

Distributore



EN.CO. Srl
Apparecchi Scientifici

Via Filande, 13 - 30038 Spinea (VE) - ITALY
Tel. +390415411133 Fax +390415411090
email commerciale@encosrl.com
service@encosrl.com
web http://www.encosrl.com



CAT

Ingenieurbüro
M. Zipperer GmbH



Our development makes your success

Stirring Motors

Ingenieurbüro **CAT**

M. Zipperer GmbH
Etzenbach 16
D 79219 Staufen

Telefon 076 36/78 03-0

Telefax 076 36/78 03-45

info@cat-ing.de · www.cat-ing.de



Zertifiziertes
QM-System
DIN EN ISO 9001:2000
Zertifikat-Nr. 03006

Brushless laboratory stirrers

A brushless motor has essential advantages compared to a brushed motor:

small size, high speeds, high torque, high efficiency and nearly silent operation

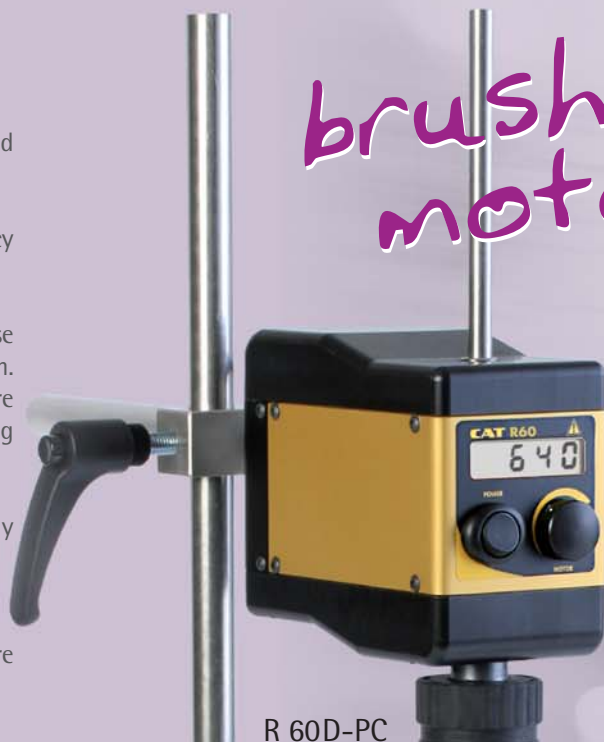
Brushless motors produce no "brush sparking" because the brush unit is replaced by electronic commutation. This means there are no carbon brushes that require replacing and the motor has an above average working life.

Practical advantage: Stirrer motors with electronically commutated DC motors are compact, light and extremely powerful.

Other features of our brushless laboratory stirrers are listed in the following section.

We are proud to be offering these powerful laboratory stirrers to you.

brushless
motors



R 60D-PC

Ingenieurbüro CAT - your partner for success for over 36 years: professional laboratory equipment and liquid handling.

Requirements for laboratory stirrer motors

Stirrer motors for professional applications have to:

- allow flexible and height-adjustable fixing to a retort stand
- run very quietly, particularly in continuous operation
- offer variable speeds from extremely slow to very fast
- ensure speed control and speed tracking with very narrow tolerances
- allow intuitive operation
- have easily accessible operating elements
- show the selected speed on a display
- be robust and acid resistant
- provide an RS232 interface for controlling through a PC
- be safe and reliable and allow emergency stops
- have a small footprint

Ingenieurbüro CAT R-Serie – stirrer motors for professional users

Ingenieurbüro CAT stands for Consultants for Appropriate Technologies.

We have been taking an open-minded approach to our customers' needs for almost four decades.

The requirements described above are met by our R series: **The high-performance stirrers R 20, R 50, R 80 and R 100.**

R 14, R 16 or R 18 are reliable devices for training applications.

These can be found on pages 6 and 7 of this brochure.

Do you have very specific fields of application?

Please contact us!

Application-specific solutions are our core business.



R 20D-PC

Red / Blue:
from 10 pieces available

R 60D-PC

The main features of this "powerpack" are its very low weight and the small dimensions. A robust stirrer motor with up to 60 Ncm torque, a speed range of 20-800 1/min, RS232 interface, brushless 60W motor, quick release chuck and hollow shaft for inserting and fixing tools up to 10 mm.

The device is suitable for medium viscosity stirring tasks.

R 20D-PC

As R 60 but with 20 Ncm torque and a speed range of 50-2000 1/min.

Field of application: light to medium viscosity.



Modell	Part No.	Color	Stirring Volume (L H ₂ O)	Torque Ncm	Speed	Average Power Intake	Chuck mm	Dimensions W x H x D* mm	Weight kg	RS232	Remarks
Powerful Stirring Motors											
R 60D-PC	60214-65	Gold	120l	60	20-800	60	1-10,5	68x121x106	1,3	yes	Length of chuck: 55 mm
R 20D-PC	60214-55	Silver	35l	20	50-2000	60	1-10,5	68x121x103	1,3	yes	Length of chuck: 55 mm

*without chuck



R 100CT

*(Pure power
 up to 600 Ncm)*

Overhead stirrer R 100CT

The powerful pilot plant stirrer for heavy duty jobs.

Powerful microprocessor controlled (fuzzy logic) stirrer for optimum performance and accuracy with a maximum torque of 600 Ncm, hollow shaft and precision chuck of 10.5 mm. The bright back-lit digital display shows all relevant system data (power input, power output and torque) plus simultaneous display of set and actual motor speed or time. The display also allows for readout of the absolute or relative torque measurements as well as the power output in watts at the shaft. Speed range 10-500 rpm with soft start and soft stop logic. Ideal for medium and high viscous media (10.000-100.000 mPa·s). Other speed ranges (up to 6000 rpm) on request. Torque limits, maximum and minimum motor speeds are programmable.

The unit is supplied with an RS232-interface for computer control. There is also an analogue input for easy remote speed control and analogue output for recorder as well as a programmable switch-off timer. The R100-series is designed for stirring jobs up to 200 litres (related to water); ideal for medium and high viscous media (1.000-100.000 mPa·s).

Overhead stirrer R 100CL

Same unit as R 100CT but with a speed range from 30-1100 rpm and a higher torque of 250 Ncm; ideal for medium to high viscous media (10.000-100.000 mPa·s).

Overhead Stirrer R 100C

The universal laboratory stirring motor for rheometric tests.

Same unit as R 100CT but with a low speed range 40-2000 rpm and high torque 150 Ncm. A multi-step safety system carries out a self test of all safety functions and detects and protects against overload as well as over-temperature. We also offer units with other speed ranges. For further information please contact us directly.

Modell	Part No.	Stirring Volume (L H ₂ O)	Torque Ncm	Speed	Average Power Intake	Chuck mm	Dimensions W x H x D* mm	Weight kg	RS232	Remarks
Powerful Stirring Motors										
R 100C	60218-00 (230V)	60218-01 (115V)	200l	150	40-2000	220	1 - 10,5 78x190x170	5	yes	Length of chuck: 55 mm
R 100CL	60315-00 (230V)	60315-01 (115V)	200l	250	30-1100	220	1 - 10,5 78x190x170	5	yes	Length of chuck: 55 mm
R 100CT	60314-00 (230V)	60314-01 (115V)	200l	600	10-500	220	1 - 10,5 78x195x195	5,5	yes	Length of chuck: 55 mm
R 100SD	60313-00 (230V)	60313-01 (115V)	200l	100	40-2000	180	1 - 10,5 78x190x170	5	no	Length of chuck: 55 mm
R 80D	60310-00 (230V)		120l	80	20-700	100	1 - 10,5 65x120x138	2,3	no	Length of chuck: 55 mm
R 80D-PC	60311-00 (230V)	60311-01 (115V)	120l	80	20-700	100	1 - 10,5 65x120x138	2,3	yes	Length of chuck: 55 mm

*without chuck



R 100SD



R 80D-PC



Overhead stirrer R 100SD

Powerful (low budget) overhead stirrer with 4-digit speed display. The microprocessor controlled speed is steplessly adjustable from 40-2000 rpm. The soft-start and soft-stop logic prevents from splashing of liquid. The unit is equipped with an extra long life high performance brush motor. Max. torque 100 Ncm. Hollow shaft and precision chuck at 10.5 mm. The electronic overload and overheat protection shuts off the unit automatically. Thus no damage to the stirrer occurs. This electronic protection applies for all R100's.

Overhead stirrer R 80D-PC

Long lasting stirrer with electronic feed-back speed control and digital speed display. This overhead stirrer is especially useful for applications where for a short time dynamic viscosity occurs but a still handy tool is requested. The stirrer comes with RS232 interface for control via a PC. The speed is steplessly adjustable from 20 to 700 rpm. The maximum torque is 80 Ncm. Speed is shown on the digital display.

Overhead stirrer R 80D

Same unit as above but without RS232 interface. Both stirrers are equipped with two independent safeguards against overload. They are self-protected through automatic reduction of power intake.



R 50D



R 18



Overhead stirrer R 50D

Long lasting stirrer with electronic feed-back speed control and digital speed display. This stirrer is well suited for all stirring needs of moderate viscosity in any laboratory, either professional or classroom. The use of the instrument is advantageous where the speed adjustment of stirring processes has to be reproducible – such as when test series have to be carried out one after the other under comparable conditions, and when parallel experiments with several stirrers must be made simultaneously. The speed is steplessly adjustable from 50 to 1600 rpm. The electronic feed-back type of control guarantees exact control and high precision so fluctuations in the viscosity of the media being stirred will not occur. The stirrer has a hollow shaft with a 10.5 mm bore and a heavy chrome plated chuck to avoid corrosion.

Overhead stirrer R 50

The economic and powerful stirring motor for every days lab work. Same unit as above but without digital speed display.

Overhead stirrer R 18

Convenient and long lasting stirrer with electronic feed-back speed control. Laboratory stirrer for stirring tasks up to 50 litres related to water. Infinitely variable speed from 110–2000 rpm without gear shift. Built-in safety circuit. No blocking; gives indication and protection when overloaded. Ideal unit for the use either in small laboratories or classroom. Ideal for low viscosities (100–1.000 mPa·s).

Overhead stirrer R 16

Convenient and long lasting small laboratory stirrer with electronic feed-back speed control steplessly adjustable from 100–900 rpm. For small mixing needs in any laboratory, either professional or classroom. Comes

with a clamp which can be attached to any laboratory stand. Chuck for stirring elements of 6 mm diameter.

Overhead stirrer R 14

Convenient and long lasting small laboratory stirrer with electronic feed-back speed control steplessly adjustable from 100–2000 rpm. Comes with a clamp which can be attached to any laboratory stand. Chuck for stirring elements of 4 mm diameter. We offer a special designed stirring paddle in stainless steel which can be ordered together with the stirrer.

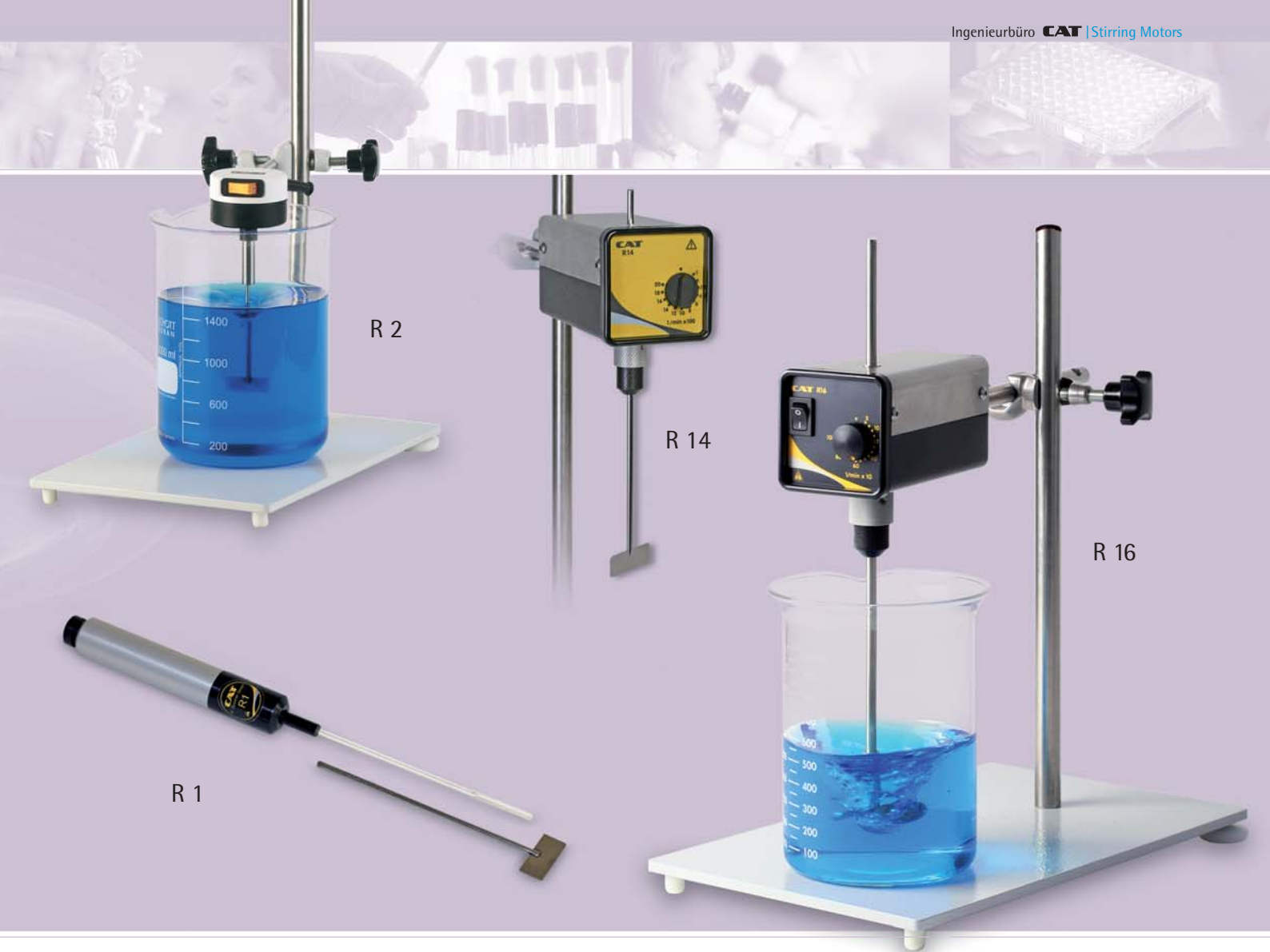
Mini-stirrer R 2

Convenient multi-purpose stirrer for small mixing needs in any laboratory, either professional or classroom. A small, quiet and problem-free stirrer designed for long lasting use, comes with clamping bar to be attached to any laboratory stand. The motor is designed for long lasting use and operates at 750 rpm. The unit is fully enclosed and covered by polypropylene to provide protection from chemical spills. Clamping tube and stirring rod are made of stainless steel.

Handstirrer R 1

Handy, battery powered mini-stirrer for mixing liquids of low viscosity in test tubes and other small vessels of up to 500 ml. The stirrer operates on only one AA battery which provides for amazing long lasting use. Easy to use. No cables – no plugs! One of three different stirring rods are available.

- Plastic (3 mm diameter)
- All stainless steel for small vessels
- All stainless steel with large steel blade for max. stirring performance



Modell	Part No.	Stirring Volume (L H ₂ O)	Torque Ncm	Speed	Average Power Intake	Chuck mm	Dimensions W x H x D* mm	Weight kg	RS232	Remarks
Powerful Stirring Motors										
R 60D-PC	60214-65 (105-250V)	120l	60	20-800	60	1-10,5	68x121x106	1,3	yes	Length of chuck: 55 mm
R 20D-PC	60214-55 (105-250V)	35l	20	50-2000	60	1-10,5	68x121x103	1,3	yes	Length of chuck: 55 mm
Powerful Stirring Motors										
R 100C	60218-00 (230V) 60218-01 (115V)	200l	150	40-2000	220	1 - 10,5	78x190x170	5	yes	Length of chuck: 55 mm
R 100CL	60315-00 (230V) 60315-01 (115V)	200l	250	30-1100	220	1 - 10,5	78x190x170	5	yes	Length of chuck: 55 mm
R 100CT	60314-00 (230V) 60314-01 (115V)	200l	600	10-500	220	1 - 10,5	78x195x195	5,5	yes	Length of chuck: 55 mm
R 100SD	60313-00 (230V) 60313-01 (115V)	200l	100	40-2000	180	1 - 10,5	78x190x170	5	no	Length of chuck: 55 mm
R 80D	60310-00 (230V)	120l	80	20-700	100	1 - 10,5	65x120x138	2,3	no	Length of chuck: 55 mm
R 80D-PC	60311-00 (230V) 60311-01 (115V)	120l	80	20-700	100	1 - 10,5	65x120x138	2,3	yes	Length of chuck: 55 mm
Standard Stirring Motors										
R 50D	60216-00 (230V) 60216-01 (115V)	100	50	50-1600	85 W	1 - 10,5	65x120x138	2,1	no	Length of chuck: 55 mm
R 50	60215-00 (230V) 60215-01 (115V)	100	50	50-1600	85 W	1 - 10,5	65x120x138	2,1	no	Length of chuck: 55 mm
R 18	60214-00 (230V) 60214-01 (115V)	50	18	100-2000	85 W	1 - 10,5	65x120x138	2,1	no	Length of chuck: 55 mm
Overhead Stirrers										
R 14	60213-40 (230V) 60213-41	5l	1,4	100-2000		4	67x67x121	1,2	no	Length of chuck: 38 mm
R 16	60213-50 (100-230V)	10l	4	50-900		6	67x67x121	1,2	no	Length of chuck: 38 mm
R 2	60212-00 (230V)	2l		750 fest		3	85x60	0,26	no	
R 1	60211-00 (Battery)	0,5l		ca. 2500		3	20x134	0,07	no	1,5V Batteries AA

*without chuck

No. 8ST.MO.E/A



Dissolver 60617-50

Manifold blades for stirring and dissolving
60618-50

Distributore



EN.CO. Srl
Apparecchi Scientifici

Via Filande, 13 - 30038 Spinea (VE) - ITALY
Tel. +390415411133 Fax +390415411090
email commerciale@encosrl.com
service@encosrl.com
web http://www.encosrl.com



Part No.	Blade Stirrer	Length including blade	Diameter of rod	Diameter of blade
8B009404		400 mm	8 mm	70 mm
8B009408		500 mm	10 mm	70 mm
8B009504		400 mm	8 mm	70 mm
8B009508		500 mm	10 mm	70 mm

Part No. Centrifugal Stirrer

8B009210		400 mm	8 mm	90/15 mm
----------	--	--------	------	----------

Part No. Propeller Stirrer

8B009100		300 mm	6 mm	50 mm
8B009103		300 mm	8 mm	50 mm
8B009104		400 mm	8 mm	50 mm
8B009105		500 mm	8 mm	50 mm
8B009110		400 mm	8 mm	70 mm
8B009114		500 mm	10 mm	100 mm
8B009000		300 mm	6 mm	50 mm
8B009004		400 mm	8 mm	50 mm
8B009010		400 mm	8 mm	100 mm

Part No.	Propeller Stirrer	Length including blade	Diameter of rod	Diameter of blade
8B009700		300 mm	6 mm	50 mm
8B009703		300 mm	8 mm	50 mm
8B009704		400 mm	8 mm	50 mm
8B009705		500 mm	8 mm	50 mm
8B009603		300 mm	8 mm	50 mm
8B009604		400 mm	8 mm	50 mm
8B009605		500 mm	8 mm	50 mm

Part No.

60618-50 Stirring blade + shaft
60619-00 Stirring blade
60618-00 Stirring shaft \varnothing 8x350



Part No.

60617-50 Dissolver + shaft
60617-00 Dissolver \varnothing 100
60618-00 Dissolver shaft \varnothing 8x350



Part No.

60494-00 U-Stand
60495-00 Special clamp for R 100
60491-00 Pedestal Stand
60492-50 Cross Over Clamp Steel
60492-00 Cross Over Clamp Alu

