



Inturbine

Insertion Flowmeter

Introduction

The Jiskoot Inturbine is a large fixed or withdrawable rotor insertion meter of very rugged design, specifically for use in arduous pipeline duty applications.

It was developed to overcome the problems associated with pacing automatic crude oil samplers in pipelines with large turndown flow ratios, high wax, sediment and fibre contents. The meter incorporates several key features to solve these problems, one of which is the use of a 140mm computer designed fully contoured four-bladed impeller which optimised velocity measurements over a wide flow range with a clean 'shedding profile' and sufficient inertia to prevent jamming by fibrous or waxy materials.

The Inturbine's tungsten carbide bearings are fully shrouded. The output signal is picked up from a specially developed polarised magnetic wheel to increase sensitivity at low turning

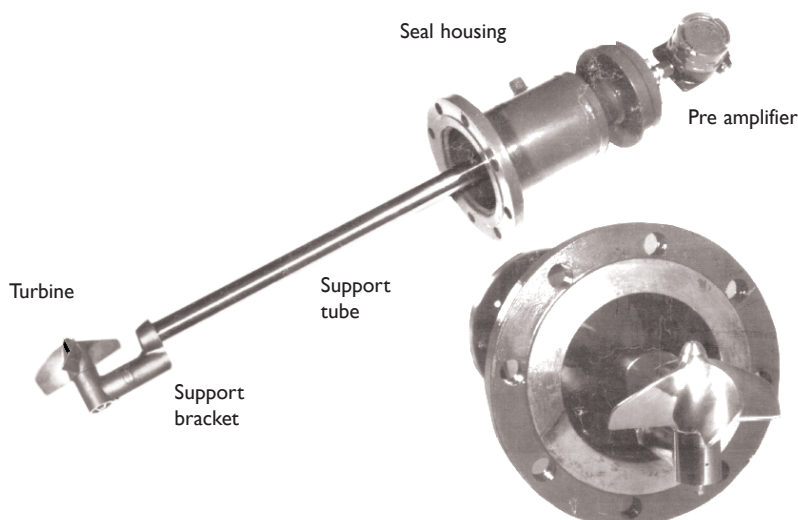
speeds.

The meter is specifically designed to pace sampling systems in pipeline flow velocities between 0.15 and 12m/s. The Inturbine is manufactured to accommodate pipeline sizes ranging from 8" to 52". (225mm to 1320mm).

Features

- Extended flow range with optional plastic turbine, typically 0.15 to 12m/sec.
- Insensitive to pipeline contents including granular particles and fibrous materials.
- Reliability – built-in through engineering design and attention to detail.
- For service in crude oil, refined hydrocarbons (including non-lubricating products) contaminated fluids and water pipelines.

Data Sheet S043-0504-3 • Inturbine Insertion Flowmeter





Specification

Materials of Construction

Support Tube	321 Stainless Steel
Seal Housing	Carbon Steel: generally flanged to A105-II, pipe to A106B or stainless steel 316/304 flanged 6" 150/300 RF as standard
Support Bracket	Cast stainless steel ASTM A351 CF8M
Bearings	Tungsten carbide
Impeller	Standard: 140mm diameter, cast stainless steel or aluminium
Seals	To suit application, typically viton, PTFE or polypropylene

Process Specification

Max Line Pressure (Process)	149 bar
Max Line Temperature (Process)	100°C (Consult Jiskoot for higher temperature applications)
Viscosity	0.5-150cSt

Electrical Specification

Pickup	Standard Output	Cenelec Flameproof to EEx.s.II T6 Sine wave output proportional to flow velocity min. 50mV at 0.15m/sec
Pre-Amp	Standard	EEx d IIC T6 (40°C). 2 wire 4-20mA current pulse output or 3 wire 0-5V or 0-10V voltage output

Performance Specification

Temperature operating limits for electronics (ambient)	-20°C to +40°C
Frequency	Typically 35Hz @ 1m/sec flow velocity
Velocity Range	0.25 to 8 m/sec std - linearity +/-5%. 0.15 to 12m/sec extended (optional plastic turbine)

Withdrawal/Insertion Mechanism

Hydraulic extractor designed for insertion and withdrawal of the Inturbine, to allow for line pigging or maintenance.

Maximum line pressure	Standard version	49 bar	(720psi)
	HP version	149 bar	(2160psi)

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