



# Series 220

## 7x7mm Compact Rotary DIP Switch

- Robust metal bracket design
- Standard through hole and surface mount gull-wing terminal configurations
- Binary coded decimal, Hexadecimal code and Single pole output
- Clockwise or counterclockwise rotation



### Ordering Information

Series	Terminal Type	Actuator Height	Number of Positions	Packaging Type														
220	AM	A	04	R														
<div>↓</div>		<div>↓</div>																
<table><tr><th>Code</th><th>Spec.</th></tr><tr><td>AM</td><td>Surface mount gull wing, 3.8mm height</td></tr><tr><td>AD</td><td>Standard through hole, 3.6mm height</td></tr></table>	Code	Spec.	AM	Surface mount gull wing, 3.8mm height	AD	Standard through hole, 3.6mm height	<table><tr><th>Code</th><th>Spec.</th></tr><tr><td>A</td><td>Flush arrow rotor</td></tr><tr><td>B</td><td>Knurled, slotted, flattened shaft</td></tr><tr><td>C</td><td>Knurled, slotted shaft</td></tr></table>	Code	Spec.	A	Flush arrow rotor	B	Knurled, slotted, flattened shaft	C	Knurled, slotted shaft	<div>↓</div>		
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Notes: Contact CTS for other common features not listed.



## Electrical Specifications

Parameter	Conditions & Remarks	Min	Max	Unit
Output	Binary coded decimal		10	position
	Hexadecimal		16	
	Single pole		4	
Contact Resistance			100	milliohms
Insulation Resistance	Between insulated terminals	1000		megohms
Dielectric Strength	250 Vac between adjacent switches		1	minute
Nonswitching Rating			100 or 50	mA or VDC
Load		1 $\mu$ A 20m		VDC

## Mechanical and Environmental

Soldering	Maximum reflow temperature, 260°C for 5 seconds Maximum wave temperature, 260°C for 10 seconds Maximum manual temperature, 350°C for 4 seconds
RoHS	Lead-Free. Fully compliant to RoHS
Rotational Torque:	40~200 gf-cm
Actuation Life	10,000 steps
Marking:	Special top marking available-consult CTS
Packaging :	Standard anti-static tube packaging for through hole terminal Standard tape and reel packaging for gull wing terminal
Operating Temperature Range	-40°C to +85°C
Storage Temperature Range:	-40°C to +85°C

## Mechanical Specifications

Figure 1 – 220AM\_10, 16R - Surface Mount Gull Wing, 10 and 16 Position

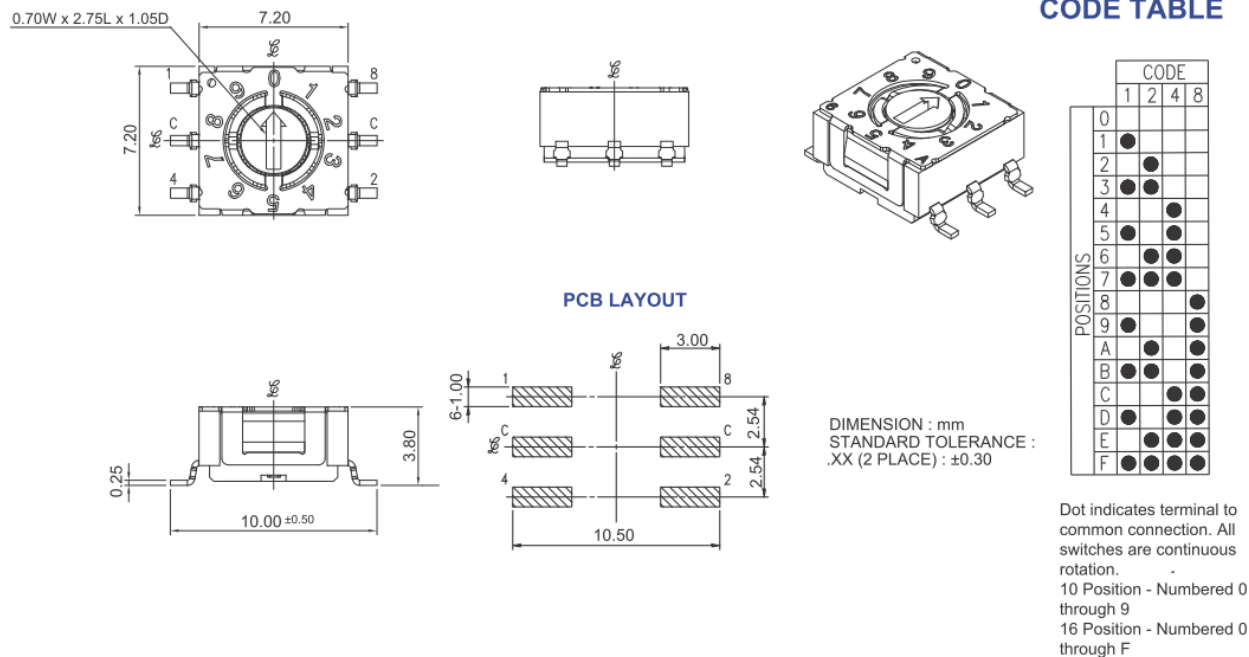


Figure 2 – 220AD\_10, 16 - Standard Through Hole, 10 and 16 Position

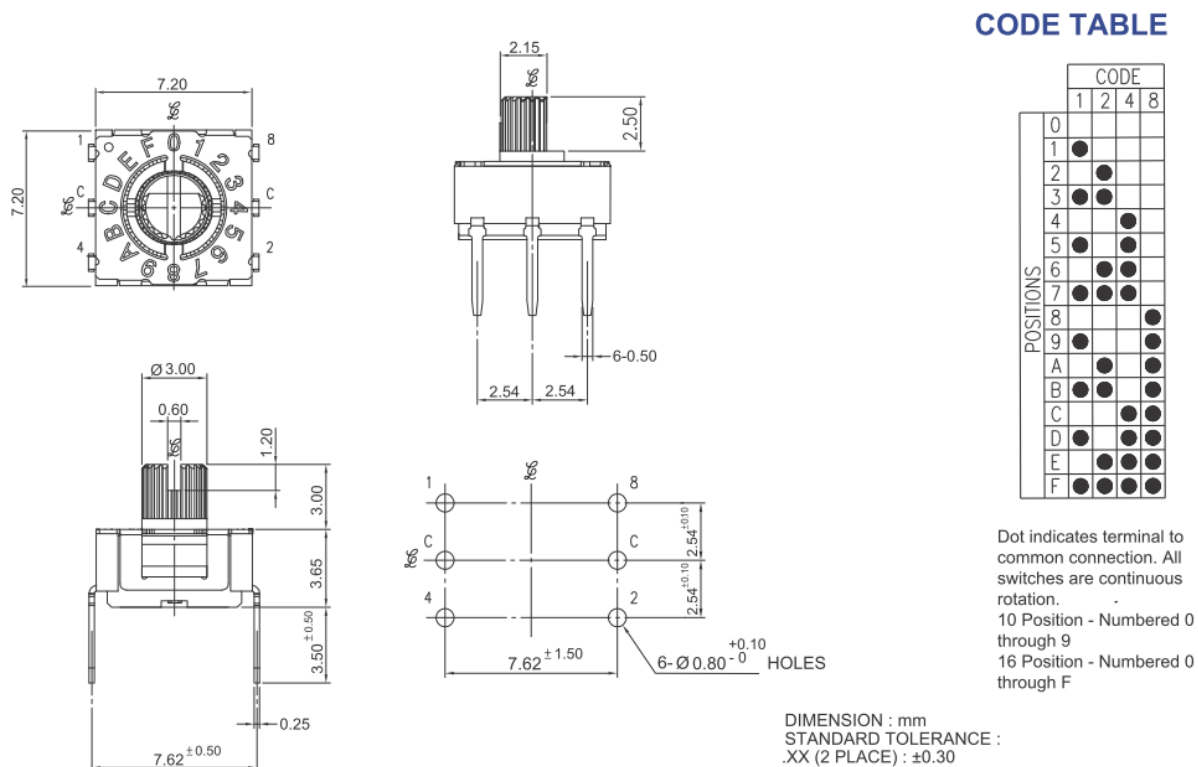
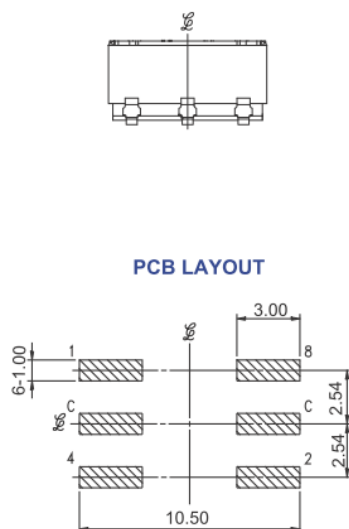
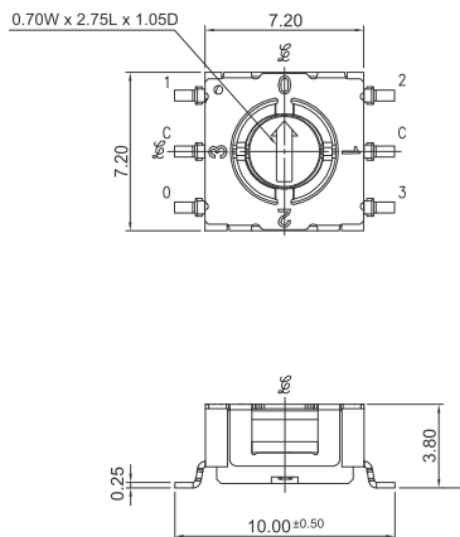


Figure 3 – 220AM\_04R - Surface Mount Gull Wing, 4 Position



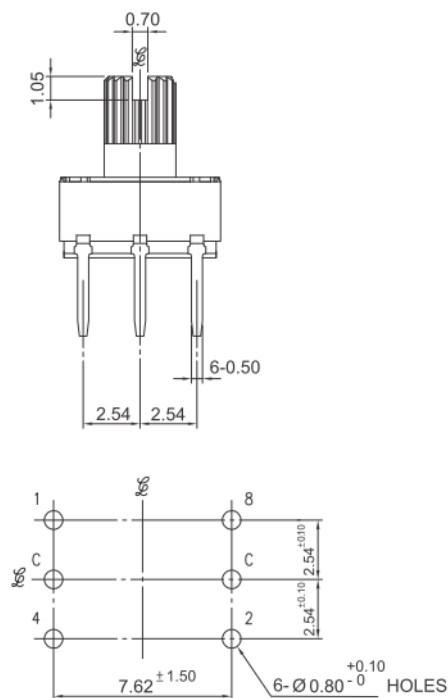
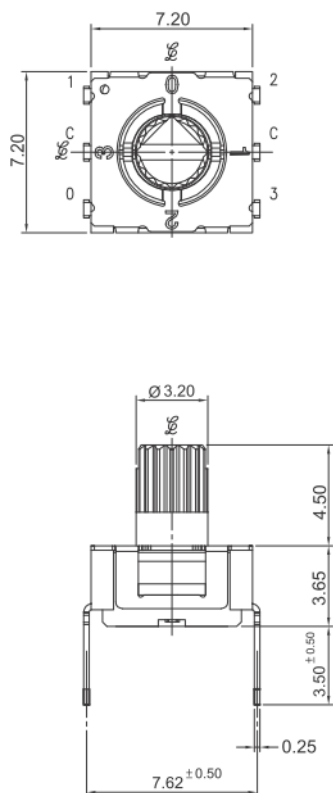
## CODE TABLE

POSITIONS	CODE			
	0	1	2	3
0	●			
1		●		
2			●	
3				●

Dot indicates terminal to common connection. All switches are continuous rotation.  
4 Position - Single pole

DIMENSION : mm  
STANDARD TOLERANCE :  
.XX (2 PLACE) : ±0.30

Figure 4 – 220AD\_04 - Standard Through Hole, 4 Position

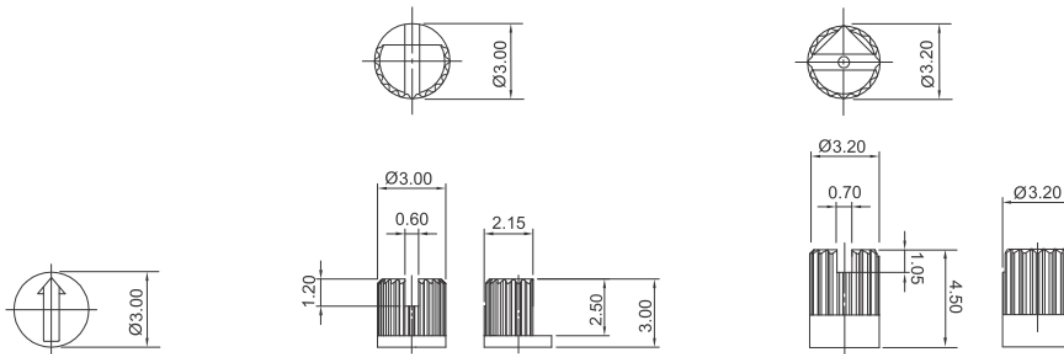


## CODE TABLE

POSITIONS	CODE			
	0	1	2	3
0	●			
1		●		
2			●	
3				●

Dot indicates terminal to common connection. All switches are continuous rotation.  
4 Position - Single pole

DIMENSION : mm  
STANDARD TOLERANCE :  
.XX (2 PLACE) : ±0.30



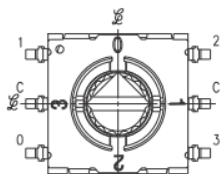
A: FLUSH ARROW ROTOR

B: KNURLED, SLOTTED, FLATTED SHAFT

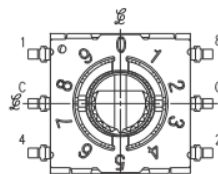
C: KNURLED, SLOTTED SHAFT

DIMENSION : mm  
STANDARD TOLERANCE :  
.XX (2 PLACE) :  $\pm 0.30$

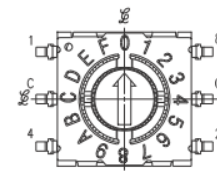
## Position Options



04: 4 POSITIONS



10: 10 POSITIONS

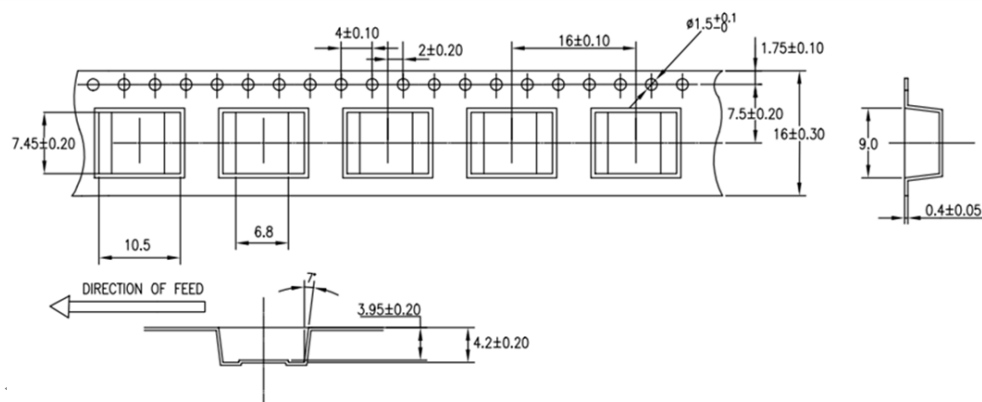


16: 16 POSITIONS

## Packing: Tape and Reel

### TAPE : ↵

### (A) 220AMAxR –MATERIAL& DIMENSIONS: ↵



**MATERIAL: CONDUCTIVE POLYSTYRENE, BLACK COLOR**

**ALL DIMENSIONS MEET EIA-481-2A REQUIREMENTS**

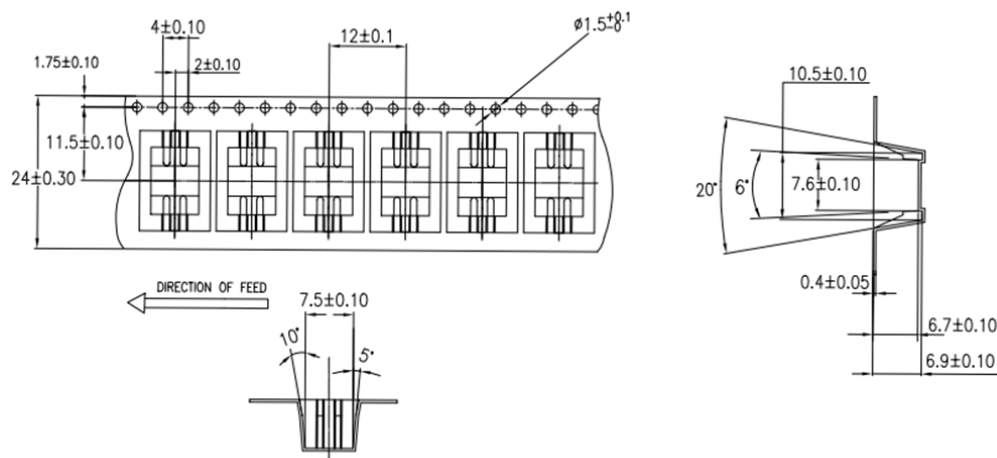
**CARRIER TAPE THICKNESS:  $0.40 \pm 0.05$ MM.**

**PACKING LENGTH PER 13" REEL: 16.6 METERS.**

**COMPONENT LOADED PER 13" REEL: 1038 PCS.**

**SPQ: 1000 PCS/ REEL**

**(B) 220AMBxxR – MATERIAL & DIMENSIONS:**



**MATERIAL: ANTI-STATIC POLYSTYRENE, TRANSPARENT, BLACK COLOR**

**ALL DIMENSIONS MEET EIA-481-B REQUIREMENTS**

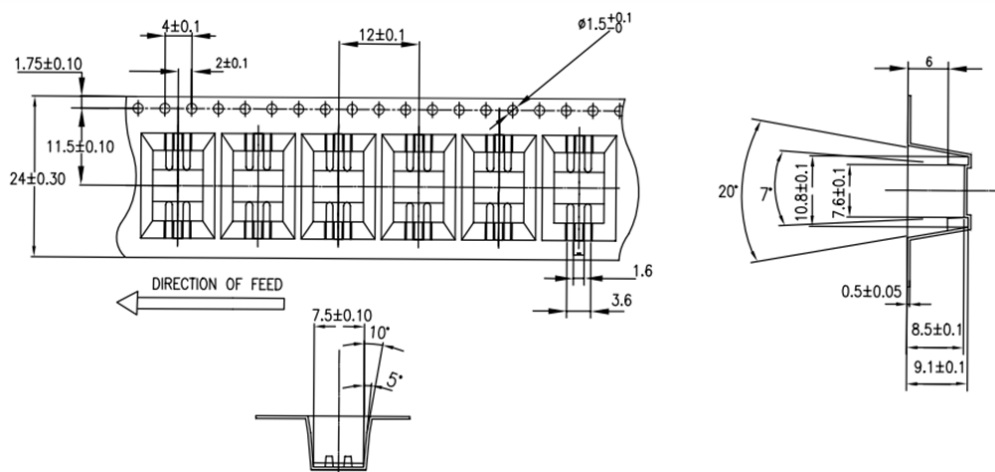
**CARRIER TAPE THICKNESS:  $0.40 \pm 0.05$ MM.**

**PACKING LENGTH PER 13" REEL: 8.93 METERS.**

**COMPONENT LOADED PER 13" REEL: 744 PCS.**

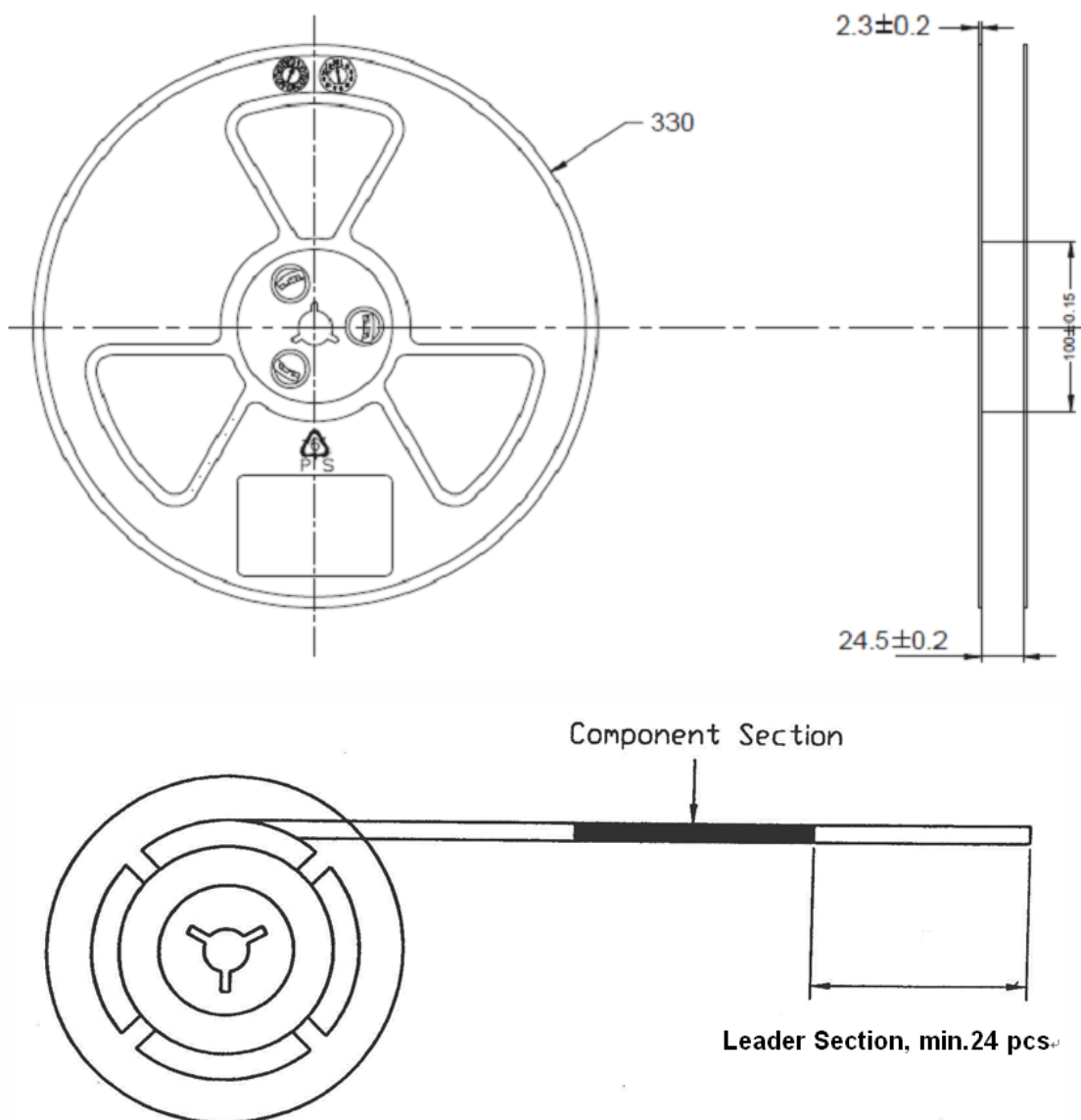
**SPQ: 700 PCS/REEL**

**(C) 220AMCxxR – MATERIAL & DIMENSIONS:**



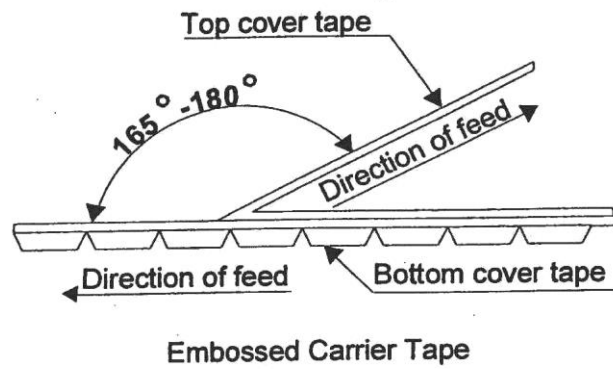
**REEL:**

(A) SPECIFIED REEL PARTS DIMENSIONS : (COMMON TO ALL SMT COMPONENTS)



**TAPE BREAK FORCE, PEEL STRENGTH AND ANGLE:  
REQUIRED SETTINGS :**

- TOP COVER TAPE PEEL FORCE : 10 ~ 140 gm
- ANGLE BETWEEN THE TOP COVER TAPE AND THE DIRECTION OF FEED DURING PEEL OFF : 165° ~ 180°



**THE COVER TAPES MAY NOT EXTEND OVER THE DEGE OF THE CARRIER TAPE OR COVER ANY PART OF THE SPROCKETS HOLES.**