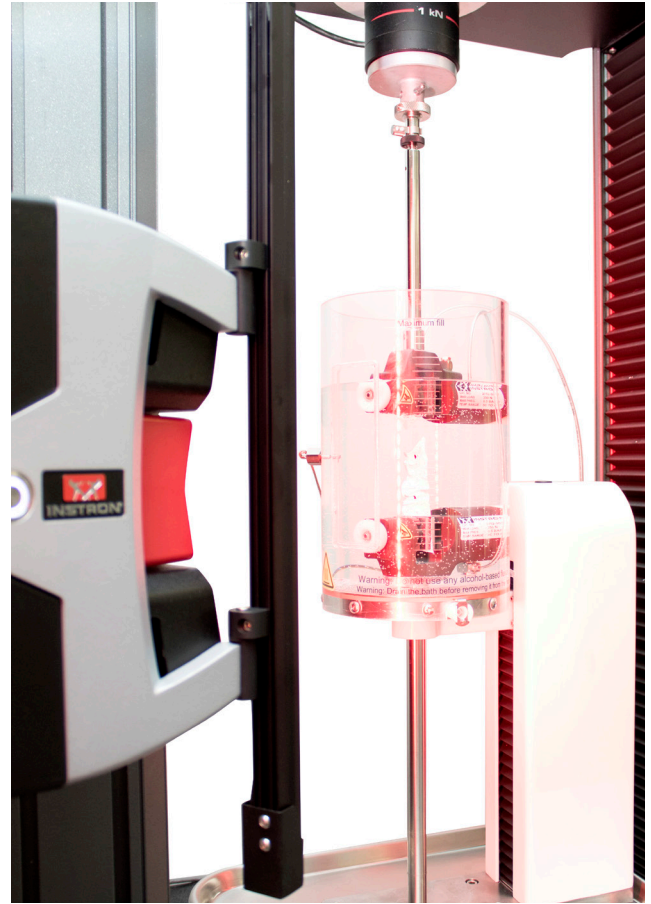


# Submersible Side Action Grips and Temperature-Controlled BioBath

The submersible pneumatic side action grips and temperature controlled BioBath with pneumatic lifting and lowering mechanism is the ideal solution for a wide variety of biomedical testing applications. The single cylinder pneumatic grips allow easy specimen loading and alignment, and prevents slippage with an adjustable and constant gripping pressure applied throughout the test. These ultra lightweight grips are ideal for low-force applications, required for testing hydrogels, contact lenses, and fibers. The grips are durable for testing up to 250 N as required for biological and bio-engineered tissues, medical tubing, and plastics. Further, with interchangeable jaw faces, these grips are versatile and adaptable to a wide range of testing needs.

The temperature-controlled BioBath allows for accurate simulation of the environmental conditions required for biomedical testing. Distilled water or saline solution is brought to temperature under 30 minutes and the temperature is maintained within onedegree through closed-loop temperature control. The bath has a pneumatic lifting and lowering mechanism that allows for ease of use, increases productivity, and minimizes the risk of spilling fluid on the surrounding test equipment. Most importantly, the BioBath was specifically designed for compatibility with our newest video extensometers, allowing for unparalleled accuracy in strain measurement.



## Grip Features

- Rated capacity: 250 N
- Manufactured out of Teflon sealed, hard-coated aluminum to prevent corrosion and allow for submersion in fluid bath
- Extremely light weight for compatibility with 5.0 N load cell
- Open front design to facilitate specimen loading
- Single cylinder pneumatic clamping with follow-up action to reduce specimen slippage
- Interchangeable jaw faces to accommodate a variety of specimens and testing requirements
- Adjustable gripping force
- Versatile design for minimal maintenance and cleaning
- Automatic air kit or footswitch allows for hands-free operation, increased efficiency and easy specimen loading

## Bath Features

- Pneumatically powered lifting mechanism smoothly raises and lowers the bath, preventing spillage and ensuring ease-of-use
- Compatible with standard height EM frames (excluding 3342, 5942, and 5542)
- Allows accurate closed-loop control of bath temperature at  $+37^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- Upper pull-rod designed to minimize buoyancy changes during testing
- Compatible with the Standard and Advanced Video Extensometers (SVE2 and AVE2) for axial strain measurements
- Strain measurement verification possible for axial strain measurements
- Maximum travel using video extensometer: 100 mm with a 25 mm grip separation and 10 mm gauge length marking
- Maximum travel within bath: 80 mm with pneumatic submersible grips and 25mm grip separation
- Easy drainage through one-way tubing
- Protective cover provided to shield machine from fluid spillage

## Principle of Operation

The single cylinder pneumatic action grips clamp the specimen through a lever arm, actuated by a cylinder built into the grip on one side of the grip body and with a manual component on the other side of the body. By varying the air pressure, the gripping force changes to accommodate different material types and strengths, which are often difficult to hold. This type of grip requires that specimen alignment must first be ensured using a manual screw, but provides the pneumatic grip advantages, including follow-up action for any decrease in specimen thickness and hands free grip operation with a footswitch. The jaw faces are interchangeable and selected based on the application. Surfalloy faces simulate 100-grit sandpaper and are usually best for thin and low force specimens, while serrated faces are recommended for thicker, higher strength tissues and plastics.

The pneumatically powered lifting mechanism of the BioBath uses a small hand lever to raise and lower the heated bath along the lower pull-rod. The lower pull-rod has a Dehrlin slider and seal to allow for repetitive lifting and lowering actions without leakage. The lifting device is designed to minimize splashing and spillage and includes adjustable speed and travel cushions, giving the user options as to how fast or slow the bath moves. A durable, protective cover shields the machine from any spillage that may occur during preparation, testing or clean-up. The temperature controller has an accuracy within  $\pm 1.0^{\circ}\text{C}$  of the desired temperature reading and is CE certified to EN 61326-1.

## Grips

Catalog Number	2752-005
Description	Submersible Pneumatic Grips
Maximum Capacity	250 N (25.5 kfg, 56.2 lbf)
Composition	Teflon sealed, hard-coated aluminum
Weight Per Grip	400 g (0.88 lb)
Weight Per Grip Fully Submersed	277 g (0.61 lb)
Temperature Range	+5 °C to +65 °C (+40 °F to +150 °F)
Clamping Force	40 N per 10 psi of supply
Maximum Operating Pressure	8.5-Bar (120 psi)
Working Principle	Single cylinder pneumatic side clamping

### Mechanical Connection

Upper Fitting	Single M6 screw to upper pull rod (Type OM optional)
Lower Fitting	Single M6 Screw to lower pull rod (Type OM optional)

#### Notes:

1. Grip catalog number provides two grips.
2. Grips require a coupling to connect to load cell or machine base without pullrods.
3. Grips require a footswitch to operate.
4. Catalog number does not include grip faces.

## BioBath

Catalog Number	3130-100
Description	Temperature-Controlled bath with pneumatic lifting and lowering mechanism
Temperature Range	Ambient to +40 °C
Frame Compatibility	334X (except 3342), 336X, 338X, 554X (except 5542), 556X, 558X, 584X (except 5842), 586X, 588X), 594X (except 5942)
Vertical Bath Travel	200 mm
Time to Heat Water from +22 °C to +37 °C	Approximately 30 minutes
Bath Volume to Fill Line	3.1 Liters
Bath Inner Diameter	5.5 in
Controller Supply Power	120 VAC to 240 VAC 50/60 Hz

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