

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.

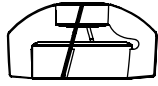
The Kest Mixer KM ATEX range can be customized to perfectly fit your needs. We can manufacture the parts that have media contact in the specific materials that your process requires, please contact your reseller for a quote.

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



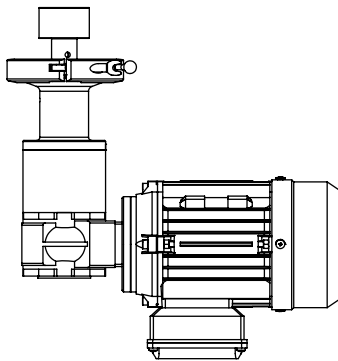
Mixing Head



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 T5 (Gb)
II 2G IIB T4 (Gb)

Inside the tank:
Outside the tank:



II 2GD h II T5 (Gb/Db)
II 2GD IIB/IIIC T4/T135 (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

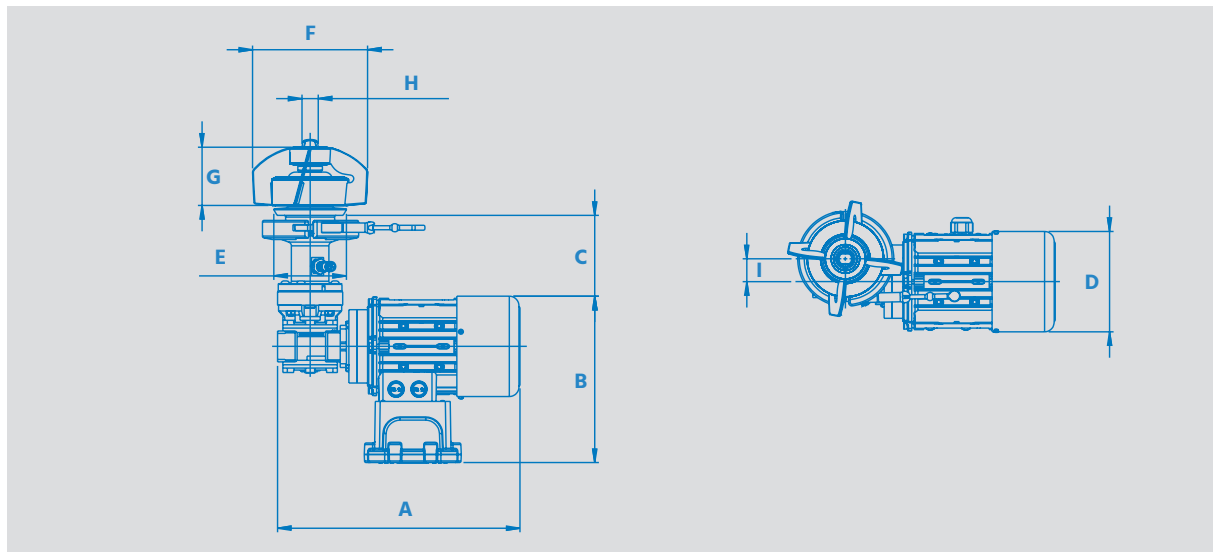
Type of protection
h = marking of non-
electrical equipment

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

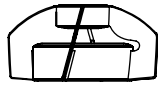
**Equipment protection
level**
Gb = Approved for Zone
1 & 2
Db = Approved for Zone
21 & 22

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] |

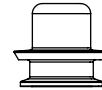
Kest Mixer KM, specifications



Mixing Head



Male Post



Tank Plate

MECHANICAL SPECIFICATIONS

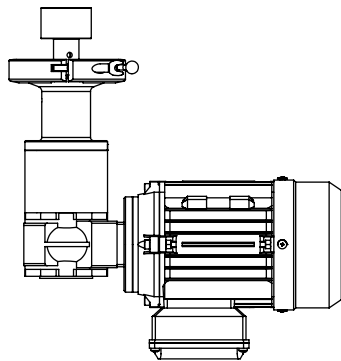
| | Mixer head | Male post | Tank plate |
|-----------------------|-------------------------------------------------------------------------------------------------|------------------------|---------------------|
| Material grade | EN 1.4435/ASTM 316L, Silicone carbide (SiC) | Zirconium Oxide (ZrO2) | 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

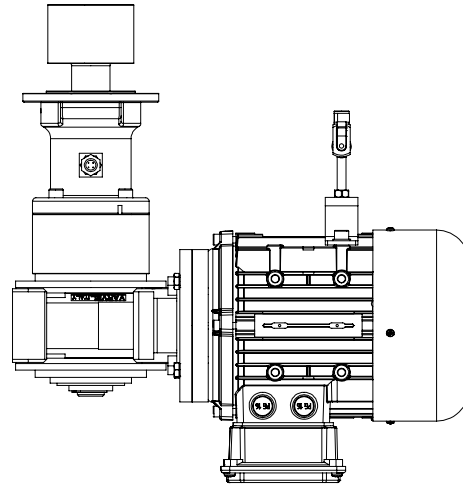
| MODEL | MIXING HEAD kg / [lb] | MALE POST kg / [lb] | TANK PLATE kg / [lb] | DRIVE UNIT* kg / [lb] | TOTAL* kg / [lb] |
|--------------|--------------------------|------------------------|-------------------------|--------------------------|---------------------|
| KM-0/3 | 0.3 / [0.7] | 0.02 / [0.04] | 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 |

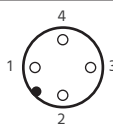
Kest Mixer KM ATEX, Revolution Counter (optional)

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.

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

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