

MGH series

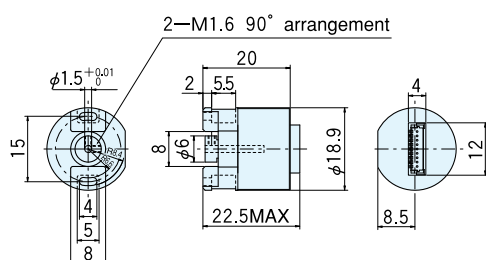
[Square Wave/Incremental]



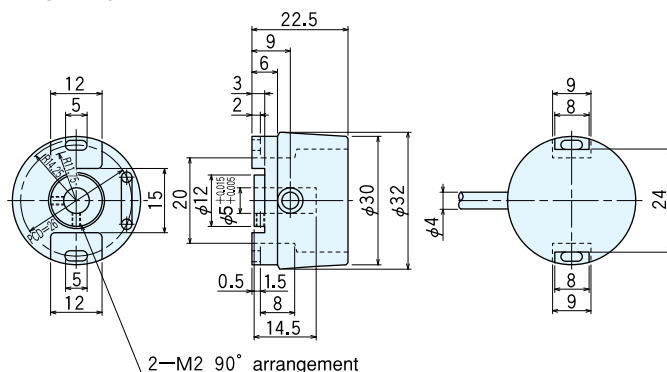
MGH-14, MGH-20, MGH-30

Outside dimensions

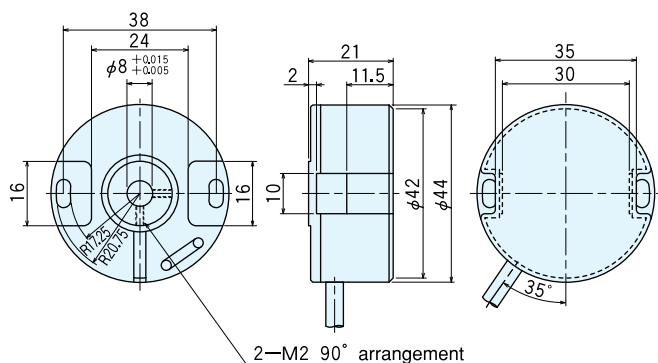
MGH-14



MGH-20



MGH-30



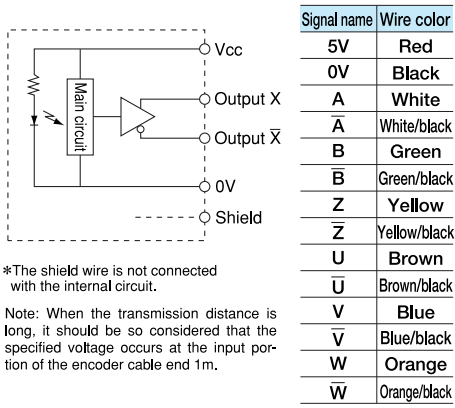
Specifications

Type name	MGH-14-□-C	MGH-20-□-E	MGH-30-□-E
Item	Pulse number CS signal ●No entry=nil ●CS=available	Pulse number CS signal ●No entry=nil ●CS=available	Pulse number CS signal ●No entry=nil ●CS=available
Supply voltage	DC+5V±10%		
Current consumption	40mA or less (under no load)	60mA or less (under no load)	
Detection system	Incremental		
Output pulse number (Standard) [Pulse number/rotation]	100 128 200 250 256 300	100 500 ※1,024 200 ※500 1,200 250 512 256 600 300 800 360 1,000 400 ※1,000	100 500 1,200 200 600 1,500 250 800 1,800 300 1,000 2,000 360 ※1,000 ※2,000 400 1,024 450 ※1,024
Output phase	A, B, Z, U, V, W phase	A, \bar{A} , B, \bar{B} , Z, \bar{Z} phase *with CS signal U, \bar{U} , V, \bar{V} , W, \bar{W} phase	
Output form	Square wave Open collector output	Square wave Line driver output	
Output capacity	Sink current 20mA or less, residual voltage 0.5V or less (at 10mA)	$V_{OL}=0.5V_{max}$ $V_{OH}=2.5V_{min}$ $I_o=\pm 20mA$	
Maximum response frequency (response pulse number)	100kHz	150kHz	
Output phase difference	A, B phase difference $90^\circ \pm 45^\circ$ (T/4 \pm T/8) Z phase T \pm T/2 With CS signal (U, V, W) 4 poles, 60° phase difference 3 signals		
Waveform rise/fall time	2 μ s or less		
Maximum allowable revolutions (mechanical)	6,000r/min		
Working ambient temperature/humidity	0°C~60°C RH35%~90% no dewing	-10°C~80°C RH35%~90% no dewing	
Storing ambient temperature	-20°C~80°C		
Vibration resistance	Durability 55Hz, double amplitude 1.5mm 2 hours each in X, Y, and Z directions		
Impact resistance	Durability 500m/s ² (about 50G) 3 times each in X, Y, and Z directions		
Cable	Conector type	Outside diameter $\phi 4.2$ ($\phi 6.8$) 8-core(19-core) vinyl wire Insulated shield cable length 1m (length 0.5m)	
Mass	10g	60g	100g

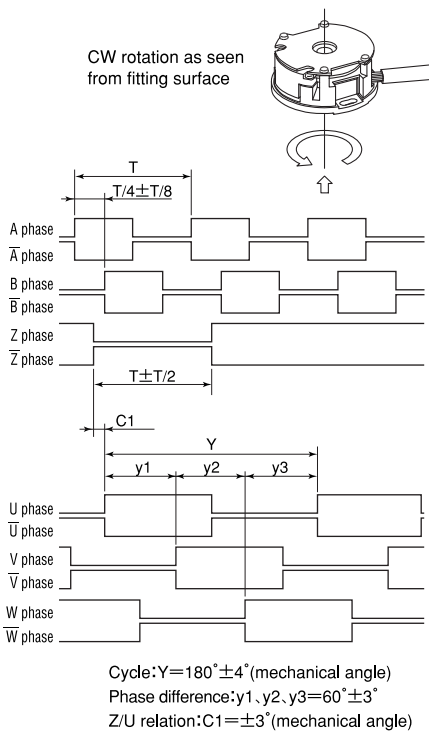
Allowable change amount of fitting shaft

		MGH-14	MGH-20	MGH-30
Allowable eccentricity	Radial	100~200	250~300	—
	Thrust	100~200	250~600	800~1,200
		100~300	400~1,024	1,200~2,000
		$\pm 0.02mm$		$\pm 0.01mm$
		$\pm 0.1mm$	$\pm 0.05mm$	$\pm 0.02mm$

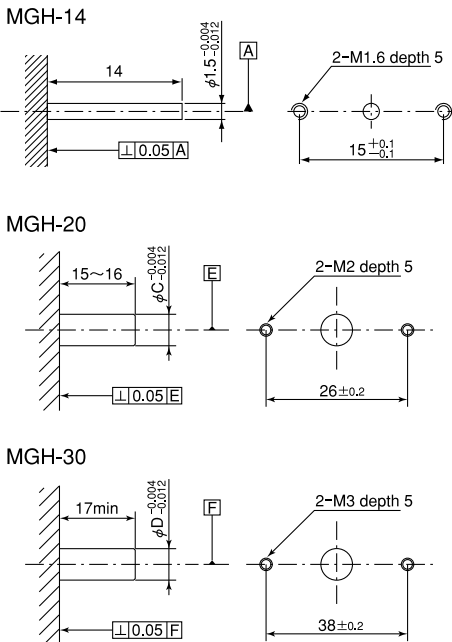
Output circuit diagram



Output waveforms



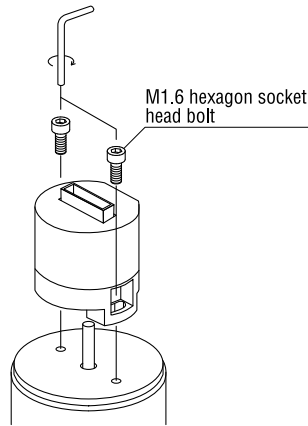
Fitting shaft dimensions



Assembling image of MGH series

MGH-14

1. Fix the encoder to the base of rotating shaft.



Tools to be used

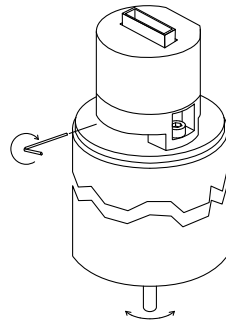
- 0.71mm hexagon wrench
- 1.5mm hexagon wrench

Attachment

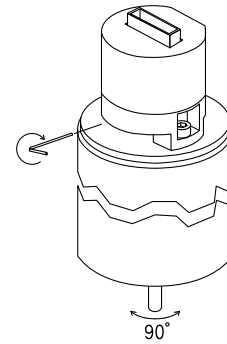
- Hexelax stopping screw (M1.6) 2pcs

2. Phase U, output of moter rises at the same moment with of encoder.

- 3-1. Search for a screw by turning the rotating shaft and fix it.

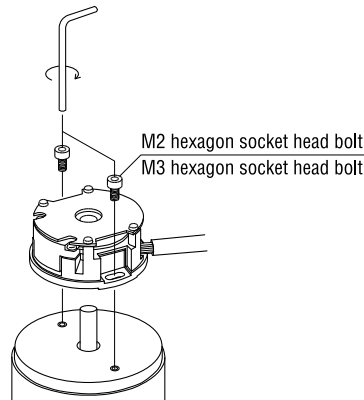


- 3-2. Turn the shaft 90° right or left and fix the other screw.



MGH-20、30

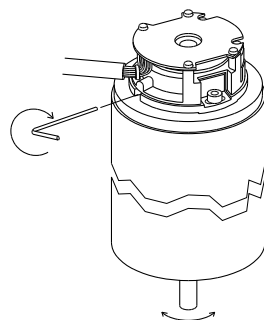
1. Fix the encoder to the base of rotating shaft.



Tools to be used

- 0.89mm hexagon wrench
- 1.5mm hexagon wrench(MGH-20)
- 2.5mm hexagon wrench(MGH-30)

- 2-1. Search for a screw by turning the rotating shaft and fix it.



- 2-2. Turn the shaft 90° right or left and fix the other screw.

