



CAT

Ingenieurbüro
M. Zipperer GmbH



*From marketing knowledge
to real innovation*

Homogenisers from CAT

- unique slanted rotor slots for fast processing
- improved mixing turbulence
- interchangeable dispersing tools
- some with ceramic shaft seals
- exchangeable rotors and stators
- optional continuous-flow chambers
- choice of 9 powerful drive units

Ingenieurbüro **CAT**

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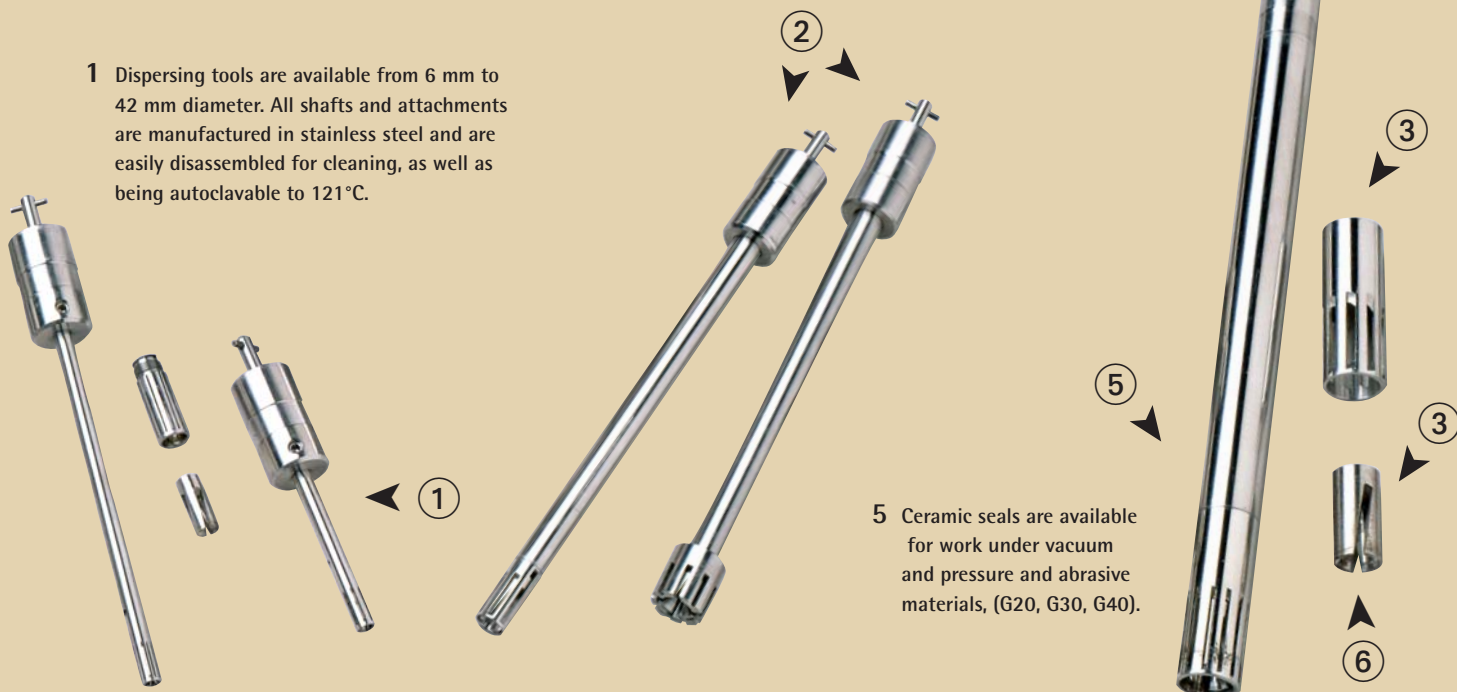
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2 All CAT dispersing shafts have the same coupling system, enabling all the drive motors to accept any choice of suitable shafts.

1 Dispersing tools are available from 6 mm to 42 mm diameter. All shafts and attachments are manufactured in stainless steel and are easily disassembled for cleaning, as well as being autoclavable to 121°C.



5 Ceramic seals are available for work under vacuum and pressure and abrasive materials, (G20, G30, G40).

CAT your partner in innovation for over 30 years:

We manufacture high quality liquid handling products, powerful microprocessor controlled overhead stirrers and thermo shakers as well as magnetic stirrers. Efficient homogenisers are also part of our business activities. Our special strengths are customer orientation and customer service. We will happily assist you to find the optimum solution in your application field.

A great number of fluid mixing problems cannot be solved even using the best possible traditional stirring method. Some solid, liquid or gaseous phase media require a dispersing means to dissolve or disintegrate into another media.

There are three different forms of dispersing:

- When dispersing gas in a liquid as high a mass transfer as possible is to be achieved. (Example: Foam)
- Dispersing of firm particles in a liquid for instance is found with the distribution of pigments in emulsion paints and lacquers.
- Dispersing of two not mixable liquids is found e.g. in the polymerization or with the production of emulsions. An Example for polymer dispersion is rubber latex. Very well known examples for a water in oil emulsion is butter and for an oil in water emulsion mayonnaise.

With the rotor-stator principle of CAT, the stirring medium is subjected to a combination of mechanical shearing and sonic energy.

The slanted slots in the rotor grasp the medium and forcibly draw it into the working area between the rotor and stator, thus causing induced high frequency pulses to interact vertically and horizontally. This turbulence intensifies the dispersion and produces optimum mixing of the suspension.

The CAT dispersing systems use very powerful electric drive units to be combined with homogenizing tools, offering exchangeable rotors and stators. Hence different tasks can be solved by using CAT homogenizing systems.

Please feel free to download our homogenizing questionnaire at www.cat-ing.de which helps to recommend the most suitable system for your application.

3 CAT's exchangeable rotors and stators allow you to treat coarse-grade media down to fine suspensions, without changing the dispersing shaft.

Special knife generators available for stringy and fibrous materials.



Application table: Please ask for our homogenising questionnaire which can be the basic for our free of charge offer.

Volume	Dispersing tools ^{1,2)}	Teeth per Rotor/Stator				Stator/Rotor				Maximum Speed		Shafts		CAT No.
		viscous		fine		stator		rotor		(Circumferencial speed)		diam (mm)	length (mm)	
		rotor	stator	rotor	stator	outer ø	inner ø	outer ø	air gap	m/sec	with drive			
0,1 - 50	T6/T6 lang	2	7	4	11	6	4,2	4	0,1	9,5	- X360	6	105/170	6420/6410
1 - 250	T10	2	7	4	15	10	8,15	7,5	0,3	17,5	- X360	10	205	6421
5 - 1000	T17	2	9	6	13	17	13,3	12,5	0,4	29,5	- X360	10	205	6426
10 - 2000	T20/G20	2	9	6	13	20	16	15	0,5	35,4	- X360	20	265	6422/6423
30 - 5000	T30/G30	3	13	6	17	30	26	25	0,5	32,7	- X1030	20	255	6424/6425
100 - 20000	T40/G40	4	13	8	23	40	35	33	1	40,8	- X1740	20	360	6414/6415

¹⁾When placing an order, please add one of the following capital letters to the CAT No. of the tools: V = medium viscosity, N = low viscosity, F = fine viscosity, M = Knife version

²⁾T denotes Teflon bearing, G denotes ceramic seals

Please turn page to find a detailed illustration of combination possibilities.




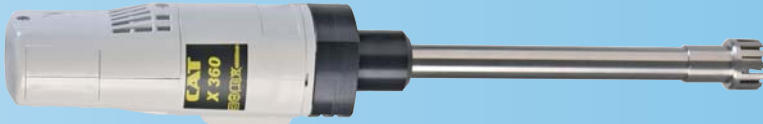

Zertifiziertes
QM-System
DIN EN ISO 9001:2010
Zertifikat-Nr. 03009

Build your dispersing
system by selecting a
motor plus one tool

Unidrive Unidrive D

X360

X120

		
T6 0,2 ml - 50 ml (CAT No.: 60420)	T10 10 ml - 100ml (CAT No.: 60420)	T17 250 ml - 1.500 ml (CAT No.: 60420)
		
T6 0,2 ml - 50 ml (CAT No.: 60420)	T10 10 ml - 100ml (CAT No.: 60420)	T17 250 ml - 1.500 ml (CAT No.: 60420)
		
T6 0,2 ml - 50 ml (CAT No.: 60420)	T10 10 ml - 100ml (CAT No.: 60420)	T17 250 ml - 1.500 ml (CAT No.: 60420)
		0,2ml - 1.500ml 1.500 - 35.000 rpm

Shafts

fine F
F-rotor + F-stator
= F-generator

low viscosity N
F-rotor + V-stator
= N-generator

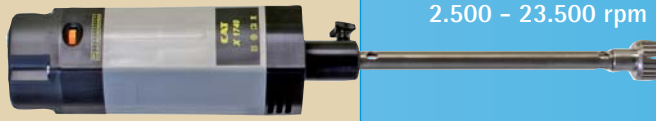
viscous V
M-rotor + V-stator
= V-generator

knife M
M-rotor + M-stator
= M-generator

Special knife generator for stringy and fibrous materials

			
	T6/T6 lang	T10	T17
			
	6420/6410 - F	6421 - F	6426 - F
			
	6420/6410 - N	6421 - N	6426 - N
			
	6420/6410 - V	6421 - V	6426 - V
			
	6420/6410 - M	6421 - M	6426 - M

X1740



5.000 - 20.000 ml
2.500 - 23.500 rpm

T40 - 20.000 ml (CAT No.: 60420)

X1740

high-power, heavy-duty drive motor with electronic speed control, 1700 watts for 40 mm tool 60408-00

0,2ml - 5.000ml
4.000 - 33.000 rpm

Unidrive

powerful drive motor, built-in speed control for all dispersing tools below up to 30 mm 60402-00

T20 250 ml - 2.000 ml (CAT No.: 60420)

T30 500 ml - 5.000 ml (CAT No.: 60420)

Unidrive D

same as above but with digital display of rpm 60XXX-00

0,2ml - 2.000ml
45.000 rpm

T20 250 ml - 2.000 ml (CAT No.: 60420)

X360

drive motor, 350 watts, high speed motor, speed control separately available 60401-00

X120

hand-held, high speed drive motor for small volumes electronically stabilized speed control for tools up to 17 mm 60404-00

T20/G20		T30/G30		T40/G40	

T = Shaft with Teflon bearing. This shaft type is used for standard application.

G = Shaft with slide seal ring. This shaft type is excellent for applications with aggressive respectively abrasive media and when pressure is applied.





Zertifiziertes
QM-System
DIN EN ISO 9001:2010
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Unidrive D



X360

7 Drive units available to create your CAT homogenizer system...

CAT offers a range of 7 drive motors, from which are 6 supplied with variable speed control to start at low speed without splashing. They differ in size, weight, power and maximum speed. Two of the seven electronic drives have integral liquid-crystal speed displays and there is one air-driven unit for hazardous areas.

X 120

Hand-held or stand-mounted, high-speed drive motor for small volumes, from 0.1 ml to 1,000 ml. Electronically stabilized speed control for tools T6 to T17 (short time use), speed range from 11,000 to 33,000 rpm. Power input 140 W. The support rod for mounting the drive unit to a stand is included.

Cat.No.

60404-00

X360

This high-speed motor is best suited for fast, super-fine disintegration tasks. 360 watts power give 45,000 rpm, for volumes of 0.1 ml (T6) to 2,000 ml (T/G29).

60401-00

Optionally available for speed regulation: Speed Control P1500

60493-00

Unidrive X1000D

This general-purpose 1,050 W drive unit for a host of dispersing tasks with a wide speed-range from 4,000 rpm to 33,000 rpm. The unit comes with an LCD. Suitable for volumes from 0.2 ml (T) to 3,000 ml (G/G30).

60403-00

Unidrive X1000

Same as above but without display.

60402-00

X1740

Especially designed for heavy-duty laboratory and pilot plant tasks. This drive unit takes all CAT dispersing shafts up to T/G40. In combination with our flow-through chamber this DK40 this units forms an In-line disperser. Speed range: 5,000 – 22,000 rpm.

60408-00

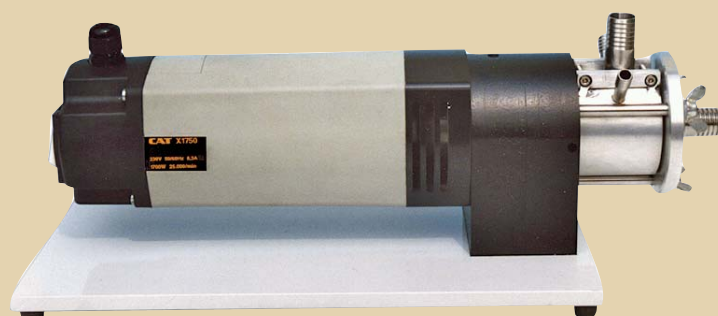
XP44

Compressed-air motor, maximum speed 44,000 rpm. For use with shafts T6, T10 and T17 which gives a volume working range from 0.1 to 1,000 ml.

60417-00



AX60



DK40



Unidrive

X120

Analytical Mill Attachment

For analysis, material testing and quality control of organic and inorganic substances of various hardness. Extremely rapid disintegration of the materials is possible by using the mill in combination with high maximum speed of the drive unit.

The AX 60

Couples to the drive unit just the same way as the interchangeable shafts. The grinding assembly consists of two stainless steel chambers both with separate cooling ports. The mill attachment handles a variety of applications. Grinding capacity is 180 cc and the chambers seal completely, offering dust-free pulverization. Both grinding chambers have inlet/outlet ports which can be used with a refrigerant coolant, such as N₂. The blade of the analytical mill automatically disengages from the motor when the grinding chamber is opened.

There is a choice of interchangeable blades either in plain stainless steel, or, with carborundum inserts, for processing extra hard materials.

Cat.No.

60409-00

Continuous-flow chambers

DK30 and **DK40** stainless steel flow-through chambers fit the G20, G30 shafts and the G40 head with ceramic seals. In-line units work according to the rotor-stator principle with high share rates. Extremely fine distribution of solid particles (suspensions) and liquids (emulsions) in a basic liquid is achieved by the combined effect of different particle reduction effects using this system.

Pressure-rated for 0.7 to 2 bar.

604XX-00

Flow-rates related to water:

DK30 (with G20 shaft) 2000 litres per hour, Cat. No. 60428-00

60428-00

DK30 (with G30 shaft) 3000 litres per hour, Cat. No. 60428-00

60428-00

DK40 (with G40 head) 5000 litres per hour, Cat. No. 60429-00

60429-00

Accessories:

For a safe and successful operation with these drive units you require in addition to the drive and dispersing tool also stand, boss head and strap for fixing the test vessel.

Product Overview

