

## Helicross Gearbox

We chose Helicross gear to design our new gearbox. Our new right-angle gearbox which is produced by patented technology is made with a hollow shaft.



## Premium Design

- Strong and elegant-looking design
- Load distributing design for enhanced durability



## High durability

- Optimized angle of twist in gear and all Ball Bearing application maximize power transmitting efficiency
- Design for maximum of gear module
- Realization of Max. torque 140 Nm through special heat treatment
- Double heat treatment steel for improved gear durability



## Low noise and Low vibration

- Reduced noise through high-precision process for input and first gear
- RSG (Round Super Grinding) processing realized high precision machining

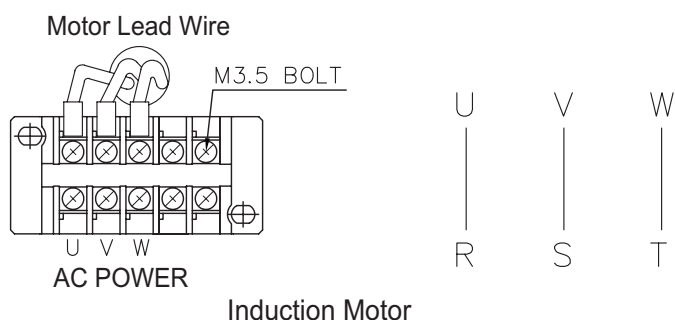




## Specifications

Item	MDSY series
Output	0.2 / 0.4kW
Type	Induction motor
Number of poles	4P
Number of phases	3-phase
Voltage	220~230V, 380~400V, 415~440V
Frequency	50/60Hz
Gear ratio	7.5~60
Rating	Continuous (S1)
Heat resistance class	B Class (130)
Starting method	Direct start
Cooling method	Totally-enclosed fan-cooled type
Degree of protection	IP55(Induction Motor) / IP40(Brake Motor)
Output shaft	Hollow Shaft type
Mounting method	For both flange and face mounting methods
Mounting direction	Installation in any direction
Installation location	Indoor
Ambient temperature	-10°C~ +40°C
Ambient humidity	85% RH or less
Altitude	1000 m or less above sea level
Lubrication method	Grease lubrication
Paint colour	Glossy Beige

## Motor wiring diagram

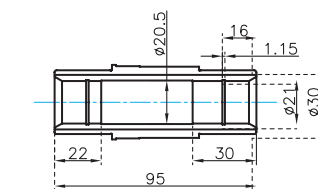
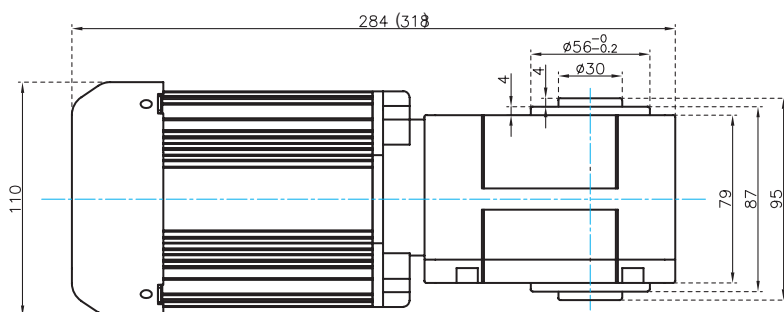


## Maximum Permissible Torque

Output	Gearratio		7.5	15	30	50
0.2kW	60Hz	r/min	240	120	60	36
	50Hz		200	100	50	30
	60Hz	kgfcm	67.6	135	270	451
	50Hz		81.1	162	325	541

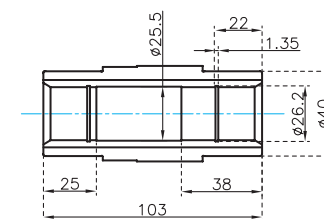
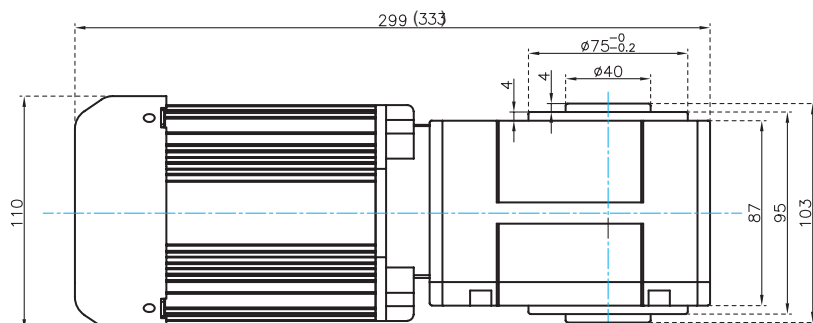
1. The Roating speed is calculated by dividing the motor's synchronous speed (50Hz: 1500r/min, 60Hz: 1800r/min) by the gear ratio. The actual speed is 2~20% less than
2. Calculation of N.m = kgfcm X 0.98

## Outline Dimension Drawings MDSY 0.2kW gear ratio(7.5:1~30:1)



Detailed dimensional drawing of output shaft

## Outline Dimension Drawings MDSY 0.2kW gear ratio(40:1~60:1)



Detailed dimensional drawing of output shaft

## Helicross Gear box Motor assembly .2kW

Model	Specifications
MDSY20S-7.5N020-G	Induction motor .2kW, 3-phase, 220/230V 50/60Hz Gear ratio 1:7.5, 181.3/217.3 r/min, Hollow shaft $\phi 20$ Torque 81.1kgfcm, IP55, Ins. ClassB, TP
MDSY20S-015N020-G	Induction motor .2kW, 3-phase, 220/230V 50/60Hz Gear ratio 1:15, 90.7/108.7 r/min, Hollow shaft $\phi 20$ Torque 162kgfcm, IP55, Ins. ClassB, TP
MDSY20S-030N020-G	Induction motor .2kW, 3-phase, 220/230V 50/60Hz Gear ratio 1:30, 45.3/54.3 r/min, Hollow shaft $\phi 20$ Torque 325kgfcm, IP55, Ins. ClassB, TP
MDSY25S-050N020-G	Induction motor .2kW, 3-phase, 220/230V 50/60Hz Gear ratio 1:50, 27.3/32.6 r/min, Hollow shaft $\phi 25$ Torque 541kgfcm, IP55, Ins. ClassB, TP
MDSY20S-15N020-5	Induction motor .2kW, 3-phase, 415/440V 50/60Hz Gear ratio 1:15, 90.6/108.6 r/min, Hollow shaft $\phi 20$ Torque 162kgfcm, IP55, Ins. ClassB, TP
MDSY20S-30N020-5	Induction motor .2kW, 3-phase, 415/440V 50/60Hz Gear ratio 1:30, 45.3/54.3 r/min, Hollow shaft $\phi 20$ Torque 325kgfcm, IP55, Ins. ClassB, TP
MDSY25S-50N020-5	Induction motor .2kW, 3-phase, 415~440V, Gear ratio 1:50, Hollow shaft $\phi 25$ , 30RPM, 541kgfcm, TP

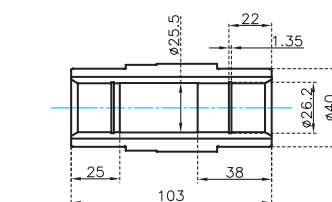
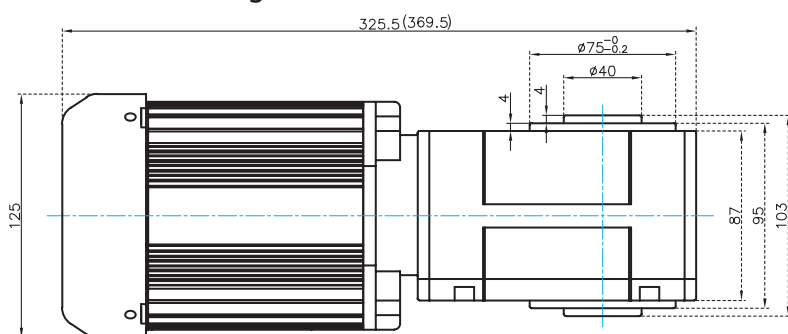
## Maximum Permissible Torque

Output	Gear ratio		7.5	15	30	50
0.4kW	60Hz	r/min	240	120	60	36
	50Hz		200	100	50	30
	60Hz	kgfcm	135	270	541	901
	50Hz		162	325	649	1082

1. The Roating speed is calculated by dividing the motor's synchronous speed (50Hz: 1500r/min, 60Hz: 1800r/min) by the gear ratio. The actual speed is 2~20% less than
2. Calculation of N.m = kgfcm X 0.98

## Outline Dimension Drawings

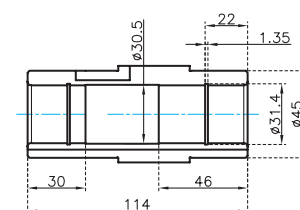
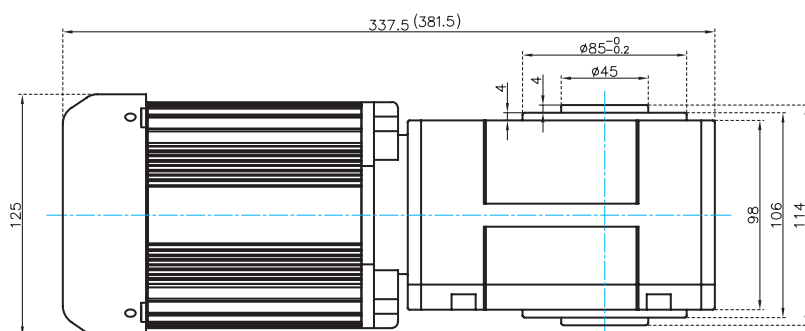
### MDSY 0.4kW gear ratio(7.5:1~30:1)



Detailed dimensional drawing of output shaft

## Outline Dimension Drawings

### MDSY 0.4kW gear ratio(40:1~60:1)



Detailed dimensional drawing of output shaft

## Helicross Gear box Motor assembly .4kW

Model	Specifications
MDSY25S-7.5N040-3	Induction motor .4kW, 3-phase, 220~230V, Gear ratio 1:7.5, Hollow shaft Ø25, 200RPM, 162kgfcm, TP
MDSY25S-15N040-3	Induction motor .4kW, 3-phase, 220~230V, Gear ratio 1:15, Hollow shaft Ø25, 100RPM, 325kgfcm, TP
MDSY25S-30N040-3	Induction motor .4kW, 3-phase, 220~230V, Gear ratio 1:30, Hollow shaft Ø25, 50RPM, 649kgfcm, TP
MDSY30S-50N040-3	Induction motor .4kW, 3-phase, 220~230V, Gear ratio 1:50, Hollow shaft Ø30, 30RPM, 1082kgfcm, TP
MDSY25S-15N040-5	Induction motor .4kW, 3-phase, 415~440V, Gear ratio 1:15, Hollow shaft Ø25, 100RPM, 325kgfcm, TP
MDSY25S-30N040-5	Induction motor .4kW, 3-phase, 415~440V, Gear ratio 1:30, Hollow shaft Ø25, 50RPM, 649kgfcm, TP
MDSY30S-50N040-5	Induction motor .4kW, 3-phase, 415~440V, Gear ratio 1:50, Hollow shaft Ø30, 30RPM, 1082kgfcm, TP