General information

Traditional stirring and mixing methods are not always successful when employed for many blending tasks. Some solid, liquid or gaseous phase media require a means of dispersion in order to dissolve or disintegrate them into other mediums.

CAT's new, interchangeable, rotor/stator design subjects the media to a combination of sonic energy and mechanical shearing. The extremely high circumferencial speeds attained by the rotors create ultrasonic cavitation which assists in very fast, efficient homogenising.

Because of their unique design CAT Homogenisers are more powerful. The slanted slots on the rotor eliminate stop/start effects which slow down the media flow. These unique slots constantly draw the media through, allowing the flow to accelerate, thus enabling far greater processing efficiency. Therefore, processing is achieved more quickly and efficiently. This new design will not only process larger volumes and/or higher viscosities but will reduce possible heat damage caused by prolonged homogenising.

Tools

Special knife generators available for stringy and fibrous materials.

1 The rotor's unique slanted slots grasp the medium and force it into the working area between the rotor and stator, thus causing induced, high-frequency vertical and horizontal pulsation within the dispersing head. This turbulence intensifies the process to produce the optimum suspension.

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

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.

4 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 One rotor wrench fits all tools with 6 – 30 mm shaft heads.

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

7 For continous-flow work, the DK series flow-chambers are attached to suitable shafts with ceramic seals, giving flow-rates up to 5000 liters per hour.

Application table:

Please ask for our homogenising questionaire which can be the basis for our free of charge offer.

Volume ml (water)	Dispersing tools [1]	Teeth per rotor/stator viscous rotor	viscous stator	fine rotor	fine stator	Rotor/Stator diam. (mm)		max. Speed (Circumferencial speed) m/sec.	with drive [3]	Shafts diam (mm)	length (mm)	CAT No. [1]
0.1 – 50	T6/T6 long	2	7	4	11	4	6	9.5 –	X 360	6	105/170	**6420/6410**
1 – 250	T10	2	7	4	15	7.5	10	17.5 –	X 360	10	205	**6421**
5 – 1000	T17	2	9	6	13	12.5	17	29.5 –	X 360	10	205	**6426**
10 – 2000	T20/G20	2	9	6	13	15	20	35.4 –	X 360	20	265	**6422/6423**
30 – 5000	T30/G30	3	13	6	17	25	30	32.7 –	X 1030	20	255	**6424/6425**
100 – 20000	T40/G40	4	13	8	23	33	42	40.8 –	X 1740	20	360	**6414/6415**

[1] When placing an order, please add one of the following capital letters to the CAT. No. of the tool: V = medium viscosity, N = low viscosity, F = fine dispersing. (e.g.: T17, CAT No. 6426 F)
[2] T denotes Teflon bearing, G denotes ceramic seals. [3] For motors see page 4.

9 Drive units available to create your CAT homogeniser system...

CAT offers a range of 9 drive motors, all supplied with variable speed control allowing the homogenising process 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 are two air-driven units for hazardous areas.

X120

Hand-held or stand-mounted, this compact, 125 watt drive unit with electronic speed control gives 10,000 to 35,000 rpm for volumes of **0,1 ml** (T6) to **1000 ml** (T17).

CAT No. 6404

X 360

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 **2000 ml** (T/G20).

CAT No. 6401

Drive units with integral speed LCD

X 520 (D)

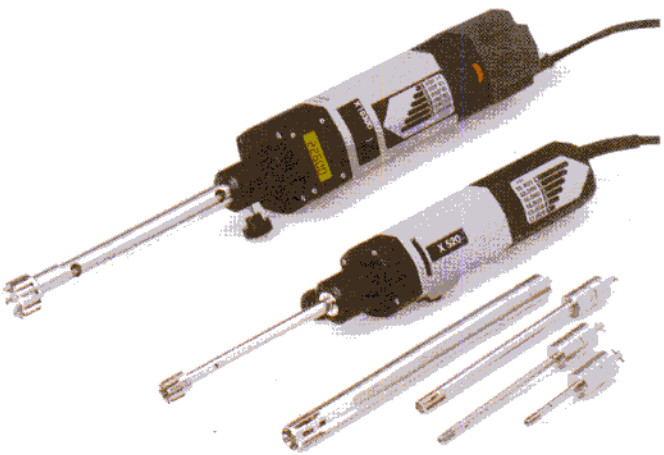
Universal highly efficient 500 watt dispersing unit for volumes of **0.2 ml** (T6) to **1500 ml** (T/G20) with electronic speed control. The **X520D** drive has an LCD speed display.

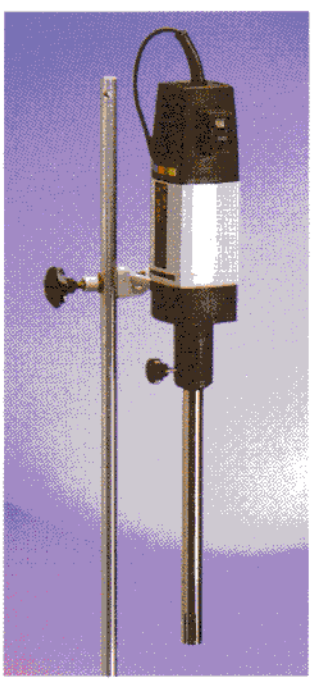
X 520 without speed display **CAT No. 6403**
X 520D with speed display **CAT No. 6405**

X 1030D

Very powerful 1000 watt drive motor for volumes of **0.2 ml** (T6) to **3000 ml** (T/G30). The electronically-stabilised speed control gives 10,000 to 24,000 rpm. Speed display incorporated.

CAT No. 6406





X 620

The bench-mark, general-purpose 600 watt drive unit for a host of dispersing tasks, with electronically-stabilised speed control, 8,000 to 24,000 rpm, **0.2 ml** (T6) to **3000 ml** (T/G30).

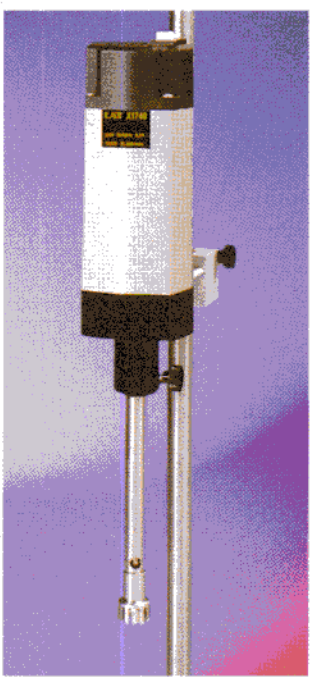
Not available in 110 volt supply.

CAT No. 6402

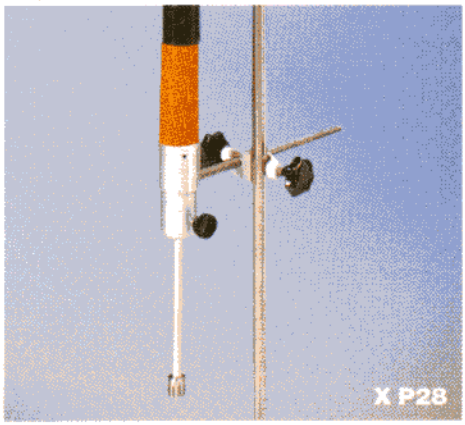
X 1740

Especially designed for heavy-duty laboratory and pilot-plant tasks. Takes all CAT dispersing shafts, but the T40 /G40 are recommended for large volumes of **10 litres** to **40 litres**.

CAT No. 6408



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. Please ask for accessory pricelist.



Compressed-air Motors

For hazardous areas, use CAT variable speed, air-driven motors.
Variable speed via built in air nozzle.

X P44

Compressed-air motor, max. speed 44,000 rpm.
Use with shafts T6, T10 and T17, for volumes of **0.1 ml** (T6) to **1000 ml** (T17).

CAT No. 6417

X P28

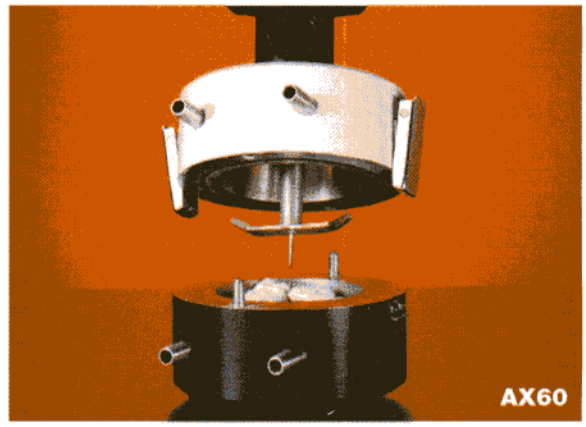
Compressed-air motor, max. speed 28,000 rpm. Use with shafts T6, T10, T17 and T/G20, for volumes of **0.1 ml** (T6) to **1500 ml** (T/G20).

CAT No. 6418

Analytical Mill Attachment AX60

The **AX60** couples to the drive motors in just the same way as the interchangeable shafts. The grinding assembly consists of two stainless steel chambers, both with separate cooling ports, handles a wide variety of applications. Grinding capacity is 180 cc and the chambers seal completely, offering dust-free pulverising. Both grinding chambers have inlet/outlet ports, which can be used with a refrigerated coolant, such as liquid N_2. 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. 6409



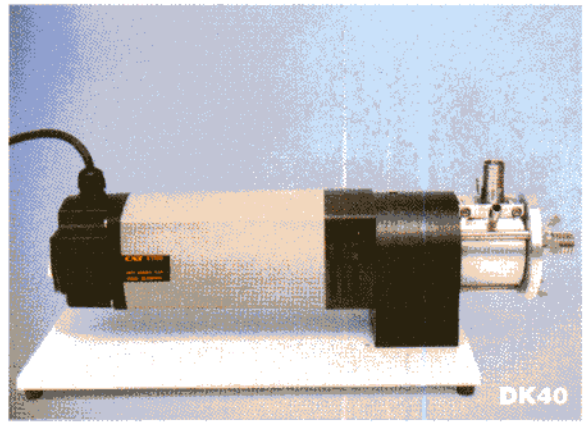
Continuous-flow Chambers

DK30 and DK40 stainless steel flow-through chambers fit the G20, G30 shafts and G40 head, with ceramic seals.
Pressure-rated for **0.7** to **2 bar**. **DK40** available as in-line-disperser with external cooling.

Flow-rates related to water:

DK30 (with G20 shaft) 2000 litres per hour
DK30 (with G30 shaft) 3000 litres per hour ..... **CAT No. 6428**

DK40 (with G40 head) 5000 litres per hour ..... **CAT No. 6429**



Drive motor	Power supply	Speed, rpm	Dims, mm	Weight	Shafts diam.	CAT Nr.
X 1740	110/230V, 50/60Hz 1500W	7,000 – 20,000 electronic speed control	330 x 100 x 100 mm	4.2 kg	6 – 40 mm	**6408**
X 1030D [1]	110/230V, 50/60Hz 1000W	10,000 – 24,000 electronic speed control, digital display	320 x 80 x 80 mm	2.4 kg	6 – 30 mm	**6406**
X 620	230V, 50/60Hz 600W	8,000 – 24,000 electronic speed control	260 x 70 x 70 mm	1.9 kg	6 – 30 mm	**6402**
X 520D [1]	110/230V, 50/60Hz 500W	11,000 – 30,000 electronic speed control, digital display	260 x 60 x 60 mm	1.6 kg	6 – 30 mm	**6405**
X 520	110/230V, 50/60Hz 500W	11,000 – 30,000 electronic speed control	260 x 60 x 60 mm	1.5 kg	6 – 30 mm	**6403**
X 360	110/230V, 50/60Hz 350W	5,000 – 45,000 separate speed control	230 x 60 x 60 mm	1.1 kg	6 – 20 mm	**6401**
X 120	110/230V, 50/60Hz 120W	10,000 – 35,000 electronic speed control	260 x 50 x 50 mm	0.7 kg	6 – 17 mm	**6404**
X P28	Compressed air 6 bar, 0,6 m^3/min	0 – 28,000 built in speed control	250 x 40 mm diam.	1.1 kg	6 – 20 mm	**6418**
X P44	Compressed air 6 bar, 0,35 m^3/min	0 – 44,000 built in speed control	250 x 40 mm diam.	1.0 kg	6 – 17 mm	**6417**

[1] D-denotes luiquid crystal display of speed.