

# Selector Switches A22NS/A22NW

# 22-mm Selector Switches Universal Design. Emphasis on Color Coding, Workability, and Safety.

# Easy to Use

- You can connect up to three Contact Blocks in one stage for multistage expansion.
- Screw terminal structure is compatible with round crimp terminals

## Safety

- Easy-to-operate lock lever for secure locking.
- Easy-mounting Contact Blocks provide finger protection.
- Different colors of Contact Blocks (NO: blue, NC: orange) help prevent wiring errors.

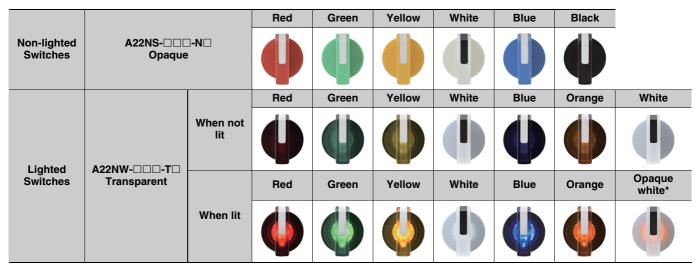
# **Product Lineup**

- · Meets global safety standards.
- Available in metal and plastic bezels.
- · Many color variations.
- Standard-feature degree of protection: IP66, NEMA 4X, and NEMA 13.



Refer to Safety Precautions for All Pushbutton Switches/Indicators and Safety Precautions in the A22NN/ A22NL datasheet

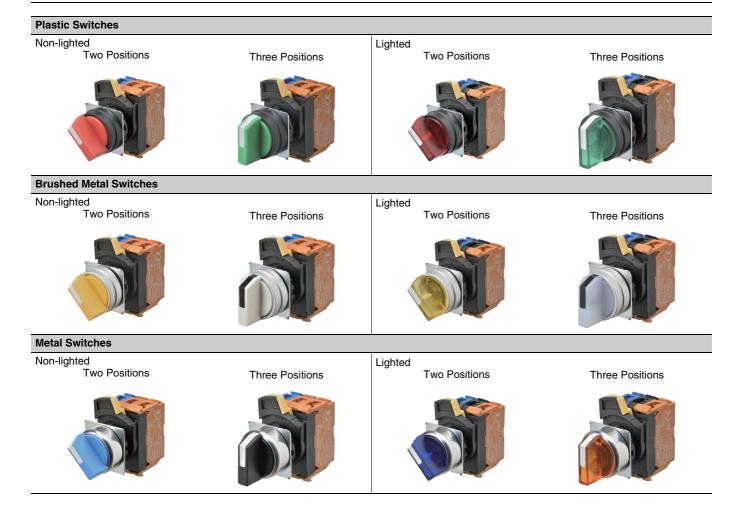
# **Operation Unit Colors**



<sup>\*</sup>The colors when the Switches are lit are for transparent white Operation Units (code: TW) and yellow LED Lamps (code: Y).



# **List of Models**



Note: Not all assembled configurations are possible.

Please refer to the subassemblies section for additional options.

Please refer to the specifications section for examples of linked contact block options.

# **Model Number Structure**

Model Number Legend - Shipped as a set that includes the Operation Unit, LED Lamp, Mounting Collar, and Contact Block. For information on combinations, refer to Ordering Information on pages 6 to 8.

# **Model Numbers for Sets**

# |G||101 (5) Degree of Protection

# (1) Type

Code	Туре
S	Non-lighted
W	Lighted

(6) Contacts

Code

Code	Protection
Α	IP66, NEMA 4X, NEMA13

Description

# (2) Number of Positions and Bezel Material

Code	No. of positions	Bezel material
2B	2	Plastic
2M	2	Brushed metal
2R	2	Metal
3B	3	Plastic
ЗМ	3	Brushed metal
3R	3	Metal

# General purpose

(7) Contact Configuration

•												
	Co	Non-lighted					Lighted					
Code	DI-		act Switch cocks position		No. of positions		Switch position			No. of positions		
	NO	NC	(1)	(2)	(3)	Two positions	Three positions	(1)	(2)	(3)	Two positions	Three positions
100	1	0	NO			Yes		NO	Lighting Unit		Yes	
002	0	1			NC	Yes			Lighting Unit	NC	Yes	
101	2	0	NO		NO	Yes	Yes	NO	Lighting Unit	NO	Yes	Yes
102	1	1	NO		NC	Yes	Yes	NO	Lighting Unit	NC	Yes	Yes
201	1	1	NC		NO		Yes	NC	Lighting Unit	NO		Yes
202	0	2	NC		NC	Yes	Yes	NC	Lighting Unit	NC	Yes	Yes

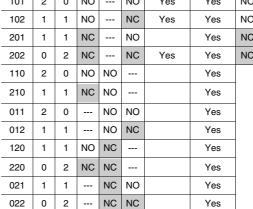
# (3) Reset Method

Code		Reset method	_
М	Manual	Two-position manual	
IVI	iviaituai	Three-position manual	

# (4) Operation Unit Transparency and Color and (8) LED Lamp Color

		` '		•		
Lighted/ non- lighted	Code (4)	Code (8)	Transparancy	Opera- tion Unit color	LED Lamp color	
	NR		Opaque	Red		
	NG		Opaque	Green		
Non-	NY	N	Opaque	Yellow		
lighted	NW	IN	Opaque	White		
	NA		Opaque	Blue		
	NB		Opaque	Black		
	TR	R	Transparent	Red	Red	
	TG	G	Transparent	Green	Green	
	TY	Υ	Transparent	Yellow	Yellow	
Lighted	TW	W	Transparent	White	White	
	TA	Α	Transparent	Blue	Blue	
	TO	0	Transparent	Orange	Orange	
	TW	Υ	Transparent	White*	Yellow	

<sup>\*</sup> The color is opaque white when the Switch is lit.



Note: 1. NO (blue): Normally open, NC (orange): Normally closed.

2. Refer to the following figure for the Unit positions.

# (9) LED Lamp Voltage

Code	LED Lamp voltage
N	Non-lighted
Α	6 VAC/DC
В	12 VAC/DC
С	24 VAC/DC
D	100/110/120 VAC
Е	200/220/230/240 VAC

Note: Not all assembled configurations are possible.

Please refer to the subassemblies section for additional options.

Please refer to the specifications section for examples of linked contact block options.

- Specifications: Refer to page 14 and refer to the A22NN/A22NL.
- Dimensions: Refer to page 15.

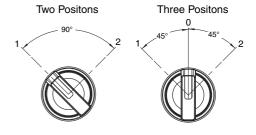
■ Precautions for correct use: Refer to the A22NN/A22NL.

# **Structure**

# **Contact Configuration Table Two Positions**

No. of	0-4-	Contact	Switch	0	Pos	ition
outputs	Code	configuration	position	Contacts	1	2
-			(1)	NO		ON
1	100	SPST-NO	(2)			
			(3)			
			(1)			
1	002	SPST-NC	(2)			
			(3)	NC	ON	
		ODOT NO	(1)	NO		ON
2	102	SPST-NO/ SPST-NC	(2)			
		0.01.10	(3)	NC	ON	
		101 DPST-NO	(1)	NO		ON
2	101		(2)			
			(3)	NO		ON
		DPST-NC	(1)	NC	ON	
2	202		(2)			
			(3)	NC	ON	
			(1)	NO		ON
3	111	3PST-NO	(2)	NO		ON
			(3)	NO		ON
			(1)	NC	ON	
3	222	3PST-NC	(2)	NC	ON	
			(3)	NC	ON	
		0007.1107	(1)	NO		ON
3	122	SPST-NO/ DPST-NC	(2)	NC	ON	
		3. 3	(3)	NC	ON	
		DDOT NG	(1)	NO		ON
3	112	DPST-NO/ SPST-NC	(2)	NO		ON
		3. 3. 1.3	(3)	NC	ON	

# **Operation Angle**



# **Three Positions**

No. of	Ondo	Contact	Switch	Comtonto		Position			
outputs	Code	configuration	position	Contacts	1	0	2		
			(1)	NO	ON				
2	110	DPST-NO	(2)	NO	ON		ON		
			(3)						
			(1)						
2	011	DPST-NO	(2)	NO	ON		ON		
			(3)	NO			ON		
	101		(1)	NO	ON				
2		DPST-NO	(2)						
			(3)	NO			ON		
	220		(1)	NC		ON	ON		
2		DPST-NC	(2)	NC		ON			
			(3)						
			(1)						
2	022	DPST-NC	(2)	NC		ON			
			(3)	NC	ON	ON			
			(1)	NC		ON	ON		
2	202	DPST-NC	(2)						
			(3)	NC	ON	ON			

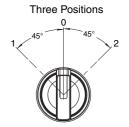
Note: Not all assembled configurations are possible.

Please refer to the subassemblies section for additional options.

Please refer to the specifications section for examples of linked contact block options.

No. of		Contact	Switch		Position			
outputs	Code	configuration	position	Contacts	1	0	2	
			(1)	NO	ON		_	
2	120	SPST-NO/	(2)	NC		ON		
		SPST-NC	(3)					
-			(1)	NO	ON			
2	102	SPST-NO/ SPST-NC	(2)					
		3P31-NC	(3)	NC	ON	ON		
				(1)	NC		ON	ON
2	210	SPST-NO/ SPST-NC	(2)	NO	ON		ON	
		3531-110	(3)					
			(1)	NC		ON	ON	
2	201	SPST-NO/ SPST-NC	(2)					
		01 01-110	(3)	NO			ON	
	2 012		(1)					
2		SPST-NO/ SPST-NC	(2)	NO	ON		ON	
		01 01-110	(3)	NC	ON	ON		
	021			(1)				
2		SPST-NO/ SPST-NC	(2)	NC		ON		
			(3)	NO			ON	
	111	3PST-NO	(1)	NO	ON			
3			(2)	NO	ON		ON	
			(3)	NO			ON	
	222		(1)	NC		ON	ON	
3		3PST-NC	(2)	NC		ON		
			(3)	NC	ON	ON		
		CDCT NO/	(1)	NO	ON			
3	122	SPST-NO/ DPST-NC	(2)	NC		ON		
			(3)	NC	ON	ON		
		CDCT NO/	(1)	NC		ON	ON	
3	212	SPST-NO/ DPST-NC	(2)	NO	ON		ON	
			(3)	NC	ON	ON		
		SPST-NO/	(1)	NC		ON	ON	
3	221	DPST-NC	(2)	NC		ON		
			(3)	NO	ON		ON	
		DPST-NO/	(1)	NC		ON	ON	
3	211	SPST-NC/	(2)	NO	ON		ON	
			(3)	NO			ON	
		DPST-NO/	(1)	NO	ON			
3	121	SPST-NC/	(2)	NC		ON		
			(3)	NO			ON	
		DPST-NO/	(1)	NO	ON			
3	112	SPST-NC/	(2)	NO	ON		ON	
		0.01-110	(3)	NC	ON	ON		

# **Operation Angle**



Note: Some combinations are only available through subassemblies. Please refer to the specifications section for more information.

# **Ordering Information**

**Model Numbers for Sets** ----Shipped as a set that includes the Operation Unit, LED Lamp, Mounting Collar, and Contact Block. **Non-lighted, Two-positon, Selector Switches** 

Appearance	Bezel material	No. of outputs	Model	(3) Reset method	(4)(4) Operation Unit color	(7)(7)(7) Contact configuration
Plastic bezels	4					100 002
	2B	2	A22NS-2B(3)-(4)(4)A-G(7)(7)(7)-NN	<b>M</b> : Manual	NR: Opaque red NG: Opaque green NY: Opaque yellow NW: Opaque white NA: Opaque blue NB: Opaque black	102 101 202
Brushed metal bezels	2M	1	A22NS-2M(3)-(4)(4)A-G(7)(7)(7)-NN			100 002
		2				102 101 202
Metal bezels	els 1 2R 2	1				100 002
		A22NS-2R(3)-(4)(4)A-G(7)(7)(7)-NN			102 101 202	

Note: Not all assembled configurations are possible.

Please refer to the subassemblies section for additional options.

Please refer to the specifications section for examples of linked contact block options.

# Non-lighted, Three-positon, Selector Switches

Appearance	Bezel material	No. of outputs	Model	(3) Reset method	(4)(4) Operation Unit color	(7)(7)(7) Contact configuration
Plastic bezels	3В	2	A22NS-3B(3)-(4)(4)A-G(7)(7)(7)-NN			110 011 101 220 022 202 120 102 210 201 012 021
Brushed metal bezels		2	A22NS-3(3)-(4)(4)A-G(7)(7)(7)-NN	<b>M:</b> Manual	NR: Opaque red NG: Opaque green NY: Opaque yellow NW: Opaque white NA: Opaque blue NB: Opaque black	110 011 101 220 022 202 120 102 210 201 012 021
Metal bezels	3R	2	A22NS-3R(3)-(4)(4)A-G(7)(7)(7)-NN			110 011 101 220 022 202 120 102 210 201 012 021

Note: Not all assembled configurations are possible.

Please refer to the subassemblies section for additional options.

Please refer to the specifications section for examples of linked contact block options.

# **Ordering Information**

**Model Numbers for Sets** ----Shipped as a set that includes the Operation Unit, LED Lamp, Mounting Collar, and Contact Block. **Lighted, Two-positon, Selector Switches** 

Appearance	Bezel material	No. of outputs	Model	(3) Reset method	(4)(4) Operation Unit color	(7)(7)(7) Contact Configuration	(8) LED Lamp color	(9) LED Lamp voltage
Plastic bezels	2B	1	A22NW-2B(3)-			100 002		
	25	2	(4)(4)A-G(7)(7)(7)-(8)(9)			102 101 202		
Brushed metal bezels	2M 2	1	A22NW-2M(3)-	M: Manual	TR: Transparent red TG: Transparent green TY: Transparent yellow	100 002	R: Red G: Green Y: Yellow A: Blue O: Orange	A: 6 VAC/DC B: 12 VAC/DC C: 24 VAC/DC D: 100/110/120 VAC E: 200/220/230/240 VAC
		(4)(4)A-G(7)(7)(	(4)(4)A-G(7)(7)(7)-(8)(9)		TW: Transparent white TA: Transparent blue TO: Transparent orange	102 101 202		
Metal bezels	28	1	A22NW-2R(3)-			100 002		
	2R	2	(4)(4)A-G(7)(7)(7)-(8)(9)			102 101 202		

# Lighted, Three-positon, Selector Switches

Appearance	Bezel material	No. of outputs	Model	(3) Reset method	(4)(4) Operation Unit color	(7)(7)(7) Contact Configuration	(8) LED Lamp color	(9) LED Lamp voltage
Plastic bezels								
	3В	2	A22NW-3B(3)- (4)(4)A-G(7)(7)(7)-(8)(9)			101 202 102 201		
Brushed metal bezels				M: Manual				
	3M	2	A22NW-3M(3)- (4)(4)A-G(7)(7)(7)-(8)(9)		TR: Transparent red TG: Transparent green TY: Transparent yellow TW: Transparent white TA: Transparent blue TO: Transparent orange	101 202 102 201	R: Red G: Green Y: Yellow A: Blue O: Orange	A: 6 VAC/DC B: 12 VAC/DC C: 24 VAC/DC D: 100/110/120 VAC E: 200/220/230/240 VAC
Metal bezels								
	3R	2	A22NW-3R(3)- (4)(4)A-G(7)(7)(7)-(8)(9)			101 202 102 201		

Note: Normally, the Operation Unit and LED Lamp with the same color are combined.

However, opaque white is available by combining a white Operation Unit and yellow LED. A22N $\square$ - $\square$  $\square$ - $\underline{TW}$ A-G $\square$  $\square$ - $\underline{Y}$ 

Note: Not all assembled configurations are possible.

Please refer to the subassemblies section for additional options.

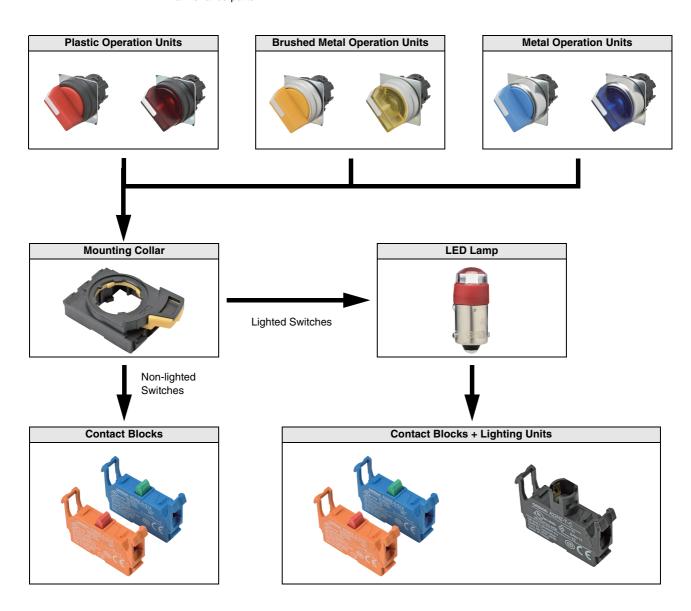
Please refer to the specifications section for examples of linked contact block options.

■ Subassemblies: Refer to pages 9 to 13. (You can order Operation Units, LED Lamps, Mounting Collars, and Contact Blocks individually.)

- Specifications: Refer to page 14 and refer to the A22NN/A22NL.
- Dimensions: Refer to page 15.
- Accessories and tools: Refer to the A22NN/A22NL.

# **Ordering Information**

**Subassemblies** -----You can order Operation Units, LED Lamps, Mounting Collars, and Contact Blocks individually. Use them in combination for models that are not available as assembled Switches. They can also be used as inventory for maintenance parts.



Note: Use a Reinforcement Plate for greater strength.



■ Model numbers of sets: Refer to pages 6 to 8.

- Specifications: Refer to page 14 and refer to the A22NN/A22NL.
- Dimensions: Refer to page 15.
- Accessories and tools: Refer to the A22NN/A22NL.

# **Model Number Structure**

# **Model Number Legend**

# **Model Numbers for Subassemblies**

# (1) Type

Code	Туре
Z	Subassembly

# (2) Number of Positions and Bezel Material

Code	No. of positions	Bezel material
2B	2	Plastic
2M	2	Brushed metal
2R	2	Metal
3B	3	Plastic
ЗМ	3	Brushed metal
3R	3	Metal

# (3) Reset Method

Code		Reset method					
М	Manual	Two-position manual	\ <u>\</u>				
IVI	Manual	Three-position manual	$\bigvee$				
L	Automatic	Two-position automatic					
L	reset on left	Three-position left automatic	<b>\</b>				
R	Automatic reset on right	Three-position right automatic					
В	Automatic reset on left and right	Three-position left or right automatic	<b>\\</b>				

# (4) Operation Unit Transparency and Color

Lighted/ non- lighted	Code (4)	Code (8)	Transparancy	Opera- tion Unit color	LED Lamp color	
	NR		Opaque	Red		
	NG		Opaque	Green		
Non-	NY	N	Opaque	Yellow		
lighted	NW	IN	Opaque	White		
	NA		Opaque	Blue		
	NB		Opaque	Black		
	TR	R	Transparent	Red	Red	
	TG	G	Transparent	Green	Green	
	TY	Υ	Transparent	Yellow	Yellow	
Lighted	TW	W	Transparent	White	White	
	TA	Α	Transparent	Blue	Blue	
	ТО	0	Transparent	Orange	Orange	

# (5) Degree of Protection

Code	Protective code
A	IP66, NEMA 4X, NEMA13

■ Dimensions: Refer to page 15.

<sup>■</sup> Specifications: Refer to page 14 and refer to the A22NN/A22NL.

<sup>■</sup> Precautions for correct use: Refer to the A22NN/A22NL.

# **Ordering Information**

**Subassemblies** ----- You can order Operation Units, LED Lamps, Mounting Collars, and Contact Blocks individually. Use them in combination for models that are not available as assembled Switches. They can also be used as inventory for maintenance parts.

# **Operation Unit** Non-lighted Switches

			Plastic	Brushed metal	Metal	
	Bezel materia	al and shape		<b>P</b>		
No. of positions	Reset method	Operation Unit color	Model	Model	Model	
2	Manual		A22NZ-2BM-NRA	A22NZ-2MM-NRA	A22NZ-2RM-NRA	
2	Automatic reset on left		A22NZ-2BL-NRA	A22NZ-2ML-NRA	A22NZ-2RL-NRA	
	Manual	Opaque	A22NZ-3BM-NRA	A22NZ-3MM-NRA	A22NZ-3RM-NRA	
3	Automatic reset on left	red	A22NZ-3BL-NRA	A22NZ-3ML-NRA	A22NZ-3RL-NRA	
3	Automatic reset on right		A22NZ-3BR-NRA	A22NZ-3MR-NRA	A22NZ-3RR-NRA	
	Automatic reset on left and right		A22NZ-3BB-NRA	A22NZ-3MB-NRA	A22NZ-3RB-NRA	
2	Manual		A22NZ-2BM-NGA	A22NZ-2MM-NGA	A22NZ-2RM-NGA	
2	Automatic reset on left		A22NZ-2BL-NGA	A22NZ-2ML-NGA	A22NZ-2RL-NGA	
	Manual	Opaque	A22NZ-3BM-NGA	A22NZ-3MM-NGA	A22NZ-3RM-NGA	
3	Automatic reset on left	green	A22NZ-3BL-NGA	A22NZ-3ML-NGA	A22NZ-3RL-NGA	
3	Automatic reset on right		A22NZ-3BR-NGA	A22NZ-3MR-NGA	A22NZ-3RR-NGA	
	Automatic reset on left and right		A22NZ-3BB-NGA	A22NZ-3MB-NGA	A22NZ-3RB-NGA	
•	Manual		A22NZ-2BM-NYA	A22NZ-2MM-NYA	A22NZ-2RM-NYA	
2	Automatic reset on left		A22NZ-2BL-NYA	A22NZ-2ML-NYA	A22NZ-2RL-NYA	
	Manual	Opaque	A22NZ-3BM-NYA	A22NZ-3MM-NYA	A22NZ-3RM-NYA	
•	Automatic reset on left	yellow	A22NZ-3BL-NYA	A22NZ-3ML-NYA	A22NZ-3RL-NYA	
3	Automatic reset on right		A22NZ-3BR-NYA	A22NZ-3MR-NYA	A22NZ-3RR-NYA	
	Automatic reset on left and right		A22NZ-3BB-NYA	A22NZ-3MB-NYA	A22NZ-3RB-NYA	
2	Manual		A22NZ-2BM-NWA	A22NZ-2MM-NWA	A22NZ-2RM-NWA	
2	Automatic reset on left		A22NZ-2BL-NWA	A22NZ-2ML-NWA	A22NZ-2RL-NWA	
	Manual	Opaque	A22NZ-3BM-NWA	A22NZ-3MM-NWA	A22NZ-3RM-NWA	
	Automatic reset on left	white	A22NZ-3BL-NWA	A22NZ-3ML-NWA	A22NZ-3RL-NWA	
3	Automatic reset on right		A22NZ-3BR-NWA	A22NZ-3MR-NWA	A22NZ-3RR-NWA	
	Automatic reset on left and right		A22NZ-3BB-NWA	A22NZ-3MB-NWA	A22NZ-3RB-NWA	
•	Manual		A22NZ-2BM-NAA	A22NZ-2MM-NAA	A22NZ-2RM-NAA	
2	Automatic reset on left		A22NZ-2BL-NAA	A22NZ-2ML-NAA	A22NZ-2RL-NAA	
	Manual	Opaque	A22NZ-3BM-NAA	A22NZ-3MM-NAA	A22NZ-3RM-NAA	
3	Automatic reset on left	blue	A22NZ-3BL-NAA	A22NZ-3ML-NAA	A22NZ-3RL-NAA	
3	Automatic reset on right		A22NZ-3BR-NAA	A22NZ-3MR-NAA	A22NZ-3RR-NAA	
	Automatic reset on left and right		A22NZ-3BB-NAA	A22NZ-3MB-NAA	A22NZ-3RB-NAA	
2	Manual		A22NZ-2BM-NBA	A22NZ-2MM-NBA	A22NZ-2RM-NBA	
2	Automatic reset on left		A22NZ-2BL-NBA	A22NZ-2ML-NBA	A22NZ-2RL-NBA	
	Manual	Opaque	A22NZ-3BM-NBA	A22NZ-3MM-NBA	A22NZ-3RM-NBA	
	Automatic reset on left	black	A22NZ-3BL-NBA	A22NZ-3ML-NBA	A22NZ-3RL-NBA	
3	Automatic reset on right		A22NZ-3BR-NBA	A22NZ-3MR-NBA	A22NZ-3RR-NBA	
	Automatic reset on left and right		A22NZ-3BB-NBA	A22NZ-3MB-NBA	A22NZ-3RB-NBA	

<sup>■</sup> Model numbers of sets: Refer to pages 6 to 8.

<sup>■</sup> Specifications: Refer to page 14 and refer to the A22NN/A22NL.

<sup>■</sup> Dimensions: Refer to page 15.

<sup>■</sup> Accessories and tools: Refer to the A22NN/A22NL.

# **Ordering Information**

**Subassemblies** -----You can order Operation Units, LED Lamps, Mounting Collars, and Contact Blocks individually. Use them in combination for models that are not available as assembled Switches. They can also be used as inventory for maintenance parts.

## **Lighted Switches**

	Bezel mate	erial and shape	Plastic	Brushed metal	Metal	
No. of	Reset method	Operation Unit color	Model	Model	Model	
positions	Manual	Jill Color	A22NZ-2BM-TRA	A22NZ-2MM-TRA	A22NZ-2RM-TRA	
2	Automatic reset on left	_	A22NZ-2BN-TRA	A22NZ-2ML-TRA	A22NZ-2RIVI-THA A22NZ-2RL-TRA	
	Manual	-	A22NZ-2BL-TRA A22NZ-3BM-TRA	A22NZ-3MM-TRA	A22NZ-3RM-TRA	
-	Automatic reset on left	Transparent red	A22NZ-3BL-TRA	A22NZ-3ML-TRA	A22NZ-3RL-TRA	
3	Automatic reset on right	-	A22NZ-3BR-TRA	A22NZ-3MR-TRA	A22NZ-3RR-TRA	
-	Automatic reset on left and right	_	A22NZ-3BB-TRA	A22NZ-3MB-TRA	A22NZ-3RB-TRA	
	Manual		A22NZ-2BM-TGA	A22NZ-3MB-TRA A22NZ-2MM-TGA	A22NZ-3RB-TRA A22NZ-2RM-TGA	
2	Automatic reset on left		A22NZ-2BW-TGA A22NZ-2BL-TGA	A22NZ-2MM-TGA A22NZ-2ML-TGA	A22NZ-2RW-TGA A22NZ-2RL-TGA	
	Manual		A22NZ-2BL-TGA A22NZ-3BM-TGA	A22NZ-2ML-TGA A22NZ-3MM-TGA	A22NZ-2RL-TGA A22NZ-3RM-TGA	
-	Automatic reset on left	Transparent green	A22NZ-3BM-1GA A22NZ-3BL-TGA	A22NZ-3MM-TGA A22NZ-3ML-TGA	A22NZ-3RW-TGA	
3	Automatic reset on right	-	A22NZ-3BR-TGA	A22NZ-3MR-TGA	A22NZ-3RR-TGA	
-	Automatic reset on left and right	_	A22NZ-3BB-TGA	A22NZ-3MB-TGA	A22NZ-3RB-TGA	
	Manual		A22NZ-2BM-TYA	A22NZ-2MM-TYA	A22NZ-2RM-TYA	
2	Automatic reset on left	-	A22NZ-2BL-TYA	A22NZ-2ML-TYA	A22NZ-2RL-TYA	
	Manual		A22NZ-3BM-TYA	A22NZ-3MM-TYA	A22NZ-3RM-TYA	
-	Automatic reset on left	Transparent vellow	A22NZ-3BL-TYA	A22NZ-3ML-TYA	A22NZ-3RL-TYA	
3	Automatic reset on right	-	A22NZ-3BR-TYA	A22NZ-3MR-TYA	A22NZ-3RR-TYA	
-	Automatic reset on left and right	_	A22NZ-3BB-TYA	A22NZ-3MR-TYA	A22NZ-3RR-TYA	
	Manual		A22NZ-2BM-TWA	A22NZ-2MM-TWA	A22NZ-2RM-TWA	
2	Automatic reset on left	-	A22NZ-2BN-TWA	A22NZ-2ML-TWA	A22NZ-2RL-TWA	
	Manual	-	A22NZ-3BM-TWA	A22NZ-2ML-1WA	A22NZ-3RM-TWA	
-	Automatic reset on left	Transparent white	A22NZ-3BN-TWA	A22NZ-3MM-1WA A22NZ-3ML-TWA	A22NZ-3RL-TWA	
3	Automatic reset on right	-	A22NZ-3BR-TWA	A22NZ-3MR-TWA	A22NZ-3RR-TWA	
-		-	A22NZ-3BB-TWA	A22NZ-3MR-1WA A22NZ-3MB-TWA	A22NZ-3RR-TWA	
	Automatic reset on left and right  Manual		A22NZ-3BB-1WA A22NZ-2BM-TAA	A22NZ-3MB-1WA A22NZ-2MM-TAA	A22NZ-3RB-1WA A22NZ-2RM-TAA	
2	Automatic reset on left		A22NZ-2BN-TAA A22NZ-2BL-TAA	A22NZ-2MM-TAA A22NZ-2ML-TAA	A22NZ-2RIV-TAA A22NZ-2RL-TAA	
	Manual	T	A22NZ-2BL-TAA A22NZ-3BM-TAA	A22NZ-2ML-TAA A22NZ-3MM-TAA	A22NZ-2RL-TAA A22NZ-3RM-TAA	
	Automatic reset on left	Transparent blue	A22NZ-3BW-TAA A22NZ-3BL-TAA	A22NZ-3MW-TAA A22NZ-3ML-TAA	A22NZ-3RW-TAA	
3	Automatic reset on right	+	A22NZ-3BL-TAA A22NZ-3BR-TAA	A22NZ-3ML-TAA A22NZ-3MR-TAA	A22NZ-3RL-TAA A22NZ-3RR-TAA	
	Automatic reset on light		A22NZ-3BH-TAA	A22NZ-3MB-TAA	A22NZ-3RR-TAA	
	Manual		A22NZ-3BB-TAA A22NZ-2BM-TOA	A22NZ-3MB-TAA A22NZ-2MM-TOA	A22NZ-3RB-TAA A22NZ-2RM-TOA	
2	Automatic reset on left		A22NZ-2BN-TOA	A22NZ-2ML-TOA	A22NZ-2RL-TOA	
	Manual	T	A22NZ-2BL-TOA A22NZ-3BM-TOA	A22NZ-2ML-TOA A22NZ-3MM-TOA	A22NZ-2RL-TOA A22NZ-3RM-TOA	
	Automatic reset on left	Transparent orange	A22NZ-3BW-TOA A22NZ-3BL-TOA	A22NZ-3MM-TOA A22NZ-3ML-TOA	A22NZ-3RW-TOA A22NZ-3RL-TOA	
3	Automatic reset on right		A22NZ-3BR-TOA	A22NZ-3MR-TOA	A22NZ-3RR-TOA	
	Automatic reset on left and right		A22NZ-3BB-TOA	A22NZ-3MB-TOA	A22NZ-3RB-TOA	

■ Model numbers of sets: Refer to pages 6 to 8.

<sup>■</sup> Specifications: Refer to page 14 and refer to the A22NN/A22NL.

<sup>■</sup> Dimensions: Refer to page 15.

<sup>■</sup> Accessories and tools: Refer to the A22NN/A22NL.

# **Ordering Information**

**Subassemblies** - - - You can order Operation Units, LED Lamps, Mounting Collars, and Contact Blocks individually. Use them in combination for models that are not available as assembled Switches. They can also be used as inventory for maintenance parts.

# **LED Lamps**

Appearance	Applied voltage	6 VAC/DC	12 VAC/DC	24 VAC/DC	100/110/120 VAC	200/220/230/240 VAC
	Color	Model	Model	Model	Model	Model
	Red	A22NZ-L-RA	A22NZ-L-RB	A22NZ-L-RC	A22NZ-L-RD	A22NZ-L-RE
	Green	A22NZ-L-GA	A22NZ-L-GB	A22NZ-L-GC	A22NZ-L-GD	A22NZ-L-GE
G 13/1520	Yellow	A22NZ-L-YA	A22NZ-L-YB	A22NZ-L-YC	A22NZ-L-YD	A22NZ-L-YE
	White	A22NZ-L-WA	A22NZ-L-WB	A22NZ-L-WC	A22NZ-L-WD	A22NZ-L-WE
	Blue	A22NZ-L-AA	A22NZ-L-AB	A22NZ-L-AC	A22NZ-L-AD	A22NZ-L-AE
	Orange	A22NZ-L-OA	A22NZ-L-OB	A22NZ-L-OC	A22NZ-L-OD	A22NZ-L-OE

# **Mounting Collar**

Appearance	Model
	A22NZ-H-01

## **Contact Blocks**

Appearance	Contacts	Model
1	SPST-NO (blue)	A22NZ-S-G1A
C	SPST-NC (orange)	A22NZ-S-G1B

# **Lighting Units**

Appearance	Applied voltage	Model
Ce	6 VAC/DC	A22NZ-T-A
	12 VAC/DC	A22NZ-T-B
	24 VAC/DC	A22NZ-T-C
	100/110/120 VAC	A22NZ-T-D
	200/220/230/240 VAC	A22NZ-T-E

# **Reinforcement Plate**

Appearance	Model
GENERAL	A22NZ-A-C01

■ Model numbers of sets: Refer to pages 6 to 8.

- Specifications: Refer to page 14 and refer to the A22NN/A22NL.
- Dimensions: Refer to page 15.
- Accessories and tools: Refer to the A22NN/A22NL.

# **Specifications**

# **Characteristics**

Туре		Selector Switches	
Item		Non-lighted models	Lighted models
Anowable operating		30 operations/minute max.	
		30 operations/minute max.	
Insulation resistance		100 MΩ min. (at 500 VDC)	
Contact resistance		100 mΩ max. (initial value)	
Between terminals of same polarity		2,500 VAC at 50/60 Hz for 1 min	
Dielectric strength  Between each terminal and ground		2,500 VAC at 50/60 Hz for 1 min	
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude (malfunction within 1 ms)	
Shock resistance	Malfunction	1,000 m/s² max. (malfunction within 1 ms)	
D	Mechanical	500,000 operations min. (Switches with 3 positions: 300,000 operations min.	
Durability Electrical		500,000 operations min. (Switches with 3 positions: 300,000 operations min.)	
Ambient operating temperature*1		−25 to 70°C	
Ambient operating humidity		35% to 85% RH	
Ambient storage temperature*1		-40 to 80°C	
Degree of protection*2		IP66, NEMA 4X, NEMA 13	
Electric shock protection class		Class II	
PTI (tracking characteristic)		175	
Degree of contamination (application environment)		3 (IEC 60947-5-1)	
Weight		Approx. 50 g (for 1NC/1NO)	Approx. 60 g (for 1NC/1NO)

**<sup>\*1.</sup>** With no icing or condensation.

# **Operating Characteristics (for SPST-NO/SPST-NC)**

Туре	Selector Switches	
Item	Manual reset	Automatic reset
Total travel force (torque) (maximum TTF)	0.6 N·m	0.6 N·m
Total travel (TT)	2 positions: Approx. 90°, 3 positions: Approx. 45°	
Resetting force (torque) (RF)	0.5 N·m max	

# **Examples of Linked Contact Blocks**

Contact Blocks Lighting Units Selector Switches 2 positions 3 positions Lighted Non-lighted Lighted Non-lighted Linking example

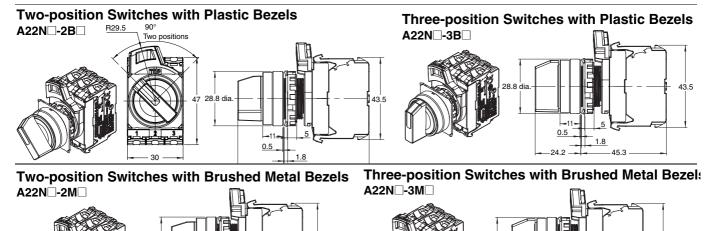
★ If you use three Contact Blocks in stage 1, you can add one more Contact Block in the middle of stage 2.

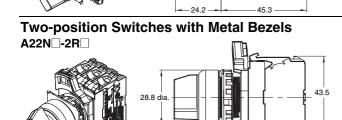
Note: If you increase the number of Contact Blocks, evaluate the Switch under actual working conditions before permanent installation and use the Switch within a number of switching operations that will not adversely affect the Switch's performance.

**<sup>\*2.</sup>** Degree of protection from the front of the panel.

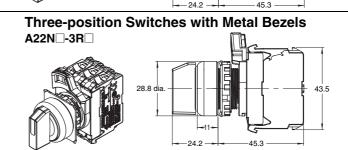
Dimensions (Unit: mm)

# **Lighted and Non-lighted Selection Switches**

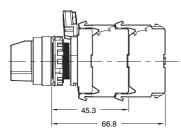




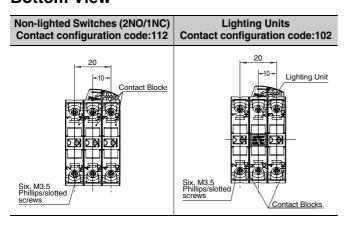
45.3



# **Depth with Linked Units**



# Terminal Wiring Diagrams Bottom View



# **Terminal Connection Diagrams**

Non-lighted Switches (2NO/1NC) Contact configuration code:112	Lighted Switches (1NO/1NC) Contact configuration code:102
Bottom View	Bottom View

# **Safety Precautions**

Refer to Safety Precautions for All Pushbutton Switches/Indicators for common precautions. Read the Safety Precautions on the following pages.

# **Safety Precautions**

#### Refer to Safety Precautions for All Pushbutton Switches/Indicators.

# **Precautions for Safe Use**

- Never perform wiring work on a Switch while power is being supplied. Never touch terminals and other charged parts while power is being supplied. Doing so may result in electrical shock.
- Never attempt to disassemble or modify the Switch in any way.
   Doing so may prevent correct operation.
- Switch functionality may be inhibited. Do not drop the Switch.
   Never apply a force that would deform or alter the nature of the Switch.
- The durability of the Switch is greatly affected by operating conditions. Evaluate the Switch under actual working conditions before permanent installation and use the Switch within a number of switching operations that will not adversely affect the Switch's performance.
- Do not use a load voltage or current that exceeds the rating. Doing so may damage or cause burning in the Switch.
- Do not use the Switch in a location with inflammable or explosive gases, or where the Switch would be subjected to inflammable solvents. The arcs and heat generated when the Switch is operated can cause ignition or explosions.
- Do not use the Switch where sulfur gas (H<sub>2</sub>S, SO<sub>2</sub>), ammonia gas (NH<sub>3</sub>), nitric acid gas (HNO<sub>3</sub>), chlorine gas (Cl<sub>2</sub>), or other harmful gases are present or where high humidity is present. Contact faults and damage due to corrosion may interfere with the functionality of the Switch.
- Do not use the Switch in oil or water or in an environment subject to constant contact with oil or water. The oil or water may enter the Switch, causing failure.
- Do not use or store the Switch in the following locations.
  - •Locations subject to rapid temperature changes
  - •Locations subject to condensation due to high humidity
- Locations subject to vibration
- •Locations subject to direct sunlight
- Locations subject to salty air
- Make sure that the rubber washer is in place between the Operation Unit and the panel. Otherwise, the specifications of the protective structure may not be satisfied.
- Do not subject the Contact Block or wiring to excessive force. The Contact Block may be damaged or deformed and faulty contact may occur.

#### **Precautions for Correct Use**

#### Mounting

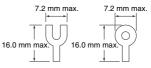
 Do not tighten the Mounting Nut more than necessary using tools such as pointed-nose pliers. Doing so will damage the Mounting Nut. (The tightening torque of the Mounting Nut is 1.0 to 2.0 N·m.)

#### Wiring

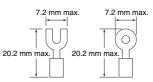
- Terminal screws must be M3.5 Phillips or slotted screws with a square washer.
- The terminal screw tightening torque is 1.0 to 1.3 N·m.
- Solid wires, stranded wires, and crimp terminals can be connected to the Switch.

Stranded wires: AWG14 to AWG16

Solid wire: 1.6 dia. max. Bare Crimp Terminals



Crimp Terminals with Insulating Sheathes



 After wiring the Switch, maintain appropriate clearance and creepage distances.

#### Operating Environment

The Switch is intended for indoor use only.
 Using the Switch outdoors will result in failure.

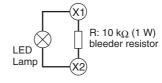
# **LED Lamps**

- A current-limiting resistor is built into the LED Lamp, so external resistance is not required.
- False Lighting of the LED Lamp

The LED Lamp will light with a microcurrent of approx. 0.1 mA or less. Take countermeasures, such as adding a resistor in parallel to the LED Lamp, to prevent false lighting.

The micro-current varies with the machine (due to leakage current, stray capacity between cables, etc.). Select a resistance value and allowable power consumption according to the actual current.

# Example of Circuit to Prevent False Lighting For 24 VAC/VDC Lighting Unit



# **Application**

# **Mounting to the Panel**

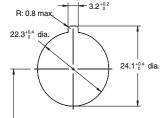
#### **Panel Hole Dimensions**

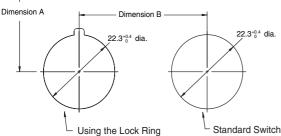
- Panel hole dimensions are given below.
- The recommended panel thicknesses are given below.

Panel hole dimension	Panel thickness
22.3 dia.	0.8 to 5 mm
25.5 dia.	0.8 to 6 mm

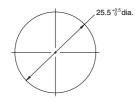
- If outer surface treatment such as coating is performed for the panel, the panel dimensions after outer surface treatment must meet the specified panel dimensions.
- The following figure gives pitch dimension A and pitch dimension B between the centers of the mounting holes.

#### Panel Hole Dimensions for 22.3 Diameter





#### Panel Hole Dimensions for 25.5 Diameter



## **Dimension A**

Wire type	Number of linked Contact Blocks	Number of wires per ter- minal	Minimum al- lowable pitch Dimension A (mm) or larger
Leads (twisted wires or solid wire)	1	1	50
Bare crimp terminals	1	1	50
Crimp terminals with insulating sheathes	1	1	60

Note: The minimum mounting pitch is based on three Contact Blocks in stage 1 with one wire attached to each terminal.

If you attach two wires or link Units, determine the mounting pitch based on the dimensions diagrams and ease of operation and wiring.

# Dimension A When Using Accessory

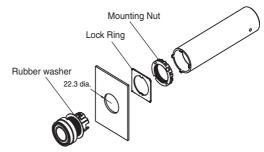
- Dimension A is 50 mm minimum when a Standard Legend Plate Frame is attached.
- Dimension A is 51 mm minimum when a Large Legend Plate Frame is attached.
- Dimension A is 75 mm minimum when a Protective Cover is attached.

#### **Dimension B**

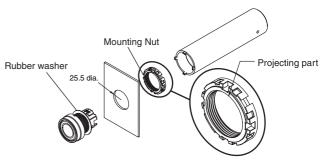
Operation Unit shape	Dimension B
Mushroom	40 mm min.
Other than the above	30 mm min.

#### **Mounting the Operation Unit**

Panel Hole of 22.3-mm Diameter
Insert the Operation Unit from the front of the panel, insert the Lock
Ring and Mounting Nut from the back of the panel, and tighten the
Mounting Nut. Before tightening, check that the rubber washer is
present between the Operation Unit and the panel.



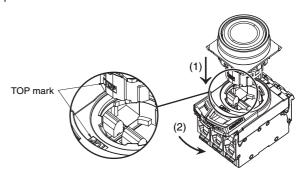
Panel Hole of 25.5-mm Diameter
 Do not use the Lock Ring, and tighten the Mounting Nut while confirming that the projecting part (see following figure) on the Mounting Nut is aligned with mounting hole. Before tightening, check that the rubber washer is present between the Operation Unit and the panel.



• Align the Lock Ring with the slot on the case and insert it so that the edge is flush with the panel.

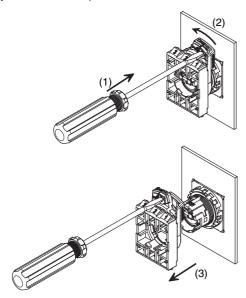
## **Mounting the Contact Block to the Operation Unit**

 Insert the Operation Unit into the Mounting Collar, aligning the TOP mark inscribed on the Operation Unit with the lever on the Mounting Collar, and then turn the lever in the direction indicated by the arrow in the following figure all of the way until it clicks into place.



## **Removing the Mounting Collar**

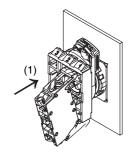
 Press the lock lever in from the back side to release the lock, and then hook the Mounting Collar with a screwdriver, move it in the direction indicated at (2), and remove it. Turn the lever all of the way until it clicks into place.

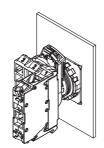


## **Contact Block**

## **Attaching the Contact Block**

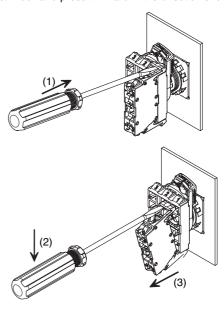
 Catch the projection on the opposite side of the Mounting Collar from the lever side and press the Contact Block in the direction indicated at (1).





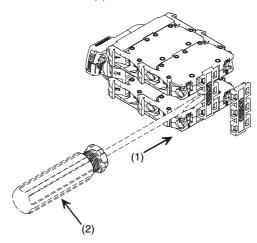
## **Removing the Contact Block**

 Insert a screwdriver into the gap between the Mounting Collar and Contact Block and press it inward in the direction shown at (2).



# **Attaching the Reinforcement Plate**

• To link Contact Blocks together, attach a Reinforcement Plate in the direction shown in the following figure. To remove the Plate, insert a screwdriver in the direction indicated at (1) and rotate it in the direction indicated at (2).



## **Engraving**

- Engrave legends on the Legend Plates.
   Do so with the straight part of the Legend Plate positioned on the right and left.
- The characters must be engraved no deeper than 0.5 mm. Use an alcohol-based paint, such as a melamine, phthalic acid, or acrylic resin based paint.

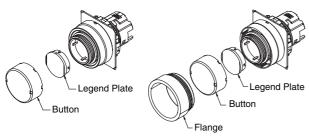
Projected, Full-guard, or Mushroom Switches	Flat Switches
15.4 dia.	17.7 dia.

# **Attaching Character Films**

• To attach a character film, remove the Button and attach the film, aligning it with the straight portions of the Legend Plate.

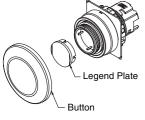
#### **Projected Switches**

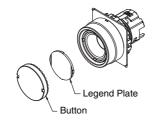
#### **Full-guard Switches**



#### **Mushroom Switches**

#### Flat Switches



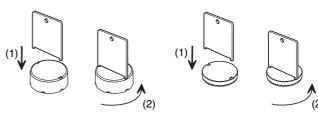


 Prepare films of the following sizes depending on the type of Legend Plate.

Projected, Full-guard, or Mushroom Switches	Legend Plate di- mensions	Display range 15.4 dia. 1.6 5.15 15.9 dia.	
	Film dimensions	17.1 $^{\circ}_{-0.2}$ dia.  15.4 $^{\circ}_{-0.2}$ T = 0.1 to 0.2 mm	
Flat Switches	Legend Plate di- mensions	Display range 17.7 dia. 1.30	
	Film dimen- sions	19.6 ° <sub>0,2</sub> dia. 17.5 ° <sub>0,2</sub> T = 0.1 to 0.2 mm	

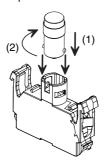
# **Removing and Tightening the Cap**

For all Switches except for Mushroom Switches, use the A22Z-3908 Cap Tightening Tool to loosen the cap. When you tighten the cap, make sure that the Legend Plate is in the correct position and then turn the cap in the direction opposite of the direction shown in the following figure. Tighten it to a torque of 0.5 to 1.0 N·m so that it will not become loose.



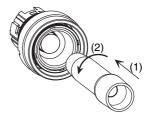
# Attaching the LED Lamp to the Lighting Unit

• Insert the protrusions on the LED Lamp into the guides on the Lighting Unit and then turn the LED Lamp in direction (2) to lock it in place.



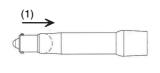
# Attaching and Replacing LED Lamps Removing the LED Lamp from the Panel Surface

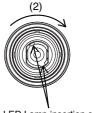
 Insert the LED Lamp Extractor as shown in the following figure and then rotate the Extractor in the direction shown at (2) while pressing it inward.



# Attaching the LED Lamp from the Panel Surface

• Insert the LED Lamp into the LED Lamp Extractor as shown in the following figure. Align the projections on the LED Lamp with the LED Lamp insertion guides, insert the LED Lamp, and turn it in the direction indicted at (2).

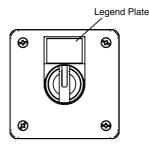




LED Lamp insertion guides

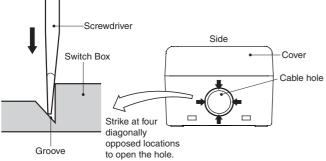
# **Control Box**

You can attach a Legend Plate Frame. Attach it in the direction shown in the following figure. Mount the Switch in the same way as for a standard panel. The tightening torque of the Box screws is 1.4 to 2.0 N·m.



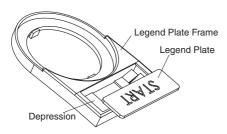
#### **Creating a Cable Hole**

To open a cable hole, leave the cover attached, place the tip of a screwdriver in the grooves at four locations around the cable hole, and strike the screwdriver with a hammer to open the hole.

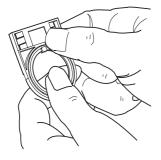


# **Attaching and Removing Legend Plates**

- Press the Legend Plate into the depression in the Legend Plate Frame. The Legend Plate Frame can be separate or it can be mounted on the panel when you attach the Legend Plate.
- The direction of the characters will depend on the mounting direction of the Operation Unit if the Switch is a Selector Switch or Key Selector Switch.

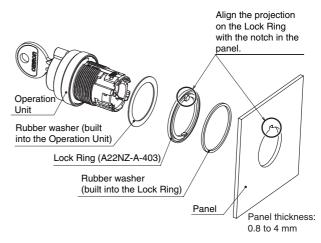


- You can easily remove the Legend Plate by pressing it forwards from the back of the Legend Plate Frame.
- The acrylic plastic Legend Plate is easily damaged by shock.
   Handle it with care.

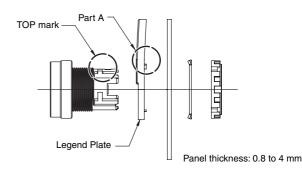


# Attaching the Lock Ring

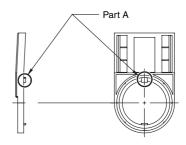
Attach the Lock Ring as shown in the following figure. To ensure water resistance, attach the rubber washer in the specified location.



 Align the TOP mark on the Operation Unit, part A on the Legend Plate, and the notch in the panel, and insert the Operation Unit.

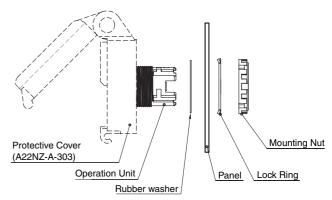


 If there is no notch in the panel, remove part A from the Legend Plate with pliers.



#### **Attaching the Protective Cover**

Attach the Protective Cover (A22NZ-A-303) to a panel that is 0.8 to 1.0 mm thick. To ensure water resistance, attach the rubber washer in the specified location.



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- and (ii) Buyer has no past due amounts.

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