

CARTEN-Fujikin Inc.

High Performance Valves and Process Solutions

THE NEW R4i-LATERAL CONCEPT

A NEW APPROACH FOR SEMICONDUCTOR INSTALLATIONS



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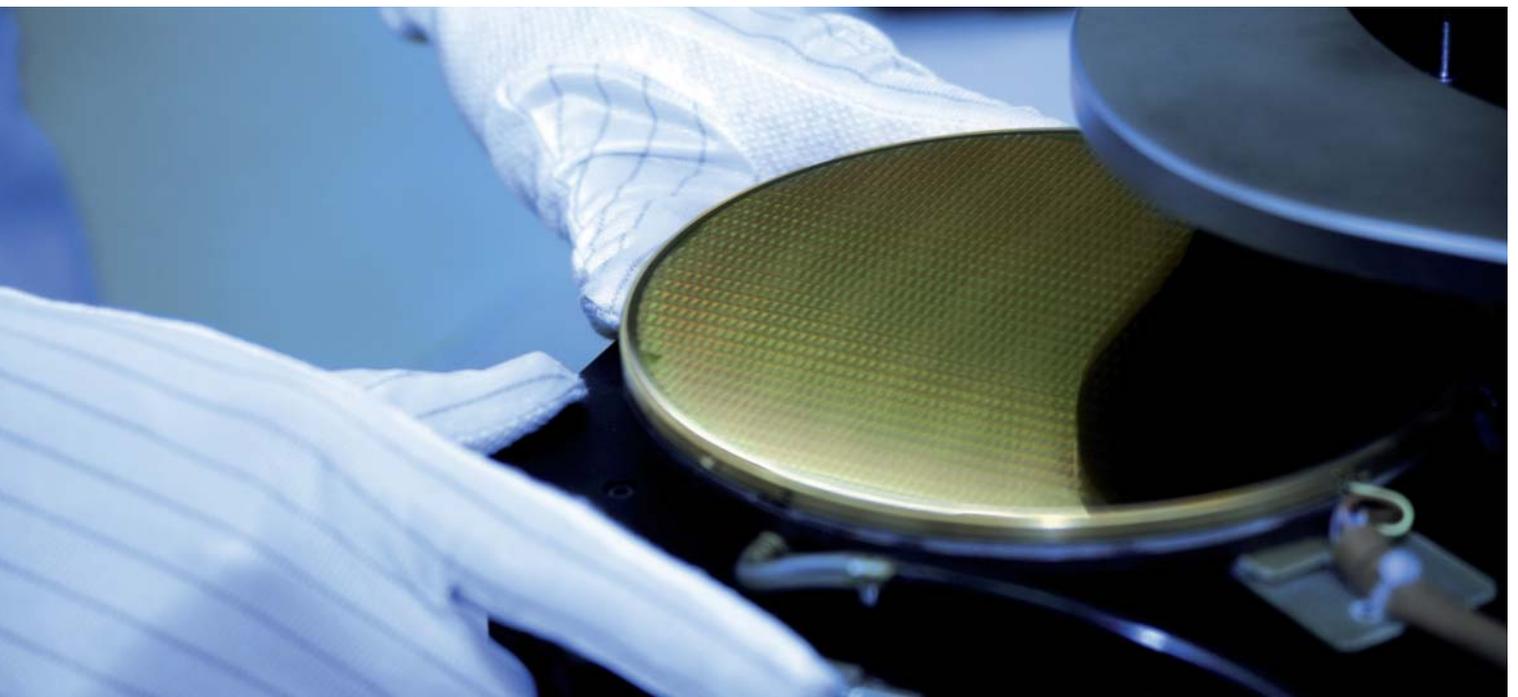
A CARTEN • DOCKWEILER • EVANS COOPERATION

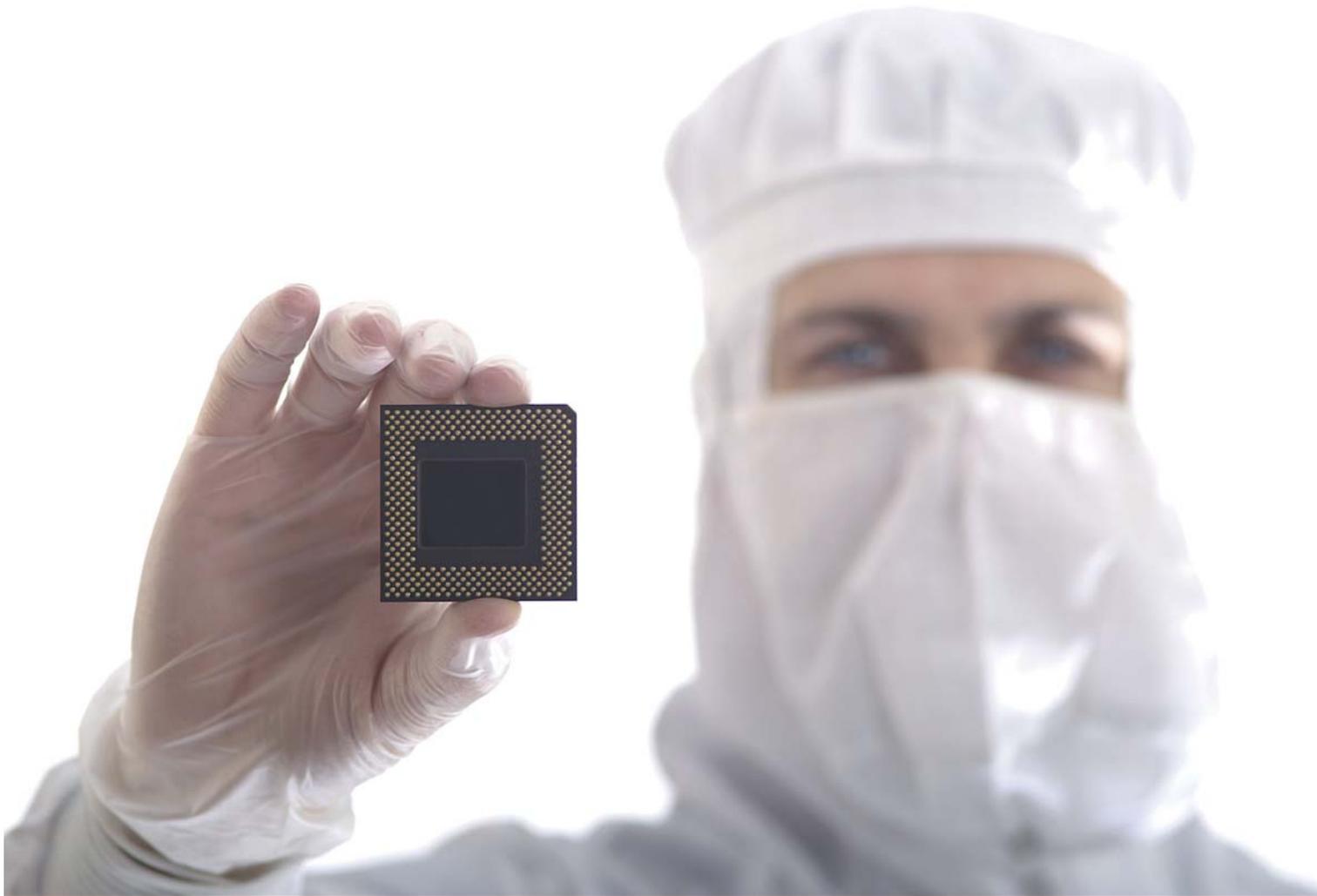
ENSURING THE HIGHEST QUALITY SURFACE AVAILABLE

THE R4i-LATERAL READY FOR INSTALLATION

has been designed to meet all UHP specifications for the semiconductor industry.

Prefabricated laterals are fabricated using a pulled-tee method then welded, tested and packaged in a Class 10 cleanroom environment. Because of the cooperation with Carten Controls, Dockweiler and Evans Components are able to offer four locations across the globe for fabrication which ensures fast, cost effective delivery of products to site. R4i laterals deliver reduced overall UHP qualification times through improved dry down and reduced particle.





THE NEW R4i-LATERAL CONCEPT

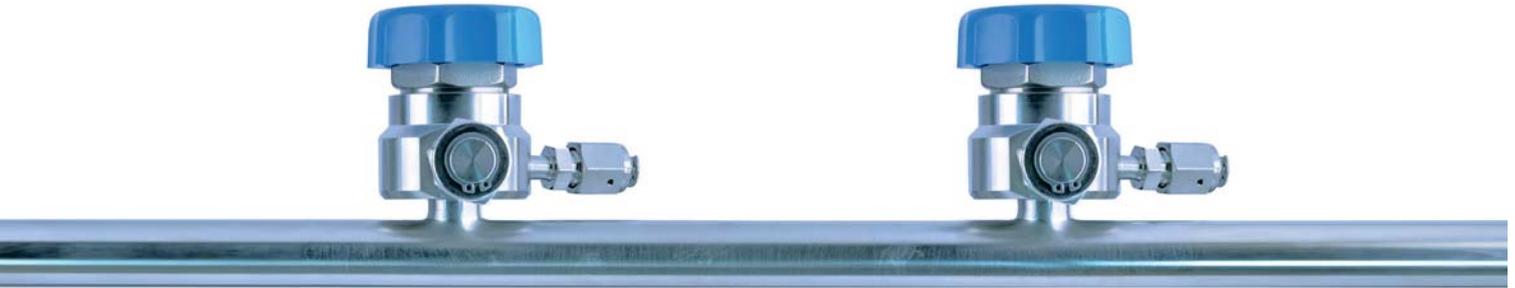
PYRAMID COOPERATION VALUE FOR CUSTOMERS

- Industry approved Carten high quality valves
- All R4i laterals are 100 % Helium leak tested (1×10^{-9} scc/sec)
- Highest quality welds due to decades of experience in orbital welding
- 3D CAD data for BIM modeling available
- Fast delivery due to manufacturing locations worldwide
- Full UHP certification package provided



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LOOK AND SEE! FEATURE, FUNCTION, BENEFIT:



The R4i-Lateral is used for UHP bulk gas piping systems. Prefabricated Laterals are also available for CFOS related gas systems. Custom lengths and number of valves are avail-

able based on the design criteria. Typical spool lengths are 20 feet (maximum lengths 24 feet) with valve spacing to match all equipment hook up needs.

- Improved Dry-down times
- Overhead reductions in QA/QC, cutting, facing, prep activities
- Pre-assembled / Tested and (R4i) ready for installation in controlled Class 10 clean room conditions
- SEMI specification (UHP) compliant
- Fewer welds (up to 65%) and lower valve costs (up to 80% in comparison integrated block valves)
- Reduced overall cost (20-30%)
- Reduced weight and overall foot print

DATA SHEET

TUBE

Material

UNS S31603 (316L) / 1.4404 / 1.4435

Dimensions

1/2" up to 6" Further dimensions on request

Surface options

ultron

Inner surface: ≤1" Ra 7 μin; Ra_{max} 10 μin
>1" Ra ≤ 7 μin and 5 μin on request

TCC

Inner surface: ≤1" Ra 16 μin; Ra_{max} 19 μin
>1" Ra 30 μin; Ra_{max} 36 μin



Spool with SPDS755 valve (bottom inlet)



Spool with SPDS1000 valve (straight through)

VALVES

Type

CARTEN DIAPHRAGM VALVE

Type SPDS250, SPDS375, SPDS500, SPDS755, SPDS751, SPDS1000

Multiple configurations and orientations available

Dimensions

1/4" up to 1"

Handle color

White (standard), colored handles are available

[Air operated valves available upon request](#)

LATERAL

Maximum length

24 ft./7.3 m

Welding

- SEMI F78-0611
- SEMI F81-0611

Tests/Documentation

Leak test:

100% Helium Leak tested to 1×10^{-9} scc/sec

Weld Logs

Material Certifications

HOW TO ORDER

PART-NO.-GENERATOR

MATERIAL			VALVE BRANCH SIZE		MAIN TUBE SIZE	
1			2		3	
P/N	Specification	Description	P/N	Size	P/N	Size
UL	Ultron	316L EP	04	1/4"	08	1/2"
TC	TCC	316L Non EP	08	1/2"	12	3/4"
			12	3/4"	16	1"
			16	1"	24	1 1/2"
					32	2"
					40	2 1/2"
					48	3"
					64	4"
					96	6"

CARTEN DIAPHRAGM VALVE TYPE				NUMBER OF POC CONNECTIONS		VALVE OUTLET CONNECTION	
4				5		6	
P/N	Valve	Inlet x Outlet	CV	Total Number of Valves		P/N	Connection
SP250	SPDS250	3/8" x 1/4"	0.41	Example: 6 = 6 POC Connections		FV	Female Face Seal
SP375	SPDS375	3/8" x 1/4" high flow	0.64			MV	Male Face Seal
SP500	SPDS500	1/2" x 1/2"	2.81			FVP	Female Face Seal with Plug
SP755	SPDS755	3/4" x 1/2"	3.10			MVC	Male Face Seal with Cap
SP755	SPDS755	3/4" x 3/4"	3.44			TS	Tube Stub
SP751	SPDS751	3/4" x 3/4"	7.00			TSC	Tube Stub with Compression Cap/NY Ferrules
SP1000	SPDS1000	1" x 1"	7.00			DWC	Dockweiler Cap
						WC	Standard Tube Stub with Weld Cap

PURGE PORT OPTION		LENGTH OF MANIFOLD/LATERAL		OPTIONS	
7		8		9	
P/N	Option	Overall Length in Inches Max. Length 288" (7.3 m)		P/N	Option
XX	No Purge Port	Example: 72 would indicate 6 ft (1.83 m)		LO	Clear Lock-out Tag-out clamshell
PC1	Downstream Purge Port			**	Insert first two letters of color (White is standard) (Example: BL = Blue)
PC2	Upstream/Downstream Purge Port				

	1	2	3	4	5	6	7	8	9
Part-No.:	UL -	08 -	12 -	SP375 -	8 -	MV -	XX -	60 -	YE

FOR HIGHEST DEMANDS ON PURITY AND CLEANLINESS.

The German company Dockweiler AG and the American companies Carten with Factories in USA & Ireland together with Evans Components Inc. are four leading global suppliers for the semiconductor industry, the pharmaceutical industry, and other High-Tech industries. They have developed industry leading diaphragm valves, integrated tube and valve systems to serve a wide range of specifications: from e-polished stainless steel tube systems;

to high purity ball valves; and a complete line of UHP valves. By working together this group continues to manufacture products which fulfill the highest demands on purity and cleanliness.

Carten Controls, Dockweiler AG, and Evans Components Inc. have extended their product range under the PYRAMID cooperation by offering prefabricated UHP laterals with diaphragm valves.

CARTEN-Fujikin Inc.
High Performance Valves and Process Solutions

UHP Valve Manufacturing Company
for Semiconductor and FPD Industries

D-CKWEILER
TUBE SYSTEMS IN STAINLESS STEEL

UHP Tube and Fitting Supplier
and Specialty Welding

 **EVANS**
COMPONENTS, INC.[®]

UHP, CFOS & PCW Specialty
Manufacturing Company

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