

# MIXTEC

FLUID MIXING TECHNOLOGY

2020



**PERFECT VISION INTO GOOD MIXING PRACTICE**

## 75 Years of experience and know how

### Profile

Mixtec International has seven manufacturing plants strategically placed around the world to give you, our customer, the service and fluid mixing technology that you require, when you require it.

Each plant has its own research and development as well as design, engineering and commissioning personnel who are trained to solve your mixing problems with the latest fluid mixing technology.



132kW Series 4015 Mixer Drive

For 75 years, the Mixtec group has been engaged in mixing technology. Since 1930 as Kestner Industries, UK Mixtec has been committed to quality, reliability and service



Mixtec Agitator shaft coupling and support collar



4000m<sup>3</sup>  
17.0m Dia Gold  
Leach tanks

Whether your requirements are simple blending of solids suspension to the more exacting standards of multiple complex reactions, Mixtec has the capability and experience to suit your needs.

Mixtec's proven track record of thousands of installations around the world bears witness to our success and our commitment to good mixing practice.



Dual 6.0m Dia HA715 Impellers

## Good Mixing practice starts with product research and development



This enables Mixtec to produce custom made equipment and cost effective solutions to your mixing problems.

Our laboratory can guide you in the correct selection of impeller systems as well as in-tank items such as Sparge ring design and baffle arrangements.



**Complex fluid flow and gas dispersion test rig.**

Research into optimum tank characteristics-baffling-inlet-outlet configuration and optimisation of gas sparge.

Over a period of many years Mixtec has developed new impeller systems and improved on existing agitator duties in all major industries.



**Gold Leach test work**



**Solid suspension test work on Copper leaching application.**

Mixtec is in constant contact with operators and all important research institutes around the world in order to offer the very best solution to your agitation problems

Using established scale up procedures accurate and predictable process results are obtained.

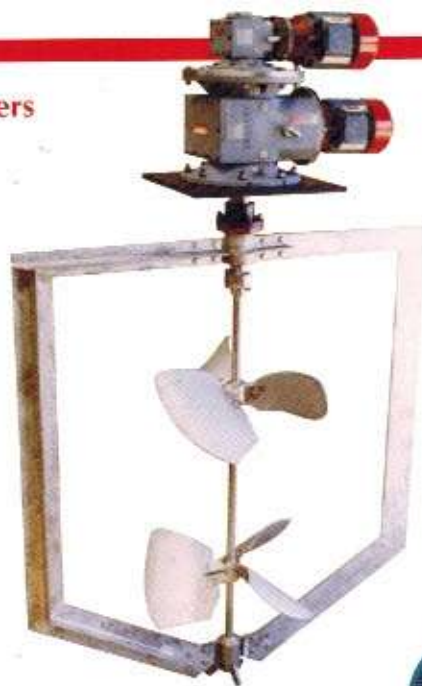


**New gas dispersion impellers and sparge rings under test**



## Custom designed mixers

Magnetic drive for Bio processing



Contra rotating mixer impellers for viscous blending duty

All mixing applications are different and each has its own unique solution.

At Mixtec we understand this and our engineers strive to improve every aspect of mixer selection.



Series 5500 Improved side entry agitators for paper and pulp applications

### Mixtec's main activities include:

- The research and development of mixing technology
- Processed design and construction of fluid mixers
- Comprehensive mechanical design of fluid mixing components
- Design and development of alternative agitation systems
- Design and development of fluid pumping devices.



Special bottom entry agitator for crystalliser duty

Glass coated shaft and impellers



Polycarbonate shaft and impeller

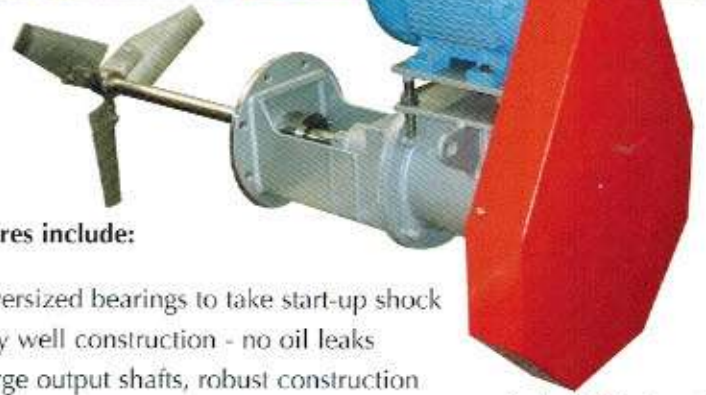
Dairy, food and beverage side entry mixers for liquid blending and solid suspension



600mm Dia static mixers

## Good Mixing practice - selecting the right drive for the job

Mixtec Series 2000 drives



### Features include:

- Oversized bearings to take start-up shock
- Dry well construction - no oil leaks
- Large output shafts, robust construction
- Hardened and ground gears to AGMA 2000 standards for maximum strength and wear and reliability

Series 5000 side entry agitator for petro-chemical application



Robust drive casings on the Series 4000 after stress relieving and NDT testing



Mixtec Series 3000 right angle drive under test

## Mining and Refining Agitators for all duties



Cobalt, Tin, Aluminium, Lead, Mineral Sands and others



Gold, Platinum, Uranium, Silver, Copper, Nickel, Zinc



In 1980 thirty 75kW draft tube agitators were supplied to Rand Mines Milling and Mining for the processing of Gold Dumps around Johannesburg, South Africa.

Using the new CIP Adsorption technology these units have now treated over 50 million tonnes of rock resulting in the recovery of over 40,000kg of Gold.



75kW Precipitation Reactor

Mixtec has extensive knowledge of solvent extraction pump secondary and auxiliary mixer duties.

Process duties require an efficient and reliable solution. Mixtec has the track record, technology and equipment.



## Chemical and Industrial mixing applications



Series 4000 agitators on a Resin plant installation. UK

Chemical processing has some of the most varied and difficult agitation problems.



Chemical plant. Malaysia



Series 1000 units on paint blending duty



Special solvent extraction column with 28 stage counter current agitation



Series 2000 agitator on a crystalliser duty



Large HA 735 impeller in a high pressure, high temperature autoclave

Mixtec has the experience and know-how to solve your mixing needs

## Dairy Food, Beverage and Pharmaceutical industry



One of 104 Series 5000 side entry agitators supplied to a large winery. New Zealand



Series 2000 on a soup cooker.



High quality finish to latest hygiene standards

Food blending application



### Also available:

- In-line static mixers
- Jet and eduction mixing
- High viscosity blending
- Sugar pan circulators
- High Speed dispersion



Multi stage fermenter hygienic designed surfaces for CIP processes

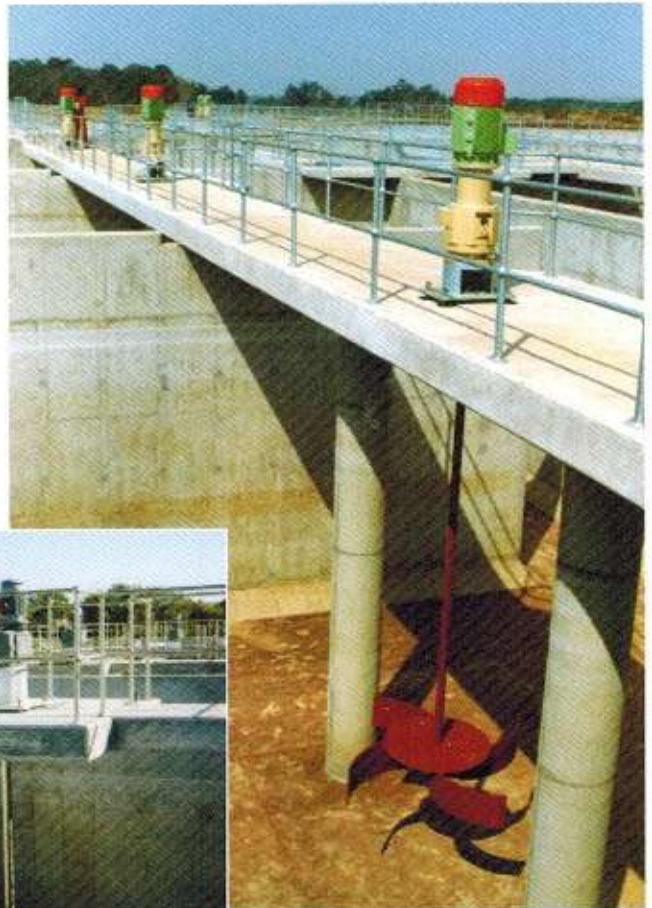




## Water Treatment and Environmental



Series 1000 on flocculator duty - USA



Side mounted Series 1000 - Australia



1992 major installation of anoxic and anaerobic agitators. For over 30 years Mixtec has supplied thousands of agitators to the Water Treatment industry

### Anoxic Mixer

Clean water is precious and water care is rapidly becoming one of the worlds major problems.

Mixtec has been at the forefront of many water treatment processes due to its continual research and development.



Series 2000 on aeration basin - South Africa



Series 1000 with weather protection and VVVF control

## Engineering and Fabrication



Large agitator couplings being manufactured to tolerances of less than 0.01mm for accuracy and control.



All agitators are manufactured using the latest international standards for mixer design, to produce a rugged well constructed agitator backed by a solid mechanical and process guarantee.



Series 5500 side entry

Complete assembly of all components before despatch



Massive 5 ton impeller hubs used on 250kW agitators

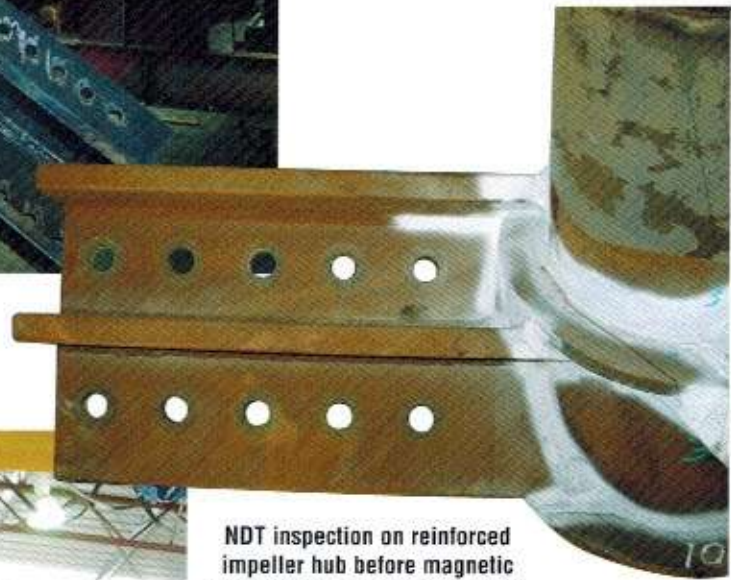


500mm nominal bore schedule 80 pipe shaft in production.  
Shaft length exceeds 20 metres

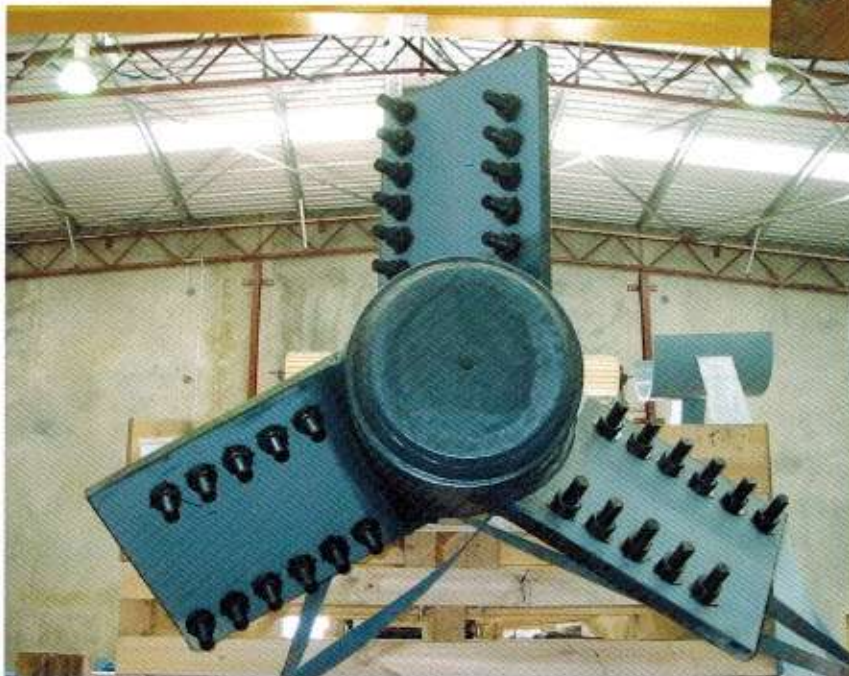
Mixtec has a wealth of experience which covers all aspects of agitator construction.

Our computer designs not only check process parameters but also calculate bending and torsional loads.

This information is used to design material sizes and fabrication techniques.



NDT inspection on reinforced impeller hub before magnetic particle testing and final coating



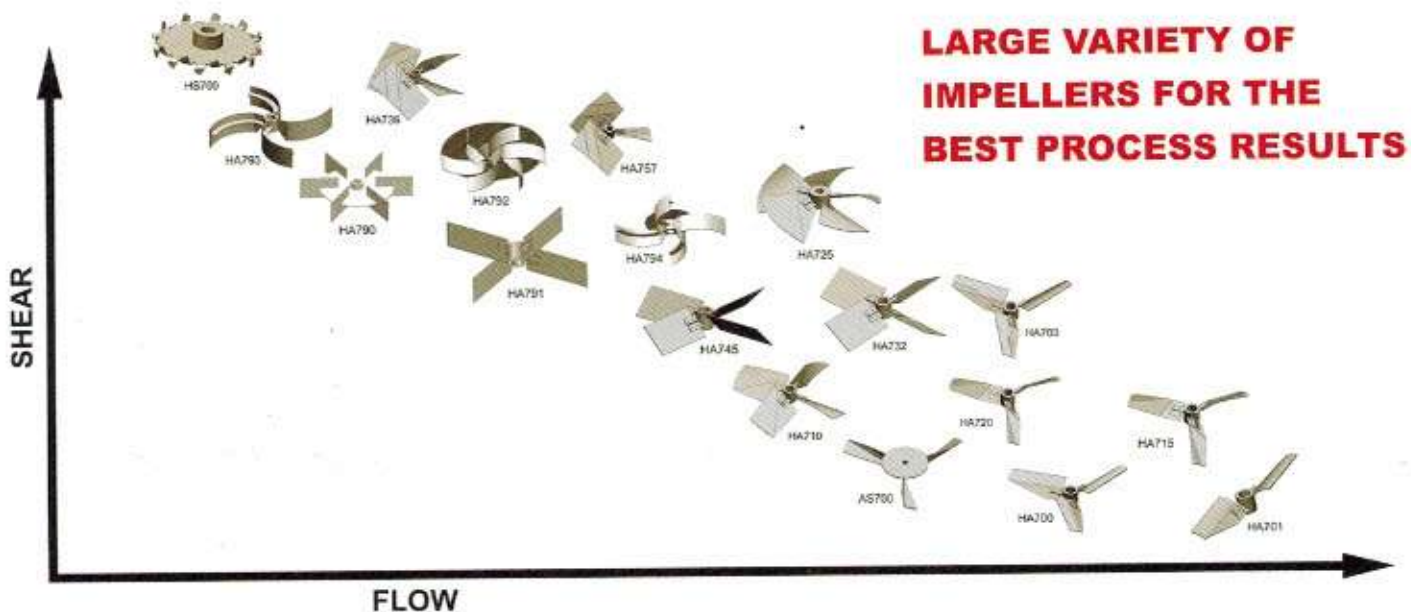
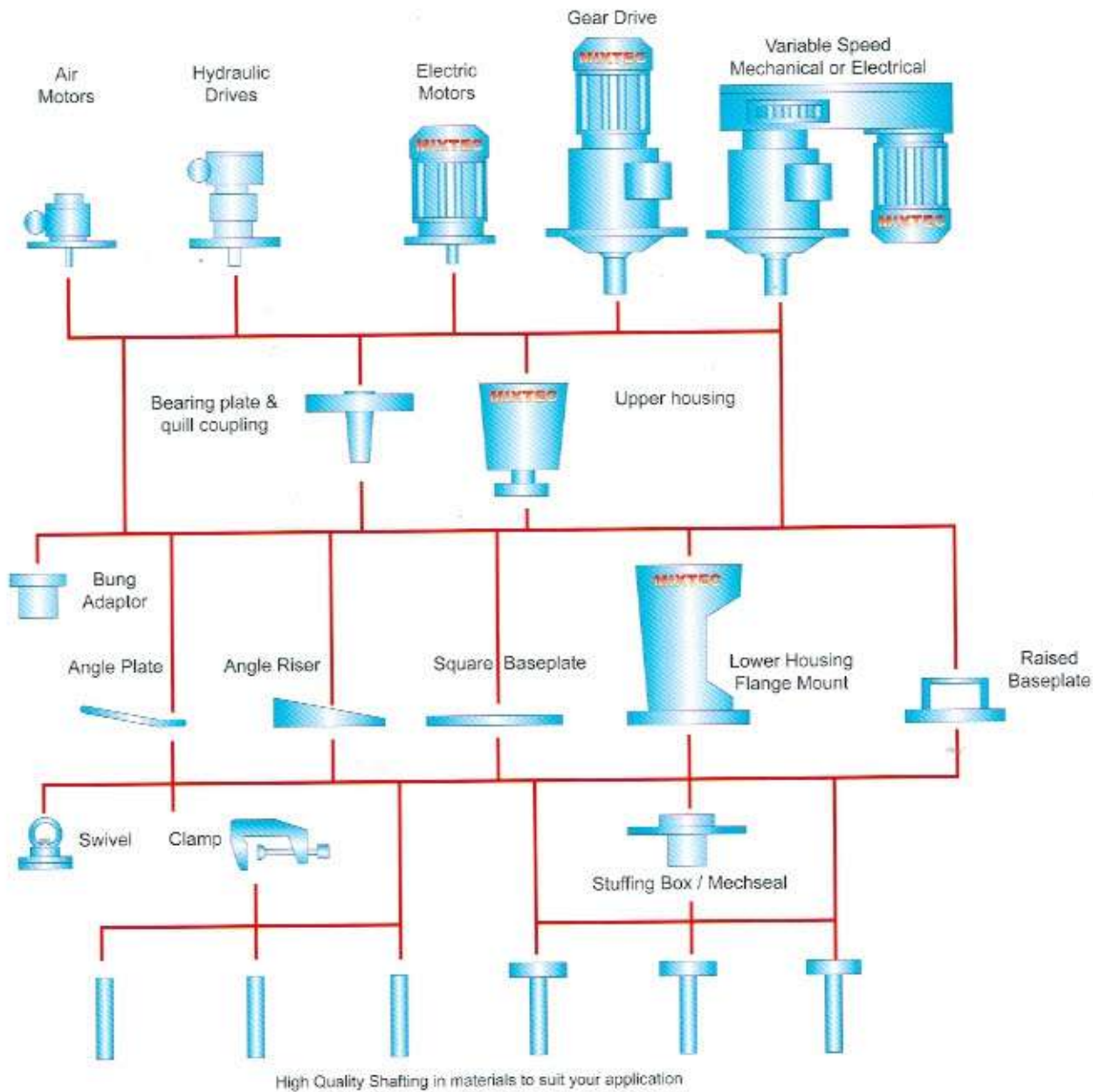
All factors influencing the mechanical design are analysed and backed up by years of successful experience in the field.

Materials of construction include Carbon and Stainless steels, Hastelloy, Incolloy, Tantalum and Titanium plus several varieties of coatings such as rubber, stellite, Halar, glass and poly-carbonates.



Final test on Series 4000 in 5m Dia test tank

# INTERCHANGEABILITY



# VERSATILITY



200 L Bung Adaptor



Angle Plate



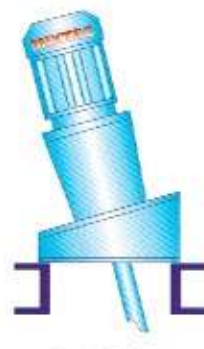
G Clamp



Swivel G Clamp

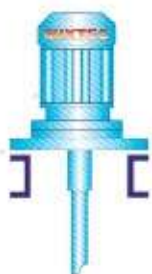


Swivel Mount

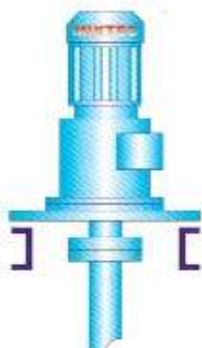


Angle Riser

## SERIES 250 & 500 RIM MOUNTING



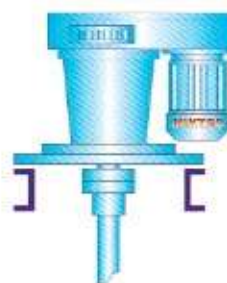
Direct Drive



Monobloc Drive



Co-axial In Line Drive

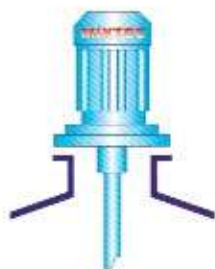


Variable Speed Drive



Raised Baseplate

## SERIES 1000 BASEPLATE MOUNTING



Flange Mount Direct Drive



Flange Mount Gear Drive



Flange Mount with Input Adaptor



Flange Mount with Bearing Cartridge for High Tank Pressure Application

## SERIES 2000 FLANGE MOUNT

\*TANK MOUNTINGS NOT MIXTEC SUPPLY

The Mixtec Series of industrial mixers offers a wide variety of motor enclosures and drives to suit your process requirements. This combined with a comprehensive range of impeller types allows our Application Engineers to custom manufacture agitators to suit your process conditions and Mixtec backs up its selected expertise with both a **process and mechanical guarantee**.

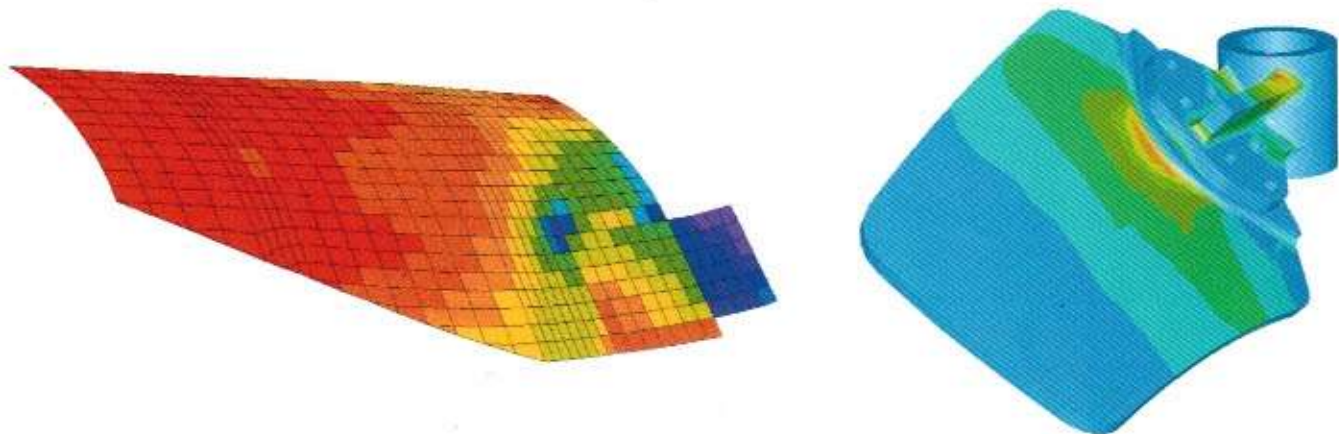
When process conditions change, these simple and flexible designs can be inexpensively modified,

thereby increasing the mixers life span and increasing plant efficiency. State of the art impeller systems will also ensure low operating costs and high productivity.

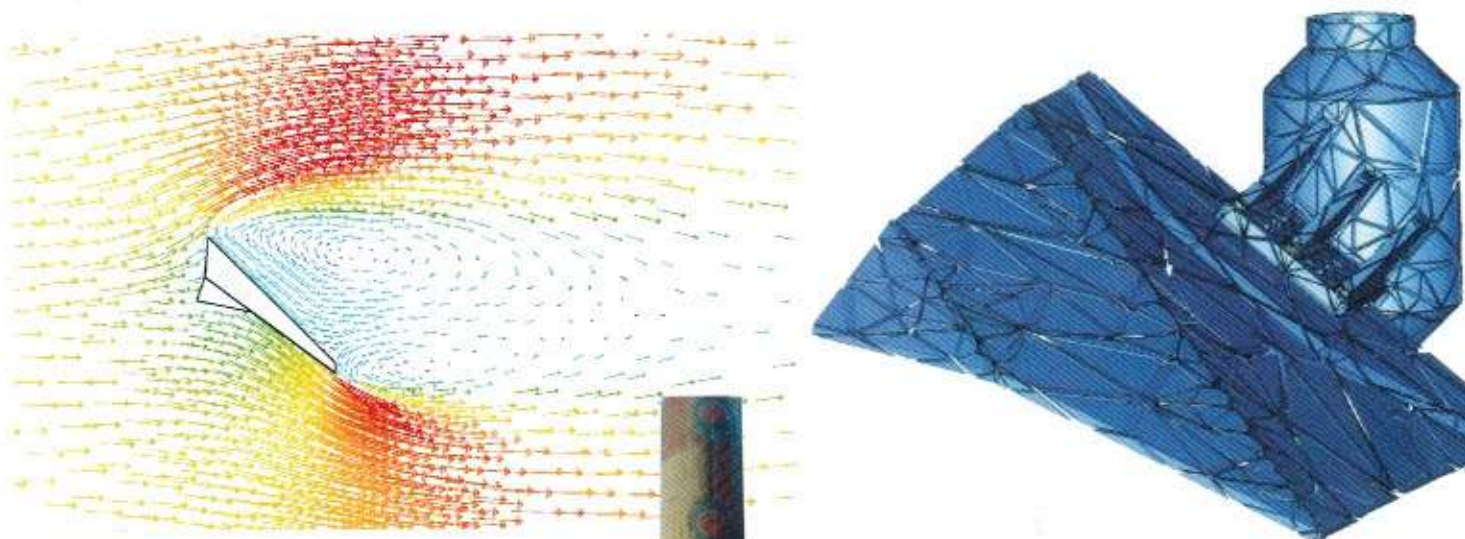
Air motors are of the floating vane type and speed control is achieved by adjustment on the air inlet valve. An exhaust muffler is also fitted to ensure quiet operation. Electrical motors can be TEFC, weather resistant, hose resistant or flame resistant. Other enclosures are available on request.

## IMPELLER TECHNOLOGY AND DESIGN: for high efficiency and productivity

Getting the facts on fluid behaviour and mixer scale up is just the start. Mixtec have experienced application engineers who can turn this information in to reliable designs - first time every time and give it a process guarantee.



Mixtec's In house computer programmes have been developed through many years of rigorous research. Factors and constants generated from testwork and tempered with experience are incorporated into the Mixtec computer programmes ensuring that a reliable conservative design is produced not only to work on the day it was installed but also for many years of productive life.



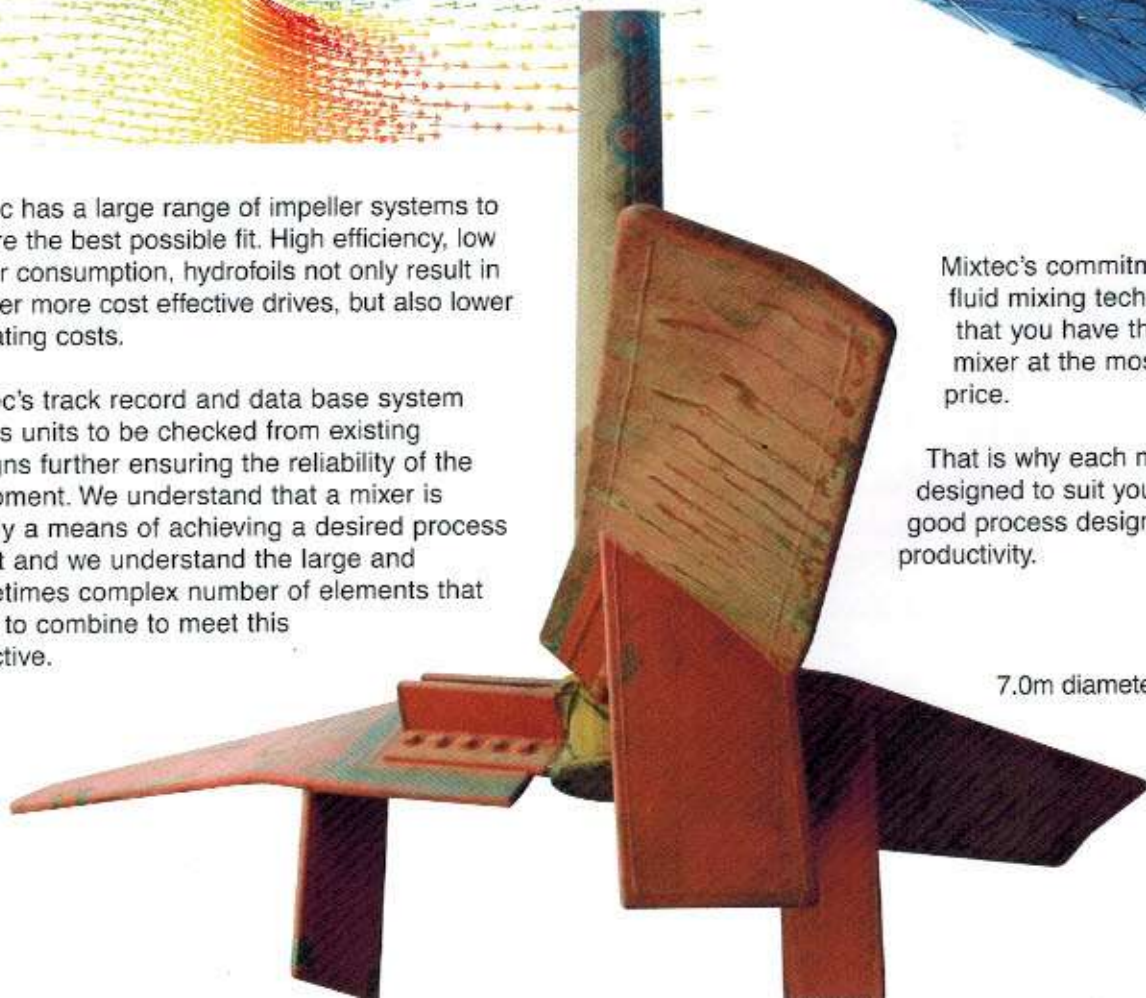
Mixtec has a large range of impeller systems to ensure the best possible fit. High efficiency, low power consumption, hydrofoils not only result in smaller more cost effective drives, but also lower operating costs.

Mixtec's track record and data base system allows units to be checked from existing designs further ensuring the reliability of the equipment. We understand that a mixer is simply a means of achieving a desired process result and we understand the large and sometimes complex number of elements that have to combine to meet this objective.

Mixtec's commitment to providing fluid mixing technology ensures that you have the best possible mixer at the most economical price.

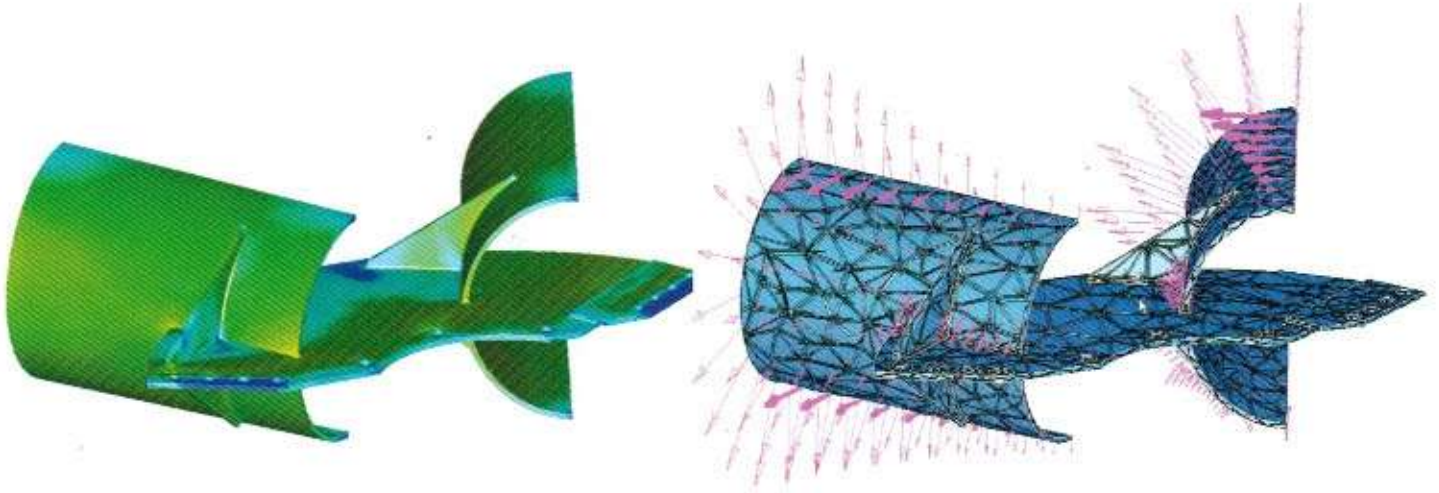
That is why each mixer is custom designed to suit your process and a good process design ensures productivity.

7.0m diameter HA715

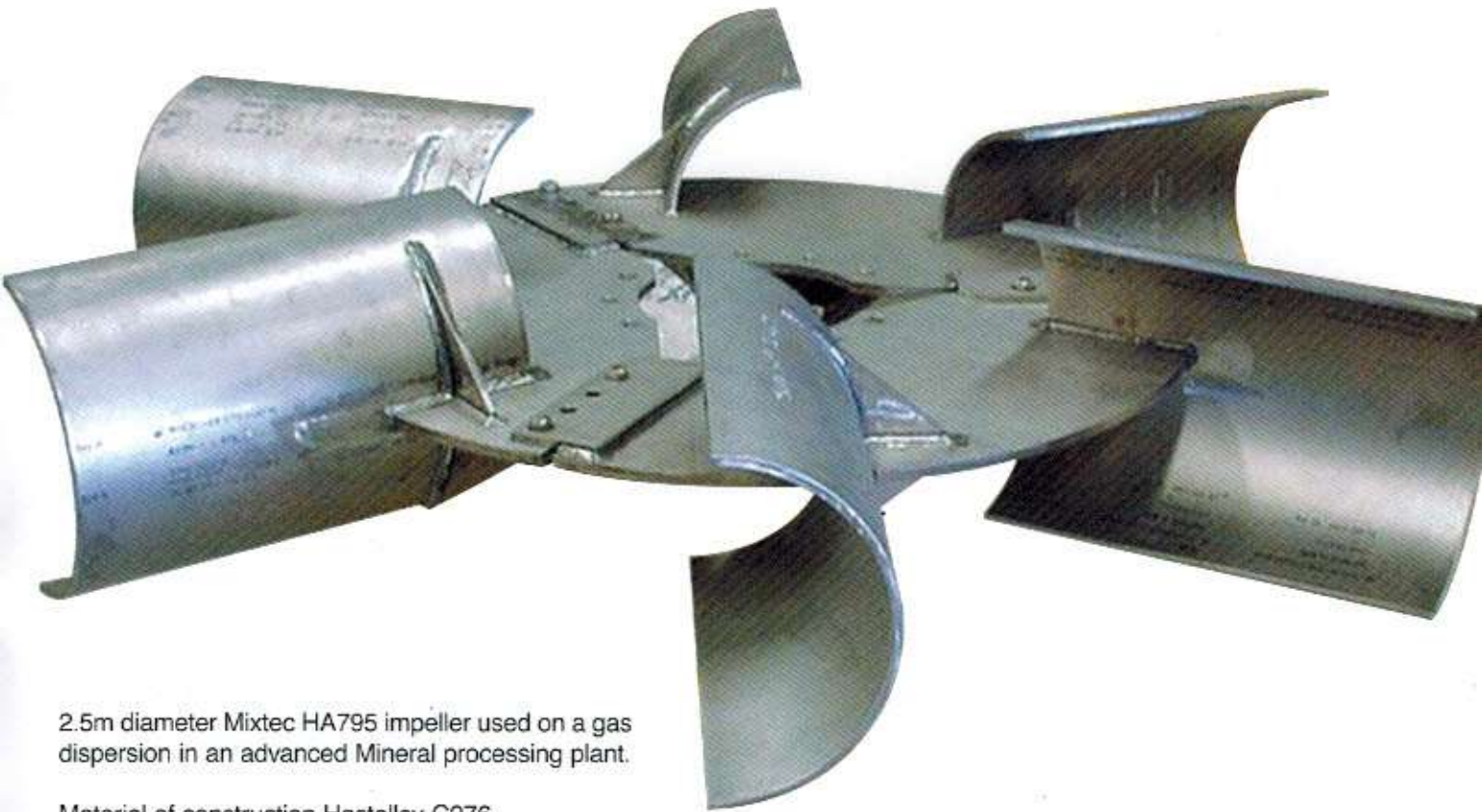


All mixing applications are different and each has its own unique engineering problems. Understanding these problems takes experience and solving them demands technology of the highest standard.

Extensive use has been made of finite element analysis on the design of high stress components, such as the impeller and the coupling, to ensure maximum reliability at minimum cost.



The impeller is subjected to the calculated loads and stresses that it will experience in operation and using advanced software and processor platforms the analysis is computed to identify any potential areas of weakness or stress build up.



2.5m diameter Mixtec HA795 impeller used on a gas dispersion in an advanced Mineral processing plant.

Material of construction Hastelloy C276

## OTHER AGITATION APPLICATION



Chemical plant - BRAZIL



Gold plant - SOUTH AFRICA



Zinc storage - NAMIBIA



Back fill - INDONESIA



Beverage storage - AUSTRALIA



Mineral Leach tank - USA



Water treatment - CHINA



Paint plant - NEW ZEALAND



Paper and pulp side entry mixers - UK

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