



- STANDARD IMMERSION MIXERS
- HIGH SPEED SEALED BEARING MIXERS
- PURPOSE DESIGNED MIXERS TO CUSTOMER REQUIREMENTS
- FIXED MOUNT GEARBOX DRIVE AXIAL FLOW TURBINE MIXERS
- ADVANCED PROCESSOR - INC OUT OF VESSEL PRE-MIXING
- THREE STAGE IN-LINE MIXERS
- BELT DRIVEN IN-LINE MIXERS
- BOTTOM ENTRY MIXERS
- FIXED MOUNT DIRECT DRIVE PROPELLER MIXERS



Advanced Engineering
MIDDLETON LTD

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in-line mixer design and technology



AEROSOLS & BENTONITES • AGROCHEMICALS • ANIMAL & VEGETABLE PRODUCTS • ASBESTOS • BATH ADDITIVES • BEVERAGES • BITUMINOUS & HEAVY OIL MIXTURES • BUILDING CHEMICALS • CANE SUGAR • CARBON BLACK • CELLULOSE • CERAMICS • CHEESES & SAUCES • CLEANSING CREAMS • CMC • COD LIVER OIL • COSMETICS • CREAMS • DRUG EXTRACTS • DYES • FIBRES & TEXTILES • FILTER CAKE MASSES • FINE CHEMICALS • FOOD PROCESSING • GELATINE SOLUTIONS • GELATINS • GRAPHITE • HAZARDOUS MATERIALS • ICE CREAM • INKS • INFANT FOODS • LACTOSE AND GLUCOSE • LACQUERS • LEATHER • LECTHIN • LIPSTICK SUBSTANCES • LOTIONS • LUBRICANTS • MARGARINE • MAYONNAISE • MILK AND MILK PRODUCTS • MILK FAT • MOLYBDENUM DISULPHIDE • MUCILAGE • NATURAL RESINS • OINTMENTS • OLIVE OIL • ORGANIC TISSUES • PAINT AND VARNISH • PAPER • PARAFFIN • PARAFFIN EMULSIONS • PARTING & IMPREGNATING COMPOUNDS • PASTES • PECTINS • PETFOODS • PETROCHEMICALS • PHARMACEUTICALS • PIGMENTS • PLASTICS • REFINERIES • REGENERATED MILK • RESINS • RUBBER • SALAD AND OTHER SAUCES • SALTS • SALT SOLUTIONS • SILICIC ACID • SILICON OIL • SODIUM EMULSIONS • SPRAY DRYING • STARTING MATERIALS FOR INSTANT SOUPS • SUGAR • SULPHUR • SUPPORTORY COMPOUNDS • SWELLING AGENTS • SYNTHETICS • TOMATO KETCHUP • TOOTH PASTES • WASTE TREATMENT • WASTE WATER • WAX



mixer design & technology from Advanced Engineering

We design and produce highly efficient mixers used throughout the food processing, paint production, petrochemical and cosmetic industries. Our production workshop in Rochdale is staffed with skilled operators trained for quality work. Design and manufacturing is carried out to the highest engineering standards ensuring total quality at all stages of production. The highest grades of stainless steel are used in manufacture, coupled with high performance motors and mechanical shaft seals to provide a degree of performance, durability and reliability hard to match, let alone better. Increasing customer demand has dictated the necessity for developing a wide range of products that reflect technical innovations. Although our initial aim is to satisfy our customers production requirements, our after sales support and services are available for the complete operational life of our products.



Our highly efficient mixers are used throughout the food processing, paint production, petrochemical and cosmetic industries.

complete in-house service

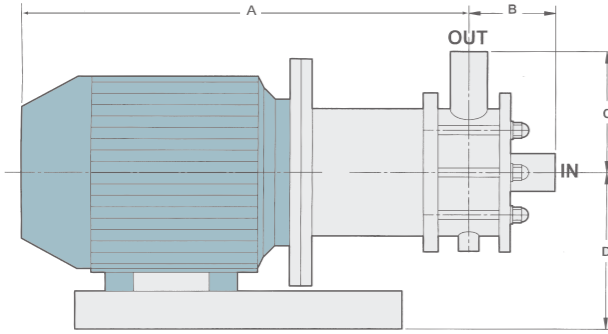


repairs and refurbishments

We can undertake repairs and refurbishments of your existing mixing equipment. We offer a complete in-house or on-site refurbishing service to suit customers requirements. This is often a more cost effective solution for minor problems. All our repairs and refurbishments are done to meet the needs of the individual customer. We offer rapid turn-around times. All repairs and refurbishments meet the same high standards as our new products.

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SINGLE SPEED MOTORS

all dimensions in millimetres

Model No	hp	kW	rpm	A	B	C	D	inlet/outlet diameter
ADILS/1	1	0.75	3000	483	100	115	150	25/1"
ADILS/2	2	1.5	3000	483	100	115	150	38/1.5"
ADILS/5.5	5.5	4	3000	620	116	160	187	50/2"
ADILS/10	10	7.5	3000	704	116	160	207	50/2"
ADILS/20	20	15	3000	910	127	188	235	76/3"

Notes:
 Purpose designed machines can be manufactured to suit customer requirements. Should it be necessary to use a pump to assist flow, we would recommend a positive displacement pump i.e. rotary lobe or progressive cavity.

- Options:**
- Additional materials of construction available
 - Special seal components for aggressive processes
 - Atex approved motors and seals
 - Single seal or double seal available
 - Pneumatic motors or alternative voltages
 - Motor mounted Electronic speed control
 - Two speed motors
 - Custom Designs
 - Various machine process connections



■ single stage in-line high shear mixers

Advanced Engineering's in-line mixers are used extensively for single pass and recirculatory processing, ideal for pilot plant and large production applications

- In many instances, in-line processors have many advantages over immersion processors for batch work. They are not dependent on the volume of the processing medium and require less space. They are much easier to clean and can be used on highly viscous media by employing a supplementary feed pump.

- The dispersion head consists of one, two or three intermeshed concentric circles of stainless steel with precision machined perforations or slots. Rings forming the stator remain stationary while the inner rings of the rotor rotate at high speed. The processing medium is progressively pulled under enormous centrifugal acceleration by the spinning rotor and subject to high shear action when drawn into the dispersion head. Centrifugal action forces the medium through the tight gaps between rotor and stator, thus reducing solids and droplets to produce excellent smooth emulsions, dispersions, creams etc.

- By interchanging the rotor/stator rings, it is possible to produce a wide choice of shear ranges to suit different materials and applications. We will also purpose design rotor/stator combinations for customers with very specific requirements. The single stage in-line is a completely closed system which eliminates the risk of unintentional aeration.

high speed, virtually self cleaning maintenance-free mixers

Dispersion heads: - Five interchangeable rotor/stator options are available as standard which would cover most requirements. Special purpose designs can also be produced to cover unusual requirements.



ADILS/01

General Purpose Stator Rotor Combination, for the greatest throughput of product. Used for the blending of fluids, disintegration of solids, dispersing of agglomerates and preparation of coarse emulsions.



ADILS/02

Slotted Stator Rotor Combination, used for the breaking down, shredding and dissolving of fibrous, polymeric and elastomeric solids.



ADILS/03

Square Hole Screen Stator with Standard Rotor, used for rapid size reduction of soluble and insoluble granular partly milled solids. Products include polymers into oil, aqueous emulsions and suspensions of low solid content.



ADILS/04

Single Castle Rotor and Double Castle Stator, for the production of emulsions and suspended solids with products of average viscosity.



ADILS/05

Double Castle Rotor and Triple Castle Stator, to produce low viscosity emulsions, and suspended matter with low solids content, where high particle reduction is required.



Stainless Steel Motors
 We are able to offer stainless motors and gearboxes with our mixers in order to provide complete stainless solutions to meet your washdown and hygiene requirements.



Belt Drive Mixers
 We also offer the single stage mixer with the option of a belt drive: The model shown is a ADBE-20.0 Belt Drive Inline High Shear Mixer, working at 5000 RPM to increase Shear Rate and Flow Rate.



■ 3 stage multi shear in-line mixers

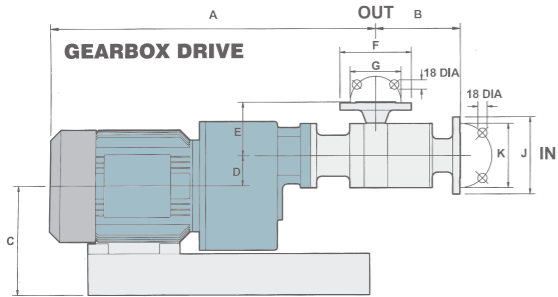
Advanced Engineering's 'multi shear' in-line mixers are used extensively in many fields of process engineering for the production of Ultra-fine emulsions, dispersions and creams etc

- These processors have many advantages over immersion processors for batch work; they are not dependent on the volume of the processing medium and require less space. They are much easier to clean and can be used on highly viscous media by employing a supplementary feed pump.

- Our precision designed dispersion heads are the key to the machines highly effective performance. It consists of three sets of concentric stainless steel rings which incorporate machined perforations or slots. The outer rings or stators remain stationary whilst the inner rings or rotors spin at high speed. This generates enormous centrifugal force drawing the process material into the dispersion head chamber and expelling it through the fine gaps created between the cutters of the three stages of outer and inner rings. Fitting progressively finer cutters within the chamber produces progressively finer results.

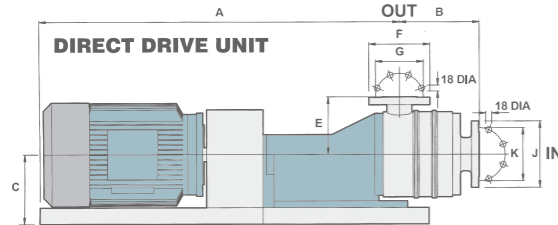
- By varying the rotor/stator arrangement it is possible to produce a wide choice of shear ranges to suit different applications. We will also design special cutter combinations for customers with very specific requirements.

- Our 3 stage in-line machines can be used for single pass processing or to recirculate material where extremely fine processing is required.



SINGLE SPEED MOTORS all dimensions in millimetres

Model No	hp	kw	rpm	A	B	C	D	E	F	G	J	K
ADIL35/5.5	5.5	4	8000	500	177	192	58	100	140	100	150	110
ADIL35/15	15	11	4500	930	203	260	74	133	165	125	165	125



Model No	hp	kw	rpm	A	B	C	E	F	G	J	K
ADIL35/25	25	18.5	3000	1275	235	210	170	185	145	200	160
ADIL35/30	30	22	3000	1331	235	230	170	185	145	200	160
ADIL35/50	50	37.5	1500	1628	352	410	255	240	200	285	240

Notes:
Purpose designed machines can be manufactured to suit customer requirements. Should it be necessary to use a pump to assist flow, we would recommend a positive displacement pump i.e. rotary lobe or progressive cavity.

- Options:
- Additional materials of construction available
 - Special seal components for aggressive processes
 - Atex approved motors and seals
 - Single seal or double seal available
 - Pneumatic motors or alternative voltages
 - Motor mounted Electronic speed control
 - Two speed motors
 - Custom Designs
 - Various machine process connections



ADIL35/C - Coarse



ADIL35/M - Medium



ADIL35/F - Fine



ADIL35/SF - Superfine

Shaft Sealing

- Shaft sealing is normally by means of double mechanical cartridge shaft seal, with an effective thermosyphon circulation system and accessories to provide seal cooling and lubrication to seal faces.

Dispersion heads

- Four interchangeable rotor/stator cutter options are available as standard which cover most requirements.

Special purpose designs can also be produced to cover particular problems.

With these machines the design of the rotor/stator cutters in the dispersion head is such that it eliminates the total closure of cutter slots during operation. This results in a high shear effect enhanced by the high peripheral speeds achieved. The rotor design also induces a high working pressure within the dispersion head for maximum conveying effect.

- Rotor/stator combinations can be selected to achieve coarse, medium, fine and superfine dispersions. This choice will depend upon the results required and the viscosity, throughput speed and processing time of the process materials. Total interchangeability of the cutter sets provides a very wide choice of options, from three stages of superfine processing for extreme results, to three stages of coarse processing for the less demanding dispersions, all with intermediate stages in between.



■ advanced processing mixers

The Ad-Pro high shear emulsifier can accommodate both wet and dry ingredients either directly into the emulsifier or via the side additive inlets. It is designed for retro-fitting into a wide range of existing processing installations to achieve reductions in batch processing times.

