

# ELECTRICALLY OPERATED PUMP WITH ONE-TOUCH OPERATION

3117-503



## ONE-TOUCH OPERATION

Instron is committed to simplifying testing equipment and making even complex tests and applications accessible to all users. Low cycle fatigue is an application which brings with it some significant challenges, one of which is achieving Class 5 alignment to ASTM E1012. When used in conjunction with our hydraulic reverse stress pull rods (3117-501) this electric micro-pump will smoothly pressurise your grips and achieve Class 5 alignment repeatedly between operators and specimens at the touch of a button. This improves user confidence and efficiency.



## DIGITAL PRECISION AND REPEATABILITY

As a modern alternative to using a hand pump and a pressure gauge this drive unit offers digital precision and simplicity. The system has an ergonomically placed digital display of gripping pressure located directly next to the system grip controls. This ensures that it is easy and convenient to accurately read the gripping pressure without the ambiguity or inconvenience of reading a dial gauge located on the side of the frame. In addition, the desired gripping pressure can be set digitally before clamping to ensure that specimen preload is achieved.



## CONSISTENT RESULTS BETWEEN USERS

The most significant benefit of the integrated micro-pump is the improved repeatability of pressurization and alignment between users. This powerful add-on removes the reliance on user training in how fast or slow to actuate a hand pump or in the correct way to read a dial gauge. The system is simple to use and delivers highly repeatable and smooth pressurisation to a set pressure which in turn contributes to superb alignment which any user in your lab can achieve.

## PRESSURE, PRELOAD & ALIGNMENT

In order to load a specimen in both tension and compression the specimen ends must be preloaded to remove backlash in the loadstring as the specimen goes from being under tensile and into compressive load. The preload must be adjusted depending on the specimen geometry or the test forces involved. To adjust the pre-load, you need to change the clamping pressure. In order to achieve precise and repeatable Class 5 Alignment the clamping pressure should be applied smoothly and in a controlled and repeatable manner.



### DIGITALLY ADJUST PRESSURE

Adjust clamping pressure in 1Bar intervals before activating grips and see a digital display of clamping pressure ergonomically located next to the grip controls.

### INTEGRATED GRIP CONTROLS

When used with the electric micro-pump the grip controls are integrated to the 8800MT control panel. Close and open grips at the touch of a button and easily see the grip status with indicator lights.



Clear Digital Display

### SETTING & READING PRESSURE

As a technician it is important to be able to precisely set the preload on a specimen and achieve it consistently. While the technology to achieve this has been around for a long time, Instron is the first to utilise it in this application in simplifying and improving the quality of Low Cycle fatigue testing. It really is as simple as it sounds, set a pressure and push to close. Remove an unnecessary manual step in your test procedures and with it remove the variability between technicians.



Integrated Grip Controls

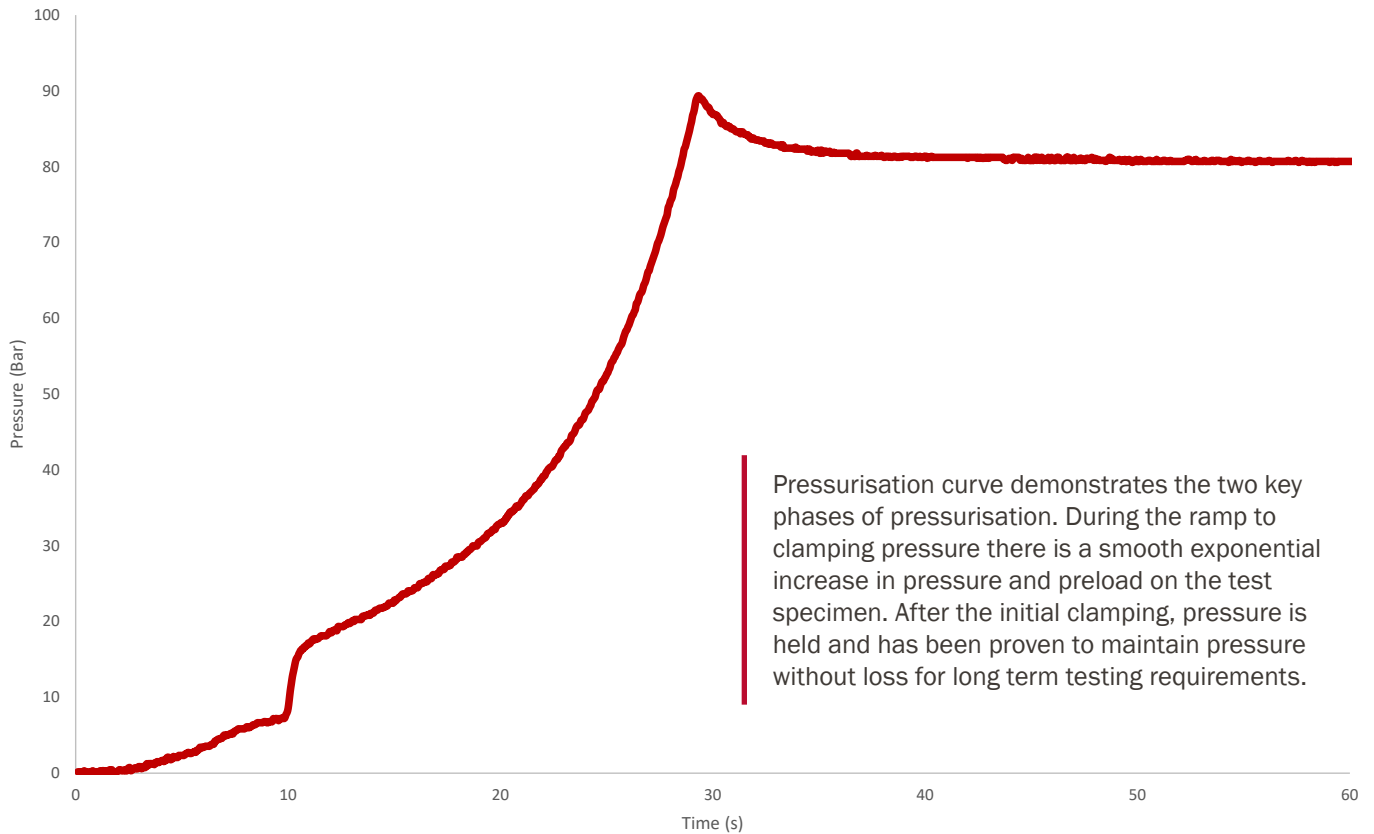
### INTERLOCKED ONE-TOUCH OPERATION

With the electric micro-pump, grip control is integrated with the 8800MT frame control panel and not a stand-alone manual unit. As a result of that integration users will benefit from operator security features which prevent accidental grip opening under load control or in test mode. As well as easily being able to see and change the grip status, users are protected from accidentally disrupting a test or damaging the specimen unexpectedly.

## REPEATABLE PRESSURISATION & PRELOAD

Data collected from grip pressurisation to show smooth and repeatable pressurisation that results from one-touch operation with electric micro-pump.

Smooth and repeatable application of pressure and specimen preload



## FLAME-OUT OIL

This unit is a self-contained electric pump which has an integrated reservoir of oil. This is separate from the oil supply of a hydraulic power pack used to run a hydraulic actuator test system. Due to the high temperatures used in Low Cycle Applications this micro-pump is filled with a special self-extinguishing hydraulic oil known as 'Flame-Out' oil. This ensures that in the unlikely event the oil will extinguish as soon as the heat source is removed.

## INSTRON LCF SOLUTION

Catalog Number	Description
3117-501	High temperature reverse stress pullrods
3117-503	Electrically operated pump unit with one-touch operation
3117-505	Manually operated hand pump unit
3117-301	Low Cycle Fatigue Furnace Controller



Self-Contained Electric Pump

## SPECIFICATIONS

Dimensions	mm	150 x 265 x 340
	in	5.91 x 10.4 x 13.4
Weight	kg	11
	lb	24.25
Time to Maximum Pressure	s	38
Pressure Display Resolution	bar	1
Pressure Adjust Resolution	bar	1
Maximum Pressure	bar	120
Oil Type		Fire Resistant Hydraulic Fluid
Reservoir Size	l	0.5
Accumulator Size	l	0.16
Noise	dbA	61
Electrical Supply*	DC	24V
Requires		3117-501 Reverse Stress Hydraulic Pullrods

\*Connected directly to 8800MT controller.

## RELATED HIGH TEMPERATURE SOLUTIONS



3117-501 LCF Pullrods



3117-301 Furnace Controller Software



More information can be found on our website at  
<https://go.instron.com/lcf>

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