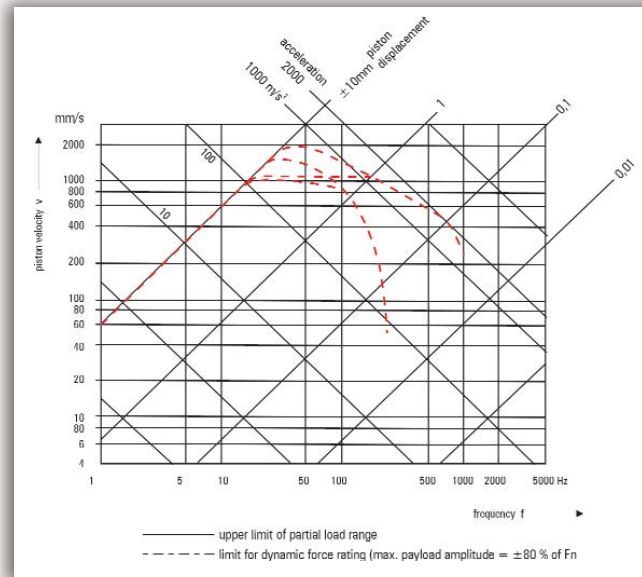


## Specifications

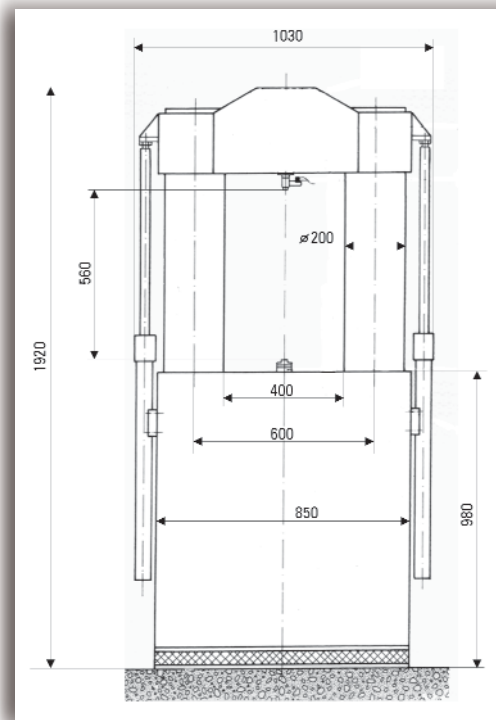
ACTUATOR FORCES AND STROKES	VHF 7
Nominal Load Static	7 kN
Nominal Load Dynamic	~5,6 kN
Piston Stroke	20 ( $\pm 10$ ) mm
PISTON VELOCITY AND FREQUENCY	
Max. Velocity (without Load)	~2,0m/ s
Frequency	0,01 - 1000 Hz
Total Frame Weight	2800 kg
Environmental Chamber	-40 bis +200°C

### Notes:

- Other specifications such as different hydraulic power packs, test components fixtures etc. available upon request.



▲ VHF 7D performance diagram



▲ Dimensions VHF 7D

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## High-Frequency Testing System VHF

Testing of Elastomeric Components and Frequencies up to 1000 Hz



Instron Structural Testing Systems Corporation  
 28700 Cabot Drive, Suite 100  
 Novi, MI 48377, USA  
 Tel: +1 248 553 4630  
 Toll free: +1 800 651 0924  
 Fax: +1 248 553 6869

Instron Structural Testing Systems GmbH  
 Landwehrstrasse 65  
 D-64293 Darmstadt  
 Germany  
 Tel: +49 6151 3917-0  
 Fax: +49 6151 3917-500

Instron Structural Testing Systems Limited  
 Coronation Road, High Wycombe  
 Buckinghamshire, HP12 3SY  
 United Kingdom  
 Tel: +44 1494 456789  
 Fax: +44 1494 456777

[www.instron.com/ist](http://www.instron.com/ist)

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POD IST0034 AE



VHF

# A Future-Oriented, Modular Testing Concept

## Design Principle

The purpose-designed servohydraulic high frequency testing system type VHF excels outstanding flexibility and the capability to adapt to constantly changing requirements of the viscoelastic properties of elastomeric suspension and chassis components. It is designed specifically for optimum testing of these components to establish their dynamic characteristics. Such testing procedures are usually conducted in the frequency range up to 1000 Hz.

## Load Frame Design

The configuration of the load frame is optimally designed to test at frequencies up to 1000 Hz (Fig. 1). The actuator is fitted inside the crosshead.

## Your Benefits

- High crosshead stiffness
- Eliminates undesirable actuator resonance
- Low design height
- Low phase error
- High measuring accuracy

## Working Principle

The overall design of the testing system with a comparatively high frame stiffness and table mass avoids undesirable natural frequencies in the testing frequency range below 1000 Hz, and operates with extremely high accuracy. For testing, the crosshead is adjusted by means of two hydraulic positioning cylinders.

Another purpose of the positioning cylinders is to apply a static preload for high-deformation specimens. This enables the working actuator to be designed for a low nominal stroke and thus for highly dynamic operation.

## Application

- Analysis of the behaviour of chassis and suspension components and other construction elements for optimised ride and NVH characteristics of the vehicle under design
- Testing of rubber-metal elements in automotive and general mechanical engineering
- Comfort analysis: Testing of the acoustics characteristics

## Area of Use

- Research & Development
- Quality Assurance

## Benefits

- Optimum use of working space
- High basic seismic mass, extremely stiff frame design to avoid resonance
- Hydraulic crosshead positioning for fast installation and removal of specimens or application of a static preload
- Operation of actuator against high table mass reduces phase error and ensures high measurement accuracy
- Full digital control with 19-bit resolution and outstanding repeatability



▲ Frame configuration VHF

- 1 Very stiff crosshead
- 2 Integral Hydropuls™ actuator
- 3 Hydraulic positioning actuator
- 4 Base
- 5 Load cell

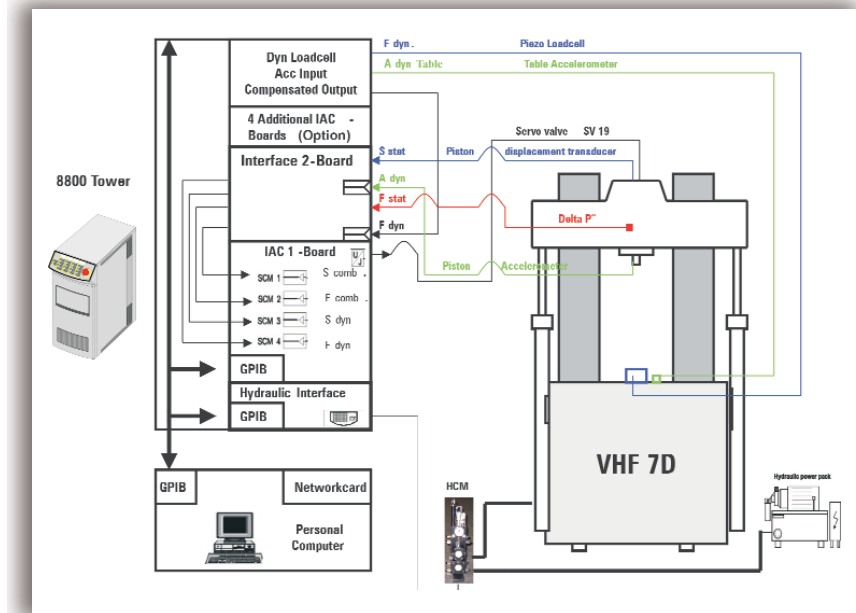
# Overall Design Digital Control, PC-Based Operation

## Outstanding Control

The testing system comprises of a test machine (nominal load capacity 7 kN), with hydraulic power supply, computer hardware, Labtronic™ 8800 digital controller and RS Elastomer testing software. High resolution signal conditioners in conjunction with a PC-based modular software package, permit the determination of the characteristic properties of elastomers with a high sample rate, and their presentation in the form of plots and test reports - turning the testing system into a comprehensive measurement system.

## Features of Labtronic 8800

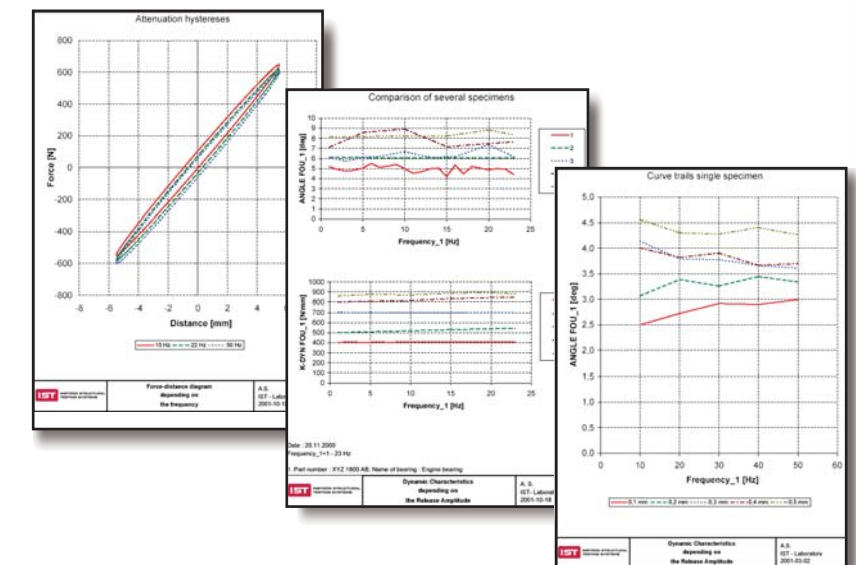
- Variable configuration from simple test rig electronics to a complete test laboratory network
- Simple PC-based operation
- High signal resolution
- Data acquisition with high sample rate
- High accuracy of measuring system for load and position up to 1000 Hz.



▲ Fig. 2: Overall configuration of the VHF servohydraulic high frequency testing system

## RS Elastomer Software

The software is based on the Windows® operating system, and is characterised by a modular structure, which ensures that all operation-relevant modules are stored independent of the application program. Operation is easy, flexible and straightforward: Tests can be defined with just a few clicks of the mouse. Test parameters and testing procedures can be stored and combined into arbitrary testing sequences as required.



## RS Elastomer Testing Procedures

- Static tests
- Dynamic tests
- Temperature tests
- Resonance tests
- Durability testing