



MAINCO 

EXPERTOS EN ACERO INOXIDABLE

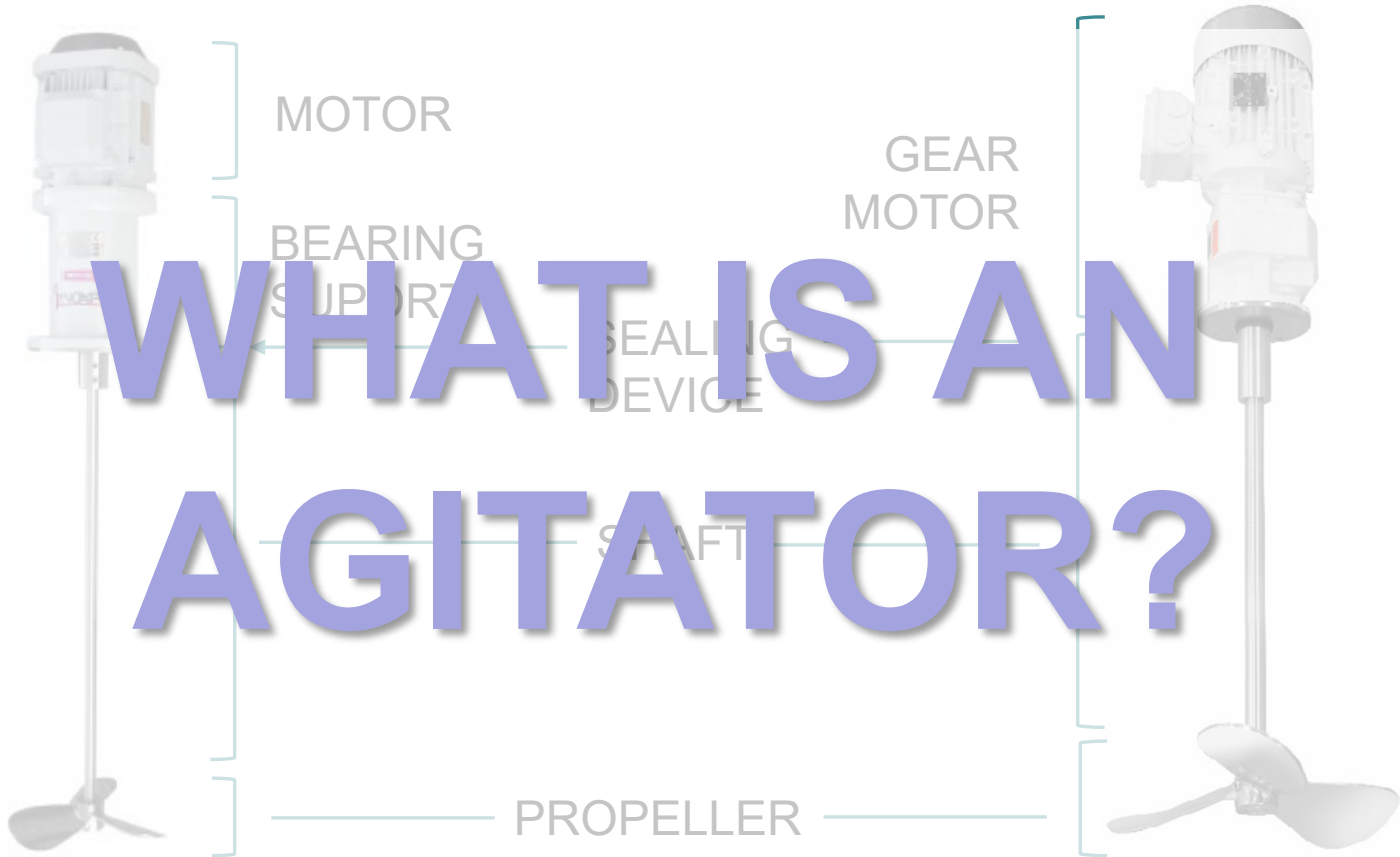
**SEMINARIO
INTERNACIONAL
EN LÍNEA**



MEMBER OF
INTERPUMP GROUP

AGITATORS

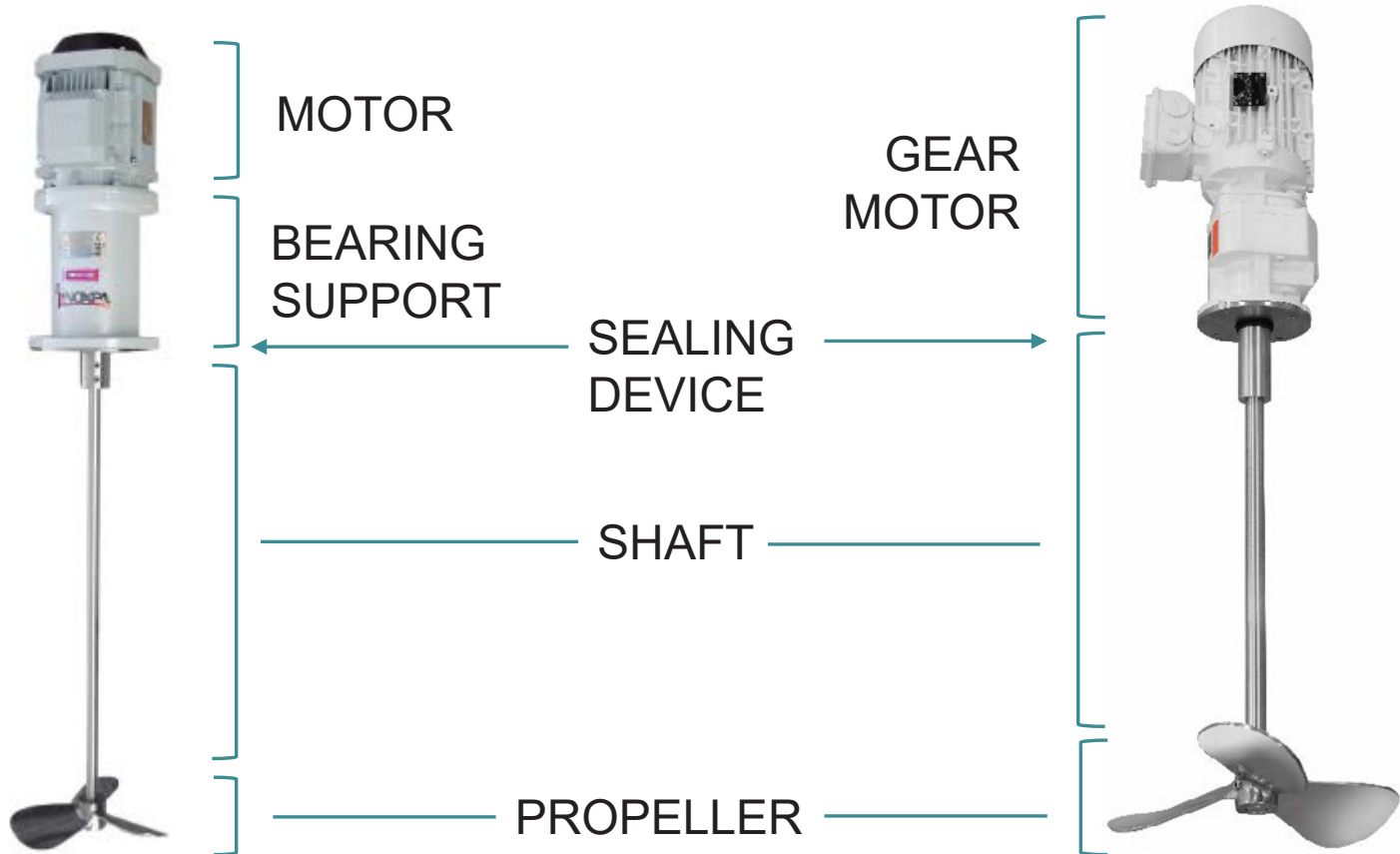
INOXPA



WHAT IS AN AGITATOR?



AGITATORS





AGITATORS

AGITATORS



MOTOR OR GEAR MOTOR?



MOTOR

- High speed = 1000/1500 rpm
- Strong agitation / to shear
- Non – sensitive products
- Brines, syrups, mixtures,...

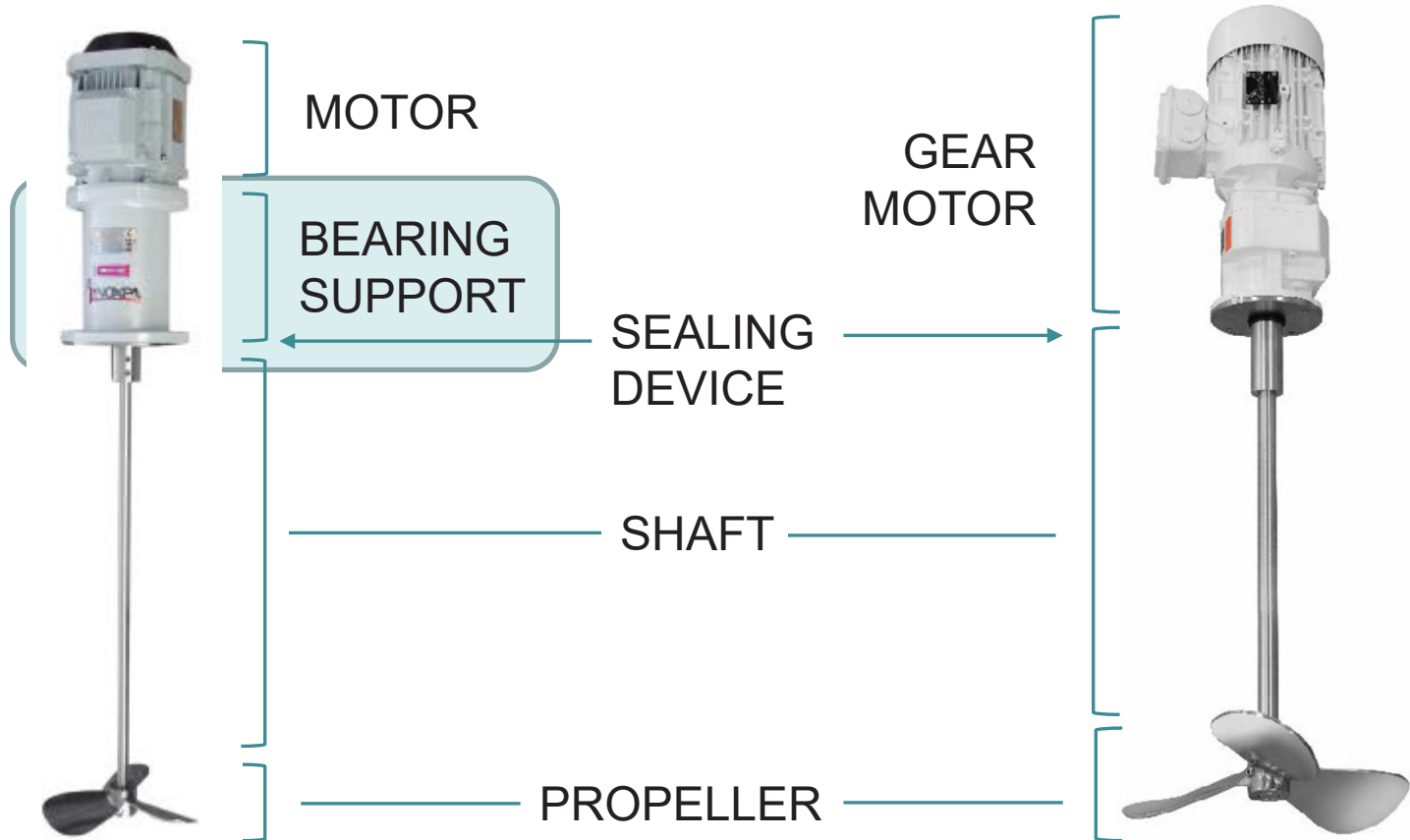
VS

GEAR MOTOR

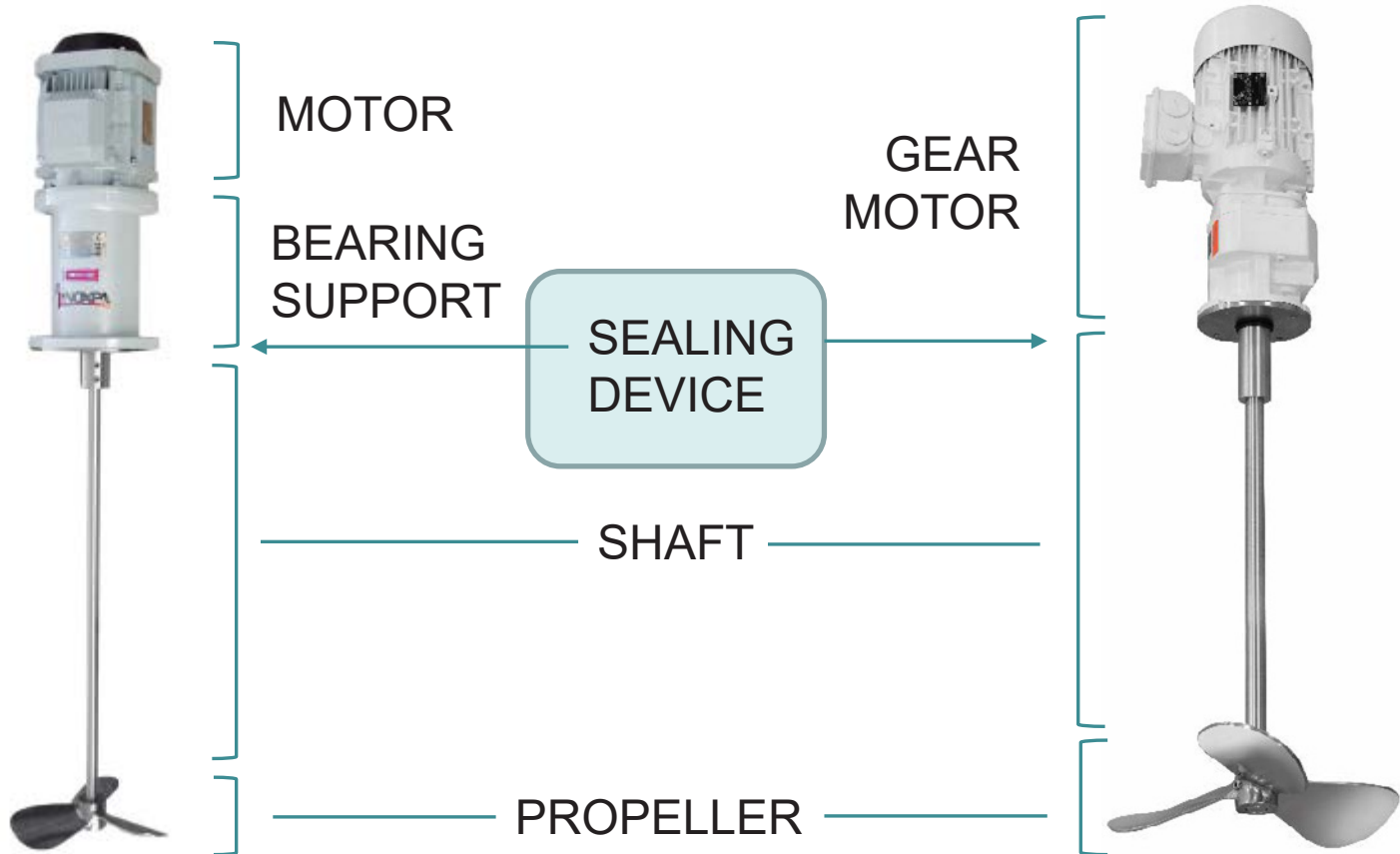
- Low speed 30 to 200 rpm
- Gentle agitation / homogenizing /
keep suspended solids
- Sensitive products
- Sauces, chocolate, milk,...



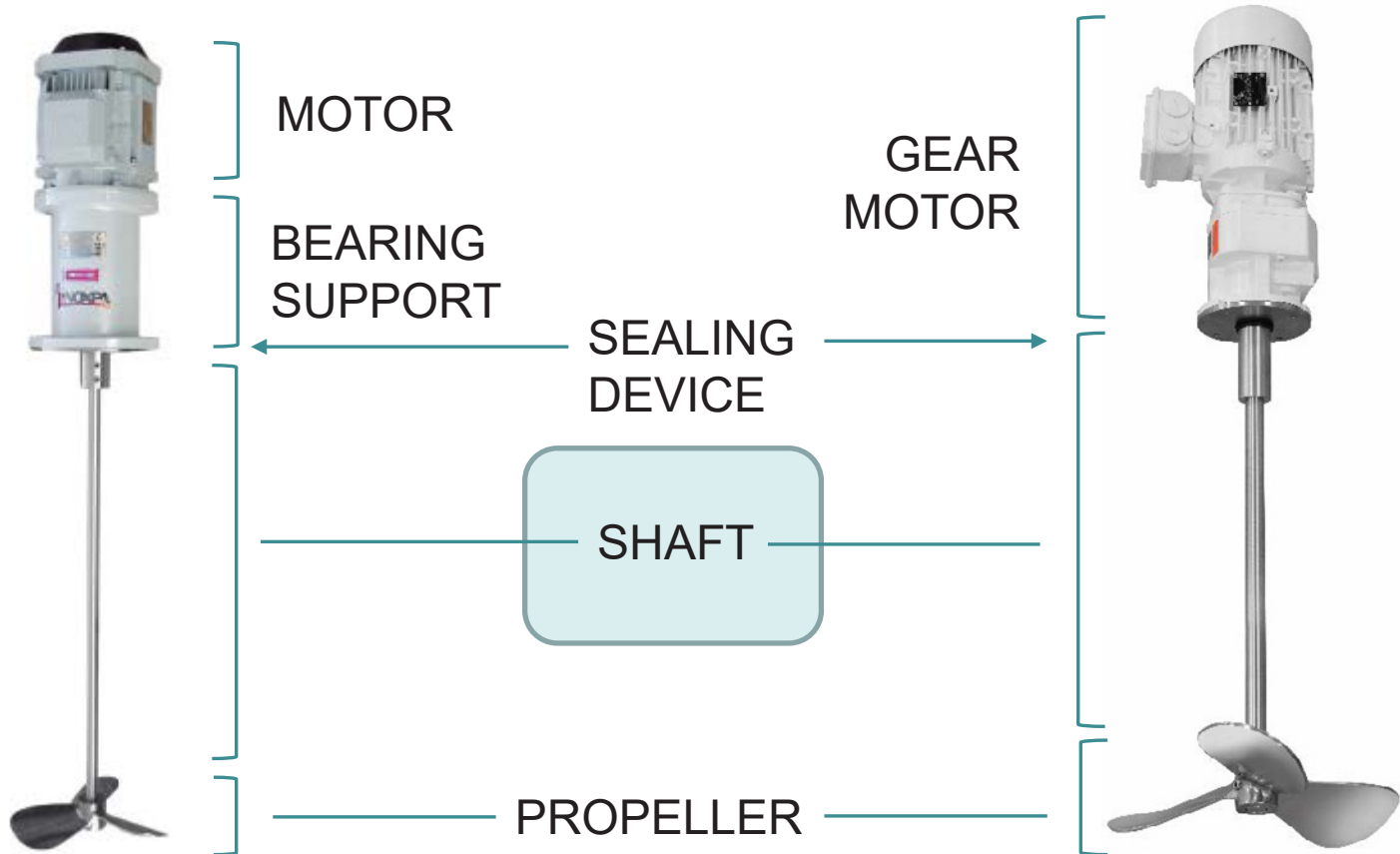
AGITATORS



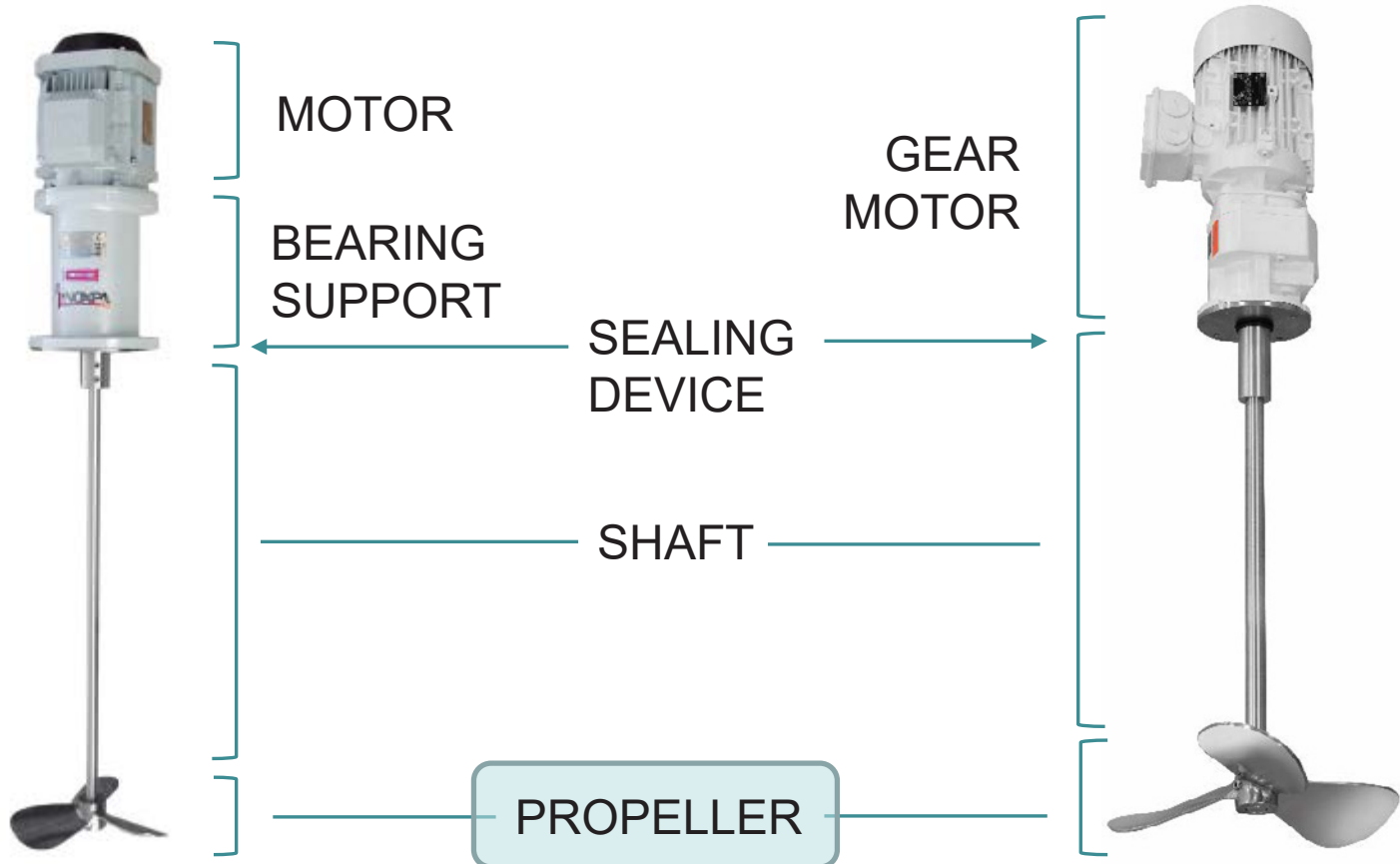
AGITATORS



AGITATORS



AGITATORS





AGITATORS

PROPELLERS

PROPELLERS FOR AGITATORS



PROPELLERS FOR **DIRECT MOTOR** AGITATORS

LYNEFLUX



MARINE



SAWTOOTH



MARINE PROPELLER

- Example: Laundry detergent



PROPELLERS FOR **GEAR MOTOR** AGITATORS

MARINE



GAMMA



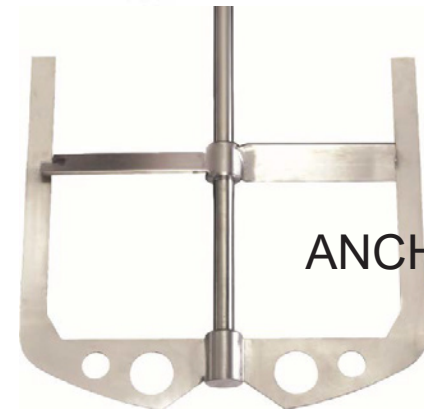
HIGH FLOW



2 BLADES



4 BLADES



ANCHOR



ANCHOR PROPELLER

- Example: Tooth paste





AGITATORS

AGITATOR RANGE



AGITATOR RANGE

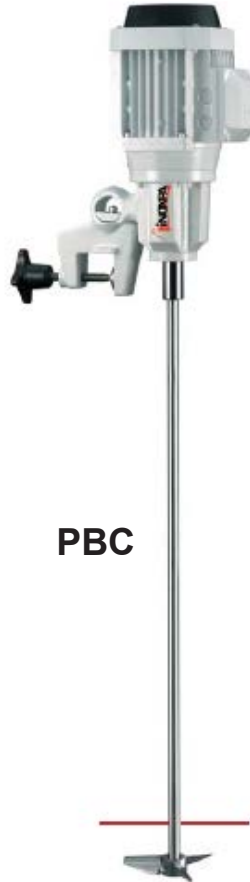
• DIRECT MOTOR



CPG



BCI



PBC



BMI



BFI



FMI



AGITATOR RANGE

• DIRECT MOTOR

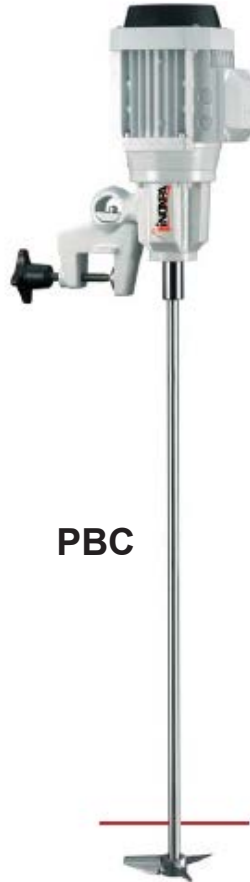
Wine & Oil



CPG



BCI



PBC



BMI



BFI



FMI



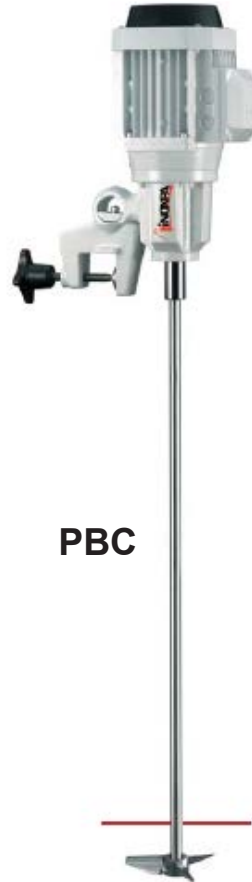
AGITATOR RANGE

• DIRECT MOTOR



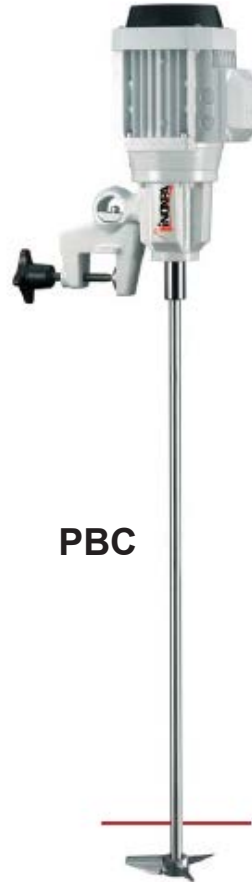
AGITATOR RANGE

• DIRECT MOTOR



AGITATOR RANGE

• DIRECT MOTOR



AGITATOR RANGE

- GEAR MOTOR**



NHS



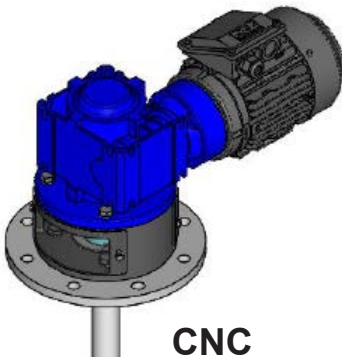
AGC



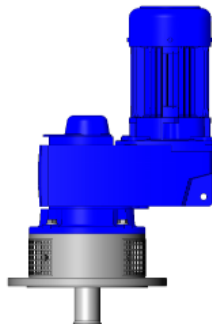
LR / LRE



BMA



CNC



CRC



LHR



AGITATOR RANGE

- GEAR MOTOR

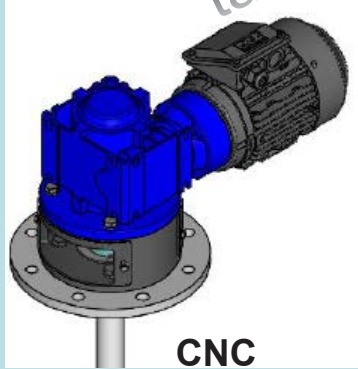


NBI



NHS

Medium tanks



CNC



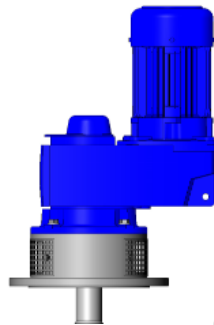
AGC



LR / LRE



LHR



CRC



BMA



AGITATOR RANGE

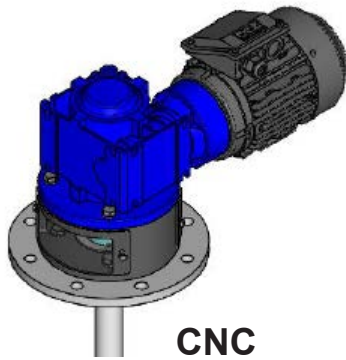
• GEAR MOTOR



NBI



NHS



CNC



AGC

CRC

Big tanks



LR / LRE



LHR



BMA



AGITATOR RANGE

- GEAR MOTOR**



NBI



NHS

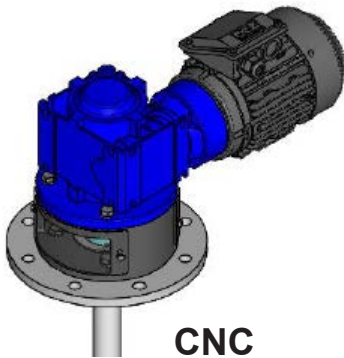


AGC

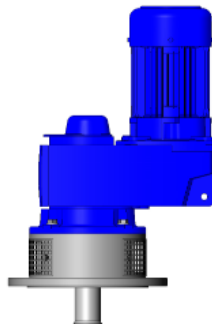


LR / LRE

LHR



CNC



CRC



BMA



AGITATOR RANGE

- GEAR MOTOR**



NBI



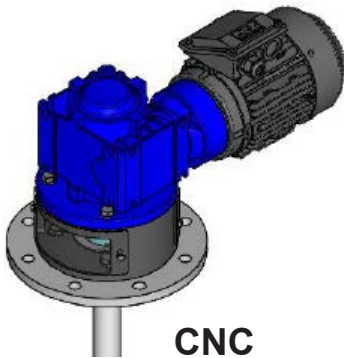
NHS



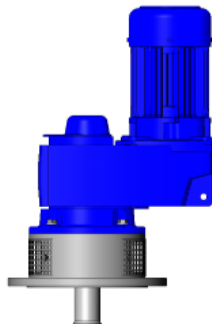
AGC



LR / LRE



CNC



CRC



LHR

Pharma applications



BMA



AGITATOR RANGE

SURFACE
FINISH

DIFFERENT
SEALING
DEVICE

MOTOR
SHROUD

DIFFERENT
PROPELLERS

OPTIONS

ATEX
CERTIFICATE

PNEUMATIC
MOTOR

DIFFERENT
MOTOR
PROTECTION





MIXING EQUIPMENT SELECTION

GET INFORMATION

- Viscosity
- Density
- Temperature
- Explosive atmosphere
- Abrasive
- Corrosive
- Shear sensitive



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DATA COLLECTION FOR AGITATION AND BLENDING

v.1.1 May/04 Date: _____ Qty: _____
 TYPE: INOXPA recommendation
 Replacement equipment? New equipment

CLIENT DATA:
 Company: _____ Phone: _____
 Contact person: _____ Fax: _____
 Address: _____ e-mail: _____
 City: _____ Country: _____

PRODUCT DATA:
 Abrasive? Yes No Delicate? Yes No Corrosive? Yes No
 Process: Maintenance Smooth agitation Striation Dissolve Relative agitation Suspension Dispersion Other agitation Others
 Maintenance: To keep in smooth movement the product. (i.e. Avoiding dissociation of fat phase and aqueous phase in milk storage tanks)
 Suggestion: Top mounted or side entry agitator

Initial viscosity: _____ cP Final viscosity: _____ cP
 Solid concentration: _____ % Sp. Gravity: _____ g/dm³ Process time required: _____ min Particle size: _____ µm

Component	Viscosity	Density	Fraction (%)	Temperat (°C or °F)
1				
2				
3				
4				

IS THERE ANY EXPLOSION RISK? Yes No COMPATIBLE GASKET MATERIAL WITH THE PRODUCT: NBR (Nubunar) Viton PTFE
 Are the gasket, material or rugosity certifications required? Yes No
 AT EX ZONE: It is not an ATEX zone EQUIPMENT FINISH: STANDARD (Ra=1.6µm (Ra=63µin) and satin polished) POLISHED

DRIVE UNIT DATA:
 SUPPLY: Electric Pneumatic Other _____
 VOLTAGE: 230/400V 400/690V 220/440V OTHER _____ V
 SINGLE PHASE? YES NO
 FREQUENCY: 50Hz 60Hz VARIABLE SPEED? No variation Variable speed gearbox Freq. converter
 MOTOR PROTECTION: IP 55 IP 65 IEC B35 IEC B33 OTHER _____
 ELECTRIC PANEL: RING PANEL PROTECTION AND SWITCH ON/OFF OTHER _____
 PROTECTION SWITCH ON/OFF AND FREQ. CONVERTER

VESSEL DATA:
 Volume: _____ liters Pressure: _____ bar Temp: _____ °C
 Cylindrical Spherical
 Straight wall: _____ mm Bore: _____ mm Height: _____ mm
 Bottoms: Up: Flat Down: Flat YES NO
 Morhole dimensions: _____

COMMENTS: (i.e. How is the process now? Which are the possible improvements?)

ANNEX (ONLY FOR BENDERS and special mixer connections)

Note: for in line mixers and blenders will be needed a piping installation sketch in order to foresee a possible feeding pump.

Page 1

VERTICAL BLENDER M228W440:

HORIZONTAL TABLE BLENDER M20C M28C:

Note: the standard M20C/M28C is executed without mixer. There is the possibility to make this equipment customized.

IMPORTANT NOTES:
 1- Maximum working temperature: 65 °C (149 °F)
 2- Is advisable working in batch recirculation
 3- Blender is not a pump. It have a poor pumping performances with the hopper valve opened.
 4- Blender must work in charge.
 5- For viscous products (more than 500 cP) it is necessary to use feeding and discharge lobe pumps.
 6- Blenders have an optimal flow rate, we will advise working in this optimal range.

HORIZONTAL BLENDER M20M26:

GENERAL DATA:
 Needed flow rate: _____ m³/h See note 6
 Needed solid amount: _____ kg/h
 Special connections: Clamp Female ISO 2862 (standard)

AUTOMATION OPTIONS FOR THE M20C/M28C AND FOR THE M20M26:
 Electric panel (switch on/off and overheat protection), this is standard for M20C and M28C
 Hopper shaker
 Switch on/off button for shaker in the panel.
 Automatic hopper valve, controlled by a minimum powder detector in the hopper.
 Maximum powder detector in the hopper.

GENERAL OPTIONS FOR THE M20M26 AND THE M20C/M28C:
 Hinged hopper lid with cleaning ball.
 Mix screen lid. (Standard in the M20C/M28C)
 Chaining.
 Outlet in line mixer.
 Inlet / outlet pumps.

Page 2





MIXING EQUIPMENT SELECTION

SELECTION



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English

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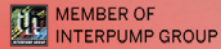


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MIXERS

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MIXERS

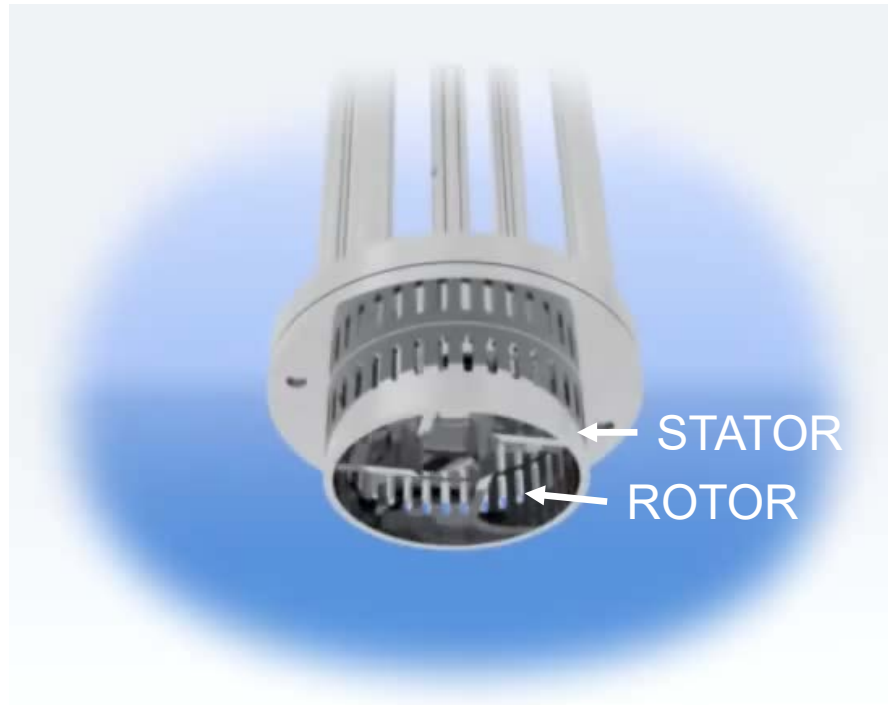
MIXERS

A large, semi-transparent image of an industrial mixer with three vertical shafts and a central mixing chamber, set against a light blue background.

WHAT IS A MIXER?



INOXPA



TO SHEAR





MIXERS

MIXERS

MIXER RANGE

→ https://youtu.be/eONepZ4_Gtg





Atmospheric tanks

VERTICAL MIXER

ME-1100



BOTTOM MIXER

ME-6100



**RECIRCULATION
BOTTOM MIXER**

ME-6100 RE



**MIXER
IN-LINE**

ME-4100



**MULTITOOTH
MIXER**

ME-892X



OPTION

VORTEX
PROPELLERCIRCULATION
PROPELLER

OPTION

SLIM
SYSTEM

OPTION



*STANDARD
ESTATOR



FINE
SCREEN



DISINTEGRATING
ESTATOR



Pressurized tanks



VERTICAL MIXER

ME-1100



BOTTOM MIXER

ME-6100



RECIRCULATION BOTTOM MIXER

ME-6100 RE



MIXER IN-LINE

ME-4100



MULTITOOTH MIXER

ME-892X



BOTTOM MIXER (ME-6100)

- **Example:** Carbopol (water-soluble polymer, emulsion stabilizer) for cosmetic cream





**VERTICAL
MIXER**

ME-1100



**BOTTOM
MIXER**

ME-6100



**RECIRCULATION
BOTTOM MIXER**

ME-6100 RE

*In-line
process*



**MIXER
IN-LINE**

ME-4100



**MULTITOOTH
MIXER**

ME-892X



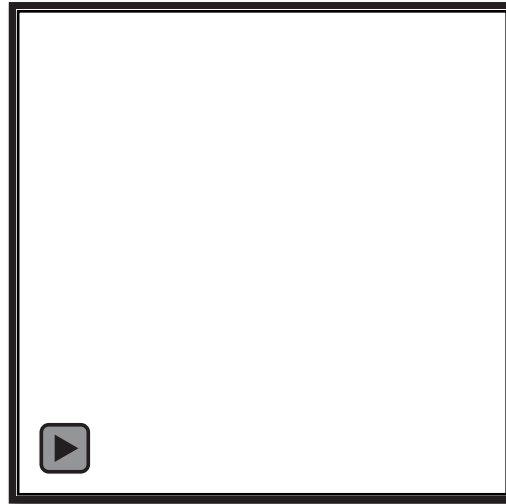
IN-LINE MIXER (ME-4100)

- Example: Vegetables puree



IN-LINE MIXER (ME-4100)

- Example: Vegetables puree





**VERTICAL
MIXER**

ME-1100



**BOTTOM
MIXER**

ME-6100



**RECIRCULATION
BOTTOM MIXER**

ME-6100 RE



**MIXER
IN-LINE**

ME-4100

In-line
process –
High
shearing



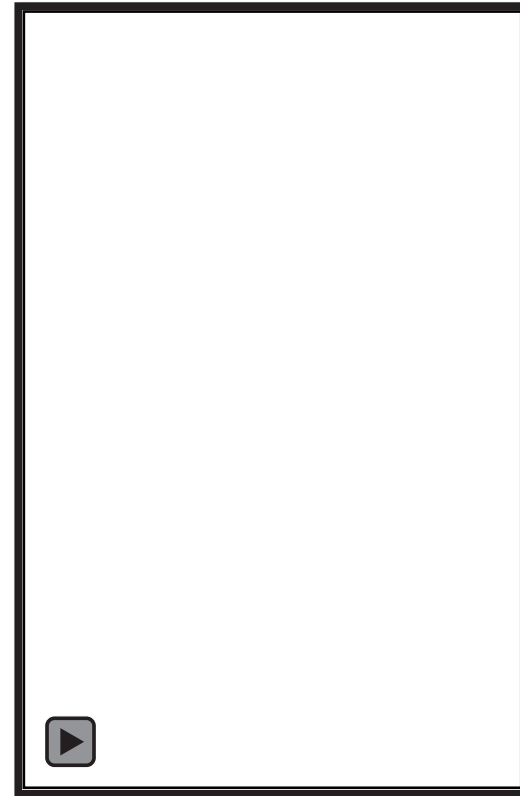
**MULTITOOTH
MIXER**

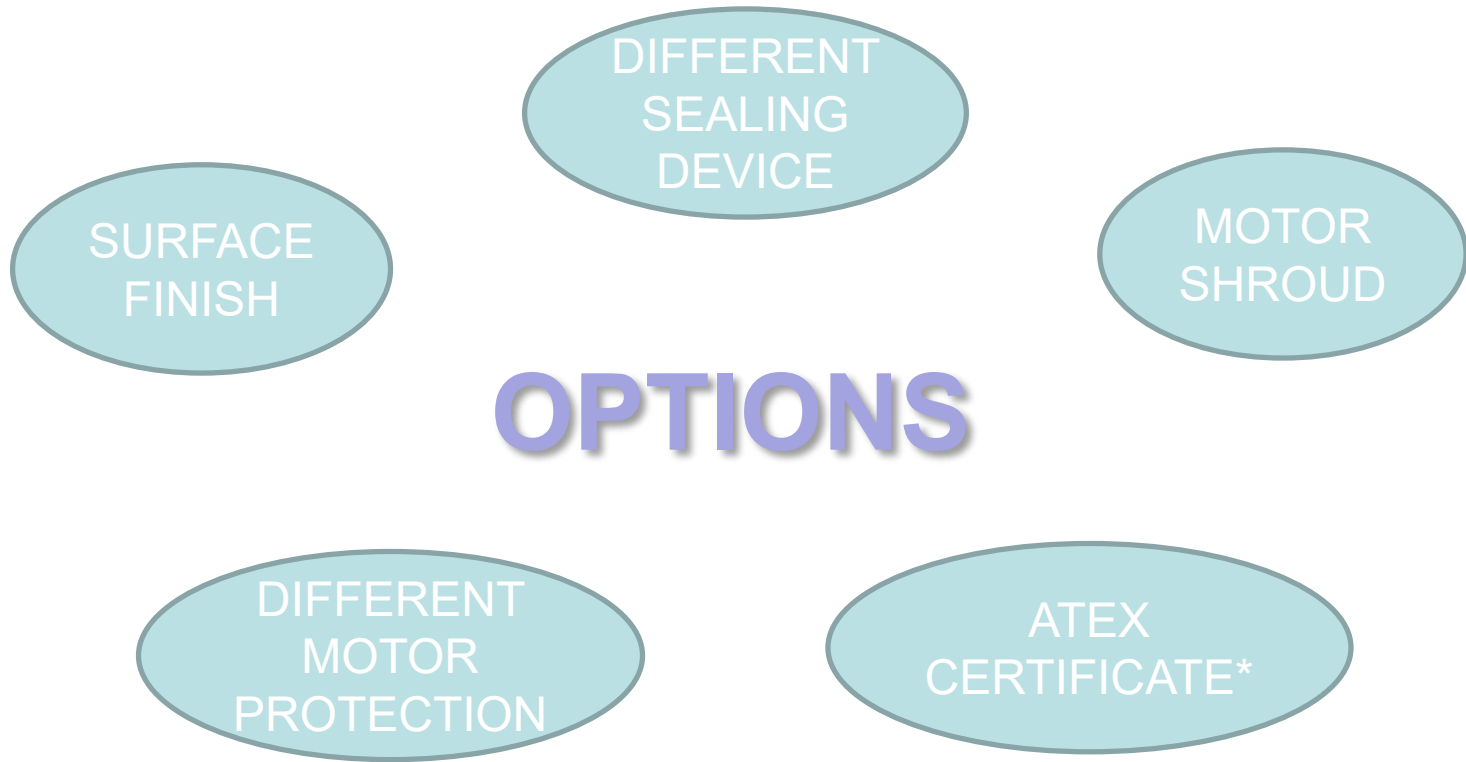
ME-892X



MULTITOOTH MIXER (ME-892X)

- Example: Mayonnaise





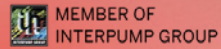
*Only ME-4100 and ME-6100





THANK YOU

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