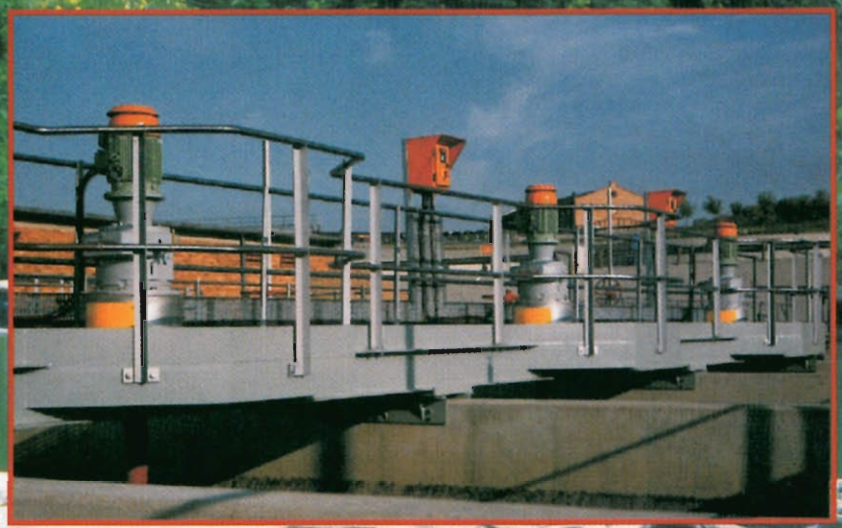


MIXERS FOR WATER CARE & ENVIRONMENTAL PROTECTION PROCESSES

MIXTEC

FOR MIXING TECHNOLOGY

ORGANISATION PROFILE

The **Mixtec** group of companies offers a wide range of specialised mixing equipment for the water care and environmental protection industries. Its ability to solve mixing problems with the latest technology and expertise is solely due to it's commitment to mixing research and development.

At engineering design facilities on five continents, each producing high quality mixers to the latest international standards and quality controls, we offer affordable technology and mechanical hardware. Whether your requirements are for simple reagent blending or neutralisation to the more exacting standards of gas dispersion and oxygen transfer, **Mixtec** has the capability and experience to suit your needs today and in the future. Where entrusted with the design of your application, we will offer a double warranty on mechanical as well as process design. To back this up is a proven track record of thousands of installations from fractional kilowatt to duties requiring hundreds of horsepower.

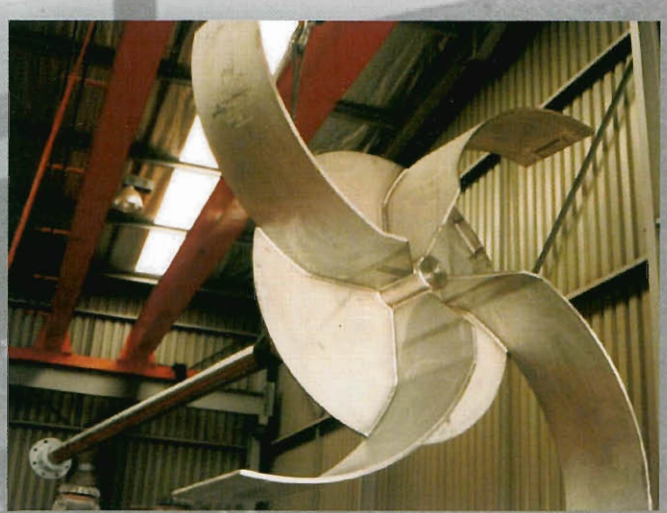
Mixtec's constant research and development policy has been the key to our growth and our policy is to provide custom made mixing equipment, better service and cost effective answers to your problems.

RESEARCH & DEVELOPMENT

Our laboratory and fluid handling facilities can assist you in the desired process response and our experienced application engineers can guide in the correct mixer selection as well as special arrangements such as anti-vortex baffles, mounting structures, risers, dip tubes and vessel or beam configuration. In addition our customer design service in conjunction with our fluid laboratory are capable of producing the information necessary to complete a mixer design if little or no data is available.

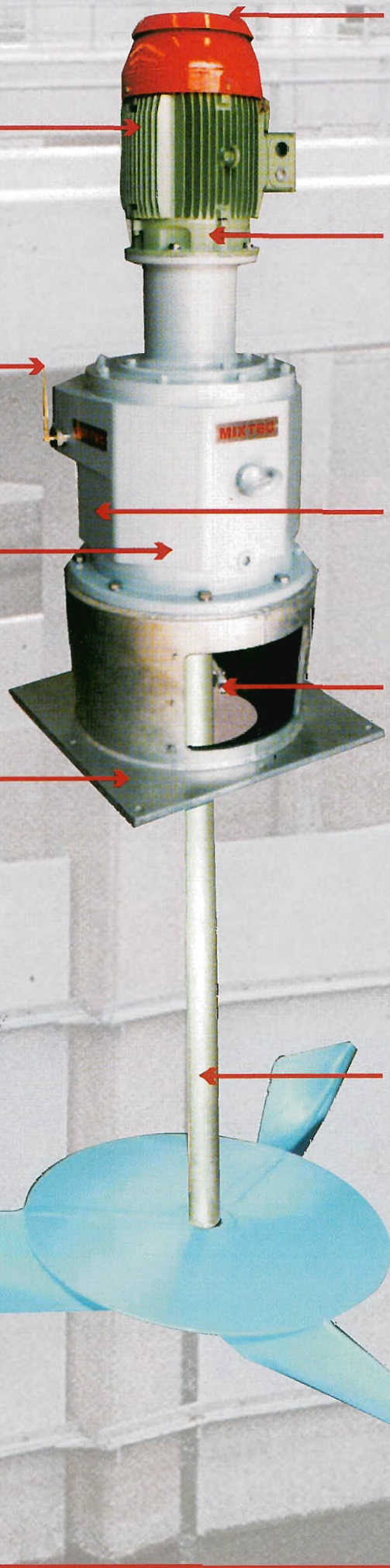
Laboratory strain gauge analysis on new impeller

Mixer test facility



HA794 Impeller

DESIGN



The weather canopy to ensure no water contamination of the non-drive end motor bearings thereby increasing motor life.

Grease lubrication nipples also increase motor life and allow simple maintenance. Anti-condensation heaters built into the motor reduces moisture and the possibility of motor burnout.

Flexible coupling and pre-machined spigot mounting accurately mounts standard motors without creating alignment loads to motor or gearbox making it easy for installation and maintenance by inexperienced personnel.

A modern splash lubrication system with exterior sight glass even removes the need to physically check the oil level and allows the operator more time for other duties.

Cast iron construction of the gearbox and motor gives greater corrosion protection and less maintenance.

Precision ground helical gearing for maximum efficiency and standard gear lubricating oil simplifies lubrication maintenance requirements.

When oil changes become necessary it can be speedily and cleanly done by using the drain valve which incorporates a reinforced bracket hanger. The drain valve is also plugged with a blank socket so that no accidental operation of the drain valves can result in oil draining from the gearbox.

The drive is mounted on a rigid galvanised mild steel housing which also contains some special features. These include the shaft support mechanism that allows for the shaft to be supported in position without any special lifting tools or equipment.

Rigid shaft construction caters for high out of balance loads caused by rags and other waste materials which may accumulate on the impeller blades.

Efficient hydrofoil impeller systems have been designed for every process need from high flow, low shear for flocculant, anaerobic and anoxic duties to the HA795 surface aerator used for maximum oxygen transfer as well as the HA735 gas dispersion impellers employed on submerged aeration applications. Having the correct impeller technology and process knowledge combines to give maximum efficiency, low operating costs and a reliable mixer.

Series 1080 production

Series 1130 production

Series 1100 production

Production - various models

CUSTOM DESIGNED MIXERS

All mixing applications are different and each has its own unique problems. Our organisation understands these problems and custom designs each duty to match your requirements. Use is made of the latest computer technology to ensure the correct selection and to run a thorough mechanical check on components selected. Environmental and water care applications require special attention not only to operate from the day installed but to keep operating for years of productive life. Mixer equipment has been designed so that servicing is reduced to the minimum and maintenance made easy by incorporating special design features.

INSTALLATIONS

Applications are varied and include **flue gas desulphurisation, cyanide destruction, sludge mixing, flash mixing, flocculation, carbon slurry mixing, neutralisation, lime mixing, anaerobic digesters, anoxic basin mixing, balancing tanks and fly ash repulping.**

Most water care plants require fluid and static mixers of some sort. Mixers are used for a wide variety of applications, ranging from chemical make-up to flocculation.

Rapid mixers are widely used to disperse chemical additives into the process flow stream. Normally designed on the basis of a specified mean velocity gradient, they must combine adequate impeller pumping capacity with proper shear charac-teristics. Either radial flow or axial flow turbine impellers may be used, depending upon basin geometry and liquid flow pattern. Flocculation, which often follows rapid mixing, is a shear sensitive application.

A flocculator's function is simply to maintain the water in motion, allowing the agglomeration and coagulation of the particles to proceed.

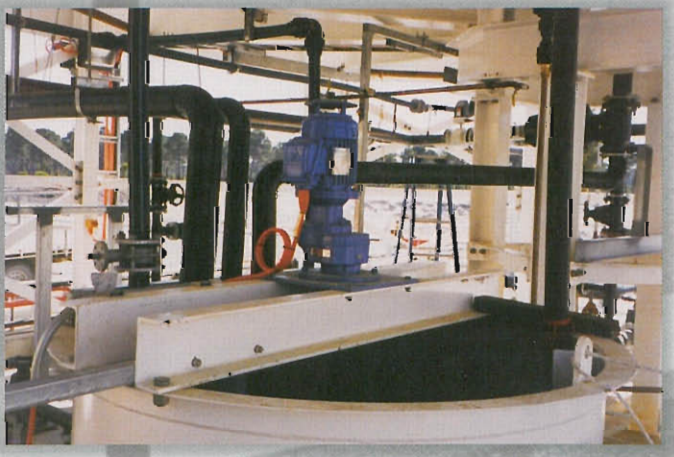
To accomplish this, it is advisable to use some sort of mechanical agitation that will gently mix the liquid, but will not destroy the delicate floc as it forms. In the past a variety of different equipment designs, generally consisting of slow moving rakes or wooden paddles, were used.

In recent years, however, the superiority of more conventional fluid mixers, equipped with low shear HA700 hydrofoil impellers, has been almost universally accepted. When equipped with a large, low shear axial flow HA700 impeller and a variable speed drive, these mixers represent the optimum combination of investment and energy efficiency for flocculation. The many other fluid mixer applications simply require the use of known blending or solid suspension design criteria along with other individual requirements for each situation.

For example, carbon slurry mixers must be designed to wet out the dry activated carbon, then to maintain it in suspension. Neutralisation mixers, by comparison, must provide sufficient agitation to blend the tank's contents to uniformity in the time allowed.

Sludge mixers must perform a dual function. To keep the solids in suspension while also blending the tank volume. Proper mixing facilitates sludge handling and, in this case, maximises the efficiency of digestion.

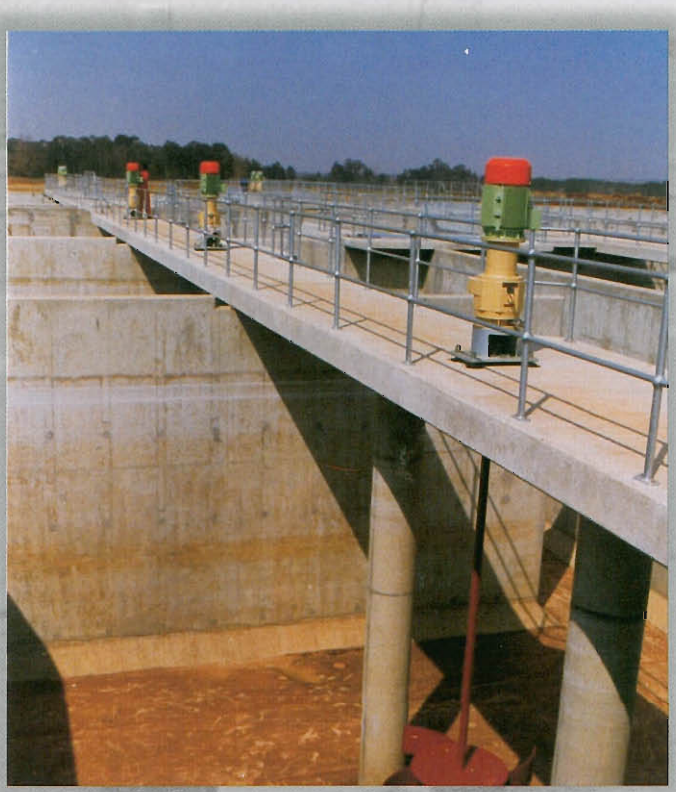
Biological Reactor Mixer



Reagent make-up

Balancing Tanks

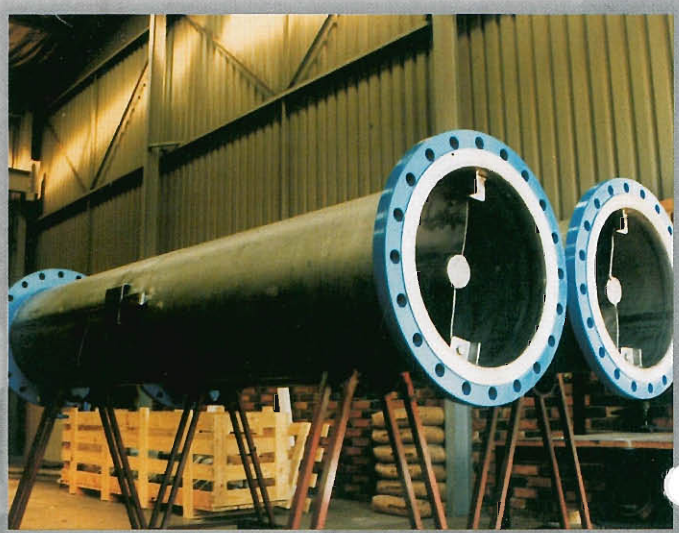
Large Municipal Anoxic Mixer



Large Anaerobic Basin Application

Anaerobic mixer

Aeration Application



500mm Dia inline static mixers

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