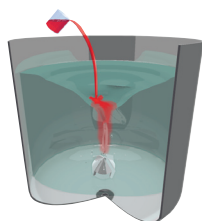




STERIMIXER®

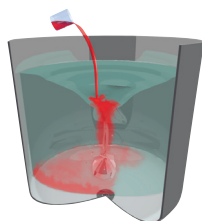
Roplan Steridose Pharmaceutical Products – Sterimixer®

Mixing principle



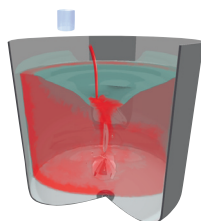
1

When adding soluble powder or liquid in the vortex, there will be rapid downward transport of the contents. Mixer velocity is the most important parameter, and this will vary from application to application in accordance with the process requirements.



2

When the additive powder or liquid meets the top of the impeller the axial movement will be transformed into a radial acceleration from the center of the impeller towards the wall of the vessel.



3

During steps 1 and 2 the additive will be transported efficiently and mixed into the bulk liquid. In addition, the pumping effect along the wall of the vessel will ensure homogeneous mixing, avoiding any localized concentration gradients.



A unique magnetic mixer

The Sterimixer® from Roplan is probably the most used magnetic mixer for pharmaceutical applications worldwide. The mixer consists of the following major components: impeller, bearing, weld plate, drive unit and control box. All wetted parts of the impeller and the weld plate are made of polished EN No. 1.4404 (AISI 316L) stainless steel. Two impeller designs are available:

Aseptic design SMA

Impeller aseptic type SMA, is ideal for critical applications. The SMA impeller has horizontal flow-channels which, using the differential pressure created during rotation, ensure continuous purging of liquid through the bearing and from beneath the impeller. This patented feature optimises the in situ cleaning and steam-sterilization of the impeller assembly, and has been proven in a wide range of applications.

Open design SMO

Impeller open type SMO, for less critical applications, is a cost effective alternative; both impeller types use the same bearing and weld plate assembly and are fully interchangeable. The SMO is the natural choice for applications where shear forces are not critical. The SMO impeller shows excellent CIP performance and can be cleaned efficiently using typical in-vessel equipment, purging directly to drain.

A wide choice of models

Sterimixer® models are available for vessel volumes ranging from 5 to 30 000 liters, with or without control cabinets and with various types of drive units: AC, direct coupled frequency drive "Motec", DC and air, together with Explosion Proof options. The Sterimixer® is manufactured in accordance with relevant industry standards and requirements such as: applicable pressure vessel codes, material traceability requirements and the EU Machine Directive 89/392/EEC, as well as GMP.

Total quality concept

The manufacturing of Sterimixer® is quality assured and certified to be in accordance with ISO 9001 by Lloyds Register Quality Assurance and in addition, benefits from our extensive experience within the pharmaceutical industry.

References

Worldwide references for the Sterimixer® include the manufacture of blood protein fractions, delicate cell suspensions, insulin, LVPs, buffer solutions and oral liquids. Using this background together with a history of manufacturing excellence and full technical support, Roplan can guide you to obtain the most user-friendly and cost-effective solution for your application. The Roplan Development Centre and demonstration equipment are available for confidential customer product testing and CIP tests. We offer facilities for process optimization under controlled technical and financial conditions.



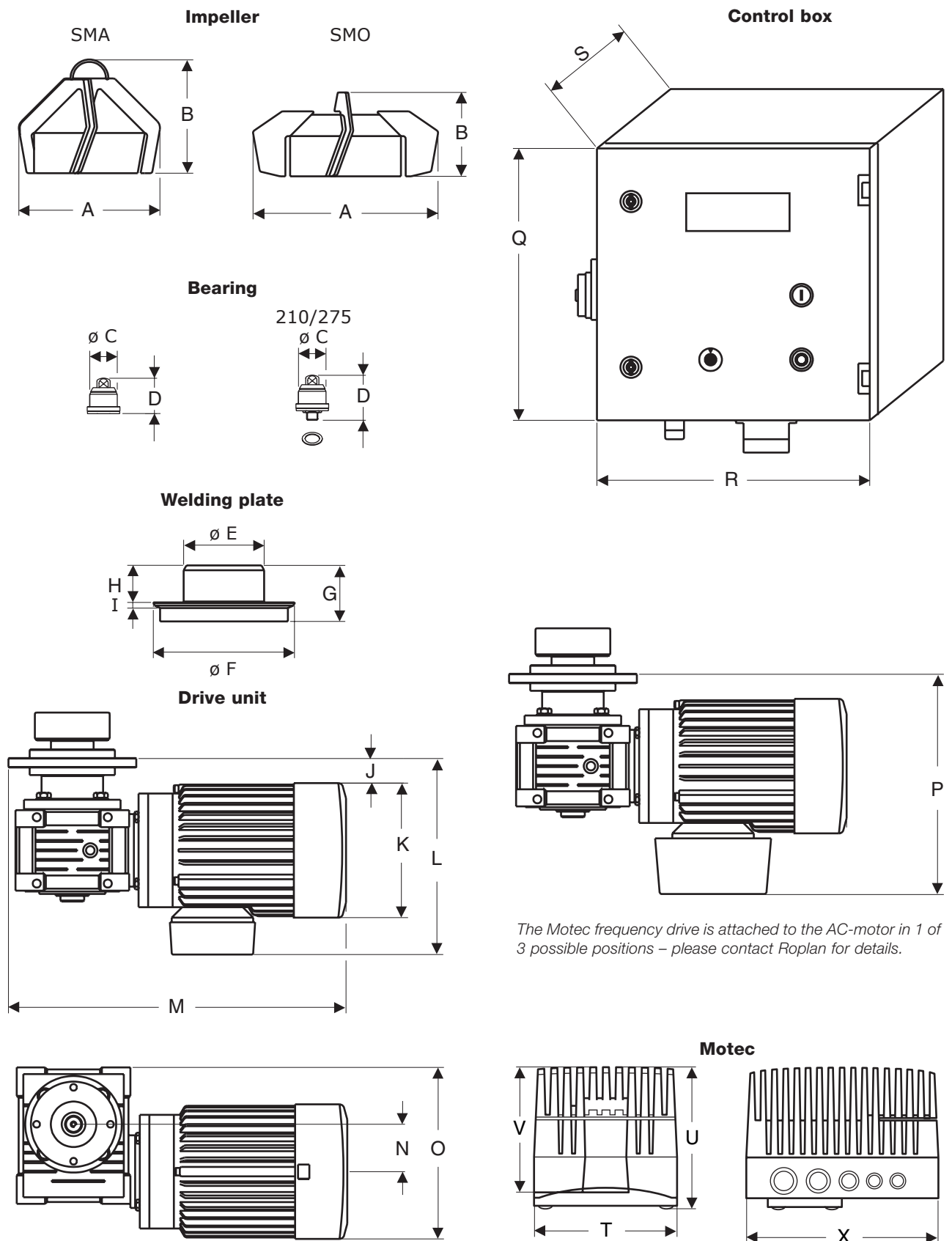
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SPECIALISTS IN SHAFT SEALING
AND MAG DRIVE MIXING

Principal Drawing

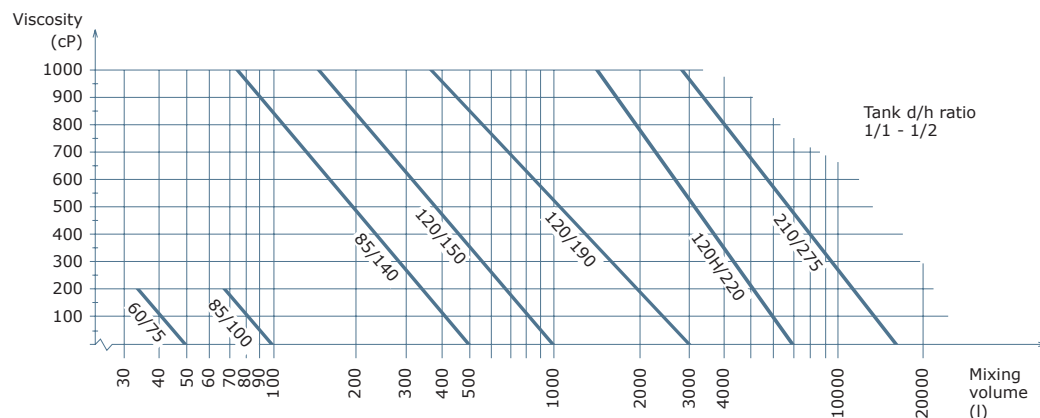


Technical Information

	SMA 60/75	SMO 85/100	SMA 85/100	SMO 85/140	SMA 85/140	SMO 120/150	SMA 120/150	SMO 120/190	SMA 120/190	SMA/SMO 120H/220	SMA/SMO 210/275
Impeller											
A	78	114	100	145	140	163	155	201	190	200/220	275
B	60	71	82	71	82	103	120	110	120	145	140
Bearing											
C	17		17				34			35	50
D	23		23				50,5			53	85
Weld plate											
E	32		54				85			85	168
F	60		90				149			150	280
G	44		48				59			85	72
H	29		28				39			65	52
I	5		5				6			5	5
Motor	75 W AC		180 W AC			750 W AC		1100 W AC		1500 W AC	2200 W AC
J	10		7			9		8		8	24
K	75		120			158		178		178	198
L	133		154			200		219		219	259
M	225		275			357		410		410	607
N	25		30			50		63		63	75
O	76		130			189		224		224	260
P	–		289			335		370		370	410
Control box											
Q						360					
R						360					
S						240					
Motec											
T	–			156						176	
U	–			151						167	
V	–			135						151	
X	–			202						230	
Options											
Motor DC	X	X	X	X	X						
Motor AIR	X	X	X	X	X	X	X	X	X		
Impeller * Monitor	X	X	X	X	X	X	X	X	X	X	
Extended drive-shaft	X	X	X	X	X	X	X	X	X	X	X
Silicon Car- bide bearing	X	X	X	X	X	X	X	X	X	X	X
Eex	Please advise room classification, i.e. Eexde IIB T4										
Max torque (Nm)	0,75		1,5				14			26	38

* Impeller Monitor: Measurement of actual impeller speed with output to digital display or users control system.

Guideline, mixer sizing -mixing volume/viscosity



Bearing material: Tungsten Carbide (standard)
Silicon Carbide (option)

All stainless steel parts: EN No 1.4404 (AISI 316L)
(Other materials available on request)

SMA – Sterimixer Aseptic
SMO – Sterimixer Open

Surface finish of impeller, bearing and weld plate:
Ra 0.5 µm SMO, SMA 210/275 & 120H/220
Ra 0.2 µm SMA

Example: SMO 85/140 180W AC CB Option

SMO – Sterimixer Open
85/140 – Impeller body ø 85, wings ø 140
180W AC – Motor 180 W AC
CB – Control Box
Option – Option from list on page 3

Sterimixer type	Vigorous mixing volume [liters]	Gentle mixing volume [liters]
SMA 60/75	5 – 50	– 100
SMO 85/100	20 – 100	– 200
SMA 85/100		
SMO 85/140	50 – 500	– 1000
SMA 85/140		
SMO 120/150	300 – 1000	– 2000
SMA 120/150		
SMO 120/190	300 – 3000	– 6000
SMA 120/190		
SMA/SMO 120H/220	1000 – 7000	– 14000
SMA/SMO 210/275	3000 – 15000	– 30000

The above recommendations assume non viscous fluids, less than 10 cP.
For other fluids, please contact us for a recommendation.