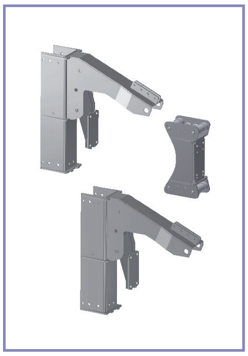
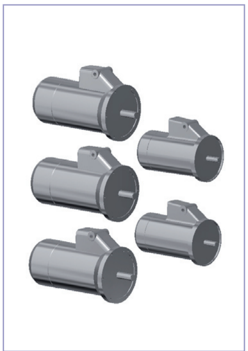
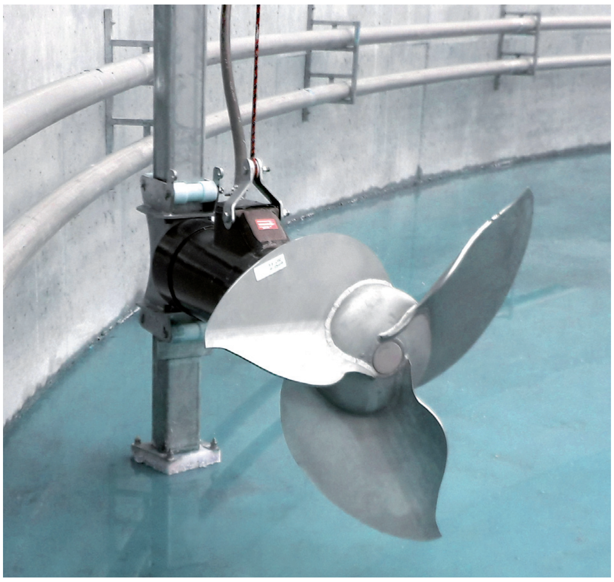
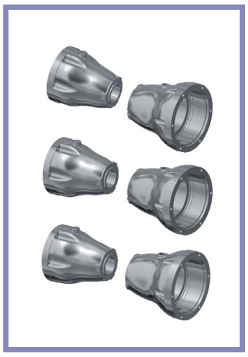
streisal

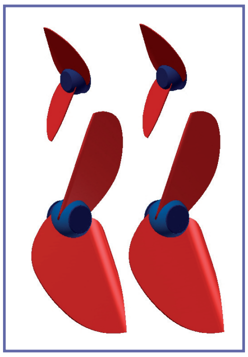
DIE RÜHRWERKPROFIS











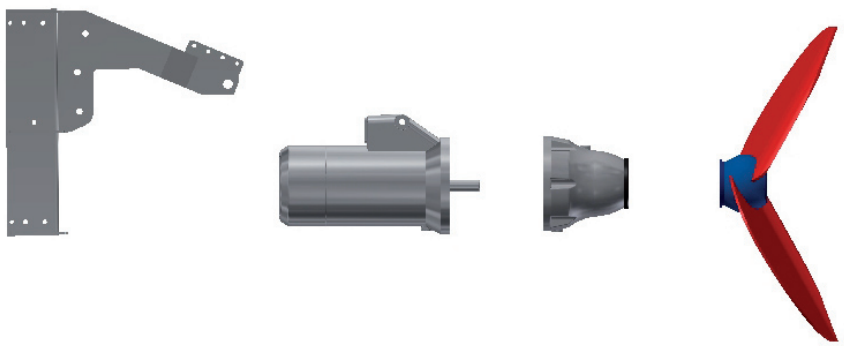
SUBMERSIBLE MIXERS

NEW SERIES – NEW STANDARDS

SUBMERSIBLE MIXERS:

FOR 25 YEARS, STREISAL GMBH HAS BEEN INVOLVED IN THE USE OF SUBMERSIBLE AGITATORS IN INDUSTRIAL PROCESSES: FROM AGRICULTURE AND THE MUNICIPAL WATER AND WASTEWATER INDUSTRY TO BIOGAS PRODUCTION AND A VARIETY OF INDUSTRIAL APPLICATIONS.
THE MAIN FOCUS OF OUR BUSINESS HAS ALWAYS BEEN ON THE PERFORMANCE, RELIABILITY AND ENERGY EFFICIENCY OF OUR PRODUCTS. WITH THE DEVELOPMENT OF AN ENTIRELY NEW SERIES OF MEDIUM-SPEED SUBMERSIBLE AGITATORS, STREISAL HAS NOW RAISED THE STANDARD AGAIN:

- **MORE POWER AND THRUST THROUGH IMPROVED PROPELLER HYDRAULICS**
- **INCREASED RELIABILITY AND AVAILABILITY THROUGH INNOVATIVE DESIGN DETAILS SUCH AS THE WEAR RING, PATENTED SEAL SYSTEM / WINDING PROTECTION AND THE OPTIONAL TANDEM MECHANICAL SEAL ETC.**
- **SAVINGS IN ENERGY COSTS BY USING HIGH-EFFICIENCY MOTORS**

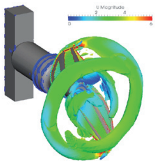


MODULAR DESIGN

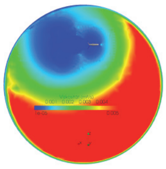
WITH THE WIDE RANGE OF INDIVIDUAL COMPONENTS AVAILABLE (SUBMERSIBLE MOTORS, GEARBOXES, PROPELLERS, MONITORING DEVICES AND ACCESSORIES), IT IS POSSIBLE TO CONFIGURE A SUITABLE SUBMERSIBLE MIXER FOR ALMOST ANY APPLICATION.
IT IS NOW POSSIBLE TO OPTIMIZE PROPELLER PERFORMANCE FOR ANY PARTICULAR APPLICATION BY USING DIFFERENT TRANSMISSION RATIOS AND PROPELLER CHARACTERISTICS (DIAMETERS, MATERIALS AND PROFILES). THIS INCREASES THE AGITATOR EFFICIENCY AND SERVICE LIFE AND REDUCES ENERGY COSTS.

THE SHAFT SEAL FOR THE GEARBOX AND MOTOR INTERIOR IS ALWAYS A SILICON CARBIDE MECHANICAL SEAL.
IF REQUIRED, TWO SEALS (TANDEM VERSION) CAN BE USED TO SEAL THE PROPELLER SHAFT.
THE STANDARD FEATURES OF OUR NEW SERIES WITH MOTOR OUTPUTS FROM 1,5 TO 18,5 KW INCLUDE A TEMPERATURE MONITOR ON THE MOTOR WINDING AND A HIGHVOLUME OIL CHAMBER WITH SEAL MONITOR.
UNIVERSAL INSTALLATION KITS, SWITCHING EQUIPMENT/CONTROLLERS ARE AVAILABLE FOR DIFFERENT STANDARD INSTALLATIONS. WE ALSO OFFER THE POSSIBILITY TO CUSTOMIZE THE INSTALLATION ACCESSORIES TO ANY PARTICULAR SITUATION.

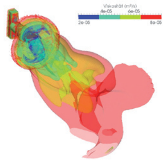
APPLICATION RANGE:
MEDIA / SUBSTRATES AT TEMPERATURES UP TO 60°C
INDUSTRIAL PROCESSING
MIXING TANKS
SLUDGE STORAGE TANKS
ACTIVATED SLUDGE BASINS
NITRIFICATION / DENITRIFICATION
SLURRY STORAGE TANKS
BIOGAS TANKS, COVERED
APPLICATIONS WITH EXPLOSION-PROOF REQUIREMENTS



Tip vortex



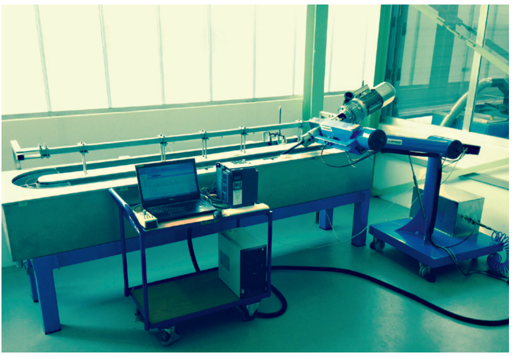
Viscosity distribution



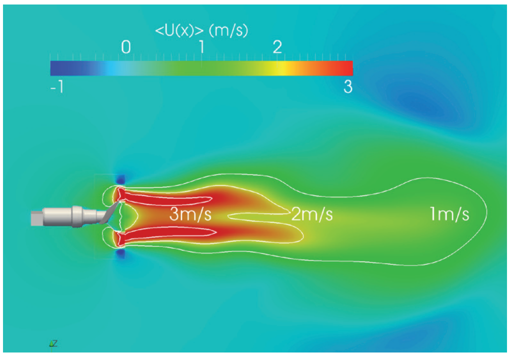
Viscosity in the wake

PROPELLERDESIGN

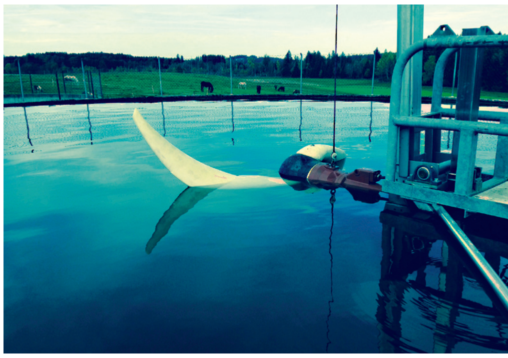
CRUCIAL TO THE EFFICIENCY COMPARISON OF AGITATORS IS THE SO - CALLED THRUST COEFFICIENT OF PERFORMANCE AS A QUOTIENT OF THE THRUST PRODUCED AND THE ELECTRICAL ENERGY ABSORBED AT THE OPERATING POINT. PROPELLER GEOMETRY ENHANCED IN THE STREISAL FLOW LABORATORY USING THE LATEST MEASUREMENT TECHNOLOGY AND OPTIMIZED IN FULL - SCALE TEST TANKS, HAS MADE IT POSSIBLE TO ACHIEVE ENORMOUSLY HIGH THRUST VALUES AT LOW POWER CONSUMPTIONS.
THIS LEADS TO SIGNIFICANT REDUCTIONS IN ENERGY AND OPERATING COSTS.



Flow-analysis laboratory



Axial velocity in the wake



Full scale test tank

TRANSMISSION

THE PROPELLER SPEED IS FINE-TUNED BY USING PLANETARY GEARS WITH EXCHANGEABLE TRANSMISSION RATIOS WHICH OFFER A NUMBER OF ADVANTAGES: LOW COMPONENT STRESSES DUE TO UNIFORM TORQUE DISTRIBUTION, OPTIMUM LOAD DISTRIBUTION IN GEAR MESHING, COMPACT DESIGN AND HIGH EFFICIENCY.

ENERGY-EFFICIENT DRIVES

ALTHOUGH MINIMUM EFFICIENCY REQUIREMENTS ARE NOT SPECIFIED FOR SUBMERSIBLE MIXERS UNDER EU DIRECTIVE 640/2009, THE MOTORS IN THE NEW SERIES ARE AVAILABLE IN EFFICIENCY CLASSES IE2 (HIGH EFFICIENCY) AND IE3 (PREMIUM EFFICIENCY).
WHEN CHOOSING THE RIGHT DRIVE TECHNOLOGY, THE MOST IMPORTANT FACTOR IS NOT THE PURCHASE PRICE BUT THE ENERGY COSTS INCURRED THROUGHOUT THE ENTIRE SERVICE LIFE. AGITATORS WITH HIGH NUMBERS OF OPERATING HOURS PAY OFF IMMEDIATELY WHEN SWITCHING OVER TO ENERGY-SAVING SYSTEMS. CHOOSING THE IE2 AND IE3 SUBMERSIBLE AGITATORS FROM STREISAL REVEALS YOUR ENVIRONMENTAL AWARENESS AND ALSO SAVES A CONSIDERABLE AMOUNT OF ENERGY AND MONEY.

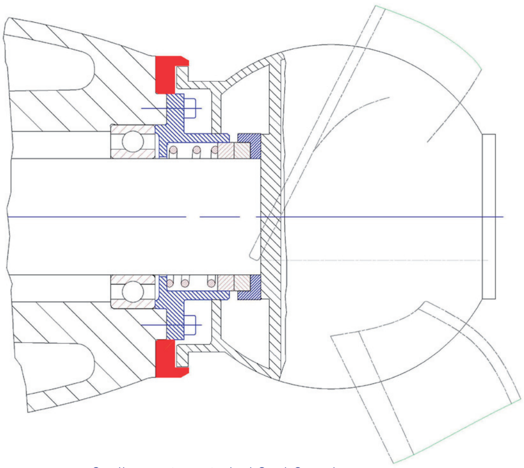
ELECTRICAL DESIGN AND CONTROL

THE MOTOR AND CONTROLLER ARE CONNECTED VIA A COMMON WATERPROOF CABLE WHICH IS RESISTANT TO AGGRESSIVE MEDIA. THE AGITATORS CAN BE OPERATED VIA DIRECT CONNECTION, STAR- DELTA ACTIVATION, SOFT-START OR FREQUENCY INVERTERS, DEPENDING ON THE PERFORMANCE AND APPLICATION.

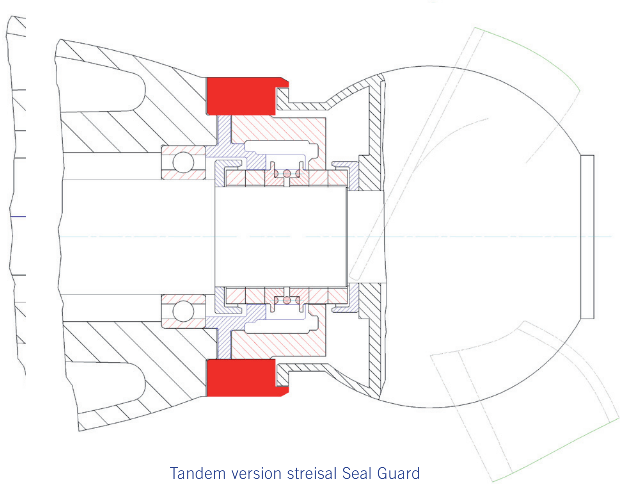
SEALING SYSTEM

IN PRACTICE, THE RELIABILITY AND DURABILITY OF THE SHAFT SEALS HAVE BEEN FOUND TO BE CRUCIAL FOR TROUBLE-FREE OPERATION. THE UNIQUE, STREISAL-PATENTED SEALING SYSTEM OFFERS A NUMBER OF ADVANTAGES, ESPECIALLY IN MEDIA WITH COARSE OR ABRASIVE SOLIDS, LONGFIBER CONSTITUENTS AND INTERFERING MATERIALS (SUCH AS PLASTIC CORDS AND FILMS ETC.):

- **HIGH-ABRASION-RESISTANT SILICON CARBIDE MECHANICAL SEAL STREISAL SEAL GUARD**
- **OUTER LABYRINTH SEAL TO PREVENT THE INGRESS OF CONTAMINANTS**
- **SUBMERSIBLE AGITATOR HOUSING WITH EASILY REPLACEABLE WEAR RING**
- **GLIDE RINGS PROTECTED BY SEALING RETAINER IN STAINLESS STEEL**
- **INTERNAL SPRING ELEMENTS WHICH DO NOT COME INTO CONTACT WITH THE MEDIA**



Sealing system streisal Seal Guard



Tandem version streisal Seal Guard

TECHNICAL DATA:

Type	Nominal Power P2 [kW]	Nominal Current [A]	Circulation Power *) [m^3/h]	Propeller Speed [rpm]	Axial Thrust [N]
TSR 16-132	1,5	3,5	1.320	227	660
TSR 26-132	2,2	5,1	1.410	227	1.030
TSR 34-132	3,0	6,9	1.520	340	940
TSR 44-132	4,0	8,3	1.810	340	1.180
TSR 54-132	5,5	11,0	2.020	340	1.250
TSR 74-132	7,5	15,0	2.610	340	1.900
TSR 114-132**)	11,0	21,0	3.030	340	2.670
TSR 74-160	7,5	13,8	3.930	193	2.400
TSR 114-160	11,0	21,0	5.010	193	3.400
TSR 154-160	15,0	28,0	6.280	193	4.300
TSR 184-160	18,5	34,7	7.200	193	4.920

*) Circulation power in flow profile **) Energy-efficiency class IE1

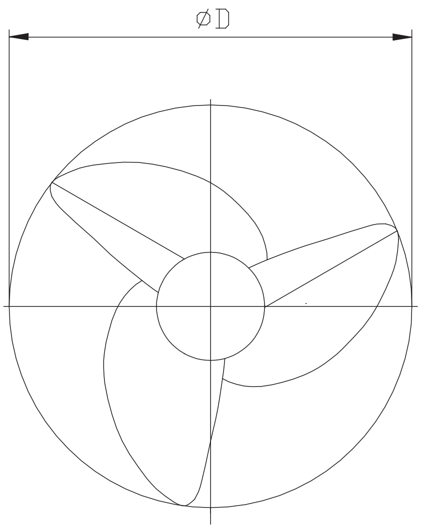
MOTOR 400+/-5% VAC, NOMINAL FREQUENCY 50 HZ, PROTECTION CLASS MOTOR IP 68

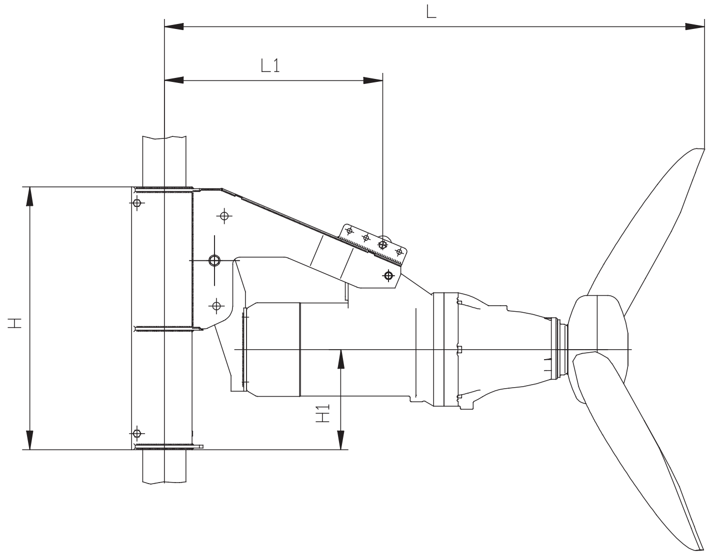
DIMENSIONS AND WEIGHTS:

Type	D	L Standard	L1 Standard	H Standard	H1 Standard	L*)	L1*)	H*)	H1*)	Weight [kg]**)
TSR 16-132	560	1.080	381	450	201	1.208	509	600	230	138
TSR 26-132	600	1.080	381	450	201	1.208	509	600	230	140
TSR 34-132	500	1.080	381	450	201	1.208	509	600	230	144
TSR 44-132	530	1.080	381	450	201	1.208	509	600	230	144
TSR 54-132	560	1.080	381	450	201	1.208	509	600	230	152
TSR 74-132	600	1.080	381	450	201	1.208	509	600	230	154
TSR 114-132	650	1.080	381	450	201	1.208	509	600	230	166
TSR 74-160	840	1.350	484	450	230	1.480	613	730	278	201
TSR 114-160	910	1.350	484	450	230	1.480	613	730	278	219
TSR 154-160	960	1.350	484	450	230	1.480	613	730	278	242
TSR 184-160	1.010	1.350	484	450	230	1.480	613	730	278	255

*) Carriage with adjustability as shown **) Agitator without carriage

Dimensions in mm



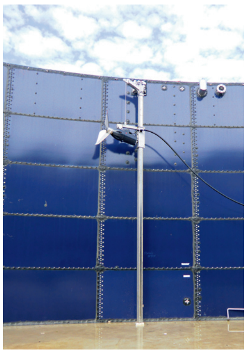


MATERIALS

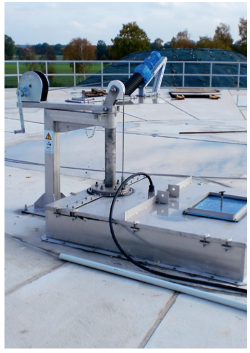
CASING:	GG25
SEALING RETAINER:	STAINLESS STEEL 1.4301/ AISI 304 (V2A)
CONNECTORS:	STAINLESS STEEL 1.4301/ AISI 304 (V2A)
MOTOR SHAFT:	1.7225
PROPELLER:	STAINLESS STEEL 1.4301/ AISI 304 (V2A)
MECHANICAL SEALS:	SILICON CARBIDE
CARRIAGE:	STAINLESS STEEL 1.4301/ AISI 304 (V2A)
CORROSION PROTECTION:	INERTOL POXITAR COATING

HIGH QUALITY ACCESSORIES

STREISAL OFFERS A COMPREHENSIVE RANGE OF ROBUST ACCESSORIES SUITABLE FOR THE PARTICULAR AGITATOR AND INSTALLATION SITUATION CONCERNED – FROM WALL - OR CEILING - MOUNTED GUIDE RAILS, TRIPOD UNITS AND SLIDING CARRIAGES TO LIFTING DEVICES AND ELECTRICAL COMPONENTS. GAS - TIGHT WALL AND CEILING DUCTS ARE ALSO AVAILABLE FOR CLOSED TANKS.







SERVICE

WE ALSO PROVIDE A COMPREHENSIVE SERVICE. OUR EXPERIENCED STAFF HELP TO ENSURE THE RELIABILITY OF YOUR SYSTEM THROUGH AGITATOR DIMENSIONING AND DESIGN, PRACTICAL ON - SITE SUPPORT, INSTALLATION AND COMMISSIONING, MAINTENANCE AND INSPECTION.

SAFETY:
MOTOR WITH FLAMEPROOF ENCLOSURE
EXPLOSIVE ATMOSPHERE PROTECTION ACCORDING TO ATEX – ZONE 1
PTC THERMISTORS TO PROTECT AGAINST THERMAL OVERLOAD
SEALING SYSTEM MONITORED BY STREISAL TOPLIMITER - OPTIONAL IN TANDEM VERSION, I.E. WITH TWO SEALS AND OIL CHAMBER UPSTREAM.

(TECHNICAL CHANGES, ERRORS AND OMISSIONS EXCEPTED)

CONTACT: STREISAL GMBH PETTERMANDSTRASSE 2 88239 WANGEN IM ALLGÄU / GERMANY
TEL +49(0)7522-707965-0 FAX +49(0)7522-80450 WWW.STREISAL.DE INFO@STREISAL.DE