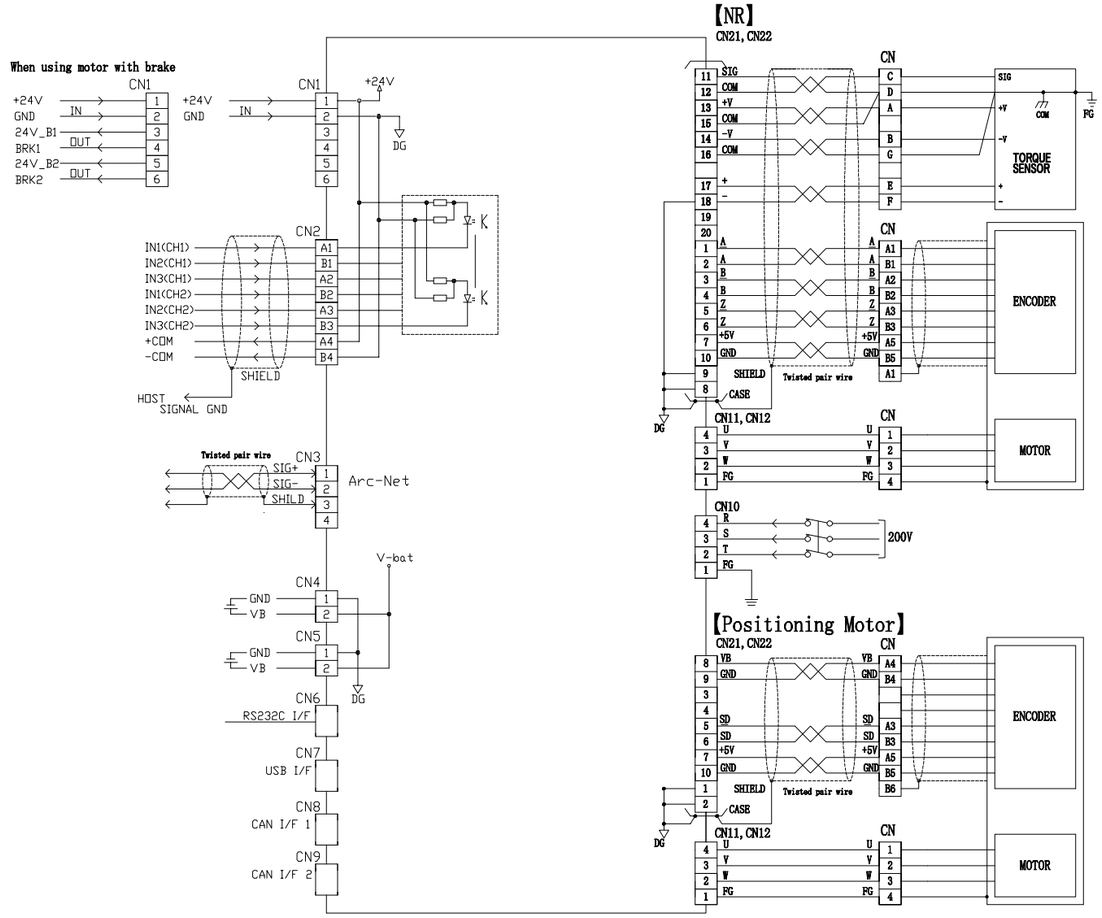
GSK(W)-14-R□-P□

Port No.	Name	Used connector model	Opposing connector housing	Opposing connector pin	Opposing connector included	Remark
CN1	Control power supplyinput port	734-166 (WAGO)	734-106 (WAGO)	–	○	DC24V
CN3	Port for connecting interface / controller	MSTB2.5/4-GF-5.08 (PHOENIX CONTACT)	MSTB2.5/4-STF-5.08 (PHOENIX CONTACT)	–	○	ARC-NET
CN10	Port for inputting driving power supply	1-179277-2 (TE Connectivity)	1-178128-4 (TE Connectivity)	1-175218-2 (TE Connectivity)	○	AC200～220V
CN11	Port for connecting axis 1 motor driving power supply	2-179277-2 (TE Connectivity)	2-178128-4 (TE Connectivity)	1-353717-2 (TE Connectivity)	–	
CN12	Port for connecting axis 2 motor driving power supply	2-179277-2 (TE Connectivity)	2-178128-4 (TE Connectivity)	1-353717-2 (TE Connectivity)	–	
CN13	Battery	–	–	–	–	Battery type:GSK-BATT
CN21	Port for connecting axis 1 sensor	10220-52-A2PL (Sumitomo 3M)	10320-5A0-008 (Sumitomo 3M)	10120-3000VE (Sumitomo 3M)	–	
CN22	Port for connecting axis 2 sensor	10220-52-A2PL (Sumitomo 3M)	10320-5A0-008 (Sumitomo 3M)	10120-3000VE (Sumitomo 3M)	–	
CN31	Backup unit	–	–	–	–	Backup unit model：BU-R001

■Interface (Common to GSK)



■Controller



■Interface (Common to GSK)

◆Model composition

GSK - IF CC – N1
① ②

①Supported communication standard

Blank	: M-NET
CC	: CC-LINK
DN	: Device-NET
PNIO	: PROFI-NET-I/O
PNIRT	: PROFI-NET-IRT
FL	: FL-NET
ET	: Ether-NET
SG	: System GSK (I/O)

②Corresponding series symbol

N1	: Standard item (Common to positioning and nut runner)

◆Model list

Model	Communication standard
GSK-IF-N1	M-NET
GSK-IFCC-N1	CC-LINK
GSK-IFDN-N1	Device-NET
GSK-IFPNIO-N1	PROFI-NET-I/O
GSK-IFPNIRT-N1	PROFI-NET-IRT
GSK-IFFL-N1	FL-NET
GSK-IFET-N1	Ether-NET
GSK-IFSG-N1	System GSK specification (I/O)
GSK-IFDN(ET)-N1	Device-NET + Ether-NET
GSK-IFCC(ET)-N1	CC-LINK + Ether-NET

■Controller

◆Model composition

GSK W – 1 4 – E – E※ P2
① ② ③ ④ ⑤ ⑥

①Number of controllable motor

Blank	: 1 axis type
W	: 2 axis type

②Cooling plate mounting position

1	: Side (Standard type)
T	: Back (T type)

③Angle sensor type ※1

E	: Encoder
R	: Resolver

※1 Depends on motor type.

④Angle sensor spec

Blank	: Standard

⑤Nutrunner angle sensor type

E※	: Encoder Specifications Nutruna
R	: Resolver Specifications Nutruna

⑥Corresponding series symbol

P2	: Standard

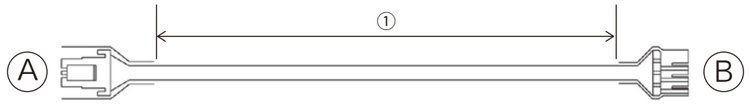
※The mark indicates the nut runner's angle sensor specifications. (Standard type is blank)
※When moving the nut runner and positioning motor with W specification a controller ,
⑤ type selection is required.
In that case, please use nut runner as the first axis.

◆Model list

Model	Number of controllable motor	Cooling plate
GSK-14-□-P2	1 axis specification	No cooling plate
GSKW-14-□-P2	2-axis specification	
GSKW-14-□-□P2	2-axis specification	
GSK-T4-□-P2	1 axis specification	
GSKW-T4-□-P2	2-axis specification	
GSKW-T4-□-□P2	2-axis specification	

■Motor cable

◆Direct cable



【Model】

K I C H I M − □ M − □
① ②

①Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible. Please check the operation by the customer.
※3 All cables are flex cables.

②Motor brake specification

Blank: For no brakes motor
BK ：For brakes motor

【Model list】

Name	Model	With or without brake
Direct cable	KICHIM-□M	No brake
Direct cable	KICHIM-□M-BK	With brake

【Specification】

Housing model		Contact type	Contact Shape
A	350715-1 (AMP)	350550-1 (AMP)	凹
B	2-178128-4 (AMP)	1-353717-2 (AMP)	

◆Relay cable

【Model】

K I C H I M KA − □ M − □
① ② ③

①Cable division

KA ：Relay movable cable
KO ：Relay fixed cable

②Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible. Please check the operation by the customer.
※3 All cables are flex cables.

③Motor brake specification

Blank: For no brakes motor
BK ：For brakes motor

【Model list】

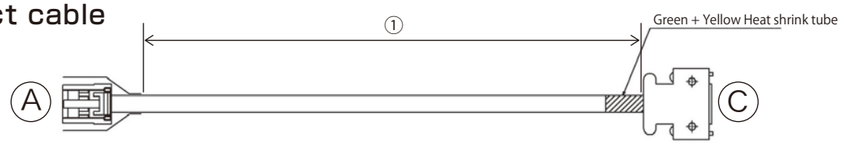
Name	Model
Relay movable cable	KICHIMKA-□M
Relay fixed cable	KICHIMKO-□M

【Specification】

Housing model		Contact type	Contact Shape
A	350715-1 (AMP)	350550-1 (AMP)	凹
B	2-178128-4 (AMP)	1-353717-2 (AMP)	
D	350781-1 (AMP)	350547-3 (AMP) (PinNo.1～3) 350669-1 (AMP) (PinNo.4)	凸

■Encoder cable

◆Direct cable



【Model】

ICHIE-□M
①

①Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.
※3 All cables are flex cables.

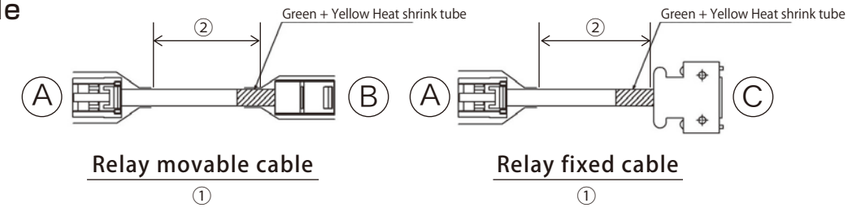
【Model list】

Name	Model
Direct cable	ICHIE-□M

【Specification】

Housing/connector model		Contact type	Contact Shape
A	1-1318118-6 (AMP)	1318108-1 (AMP)	凹
C	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

◆Relay cable



【Model】

ICHIE KA-□M
① ②

①Cable division

KA ：Relay movable cable
KO ：Relay fixed cable

②Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.
※3 All cables are flex cables.

【Model list】

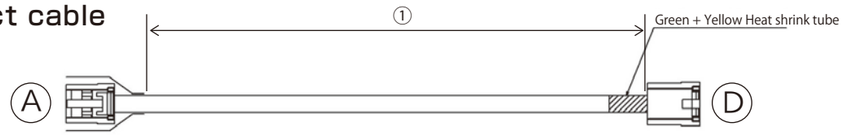
Name	Model
Relay movable cable	ICHIEKA-□M
Relay fixed cable	ICHIEKO-□M

【Specification】

Housing/connector model		Contact type	Contact Shape
A	1-1318118-6 (AMP)	1318108-1 (AMP)	凹
B	1-1318115-6 (AMP)	1318112-1 (AMP)	凸
C	10120-3000VE (3M)	10320-52A0-008 (3M)	凸

■Resolver cable

◆Direct cable



【Model】

I C H I R − □ M
①

①Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.
※3 All cables are flex cables.

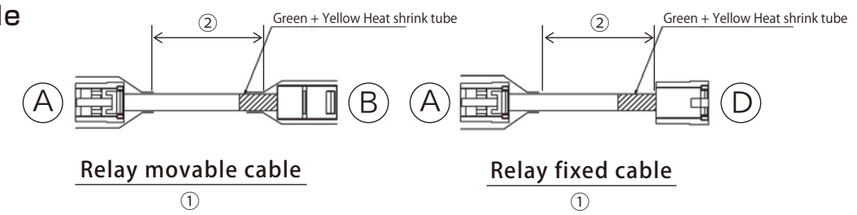
【Model list】

Name	Model
Direct cable	ICHIR-□M

【Specification】

Housing/connector model		Contact type	Contact Shape
A	1-1318118-6 (AMP)	1318108-1 (AMP)	凹
D	1-1827864-4 (AMP)	1827588-2 (AMP)	

◆Relay cable



【Model】

I C H I R KA − □ M
① ②

①Cable division

KA ：Relay movable cable
KO ：Relay fixed cable

②Cable length

Designation of cable length (Specified unit:1m)

※1 Maximum guaranteed cable length 20 m (nut runner to inter-controller length)
※2 Custom-made cable of 20 m or more is manufacturable, but operation guarantee is not possible.
Please check the operation by the customer.
※3 All cables are flex cables.

【Model list】

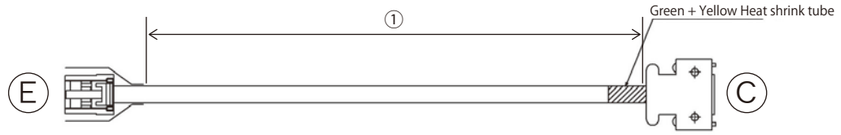
Name	Model
Relay movable cable	ICHIRKA-□M
Relay fixed cable	ICHIRKO-□M

【Specification】

Housing/connector model		Contact type	Contact Shape
A	1-1318118-6 (AMP)	1318108-1 (AMP)	凹
B	1-1318115-6 (AMP)	1318112-1 (AMP)	凸
D	1-1827864-4 (AMP)	1827588-2 (AMP)	凹

■Resolver cable

◆Backup cable



【Model】

I C R K B− ☐ M
①

①Cable length

1	：1m
2	：2m

※1 Other than the above length, can be manufactured as a custom item.
※2 All cables are flex cables.

【Model list】

Name	Model	Remark
Backup cable	ICRKB-1M	Cable length1m
Backup cable	ICRKB-2M	Cable length2m

【Specification】

Housing/connector model		Contact type	Contact Shape
E	1-1827864-2(AMP)	1827588-2(AMP)	凹
C	10120-3000VE(3M)	10320-52A0-008(3M)	凸

※3 Sensor Type　Resolver Positioning When using a motor, a backup unit cable is required.

■Resolver backup unit

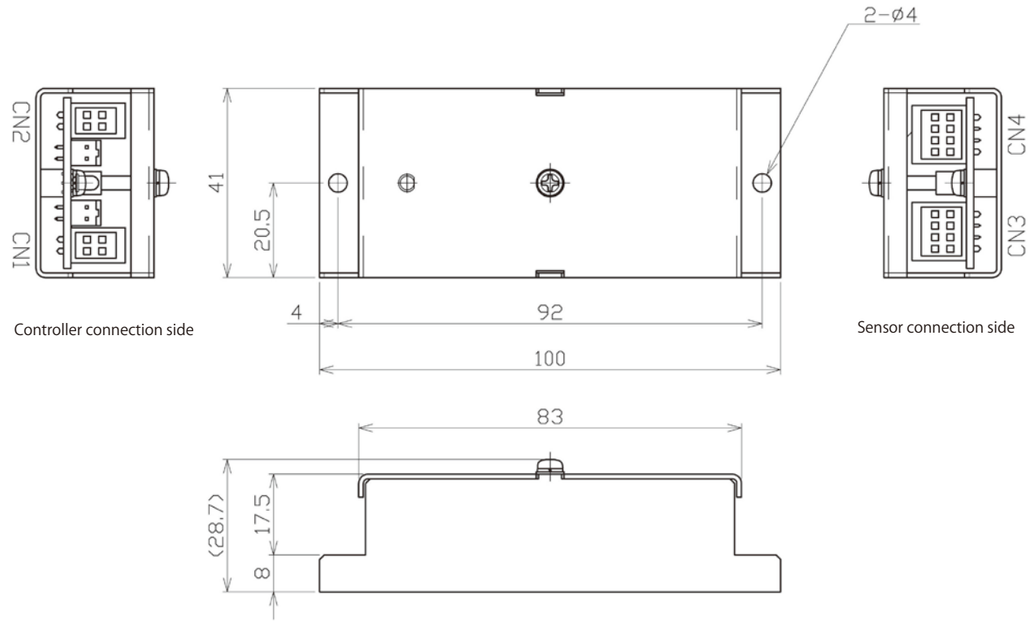
◆Backup unit

【Model list】

Name	Model
Backup unit	BU-R001

※1 Positioning motor To specify the resolver specification, a backup unit is required.
※2 Corresponds to backing up for two motor shafts.
※3 Two batteries are built in the inside.
Corresponding battery: ER17500VC (3.6 V) 2 pieces / made by Toshiba Home Appliance Co., Ltd.

◆Backup unit dimensions



■Cable specification list

◆Motor cable withstand voltage 600 V North American specification compliant

Cable type	Type	Corresponding controller	Cable size	Cable outer diameter	Coating color	Cable type
KICHIM-□M	Direct	GSK(W)-14-P2 GSK(W)-T4-P2	0.5X4 21AWG 600V	8.8mm	Gray	Flex cable
KICHIMKA-□M	Relay movable					
KICHIMKO-□M	Relay fixed					
KICHIM-□M-BK	Direct		0.5X6 21AWG 600V	10.3mm		
KICHIMKA-□M-BK	Relay movable					
KICHIMKA-□M-BK	Relay fixed					

◆Encoder cable

Cable type	Type	Corresponding controller	Cable size	Cable outer diameter	Coating color	Cable type
ICHIE□□-□M	Common to all models	GSK(W)-14-P2 GSK(W)-T4-P2	AWG23	10.8mm	Black	Flex cable

◆Resolver cable

Cable type	Type	Corresponding controller	Cable size	Cable outer diameter	Coating color	Cable type
ICHIR□□-□M	Common to all models	GSK(W)-14-P2 GSK(W)-T4-P2	AWG23	10.8mm	Black	Flex cable
ICRKB-□M						

■Setting software

To carry out various settings of GSK, a PC in which setting software is installed is required Various settings, communication status with upper device, tightening result, and tightening waveform can be confirmed with setting software.

◆Setting software model

Setting software model	Language	Controller type
GSK-SET-SOFT-J	Japanese	GSK GSKW Common to positioning GSK
GSK-SET-SOFT-E	English	

Supported OS win7/8/8.1/10

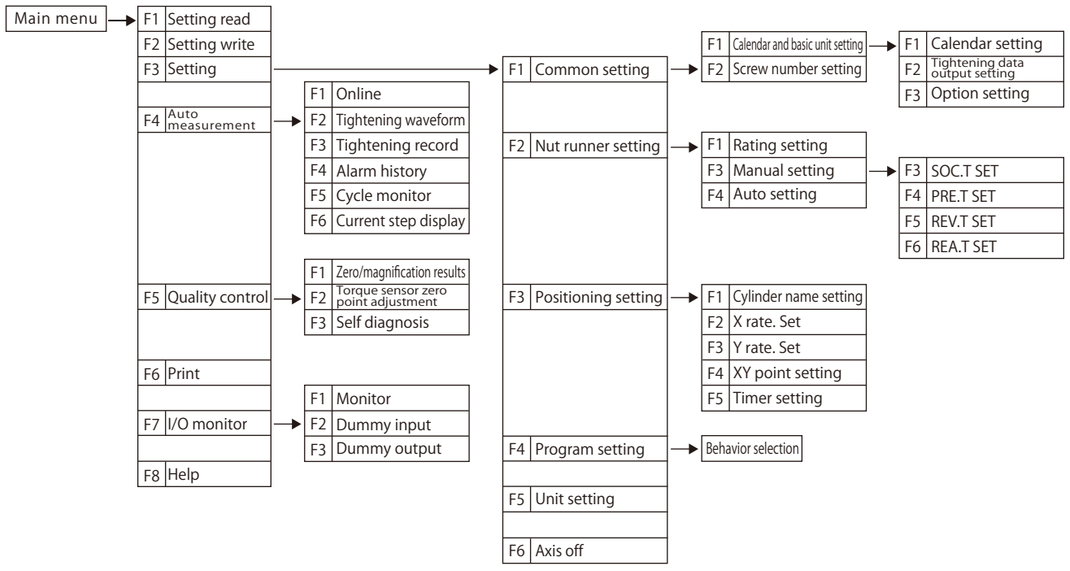
◆Setting cable model

Cable for connecting PC in which setting software of GSK is installed and interface.

Model	Cable length [m]
GK-SET-1.8M	1.8m

The setting cable is common to all setting software.

■Hierarchy of setting software



■Setting screen

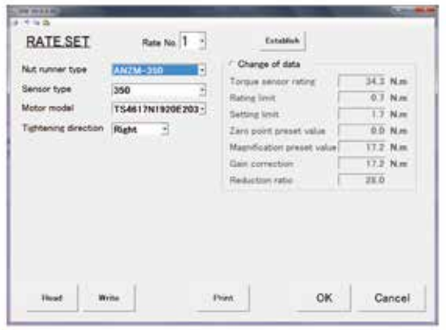
【Main menu】

Initial screen that is displayed when the setting software is activated.

【Setting menu】

Screen for carrying out various settings.

【Rate Setting】



Screen for setting the details of used nut runner .

【SOC.T Setting】

Screen for setting the rotation for matching a bolt with a socket.

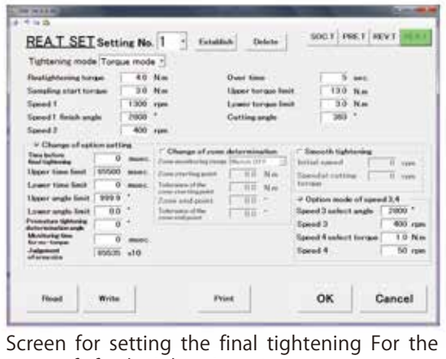
【PRE.T Setting】

Screen for setting bolt setting status to seating. (temporary tightening)

【REV.T Setting】

Screen for setting seizure judgment after temporary tightening of bolt.

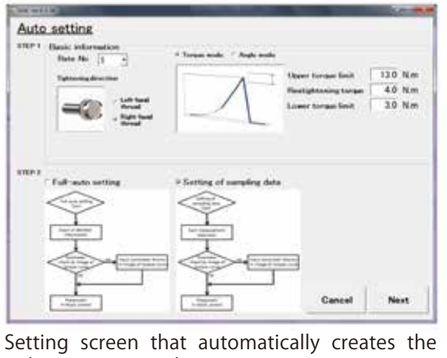
【REA.T Setting】



Screen for setting the final tightening For the type of final tightening, two types; torque method and angle method are available.

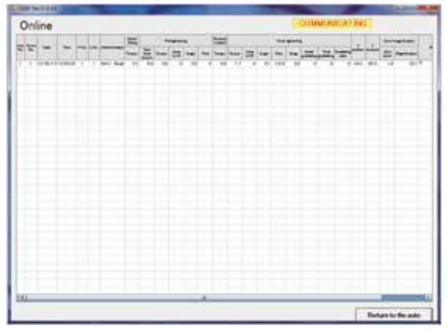
※For the final tightening setting, up to No. 50 can be set.

【Auto setting】



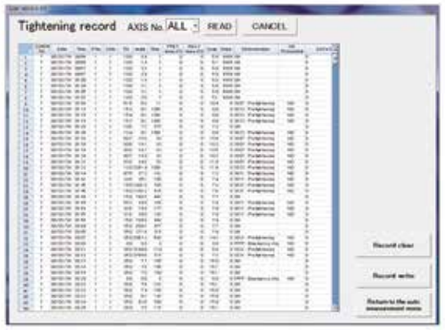
Setting screen that automatically creates the tightening setting by inputting necessary items in case of full auto setting With the sampling setting, detailed setting is enabled by actually tightening a workpiece.

【Online】



Screen for saving the tightening result in PC by making a connection to controller.

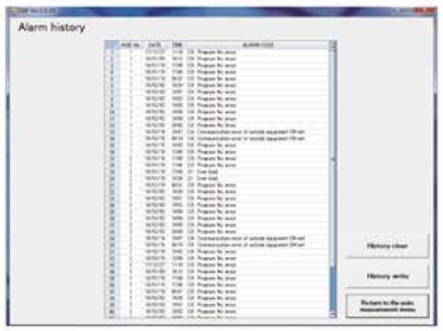
【Tightening history】



Screen for importing the data saved in the controller in PC.

※Maximum number of saved items in tightening historyper axis: 5,000items

【Alarm history】



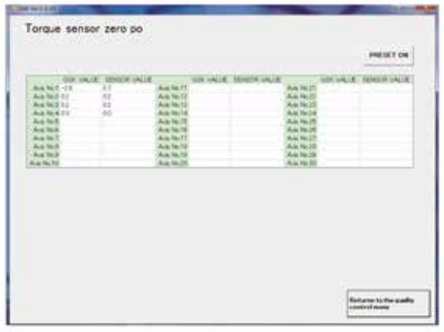
Screen for importing the alarm data saved in the controller in PC.

※Maximum number of saved items in alarm history per axis:16 items

【I/O monitor】

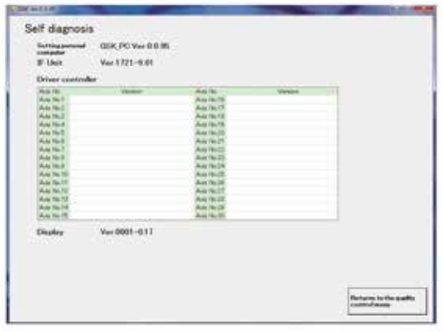
Screen for checking the I/O status with upper link.

【Torque sensor zero point adjustment】



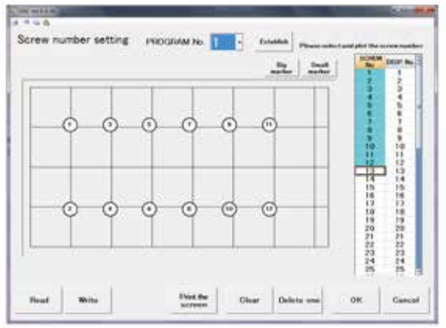
Screen for checking the zero point of current torque sensor.

【Self diagnosis】



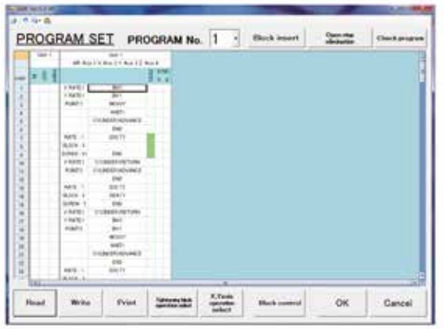
Screen for checking each version of currently configured parts.

【Screw No. array setting】



Screen for setting the screw No. array to be displayed on the display (GSK-D1/ GK-D1 series).

【Program setting】

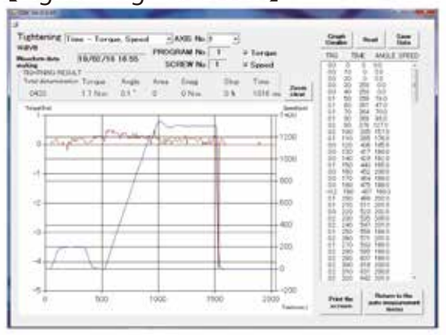


Screen for setting the combination of behaviors related to tightening(socket matching,temporary inversion,final tightening)for each axis tightening, final tightening) for each axis.

※Maximum number of programs

Max.number of axes	Number of programs	Number of steps
30	16	220
30	50	70
8	50	220

【Tightening waveform】



Screen for importing the tightening waveform in PC.

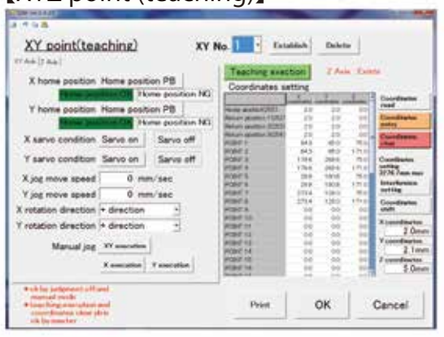
【X-axis rating】

Screen for setting the details of X / Y-axis motor.

【Z-axis rating】

Screen for setting the details of Z-axis motor.

【XYZ point (teaching)】



Screen for setting (teaching) the tightening coordinates.

System GSK PLC-less control system

Items

Feature (Simple sequence function (GFB) is incorporated)

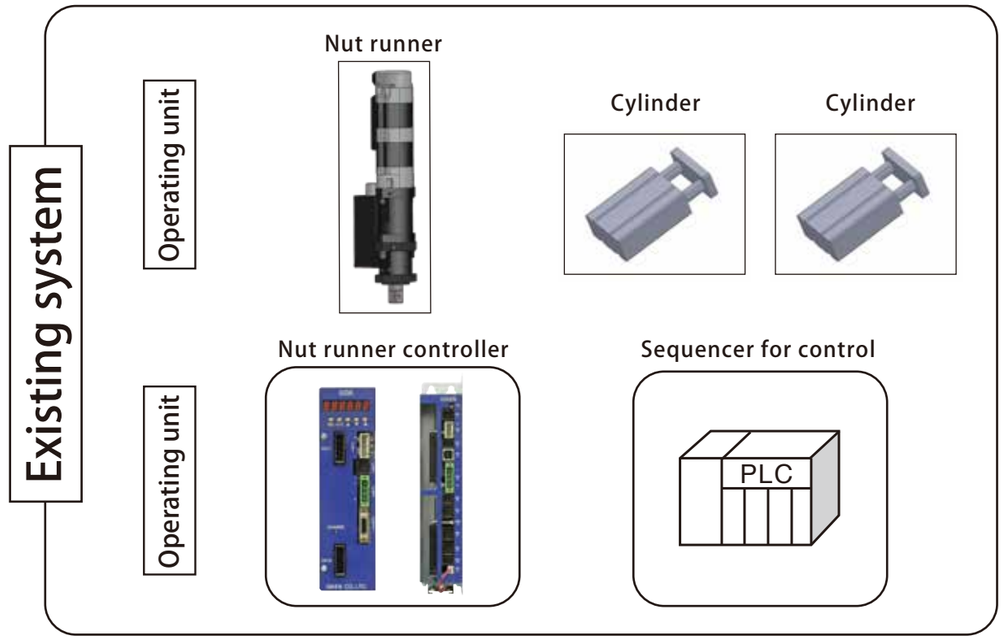
◆GFB is regularly mounted on nut runner controller

Various actuators can be managed and the sequence-less configuration of device is enabled by mounting GFB on nut runner controller

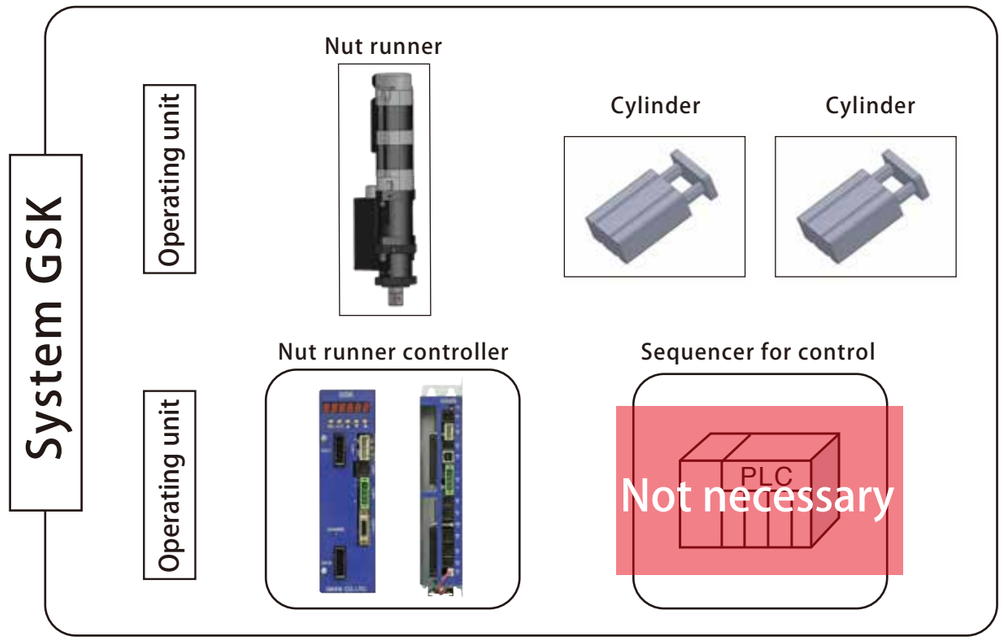
GFB (Giken Function Block)
The behavior of cylinder etc. can be set without PLC by using the setting software of system GSK for GIKEN's original circuit block.

◆Various signals of solenoid valve etc. are controlled from actuator

- Nut runner control
- Positioning control
- Control of other signals
- Solenoid valve control
- Number of I/O points 96 points
- Number of blocks 10,000 blocks

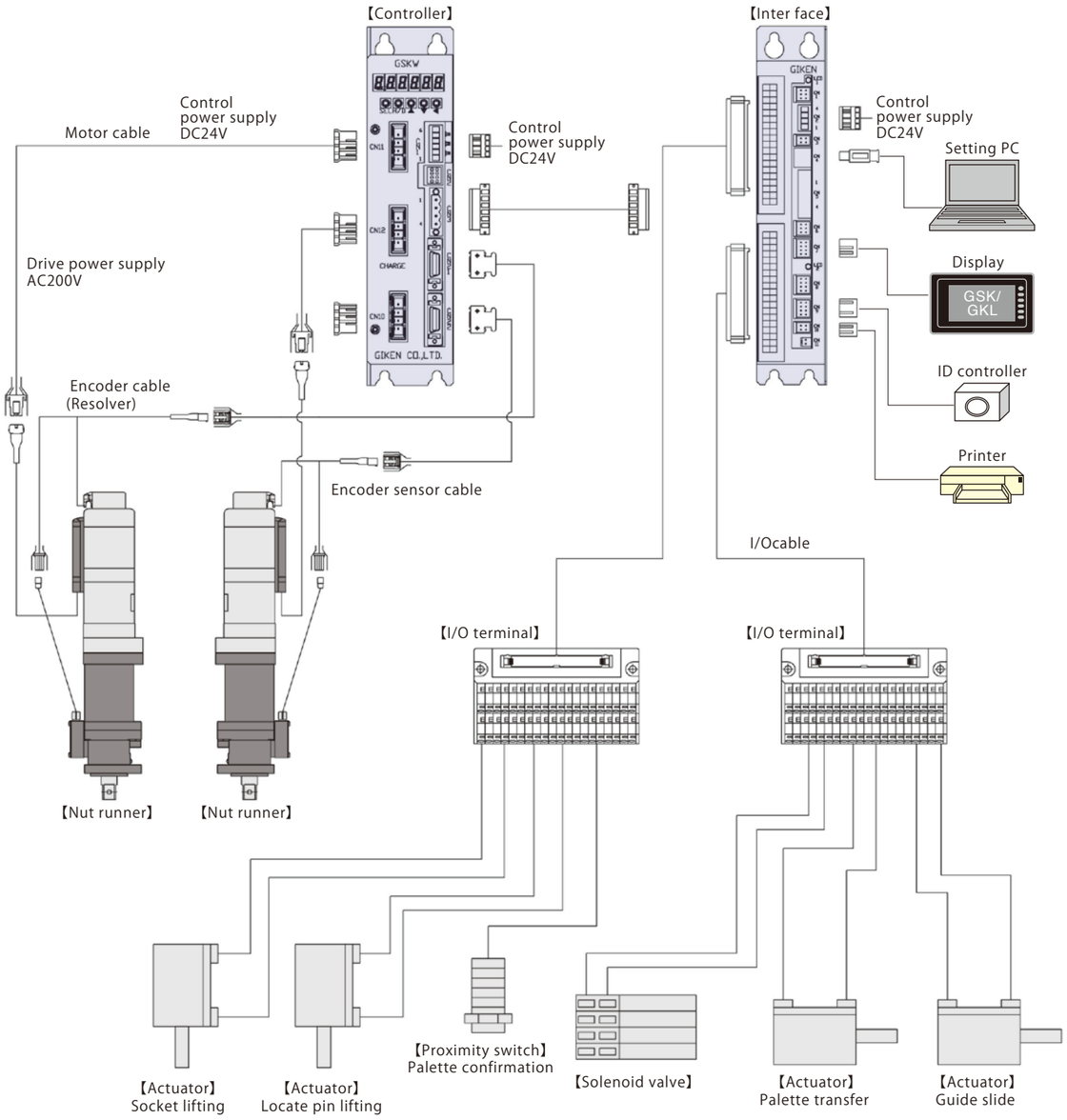


・Simplification of system
・Nut runner + positioning setting + cylinder operation setting is enabled by system GSK setting software.



Number of I/O points per I/O board
Input: 24 points　Output: 24 points
Two I/O boards can be attached to system GSK.
※For the standard model, only one I/O board is attached.
The second board is an option.

■System GSK system configuration



■Model configuration

■Interface

GSK-IF SG ① 2 ② – N1 ③

①Corresponding communication specification

SG ：System GSK（I/O）

③Corresponding series symbol

N1 ：Standard

②Number of I/O boards

Blank: One I/O board

2 ：Two I/O boards

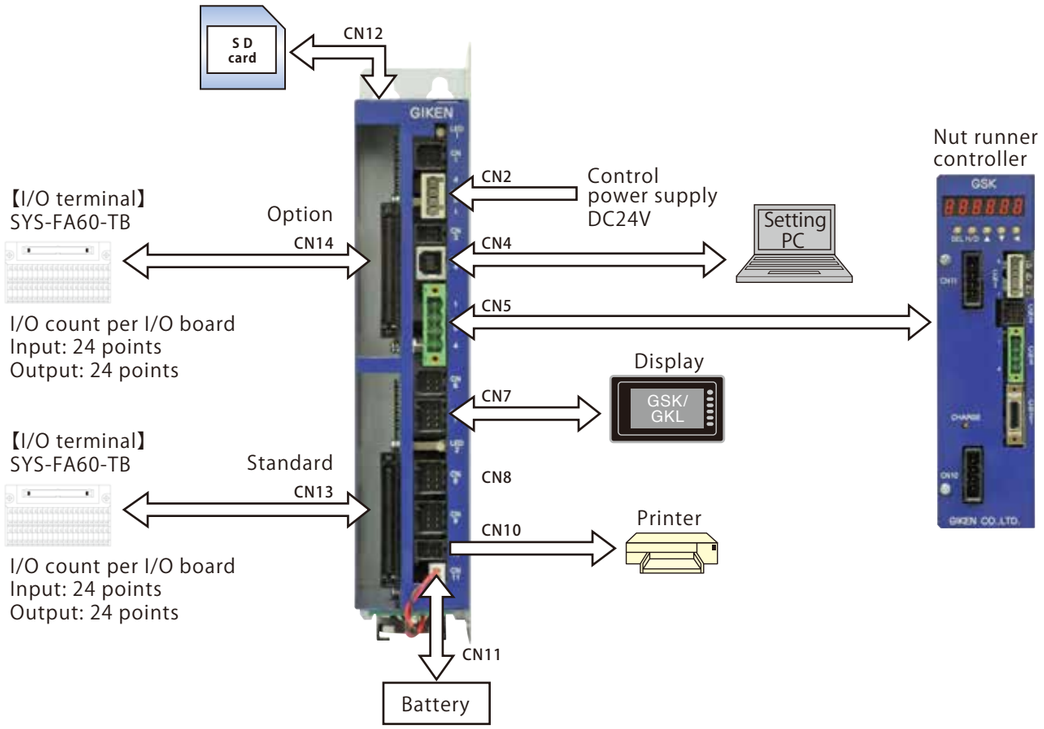
◆Model list

Model	I/O board
GSK-IFSG-N1	One I/O board
GSK-IFSG2-N1	Two I/O boards

※The controller can use GSK · GKL and Positioning GSK that way.

Name of each section

■Interface

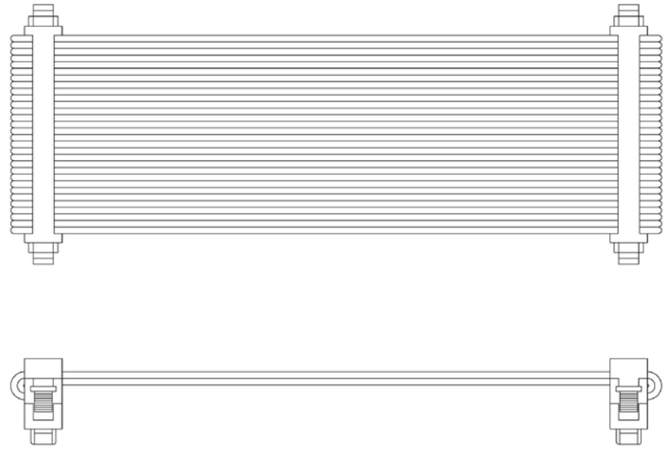


Port NO.	Name	Connector model	Opponent's connector housing	Opponent's connector pin	Opponent's connector Accessories	Communication method	Remarks
CN2	Control power supply input port	734-144 (WAGO)	734-104 (WAGO)	–	○	DC24V	
CN4	Port for connecting setting PC	UBB-4R-D14T-4D (JST)	USB Type B	–	–	USB communication	Cable model：GK-SET-1.8M
CN5	Port for connecting controller	MSTB2.5/4-GF-5.08 (PHOENIX CONTACT)	MSTB2.5/4-STF-5.08 (PHOENIX CONTACT)	–	○	ARC-NET communication	
CN7	Port for connecting display	1-1827876-4 (TE Connectivity)	1-1827864-4 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS422 communication	Cable model：GSK-DIS-10M
CN8	Port for connecting ID controller	1-1827876-4 (TE Connectivity)	1-1827864-4 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS422 communication	
CN10	Port for connecting printer	1-1827876-2 (TE Connectivity)	1-1827864-2 (TE Connectivity)	1827570-2 (TE Connectivity)	–	RS232C communication	Cable model：GK-PRN-1.5M ：GK-PRN-3.0M
CN11	Battery	–	–	–	○	–	Battery model:CR2450 / Panasonic Battery included
CN12	SD card slot	–	–	–	–	–	SD/SDHC to 32GB or less supported SD card model: GK-SD-32G
CN13	Port for connecting I/O cable	8830-060-170S-F (KEL)	–	–	○	–	Standard model is equipped with only one port
CN14	Port for connecting I/O cable	8830-060-170S-F (KEL)	–	–	–	–	For the second sheet, an optional IO port: SYS-IO24 is separately required

I/O cable/terminal model

■System GSK I/O cable

◆I/O cable model

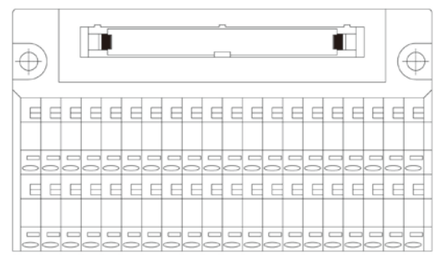


Model	Cable length [m]
SYS-FA60-0.5M	0.5m
SYS-FA60-1M	1.0m
SYS-FA60-2M	2.0m
SYS-FA60-3M	3.0m

※60-pin flat cable

■System GSK I/O terminal

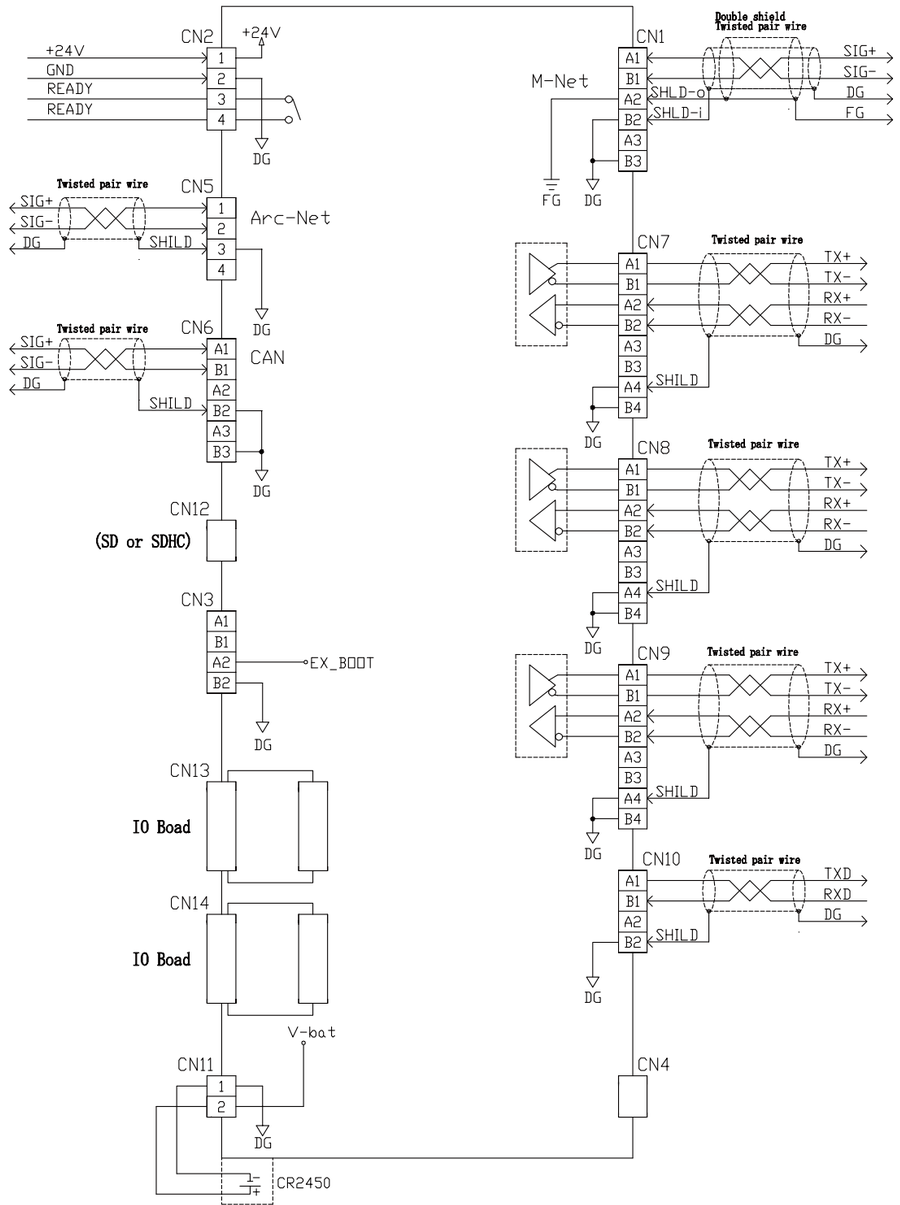
◆I/O terminal model



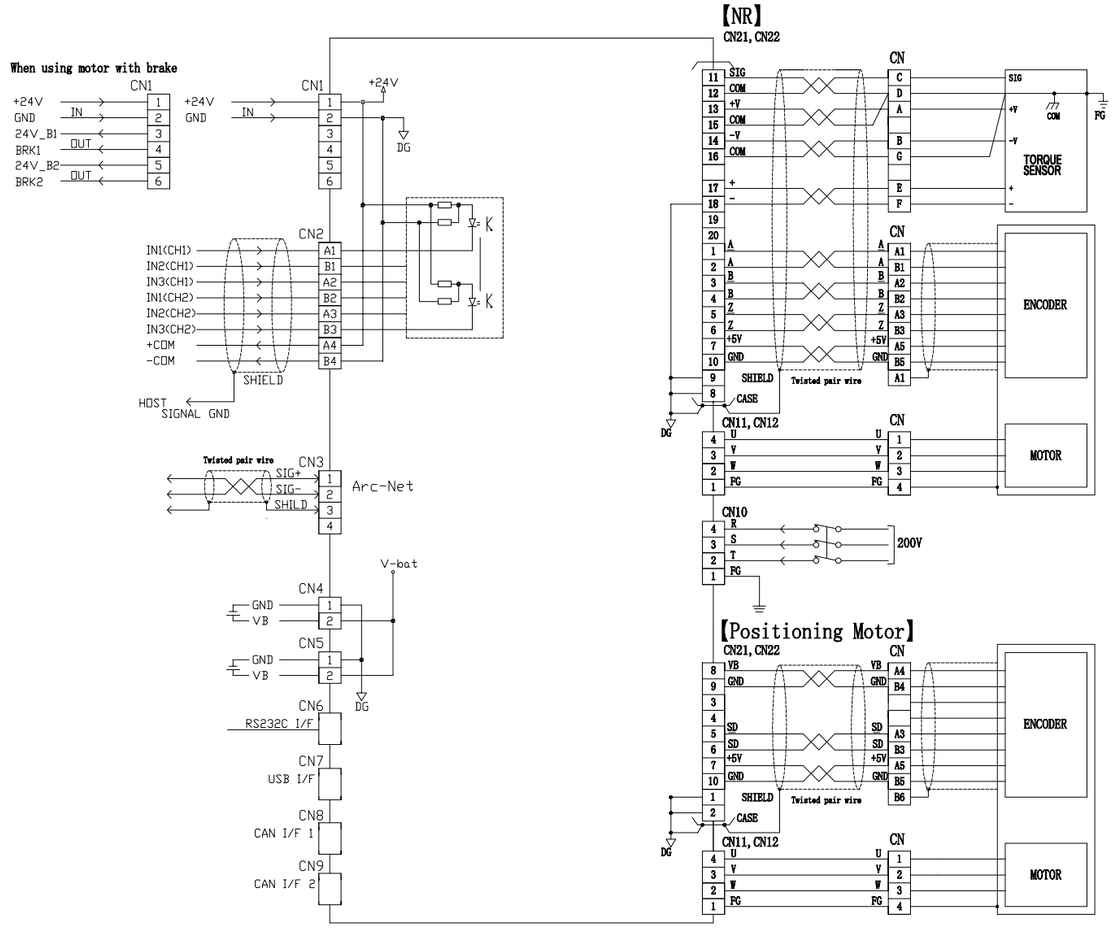
Model
SYS-FA60-TB

※The shape will be changed without notice.
For the latest shape and dimensions, please contact our company.

■Interface



■Controller



■Setting software

To carry out various settings of GSK, a PC in which setting software is installed is required Various settings, communication status with upper device, tightening result, and tightening waveform can be confirmed with setting software.

◆Setting software model

Setting software model	Language	Controller type
S-GSK-SET-SOFT-J	Japanese	System GSK
S-GSK-SET-SOFT-E	English	

Supported OS win7/8/8.1/10

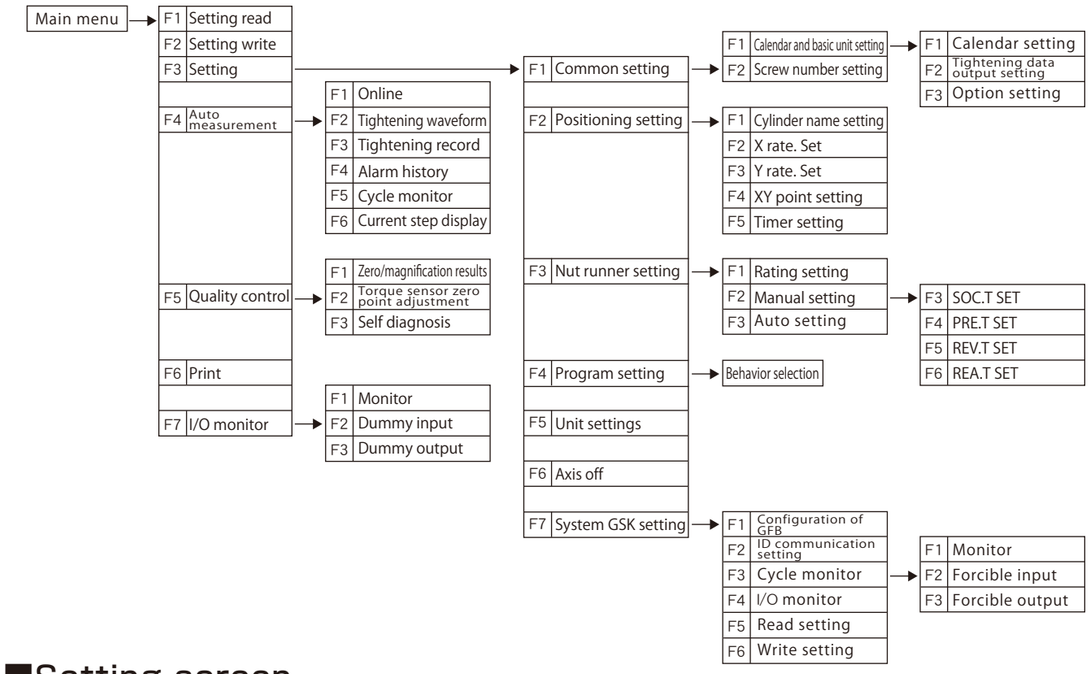
◆Setting cable model

Cable for connecting PC in which setting software of GSK is installed and interface.

Model	Cable length [m]
GK-SET-1.8M	1.8m

The setting cable is common to all setting software.

■Hierarchy of setting software



■Setting screen

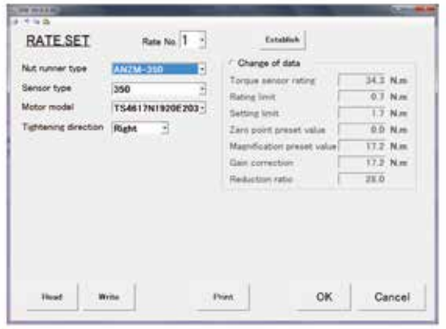
【Main menu】

Initial screen that is displayed when the setting software is activated.

【Setting menu】

Screen for carrying out various settings.

【Rate Setting】



Screen for setting the details of used nut runner .

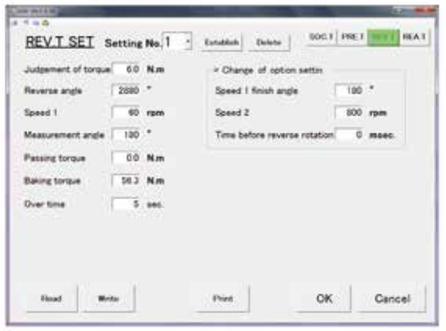
【SOC.T Setting】

Screen for setting the rotation for matching a bolt with a socket.

【PRE.T Setting】

Screen for setting bolt setting status to seating. (temporary tightening)

【REV.T Setting】



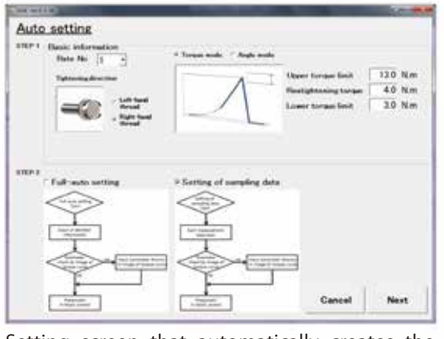
Screen for setting seizure judgment after temporary tightening of bolt.

【REA.T Setting】

Screen for setting the final tightening For the type of final tightening, two types; torque method and angle method are available.

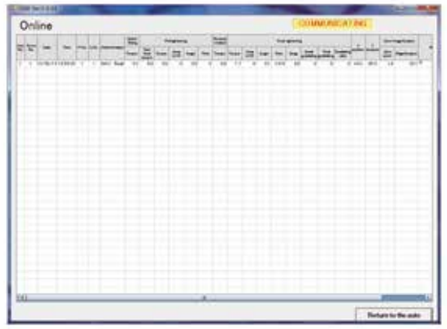
※For the final tightening setting, up to No. 50 can be set.

【Auto setting】



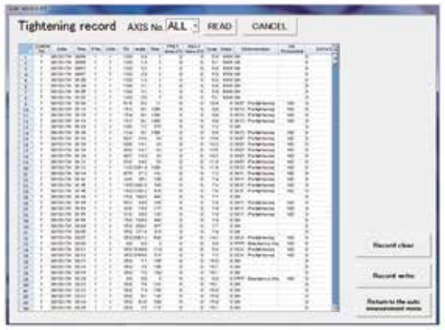
Setting screen that automatically creates the tightening setting by inputting necessary items in case of full auto setting With the sampling setting, detailed setting is enabled by actually tightening a workpiece.

【Online】



Screen for saving the tightening result in PC by making a connection to controller.

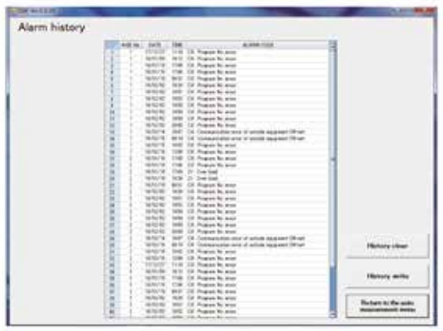
【Tightening history】



Screen for importing the data saved in the controller in PC.

※Maximum number of saved items in tightening historyper axis: 5,000items

【Alarm history】



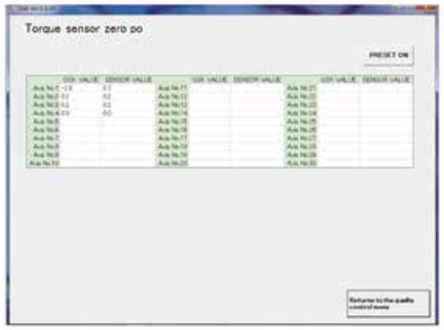
Screen for importing the alarm data saved in the controller in PC.

※Maximum number of saved items in alarm history per axis:16 items

【I/O monitor】

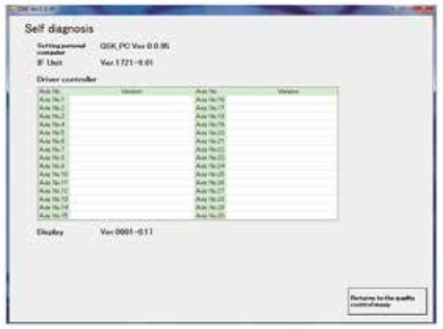
Screen for checking the I/O status with upper link.

【Torque sensor zero point adjustment】



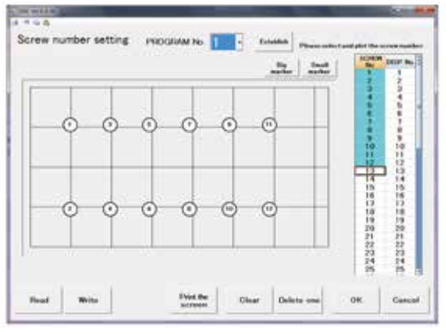
Screen for checking the zero point of current torque sensor.

【Self diagnosis】



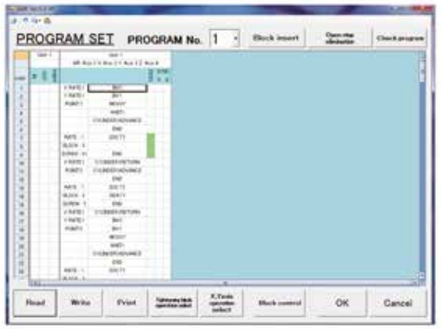
Screen for checking each version of currently configured parts.

【Screw No. array setting】



Screen for setting the screw No. array to be displayed on the display (GSK-D1/ GK-D1 series).

【Program setting】

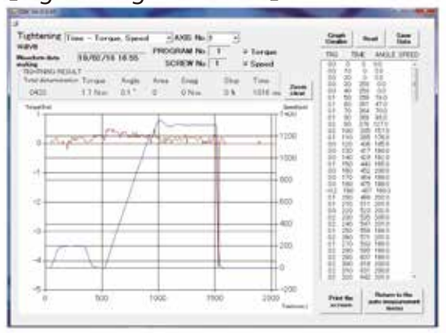


Screen for setting the combination of behaviors related to tightening(socket matching,temporary inversion,final tightening)for each axis tightening, final tightening) for each axis.

※Maximum number of programs

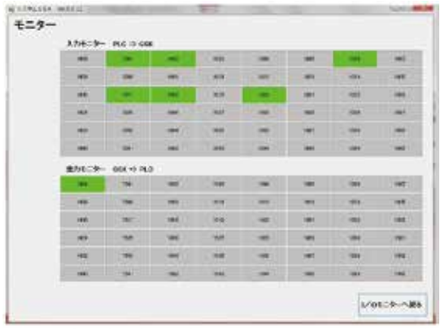
Max.number of axes	Number of programs	Number of steps
30	16	220
30	50	70
8	50	220

【Tightening waveform】



Screen for importing the tightening waveform in PC.

【Monitor】



Screen for checking the input /output status with the I / O board of the I / F.

【GFB configuration】

Screen for setting the basic setting (ladder) of GFB.

【GFB input condition configuration】

Screen for setting the input conditions of GFB.

Peripheral device/option

Items

Peripheral device/option

■Display

Lineup

Type	Name	Screen size	GSK/GKL	Model
Individual display (Equipped with Ethernet (LAN))	GSK display	5.7-inch	For GSK	GSK-D2
	GKL display		For GKL	GKL-D2
Operation panel integrated display (Equipped with Ethernet (LAN))	5.7-inch general-purpose operation panel	5.7-inch	Common to GSK/GKL	GK-D3-5.7
	8.4-inch general-purpose operation panel	8.4-inch		GK-D3-8.4
	10.4-inch general-purpose operation panel	10.4-inch		GK-D3-10.4
	12.1-inch general-purpose operation panel	12.1-inch		GK-D3-12.1
	15-inch general-purpose operation panel	15-inch		GK-D3-15

■Display model

Name	Model	Screen size
Display for GSK	GSK-D2	5.7-inch
Display for GKL	GKL-D2	5.7-inch

※For the software of display, Giken GSK (GKL) standard type has been installed.

■Operation panel integrated display model

Name	Model	Screen size
5.7-inch general-purpose operation panel	GK-D3-5.7	5.7-inch
8.4-inch general-purpose operation panel	GK-D3-8.4	8.4-inch
10.4-inch general-purpose operation panel	GK-D3-10.4	10.4-inch
12.1-inch general-purpose operation panel	GK-D3-12.1	12.1-inch
15-inch general-purpose operation panel	GK-D3-15	15-inch

※The software of display is initialized.
When you use it, it is necessary to write it by yourself.
※The software is also designed by our company.
Please feel free to consult with our company.

■Display cable model (Separately available)

Name	Model	Cable length	Communication specification
Display cable	GSK-DIS-10M	10m	RS422
	GSK-DIS-15M	15m	

※Common to operation panel integrated display.
※Common to GSK/GKL.
※The cable length can be separately designated. Max. 20m(minimum unit: 1m)
At the arrangement, please designate the desired length for□in GSK-DIS-□□M.

■Display setting software (Separately available)

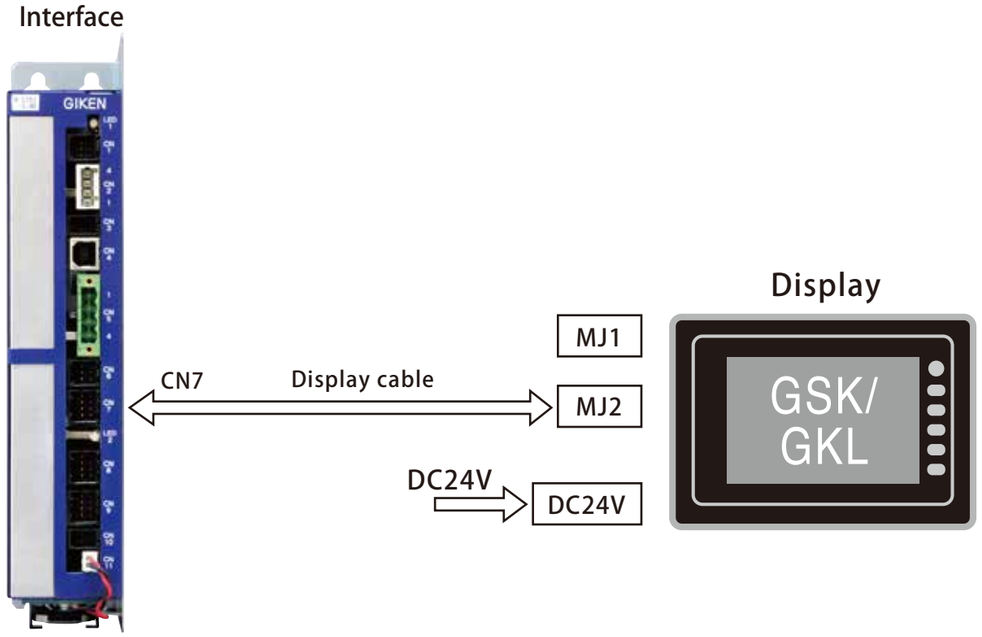
Name	Model
Display setting software	OP-DIS-SE

■Battery (Included)

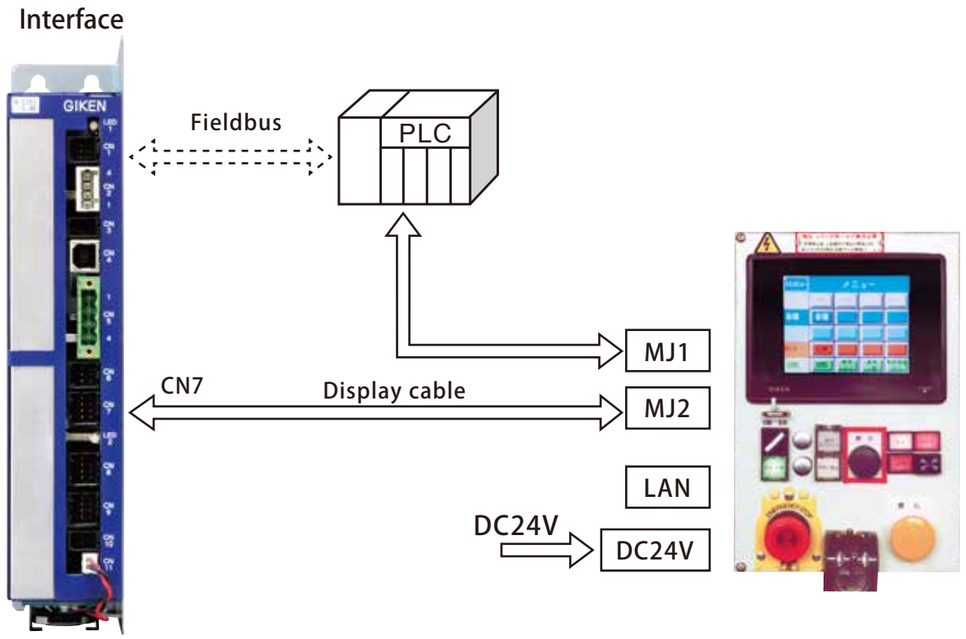
Name	Model
Battery for individual display	TGK-BT
Battery for integrated display	GK-BT

Basic system configuration

GSK/GKL display system configuration

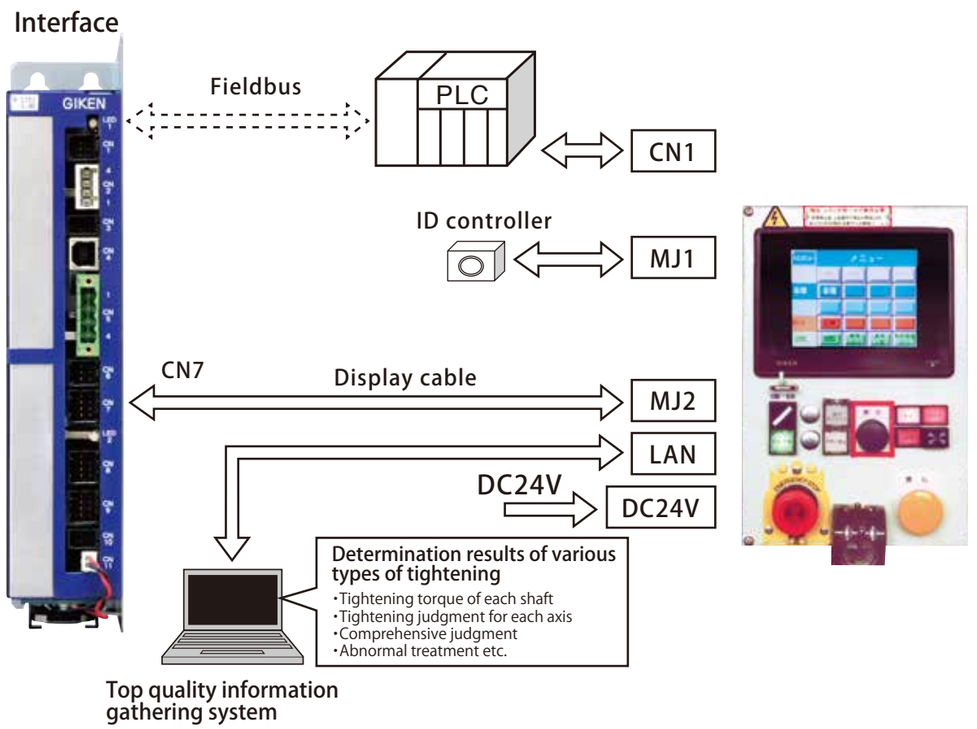


Operational panelintegrated display system configuration

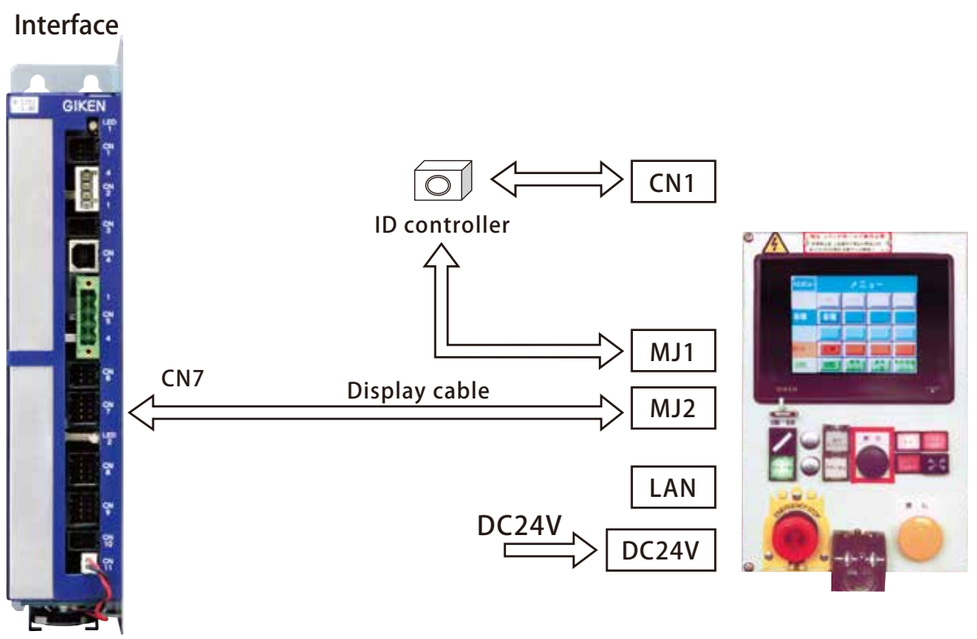


■Other system configuration

Communication composition of quality information collection system and ID conntoroll



Example of system GSK configuration



■Display & operation panel

◆Functions (Displayed content)

Display content	Remark
Tightening setting value	Displays all of setting items such as GSK,GKL, positioning
Tightening program	Displaysthe tightening program created by setting PC
Tightening torque waveform	Displays the tightening torque waveform of each screw
Tightening speed waveform	Displaysthe tightening speed waveform of each screw
Axis array	Displays allocated position of each screw changing the color for OK and NG
I/O monitor input screen	Displays the input status from PLC to interface
I/O monitor output screen	Displays the output status from interface to PLC
Alarm information	Displays the alarm informationof interface / driver
Tightening OK/NG judgment	DisplaysOK of synthetic judgement

■Example of display

Tightening result of axis array is quite obvious!
Tightening data is quite obvious!
Setting data is quite obvious!

Top page screen

Axis array

Axis array OK, NG

OK screen


Tightening result data


Tightening waveform graph

Setting menu screen

Error display screen

Display language selection screen

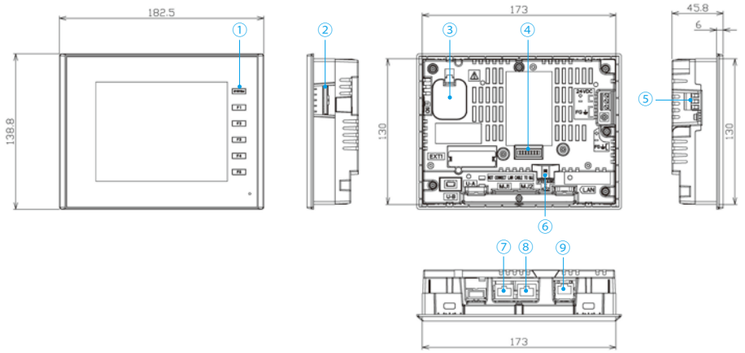

IO monitor input screen

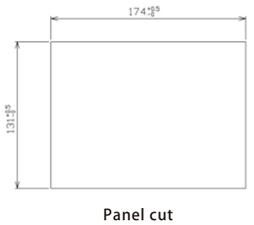

Final tightening setting value-1 screen

※Displayed content and content of operation can be designed according to the specifications.
For details, please contact the sales representative of our company.

■External view/dimension diagram

◆Individual display

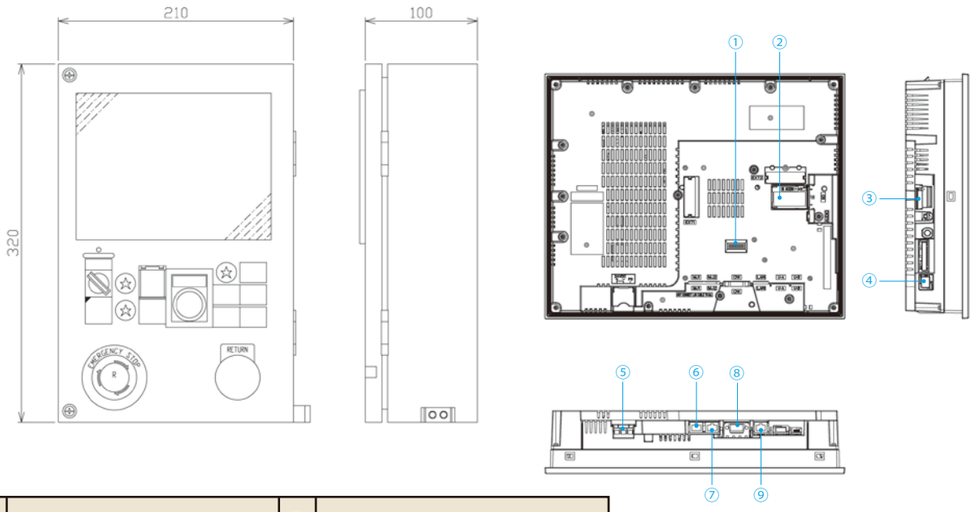




Panel cut

①	Function switch	⑥	Slide switch
②	SD card slot	⑦	Modular jack (MJ1)
③	Battery holder	⑧	Modular jack (MJ2)
④	DIP switch	⑨	LAN
⑤	Power supply input terminal block		

◆5.7-inch type dimension diagram

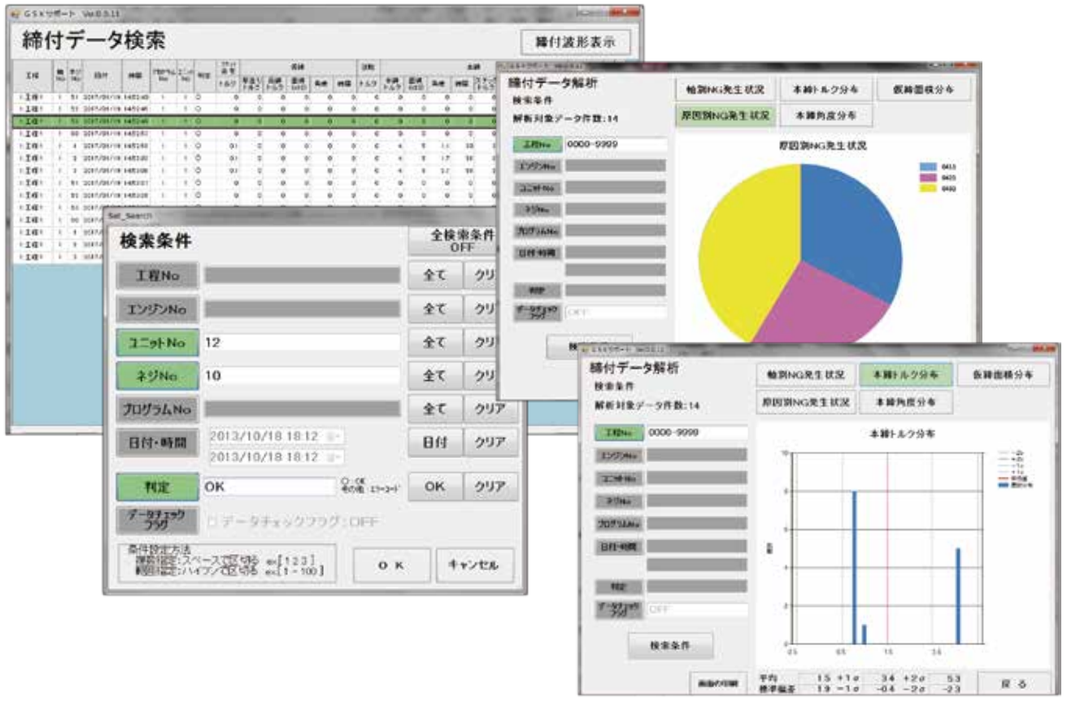


①	DIP switch	⑥	Modular jack (MJ1)
②	Battery holder	⑦	Modular jack (MJ2)
③	SD card slot	⑧	PLC communication connector (CN1)
④	LAN2	⑨	LAN
⑤	Power supply input terminal block		

■PC software of GSK support system

This is the exclusive software to analyze the tightening data acquired SD card which is inserted GSK interface.

It has a serching function of tightening data.
And the NG number and the frequency of occurrence can be graphed out.
The distribution of torque value angle data can be graphed out.



◆PC software type of GSK support system

Software type	Language	Controller type
GSK-SPT-SOFT-J	Japanese	GSK GSKW
GSK-SPT-SOFT-E	English	

OS: win7/8/8.1/10

◆SD card type

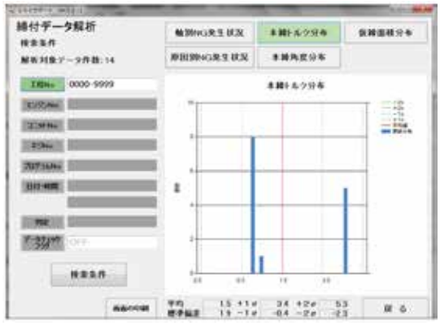
SD card type	Capacity
GK-SD-32G	32GB

SD card is option.

【List of tightening data】

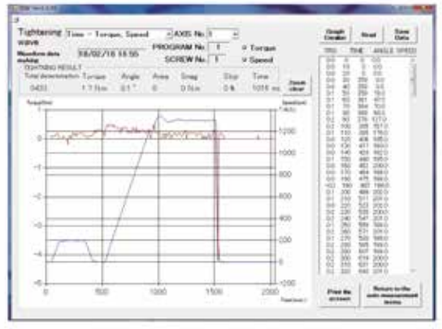
Screen for variously setting.

【Analysis of tightening data】



The screen can be cheked the mean and the distribution of chosen data.

【Tightening wave】

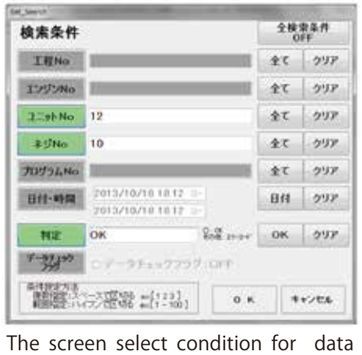


The screen can be cheked the tightening wave of chosen data.

【Analysis of tightening data】

The screen can be cheked the generation status of every item.

【Search condition】



The screen select condition for data which you want.

【Search result list】

The screen indicated list which was searched.

■Standard Cushion Attachment

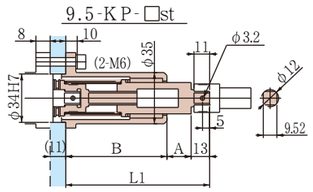
Expression of model　9.5/12/15/19/25 — K/F　P/W/B — □st
①　②　③　④

	①Sq. size	②Fitting shape	③Socket fit	④Standard stroke
Ⅰ	9.5：9.52 sq	K：Cushon case F：Swing-stop plate	P：Pin type W：Onetouch B：Bit type	9.5：20　35
Ⅱ	12：12.7 sq			12：20　35　50
Ⅲ	15：15.87sq			15：　35　50　65
Ⅳ	19：19.05sq			19：　50　65
Ⅴ	25：25.4 sq			25：　50　65

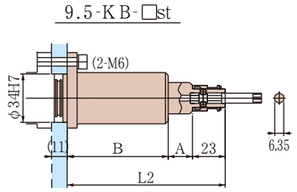
Square size 9.5

Stroke	A	B	L1	L2	L3	L4
20	22	71	106	116	117	48
35	37	86	136	146	147	63

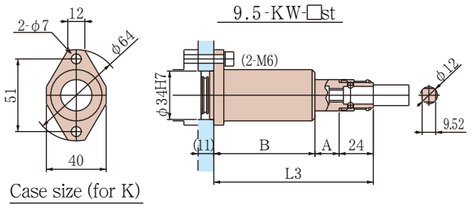
9.5-KP-□st



9.5-KB-□st

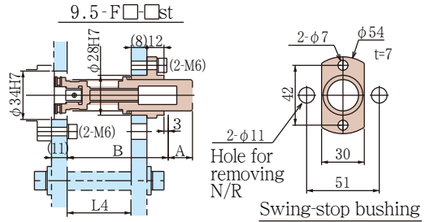


9.5-KW-□st



Case size (for K)

9.5-F□-□st

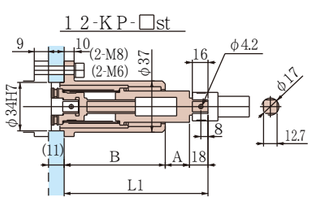


Square size 12

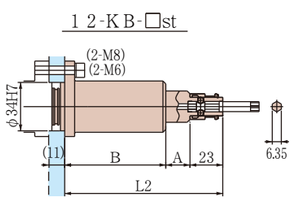
Stroke	A	B	L1	L2	L3	L4
20	22	79	119	124	129	54
35	37	94	149	154	159	69
50	52	109	179	184	189	84

2-M6：ANZM-350
2-M8：ANZM-550

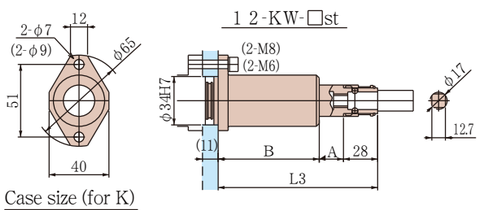
12-KP-□st



12-KB-□st

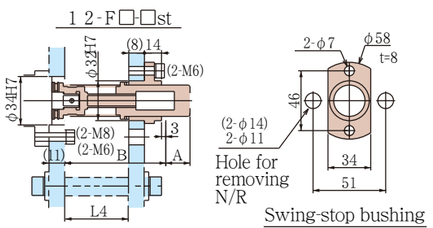


12-KW-□st



Case size (for K)

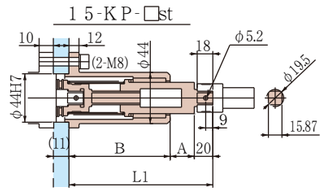
12-F□-□st



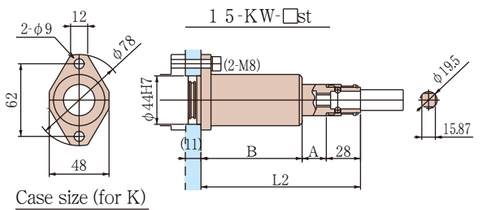
Square size 15

Stroke	A	B	L1	L2	L3
35	37	109	166	173	76
50	52	124	196	203	91
65	67	139	226	233	106

15-KP-□st

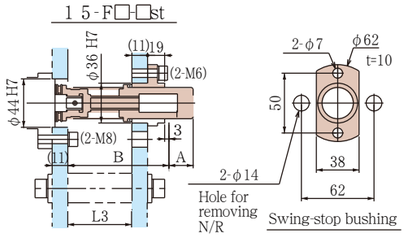


15-KW-□st



Case size (for K)

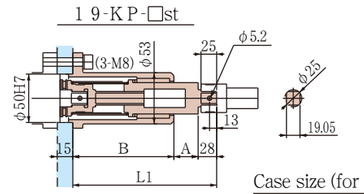
15-F□-□st



Square size 19

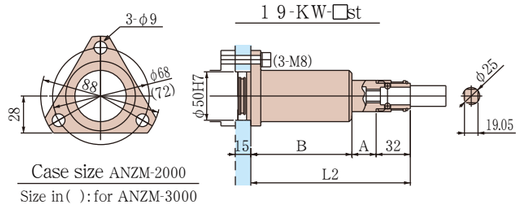
Stroke	A	B	L1	L2	L3
50	53	138	219	223	100
65	68	153	249	253	115

19-KP-□st

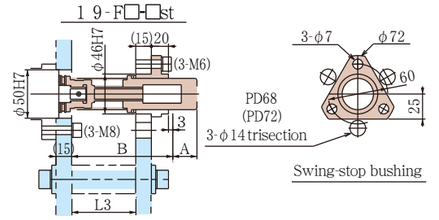


Case size (for K)

19-KW-□st



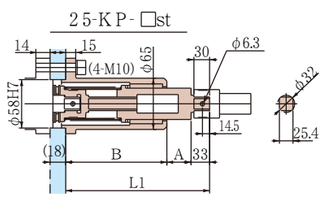
19-F□-□st



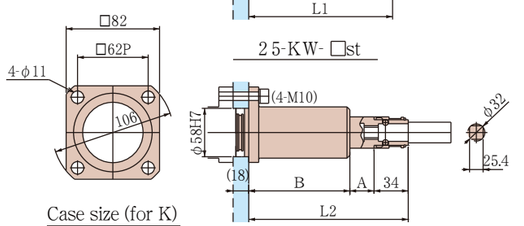
Square size 25

Stroke	A	B	L1	L2	L3
50	53	154	240	241	114
65	68	169	270	271	129

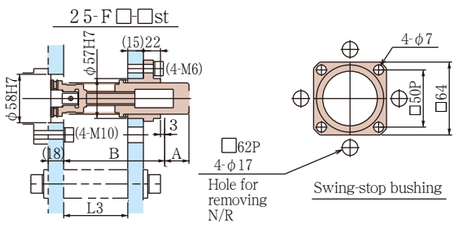
25-KP-□st



25-KW-□st



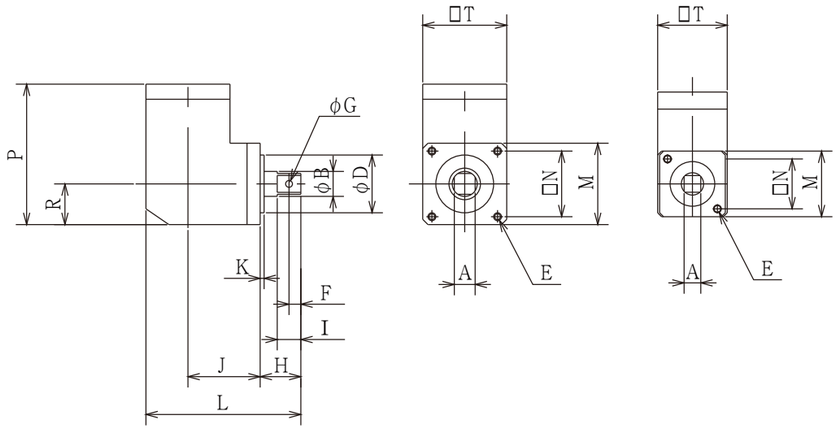
25-F□-□st



※Sockets and bits at the end of the tightening units are not included. Please use the parts to be purchased in the markets or contact to our agent.
※In case of using one-touch fitting sockets, please contact to our agent.We will decide proper methods by mutual consultation.
※The thick plates for Nut runner fixing plate and swing-stop bushing fitting plate are indicated with reference sizes. According to the purpose, please select proper sizes.
◇Besides, this is the dimension table for the straight type nut runner. When you would use the table for the offset gear type nut runners and gear case fitting parts, please consult to us.

■Angle head

◆Option of Angle head



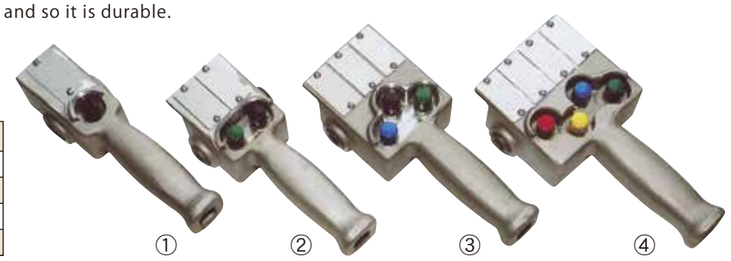
Model	A		B	D		E	F	G	H	I	J	K	L	M	N	P	R	T
	Reference dimension	Tolerance		Reference dimension	Tolerance													
GA-15	9.52	-0.04 -0.07	12	32	-0.025 -0.050	2-M6	5	3.2	21	11	38	3	83	43	32	78.5	21.5	44
GA-35	12.7		17	34			8	4.2	26	16	46		98.5	50	38	95	25	53
GA-65	15.87	-0.05 -0.10	19	44	-0.02 -0.04	4-M6	9	5.2	31	18	55		118	62	50	107	31	64
GA-120											65		133	72	58	130	36	74
GA-230	19.05		24	50	-0.02 -0.05	4-M8	13		39	25	80		165	88	72	154	44	92
GA-550	25.4		32	58		4-M10	14.5	6.2	48	30	103	4	211	118	96	197	59	120
GA-900	32		39.5	60		4-M12			50		126		250	144	120	243	72	148

■Operation handle with push botton

Special feature

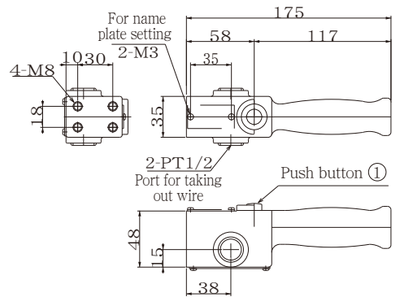
1. Light weight, compact push button type to be used as the operation handle of equipment.
2. It is possible to use for both of the right handle and the left handle.
3. Colour of push button is changeable according to your specification.
   B:black, G:green, Y:yellow, A:blue and R:red are available.
4. Setting method is M8x4 places and so it is durable.

	Name	Standard model
①	1point handle	PH1M-B
②	2points handle	PH2M-BG
③	3points handle	PH3M-BGY
④	4points handle	PH4M-BGYA

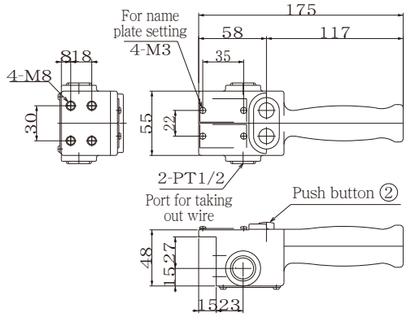


(Picture of name plate: image)

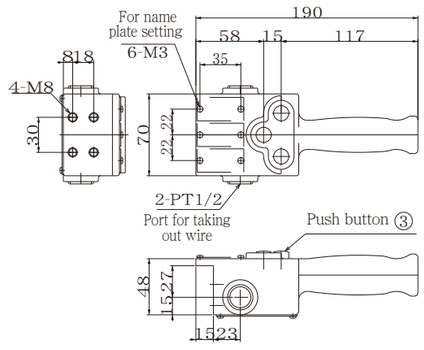
① Model PH1M-B



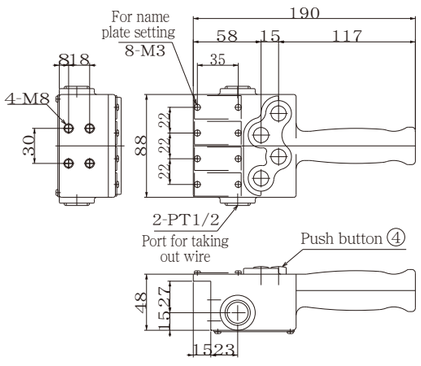
② Model PH2M-BG



③ Model PH3M-BGY

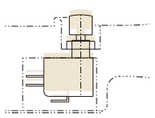


④ Model PH4M-BGYA



Colour of push button
B ： Black
G ： Green
Y ： Yellow
A ： Blue
R ： Red

□It is recommended that the indicated length of bolts (thread part less than 10)are used at 4 places to fix the handle.
□Colours of push buttons of the above models are standard, but different colours are applied according to your order ,if necessary.



Push button model

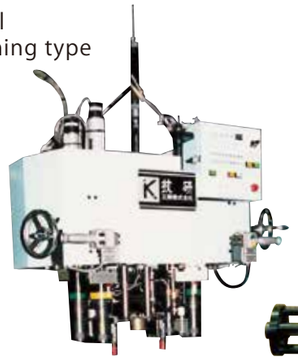
VAQ（Omron）

Wiring can be taken out either way from upper or lower port.

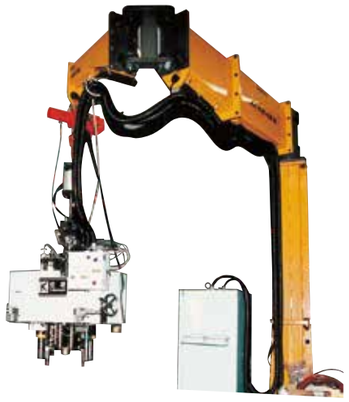
Examples of uses with Nut Runners

1.Hanging types with spring balancers, free balancers and other hanging tools for lifting.

Vertical
tightening type



Horizontal
tightening type

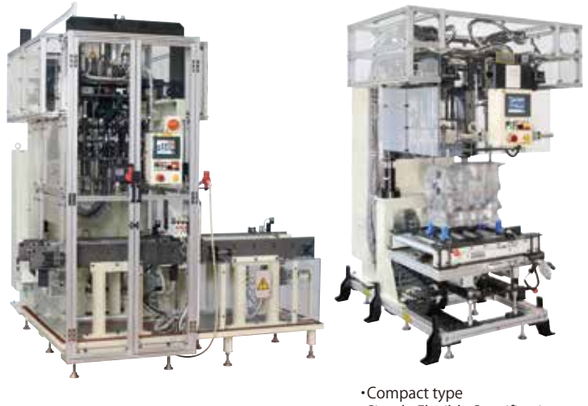


2.While working(Nagara)type

Hanging while-working type nut runner (PAT.No.764031) as semi-automatic system with synchronization, etc. for a cycle from locating position, tightening process and rising.

3.Simple machine independent while-working type

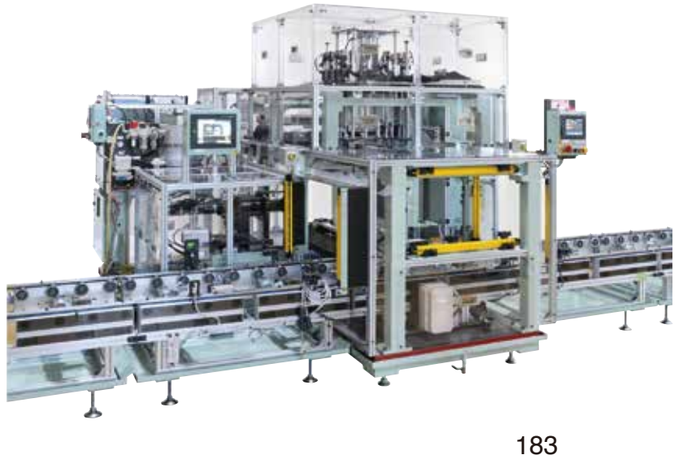
Hanging the simple indipendent while-working nut runner unit,the simple independent type tightens bolts from the upper side. It is possible to make a semi-automatic or full automatic unit by setting a device for locating the position of the conveyor.

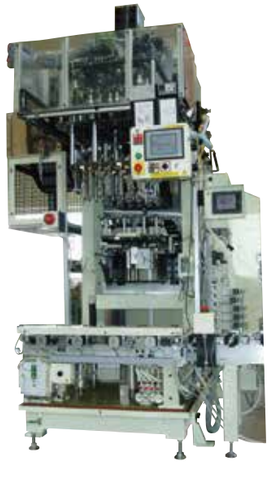


・Compact type
Simple Flexible Specification

4.Full automatic tightening nut runner machine

Complete automatic conveyance and locating position. This is the machine which uses nut runners with a complete automatic system starting from the tightening process to carryout.

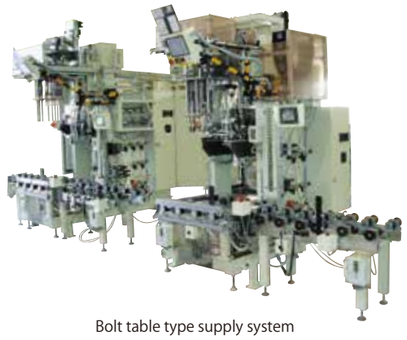




5.Complete automatic tightening machine equipped with bolts automatic feeding device.

Parts feeder and bolts line-up device made by Giken are equipped and it is the complete automatic bolt tightening machine supplying bolts and combined with the nut runner unit.

Magnet receiving supply system



Bolt table type supply system

6.Simple robot type nut runner tightening machine

High speed robot type nut runner motors are used. It is also available with the locate position detecting type as option.

・Automatic single screw
tightening machine

7.Robot type tightening machine which has nut runner motors installed in a through robot

Parts feeder and bolts line-up device made by Giken are equipped.

8.Motion control system (Positioning GSK)

MEMO