Ripple Generator

Adjustable Phase, Variable Speed

PA3430-008

Description:

Adjustable phase and variable speed ripple generator for use with IEC ripple tanks.

The IEC Ripple Generator body can be clamped to any 6.3mm (1/4") diameter rod, but it is normally clamped to a special support rail which is held over an IEC ripple tank by sliding it into the desired set of grooves provided along the sides of the tank.

The correct height is set by adjusting the locking collars on the two short legs of the support rod.

The generator can be locked on the support rod at either of two positions, which are 90^{o} apart.

The Ripple Generator consists of a small electric motor which is gear driven to a double ended output shaft which carries two cams.

These cams can be twisted by the fingers relative to one another so that they drive the two side plates up and down either exactly in unison (in phase) or by some angle out of phase.

If one plate achieves highest point at the same time as the other plate achieves the lowest point, they are then 180^{o} out of phase.

The ripple generator (rippler) is supplied without devices, but it clamps to the horizontal rod from a retort stand or as supplied with the Ripple Tank.

It accepts standard IEC Ripple Tank kit ripple making devices to become:

- Straight wave generator of variable frequency.
- Two point source generator, with adjustable phase delay between the two points.
- Multiple point source generator for illustrating single slit diffraction.

Length: 73mm	Width: 38mm

Speed Control of the Ripple Generator (Rippler):

The Ripple Generator may be connected to the terminals of any Power Supply set between 6 and 12V.AC or DC. The 12V Light Source of the ripple tank can be connected to the same power source. Several Generators may be connected to the same power source so that several ripple tanks can run from the one 12V.AC or DC power source.

A knob on the body of the rippler permits control of the rippler speed. The current supplied to the rippler motor is controlled so that motor damage due to high voltages and high speeds is eliminated. If the rippler appears to be operating too slowly, check for tightness or jamming in the rippler. Be sure the side plates can slide easily and the rubber band retaining the side plates is not too tight. When the rotary cam is turned by the fingers, everything should move very freely.

Note: For older models without speed control, the motor can be connected directly to the power source, but be careful, to avoid motor damage, the voltage applied must be DC only and must not exceed 3 Volts.

Operation:

Lock the generator on the support rod so that the moving side plates are parallel to the support rail. The rubber band around the body of the generator holds the side plates gently but firmly in place. The Wave Length (or frequency) of ripples may be varied by adjusting the motor speed control knob on the generator.

Various types of rippler devices, as supplied in the complete Ripple Tank kit, can be fitted to the ripple generator to produce waves of the desired type. Barriers of various shapes can be placed in the water to produce reflections as required for various experiments and the instructions packed with the Ripple Tank provide information on their use.

Fig. 1 shows ripple generator clamped to the support rod (looking from the top). The generator can clamp to the rod also at 90^0 around.

Fig. 2 shows ripple tank assembly with ripple generator mounted on its support rod. Note the two cams protruding from the side plates. These cams can be rotated relevant to one another to set the phase between them.

Fig. 3 shows the ripple generator and its speed adjustment knob fitted with a straight sheet rippler with one or more point source tips fitted. All point sources dip into the water at the same time to create a multiple point source.

Fig. 4 shows ripple generator and its speed adjustment knob with a separate point source fitted to opposite side plates to permit the adjustment of phase between them. This provides two point sources of waves with adjustable phase.

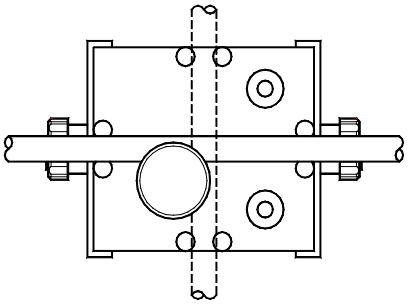

Fig 1

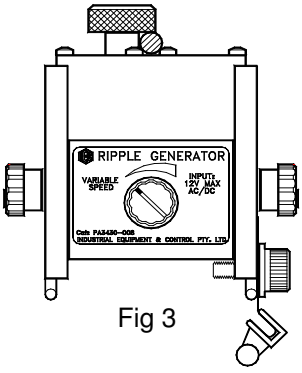

Fig 3

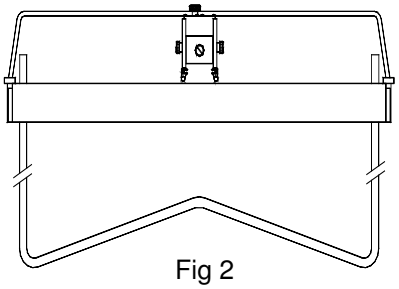

Fig 2

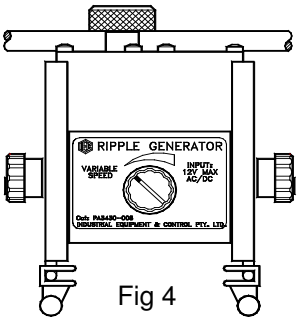

Fig 4

Designed and Manufactured in Australia