Robotic Sample Handling systems **RSH2**/**RSH3**/**RSH5** for one or two **HLC** analyser

General

The fully automatic sample handling-system with robots **RSH** are an additional option for the thermal conductivity analysers of **HLC** series **206**, **310** and **520**.

The **RSH** systems consists primary of an industrial robot, a pickup-stack with plates to be measured and a storage stack for already measured samples (specimen).
In "Tandem mode" with two opposite established **HLC** analyzers **RSH** feeds both instruments sample material.

The effective stack height of about 1500mm allow any stacking of samples between 20 .. 200mm thickness.
While the pickup stack can be loaded manually with material to be measured at any time, from storage stack measured samples could be manually removed also all time.
As the robot stops at the slightest obstruction, it can be used according to applicable regulations without mechanical shielding and without any risk for operators. Therefore also unteached users like a night-watchman can change measured
and new sample from or into both stacks from **RSH** front-side.
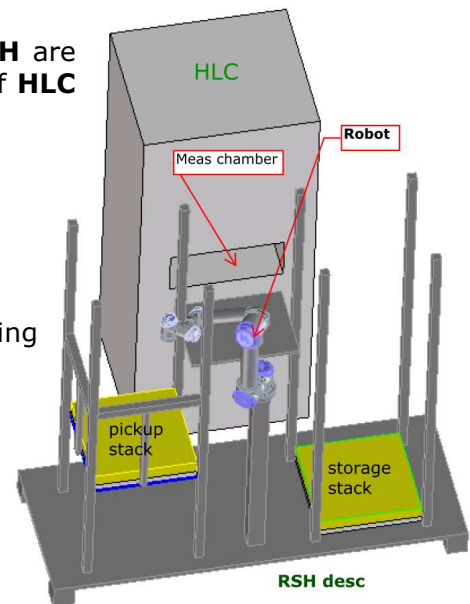
Software WinHLT# controls RSH

With adapted **RSH** Software **WinHLT#** on a WINDOWS-PC controls for each **HLC**-analyser the following two different modes:

- "Automatic sample handling": **RSH aktive**. With reaching programmed "Measend-criterion" **WinHLT#** initiate an automatic **RSH** sample change

- "Manual sample handling": **RSH inaktive**. **HLC** analyser works without **RSH**, the operator must insert material into meas-chamber manually with using function-key **door** in **HLC** front for open or close the electrical meas-chamber door.

If in "Tandem mode" both **HLC** will be connected with **RSH**, **WinHLT#** on PC must be started two-times for each analyser, whereby the software than controls both change modes (also mixed) collision-free.

Barcode labeling of samples

In **WinHLT#** program the operator can switch over **Edit** into menu **Specimen data**. Here he insert all specific data of specimen, which shall be measured ..... Finally with button **Print BC** **WinHLT#** generate automatically a continuose, 8-digit long number and print-out on connected printer a barcode label with readable number (Barcode printer is generally part of deliver). This printed lable has to be stick on side of specimen, finally specimen has to be lay-in pickup stack of **RSH**.

After removing measured specimen out of **HLC** meas-chamber and lay-down on storage stack, **RSH** gets highest specimen from pickup stack, Barcode-reader identifies automatically specimen number and transfers to **WinHLT#** and finally **RSH** slides in specimen into **HLC** meas-chamber and starts new measurement.

Both in manual as well as with automatic handling with end of measurement **WinHLT#** stores the last meas-data with specimen number, date, time and stored edited specimen-specific characteristics as a data-set in a csv-file on PC-harddisc. This csv-file could be evaluate inter alia with MS-EXCEL.

This onetime barcode-labeling reduces errors and allowed permanent assignment of equipment, specific specimen identification data and stored measurement data.

Summery

With removal and loading of specimen by robot handling-system **RSH** one or optimal two **HLC**-analysers become a fully automatic meas-system which will be used for errorfree, time-optimized, serial quality control as also for permanent tests in material-developement.

Also **RSH** has the usual **3-year factory warranty** of all **HLC** analysers in accordance with our conditions described in the offer.