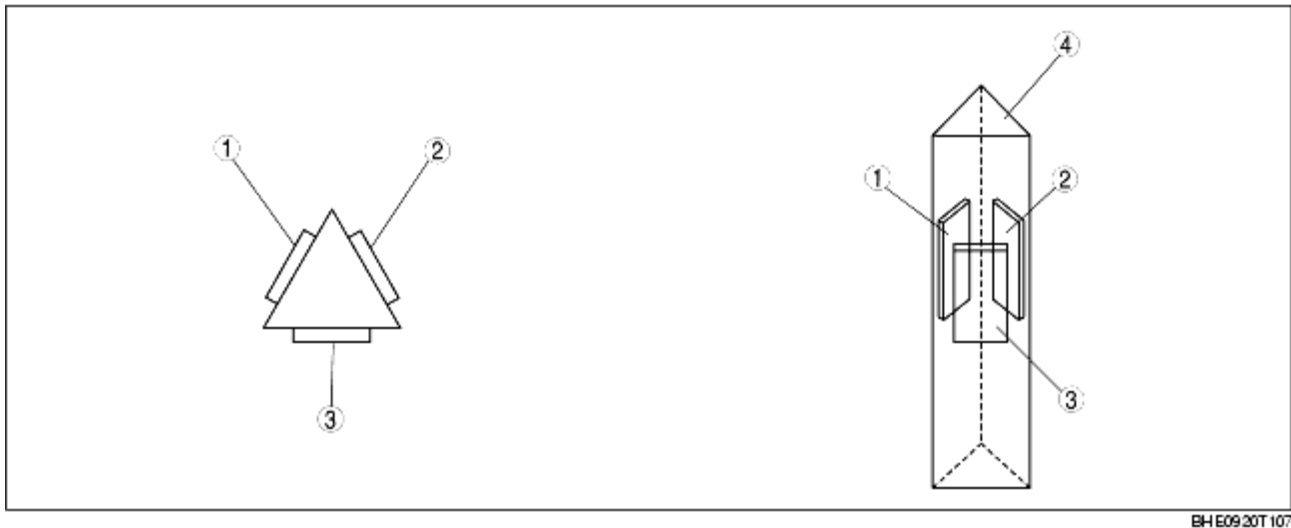


GYRO SENSOR CONSTRUCTION/OPERATION

B3E092066902T04

• A piezoelectric type (utilizes the piezoelectric effect) gyro sensor is used. It is composed of three piezoelectric transducers, a drive transducer and two pick-ups, used to drive and sense the vibrations of the triangular pillar. Both parts are installed on each surface of the triangle pillar. Piezoelectric transducer can either be distorted by electrical voltage, or can create electrical voltage by being distorted. The gyro sensor uses both characteristics of the piezoelectric material.

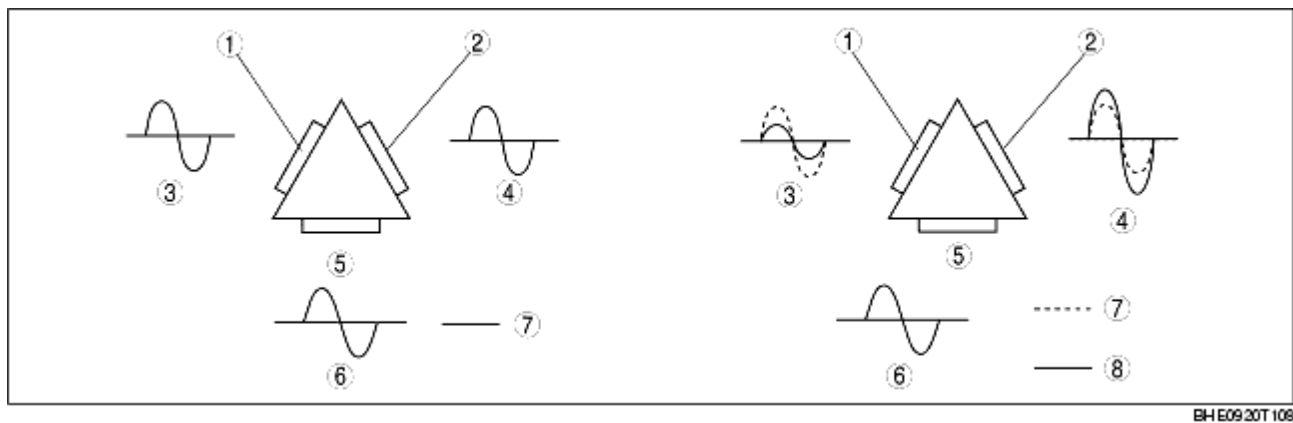


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1	Pick-up (left)
2	Pick-up (right)
3	Drive transducer
4	Triangular pillar

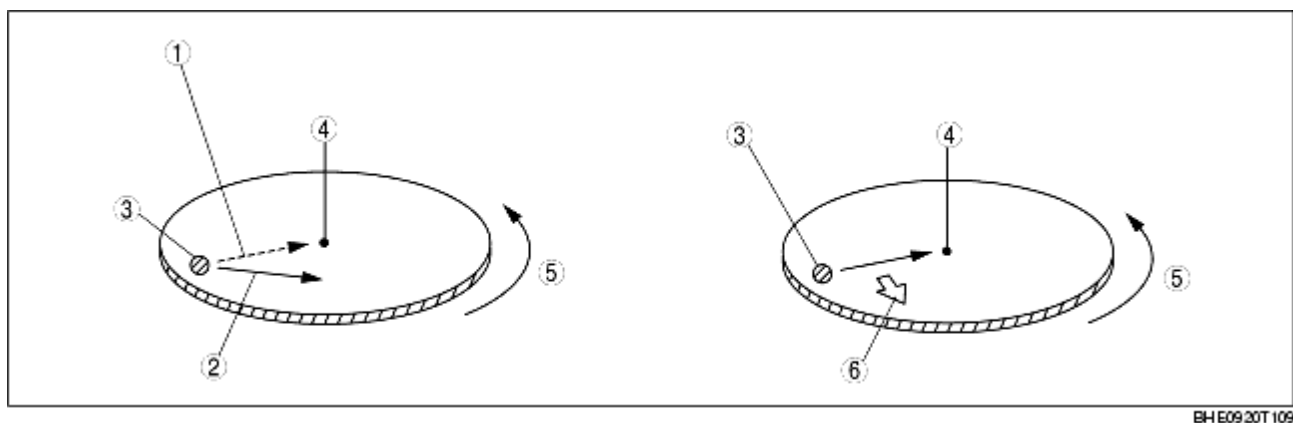
• One face of the triangular pillar functions as the driving side, the others function as pick-up sides. Electrically induced vibration of the drive transducer causes the pick-up sides to vibrate, and the pick-up sides produce an electrical current.

• The pick-up sides are distorted by Coriolis force *, which happens as a result of the turning arc and its effect on the center axis of the sensor pillar. Two piezoelectric pick-up sides convert the distortion amount into two electrical signals to indicate the exact yaw ratio.



1	Pick-up (left)
2	Pick-up (right)
3	Output voltage (left)
4	Output voltage (right)
5	Drive transducer
6	Input voltage
7	Straight ahead travel
8	Right turn travel

*Coriolis force : If turning velocity is added to an already-moving object, force is produced at a right angle to the object's path of travel.



1	Intended direction of object
2	Object's actual direction of advance
3	Moving object
4	Center axis
5	Turning direction
6	Coriolis force