

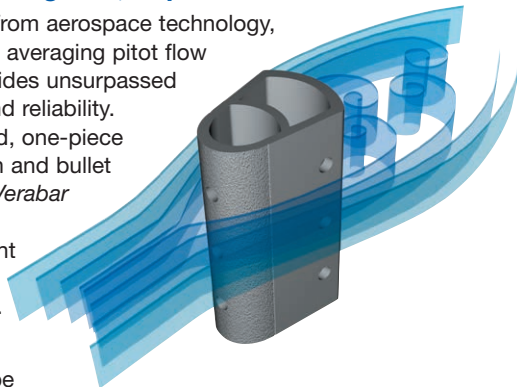
Hot Tap Models

Differential Pressure Flow Sensors

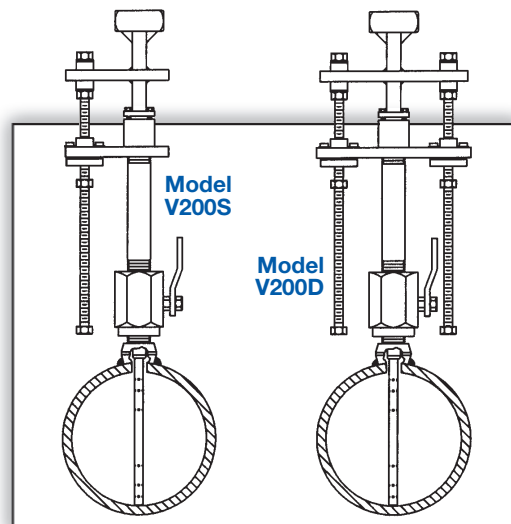
**V200 Screw Drive
Threaded Components**

The Most Accurate and Reliable Technology for Measuring Gas, Liquid and Steam...

Developed from aerospace technology, the Verabar® averaging pitot flow sensor provides unsurpassed accuracy and reliability. With its solid, one-piece construction and bullet shape, the Verabar makes flow measurement leak proof and precise.



The unique sensor shape reduces drag and flow induced vibration. The location of the low-pressure ports eliminates the potential for clogging and improves signal stability.



V200 Hot Tap	
Pipe Connection	Threaded (NPT)
Mounting Type	Ball or gate access valve
Features and Benefits	<ul style="list-style-type: none"> • Most commonly used hot tap model • Installation, insertion & retraction without system shutdown • Economical single threaded rod for most applications • Two threaded rods for high pressures • Synchro drive simultaneously rotates both rods (double rod drives only) • Patented, anti-seize orbital bearing aligns threaded rods and eliminates galling • Can mount to existing valves
Applications	<ul style="list-style-type: none"> • Air (compressed, combustion) • Natural gas • Water (raw, cooling, feedwater) • Steam
Special Designs – Consult Factory	<ul style="list-style-type: none"> • Custom mounting, lengths, materials, instrument connections, etc. • Short straight run

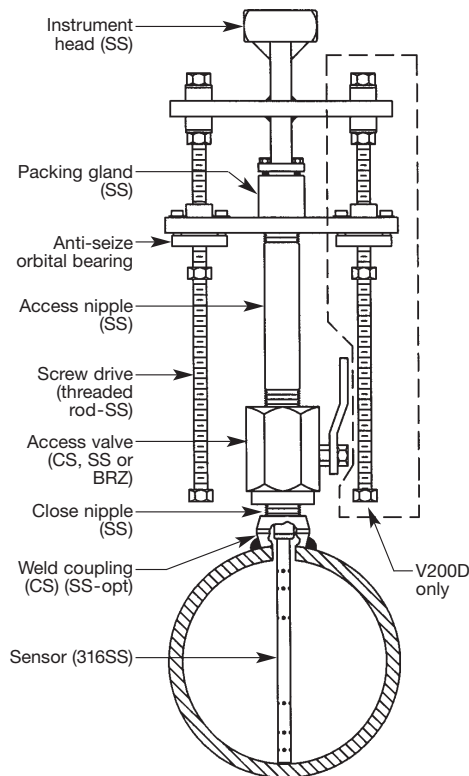
Temperature Pressure Limits (ANSI Class Rating)*
150#
275 psig @ 100°F (19 Bars @ 38°C)
80 psig @ 800°F (5.5 Bars @ 426°C)
600#
1440 psig @ 100°F (99.3 Bars @ 38°C)
825 psig @ 800°F (56.9 Bars @ 426°C)

Model Specifications	V200S			V200D	
Sensor Code	05	10	15	10	15
Sensor Diameter	7/16" (11mm)	7/8" (22mm)	1-3/8" (35mm)	7/8" (22mm)	1-3/8" (35mm)
Accuracy	±1% of flow rate; ±0.5% if calibrated				
ANSI Class*	600#	150#	150#	600#	600#
Drive Rods	Single			Double	
Pipe Size	2" - 6" (50mm - 150mm)	6" - 42" (150mm - 1050mm)	12" - 60" (300mm - 1500mm)	6" - 42" (150mm - 1050mm)	12" - 60" (300mm - 1500mm)
Instrument Connection	1/2" NPT	1/2" NPT or Direct Mount		1/2" NPT or Direct Mount	
Components Furnished	Weld coupling, close nipple, access nipple and valve				
Weld Coupling Size	3/4" NPT	1-1/4" NPT	2" NPT	1-1/4" NPT	2" NPT

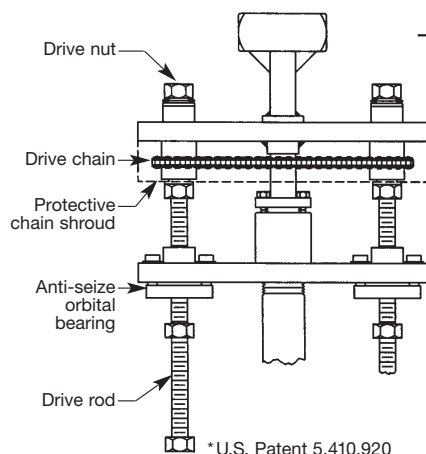
* DIN and JIS flanges available. Consult factory.

Hot Tap Models

**V200S (Single Rod)
V200D (Double Rod)**

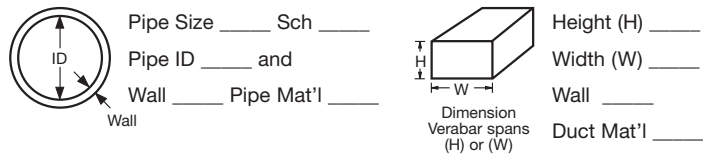


**Synchro-Drive
(Option SYN)**

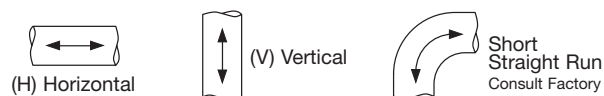


Furnish the following information:

1. Enter Pipe Dimensions or Duct Dimensions



2. Pipe or Duct Orientation



3. Enter Flow Conditions

Fluid Name:		Maximum	Normal	Minimum	Units
Flow Rate					
All Fluids	Temperature @ Flow				
	Pressure @ Flow				
Gas	Specific Gravity, or Molecular Weight				
Liquid	Specific Gravity				
Steam	Veracalc Program can calculate Density from Temperature and Pressure				

4. Select Model from Page 3

Use the Ordering Information table on Page 3 to determine your model number.

5. Flow Calculation



All Verabar applications require a flow calculation to verify the DP, pressure and temperature limits, structural limits and to size the transmitter. The Veracalc PC Program is for use by representatives and end users. It is easy to operate and **includes steam tables**.

Synchro-Drive Description

- Designed for pressures greater than ANSI Class 150#, Synchro-Drive is equipped with two drive rods that are coupled together by a protected chain drive system. Turning either drive nut simultaneously rotates both rods.

Synchro-Drive Benefits

- 95% faster and easier insertion and retraction.
- Equal load distribution over both rods maintains sensor alignment and eliminates binding.

Ordering Information

Model	Hot Tap • Threaded Pipe Connections and Components						
V200S	Single Rod, Insert/Retract, General Purpose (05 Class 600#, 10 and 15 Class 150#)						
V200D	Double Rod, Insert/Retract, Higher Pressures (600# max.) (10 and 15 only)						
Pipe Size and Schedule or Exact ID and Wall Thickness							
Code	Sensor Pipe Size Range						
05	2" to 6" (50mm to 150mm)						
10	6" to 42" (150mm to 1050mm)						
15	12" to 60" (300mm to 1500mm)						
Code	Pipe Orientation						
H	Horizontal						
V	Vertical						
Instrument Connections (Select Remote or Direct Mount) (Transmitter sold separately)							
Remote Mount Transmitter (1/2" NPT)				Direct Mount Transmitter (Flanged 450°F/232°C Max.)†			
Parallel	Regular	RTD*	Valve	Transmount	Mass Transmount*	Manifold	
		Explsn. Proof	Integral		Integral RTD	Remote RTD	Integral
P	R	D	T	F	G	E	M
Instrument Valves (Opt.)				Manifolds (Optional)			
Remote Mount				Direct Mount			
Needle	Gate	3-Valve		5-Valve			
1/2" NPT	1/2" NPT	Soft Seat	Hard Seat	Soft Seat	Hard Seat		
C2NC (CS)	C2GC (CS)	F3SC (CS)	F3HC (CS)	F5SC (CS)	F5HC (CS)		
C2NS (SS)	C2GS (SS)	F3SS (SS)	F3HS (SS)	F5SS (SS)	F5HS (SS)		
Mounting Assembly — Select Valve Type & Material (Includes valve, close nipple & weld coupling)							
Sensor (Valve Size NPT)						Type, Material & Rating	
05 (3/4")	10 (1-1/4")	15 (2")					
Code							
B3B	B5B	B8B				Ball, Brz., 600 psig @ 100°F, 100 psig @ 400°F (max.)	
B3C	B5C	B8C				Ball, CS, 1000 psig @ 100°F, 100 psig @ 400°F (max.)	
B3S	B5S	B8S				Ball, SS, 1000 psig @ 100°F, 100 psig @ 400°F (max.)	
G3C	G5C	G8C				Gate, CS, ANSI Class 600#	
G3S	G5S	G8S				Gate, SS, 1200 psig @ 100°F, 660 psig @ 800°F	
Optional							
Code	Options						
SYN	Synchronized Two Rod Drive System (Available for V200D-10 and V200D-15 sensors only)						
WPS	SS Wetted Components (Furnished with SS weld coupling, close & access nipple). Must be ordered with SS access valve.						
Typical Model Number							
V200D	8"sch40	10	H	R	C2NC	B5C	SYN

* For high pressure (>500psig) or high temperature (>500°F), remote mount RTD in a thermowell is preferred.
 † Assuming adequate heat dissipation for transmitter.

REMOTE MOUNT	PARALLEL	REGULAR	RTD	VALVE	NEEDLE	GATE
CODE	P	R	D	T	CZNG (CS) CZNS (SS)	CZGC (CS) CZGS (SS)
DOWNSTREAM						
CODE	F	G	E	M		
	INT RTD	RMT RTD	INTEGRAL	F3SC (CS) F3SS (SS)	F3HC (CS) F3HS (SS)	F3SC (CS) F3SS (SS)

NOTES:

- Δ H=ID+WALL+X+10.2" (SENSOR -05 INSERTED), H=ID+WALL+X+11.6" (SENSOR -10 INSERTED), H=ID+WALL+X+13.6" (SENSOR -15 INSERTED), H=2(ID+WALL+X)+10.1" (SENSOR -05 RETRACTED), H=2(ID+WALL+X)+11.4" (SENSOR -10 RETRACTED), H=2(ID+WALL+X)+13.3" (SENSOR -15 RETRACTED). ADD 1.35" TO "H" FOR -10 SYNCHRO DRIVE. ADD 1.75" TO "H" FOR -15 SYNCHRO DRIVE.
- 2. INSTRUMENT HEAD AND ACCESS VALVE ORIENTATION SHOWN, 90 DEGREES FROM ACTUAL ORIENTATION FOR CLARITY.

ITEM	SENSOR -05	SENSOR -10	SENSOR -15	PRESSURE RATING
SENSOR DIA.	7/16" (11mm)	7/8" (22mm)	1-3/8" (35mm)	-
COUPLING SIZE	3/4" NPT	1-1/4" NPT	2" NPT	-
DIM "D" DRILLED HOLE DIAMETER	1/2" (13mm)	1" (26mm)	1-1/2" (39mm)	-
DIM "X" FOR BRONZE BALL VALVE	5.6" (142mm)	7.2" (183mm)	8.4" (213mm)	800PSI @ 100F / 100PSI @ 400F
DIM "X" FOR OS BALL VALVE	6.2" (157mm)	7.6" (193mm)	9.1" (231mm)	1000PSI @ 100F / 100PSI @ 400F
DIM "X" FOR SS BALL VALVE	6.0" (152mm)	7.7" (196mm)	9.1" (231mm)	1000PSI @ 100F / 100PSI @ 400F
DIM "X" FOR OS GATE VALVE	6.5" (165mm)	7.7" (196mm)	10.1" (257mm)	ANSI CLASS 600#
DIM "X" FOR SS GATE VALVE	6.0" (152mm)	7.7" (196mm)	8.8" (224mm)	1200PSI @ 100F / 860PSI @ 800F

* "H" & "X" DIMENSIONS ARE APPROXIMATE (FOR SIZING PURPOSES ONLY).

CUSTOMER: _____
 PROJECT: _____
 ORDER NO.: _____
 TAG NO.: _____
 PIPE SIZE & SCHEDULE: _____
 CATALOG NO.: _____
 SERIAL NO.: _____
 CERTIFIED BY: _____ DATE: _____

Veris, inc.
 VERABAR MODEL: V200 SINGLE
 & DOUBLE ROD THREADED

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DATE 09/20/01
 SCALE NTS
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