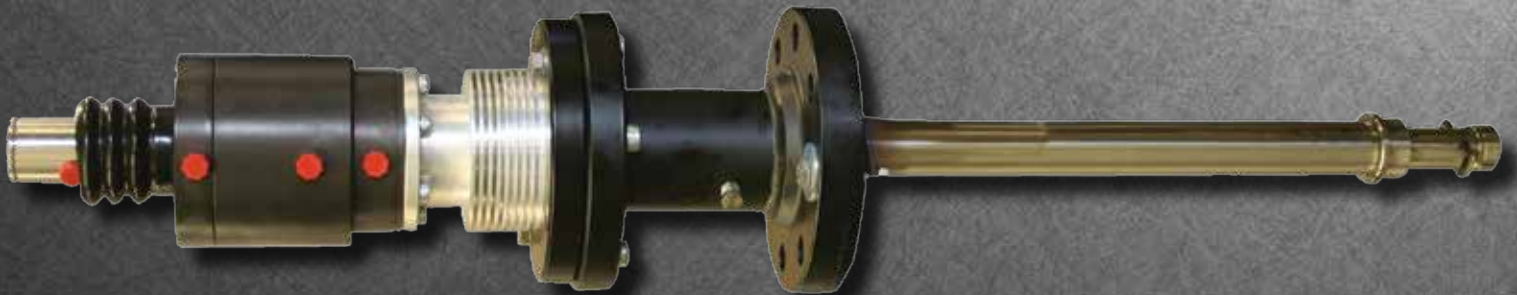


JISKOOT Extreme Temperature Probes 210P, 210-HP and 210EH, 210EH-HP

TECHNOLOGY



JISKOOT Extreme Temperature Probes 210P, 210P-HP, and 210EH, 210EH-HP

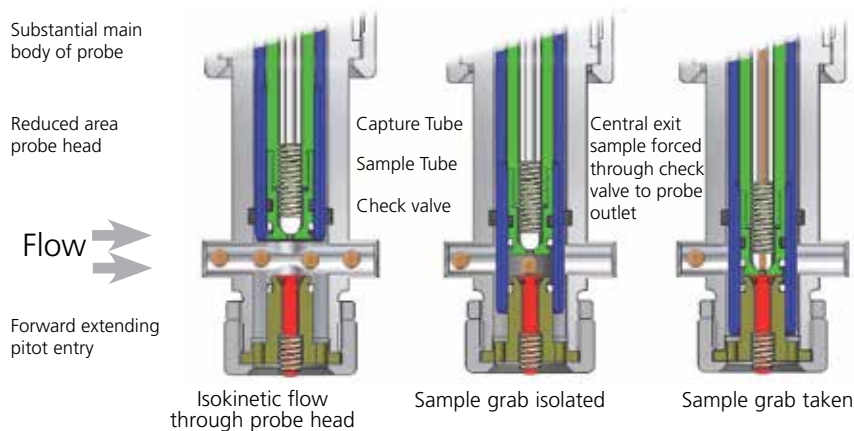
Cameron's JISKOOT™ Extreme Temperature 210 Probe is a reliable and accurate sample extraction device, suitable for use as part of an in-line sampling system. Available in standard and high pressure versions, it is the ideal solution for a wide range of liquid sampling applications.

The Extreme Temperature 210 Probe has a unique three-stage positive displacement action giving accurate sampling irrespective of variations in process pressure or fluid viscosity. The mechanism that traps the sample is at the end of the insertion device and has a large, pitot style, flow entry, minimizing bluff body effects and improving accuracy. Designed for use with 8" to 52" pipelines, it is robust enough to be inserted into the central area of the pipeline.

By installing the 210 Probe through an isolation valve, it can be inserted and withdrawn under process conditions by means of a JISKOOT Hydraulic Extractor (see the hydraulic extractor datasheet).

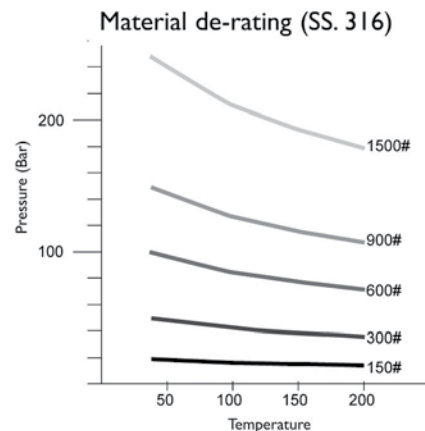
Established as one of the key instruments in the sampling process for fiscal transfer and quality assessment, the 210 Probe has a vast worldwide installed base and is seen as one of the most reliable platforms on which to build a sampling system.

Three-Stage Positive Displacement Action



210 Probe Suitability For Line Sizes (API 8.2)

FITTED TO VALVE	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"	50"	52"	
2" 150# A																								
2" 150# B																								
2" 300# A																								
2" 300# B																								
3" 150# A																								
3" 150# B																								
3" 300# A																								
3" 300# B																								
3" 300# C																								
3" 600# A																								
3" 600# B																								
3" 600# C																								
3" 900# A																								
3" 900# B																								
3" 900# C																								



Specifications

Fluids sampled	Crude oil, refined hydrocarbons (including non-lubricating products) and non corrosive chemicals						
Viscosity range	0.5 to 8000 cSt						
Process temperature range	Flange dependant						
Ambient temperature range	-4° F to 149° F (-20° C to 65° C)						
Maximum operating pressure	Class	100° C (38° C)	122° C (50° C)	212° C (100° C)	302° C (150° C)	392° C (200° C)	Model
(standard materials of construction) see chart above for material de-rating	150#	19.6	19.2	17.7	15.8	13.8	210P, 210EH
	600#	102.0	100.0	93.0	90.0	87.6	210P or 210P-HP, 210EH or 210EH-HP
	900#	153.0	150.0	139.0	135.0	131.0	210HP, 210EH-HP
	1500#	255.0	250.0	233.0	225.5	219.0	210P-HP, 210EH-HP
Operating Temperature	-9.4° F to 392° F Process wetted parts Design Temp: 73° F to 392° F (-23° C to 200° C) (-23° C to 200° C)						
Configuration	In-line withdrawable (non-standard flanges available on request)						
Size range	Sizes A, B and C - see diagram for suitability						
Mounting arrangements	3" nominal bore – flanged - ANSI class 150, 300 or 600 – RF or RTJ (other standard flanges available on request)						
Maximum pipeline velocity	Size A: 9.4 m/s, Size B: 6.9 m/s, Size C: 4.8 m/s (dependent on viscosity)						
Sample grab size (nominal)	1.04cc or 2.04cc						
Grab size repeatability	Better than ± 2%						
Grab size adjustment	1cc version ± 20% - 2cc version +0/-10%						
Maximum grab rate ³ (per min)	210P: 120	210P-HP: 60		210EH: 50		210EH-HP: 30 (½" NB hose)	
Sample outlet connection	1/8" NPT female						
Standard materials	Seal housing: ASTM A350 LF2 Carbon steel (316 available) ¹ as class construction above, Wetted parts: 316/304 Stainless steel, (NACE certification available) ¹ Standard seals: Graphite filled P.T.F.E., Standard O-rings: Viton® (Kalrez available) ¹						
Operating standards and CE compliance	ISO 3171, API 8.2, IP 6.2, PED - 97/23/EC, Machinery directive - 2006/42/EC, ATEX 98/37/EC						
Approximate weight	210P: 38kg (84lb)	210P-HP: 39kg (86lb)		210EH: 38kg (84lb)		210EH-HP: 39kg (86lb)	

Actuation data

Actuation method	210P and 210P-HP: Pneumatic	210EH and 210EH-HP: Hydraulic
Air Supply range ²	210P and 210P-HP: 4-10 bar / 60-145 psi (lubricated) 210EH and 210EH-HP: N/A	
Air Consumption ² (30 grabs/min)	210P: 0.47 ft ³ /min - (0.8m ₃ /hr) at 5 bar 210P-HP: 1 ft ³ /min - (1.67m ₃ /hr) at 5 bar	210EH: N/A 210EH-HP: N/A
Actuator connections	2 x 1/4" NPT female	

¹Charges made for these items

²ACFM reflects the actual swept volume for 30 sample cycles without allowance for interconnection piping

³Maximum grab rate, consumption, seal life and supply requirements are dependant on process conditions, i.e., line pressure and fluid viscosity

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HSE Policy Statement

At Cameron, we are committed ethically, financially and personally to a working environment where no one gets hurt and nothing gets harmed.