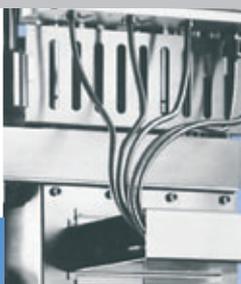


The Thermo Scientific HAAKE PCR 620 is a twin-pump bypass rheometer that provides online rheological measurements of melt index and viscosity in polymer processing. With more than 200 installations around the world, the HAAKE PCR helps to improve our customers' product quality.

Thermo Scientific HAAKE PCR 620

Process Control Rheometer



Applications:

- Online melt index measurement
- Online viscosity measurement

Materials:

- Polypropylene (PP)
- Polyethylene (LDPE/HDPE/LLDPE)
- Polyester (PET)
- Ethylene Vinyl Acetate (EVA)
- Polymethyl-methacrylate (PMMA)
- Polystyrene (PS)
- Polyamide / Nylon (PA)
- Polycarbonate (PC)

Applications

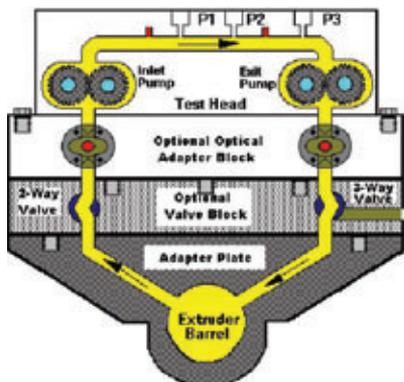
The Thermo Scientific HAAKE PCR 620 (**P**rocess **C**ontrol **R**heometer) measures the melt index at standard ASTM loads or at higher loads (with back-calculation to standard load) in order to reduce lag time.

The patented, slit die pressure-control feature allows the HAAKE PCR 620 to operate at pressures above the process pressure, thereby ensuring operation in the linear region of the transducers and preventing out-gassing. This also allows the HAAKE PCR 620 to cover a wide melt index range and follow transitions with a single die eliminating costly and troublesome die changes common to other systems. The HAAKE PCR 620 can operate in a variety

of modes: melt index mode, transition melt index mode, purge mode, viscosity mode (stress or rate control) and combinations of those.

The Thermo Scientific HAAKE PCR 620 can also report a synthesized Mooney or Intrinsic Viscosity (IV) value – a mathematical calculation from measured shear viscosity data. For ease of operation, recipes consisting of operating parameters and control values can be stored for various product grades. The HAAKE PCR 620 logs all data and events in a database for trend analysis, SPC reporting and data storage.

The HAAKE PCR 620's "return to stream" design is available with a valve block for process isolation and an optical block to allow online spectroscopic analysis (offered as options, additional equipment required). All melt pumps and slit dies are easily exchangeable to adapt the rheometer to specific processes.



Control Features

The HAAKE PCR 620 electronics, based on the SLC-500® PLC from Rockwell International (Allen-Bradley), provides superior support and integration using industry standard components and

technologies. New software features provide capabilities never before available.

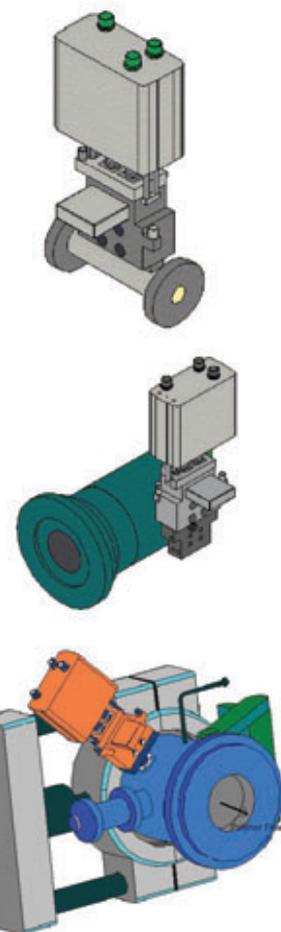
The process supervisor for Microsoft® Windows® software offers unmatched ease-of-use and an operator friendly design. The software, based on RSView® 32™, is designed for integration into plant DCS systems. It offers data communication with a variety of protocols like, Data Highway plus®, ModBus® and the latest innovation in process control, OPC (OLE for Process Control). Standard analog signals (4-20 mA or 24 VDC) are also available.

Installation & Maintenance

Installation expertise exists for adaptation to extruders from all the major manufacturers. The HAAKE PCR 620 is typically installed on finishing and compounding extruders upstream to a pelletizer or mounted as a side stream with a piping adapter. It can be retrofitted to many existing process systems. It uses a permanently lubricated, sealed-for-life gearboxes, allowing it to be mounted in any orientation. It is also interchangeable with existing PCR and MFM installations as an upgrade option. The HAAKE PCR 620 is backed by a worldwide, direct support

system for service and training of plant personnel. We also provide services to assist with the integration of the HAAKE PCR 620 in plant DCS systems.

The HAAKE PCR 620 provides superior ease of maintenance features and easy access to all critical components. It can be removed from the process by closing its isolation valves and removing only 2 bolts. The vast majority of maintainable components are standard stock items from major vendors of polymer processing hardware.



Technical Specifications HAAKE PCR 620

| | |
|----------------------|--|
| Stress | 5 kPa to 250 kPa* |
| ASTM D-1238 loads | 0.5 Kg to 25 Kg |
| Shear Rate | 0.03 to 4,000 1/sec* |
| Viscosity | 1 to 200,000 Pa.s 10 to 2,000,000 poise |
| Melt Flow Index | 0.02 to 3,000* |
| Temperature | 50°C to 350°C (400°C option) |
| Pumps | Rheometer: 0.584 cc/rev to 2.92 cc/rev Max. Speed: 60 rpm |
| Pressure Transducers | 100 bar to 350 bar (1500 psi to 5000 psi) |
| Slit Dies | Height 0.03 cm to 0.2 cm Width 2.25 cm to 1.2 cm Length 4 cm to 8 cm |
| EX proof on request | |
| Power | 220 VAC, 30A, single phase, 50/60 Hz |
| Weight | Rheometer: 104 kg (230 lbs) Electronics: 43 kg (95 lbs) |

* geometry dependent

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