



better chemistry - faster

CAT Manual

Stand-Alone Version



Version 4 09/03/2011

*9-10 Capital Business Park,
Manor Way, Borehamwood, Herts
WD6 1GW, England*

Telephone: +44 (0) 20 8736 0640

Fax: +44(0) 20 8736 06414

E-mail: info@helgroup.com



CAT MANUAL	1
Introduction	3
Assembly	3
Pressurisation and Block Temperature Monitoring	4
Reflux/Condenser Head	4
Example Pictures	5
Standard configuration of a CAT7	5
Advanced configuration of a CAT7 (with manifold and K type thermocouple)	6
CAT 18 (Photo)	7
CAT 24 (Photo)	8

Introduction

HEL CAT units are designed for low volume catalytic screening where reaction conditions require high temperatures and pressures.

The stand-alone version of the CAT unit comes in a variety of vial size formats with an option of a cooling reflux head. They are intended for use in HEL's polyBLOCK systems or on a simple heating/stirring mantle.

Assembly

The unit comes in three parts.



The bottom section is the vial holder on which the top plate is placed. The top plate may or may not have an integrated reflux head. On top is the clamp that fits over the top plate and screws down onto the bottom vial holder section.

For an experiment, first load the vial holder with the relevant vials and place in the material to be studied. An optional magnetic stirrer flea can be placed in each vial if agitation is required. Then place the top plate on the vial holder and then screw on the clamp. The whole unit can then be placed on a heating/stirring mantle for the experiment.

Pressurisation and Block Temperature Monitoring

Each CAT system has a central Manifold fitting with Pressure Gauge, Pressure Relief Valve, three-way Valve for the user to connect their own gas train and optional thermocouple.

The maximum pressure of the CAT unit is 100 Bar.



It is recommended that a suitable Pressure Relief Valve be incorporated into the gas train to prevent over-pressurisation.

Reflux/Condenser Head

An option for the top plate is to have an integrated reflux/condenser head. If this is included then two barb connections will be supplied for the user to connect to a coolant supply. One connection is used for coolant-in and the other for coolant-out.

These units will also have “cold fingers” which are positioned into the vials to enhance the efficiency of the unit.

Example Pictures

Standard configuration of a CAT7



Advanced configuration of a CAT7 (with manifold and K type thermocouple)

NOTE: thermocouple fits in central top port of the manifold and tip is located in a bored hole within the vial holder.



CAT 18 with manifold and K type thermocouple)

There are no “cold fingers” inside of a CAT 18 hence no cooling ports on the top plate.



CAT 24 with manifold and K type thermocouple)

