

the TOV viscometer TOVS Probe

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

The Probe's Sensor

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

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)

Mass Flange

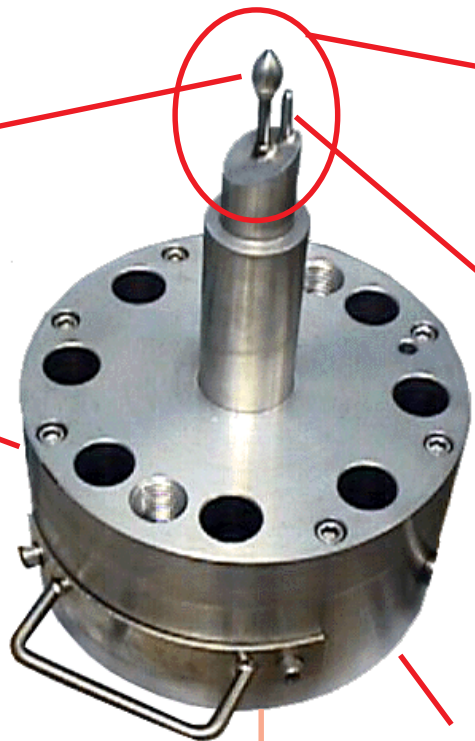
Mass flange provides reference to reduce/eliminate extraneous plant noise influences.

RTD Element

Optional Built-in Platinum RTD can provide accurate temperature reading (.1%)

Safety

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



Approx. 9.625 Inch (244.5 MM) Dia.
Approx. 85 lbs (38.5 Kg)

Probe Interior Torsional System

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

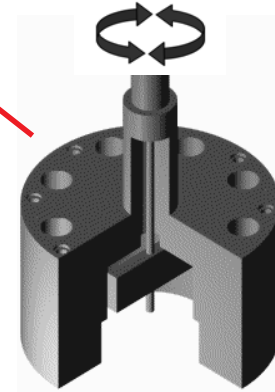
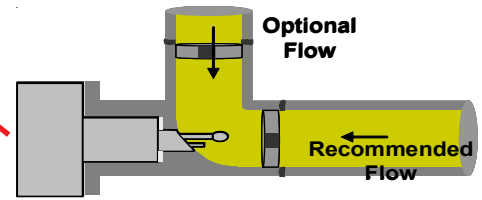
Model TOVS Probe shown as example.
Specifications above are for Model TOVS Probes.
Operating temperatures vary by model.

TOV Probe Model Number Specification

Probe Model Example	TOVS S = 9.625 model L = 6.500 model	-	HT HT = High Temp MT = Mid Temp LT = Low Temp	-	E E = Elbow L = "TEE" or Flat	H H = High Pressure L = Low Pressure	-	K = Thick Lid X = No RTD Blank = No Options
TOV Model	Probe Diameter	-	Max Temp.	-	Location	Max Design Pressure	-	Option
TOVS-HT-EH	9.625 inches (244.5 MM)	-	350C	-	Elbow	over 10,000 psi (68.9 MPA)	-	see above
TOVS-HT-EL	9.625 inches (244.5 MM)	-	350C	-	Elbow	1000 psi (6.89 MPA)	-	see above
TOVS-HT-LH	9.625 inches (244.5 MM)	-	350C	-	Line	over 10,000 psi (68.9 MPA)	-	see above
TOVS-HT-LL	9.625 inches (244.5 MM)	-	350C	-	Line	1000 psi (6.89 MPA)	-	see above
TOVS-MT-EH	9.625 inches (244.5 MM)	-	230C	-	Elbow	over 10,000 psi (68.9 MPA)	-	see above
TOVS-MT-EL	9.625 inches (244.5 MM)	-	230C	-	Elbow	1000 psi (6.89 MPA)	-	see above
TOVS-MT-LH	9.625 inches (244.5 MM)	-	230C	-	Line	over 10,000 psi (68.9 MPA)	-	see above
TOVS-MT-LL	9.625 inches (244.5 MM)	-	230C	-	Line	1000 psi (6.89 MPA)	-	see above
TOVS-LT-EH	9.625 inches (244.5 MM)	-	120C	-	Elbow	over 10,000 psi (68.9 MPA)	-	see above
TOVS-LT-EL	9.625 inches (244.5 MM)	-	120C	-	Elbow	1000 psi (6.89 MPA)	-	see above
TOVS-LT-LH	9.625 inches (244.5 MM)	-	120C	-	Line	over 10,000 psi (68.9 MPA)	-	see above
TOVS-LT-LL	9.625 inches (244.5 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

Viscosity Range:	0.01 to 100,000 poise (.001 to 10,000 Pa.s)
<u>Working Temp. Range</u>	
Model TOVL-HT:	0°C to 350°C (32 to 662°F)
Model TOVL-MT:	0°C to 230°C (32 to 446°F)
Model TOVL-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:	6.500 in (165.1 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. 40 lbs. (18.1 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 TOVL Model Probes are available.

For more information, please contact::



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