

# Kest Mixer, KM ATEX

For outstanding mixing performance in critical pharma and biotechnology applications.

DS-000011 REV A

## Kest Mixer, KM ATEX

The Kest Mixer is a bottom mounted magnetic coupled mixer. With its aseptic design, excellent mixing performance and ability to mix to the last drop it has become a popular choice for critical pharma and biotech applications where full product recovery is important.

The Kest Mixer KM ATEX range covers mixing volumes up to 22 000 liters.

The Kest Mixer is designed for CIP/SIP applications in an ATEX environment.

Kest Mixer KM ATEX has a Zone 1 classification available for both Gas or Gas & Dust environments.

Short down times is secured by features like our patented Kest-Lock Connection. Our revolution counter gives you secure control of your mixing process.

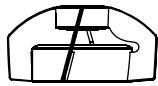
The Kest Mixer KM ATEX range can be customized to perfectly fit your needs. We can manufacture the parts that have media contact in the specific materials that your process requires, please contact your reseller for a quote.

## Kest Mixer range for various mixing applications

Kest has developed several product lines for various mixing applications and clean room needs. The KMS product line was developed for LAF applications and the Rapid Motion

(RM) line for medium shear force generation. See separate data sheets on the other product lines in the Kest Mixer family or contact your reseller for more information.

# Kest Mixer KM ATEX, general information



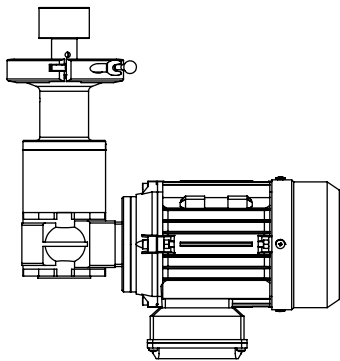
Mixing Head



Male Post



Tank Plate



Drive Unit

The Kest Mixer is a magnetically coupled mixer containing 4 modules, Mixing head, Male Post, Tank plate and Drive Unit.

To secure the integrity of the tank, the tank plate is welded into the tank, the mixing head and drive unit couples through magnetic forces. When installing the tank plate, make sure to use the welding tool and to follow the welding guideline.

Select the appropriate model. For complex mixing applications contact your reseller for consultation.

Decide upon optional drive unit features like Revolution counter and you will find the order information, Ref. No., for each part in this data sheet.

The Kest range of ATEX mixers comply with the following ATEX classifications, see explanation below.

Inside the tank:  
Outside the tank:



II 2G h II  
II 2G IIB

T5  
T4

(Gb)  
(Gb)

Inside the tank:  
Outside the tank:



II 2GD h II  
II 2GD IIB/IIIC

T5  
T4/T135

(Gb/Db)  
(Gb/Db)

**Equipment Group**  
Group I is for mining  
Group II is for above  
surface industries

**Equipment Category**  
**G (GAS)**  
Category 1: Zone 0  
Category 2: Zone 1  
Category 3: Zone 2

**D (Dust)**  
Category 1: Zone 20  
Category 2: Zone 21  
Category 3: Zone 22

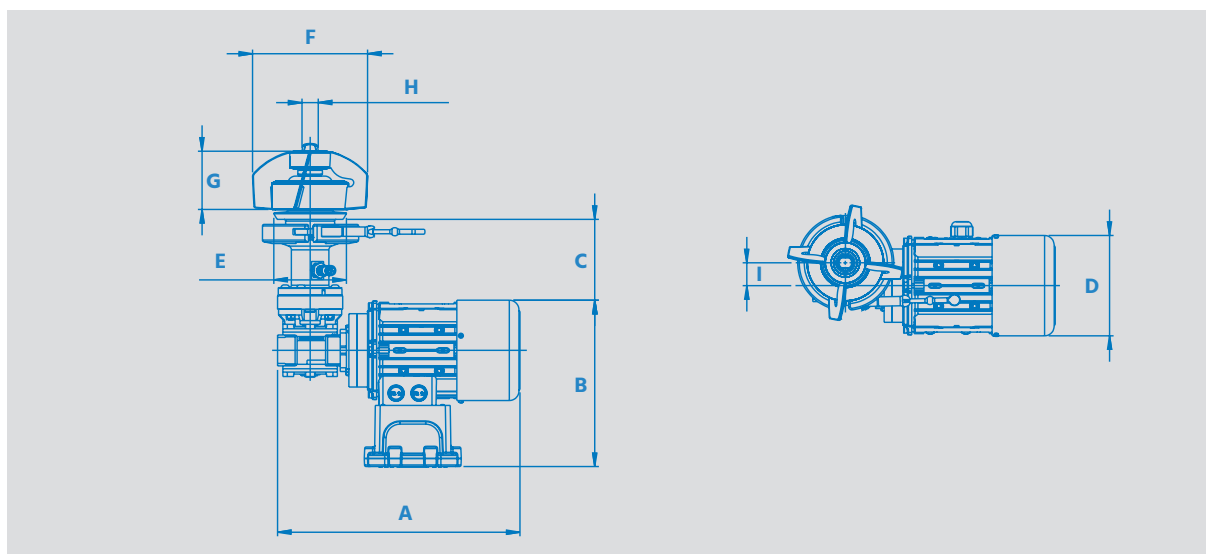
**Type of protection**  
h = marking of non-  
electrical equipment

**Subgroup**  
Group II = Approved for  
all A, B, C  
Group IIB = Ethylene  
Group IIIC = All dust

**Temperature class**  
T3 = 200°C  
T4 = 135°C  
T5 = 100°C

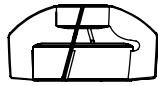
**Equipment protection  
level**  
Gb = Approved for Zone  
1 & 2  
Db = Approved for Zone  
21 & 22

# Kest-Mixer ATEX, dimensions



MODEL	A mm [in]	B mm [in]	C mm [in]	D mm [in]	E mm [in]	F mm [in]	G mm [in]	H mm [in]	I mm [in]
KM-0/3 ATEX	300 [11.811]	172 [6.772]	96 [3.779]	123 [4.843]	55 [2.165]	82 [3.228]	33 [1.299]	12 [0.472]	28 [1.102]
KM-3/7 ATEX	300 [11.811]	172 [6.772]	96 [3.779]	123 [4.843]	55 [2.165]	96 [3.780]	46 [1.811]	12 [0.472]	28 [1.102]
KM-7/20 ATEX	300 [11.811]	172 [6.772]	96 [3.779]	123 [4.843]	84 [3.307]	120 [4.724]	56 [2.205]	16 [0.630]	28 [1.102]
KM-20/70 ATEX	300 [11.811]	172 [6.772]	100 [3.937]	123 [4.843]	89 [3.504]	142 [5.591]	71 [2.795]	20 [0.787]	28 [1.102]
KM-70/120 ATEX	340 [13.386]	185 [7.283]	120 [4.724]	138 [5.433]	118 [4.646]	160 [6.299]	71 [2.795]	20 [0.787]	40 [1.575]
KM-120/230 ATEX	388 [15.278]	213 [8.386]	128 [5.039]	156 [6.142]	148 [5.827]	184 [7.244]	73 [2.874]	20 [0.787]	50 [1.966]
KM-230/600 ATEX	388 [15.278]	213 [8.386]	130 [5.118]	156 [6.142]	159 [6.260]	192 [7.559]	119 [4.685]	30 [1.181]	50 [1.966]
KM-600/1300 ATEX	420 [16.535]	224 [8.819]	135 [5.315]	171 [6.732]	240 [9.449]	220 [8.661]	150 [5.906]	30 [1.181]	60 [2.362]
KM-1300/2200 ATEX	548 [21.575]	255 [10.039]	120 [4.724]	196 [7.717]	240 [9.449]	273 [10.748]	124 [4.882]	30 [1.181]	85 [3.346]

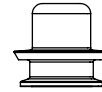
# Kest Mixer KM, specifications



Mixing Head



Male Post



Tank Plate

## MECHANICAL SPECIFICATIONS

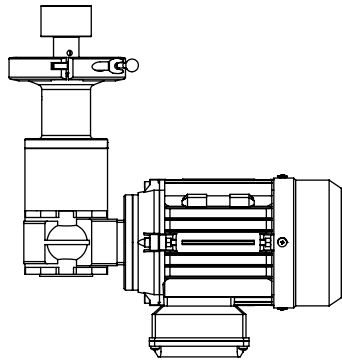
	Mixer head	Male post	Tank plate
Material grade	EN 1.4435/ASTM 316L, Silicone carbide (SiC)	Zirconium Oxide (ZrO2)	EN 1.4435/ASTM 316L
Material requirement	EN 10 272/10028-7, A479/A240 or SA479 SA240		
Documentation	Heat Certificate 3.1 acc. to EN 10 204		
Surface finish	Ra≤[0.5 µm] [20 µin] Polished - on surfaces in product contact		
Design Temperature	[0°C to +150°C] [+32°F to +302°F]		
Operating temperature	[0°C to +135°C] [+32°F to +275°F]		
Design Pressure	[-1 bar(g) to + 10 bar(g)] [-14.5 psi to 145 psi]		
pH range	1-14		
Marking	Head and Bearing is marked with ID No. Tank plate is marked with material grade and heat number		
Packing	Each item is sealed in vacuum plastic bag, labelled with article code and packed in a box		
Male bearing sealing	EPDM or Silicone, approved acc. FDA regulation CFR 177.2600, USP Class VI		
Quality Assurance	Each product is controlled and tested acc. to Kest Technology quality assurance system		

## Kest Mixer KM, weights

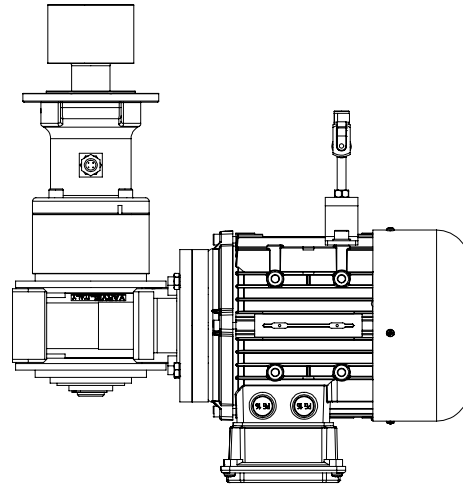
MODEL	MIXING HEAD kg / [lb]	MALE POST kg / [lb]	TANK PLATE kg / [lb]	DRIVE UNIT* kg / [lb]	TOTAL* kg / [lb]
KM-0/3	0.3 / [0.7]	0.02 / [0.04]	0.2 / [0.5]	7.0 / [15.4]	7.5 / [16.5]
KM-3/7	0.5 / [1.1]	0.02 / [0.04]	0.3 / [0.7]	7.1 / [15.7]	8.0 / [17.6]
KM-7/20	1.0 / [2.2]	0.04 / [0.09]	0.5 / [1.1]	7.4 / [16.3]	9.0 / [19.8]
KM-20/70	1.5 / [3.3]	0.09 / [0.2]	0.8 / [1.8]	7.5 / [16.5]	10.0 / [22.1]
KM-70/120	2.0 / [4.4]	0.09 / [0.2]	1.1 / [2.4]	10.6 / [23.4]	14.0 / [30.9]
KM-120/230	2.1 / [4.6]	0.09 / [0.2]	1.8 / [4.0]	15.4 / [34.0]	19.5 / [43.0]
KM-230/600	4.0 / [8.8]	0.40 / [0.9]	2.5 / [5.5]	19.6 / [43.2]	26.5 / [58.4]
KM-600/1300	5.0 / [11.0]	0.40 / [0.9]	2.7 / [6.0]	24.5 / [54.0]	32.5 / [71.7]
KM-1300/2200	6.6 / [14.6]	0.40 / [0.9]	8.4 / [18.5]	45.0 / [99.2]	60.5 / [133.4]

\*Weights based on standard unit with extension, stainless steel cover is not included, small variations might occur depending on options selected

# Kest-Mixer ATEX, Drive unit specifications



Drive Unit



\*Drive Unit with motor support

MODEL	MOTOR POWER 50/60Hz [kW]	FREQUENCY [Hz]	CURRENT 230/400V [A]	GEAR BOX RATIO [i]	SPEED RANGE [RPM]
KM-0/3 ATEX	0.25/0.30	50/60	1.3/0.75	1:7	50-490
KM-3/7 ATEX	0.25/0.30	50/60	1.3/0.75	1:7	50-490
KM-7/20 ATEX	0.25/0.30	50/60	1.3/0.75	1:7	50-490
KM-20/70 ATEX	0.25/0.30	50/60	1.3/0.75	1:7	50-490
KM-70/120 ATEX	0.55/0.68	50/60	2.4/1.4	1:7	50-490
KM-120/230 ATEX	0.75/0.90	50/60	3.3/1.9	1:7	50-490
KM-230/600 ATEX	1.10/1.30	50/60	4.7/2.7	1:7	50-490
KM-600/1300 ATEX*	1.50/1.80	50/60	6.2/3.6	1:7	50-490
KM-1300/2200 ATEX*	3.00/3.50	50/60	11.8/6.8	1:10	35-340

\*The two largest drive units are supplied with a motor support, that can be fastened with an M8 bolt. The motor support reduces the stress on the tank plate, tank dish and drive unit flange. The motor support is also providing the possibility to adjust the outer driving head to perfectly align with the tank plate.

## DRIVE UNIT SPECIFICATIONS

Motor	One thermo element as standard
Design Temperature	[0°C to +40°C] [+32°F to +104°F]
Protection class	IP 55
Paint	Motor Epoxy paint RAL 7015, Flange and Gearbox Jotun RAL 9010
Gearbox oil	UH1 6, NSF H-1 rated FDA compliant
Marking	Each item is marked with article code
Packing	Each item is sealed in plastic bag, labelled with article code and packed in a box
Quality Assurance	Each product is controlled and tested acc. to Kest Technology quality assurance system

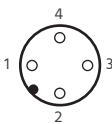
# Kest Mixer KM ATEX, Revolution Counter (optional)

The Kest Mixer ATEX Revolution Counter is a sensor system that enables secure verification of the actual rotation of the shaft.

The unit consists of a Namur sensor, that is located on the Drive Unit flange.

The output signal from the sensor is 1 pulse/rotation.

For visual indication - A LED on the sensor housing is indicating with yellow light when the sensor gets a pulse.

<b>MECHANICAL SPECIFICATIONS</b>			
	<b>Sensor Housing</b>	<b>Sensing face</b>	<b>Cable</b>
Material grade	<b>1.4305 / AISI303</b>	<b>PBT</b>	<b>5 meter, open ends</b>
Design Temperature	<b>[-25°C to +100°C] [-13°F to +212°F]</b>		<b>[0°C to +40°C] [+32°F to +104°F]</b>
Marking	<b>Each item is marked with article code</b>		
Packing	<b>Each item is sealed in vacuum plastic bag and packed in a box</b>		
Quality Assurance	<b>Each product is controlled and tested acc. to Kest Technology quality assurance system</b>		
<b>Electrical Specifications</b>			
Type	<b>NAMUR, NC</b>		
Voltage	<b>5-25 V DC</b>		
Rated Current	<b>200 mA</b>		
Protection class	<b>IP 67 (contacts)</b>		
Connection type sensor unit	<b>Output: 4-pole male connection M12x1</b>		
Socket wiring identification		<b>1: Power supply 5-25 V DC (Brown)</b> <b>2: Pulse signal 5-25 V DC (Blue)</b> <b>3: -</b> <b>4: -</b>	
Pulses	<b>1 pulse / rotation</b>		

## Kest Mixer KM ATEX, Ref. No. list

MODEL	MIXING HEAD	MALE POST	TANK PLATE
KM-0/3 ATEX	100433	100562	100383
KM-3/7 ATEX	100559	100562	100625
KM-7/20 ATEX	101273	101530	100647
KM-20/70 ATEX	100451	100415	100396
KM-70/120 ATEX	100650	100415	100546
KM-120/230 ATEX	100713	100415	100712
KM-230/600 ATEX	100442	101817	100537
KM-600/1300 ATEX	100544	101817	100794
KM-1300/2200 ATEX	101291	101817	101292

## Kest-Mixer KM ATEX, drive unit - Ref.No list

MODEL	GAS	GAS WITH REVOLUTION COUNTER	GAS & DUST	GAS & DUST WITH REVOLUTION COUNTER
KM-0/3 ATEX	102569	102570	102405	102406
KM-3/7 ATEX	102561	102571	102407	102408
KM-7/20 ATEX	102562	102572	102410	102409
KM-20/70 ATEX	102550	102573	102403	102404
KM-70/120 ATEX	102564	102574	102411	102413
KM-120/230 ATEX	102565	102575	102415	102414
KM-230/600 ATEX	102566	102576	102417	102416
KM-600/1300 ATEX	102551	102577	102418	102419
KM-1300/2200 ATEX	102578	102579	102420	102421

## Kest Mixer KM ATEX, options - Ref. No. list

MODEL	MIXING HEAD ATTRACTOR*	MALE POST TIGHTENING TOOL*	MULTI TOOL*	WELDING TOOL
KM-0/3 ATEX	101620	100704	101006	100446
KM-3/7 ATEX	101620	100704	101006	100923
KM-7/20 ATEX	101436	102422	101342	100802
KM-20/70 ATEX	100571	102423	100655	100802
KM-70/120 ATEX	-	102423	100655	100780
KM-120/230 ATEX	-	102423	100655	100717
KM-230/600 ATEX	-	102424	101010	100800
KM-600/1300 ATEX	-	102424		100717
KM-1300/2200 ATEX	-	102424		101300

\*See separate data sheet