



The SYNCRONTRAK®

The SYNCRONTRAK® small volume prover meets the most stringent accuracy requirement for meter proving. The prime features of the SYNCRONTRAK® are its precision, smooth bore cylinder and measurement piston, which contains an integral bypass valve in order to minimise disturbance to flow streams. During proving runs the piston is released from the return system allowing the piston to follow the flow stream unaided. The result is minimum effect on the flow stream providing unequalled accuracy and precision. Sealing integrity is provided by PTFE filled seals giving unrivalled fluid compatibility. The SYNCRONTRAK® meter prover has a constant displaced volume of 100%, regardless of meter location and contains no hydraulic or pneumatic features. These features assure constant proving results with repeatability equal to or exceeding 0.02%. The SYNCRONTRAK® is the pre-eminent choice for all types of flowmeters including PD, turbine, coriolis and ultrasonic.

Features

- Unrivalled fluid compatibility within the industry (only PTFE seals – no other elastomers)
- Patented rugged and simple electro-mechanical piston return mechanism (no complex hydraulics or pneumatics)
- Displaced Volume never varies relative to meter position
- No adjustments for changing line pressures
- Simple valve-in-piston eliminates four-way valves

Technical specifications

Principles

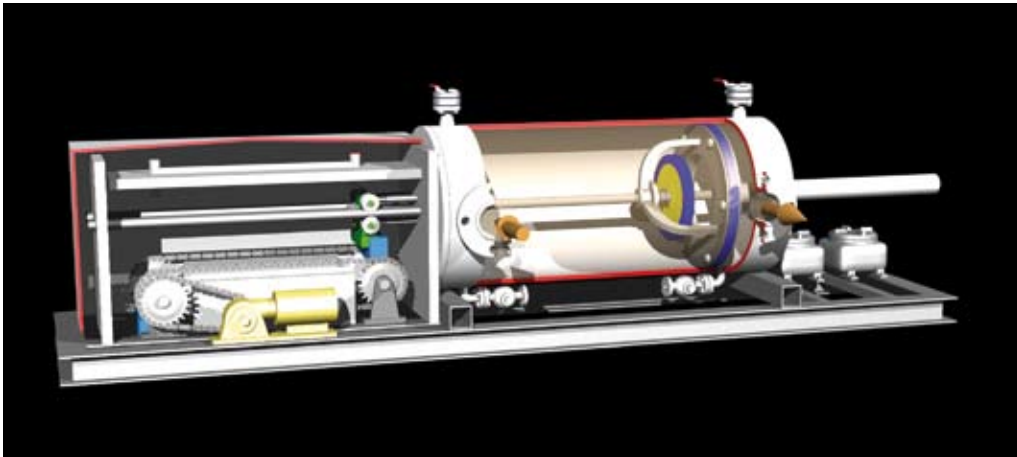


Figure 1

In the stand-by mode the piston is downstream and stationary. The piston's inner flow-through valve is open (slightly upstream of the main piston body), allowing product to flow freely through the prover's measurement cylinder with insignificant pressure loss.

When the operator starts a proving run (Figure 1), the computer signals the explosion-proof motor to pull the piston into the upstream position. The piston is then unlatched from the chain drive return mechanism. The low-drag piston traveling down the smooth-bore tube is then free to follow flow of the fluid with the least possible effect on the flow stream. When the piston is released, the flow-through valve closes by spring tension (Figure 2) and the Piston velocity is now synchronized with the fluid velocity.

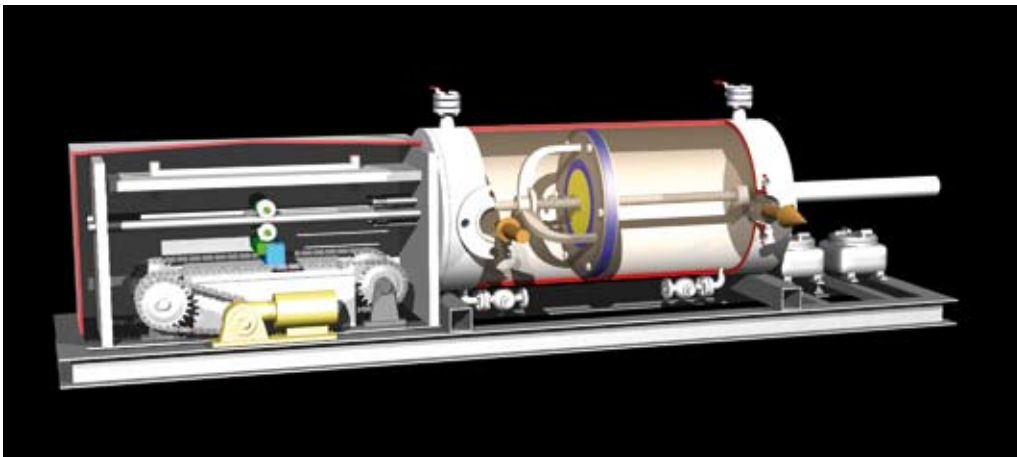


Figure 2

After the piston has been released, and after a short run, the precision optical volume switch is actuated, sending a signal to the proving computer to start the timing sequence. The piston continues downstream with the flow. Upon reaching the end volume switch, a signal is sent to the proving computer to stop the timing sequence. Just after passing the end of volume switch, the piston shaft is stopped by a mechanical stop. Product flowing through the prover pushes the perimeter of the piston further downstream, opening the flow-through valve and permitting flow to continue with little to no pulse/surge in line pressure.

To begin the next proving run, a signal is sent from the proving computer, activating the return mechanism and pulling the piston to the upstream position where it is released to obtain another data point.

Pos 1 Environmental configuration	
S	Standard configuration onshore, plant (Gate valves used for drains unless otherwise specified)
O	Offshore marine coastal, platform, & ship application (Wetted parts 'E' only; Electrical hazardous classification '5' only; ball valves used for drains)
P	Portable applications (Ball valves used for drains)

Pos 2, 3, 4 Flow rate

		Maximum Flow		Maximum Flow		Maximum Flow		Displaced volume	Displaced volume	Shipping weight	Shipping weight	
		Turbine meters	PD, coriolis, ultrasonic meters	Turbine meters	PD, coriolis, ultrasonic meters	Turbine meters	PD, coriolis, ultrasonic meters					
		BPH	BPH	GPM	GPM	M ³ /Hr	M ³ /Hr	Gallons	Litre	LB	kg	
0	5	715	715	500	500	114	114	5	18.9	1,200	544	
1	5	2,140	1,719	1,498	1,203	340	273	20	75.7	3,500	1,588	
2	5	3,570	1,719	2,499	1,203	568	273	20	75.7	4,350	1,973	
3	5	5,000	4,671	3,500	3,270	795	743	25	94.6	5,250	2,381	
5	0	7,200	5,783	5,040	4,048	1,145	919	40	151.4	7,850	3,561	
8	5	12,500	11,267	8,750	7,887	1,987	1,791	75	283.9	12,500	5,670	
1	2	0	17,500	15,922	12,249	11,145	2,782	2,531	120	454.2	14,500	6,577

Pos 5 Wetted parts

C	304 Stainless Steel flow tube with chrome plated bore. 304SS piston, end flanges & shafts
E	316 Stainless Steel flow tube with chrome plated bore. 316SS piston, flanges & shafts (Required for 'O' Models)

Pos 6 ANSI B16.5 flange rating

1	150# Raised face connection flanges (05 Not Available)
2	300# Raised face connection flanges (05 Not Available)
3	600# Raised face connection flanges (15 & 120 Not Available)
4	900# Raised face connection flanges (15 & 120 Not Available)
5	900# Ring joint connection flanges (15 & 120 Not Available)
6	150# Ring joint connection flanges (05 Not Available)
7	300# Ring joint connection flanges (05 Not Available)
8	600# Ring joint connection flanges (15 & 120 Not Available)
9	1500# Ring joint connection flanges (05, 15, 85 & 120 Not Available)

Pos 7 Operating pressure rating (applicable for temperatures of 100 Deg F or less only)

A	275 PSI (18.96 Bar) : Pressure rating (for use with with Pos 6 1&6)
B	720 PSI (49.64 Bar) : Pressure rating (for use with Pos 6 2&7)
C	1440 PSI (99.28 Bar) : Pressure rating (for use with Pos 6 3&8)
D	2160 PSI (148.92 Bar) : Pressure rating (for use with Pos 6 4&5)
F	3600 PSI (248.21 Bar) : Pressure rating (for use in Pos 6 9)

Pos 8, 9 Inlet and outlet configuration

0	Inlet both sides & outlet flange left side
1	Inlet & outlet flanges opposite-inlet right side
2	Inlet & outlet flanges same side-right side
3	Inlet & outlet flanges 90 degrees, inlet on right side
4	Inlet & outlet flanges same side-left side
5	Inlet & outlet flanges both sides-double set
6	Inlet & outlet flanges both on top
7	Inlet & outlet flanges opposite-inlet left side
8	Inlet flanges both sides & outlet on top
9	Inlet flange on top & outlet on left
1 1	Inlet flange on top & outlet on right
1 2	Inlet & outlet flanges 90 degrees, inlet on left side
1 3	Inlet on right, outlet on left, outlet on top

Pos 10 Motor voltage

D	24 VDC (05, 15, 25 & 35 only)
A	120 VAC, 60 Hz (05 thru 50)
G	120 VAC, 50 Hz (05 thru 50)
B	220 VAC, 60 Hz
C	220 VAC, 50 Hz
H	220/240 VAC, 60 Hz, 3 phase
N	220/240 VAC, 50 Hz, 3 phase
R	380/400/415 VAC, 60 Hz, 3 phase
L	380/400/415 VAC, 50 Hz, 3 phase
E	460/480 VAC, 60 Hz, 3 phase
O	460/480 VAC, 50 Hz, 3 phase

Pos 11 Electrical hazardous classification

3	CSA/US Class I, Division I, Group D T2C [CSA 1011011 (LR 84500)]
4	CSA/US Class I, Division I, Group C T3B [CSA 1011011 (LR 84500)]
5	LCIE ATEX CE II 2 G EExd ia [ia] IIC T4 [LCIE 05 ATEX 6068 X]

Pos 12 Flow tube finish

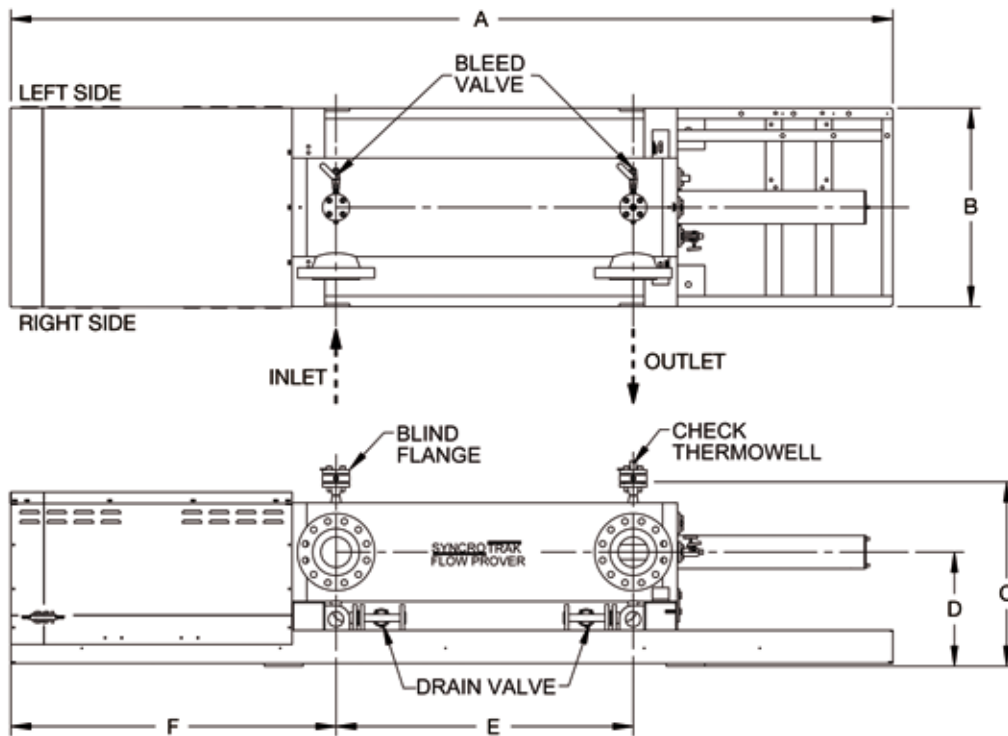
A	Stainless steel - brushed
B	Painted (White)

S 0 5 C 3 C 0 B 3

Typical identification code

Your identification code

Mechanical



Model # / Dimensions	S05C3	S15C2	S25C3	S35C2	S50C3	S85C2	S120C2
A	2438 (96")	4064 (160")	4064 (160")	4064 (160")	4496 (177")	5232 (206")	5588 (220")
B	610 (24")	914 (36")	914 (36")	914 (36")	1067 (42")	1270 (50")	1372 (54")
C	686 (27")	828 (32.6")	848 (33.4")	925 (36.4")	1166 (45.9")	1232 (48.5")	1384 (54.5")
D	427 (16.8")	523 (20.6")	523 (20.6")	541 (21.3")	673 (26.5")	762 (30")	833 (32.8")
E	777 (30.6")	1369 (53.9")	1369 (53.9")	1306 (51.4")	1473 (58")	1930 (76")	2045 (80.5")
F	930 (36.6")	1499 (59")	1499 (59")	1532 (60.3")	1875 (73.8")	2108 (83")	2245 (88.4")
Flange Sizes	3"	6"	6"	8"	8"	12"	16"

Notes:

1. Dimensions in mm and (Inches)
2. Dimensions 'C' and 'F' may vary according to model type / configuration
3. All dimensions vary according to pressure rating
4. All dimensions are subject to change

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