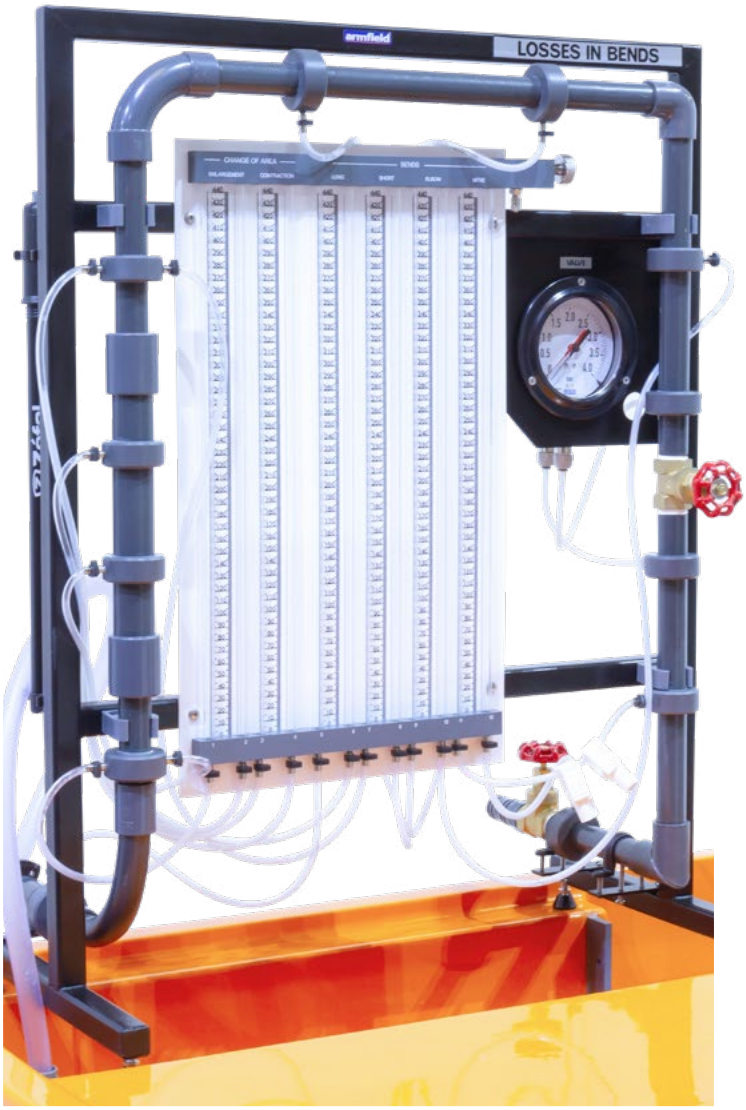
Energy Losses in Bends and Fittings - F1-22

This accessory permits losses in different bends and fittings, sudden contraction, sudden enlargement and a typical control valve to be demonstrated.

- Mitre bend - 90° elbow - Swept bends (large and small radius)
- Sudden contraction and sudden enlargement
- Fully instrumented with upstream and downstream pressure tappings
- A bank of 12 water manometer tubes mounted on the framework for visualisation of the pressure drop profiles



Experimental content

Measuring the losses in the devices related to flow rate and calculating loss coefficients related to velocity head including:

- Long bend
- Area enlargement
- Area contraction
- Elbow bend
- Mitre bend
- Short bend
- Gate valve fitting
- Comparing the pressure drop across each device

Description

The equipment is mounted on a free-standing framework which supports the test pipework and instrumentation. The following typical pipe fittings are incorporated for study: mitre bend, 90° elbow, swept bends (large and small radius), sudden contraction and sudden enlargement.

All are instrumented with upstream and downstream pressure tappings. These tappings are connected to a bank of 12 water manometer tubes mounted on the framework. Pressurisation of the manometers is facilitated by a hand pump. A gate valve is used to control the flow rate.

A separate gate valve is instrumented with upstream and downstream pressure tappings which are connected to a differential gauge on the edge of the framework. The unit stands on the working top of the hydraulics bench which is also used as the source of water supply.

Overall dimensions

Length	0.63m
Width	0.33m
Height	0.83m

Technical specifications

Pipe diameter	19.48mm
Differential pressure gauge	0-3 bar
Enlargement diameter	26.2mm
Contraction diameter	19.48mm
Fittings	45° mitre
	elbow
	short bend
	large bend
	enlargement
	contraction
Manometer range	0-440mm
Number of manometer tubes	12
Differential manometers	6

Requires Hydraulics Bench Service unit F1-10/F1-10-2

Ordering codes

- F1-22

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Issue: 2
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