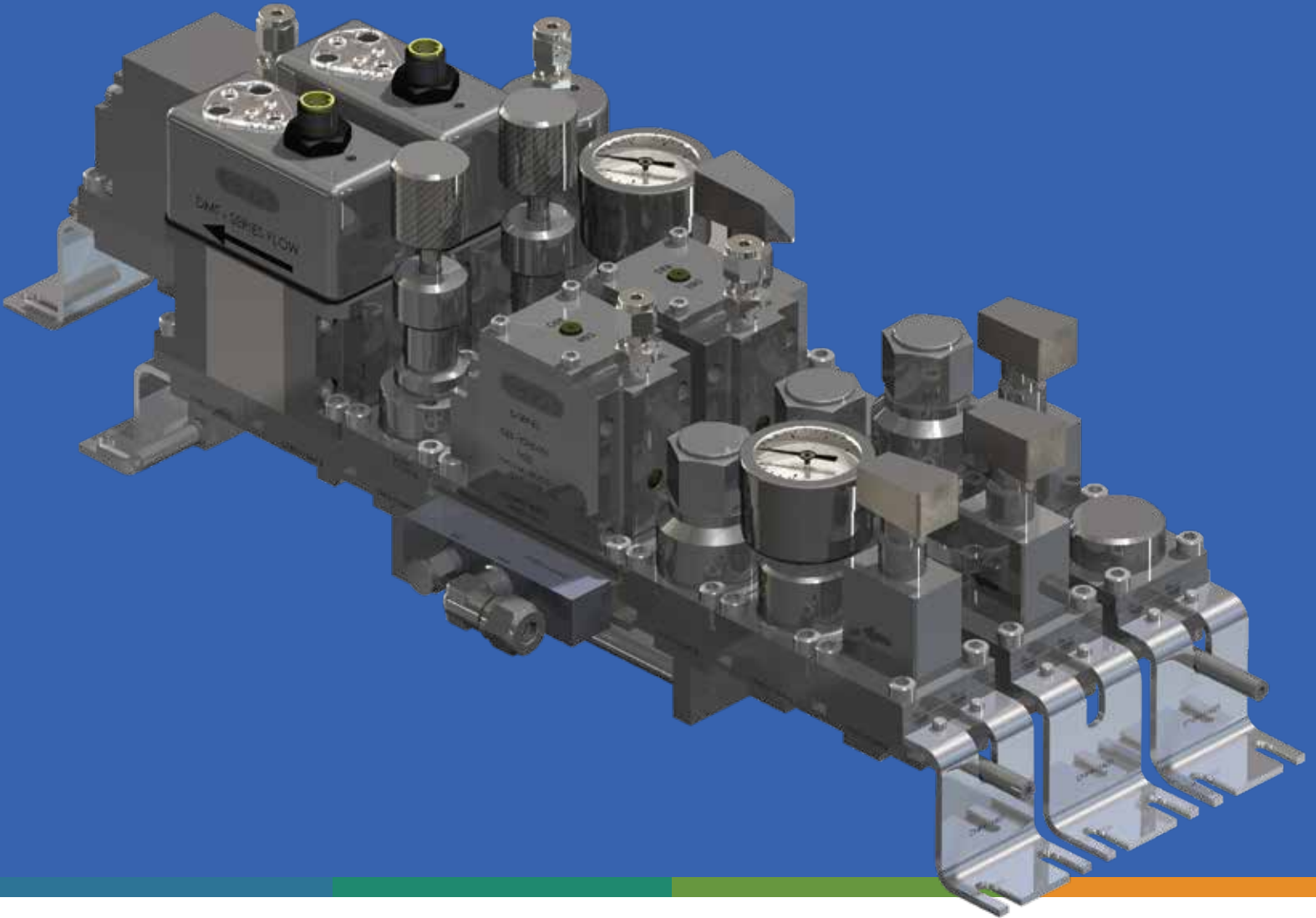


**CT76**



## **CT76 MODULAR SUBSTRATE & COMPONENT SYSTEM**

**CRANE**

Crane Instrumentation & Sampling



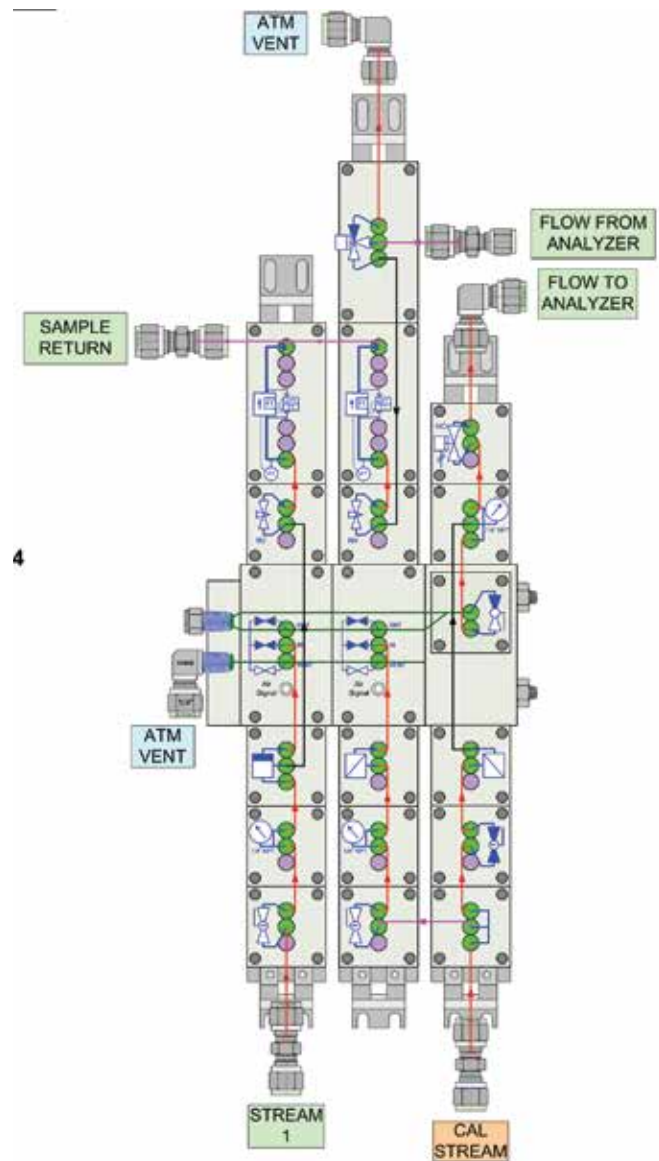
- Modular Fluid Technology for Sample Conditioning Systems (SCS) and
- Low-Flow Control of Gases and Liquids
- Compliant to ANSI/ISA-76.00.02(2002) and IEC standard (IEC 62339-1:2006)
- Greatest Flexibility and Expandability
- Visible Flow Traceability
- Complete Set of Mechanical and Electronic Components with a wide variety of
- Functionality
- Comprehensive Design Support with CT76 Visio Design Tool

# Why This Is State Of The Art Modular System?

- Three degrees of freedom that allow you to truly design the best system to fit your needs.
- On-axis and off-axis process inlet connections allow easy entrance and exit for sample streams.
- The design of the system also allows for easy field modification due to the fact that it is completely self-contained and truly modular.
- The autonomy of the individual sticks allows for modification of one line without having to redo adjacent manifold lines. You do not have to undo all your work merely to add one new component.
- Third-level connectors allow for customized tube lengths that bypass adjacent component positions without the need for additional hardware or a hybrid of tubing, fittings, and modular hardware.
- You can visually trace the flow paths of the process fluids, eliminating the confusion that can arise from visually-compromised or totally internal flow paths.

**THE RESULT IS A HIGHLY COMPACT AND COST-EFFECTIVE SYSTEM DESIGN.**

1. Stream system with auto-calibration and manual calibration functionality designed in the CT76 VISIO design tool

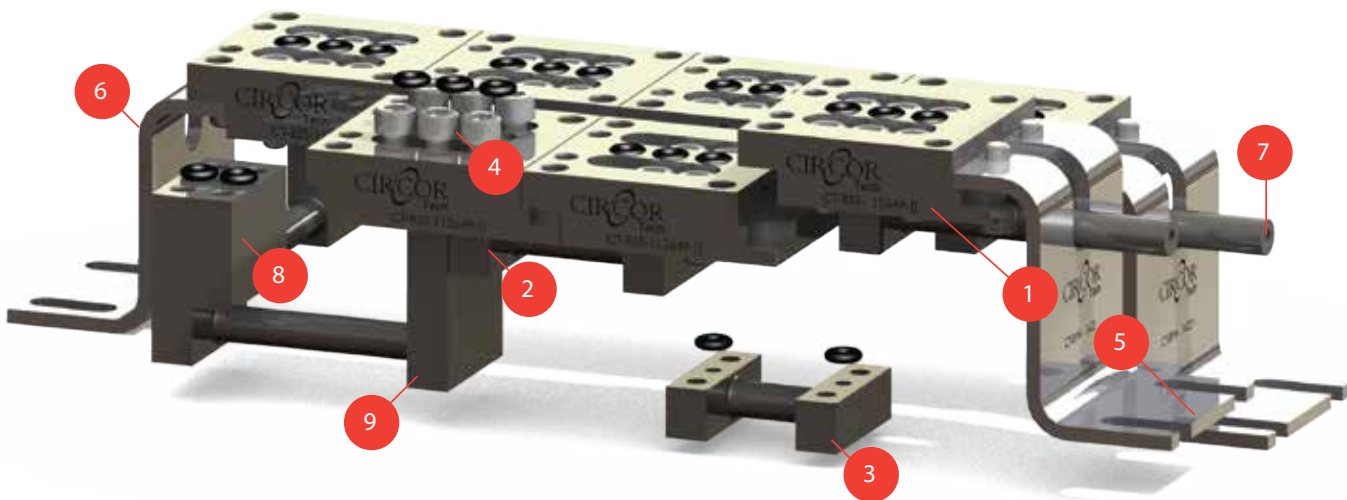


# Technical Specifications

<b>MAXIMUM WORKING PRESSURE</b>	3600 psig (250 kg/cm <sup>2</sup> ; 24800 kPa; 248 barg)
<b>WORKING PRESSURE TEMPERATURE RANGE (possibly limited by components)</b>	Viton® (standard): -20 F to +400 F (-29 C to +204 C) Kalrez® (optional): -40 F to +550 F (-40 C to +287 C)
<b>MATERIALS OF CONSTRUCTION (blocks and tubes)</b>	316 and 316L stainless steel (standard) Monel, Hastelloy C276 (optional)
<b>LEAK RATE</b>	1 x 10 <sup>-5</sup> cc/sec He (external)
<b>ORIFICE SIZE</b>	0.110" ID (3.05 mm)
<b>FLOW TUBE SIZE</b>	1/4" O.D. x 0.065" wall thickness; 0.120 I.D.
<b>WELD PROCESS</b>	Automatic TIG (GTAW)
<b>CONNECTIONS (process) ON/OFF SUBSTRATE</b>	1/4" O.D. x 0.065" wall tubing provided for compression fittings or orbital welding
<b>MOUNTING SCREWS (SHCS) (socket-head cap screws)</b>	#8-32 x 0.4375" socket-head cap for tubesets and substrate blocks #10-32 x 0.4375" socket-head cap for surface mount components
<b>PASSIVATION OR CLEANING OPTIONS</b>	Silcosteel™ by Restek Sulfi nert™ by Restek O <sub>2</sub> Clean

# Core Substrate And Flow Tube Components


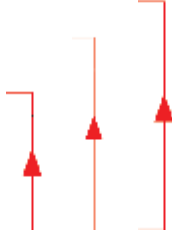





1. BASIC MODULAR BLOCK	6. OUTLET (LOW) FOOT (FOR MOUNTING AT THE END OF A MANIFOLD ASSEMBLY)
2. LONG 1ST LEVEL TUBESET™ (COMPONENT-TO-COMPONENT)	7. 1ST LEVEL PROCESS CONNECTION TUBESET™
3. SHORT 1ST LEVEL TUBESET™ (COMPONENT-TO-COMPONENT)	8. 2ND LEVEL MANIFOLD-TO-MANIFOLD OFF-AXIS CONNECTOR
4. #8-32X0.4375" SOCKET-HEAD CAP SCREWS FOR BLOCK TO-BLOCK AND TUBESET™-TO-BLOCK MOUNTING (-006 SIZE O-RINGS SHOWN ALSO)	9. 3RD LEVEL BYPASS TUBESET™
5. INLET (HIGH) FOOT (FOR MOUNTING AT THE BEGINNING OF A MANIFOLD ASSEMBLY)	





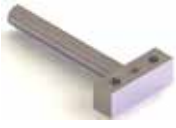




# Technical Specifications

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>CT76 STANDARD MODULAR BASE BLOCKS</b>			
	CT-BSS-112649-10	CT76-BASE-BLOCK-STANDARD, 316SS [FOR USING AT ALL OTHER MANIFOLD POSITIONS AND OUTLET (HIGH) FOOT]	
<b>CT76 STANDARD MODULAR BASE BLOCKS</b>			
	CT-BD1-114228-10	DBB-CT76-BASE-MANIFOLD-BLOCK-1.75" [FOR CREATING DOUBLE BLOCK AND BLEED (DBB) STREAM SELECT MANIFOLDS WITH INTEGRAL SWEEP LOOP]	
	CT-BDT-114224-10	CT76-DBB-VENT MANIFOLDTERMINATION BLOCK, LEFT-HAND  (TO ATTACH TO THE VENT END OF THE STREAM SELECT MANIFOLD)	
	CT-BDT-114226-10	DBB-CT76-TERMINATION 1COMP-BLOCK-316LSS-RIGHT-1.75"  (TO ATTACH TO THE PROCESS OUT END OF THE STREAM SELECT MANIFOLD; CAN INSTALL ANY TWO-PORT 1.5" COMPONENT ONTO THIS POSITION)	
	CT-BD2-114362-10	DV5-CT76-BASE-MANIFOLD-BLOCK  (FOR USING DV5 THREE-WAY STREAM SELECT VALVES)	

# Core Substrate And Flow Tube Components

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>CT76 TUBESETS™</b>			
	CB111421710L00920	<b>Short</b> BLOCK-TO-BLOCK CONNECTOR, ON-AXIS, LEVEL=1, L00.920"	
	CB111421710L01225	<b>Medium</b> BLOCK-TO-BLOCK CONNECTOR, ON-AXIS, LEVEL=1, L01.225"	
	CB111421710L01530	<b>Long</b> BLOCK-TO-BLOCK CONNECTOR, ON-AXIS, LEVEL=1, L01.530"	
	CB111421710L01605	DV5 BLOCK CONNECTOR 1.685"	
	CB111421710L01990	DBB BLOCK CONNECTOR 1.990"	
	CB211427910L01750	<b>Short</b> MANIFOLD-TO-MANIFOLD CONNECTOR, OFF-AXIS, LEVEL=2, L01.750"	
	CB211427910L02250	<b>Long</b> MANIFOLD-TO-MANIFOLD CONNECTOR, OFF-AXIS, LEVEL=2, L02.250"	

# CT76 SUBSTRATE COMPONENTS

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>CT76 TUBESETS™</b>			
	CB311428110LXXXXX	CONNECTOR, ON-AXIS, LEVEL=3, CAN BE BUILT TO ANY LENGTH AS DEFINED BY DESIGN	
	CP111427710L01745 CP111427710L02075 CP111427710L03340	INLET/OUTLET PROCESS CONNECTORS (THREE LENGTHS)  CONNECTOR, ON-AXIS, LEVEL=1, BLOCK-TO-TUBE, L01.745"  CONNECTOR, ON-AXIS, LEVEL=1, BLOCK-TO-TUBE, L02.075"  CONNECTOR, ON-AXIS, LEVEL=1, BLOCK-TO-TUBE, L03.340"	
	CS211428510L01300 CS211428510L02259	SIDE INLET/OUTLET PROCESS CONNECTOR (2 LENGTHS)  CONNECTOR, OFF-AXIS, LEVEL=2, PROCESS CONNECTION, L01.300"  CONNECTOR, OFF-AXIS, LEVEL=2, PROCESS CONNECTION, L02.259"	
		DIFFERENT MANIFOLDS AND THE RESPECTIVE PART NUMBERS CAN BE CONSTRUCTED USING THE CT76 VISIO DESIGN TOOL  CONSULT CT76 FOR MORE ASSISTANCE IN BUILDING THE APPROPRIATE MANIFOLD PART NUMBER  <b>OPTIONS INCLUDE:</b> 1. # OF MANIFOLD POSITIONS 2. 1.75" OR 2.25" MANIFOLD SPACING 3. PROCESS CONNECTIONS ON ONE OR BOTH SIDES 4. CLOSE ENDED MANIFOLD	

**ALL MODULAR BASE BLOCKS, TUBESETS™, AND MANIFOLDS ARE ALSO AVAILABLE  
IN MONEL AND HASTELLOY® C276 UPON REQUEST**



IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>VALVES</b>			
	CT-VMB-114377-10-RV	2-Way Manual Ball Valve, VITON® SEALS, TEFLON SEATS, 316 SS  KALREZ® SEALS ALSO AVAILABLE	
	CT-VMB-114378-10-RV	3-Way Manual Ball Valve, VITON® SEALS, TEFLON SEATS, 316 SS  KALREZ® SEALS ALSO AVAILABLE	
	CT-VMM-112704-10-RV	Metering Valve, 2 Port, VITON®, 316SS	
	CT-VMM-113564-10-RV	Metering Valve, 3 Port, VITON®, 316SS	
	CT-VMN-114604-10-RV	Needle Valve, METAL-SEATED, VITON® SEALS, 316SS POSITIVE SHUT-OFF CAPABILITY	

# CT76 SUBSTRATE COMPONENTS

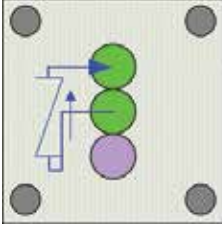
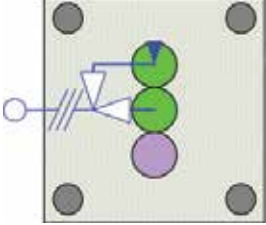
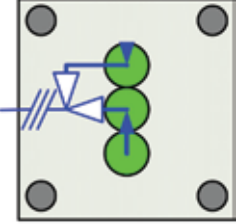


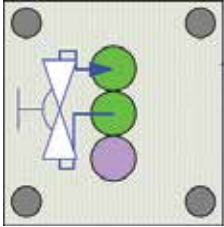

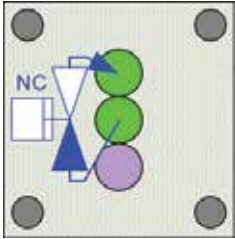

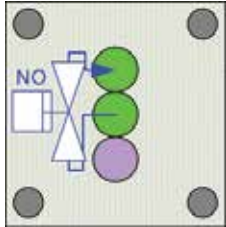

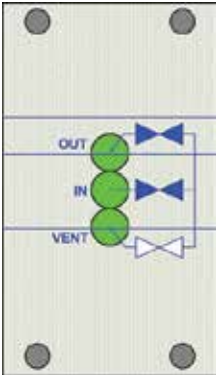

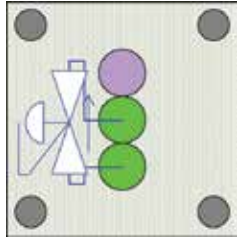

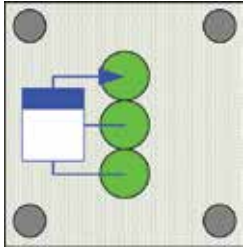
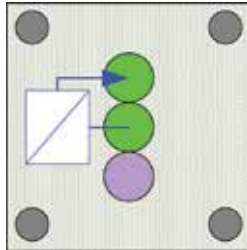
IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>VALVES</b>			
	CT-VC1-112902-10-RV	CHECK VALVE, VITON® SEALS AND SEATS, 316 SS, 0.15PSIG CRACKING PRESSURE  (OTHER CRACKING PRESSURES EXIST; CONSULT CT76 FOR MORE INFORMATION)	
	CT-VR1-113362-10-RV	TOP-PORTED RELIEF VALVE; OTHER PRESSURE RELIEF VALVE CAN BE MOUNTED ONTO STANDARD NPT ADAPTER BLOCKS)  RELIEF VALVE, 20 PSIG RELIEF PRESSURE, VITON® SEALS, 316SS  (75 PSIG AND 200 PSIG VERSIONS AVAILABLE; CONSULT CT76 FOR MORE INFORMATION)	
	CT-VR1-114717	DOWN-PORTED RELIEF VALVE; OTHER PRESSURE RELIEF VALVE CAN BE MOUNTED ONTO STANDARD NPT ADAPTER BLOCKS)  RELIEF VALVE, 20 PSIG RELIEF PRESSURE, VITON® SEALS, 316SS  (75 PSIG AND 200 PSIG VERSIONS AVAILABLE; CONSULT CT76 FOR MORE INFORMATION)	
	DV1-1MXXASMSMH0	DIAPHRAGM VALVE, MANUAL ROUND HANDLE, 316SS, PCTFE SEATS  (PEEK® SEATS CAN BE SPECIFIED; CONSULT CT76)	

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>VALVES</b>			
	DV1-1TXXASMSMH0	DIAPHRAGM VALVE, MANUAL TEE HANDLE, 316SS, PCTFE SEATS  (PEEK® SEATS CAN BE SPECIFIED; CONSULT CT76)	
	DV1-1C11BSMSMH0	DIAPHRAGM VALVE, AIR, 316SS, PCTFE SEATS STAINLESS ACTUATOR, N.C., PCTFE SEATS  (PEEK® SEATS CAN BE SPECIFIED; CONSULT CT76)	
	DV1-1O11BSMSMH0	DIAPHRAGM VALVE, AIR, 316SS, STAINLESS ACTUATOR, N.O. PCTFE SEATS  (PEEK® SEATS AND MEDIUM PRESSURE ACTUATORS CAN BE SPECIFIED WITH THIS VALVE; CONSULT CT76)	
	DBB-100HX0	DOUBLE BLOCK AND BLEED, STREAM SELECT  DIAPHRAGM VALVE, DBB, AIR, PCTFE, 316SS  (PEEK® SEATS CAN BE SPECIFIED; CONSULT CT76)  (DBB STREAM SELECT MANIFOLDS WITH ALL ASSOCIATED HARDWARE AND TERMINATION/VENT COMPONENTS CAN BE AUTOMATED THRU THE CT76 VISIO DESIGN TOOL)	

# CT76 SUBSTRATE COMPONENTS

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>VALVES</b>			
	DV5-100HX0	<p>THREE-WAY, STREAM SELECT</p> <p>DIAPHRAGM VALVE, 3-WAY, AIR, PCTFE, 316SS</p> <p>(PEEK® SEATS CAN BE SPECIFIED; CONSULT CT76)</p>	
<p><b>ALL MODULAR VALVES ARE AVAILABLE IN MONEL AND HASTELLOY C276 UPON REQUEST</b></p>			
<b>REGULATORS</b>			
	CPR-1 SERIES	<p>PRESSURE REDUCING REGULATOR (SPECIFY SURFACE MOUNT OPTION FOR CT76 SYSTEMS)</p> <p>(DOME LOADED VERSIONS ALSO AVAILABLE)</p>	
	CHPR SERIES	<p>HIGH PRESSURE (0-1500 PSIG) REDUCING REGULATOR</p> <p>(SPECIFY SURFACE MOUNT OPTION FOR CT76 SYSTEMS)</p>	
	LB1 SERIES	<p>LOW PRESSURE BACK PRESSURE REGULATOR</p> <p>(SPECIFY SURFACE MOUNT OPTION FOR CT76 SYSTEMS)</p>	

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>REGULATORS</b>			
	CHBP SERIES	HIGH PRESSURE (0-1500 PSIG) BACK PRESSURE REGULATOR  (SPECIFY SURFACE MOUNT OPTION FOR CT76 SYSTEMS)	
	CT-FB6-112702-10-RK	FILTER, BYPASS, PORT=3, 0.5 MICRON, 316SS, VITON®  (ALL FILTERS AVAILABLE WITH KALREZ® SEALS)	
	CT-FL1-113519-10-RV CT-FL2-113519-10-RV CT-FL7-113519-10-RV	FILTER, INLINE, PORT=2, 2-5 MICRON, 316SS, VITON®  FILTER, INLINE, PORT=2, 5-9 MICRON, 316SS, VITON®  FILTER, INLINE, PORT=2, 100 MICRON, 316SS, VITON®  (ALL FILTERS AVAILABLE WITH KALREZ® SEALS)	

# CT76 SUBSTRATE COMPONENTS

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>GAUGE ASSEMBLIES</b>			
	CT-SPG-112977	30PSIG-GAUGE+BLOCK-ASSEM-2PORT-316LSS  (30 PSIG BOURDON TUBE GAUGE WITH INTEGRAL 316SS FNPT BLOCK)	
	CT-SPG-114654	30PSIG-GAUGE+BLOCK-ASSEM-3PORT-316LSS  (30 PSIG BOURDON TUBE GAUGE WITH INTEGRAL 316SS FNPT BLOCK)	
<b>ADAPTER BLOCKS AND HARDWARE</b>			
	CT-BFH-114221	BOTTOM MOUNTING FOOT CT76-SHEETMETAL-FOOT-INLET-HIGH (MATES TO CT76 BASE-INLET-BLOCK, 316SS PN: CT-BSN-114229-10) NOTCHED	
	CT-BFH-114220	TOP MOUNTING FOOT CT76-SHEETMETAL-FOOT-OUTLET-LOW (MATES TO CT76 BASE-BLOCK-STANDARD, 316SS PN: CT-BSS-112649-10) SLOTTED	
	CT-AR1-114353-10 CT-AR2-114354-10	ROTAMETER MOUNT, .030" OFFSET ROTAMETER MOUNT, .045" OFFSET  (VARIOUS ROTAMETER OFFSETS CAN BE USED TO ACCOMMODATE ALL INDUSTRY STANDARD ROTAMETER CENTER-TO-CENTER FOOTPRINTS)	NONE  (THIS PART IS INCLUDED WITH ROTAMETER SYMBOLS IN THE CT76 VISIO DESIGN TOOL)

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>ADAPTER BLOCKS AND HARDWARE</b>			
	CT-AC2-113148-10	CAP, BYPASS, PORT=2 ADJACENT, 316SS	
	CT-AC2-113363-10	CAP, BYPASS, PORT=2 NOT-ADJACENT, 316SS	
	CT-AC3-113147-10	CAP, BYPASS, PORT=3, 316SS	
	CT-AP2-112662-10 CT-AP4-113192-10	ADAPTER BODY, 1/8" FNPT, PORT=2, 316SS ADAPTER BODY, 1/4" FNPT, PORT=2, 316SS	
	CT-AP2-112693-10 CT-AP4-113619-10	ADAPTER BODY, 1/8" FNPT, PORT=3, 316SS ADAPTER BODY, 1/4" FNPT, PORT=3, 316SS	
	CT-AT4-114677-10	ADAPTER BODY, 1/4" TUBE, PORT=0 CENTER	

# CT76 SUBSTRATE COMPONENTS

IMAGE	PART NUMBER	DESCRIPTION	DESIGN TOOL SCHEMATIC
<b>ADAPTER BLOCKS AND HARDWARE</b>			
	58-006-50	O-RING, VITON® STANDARD DASH 006	DENOTED BY GREEN CIRCLE ON ALL COMPONENT SCHEMATICS IN CT76 VISIO DESIGN TOOL
	CT-EPV-113575	PLUG, VITON® STANDARD DASH 006	NONE  (USED TO BLANK OFF AIR PORTS ON STREAM SELECT VALVES; NOT TO BE USED AS A PROCESS FLUID ISOLATION ELEMENT)
	CT-EWF-098023	1/4" FLAT WASHER 18-8 SS	NONE
	CT-EWL-098014	1/4" LOCK WASHER 18-8 SS	NONE
	CT-ESX-113128- 1TL04375	SCREW, SHCS, #8-32 X 0.4375", SS-TEFLON COATED (USED FOR MODULAR BASE BLOCKS AND TUBESETS™)	NONE
	CT-ESX-113128- 1TL02500	SCREW, SHCS, #8-32 X 0.250", SS-TEFLON COATED (USED FOR TOP MOUNTING FOOT)	
	CT-ESX-113509	SCREW, SHCS, #10-32 X 0.4375", SS-TEFLON COATED (USED FOR MOUNTING COMPONENTS)	
	CT-EAX-114225-10- LXXXX	1/4-28UNF-ALL-THREAD-ROD (LENGTH CONFIGURABLE BY LAST FIVE DIGITS)  (USED IN STREAM SELECT MANIFOLD; LENGTHS ARE AUTOMATICALLY CALCULATED IN THE CT76 VISIO DESIGN FOR A SELECTED CONFIGURATION)	NONE
	CT-ENX-0140-28-304	HEX JAM NUT 1/4-28 18-8 SS	NONE



**CT76™ Modular Sample Conditioning Systems**  
 Tel: (864) 574-7966 | Fax: (864) 595-5608

**Request for Quotation Questionnaire (fax or email RFQ sheet to sales@CT76.com)**

Request Date Representative		Date Quotation Required	
Company		Rep Email	
Sales Contact		Rep Phone Number	
End User Company		End User Email	
End User Contact		End User Phone Number	

**Please Provide the Needed Information Below**

Sample Phase		
Required Filtration		
Alloy Requirements		
Passivation Required		
Internal Elastomers		
Tube Fitting Specifications		
Assembly Requirements		
Analyzer Type		
Schematic Supplied		
Special Instructions (special testing included)		
System Ship to Address		

**Application Data**

	*Indicate Process or Cal Stream Composition	Temp	Units	Pressure	Units
Stream 1 Chemistry					
Stream 2 Chemistry					
Stream 3 Chemistry					
Stream 4 Chemistry					
Stream 5 Chemistry					
Stream 6 Chemistry					

Please send any customer supplied schematics, drawings, sketches and supplementary info with this sheet.







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