

數據計算 / Data Calculate

作旋轉角度計算時，將各軸所須位移經由以下公式計算，可得正確數值。

According to the mathematical equations listed below, rotation angle can be calculated precisely.

TRX-A 計算公式/ TRX-A Formula

X1 Axis: $\delta X1 = R \cos (\delta \theta + \theta X1 + \theta 0) - R \cos (\theta X1 + \theta 0)$

X2 Axis: $\delta X2 = R \cos (\delta \theta + \theta X2 + \theta 0) - R \cos (\theta X2 + \theta 0)$

Y Axis: $\delta Y = R \sin (\delta \theta + \theta Y + \theta 0) - R \sin (\theta Y + \theta 0)$

$\delta X1$: X1軸的相對送進量 (mm) }

$\delta X1$: X1 Axis relative movement (mm) }

$\delta X2$: X2軸的相對送進量 (mm) } (滾珠螺桿的送進量)

$\delta X2$: X2 Axis relative movement (mm) } (movement driven by ball screw)

δY : Y軸的相對送進量 (mm) }

δY : Y Axis relative movement (mm) }

$\theta X1$: 連接在X1軸上旋轉中心的角度位置($^{\circ}$)

$\theta X1$: Angle position of pivot on X1 Axis ($^{\circ}$)

$\theta X2$: 連接在X2軸上旋轉中心的角度位置($^{\circ}$)

$\theta X2$: Angle position of pivot on X2 Axis ($^{\circ}$)

θY : 連接在Y軸上旋轉中心的角度位置($^{\circ}$)

θY : Angle position of pivot on Y Axis ($^{\circ}$)

$\theta 0$: 計算動作前的工作角度($^{\circ}$)

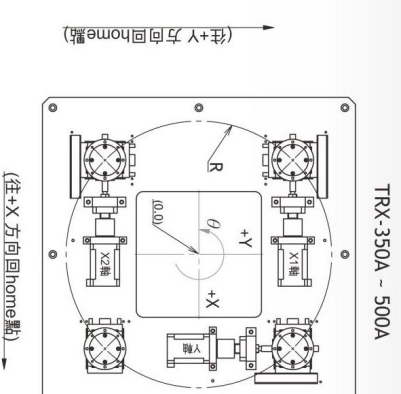
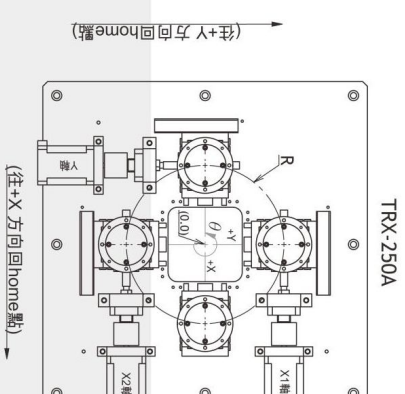
$\theta 0$: platform angle before movement($^{\circ}$)

$\delta \theta$: 工作旋轉角($^{\circ}$)

$\delta \theta$: rotation angle of platform($^{\circ}$)

R: 平台中心點到通過連接在各軸上的軸承中心的半徑距離。

R: radius distance from platform center to center of rotation bearings.



TRX-A 計算數據				
型號	R	θY	$\theta X1$	$\theta X2$
TRX-250A	85	180 $^{\circ}$	90 $^{\circ}$	270 $^{\circ}$
TRX-350A	135 $\sqrt{2}$	45 $^{\circ}$	135 $^{\circ}$	225 $^{\circ}$
TRX-400A	155 $\sqrt{2}$	45 $^{\circ}$	135 $^{\circ}$	225 $^{\circ}$
TRX-500A	195 $\sqrt{2}$	45 $^{\circ}$	135 $^{\circ}$	225 $^{\circ}$