armfield

FLUID MIXING STUDIES

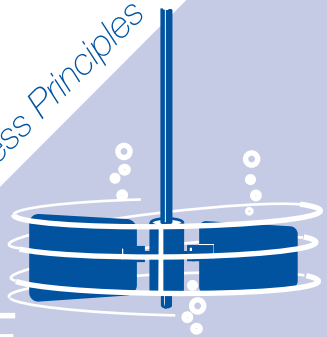
CEK
issue 8

The Armfield Fluid Mixing Apparatus has been developed to demonstrate the factors affecting mixing using visualisation and measurement techniques as appropriate. It is suitable as an instructional aid or as a design tool for large scale mixers.

DEMONSTRATION CAPABILITIES

- *mixing/flow patterns (visualisation)*
- *power/speed characteristics of different impellers*
- *mixing of solid/liquid suspensions*
- *mixing characteristics using immiscible liquids*
- *quality of mixing/mixing time*
- *prediction of power in large scale mixers using modelling techniques*

Basic Process Principles



CE

DESCRIPTION

Choosing a mixer for a particular application depends on the degree of bulk movement or shear mixing required. In order to predict full scale needs it is usual to model the system and apply dimensional analysis. The Armfield CEK Fluid Mixing Apparatus is suitable as an instructional aid or as a tool in the design of large scale mixers.

The apparatus consists of a clear acrylic cylindrical mixing vessel over which is mounted a variable speed motor which drives a vertical drive shaft.

The vessel incorporates a drain tap and a set of removable baffles.

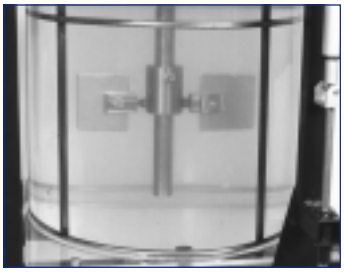
A dynamometer, mounted on a bridge, measures the torque using a direct reading force balance. It may be removed for installation of the appropriate impeller on the drive shaft.

A range of impellers, including a propeller, turbine and various flat blade paddles, is supplied.

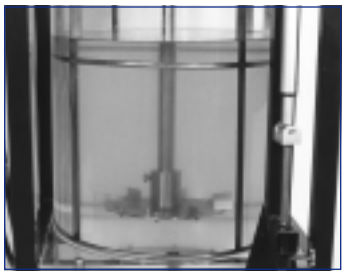
An electronic controller is used to vary the speed of the DC, geared motor. A tachometer gives an accurate indication of shaft speed.

ORDERING SPECIFICATION

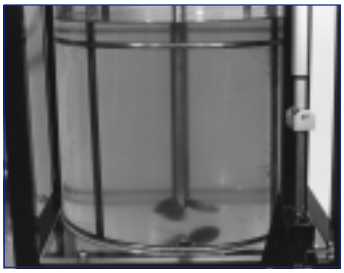
- ***A 25 litre clear acrylic vessel with drain tap and removable baffles, mounted within a steel frame.***
- ***Agitation is provided by a variable speed motor giving a drive shaft speed range of 0-500rpm. Shaft speed is measured by a tachometer.***
- ***The unit is supplied with 8 impellers of different design or scale which are readily interchanged on the drive shaft. Shapes include propeller, turbine and various flat blade paddles.***
- ***The torque is measured by a direct reading force balance dynamometer with a power range of 0-75W.***
- ***Capabilities include: mixing and flow pattern visualisation, power and speed characteristics of different impellers, mixing characteristics of immiscible liquids and solid/liquid suspensions, quality of mixing/mixing time and prediction of power in large scale mixers using modelling techniques.***



Flat blade paddles



Turbine



Propeller

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436 West Commodore Blvd (#2)
Jackson NJ 08527
Tel: (732) 928-3332
Fax: (732) 928-3542
E mail: armfield@optonline.net

SERVICES REQUIRED

Electrical supply:

CEK-A:	*220-240V/1ph/50Hz*
CEK-B:	*120V/1ph/60Hz*

OVERALL DIMENSIONS

Height:	*860mm*
Length:	*820mm*
Depth:	*400mm*

SHIPPING SPECIFICATION

Volume:	*0.8m³*
Gross weight:	*100kg*

Specifications may change without notice
iss8/5k/1102/B&S.