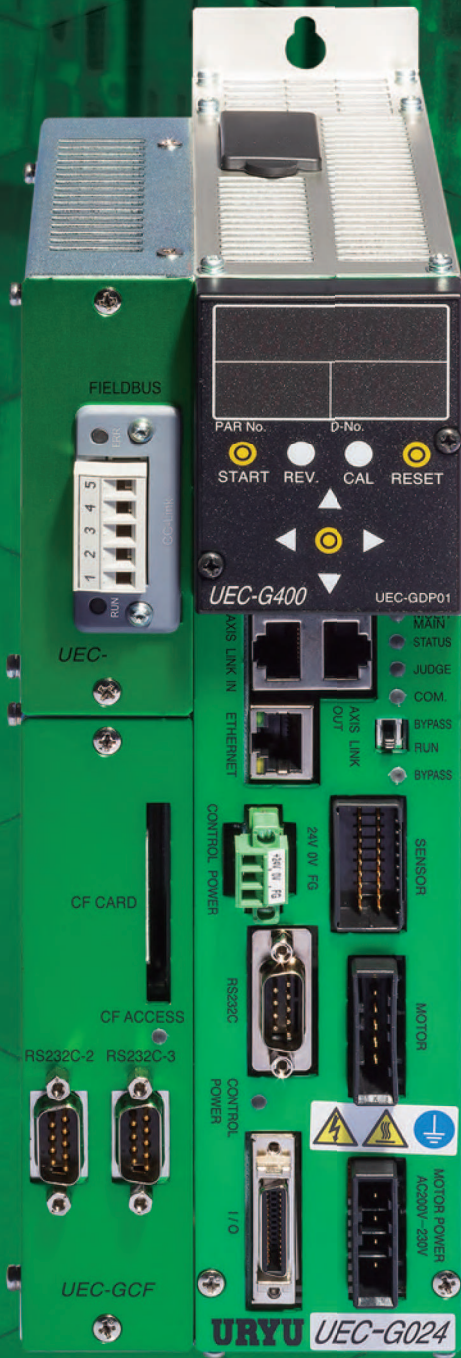


# URYU

# G

# SERIES NUTRUNNER SYSTEM



# G SERIES NUTRUNNER SYSTEM

## EXTENSION UNIT

### EXTENSION UNIT 1

UEC-GCC, UEC-GDN, UEC-GPB,  
UEC-GPN, UEC-GEN, UEC-GIO

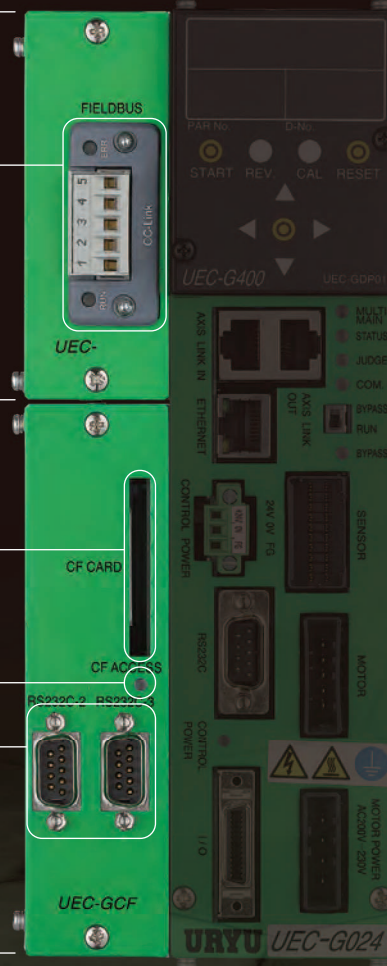
- ① Fieldbus Connector loading slot
  - Equipment slot
  - CC-Link Ver2.00
  - DeviceNet
  - PROFIBUS DP-V1
  - Ethernet/IP
  - PROFINET IO

- ② Extension D-I/O Connector  
INPUT : 32ch / OUTPUT : 32ch

### EXTENSION UNIT 2

UEC-GCF

- ③ CF Card slot
- ④ CF ACCESS LED
- ⑤ Extension RS232C Connector



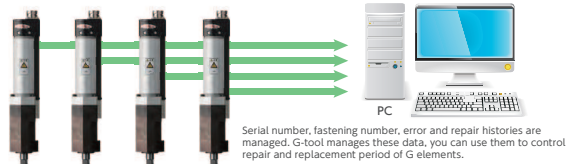
## FUNCTIONS OF EXTENSION UNIT

- |                                   |  |
|-----------------------------------|--|
| ① FIELDBUS connector loading slot | Connect external controller's connector.       |
| ② Extension D-I/O connector       | Connect IN and OUT signals from outside.       |
| ③ CF Card slot                    | Insert CompactFlash (CF) card.                 |
| ④ CF ACCESS LED                   | Indicate CF card status by changing LED color. |
| ⑤ Extension RS232C Connector      | Output fastening result and input ID data.     |

Communication speed with PC is increased rapidly.



Chip installed G-Tool manages fastening data.



A variety of network communication.



High speed fastening

# G SERIES NUTRUNNER SYSTEM

## G-Unit FRONT PANEL

**G-Unit**  
UEC-G024

**CONNECTOR**

① Connector for display unit

② Spindle communication connector  
IN/OUT

③ PC communication Ethernet connector

④ Control power connector

⑤ RS232C connector

⑥ Standard I/O connector  
(INPUT: 12ch / OUTPUT: 12ch)

Insert Display Unit's backside connector here.

Switch  
A Special function SW1 Switch

B Spindle number switch

C RUN/BYPASS Switch

⑦ G-Tool connector

⑧ Drive power connector



**Display Unit**  
UEC-GDP01

You may confirm fastening result and setting of a parameter by equipping the Display Unit on G-Unit.

## G-Unit FRONT PANEL ITEMS

① Display unit connector

② Spindle communication connector

③ PC connector

④ Controlled power connector

⑤ RS232C connector

⑥ Standard I/O connector

⑦ G-Tool connector

⑧ Drive power connector

A Special function SW1 switch

B Spindle number switch

C RUN/BYPASS switch

This is G-Unit to G-Unit communication port.

This is PC connecting port.

Connect 24V control power.

Fastening result data output

Send and receive IN and OUT signals from outside.

Connect G-Tool cable

Connect drive power AC200~230V(±10%) 50/60Hz

Set special function relating to fastening.

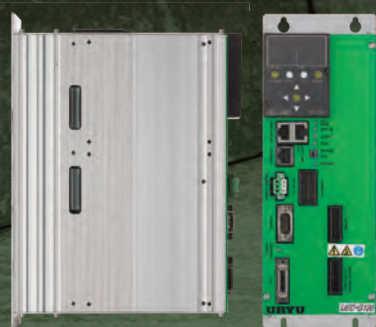
Give spindle number to G-Unit

Change G-Unit status

RUN: Nutrunner operative

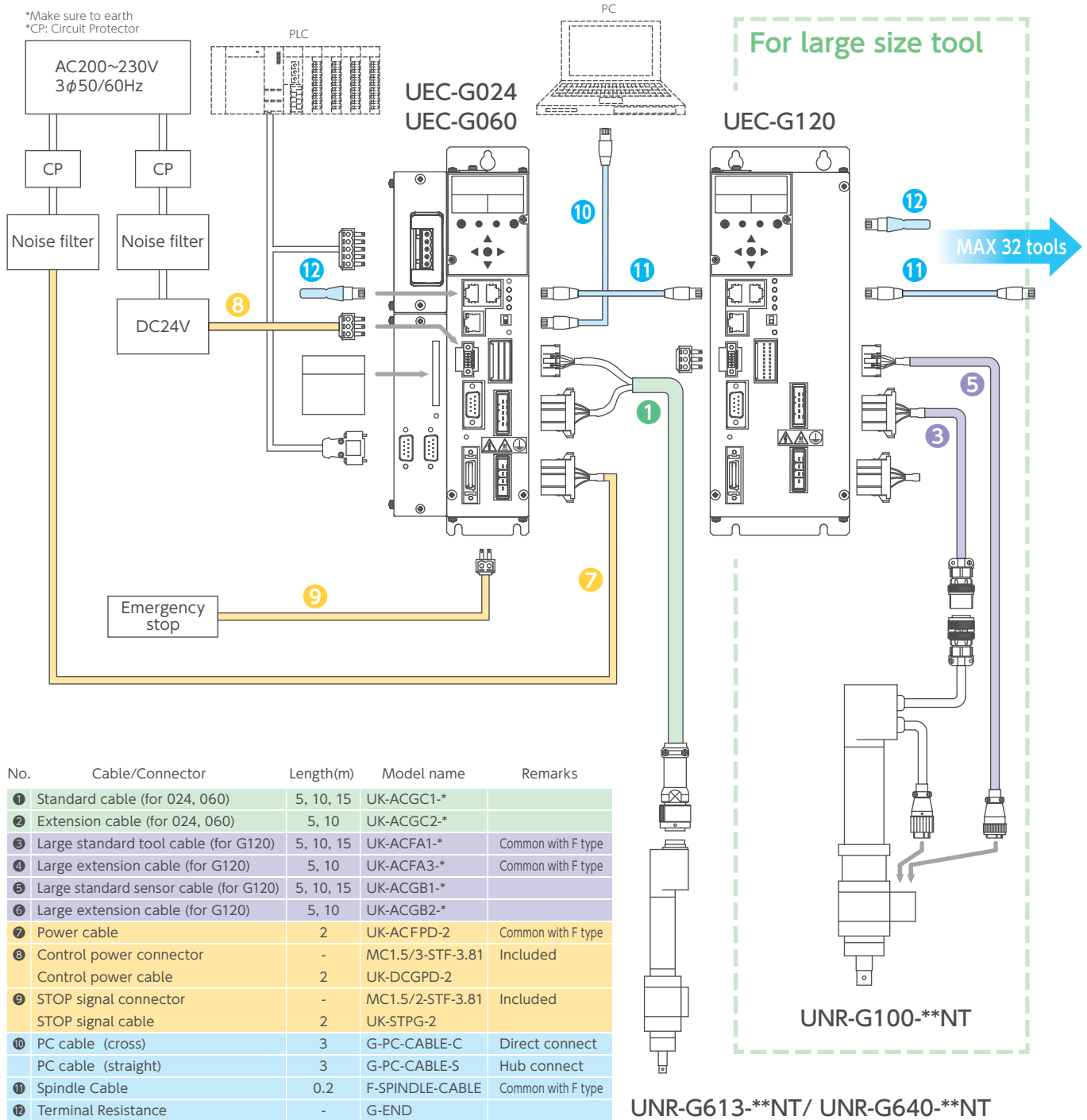
BYPASS: Nutrunner inoperative

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**[Attention]**  
Securely install and fix the G-Unit firmly to prevent personal injury, malfunction and drop caused by vibration and so on.

# G-control system Configuration



# User Console



G-Console provides you a suitable fastening and satisfy variety of fastening patterns.

- ◆ Parameter editing is possible on tabular screen.
- ◆ G-Console displays fastening result data and torque curve waveform.
- ◆ G-Console saves every data in a file and print out the same.
- ◆ G-Console saves and prints out fastening result data and torque curve file.
- ◆ G-Console reads, writes and verifies every setting value.
- ◆ G-Console communicates with up to 32 G-Units at the same time.
- ◆ G-Console makes wide variety of fastening MODE setting and ID code input (RS232C).
- ◆ Available up to 24 different each work settings and 96 fastening parameter settings.

## MODE setting

MODE	SP NO.	MEMO	STEP 1	STEP 2	STEP 3
ACTION STATE			ON	ON	LAST
PARAMETER NUMBER			1	2	3
ROTATE DIRECTION			CW	CW	CW
FASTENING DIRECTION			FASTEN	FASTEN	FASTEN
MOTOR TORQUE RESTRICTION			9999.9	9999.9	9999.9
MOTOR SPEED CONTROL			FIXED SPEED	FIXED SPEED	FIXED SPEED
INITIAL SPEED (rpm)			60	200	10
FREE RUN SPEED (rpm)					
DECELERATION SPEED					
TORQUE SPEED (rpm)					
INITIAL ROTATE TIME (sec)					
FREE RUN THREAD NUMBER					
SPREAD CHANGE TORQUE (Nm)					
CONTROL METHOD			TORQUE	TORQUE	TORQUE
SMUC TORQUE (Nm)			0.0	10.0	40.0
CUT TORQUE (Nm)			5.0	20.0	50.0
TORQUE JUDGMENT			OFF	OFF	ON

- 1) TORQUE METHOD
- 2) ANGLE METHOD
- 3) YIELD METHOD
- 4) PIN-HOLE CONTROL
- 5) POSITION ADJUST
- 6) PRE-LOAD
- 7) IDLE CHECK



## Fastening Result History

DATA NUMBER	READ START NUMBER	READ END NUMBER	DATA DISPLAY RANGE	SELECT	ACCORDING TO JUDGMENT
1	2017-12-28	18 58 30	1	48	1-1,000
2	2017-12-28	18 58 30	1	48	1-1,000
3	2017-12-28	18 58 30	1	48	1-1,000
4	2017-12-28	18 46 54	1	48	1-1,000
5	2017-12-28	18 46 47	1	48	1-1,000
6	2017-12-28	18 46 47	1	48	1-1,000
7	2017-12-28	18 46 47	1	48	1-1,000
8	2017-12-28	18 46 47	1	48	1-1,000

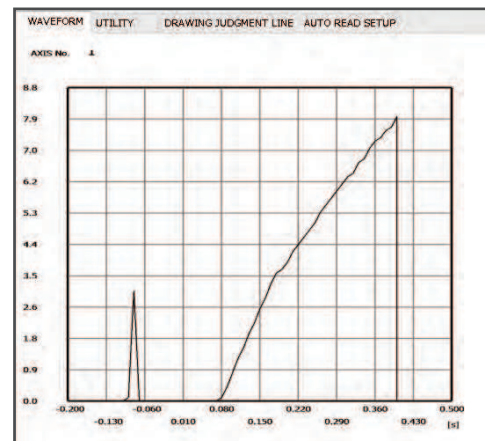
## G-Tool information

SPINDL	TOOL TYPE	SERIAL NUMBER	CAL TORQUE	CAL VOLTAGE	ZERO VOLTAGE
1	UNR-0613-200NT	SSK201	44.0	3750	0
2	UNR-0640-1000NT	SSK1001	132.3	3750	0
3	UNR-0100-1900NT	SSK2201	392.7	2704	-13

DATE	TIME	TOOL STEP COUNT	ERROR CODE	ERROR CONTENTS
1	2017-12-28 14:37:44	5702	5-1	SERVO ANSVR EROR
2	2017-11-30 11:40:32	5898	5-10	MOTOR OVERLOAD TROUBLE
3	2017-11-30 11:11:08			
4	2017-11-30 11:11:08			
5	2017-11-30 11:11:08			
6	2017-11-19 14:08:00			
7	2017-11-14 08:00:00			
8	2017-11-14 08:00:00			
9	2017-11-14 08:00:00			
10	2017-11-14 08:00:00			
11	2017-11-14 08:00:00			

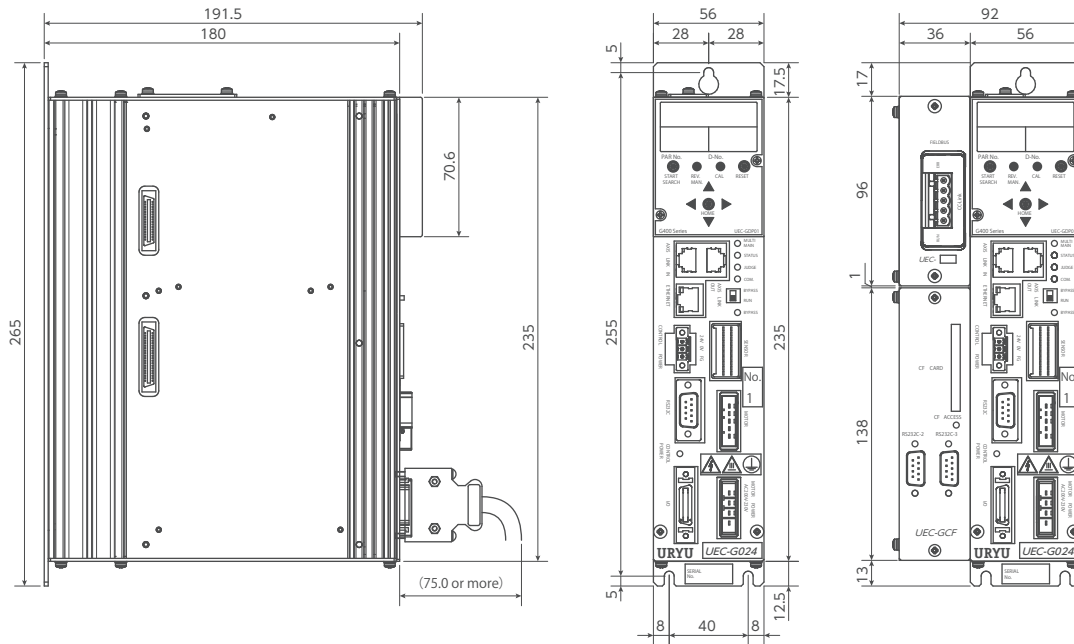
## Waveform monitor



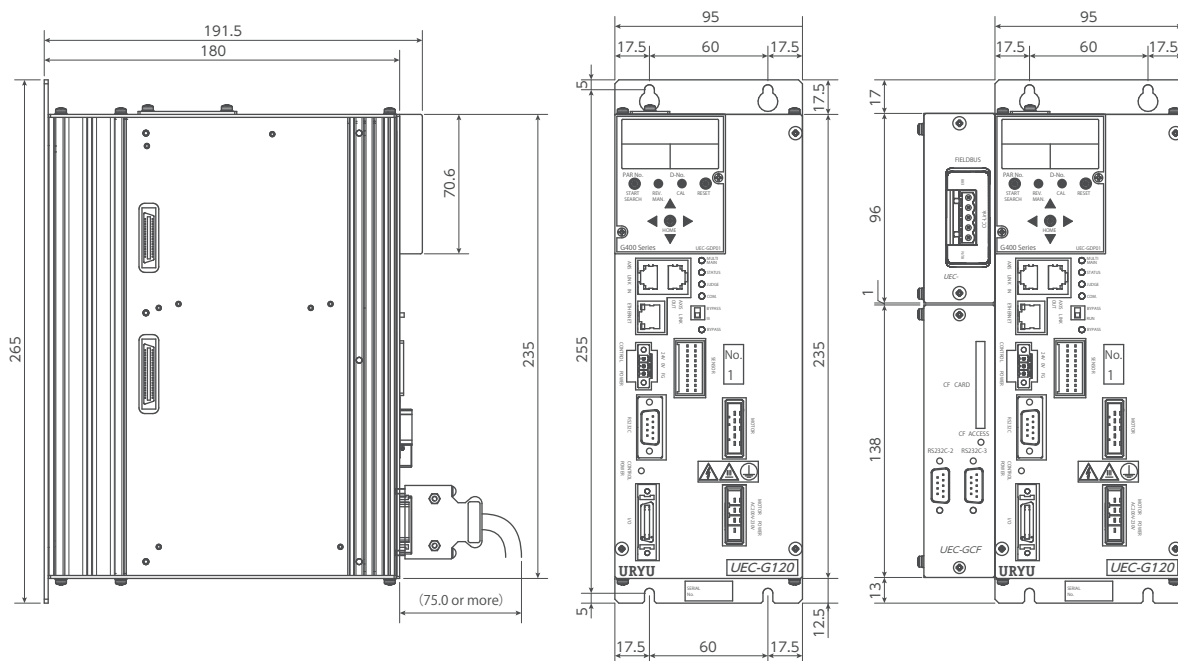
# G-Unit

## Specifications

Outline of UEC-G-024, 060 (mm)



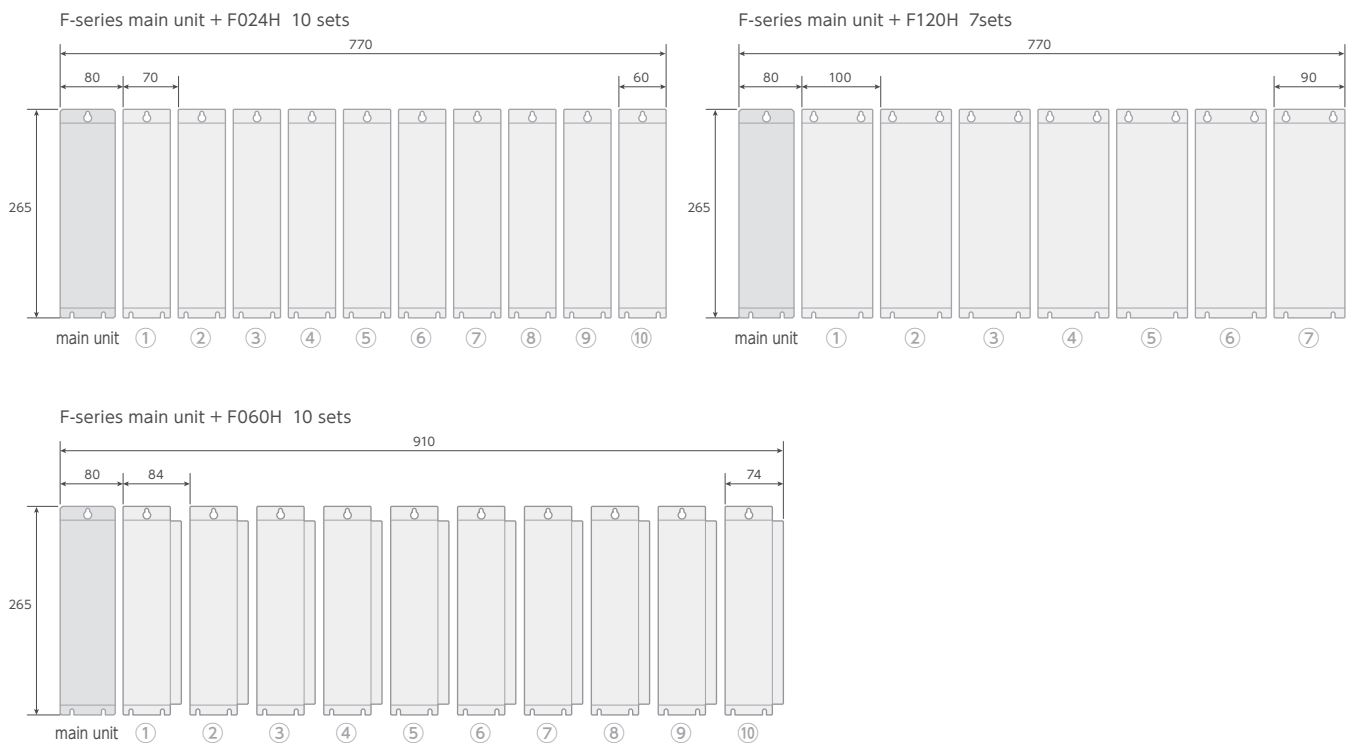
Outline of UEC-G120 (mm)



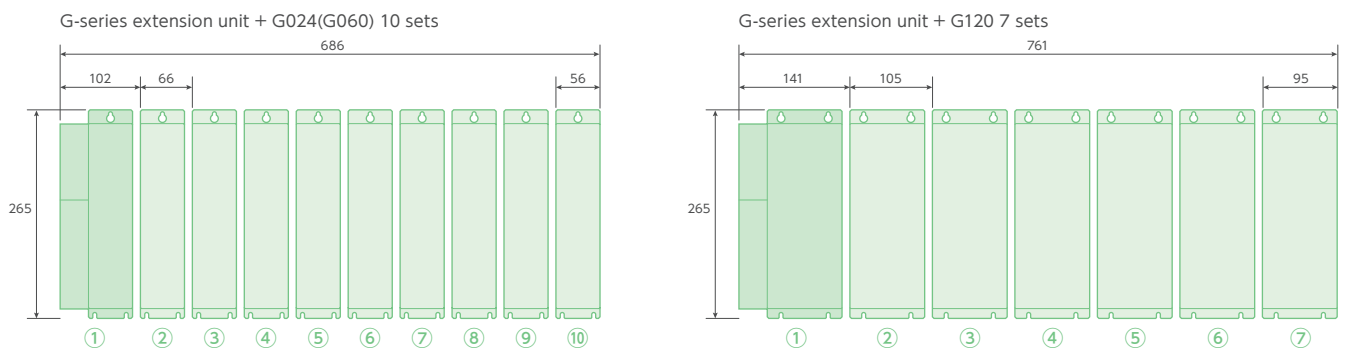
# Comparison between F-series and G-series

**G-system realizes greater space saving in control box by eliminating main unit.**

## Layout of F-series system (mm)



## Layout of G-series system (mm)

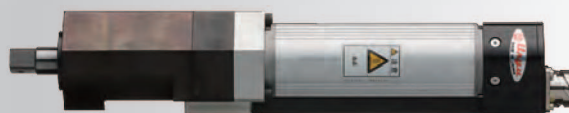


# Specifications of G-Tools

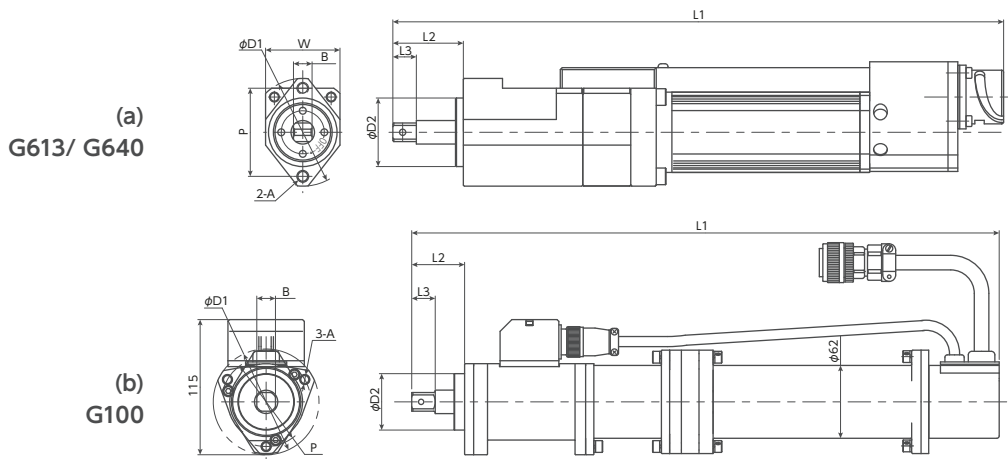
## Standard straight type



UNR-G613-400NT



UNR-G640-1300NT



### Dimensions

Type	External dimensions (mm)									Fixing plate thickness	Motor type	Torque sensor	Flange design
	L1	L2	L3	W	φD1	φD2	P	A	B				
UNR-G613-50NT	288							M6	9.5Sq	9.0以上	G613	Built-in the motor	(a)
UNR-G613-100NT													
UNR-G613-200NT	312	36	12	38	55	35	45						
UNR-G613-300NT													
UNR-G613-400NT													
UNR-G640-800NT	419	40		51	73	44	59	M8	15.88Sq				
UNR-G640-1000NT													
UNR-G640-1300NT			20										
UNR-G100-1900NT	516	45		115	90	48	φ76		19.0Sq	12.0以上	G100		(b)
UNR-G100-2500NT													
UNR-G100-3700NT	570	57	30	120.5	94	58							
UNR-G100-5400NT													
UNR-G100-7000NT	654	80	40	150.5	128	70	φ90	M10	25.4Sq				
UNR-G100-10000NT													

(mm)

### Torque sensor specifications

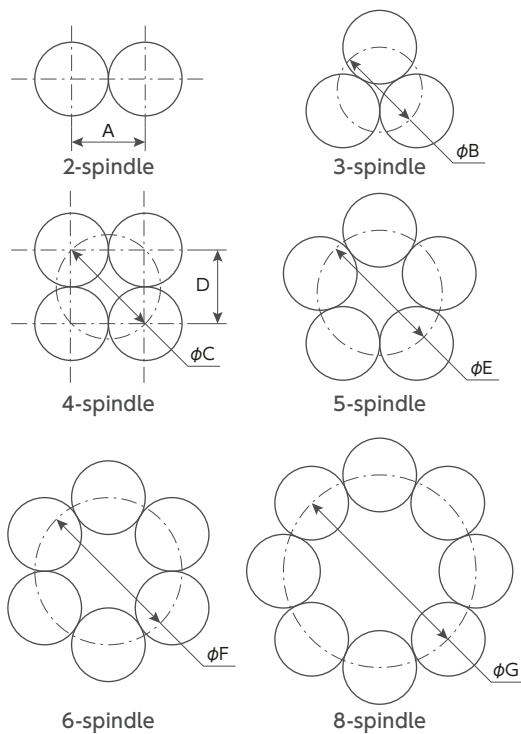
Type	Capacity (Nm)
10N	9
40N	34
130N	105
250N	195
370N	280
700N	540
1000N	800
Rated strain	1000×10-6
Output voltage	0.5mV/V
Non-linearity	0.5%R.O.
Influence on zero point due to temperature	0.025%R.O./°C
Temperature rating	-10~+65°C
Input output resistance	350Ω
Maximum input voltage	Max.16V
Insulation resistance	300MQ以上
Overload capacity	150%R.O.



Specifications	Type	Max. Torque		Free Speed (rpm)	Weight		Spindle unit
		(Nm)	(ft-lbs)		(kg)	(lb)	
Small size	UNR-G613-50NT	5	3.7	5350	1.32	2.91	UEC-G024
	UNR-G613-100NT	10	7.4	3000	1.32	2.91	
	UNR-G613-200NT	20	14.8	1220	1.55	3.42	
	UNR-G613-300NT	30	22.2	860	1.55	3.42	
	UNR-G613-400NT	40	29.6	640	1.55	3.42	
Medium size	UNR-G640-800NT	80	59.2	940	4.0	8.82	UEC-G060
	UNR-G640-1000NT	100	74.0	760	4.0	8.82	
	UNR-G640-1300NT	130	96.2	560	4.0	8.82	
Large size	UNR-G100-1900NT	190	140.6	720	8.4	18.52	UEC-G120
	UNR-G100-2500NT	250	185.0	530	8.7	19.18	
	UNR-G100-3700NT	370	273.8	370	10.2	22.49	
	UNR-G100-5400NT	540	399.6	250	16.0	35.27	
	UNR-G100-7000NT	700	518.0	170	16.0	35.27	
	UNR-G100-10000NT	1000	740.0	130	16.0	35.27	

## G-Tools minimum pitch circle

Refer to minimum pitch circle for your machine designing.



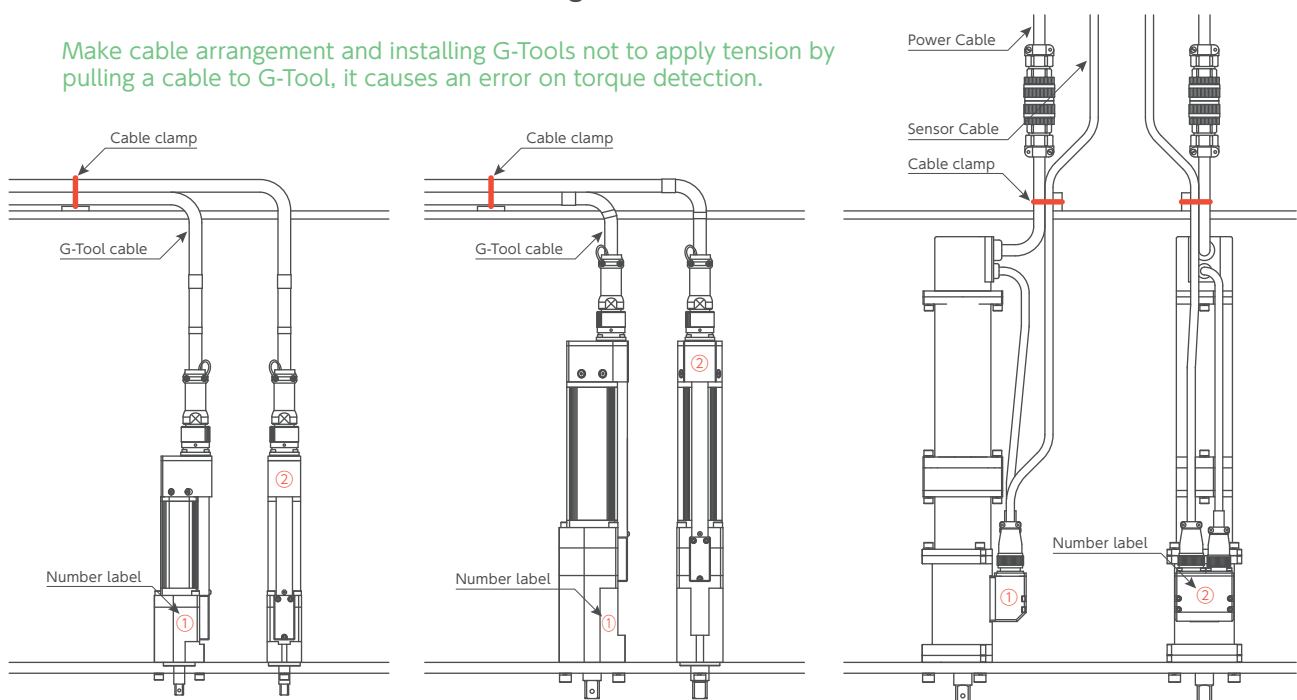
Type	A	$\phi B$	$\phi C$	D	$\phi E$	$\phi F$	$\phi G$
UNR-G613-50NT	39	49	61	44	67	80	104
UNR-G613-100NT							
UNR-G613-200NT							
UNR-G613-300NT							
UNR-G613-400NT							
UNR-G640-800NT	52	65	81	58	89	107	138
UNR-G640-1000NT	69	85	105	75	115	132	174
UNR-G100-1900NT							
UNR-G100-2500NT	76	100	110	78	120	140	184
UNR-G100-3700NT	94	125	143	102	166	188	257
UNR-G100-5400NT							
UNR-G100-7000NT							
UNR-G100-10000NT							

# G-Tool Wiring and Installation

## Cable Wiring

1. Tag every item with a label or plate showing spindle number for multiple G-Tools whatever the item is connected with.
2. Connect power cable from G-Tool with right Spindle number-labeled G-Unit.
3. Make cable arrangement so cable suffer no stress when G-Tools travel in machine structure.
4. Fix cable by cable ties in the way allowing no load to cable connecting part. Pay attention not to fasten cables to G-Tool too tight.

Make cable arrangement and installing G-Tools not to apply tension by pulling a cable to G-Tool, it causes an error on torque detection.



### <CAUTIONS FOR WIRING>

It is recommended to put movable part of cables in flexible tube or in cableveyor (a combination term made of cable and conveyor). Pay attention to the following points for wiring to avoid disconnection or wire cut.

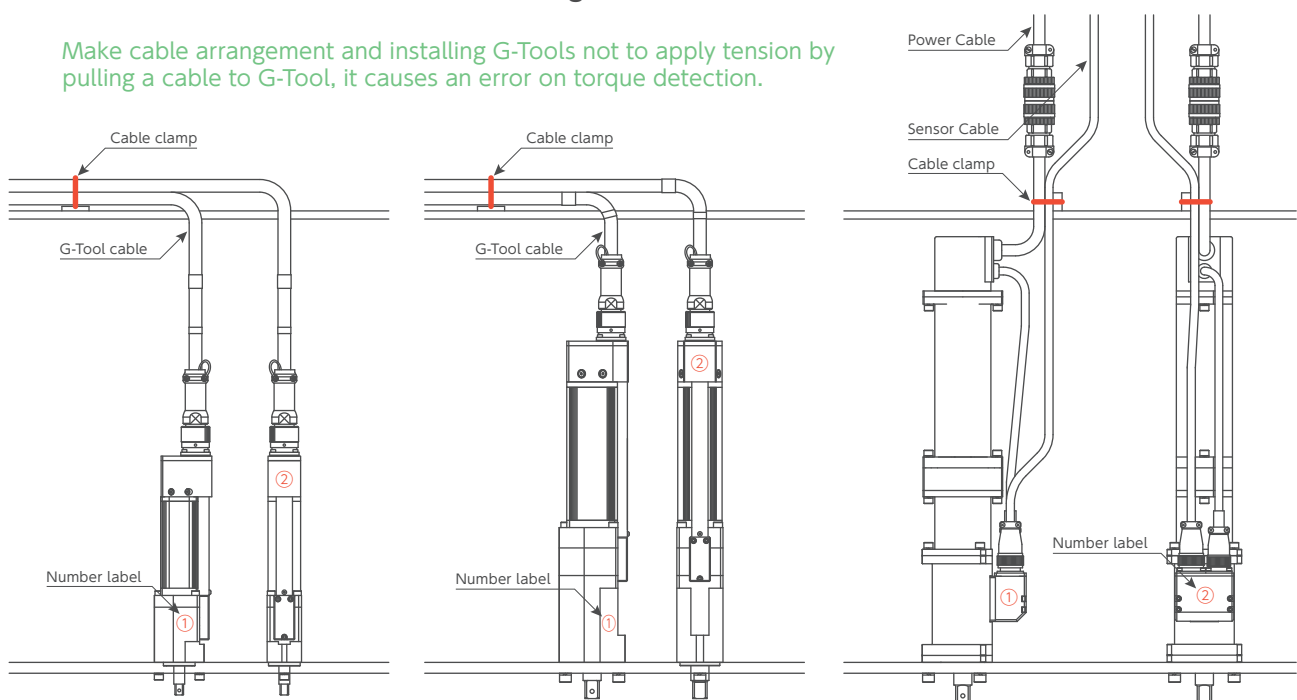
- Make separate bundles so each may have a few cables instead of less bundles having many cable to make its own weight light and to avoid stress at folding points.
- Make cable arrangement so it may keep distance from edge or corner part of hard parts or structure even if cables are not movable.

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