

Flow Measurement of Liquids at High Temperatures

The WaveInjector is a special transducer mounting fixture for clamp-on ultrasonic flow measurement. It allows continuous flow measurement with the standard FLEXIM transducers at medium temperatures up to max. 400 °C, even in an explosive atmosphere. Since the transducers are clamp-on, no cutting of the pipe is necessary for installation and the measurement can be added to an existing installation without process interruption.

A typical application of the WaveInjector is explosion-proof flow measurement in the chemical industry at process temperatures higher than 120 °C. Volumetric flow measurement of heat transfer oil is another frequent application.

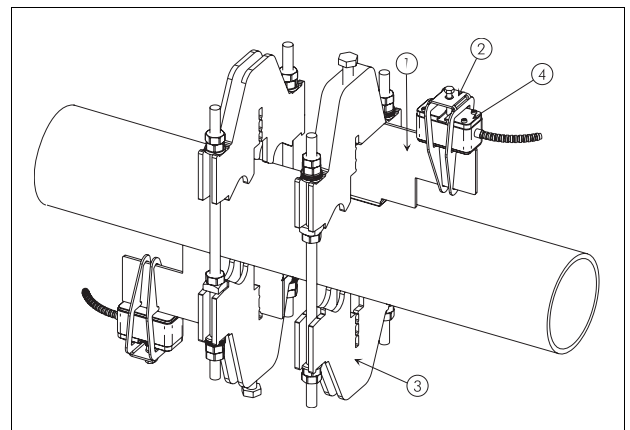
A WaveInjector is composed of the coupling plate (1), the transducers clamping fixtures (2), a pipe mounting clamp (3), together with an acoustic coupling foil. The metallic coupling plate between the transducer (4) and the pipe provides nearly loss-free ultrasonic coupling. At the same time, its cooling effect maintains a temperature gradient between the surface of the pipe and the transducer contact surface. This guarantees that the max. permissible transducer temperature is not exceeded.

Features

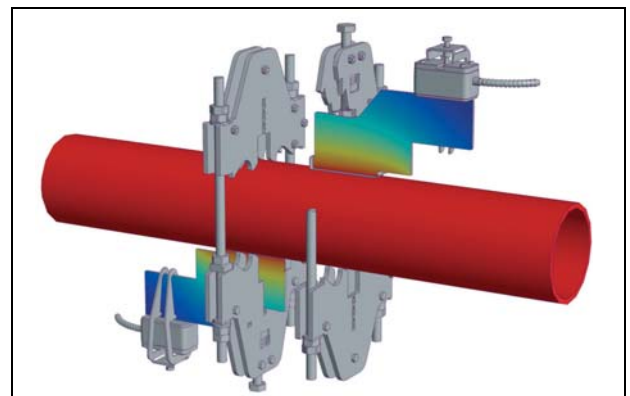
- Ultrasonic flow measurement at high temperatures (max. 400 °C) with standard clamp-on transducers
- Flexible mounting system allows mounting on pipes of different diameters
- Permanent and reliable coupling of the transducers to the pipe
- Fine tuning of the transducer distance is possible while instrument is working
- Excellent acoustic efficiency
- Transducers available for flow measurement in explosive atmospheres up to max. 400 °C
- Problem-free retrofitting on existing installations



WaveInjector WI-400

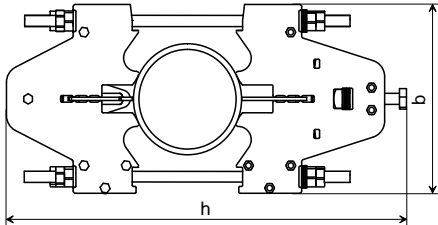
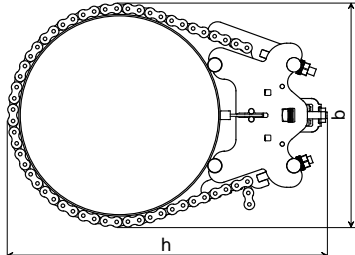


Parts of the WaveInjector



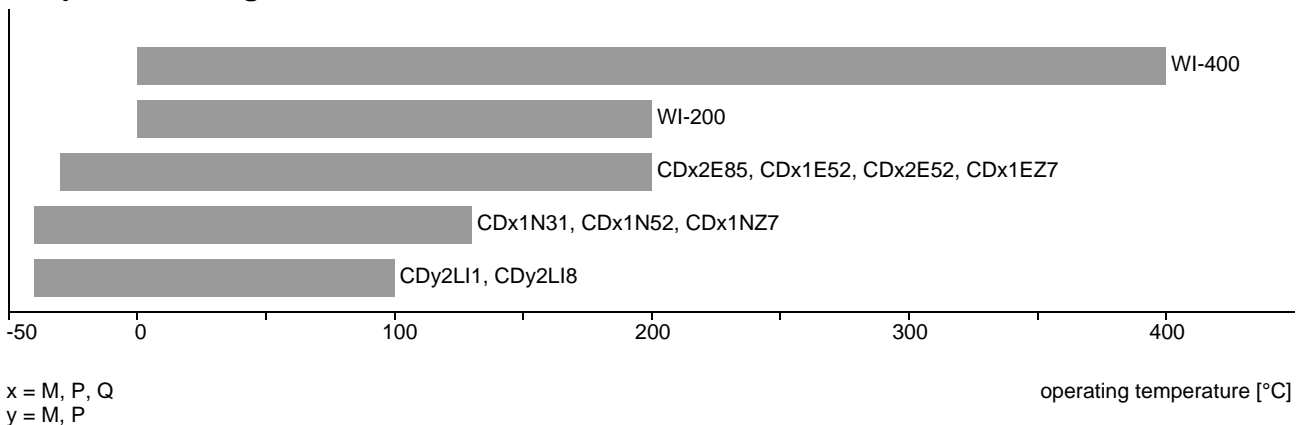
Temperature profile of WI-400

Technical Data

WaveInjector		WI-200S WI-400S	WI-200Q WI-400Q	WI-200M WI-400M	WI-200L WI-400L	WI-200V WI-400V
medium temperature	°C	WI-200: 0...200 WI-400: 0...400				
outer pipe diameter ¹	mm	40...130	80...230	80...380	350...600	600...1000
material		stainless steel 304 (1.4301)				
dimensions with mounted transducer						
length l	mm	220	220	220	220	220
width b	mm	170	270	420	outer pipe dia- meter + 32 mm	outer pipe dia- meter + 32 mm
height h	mm	outer pipe dia- meter + 264 mm	outer pipe dia- meter + 264 mm	outer pipe dia- meter + 264 mm	outer pipe dia- meter + 163 mm	outer pipe dia- meter + 163 mm
dimensional drawing						
installation to pipe		pipe mounting fixtures with threaded rods			pipe mounting fixtures und chains	
remark		upgrade of a flowmeter for the use with WaveInjector at the factory				

¹ outer pipe diameter > 1000 mm on request

Temperature Range



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