

# Patented Variable Lead Barrel Cam Drive 可變導程圓筒凸輪 - 專利技術獨家採用



- **無背隙 Zero-Backlash**

專利圓筒凸輪結構 Patented barrel cam structure

- **無磨耗 Zero Wear-Out**

滾動摩擦，無磨耗 Rolling contact to eliminate wear-out

- **高剛性 High Rigidity**

採用大滾子，施加預壓，實現高剛性 Bigger cam follower carrier under pre-loading process to achieves high rigidity

- **高精度 Outstanding Precision**

正逆轉重覆精度卓越 High repeatability accuracy clockwise and counter-clockwise

- **高扭力 High Torque Output**

作用半徑較一般滾子凸輪大，故扭力高出20% Act radius larger than other regular roller gear, resulting in 20% higher torque output

- **高轉速 High Speed**

最高轉速可達83.3rpm (伺服馬達2500rpm) Maximum rotation speed 83.3rpm (servo motor 2500rpm)

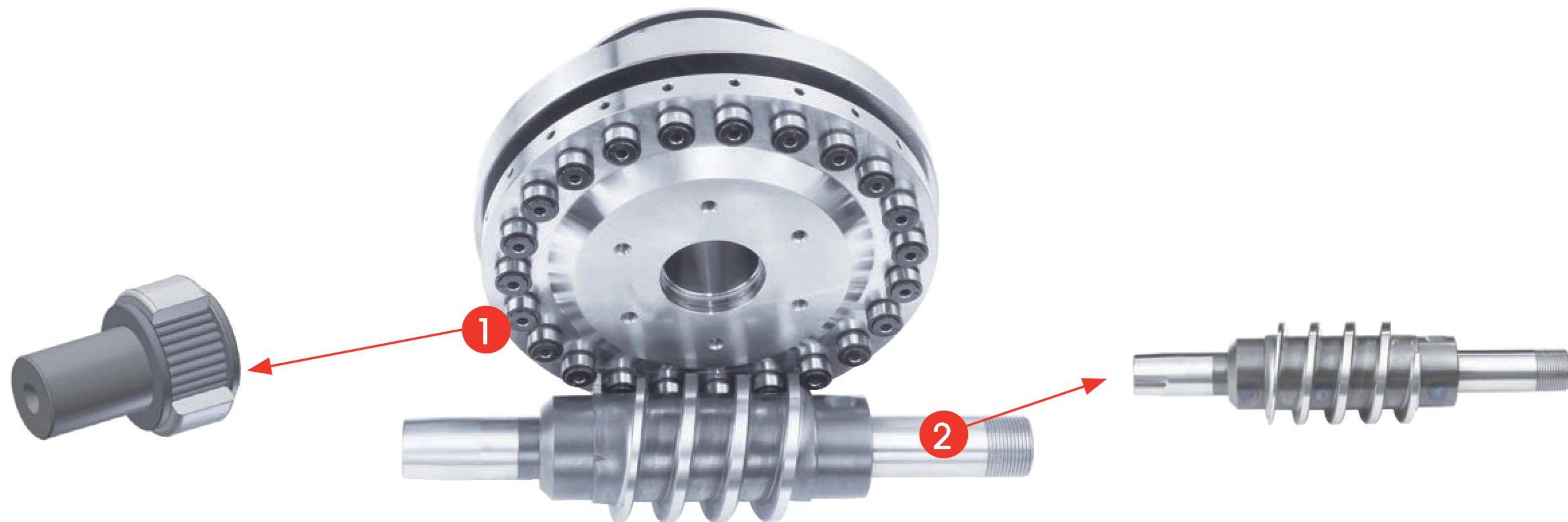
- **高夾持力 High Clamping Force**

環抱式煞車，確保高夾持力，領先同業 Double insured hydraulic brake system ensures high clamping force



# Core Technology 核心技術

## Zero-Backlash 無背隙

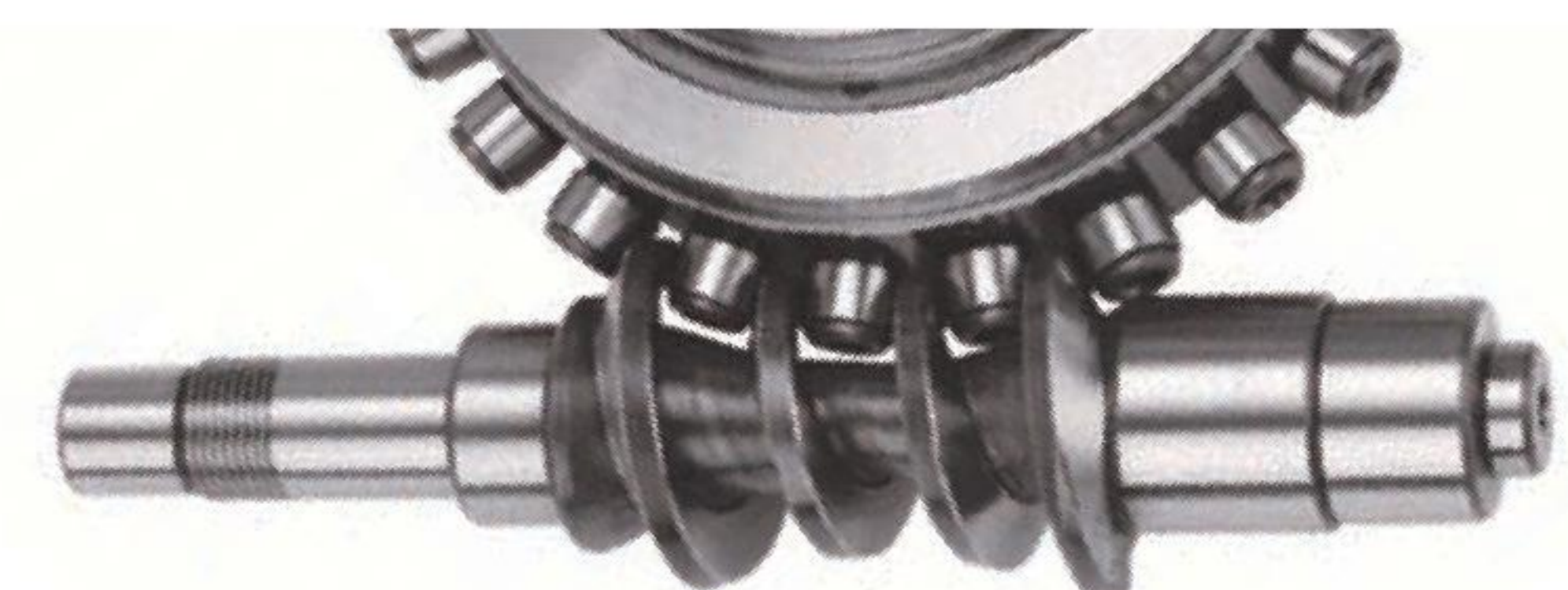
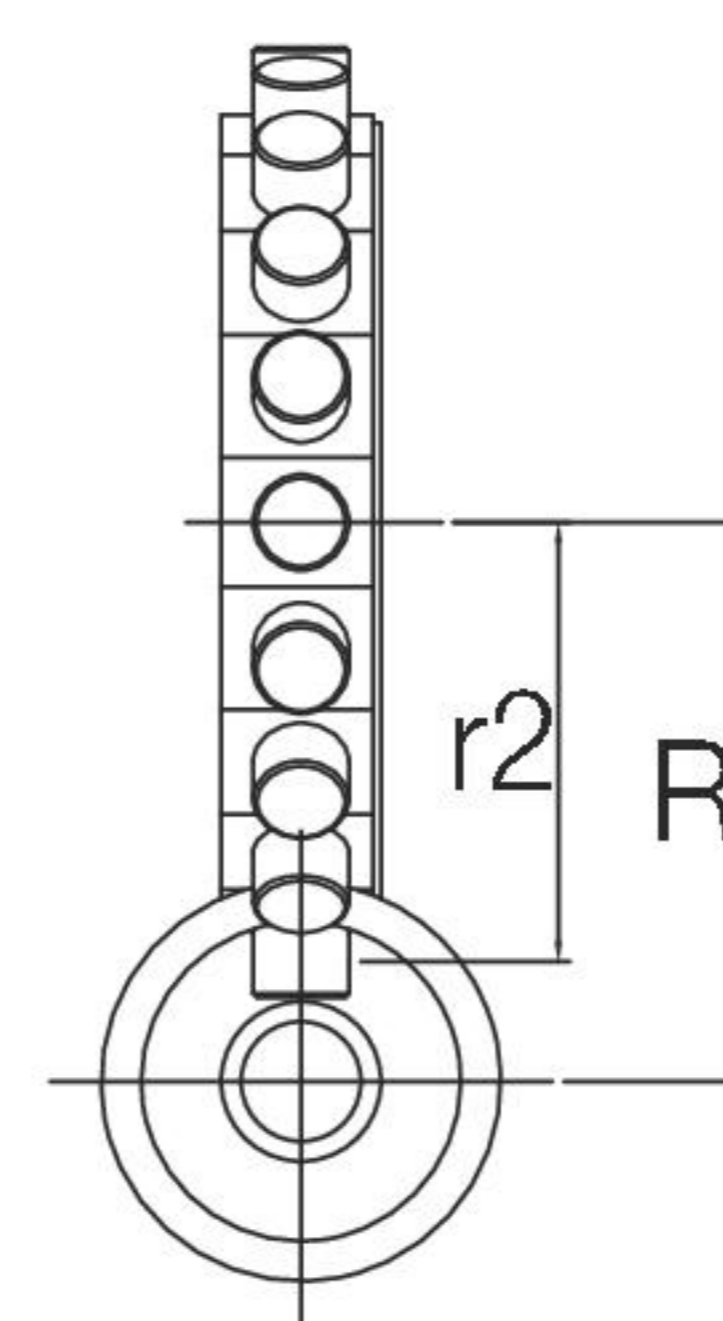
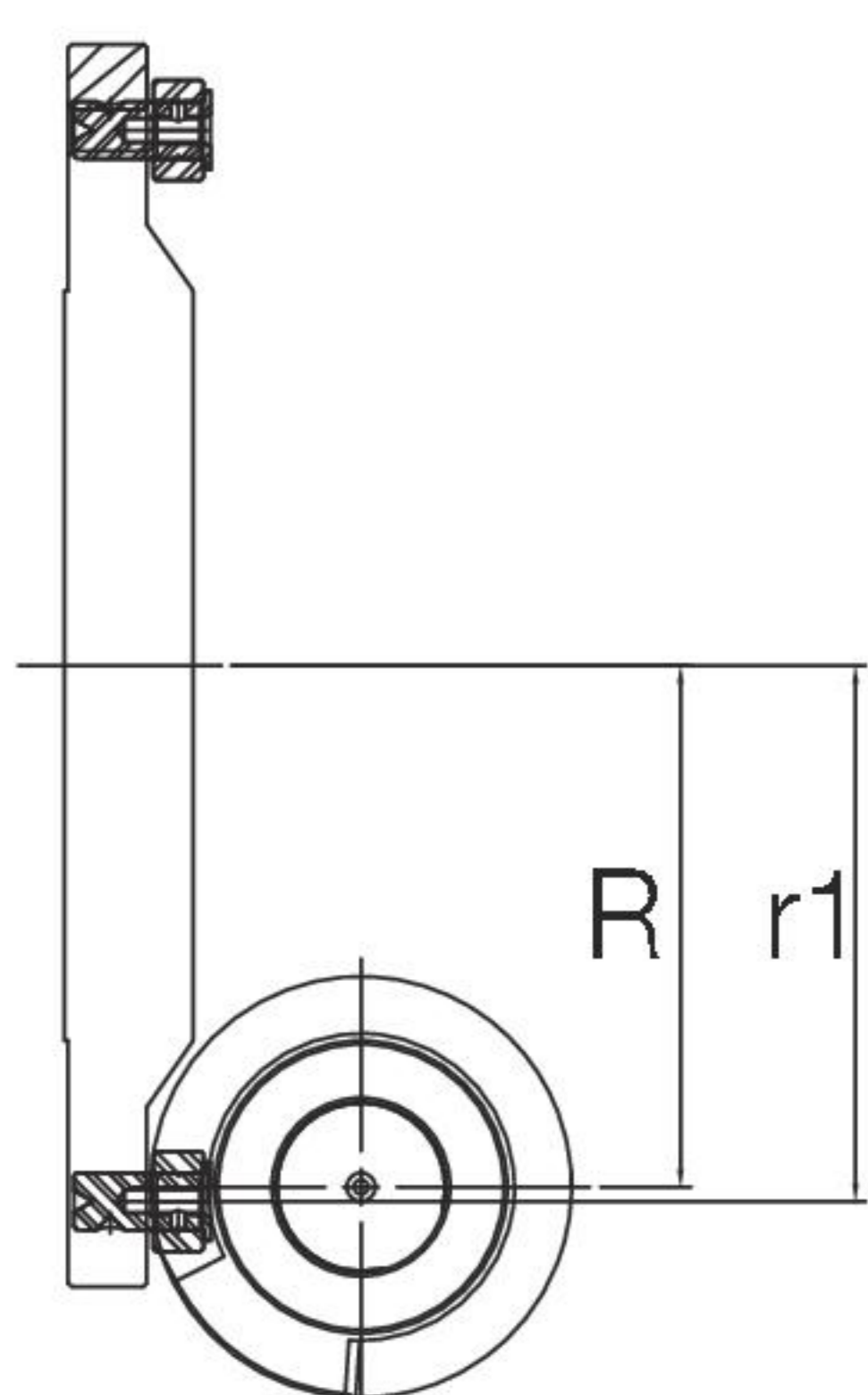


- ▲ The pre-loading process between cam follower carrier and cam with variable lead (shown as ①) can eliminate the backlash with the cam shaft ( shown as ②) and approach extraordinary high precision.  
滾子與可變導程凸輪之嚙合經預壓後(如①放大圖示)可完全消除滾子與凸輪軸(如圖示②)之背隙，此為可變導程凸輪之超精密特性。

## High Torque 高扭力

**detron**

**others**



- ▲ By equal center distance  $R$ , detron RGX performs act radius  $r1$  larger than other regular roller gear shrink the act radius  $r2$ , resulting the torque output 20% higher than other roller gear. Least geometry error and high precision.

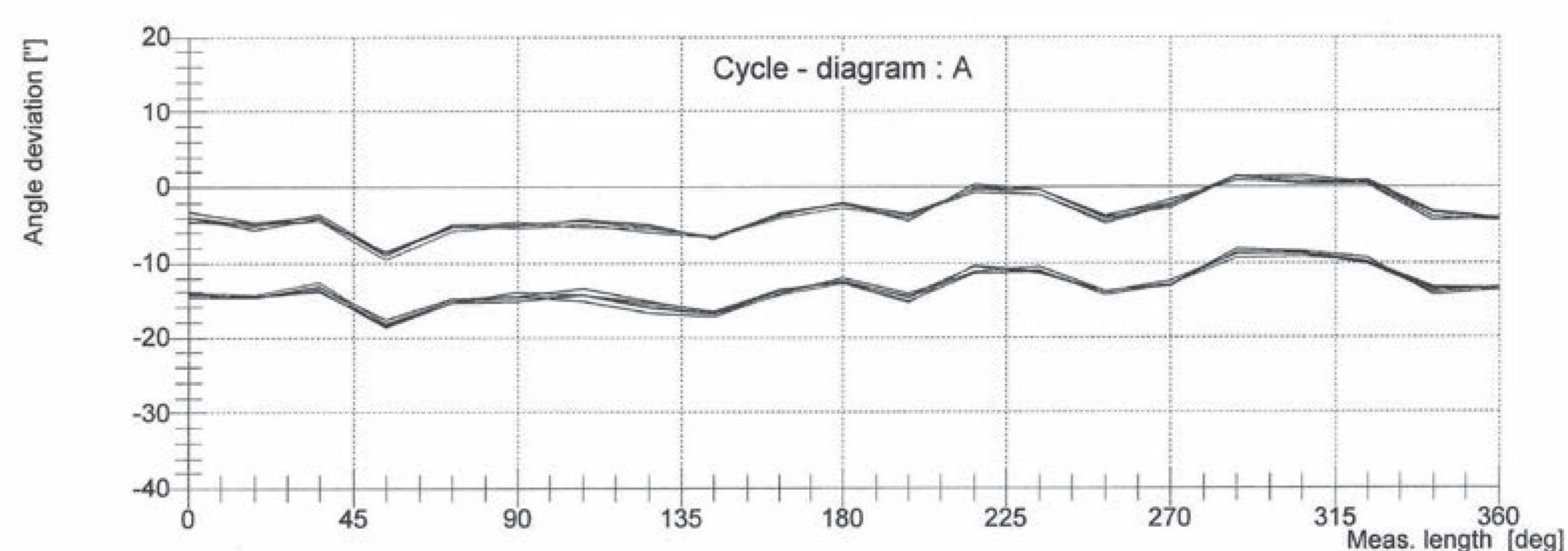
相同中心距 $R$ 的條件下，德川RGX的作用半徑 $r1$ 較一般滾子凸輪作用半徑 $r2$ 大，故扭力比一般滾子凸輪提升20%，幾何誤差較小，精度高。

## Strict Inspection Norm 嚴格的國際檢驗規範

**detron**

ISO 230-2 Norm (equal to JIS B 6192)

ISO 230-2 國際標準 (JIS B6192)



- ◀ ISO 230-2 精度測定方式是通過連續五次正轉/反轉重覆測定，與國際高階規範接軌。

**RGX170/210/255: 採用18度一測**

**RGX320H: 採用30度一測**

Accuracy Inspection upon ISO 230-2 international norm is operated with 5 continuous runs in clockwise and counterclockwise test.

**RGX170/210/255: by 18 degree measurement**

**RGX320H: by 30 degree measurement**



## Barrel Cam Drive 4 Axis 可變導程圓筒凸輪旋轉工作台

RGX-170X	RGX-210X
RGX-255H	RGX-320H



### RGX - 210X

- H** Hydraulic brake 油壓剎車
- X** Hydraulic clamp by air booster built-in 油壓剎車，內建氣轉油增壓缸

table diameter 盤面尺寸

vertical & horizontal application 立臥兩用

barrel cam drive 圓筒凸輪傳動

- Rolling contact reserves high rigidity, high speed and long endurance.  
滾子以滾動方式接觸，具有高剛性、高速性及耐久性等三大特性。
- Least drive energy wear-out and more than 90% transmission rate.  
減少驅動過程中之能量消耗，凸輪傳動效率可達90%以上。
- Backlash-free from rolling motion achieves high accuracy.  
無間隙傳動，實現高精度。
- RGX-170X、RGX-210X為內建空轉油系統，煞車鎖緊力優於同業。(不需配置油壓箱)  
RGX170/210X built-in air booster system assures more superior clamping force (additional hydraulic tank not required).

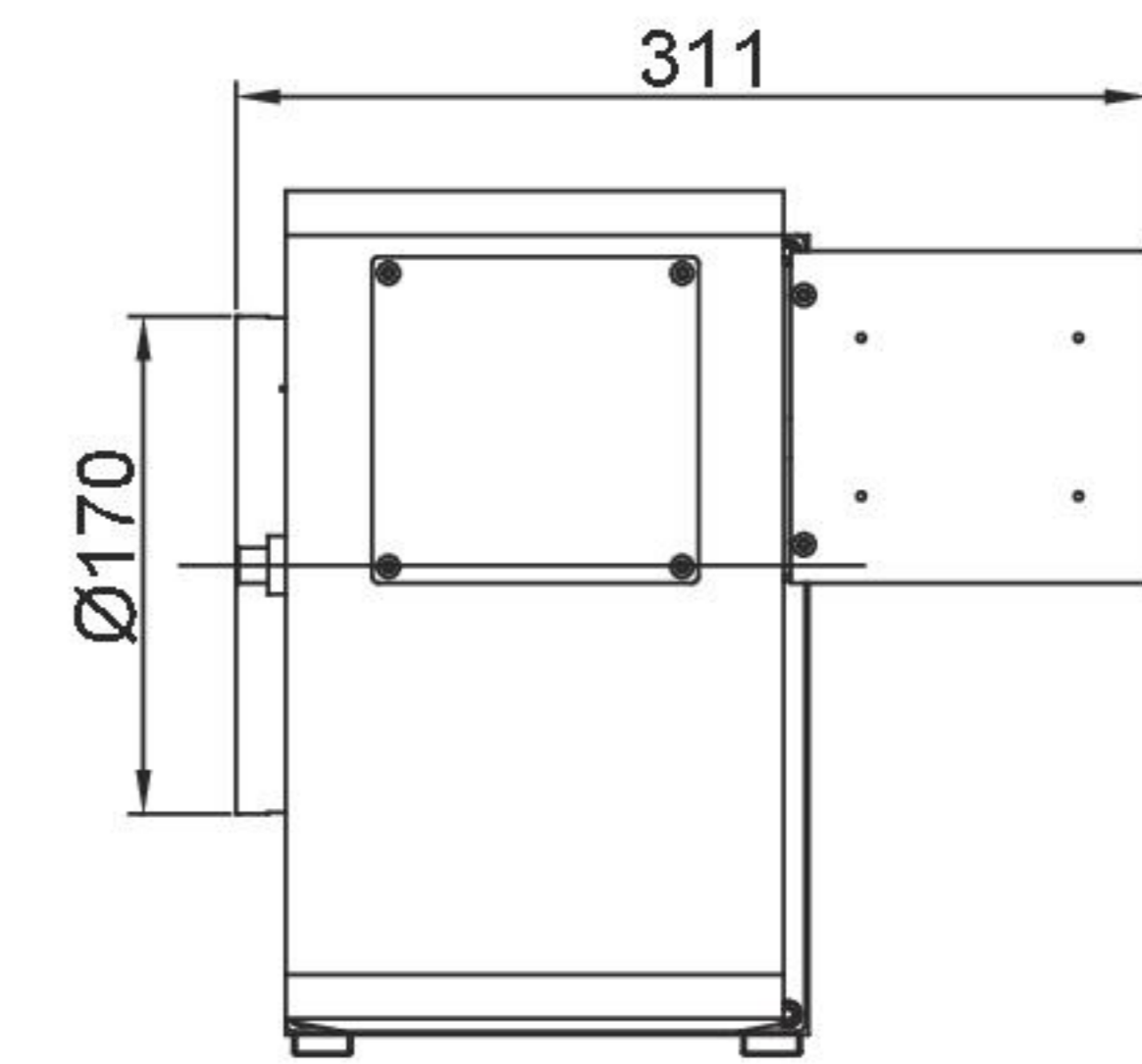
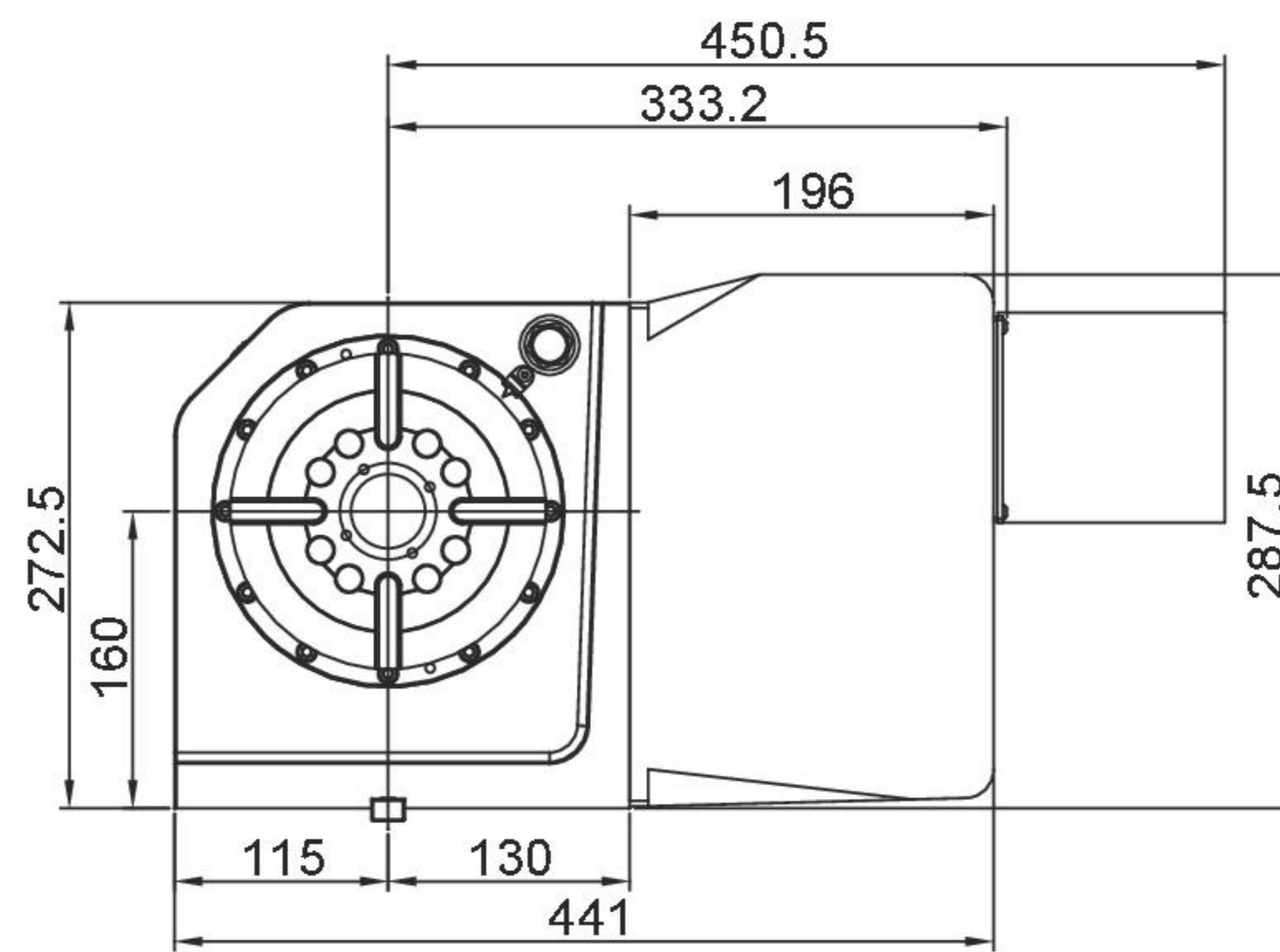
### 規格

MODEL SPECIFICATIONS 產品規格參數	Unit	RGX-170X	RGX-210X	RGX-255H	RGX-320H
Worktable bore diameter 旋轉台直徑	mm	170	210	255	320
Center bore diameter 中心孔直徑	mm	40	40	140	180
Through hole diameter 中心貫穿孔直徑	mm	40	40	90	140
Height of center 中心高度	mm	160	160	190	210
Clamping method / pressure 驅動方式/驅動壓力	MPa	0.6-0.7 Pne (氣轉油)	0.6-0.7 Pne (氣轉油)	5 Hyd	5 Hyd
Clamping torque 鎖緊扭矩	N.m	420	420	900	1600
Transmission ratio 減速比		1/30	1/30	1/60	1/72
Max. rotation speed 盤面最大轉速	min <sup>-1</sup>	83.3	83.3	50	41
Indexing accuracy 分度精度	sec.	20	20	20	20
Repeatability 重複精度	sec.	6	6	6	6
Allowable loading inertia 許容工件慣量	Kg.m <sup>2</sup>	0.72	0.72	2.43	5.1
Allowable cutting torque 許容切削扭矩	N.m	190	190	780	1055
Allowable loading capacity (Vertical) 負載容量 (立式)	Kg	100	100	150	200
Allowable loading capacity (Horizontal) 負載容量 (臥式)	Kg	200	200	300	400
Net Weight (servo motor excluded) 淨重 (不含馬達)	Kg	72	75	126	200



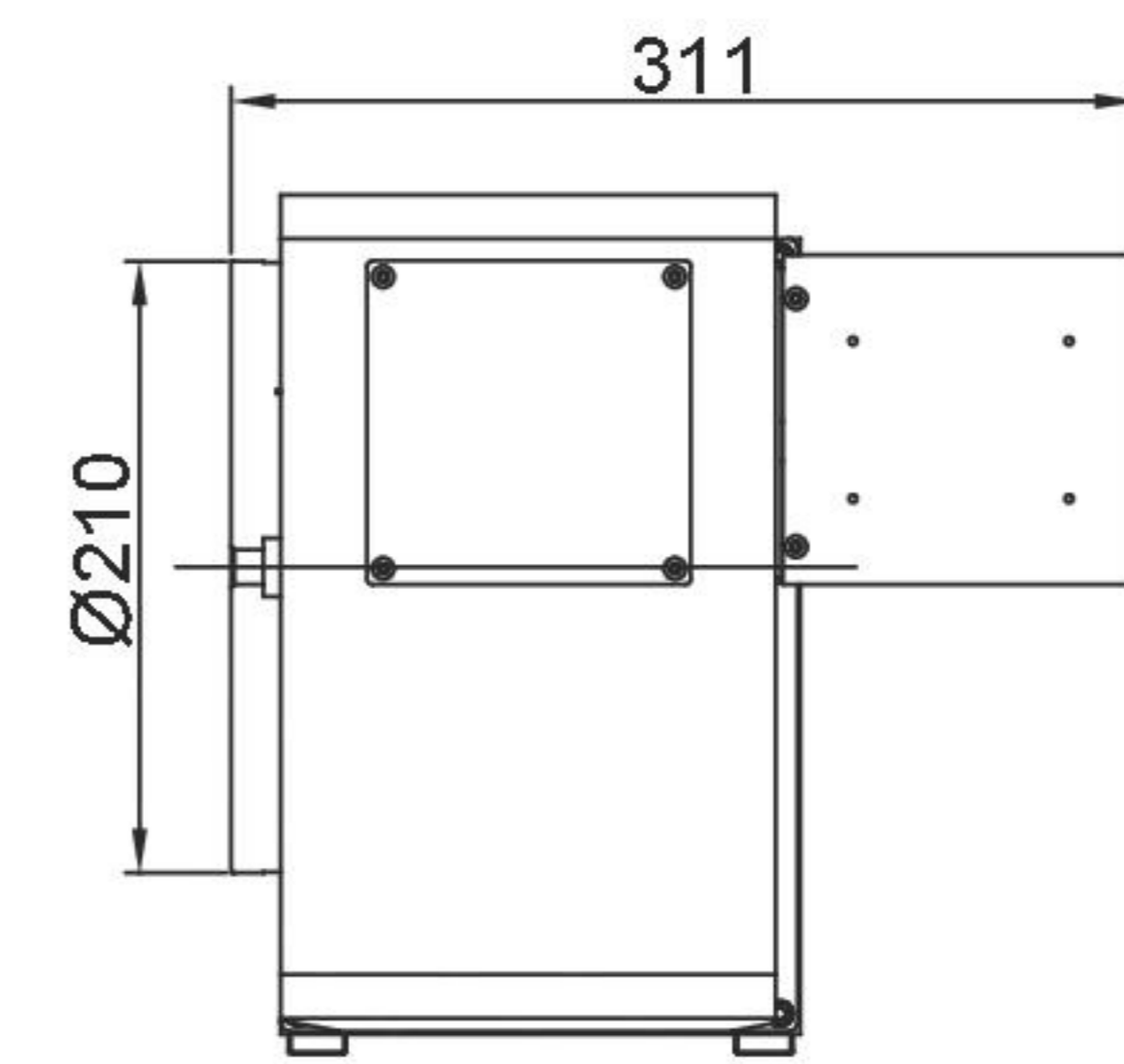
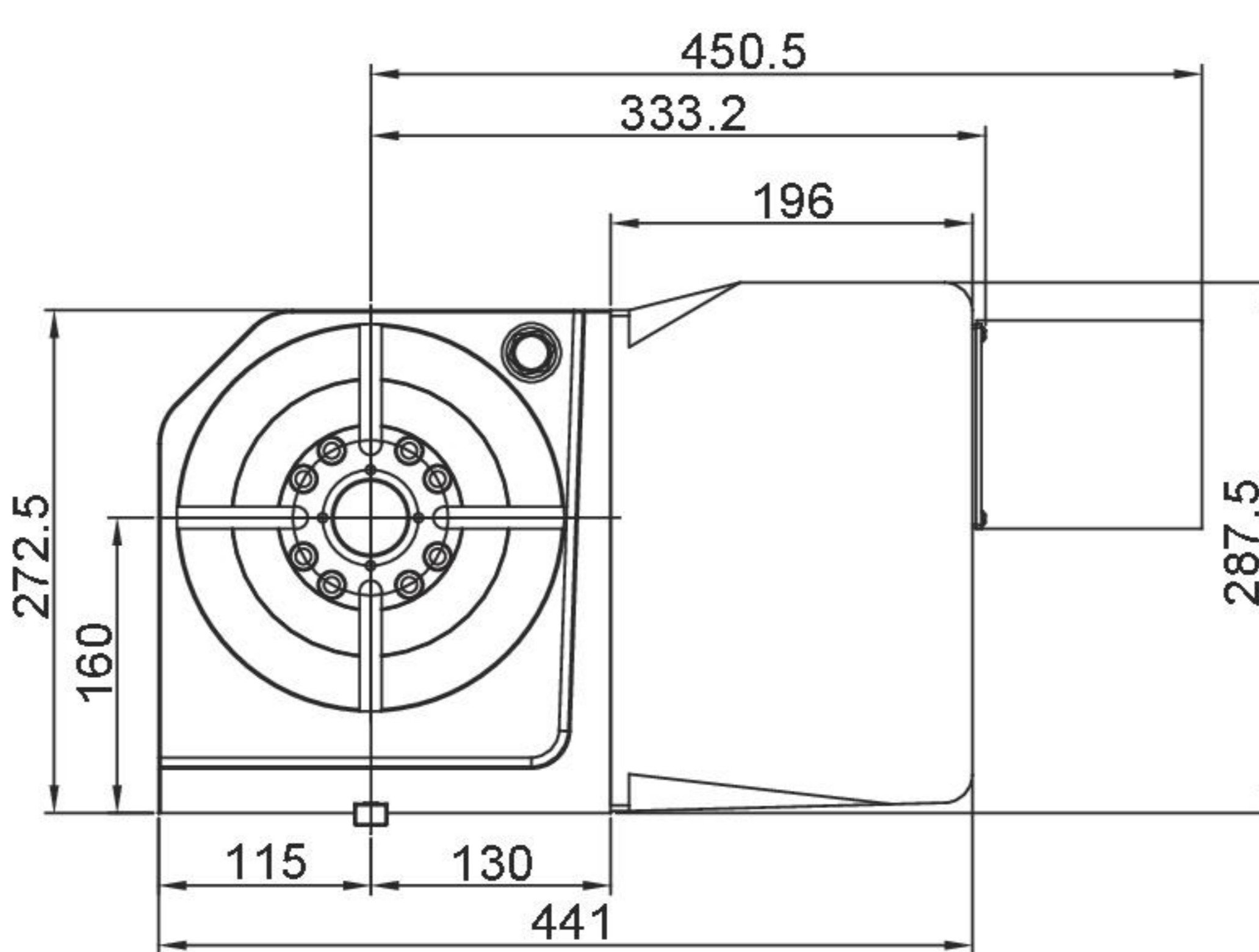
# DIMENSIONAL DRAWINGS 尺寸圖

## RGX-170X

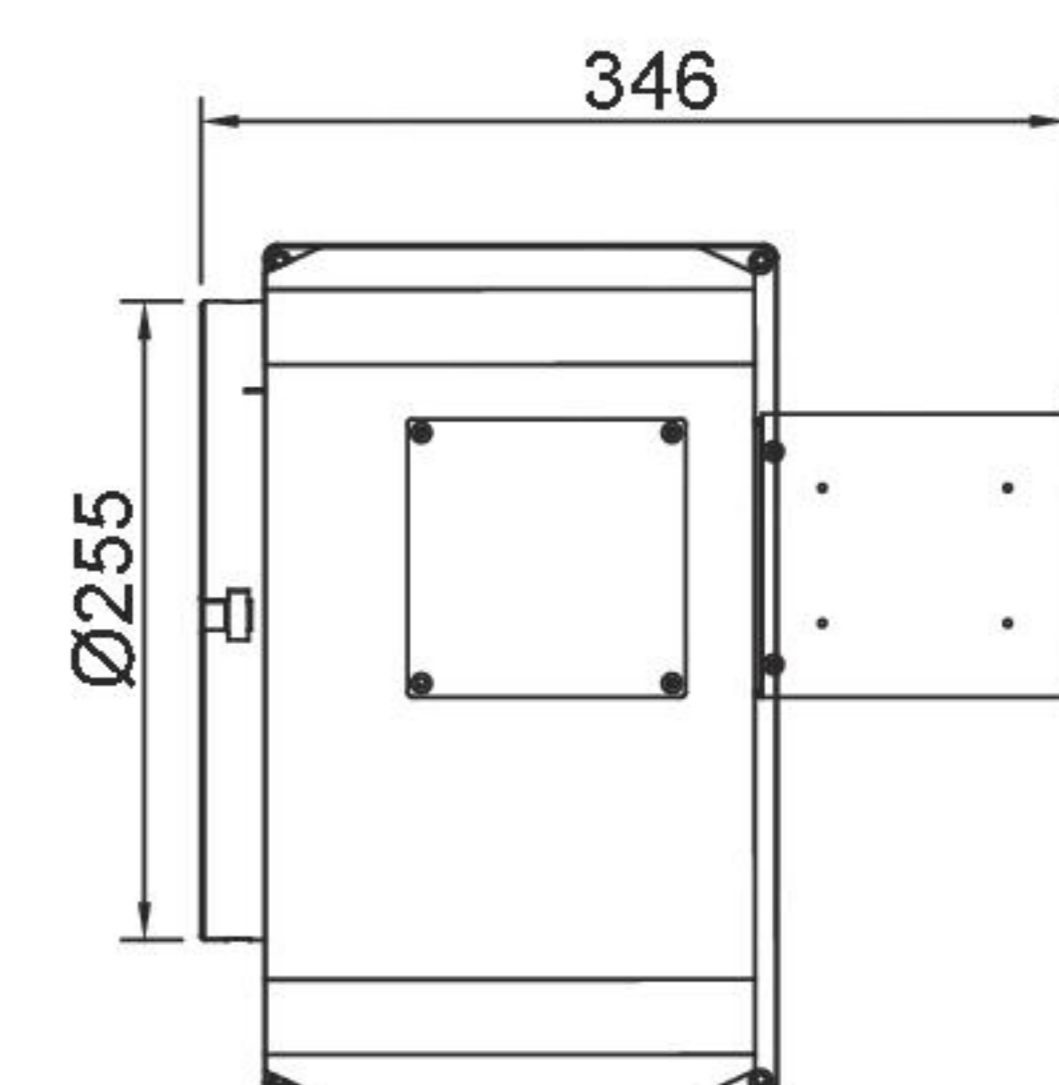
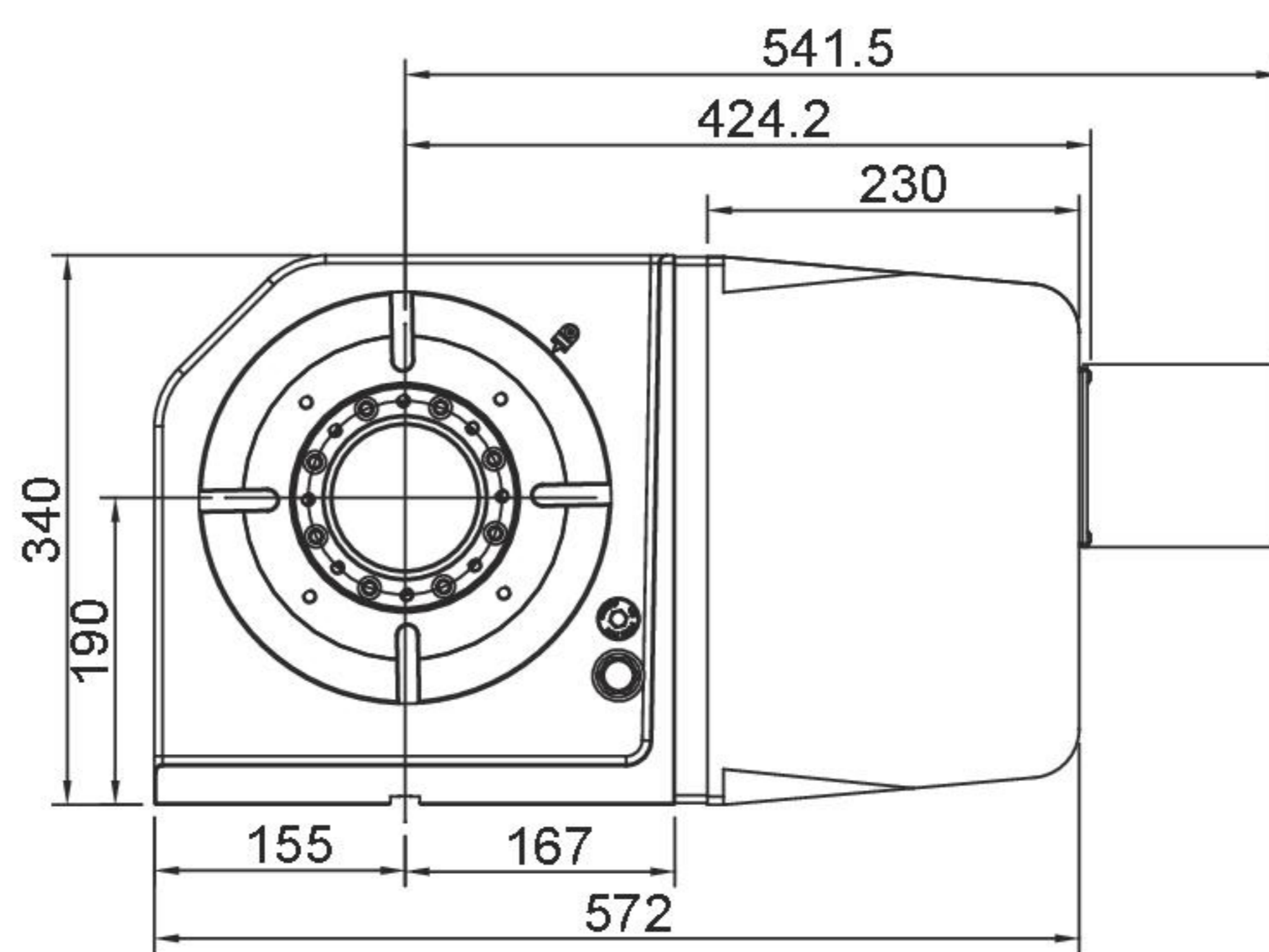


單位 : mm

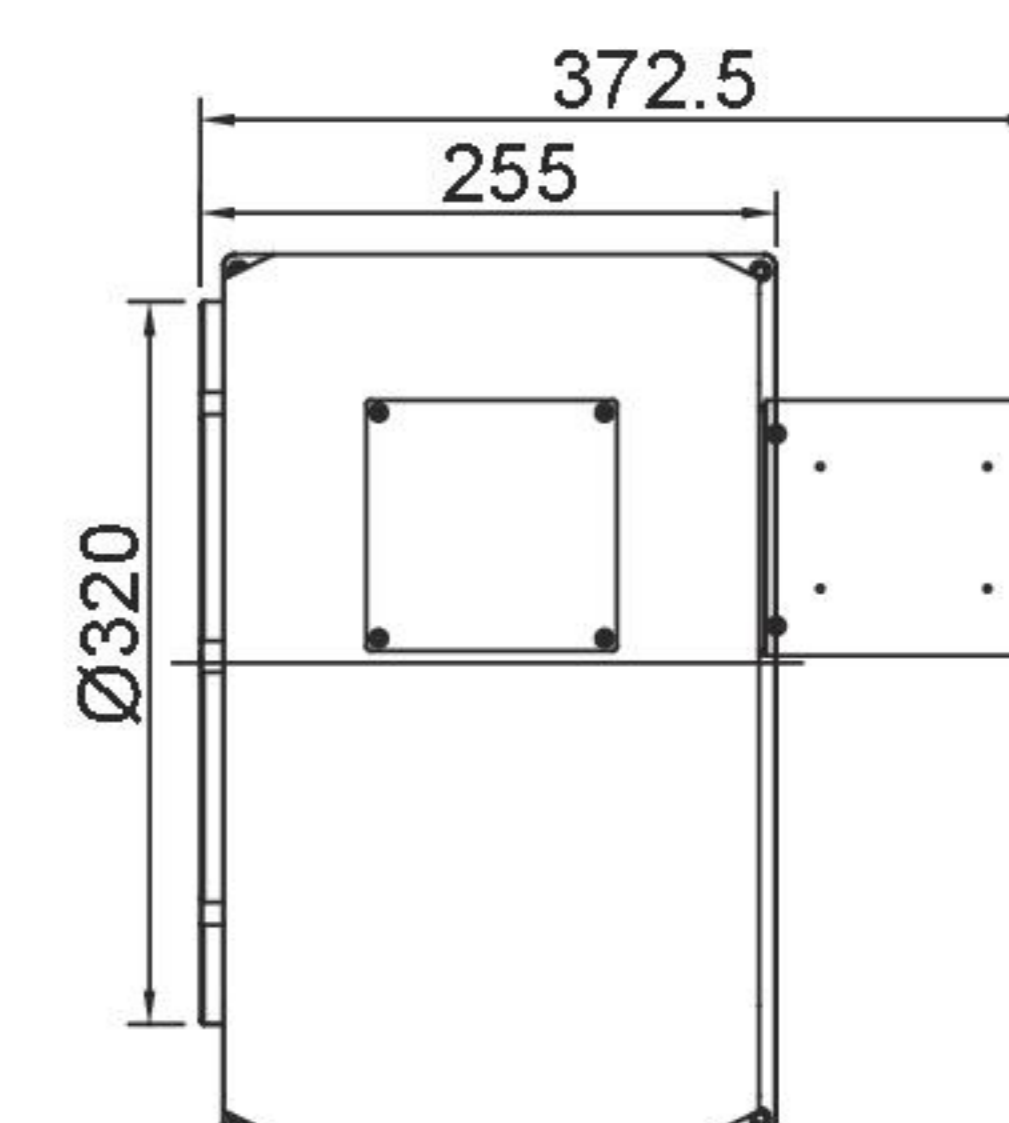
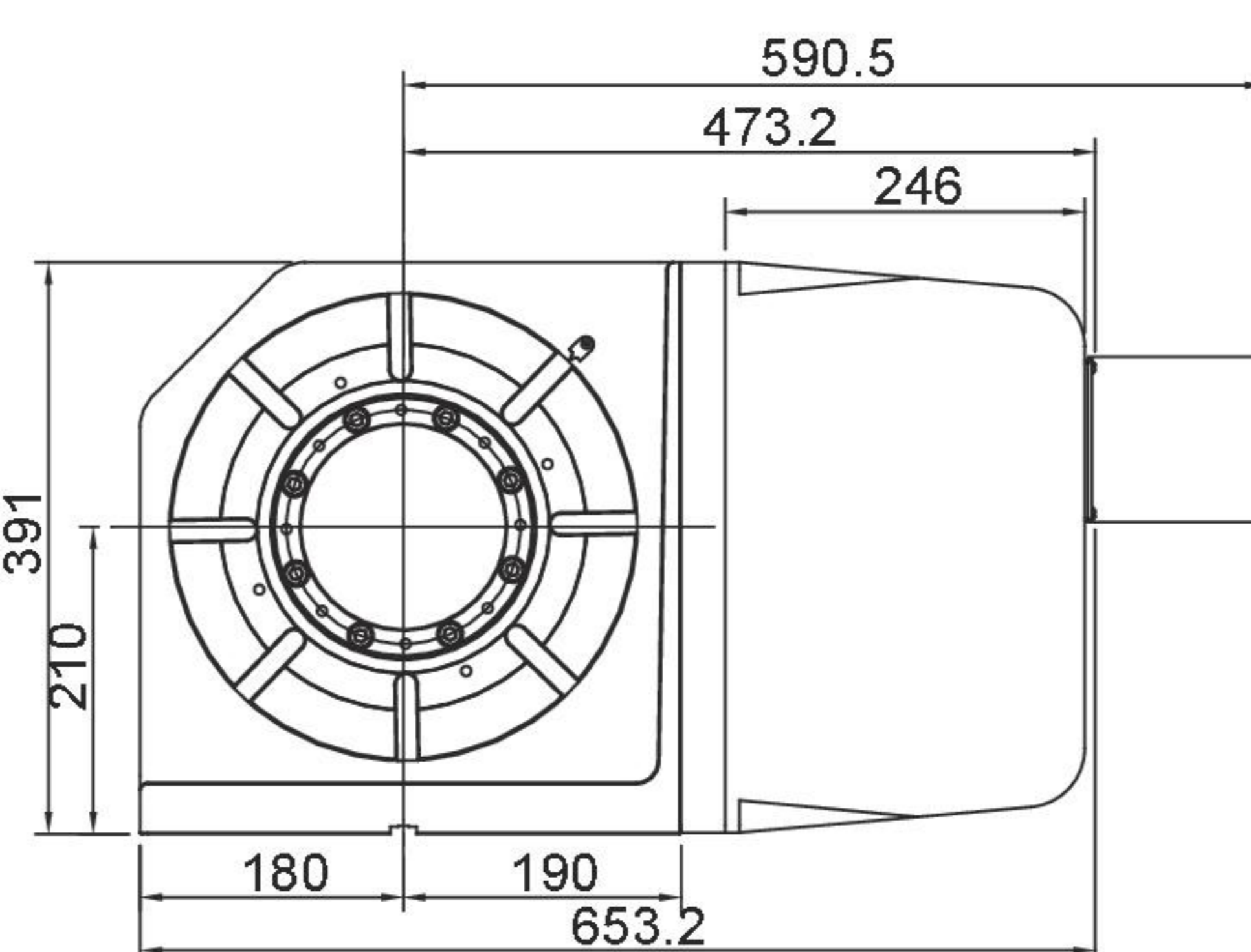
## RGX-210X



## RGX-255H



## RGX-320H



## Compatible Servo Motor 馬達選用表

機型 MODEL	RGX-170X	RGX-210X	RGX-255H	RGX-320H
FANUC	αiF4 / βis8	αiF4 / βis8	αiF8 / βis8	αiF12 / βis22
MITSUBISHI	HF/HG-54/104	HF/HG-54/104	HF/HG-154	HF/HG-204
SIEMENS	1FK7060	1FK7060	1FK7063	1FK7083
HEIDENHAIN	QSY116C	QSY116C	QSY116E	QSY155B

Note: 1. The length of servo guard may vary with servo motor type. (metal sheet dimensions shown above are based on Fanuc motor)  
 註 1. 伺服馬達護蓋長度依不同馬達而變更(右方鈹金尺寸以發那科馬達尺寸為基礎)。