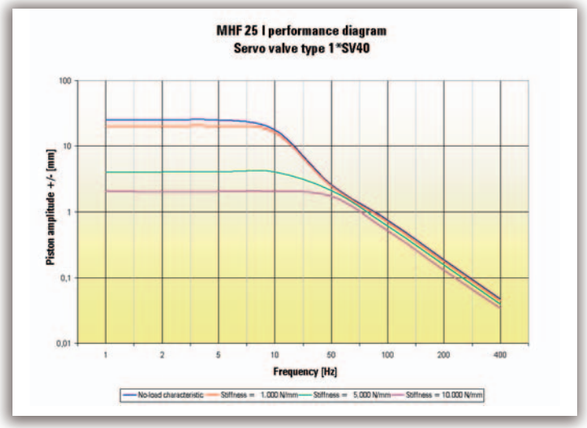
Specification

Typ MHF 25	Unit	10 D	10 I	25 D	25 I	25 K	50 I	50 K
Number of Columns		-	-	-	2	-	-	-
Actuator Nominal Load	kN	10	10	10	25	25	50	50
Piston Stroke	mm	20	50	50	50	100	10 D	100
Acutator Working Pressure	bar				280			
Hydraulic Power Supply					PP 40 B			
Servo valve configurations	l/min				1 x SV 40			
Crosshead Clamping		Mechanical Clamping - Hydraulic Unclamping						
Crosshead Adjustment		Hydraulic						
Safety Load Protect Mode		Standard						
Safety Package		Option (e.g. Safety Screen, Safety Enclosure, Safety Circuit, CE						
Max. Static Load	kN				±25			
Max. Dynamic Load	kN				±20			
Max. Dynamic Amplitude of Vibration	kN				50			
Frame Stiffness	kn/mm				~1500			
Total Weight Approx.	kg				1500			
Climatic Chamber -40 up to 200 °C	°C				Option			

Notes:

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



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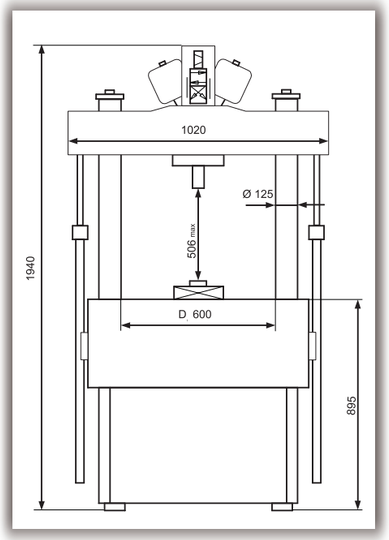
Performance diagram MHF 25



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Dimensions MHF

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Elastomeric-Testing System MHF

Testing of Elastomeric Components and Frequencies up to 400 Hz

MHF

INSTRON® STRUCTURAL TESTING SYSTEMS

A Future-Oriented, Modular Testing Concept

Design Principle

The purpose-designed servohydraulic medium high frequency testing system type MHF 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 400 Hz.

Load Frame Design

The configuration of the load frame is optimally designed to test at frequencies up to 400 Hz (Fig. 1). The load actuator is designed into the frame crosshead.

Your Benefits

- Low mass and excellent dynamic properties due to small number of components
- Inconvenient clamping surfaces are avoided
- High crosshead stiffness
- Eliminates undesirable actuator resonance
- Low design height
- Low phase error
- High measuring accuracy

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

Area of Use

- Research & Development
- Quality Assucrance

Benefits

- Optimum use of working space
- High basic seismic mass, extremely stiff frame design with low number of parts 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

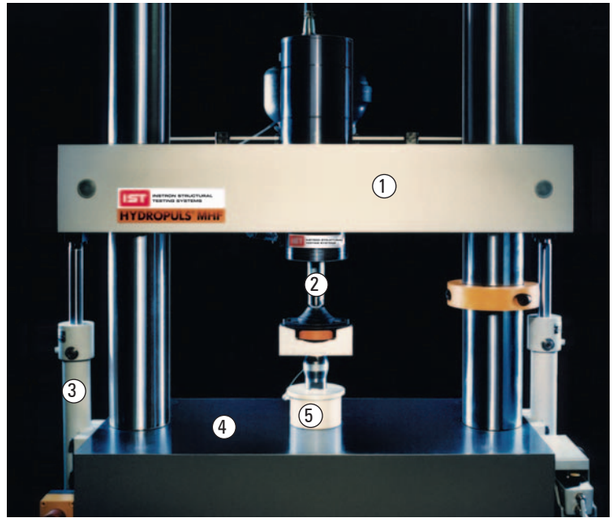

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Fig. 1: MHF frame configuration

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 400 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.

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 25 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.

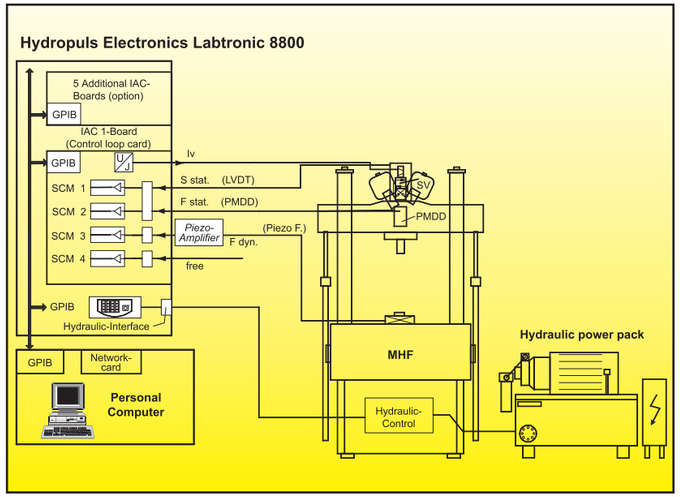

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Fig. 2: Overall configuration of the MHF servohydraulic medium high frequency testing system

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 400Hz

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