

the TOV viscometer TOVL Probe

The Probe is the mechanical portion of the TOV System that installs directly into the process environment.

TOV Probe's Construction

All weld construction allows Probe designs for high pressures (over 10,000 PSI or 700 Kg/cm²) and high temperatures (up to 350°C)

The Probe's Sensor

Viscosity sensor is sized and shaped according to the process specifications for greater sensitivity.

Mass Flange

Mass flange provides reference to reduce/eliminate extraneous plant noise influences.

RTD Thermowell

Location for optional RTD for accurate temperature measurement

Safety

TOV Probe models are approved for Class 1, Division II, Groups A,B,C,D by Entela and UL

Approx. 6.500 Inch (165.1 MM) Dia.
Approx. 40 lbs (18.1 Kg)

Probe Interior Torsional System

Operates utilizing the torsional principal...no motors or gears, less moving parts, and no maintenance

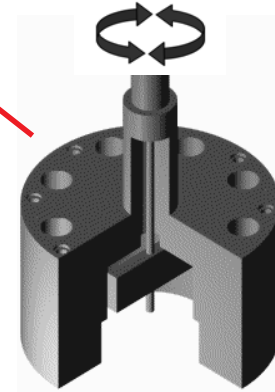
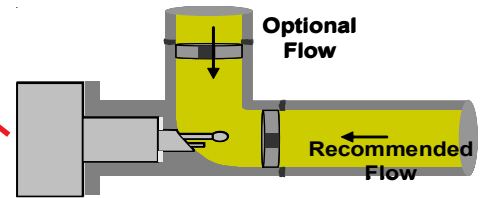
Model TOVL Probe shown.
Specifications above are for Model TOVL Probes.
Operating temperatures vary by model.

TOV Probe Model Number Specification

Probe Model Example	TOVL S = 9.625 model L = 6.500 model	-	LT HT = High Temp MT = Mid Temp LT = Low Temp	-	L (or E) E = Elbow L = "TEE" or Flat	-	L H = High Pressure L = Low Pressure	-	X K = Thick Lid X = No RTD
TOV Model	Probe Diameter	-	Max Temp.	-	Location	-	Max Design Pressure	-	Option
TOVL-HT-EH	6.5 inches (165.1 MM)	-	350C	-	Elbow	-	over 10,000 psi (68.9 MPA)	-	see above
TOVL-HT-EL	6.5 inches (165.1 MM)	-	350C	-	Elbow	-	1000 psi (6.89 MPA)	-	see above
TOVL-HT-LH	6.5 inches (165.1 MM)	-	350C	-	Line	-	over 10,000 psi (68.9 MPA)	-	see above
TOVL-HT-LL	6.5 inches (165.1 MM)	-	350C	-	Line	-	1000 psi (6.89 MPA)	-	see above
TOVL-MT-EH	6.5 inches (165.1 MM)	-	230C	-	Elbow	-	over 10,000 psi (68.9 MPA)	-	see above
TOVL-MT-EL	6.5 inches (165.1 MM)	-	230C	-	Elbow	-	1000 psi (6.89 MPA)	-	see above
TOVL-MT-LH	6.5 inches (165.1 MM)	-	230C	-	Line	-	over 10,000 psi (68.9 MPA)	-	see above
TOVL-MT-LL	6.5 inches (165.1 MM)	-	230C	-	Line	-	1000 psi (6.89 MPA)	-	see above
TOVL-LT-EH	6.5 inches (165.1 MM)	-	120C	-	Elbow	-	over 10,000 psi (68.9 MPA)	-	see above
TOVL-LT-EL	6.5 inches (165.1 MM)	-	120C	-	Elbow	-	1000 psi (6.89 MPA)	-	see above
TOVL-LT-LH	6.5 inches (165.1 MM)	-	120C	-	Line	-	over 10,000 psi (68.9 MPA)	-	see above
TOVL-LT-LL	6.5 inches (165.1 MM)	-	120C	-	Line	-	1000 psi (6.89 MPA)	-	see above

How it works...

- The TOV Probe's sensing device is immersed in process fluid.
- The TOV Probe is allowed to oscillate at its own resonance frequency...no motors or gears.
- Power to start and maintain the TOV Probe's oscillation is supplied by the TOV Transducer.
- As the viscosity increases, more power is needed to maintain the oscillation. For a lower viscosity, less power is needed.
- The Transducer continually monitors how much power is needed meaning the viscosity is also constantly monitored. No sampling time....only REAL TIME measurement.



TOV Probe Specifications Comparison

TOV Probe Model TOVS-HT,MT, or LT

Viscosity Range:	0.01 to 100,000 poise (.001 to 10,000 Pa.s)
<u>Working Temp. Range</u>	
Model TOVS-HT:	0°C to 350°C (32 to 662°F)
Model TOVS-MT:	0°C to 230°C (32 to 446°F)
Model TOVS-LT:	0°C to 120°C (32 to 248°F)
Temperature Accuracy:	±0.1°C of the balance point
Design Pressure Range:	0.01 to 10,000 PSIG (700kg/cm ²)
Installation and Mounting:	Flange mounted with pipeline, vessel, or extruder adaptor/flange
Mass Diameter:	9.625 in (244.5 MM)
Lid:	Standard thin Rupture Disk Special Thick Lid design available
Optional RTD:	Dual Element, 100 ohm Icepoint
Size: Std Sensor Length	3 inches (76.2 MM)
Overall Length	14 inches (355.6 MM)
Weight:	Approx. 85 lbs. (38.5 Kg)
Materials:	Generally 316 S.S., others available
Safety Certification:	US Entela Certified for UL1604 Class 1, Division II, Groups A,B,C,D Certification 8769
Viscosity Repeatability:	±0.2% of reading
Viscosity Accuracy:	±1% of range in use

Other TOVS models are available.

TOV Probe Model TOVL-HT, MT, or LT

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<u>Working Temp. Range</u>	
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Other TOVL Model Probes are available.

For more information, please contact::



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