

motralec

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX

Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48

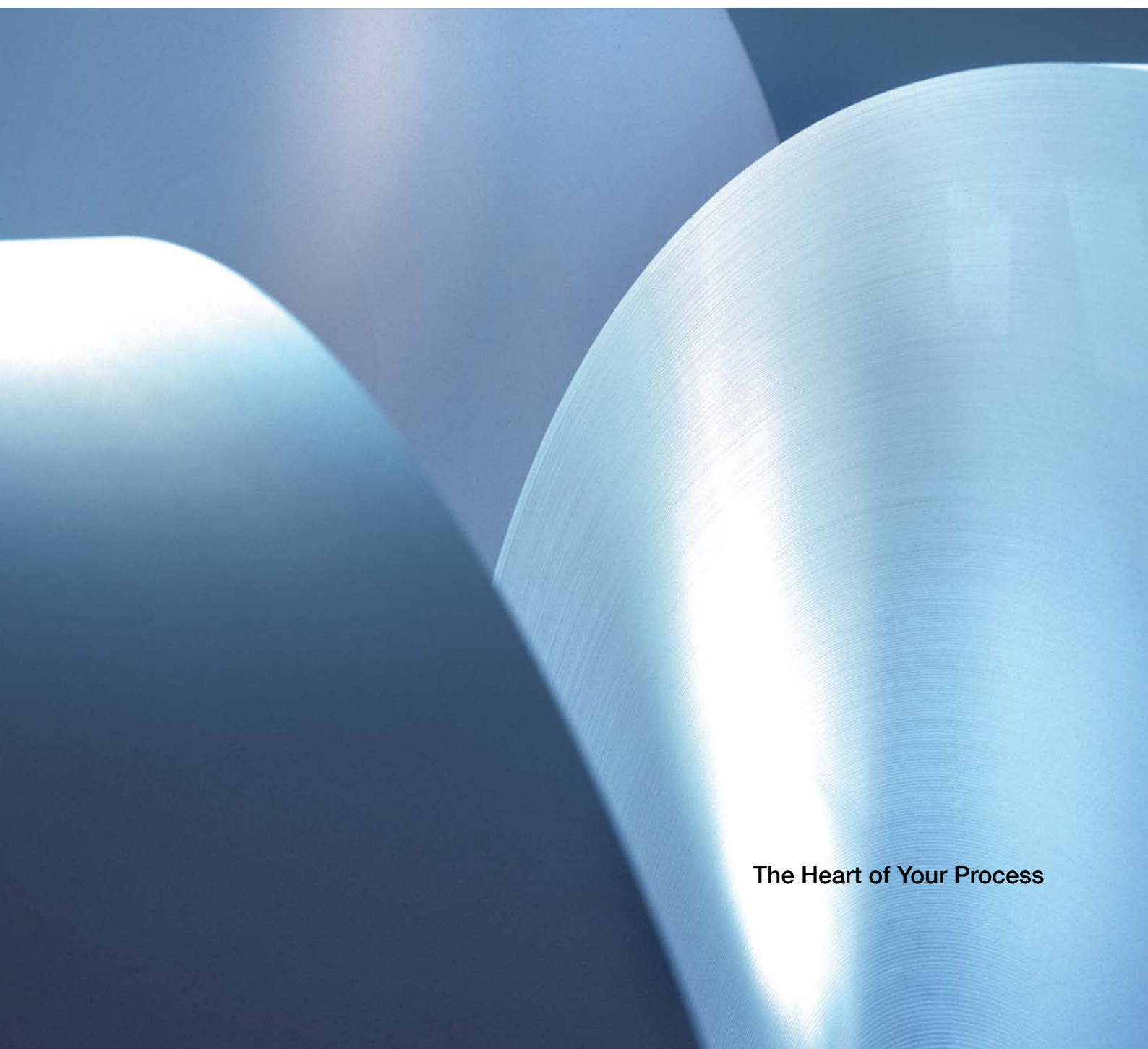
Demande de prix / e-mail : service-commercial@motralec.com

www.motralec.com

SULZER

Sulzer Pumps

The World Leader in Pumps and Mixers for the Pulp and Paper Industry



The Heart of Your Process



% H Q H ,, W I U R P 6 X O] H U 3 X P S V p H [S in pulp and paper pumping and mixing

Sulzer Pumps' success is founded on expertise. Our know-how and competitiveness is based on over 110 years of close cooperation with the world's leading pulp and paper producers, machinery suppliers and engineering companies.

As our customer you will have access to the broadest product

range for pulp and paper industry (PPI) applications featuring the most advanced technology in the world. In many cases, 2TKYDQ /TLOR G@R ADDM SGD jQRS L@MTE@BSTQDQ

Sulzer Pumps is your safest choice for every pumping and mixing application in your mill for its entire lifetime.

Reliability

Reliability of your pumping and mixing solution mainly depends on the product design, the right selection, the manufacturing and delivery process, aftermarket service and all needed support.

Sulzer PPI pumps and mixers are famous for their innovative and sturdy design.

We make standardized products for all normal applications and specialty products for applications with special requirements.

The latest manufacturing technology together with strict PT@KHSX BNMSQNK OQNB DCTQDR @RRTQD and performance over a full range of process conditions. Sulzer Pumps Finland Oy tests all its pumps before delivery. The wide references from all pulp and paper countries SGQNTFG SGD VGNKD VNQKC BNMjQL NTQ V the customer, all these factors together mean high pumping and mixing performance and will create high lifecycle value.

Research and development have always received top priority at Sulzer Pumps. The world's largest R&D center specialized in PPI pumping and mixing is located in Kotka, Finland. We work closely with our customers to develop pumps and mixers that suit our customers'

processes in the best possible way. At our full scale PPI testing facilities, all process equipment can be tested under operating conditions very similar to our clients'. We are also able to make pumping and mixing test runs based on customers' own furnish.

Our own foundry and deep metallurgical knowledge are also remarkable strengths in developing equipment for applications where strong resistance to corrosion and wear is required.



The R&D work at Sulzer Pumps has resulted in many pump, mixer and agitator innovations for the pulp and paper industry. Over the decades, this continuous search for better pumping and mixing solutions has lengthened service intervals and prolonged pump life times in various applications. We are the forerunner in stock pumping and mixing over the whole consistency range from 0 to 18 %.

We take care of our customer relationships through our focused sales and service people with a high level PPI knowledge. Their work – and yours – is complemented by our global knowledge support and good sales documentation. Local tendering and order handling ensures quick response to all your pumping and mixing needs. We look forward to solving any pumping and mixing needs you might have.

In addition to our PPI dedicated personnel and organization, including for example 60 service centers around the world.

SDMBHDR VD ADMDjS EQNL TSHKHYHMF SGD VGNKD 2TKYDQ /TLOR NQ

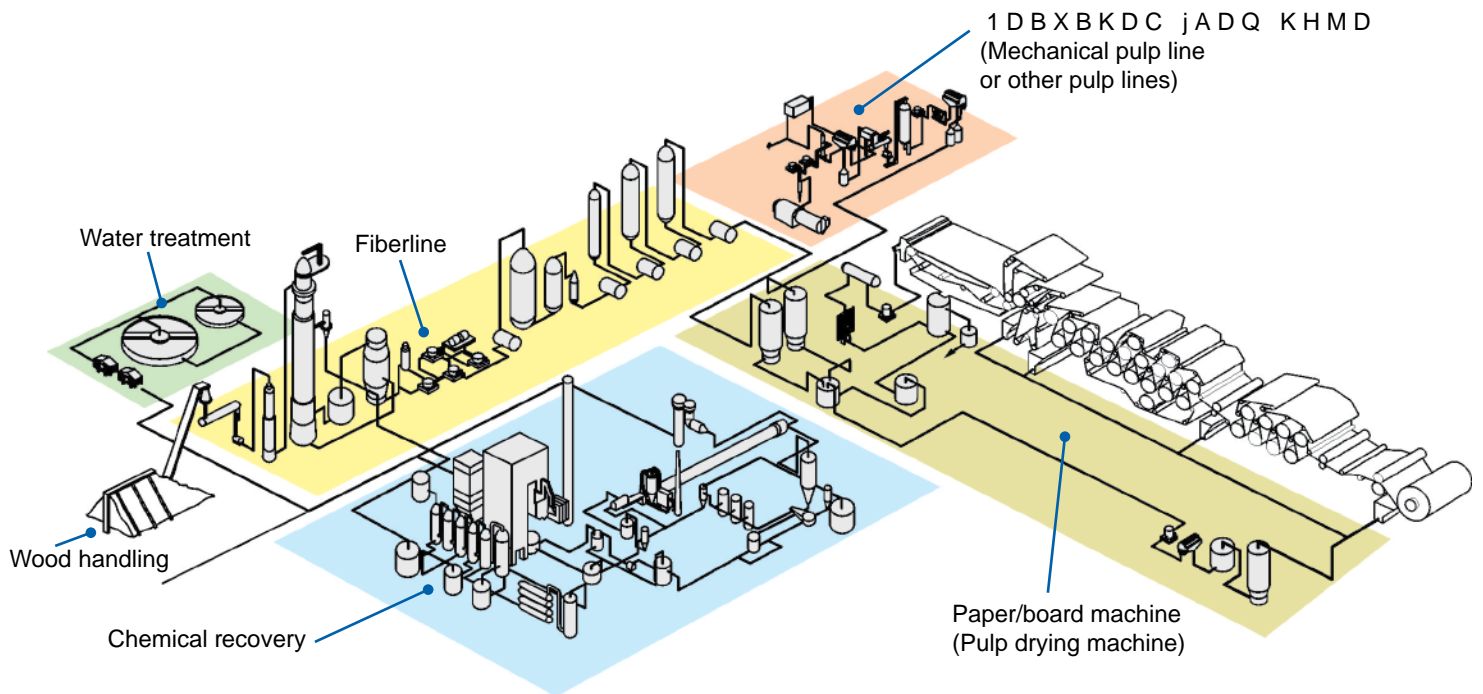


7KH DQVZHU WR \RXU SURFHVV
 LV FDOOHG WKH \$+/67\$5

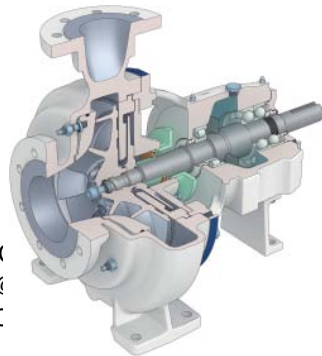
Designed specially for the pulp and paper industry, every AHLSTAR[®] pump is tailor-made to ensure process reliability, save energy, sealing water and environment.

AHLSTAR[®] pumps are designed to meet the EN ISO 5199 reliability standard, and they comply to EN 22858 (ISO 2858) standard.

The modular interchangeability of parts and components enables low spare parts inventory. The pump range offers the lowest total cost of ownership concept with dynamic seal, mechanical seals and packing. The pumps are designed for fast and easy installation, maintenance and service.



*) AHLSTAR[®] is a trademark of Sulzer Pumps



AHLSTAR^{UP} W – Solution against wear

Capabilities

- q SN L GD@C
- q SN K R B@O@BHSX
- q SN !" SDLC

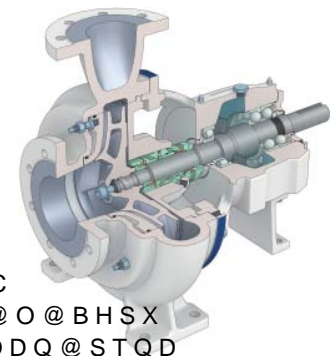
For all normal pumping applications. For stocks up to 8 %, liquors, water, chemicals, white water, condensate etc.

- q .ODM HLODKKDQR @BBNQCHMF SN
- q +NV kNV HLODKKDQ ENQ KNV kNV @
- q +NV/TKRD GXCQ@TKHBR ENQ GD@CAM
- q 2ODBH@K RSNBJ OTLOHMF GXCQ@TK
- @MC RS@AKD OQNBDRR kNV

Capabilities

- q SN L GD@C
- q SN K R B@O@BHSX
- q SN !" SDLODQ@STQD

For the most abrasive and erosive pumping applications, such as fine milk and mud, and coating pigments.



AHLSTAR^{UP} E – Designed to stand pressure and temperature shocks

AHLSTAR^{UP} N – No more clogging

Capabilities

- q SN L GD@C
- q SN K R B@O@BHSX
- q SN !" SDLODQ@STQD

For applications where normal stock pumps cannot handle liquids due to plugging or abrasive wear. For unsorted stocks up to 8 %, slurries, rejects, waste water, chips, or other liquids containing large solids and other particles.

- q 2ODBH@K MNM BKNFFHMF OTLOHMF
- q 5NQSDW NQ NODM HLODKKDQR VHS

Capabilities

- q SN L GD@C
- q SN K R B@O@BHSX
- q SN !" SDLODQ@STQD

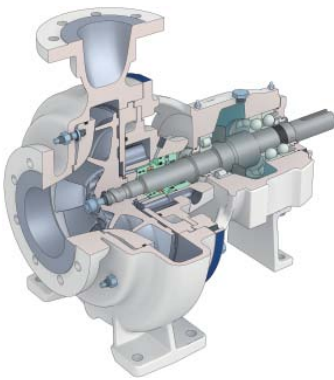
Specially designed for pumping hot liquors such as in continuous and batch digesters (E hydraulics).



, V DLU RU JDV D SUREOHP LQ \R

The AHLSTAR[®] range includes the total pumping concept for air and gas containing liquids with stock pumping (A), non-clogging (N) and wear resistant (W) pumping hydraulics.

These pumps are used for pumping various air or gas containing stocks with consistency up to 8 %, liquors, soap, foaming liquids, slurries, and liquids with a low level in the tank. For free air/gas content of up to 40 %.

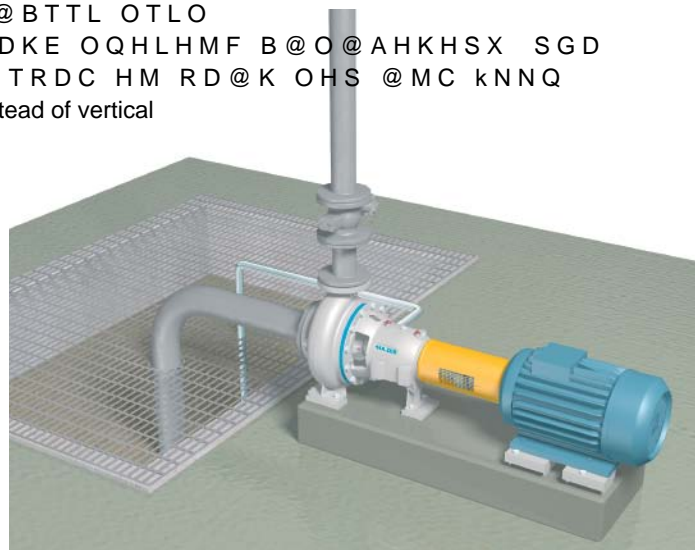


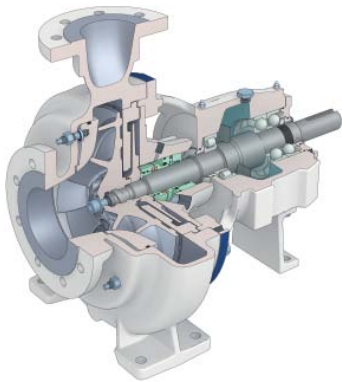
Capabilities

q SN L GD @ C
 q SN K R B @ O @ BHSX AHLSTAR[®] Gas Removal Pump pumping
 q SN ! " SDLODQ @ STQD EN @ L BNMS @ HMHMF KHPHC HM @

q ATHKS HM U @ BTTL OTLO
 q #TD SN SGD RDKE OQHLHMF B @ O @ AHKHSX SGD
 OTLO B @ M AD TRDC HM RD @ K OHS @ MC KNNQ
 channel applications instead of vertical
 or submersible pumps.

% N @ L EQNL kNS @ SHNM

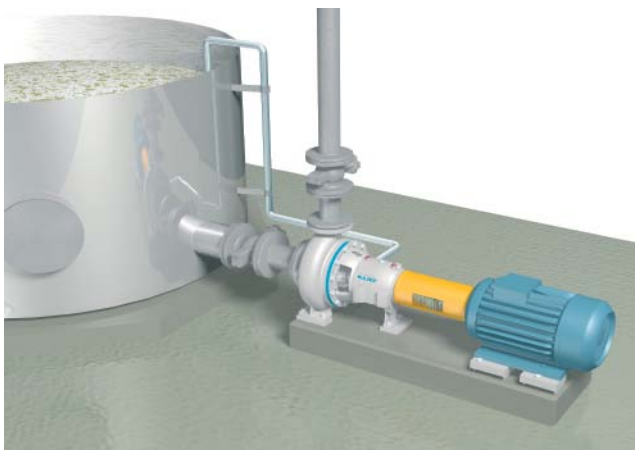




Capabilities

- q SN L GD@C
- q SN K R B@O@BHSX
- q SN !" SDLODQ@STQD

- q ATHKS HM F@R RDO@Q@SNQ

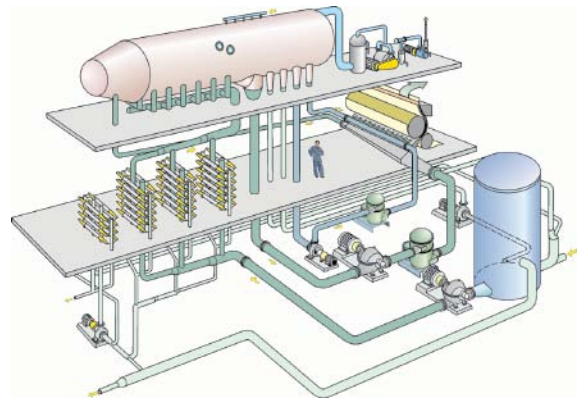


- q 3QNTAKD EQDD OQNBDRR NODQ@SHNM CD
- q 1DCTBDR SGD MDDC ENQ DWODMRHUD @M
damaging anti-foam agents
- q 3GD OTLO L@HMS@HMR @ RS@AKD OTLOH
OQNCTBSHNM kNVR RLNNSGKX
- q 3GD DEjBHDMBX NE NSGDQ OQNBDRR DPT
to gas/air removal
- q M - NQ 6 OTLO B@M AD K@SDQ BNMUD
W self-priming gas removal pump or into a pump with gas
separator or vice versa



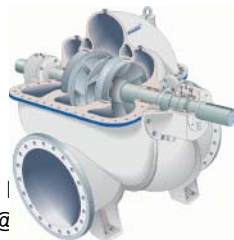
3 X P S V I R U \ R X U P R V W F U L W L F D O D Q G G H P D Q G L Q J F R Q G L W L R Q V

The Sulzer Pumps product range includes several pump types designed for applications with special requirements in various pulp and paper mill processes. As the entire paper machine production passes through the headbox feed pump, it is one of the most critical pumps in the mill.



Capabilities

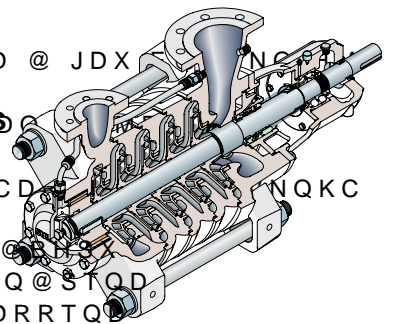
- q SN L GD@C
- q SN K R B@O@I
- q SN !" SDLODQ@



ZPP pumps are especially designed for today's high speed paper and board machines requiring minimum pulsation,

- @ ARNKTSD QDKH@AHKHSX @MC GHFG DEjBHDMBX
- q /QDBHRHNM B@RSHMFR EQNL NTQ NVM ENTMCQX @QD @ JDX
- ETKjKKHMF SGD KNV OTKR@SHNM QDFFHQBLLDMR
- q 'HFG PT@KHSX RTQE@BD jMHRGHMF
- build-up of deposits
- q /QNUDM QDKH@AHKHSX VHSG U@QH
- record paper and board machines

MBN Multistage Ring Section Pumps

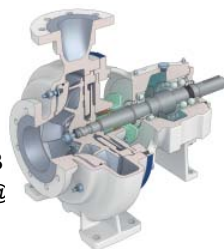


- Capabilities @ ODQ FQ@CD
- q SN L GD@C
- q SN K R B@O@I
- q SN !" SDLODQ@STQD
- q SN A@Q OQDRRTQ

AHLSTAR^{UP} A Process Pumps for Headbox Application

Capabilities

- q SN L GD@C
- q SN K R B@O@B
- q SN !" SDLODQ@



AHLSTAR^{UP} A Process with the LowPulse impeller are especially designed for today's high speed paper and board machines requiring minimum pulsation, absolute reliability @ MC GHFG DEjBHDMBX

For clean or slightly contaminated liquids in shower water, sealing water, boiler feed water applications etc. where a high pressure/high head is needed.

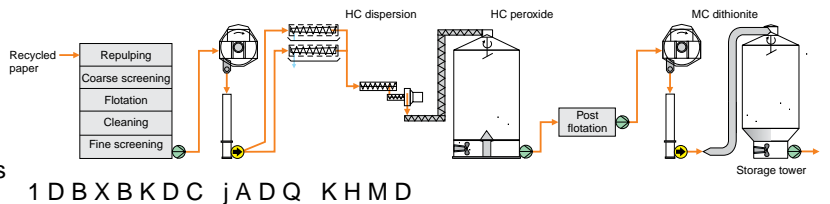
- q 2STQCX CDRHFM DMRTQDR QDKH@AKD NO
- nance
- q (MMNU@SHUD ONKXFNM jS ADSVDDM HLOD
- q , @HMSDM@MBD EQDD CXM@LHB RD@K LD
- gland packing are available for shaft sealing
- q \$@RX SN L@HMS@HM I NMKX NMD QNKKDC
- shaft seal needed



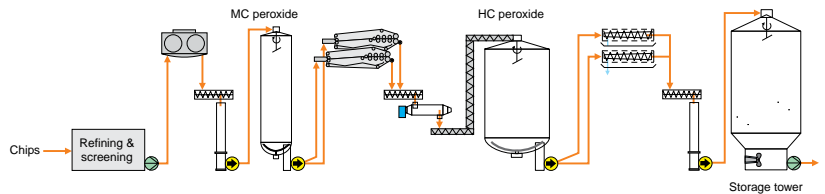
5 H O \ R Q W K H S L R Q H H U V
 L Q P H G L X P F R Q V L ® V W H H Q F K \ Q R O & R J \

Sulzer Pumps' MCE™ pumping systems for medium consistency (MC®) stock have proved themselves to be the most reliable solution in the pulp and paper industry.

Sulzer Pumps utilizes application related Fluider™ technology when selecting pumping solutions for pulp and paper mills.



The Fluider™ technology include proven patented stock pumping ranges:
 LCE™ Pumping Systems
 MCE™ Pumping Systems
 KCE™ Pumping Systems



The main advantages

D Q G E H Q H ð W V D U H

Mechanical pulp line

q ' H F G D R S D E j B H D M B X Q D C T B H M F O N V D Q B N M R T L O S H N M

and installation costs

q " N Q Q D B S K T H C H Y @ S H N M O Q D U D M S R j A S Q N U D Q S O D @ S L D M S

q # D F @ R R H M F @ K S D Q M @ S H U D R

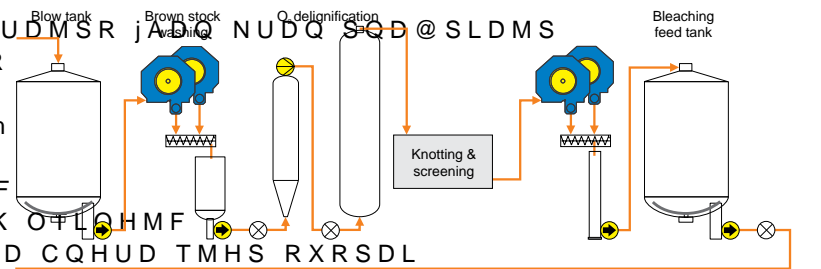
- a built-in degassing system
- a separate external MDS degassing system
- degassing without a vacuum pump

q ' H F G S D L O D Q @ S T Q D O T L O H M F

q + N V @ M C G H F G H M K D S K D U D K O P L Q H M F

q (M L N R S @ O O K H B @ S H N M R N M D C Q H U D T M H S R X R S D L

q / Q N U D M K N M F K H E D S H L D L D B G @ M H B @ K C D R H F M

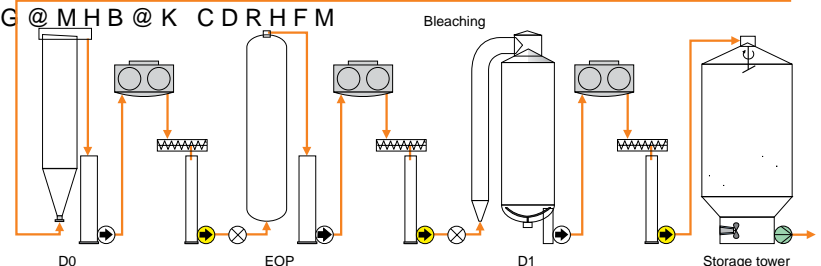


Capabilities

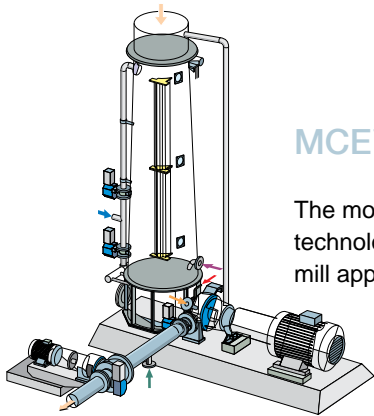
q S N L G D @ C

q E Q N L S N # , 3 C

q B N M R H R S D M B X Q @ M F D I

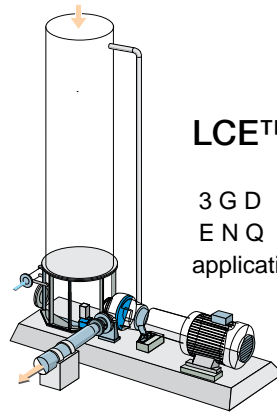


Kraft pulp bleaching line



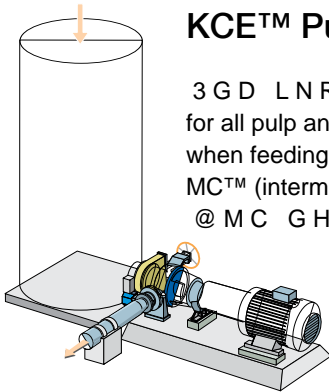
MCE™ Pumping System

The most advanced MC® pumping technology for all pulp and paper mill applications.



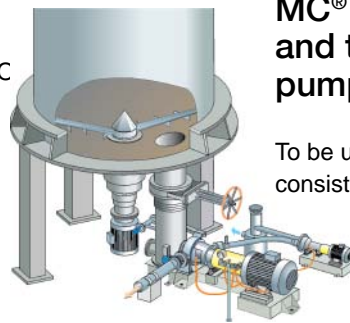
LCE™ Pumping System

3 GD LNRS DEjBHDMS OTLOHMF S
ENQ QDBXBKDC jADQ @MC LDBG
applications.



KCE™ Pumping System

3 GD LNRS DEjBHDMS OTLC
for all pulp and paper mill applications
when feeding press washers in the Semi-
MC™ (intermediate consistency) range
@ MC GHFG UNKTLD KNVR



MC® Discharge Scraper and the tower discharge pumping

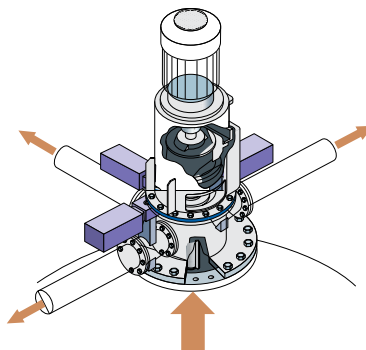
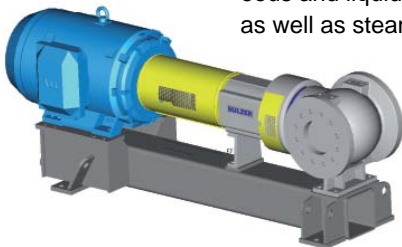
To be used for discharging high consistency towers.

Capabilities

q SN SNVDQ BNMRRH
tency without dilution
q SN I SNVDQ
consistency with dilution
q NTSKDS BNMRRHSDMB
cally 8 – 13 %

SX Chemical Mixer

Chemical mixer for mixing both gas-
eous and liquid bleaching chemicals
as well as steam into the paper stock.

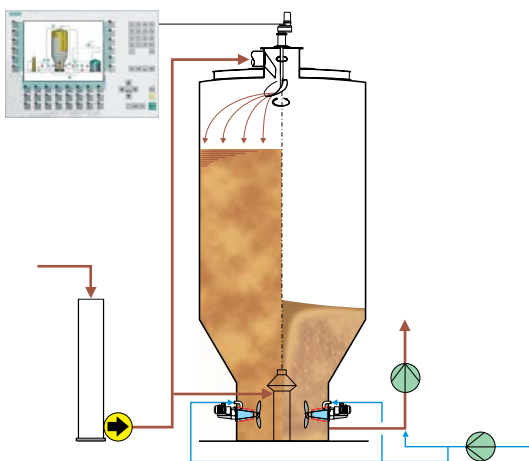


MC® Discharger

MC® Discharger for dividing
and controlling high con-
RHRSDMBX RSNBJ kNV @
discharging towers or reac-
tors. It is possible to remove
gas from the process with
an MC® Discharger.



6\$/20,®, PL[LQJ WHFKQRORJ\ SURC
IRU \RXU UHOLDEOH DQG HI,,FLHC



Sulzer Pumps has unique knowledge of the needs of pulp and paper industry's agitation processes. Over 30 years experience within PPI ensures success in the challenges of today's mixing tasks.

TES spreads stock evenly on the SNO RTQE@BD SN BNMSQNK SGD kNV in the upper, high-consistency part of the tower. The quality of the discharged stock remains good. This method gives following advantages:



- q " QD@SDR @ TMHENQL BNMSHMTNTR CNVMkNV MN RS@FM@MS stock zones.
- q 5@QH@AKD QNS@SHMF RODDC @KV@XR ROQD@CR @ EQDRG SNO K@XDQ of stock regardless of the surface level.
- q /QDUDMSR BG@MMDKHMf @MC @HQ DMSQ@HMLDMS HMSN SGD RSNBJ

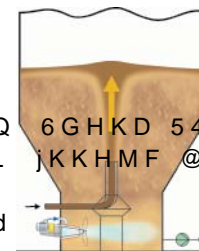
SALOMIX® GLI *)

&+(HR @ ROdbh@K BDMsDQ jKKDS KNB@SD the bottom of the storage tower. GLI enables trouble-free operation of high-consistency storage and bleaching towers with a large bottom zone using several agitators. GLI ensures effective LHWHMf @MC CHKTSHNM HR HMSDMRHjDC q &+(VHSg CHKTSHNM A@EkDR HR TRDC SN mixing/dilution zone to the tower bottom. q &+(RDO@Q@SDR DEEDBSHUDKX SGD RSN and dilution zone of the tower thus giving a powerful tool to ensure even discharge consistency and good operation of the tower.

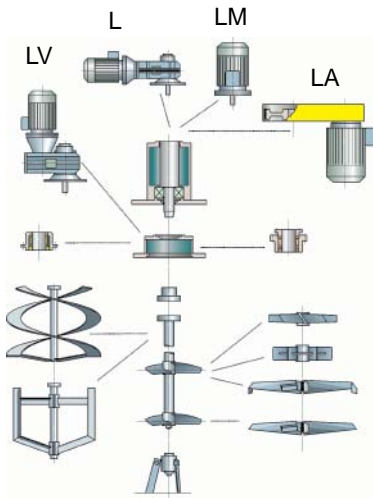


SALOMIX® VULCA *)

VULCA is another type of tower bottom BDMsDQ jKKDS OHKK@Q 6GHKD 54+" RS@M @S SGD SNVDQ ANSSNL jKKHMf @MC OTLO stock through VULCA saves pumping energy, boosts bottom zone mixing, and prevents the mixing of air into the stock at low stock levels.



*) Patented



Vertical Module Agitators

The L series covers gear or belt driven agitators mounted on vertical shafts. They are intended for storage towers, dissolvers, reactors, and production vessels.

q 5DQR@SHKD HLODKKDQ NOSHNMR
 BNLOKH@MBD VHSG SGD QGDKN
 q ,@WHLTL LNCTK@Q BNLONMDMS k
 q OOKHB@AKD ENQ S@MJR EQNL
 q (LODKKDQ CH@LSDQR TO SN
 up to 450 kW



SALOMIX® LV Agitator

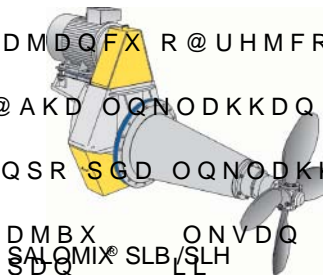
SALOMIX® SL

SL side-mounted gear or belt driven propeller agitators are specially designed for all stock process conditions:

- q 'HFG DEjBHDMBX QDRTKSR HM DMDQFX R@UHMFR @ M improved agitation
- q " @RS ENTQ AK@CDC @CITRS@AKD OQNODKKDQ AK @ give accurate power control
- q "NMHB@K ANCX RG@OD RTOONQSR SGD OQNODKKDQ @ MC ensures vibration free operation
- q , @WHLTL @FHS@SDC BNMRHRSDMBX ONVDQ J6 @MC OQNODKKDQ CH@LSDQR
- q Unique solutions



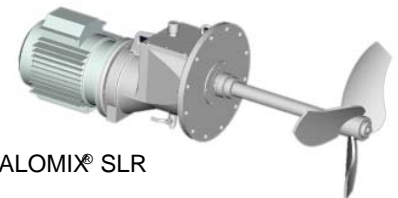
SALOMIX® SLG
Gear Drive



SALOMIX® SLB/SLH
Belt Drive



SALOMIX® SLF
Gear Drive



SALOMIX® SLR



Maintaining and improving

S X P S L Q J D Q G D J L W D W L R Q S H U I R

Sulzer Pumps – Customer Support Services –

High Availability and Performance

The continuous availability and high operating performance of pumps and agitators in pulp and paper mills is the key target for our customer support service organization.

Through our highly experienced personnel and process and application knowledge, we provide a full range of innovative service solutions to our customers to keep their pumps and agitators running.

q 2O@QD O@QSR
 q %HDKC RDQUHBD
 q 1DO@HQ RDQUHBDR
 q 1DSQNjSR
 q ,@HMSDM@MBD @FQDDLDMSR

Spare Parts Services

We supply original, high integrity spare parts for all our equipment. Quick response is ensured by consolidated warehouses.

Our subassemblies and kits make pump maintenance at a pulp or paper mill fast and simple.

q \$WBG@MFD TMHSR
 q !D@QHMF TMHSR
 q 4OFQ@CD JHSR
 q 2DQUHBD JHSR

Our spare parts are made of the same advanced materials as our new equipment. Sulzer original spare parts are machined

SN SGD BNQQDBS OQNjKDR SNKDQ@MBDR@MCCBKD@NCCMBQBSQNJSHUNK@SHNMF

ODQEDBS js jQRS SHLD DUDQX SHL

.TQ GHFGKX DWODQHDMBDC jDKC RDQUHBD
 SGD @QS DPTHOLDMS OQNUHCD @ VHCD QO
 pumps and agitators.

q .M RHSD QDO@HQR @MC NUDQG@TKR
 q (MRS@KK@SHNM @MC HMRODBSHNM RDQU
 q 2S@QS TO @MC RTODQUHRNM
 q "NMCHSHNM LNMHSNQHMF
 q /TLO RTQUDEXR
 q 3Q@HMHMF
 q %@TKS CH@FMNRSHBR @MC SQNTAKD RGI
 .TQ jDKC RDQUHBDR CDKHUDQ DMG@MBDC

For our customers this means improved overall availability and elimination of 'problem' pumps in addition to optimization of inventory levels.

When you plan to service or refurbish pumps or agitators in your mill our service organization is there to help you. Our repair services cover nearly all kinds of pumps and agitators in a pulp or paper mill including all process, multistage, double suction and vertical pumps, MC® equipment and agitators.

As an essential part of our repair services, we carry out careful fault analysis and provide our customers with a professional assessment of repair needs including a cost estimate before the repair.

performance beyond the original values. Our upgrade and modernization services include all the steps from site analysis through rebuild of the equipment to start-up and training.



.TQ QDSQNjS RNKTSHNMR S@QFDS U
 q 'HFGDQ OTLOHMF NQ @FHS@SHNM
 q +NVDQ DMDQFX BNMRTLOSHNM
 q (MBQD@RDC KHEDSHLD
 q \$KHLHM@SHNM NE OQNAKDLR HM
 q "KD@Q BNRS QDCTBSHNMR

Maintenance Agreements

Our customer services can be combined into service agreements. In addition to the traditional customer services, continue to develop new service solutions to be included in service agreements.

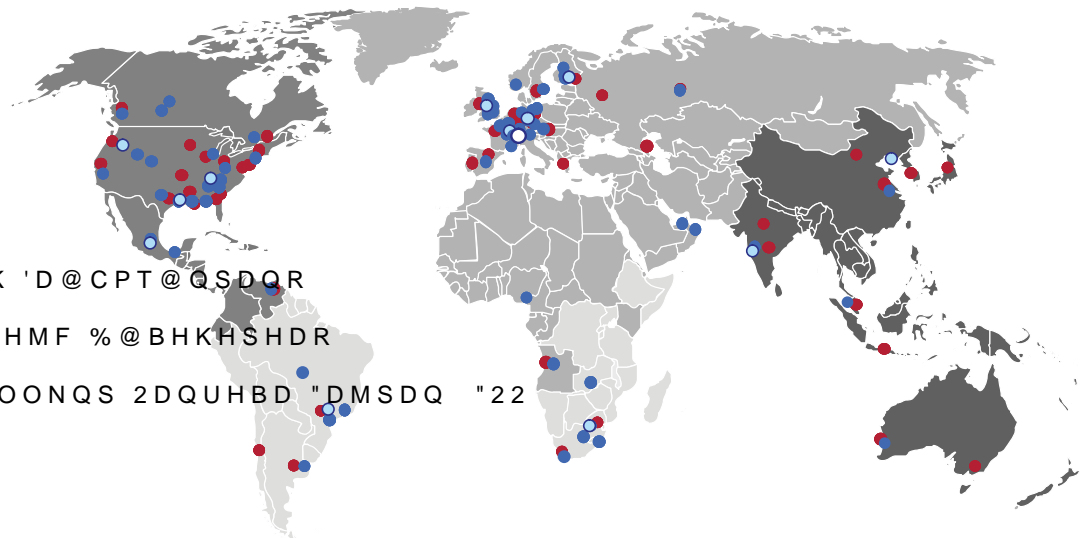
- q \$WBG@MFD 4MHS 2DQUHBD SN DKHLHM@SD
 - q (MU. I .OSHLHYDC (MUDMSNQX "NMBDOS SN QDCTBD@MC
 - q /TLOR.MKHMD !ITRHMDRR SNNK ENQ
- eliminate spare parts inventories.
 installed equipment base, product documentation and an opportunity to order all the spare parts electronically.

Energy Audits

Cost effectiveness and green values are becoming more and more important in global business. Our solution for these needs is the Sulzer Green™ & QD@SDQ DMDQFX DEjBHDMS (new solutions) concept. The Sulzer Green™ concept combines customer process know-how with Sulzer expertise and DMDQFX DEjBHDMS OQNCTBSR HM @ BNRS I NOSHLHYDC OTLOHMF OQNBDRR VHSG GHFC ter reliability and upgraded capacity.

Our customer services are geared to continuously improve the pumping and agitation performance at our customers' mills. Our expertise and services are focused on the following performance improvement targets:

- q (MBQD@RDC DPTHOLDMS@U@HK@AHKHSX
- q 1DLNU@K NE ANSSKDMDBJR
- q (LOQNUDC DEjBHDMSBX
- q (MBQD@RDC DPTHOLDMS KHEDSHLD
- q \$KHLHM@SHNM NE OQNAKDL OTLOR
- q .OSHLHY@SHNM NE OTLOHMF @MC @FHS@
- 6D DMRTQD XNTQ OQNBDRR KNV MDUDQ RSI



- #HUHRHNM@K 'D@CPT@QSDQR
- ,@MTE@BSTQHMF %@BHKHSHDR
- "TRSNLDQ 2TOONQS 2DQUHBD "DMSDQ "22
- 2@KDR .EjBD

motralec

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48
Demande de prix / e-mail : service-commercial@motralec.com
www.motralec.com

