VH_2 Components for Hydrogen Technology

Precision and reliability for your applications

Our VH_2 fittings are specially developed for the high demands of hydrogen technology. They offer maximum tightness, corrosion resistance, and safety – even under extreme operating conditions.

- **Made in Germany** – in-house production with the highest quality standards
- **Proven cutting ring technology from decades of experience**
- **Universally applicable** – mobile and stationary

- **Stainless steel** 1.4571 / AISI 316Ti
- **Tube sizes:** 6–16 mm
- **Connections:** DIN 2353 / ISO 8434-1
- **Temperature range:** –40 °C to +85 °C
- **Pressure testing** up to 700 bar
- **TÜV SÜD & DNV** certified

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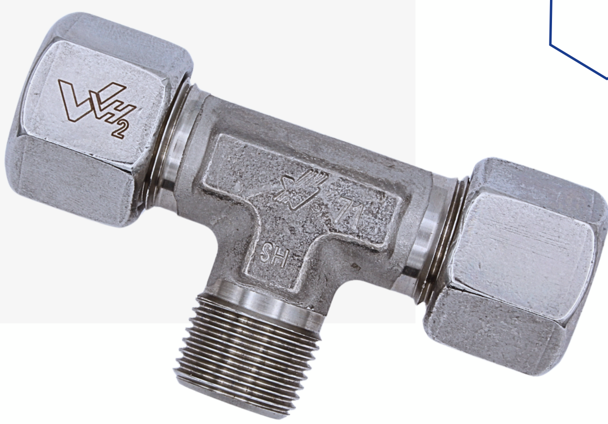
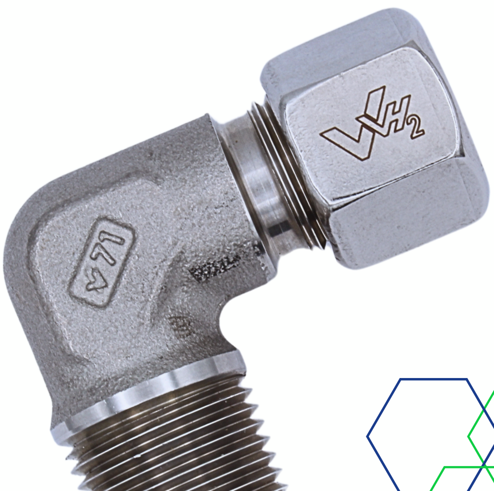
Connection technology for the green energy of tomorrow

Hydrogen is considered a key technology of the energy transition. Volz provides the right fitting solutions – ready for use in a wide range of applications along the entire hydrogen value chain.

Application areas:

- **Hydrogen fueling stations**
  Safe connections for refueling hydrogen vehicles.
- **Hydrogen trailers**
  Stability and tightness during hydrogen transport.
- **Storage systems**
  Prevention of leaks in pressure tanks.
- **Electrolyzers**
  Efficient connections in hydrogen production.
- **Compressors**
  Safe handling of high pressures.
- **Fuel cells**
  Reliability in power generation.





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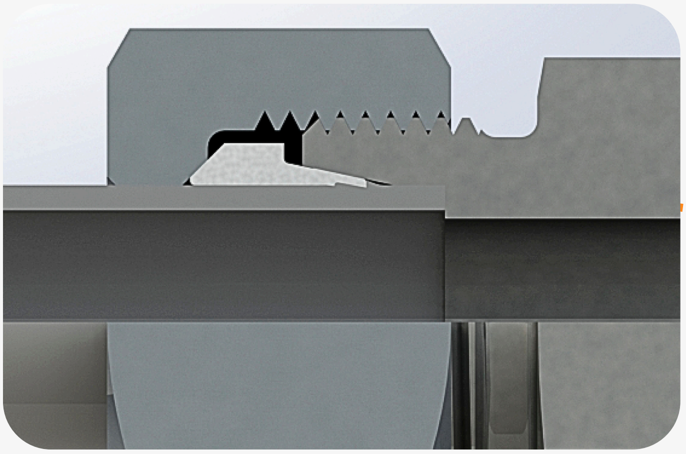
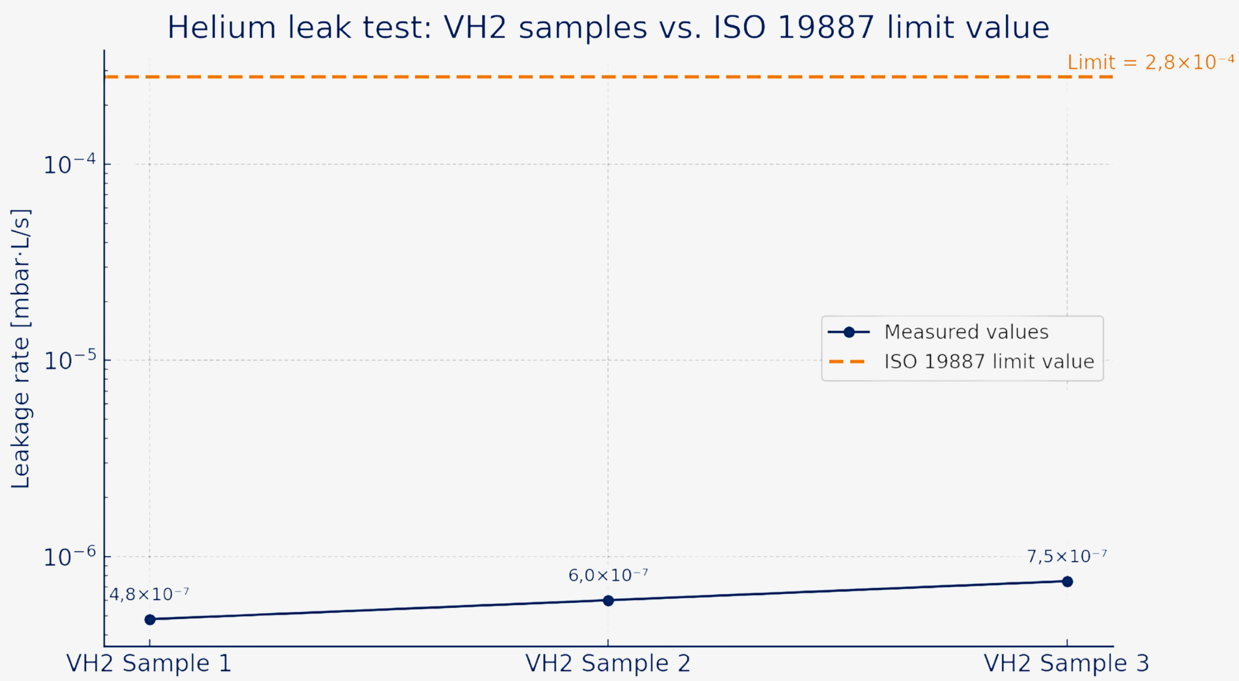
and product information!

Tightness and pressure resistance: The cutting ring technology

The metallic cutting edges of the cutting ring ensure a highly reliable seal between tube and fitting. This results in extremely low leakage rates in testing with He/N_2 – far below the TÜV certification limit, as clearly shown in the graph.





Low-temperature diffusion hardened cutting rings

Low-temperature diffusion hardening is a surface hardening process for austenitic stainless steels. During the treatment, carbon diffuses into the surface at only 400–480 °C, without forming chromium carbides. This creates an expanded austenite layer (S-phase) with significantly increased hardness.

Parameter	Carburizing / C_2 bath	Low-temperature diffusion
Hardness	++	+++
Corrosion resistance	---	+++
Distortion	--	+++
Appearance	-	+++
Costs	+++	+

Advantages:

- ✅ Hardness up to 1200 HV
- ✅ No phase transformation → virtually distortion-free
- ✅ Corrosion resistance fully maintained
- ✅ Bright metallic surface, no post-processing required
- ✅ Extended service life and excellent wear resistance for stainless components

Neutral salt spray test (5% NaCl, 35 °C) according to ISO 9227

Carburizing / C_2 bath:

- >48 h and corrosion appears

Low-temperature diffusion

- >1000 h and no corrosion appears

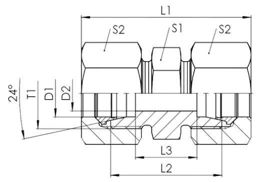
Hydrogen Fittings by Volz

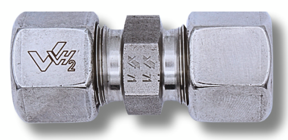
Tested according to ISO DIS 19887:2023 Clause 5.3

- **Nominal working pressure:** 70 MPa / 700 bar
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** ≤ $2{,}8 \times 10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4{,}8 \times 10^{-7}$ mbar·L/s (He/N_2)

Straight Connector

Stainless steel (1.4571/AISI 316Ti)

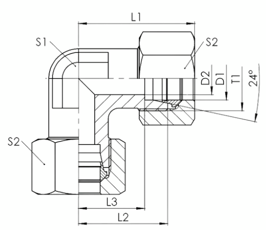




Series	D1	T1	D2	L1	L2	L3	S1	S2	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	bar	g		
	6	M14x1,5	4	46	30	16	14	17	700	72	GV 06S VH2	254472
S	10	M18x1,5	7	50	32	17	19	22	700	122	GV 10S VH2	254480
	16	M24x1,5	12	58	38	21	27	30	700	250	GV 16S VH2	254481

90° Elbow Connector

Stainless steel (1.4571/AISI 316Ti)



Series	D1	T1	D2	L1	L2	L3	S1	S2	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	bar	g		
	6	M14x1,5	4	31	23	16	12	17	700	79	WV 06S VH2	254482
S	10	M18x1,5	7	34	25	17,5	17	22	700	134	WV 10S VH2	254483
	16	M24x1,5	12	43	33	24,5	24	30	700	296	WV 16S VH2	254484

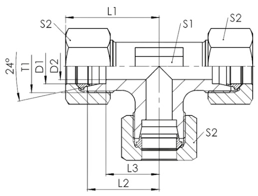
Hydrogen Fittings by Volz

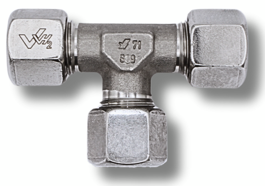
Tested according to ISO DIS 19887:2023 Clause 5.3

- **Nominal working pressure:** 70 MPa / 700 bar
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** ≤ $2{,}8\times10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** up to $4{,}8\times10^{-7}$ mbar·L/s (He/N_2, 10 % He)

Equal Tee Connector

Stainless steel (1.4571/AISI 316Ti)

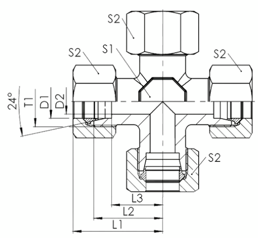


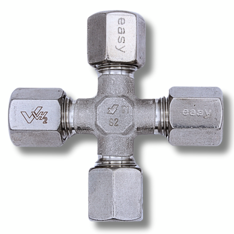


Series	D1	T1	D2	L1	L2	L3	S1	S2	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	4	31	23	16	12	17	700	117	TV 06S VH2	254485
	10	M18x1,5	7	34	25	17,5	17	22	700	195	TV 10S VH2	254486
	16	M24x1,5	12	43	33	24,5	24	30	700	422	TV 16S VH2	254487

Cross Connector

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	D2	L1	L2	L3	S1	S2	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	4	31	23	16	12	17	700	152	KV 06S VH2	254488
	10	M18x1,5	7	34	25	17,5	17	22	700	254	KV 10S VH2	254489
	16	M24x1,5	12	43	33	24,5	24	30	700	543	KV 16S VH2	254490

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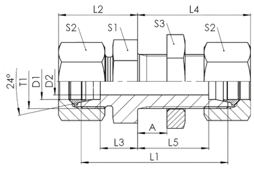
Hydrogen Fittings by Volz

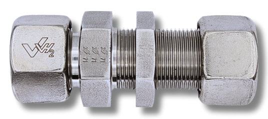
Tested according to ISO DIS 19887:2023 Clause 5.3

- **Nominal working pressure:** 70 MPa / 700 bar
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** ≤ $2{,}8\times10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4{,}8\times10^{-7}$ mbar·L/s (He/N_2)

Straight Bulkhead Connector

Stainless steel (1.4571/AISI 316Ti)

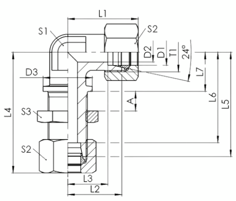


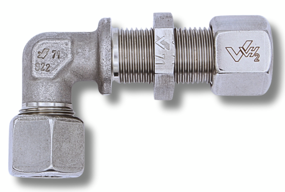


Series	D1	T1	D2	L1	L2	L3	L4	L5	S1	S2	S3	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	4	55	27	12	44	29	19	17	19	700	119	GSV 06S VH2	254491
	10	M18x1,5	7	59	31	14,5	46	29,5	24	22	24	700	199	GSV 10S VH2	254492
	16	M24x1,5	12	65	35	16,5	50	31,5	32	30	32	700	376	GSV 16S VH2	254493

90° Elbow Bulkhead Connector

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	D2	D3	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	4	19	31	23	16	61	53	46	17	12	17	19	700	129	WSV 06S VH2	254494
	10	M18x1,5	7	24	34	25	17,5	66	57	49,5	20	17	22	24	700	211	WSV 10S VH2	254495
	16	M24x1,5	12	30	43	33	24,5	74	64	55,5	24	24	30	32	700	415	WSV 16S VH2	254496

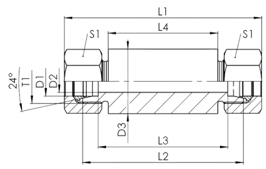
Hydrogen Fittings by Volz

Tested according to ISO DIS 19887:2023 Clause 5.3

- **Nominal working pressure:** 70 MPa / 700 bar
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** ≤ $2{,}8 \times 10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4{,}8 \times 10^{-7}$ mbar·L/s (He/N_2)

Straight Weld Bulkhead Connector

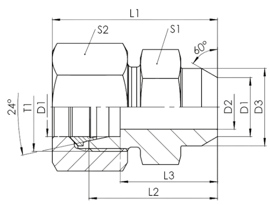
Stainless steel (1.4571/AISI 316Ti)

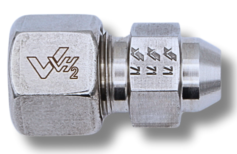


Series	D1	T1	D2	D3	L1	L2	L3	L4	S1	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	4	20	90	74	60	50	17	700	185	ESV 06S VH2	254497
	10	M18x1,5	7	25	92	74	59	50	22	700	285	ESV 10S VH2	254498
	16	M24x1,5	12	35	108	88	71	60	30	700	616	ESV 16S VH2	254499

Straight Weld Connector

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	D2	D3	L1	L2	L3	S1	S2	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	4	11	34	26	19	14	17	700	44	GASV 06S VH2	254503
	10	M18x1,5	7	15	39	30	22,5	19	22	700	81	GASV 10S VH2	254504
	16	M24x1,5	12	21	45	35	26,5	27	30	700	166	GASV 16S VH2	254505

Hydrogen Fittings by Volz

Tested according to ISO DIS 19887:2023 Clause 5.3

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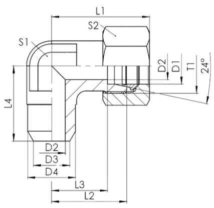
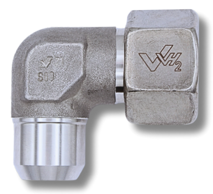
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** ≤ $2{,}8 \times 10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4{,}8 \times 10^{-7}$ mbar·L/s (He/N_2)

90° Elbow Weld Connector

Stainless steel (1.4571/AISI 316Ti)

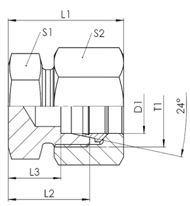


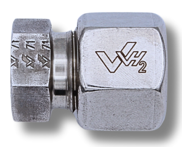


Series	D1	T1	D2	D3	D4	L1	L2	L3	L4	S1	S2	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	4	6	11	31	23	16	23	14	17	700	55	WASV 06S VH2	254506
	10	M18x1,5	7	10	15	34	25	17,5	25	17	22	700	95	WASV 10S VH2	254507
	16	M24x1,5	12	16	21	43	33	24,5	33	24	30	700	216	WASV 16S VH2	254508

Blanking Plug for tube ends

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	L1	L2	L3	S1	S2	WP	Total weight	Name	Article No.
	mm		mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	26	18	11	14	17	700	40	EVSV 06S VH2	254500
	10	M18x1,5	29	20	12,5	19	22	700	71	EVSV 10S VH2	254501
	16	M24x1,5	34	24	15,5	27	30	700	151	EVSV 16S VH2	254502

Hydrogen Fittings by Volz

Tested according to ISO DIS 19887:2023 Clause 5.3

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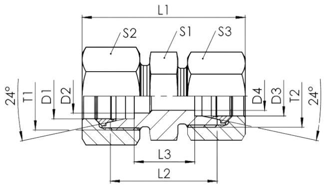
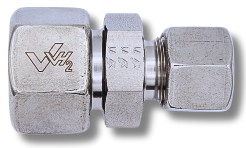
- **Measured leakage rate:** down to $4{,}8 \times 10^{-7}$ mbar·L/s (He/N_2)

Straight Reducer

Stainless steel (1.4571/AISI 316Ti)

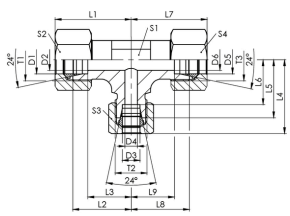


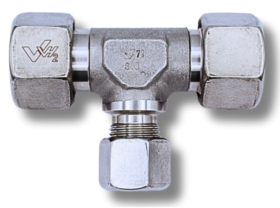


Series	D1	T1	T2	D2	D3	D4	L1	L2	L3	S1	S2	S3	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	10	M18x1,5	M14x1,5	7	6	4	49	32	17,5	19	22	17	700	104	GRV 10 06S VH2	254512
	16	M24x1,5	M14x1,5	12	6	4	53,5	35,5	20	27	30	17	700	183	GRV 16 06S VH2	254513
	16	M24x1,5	M18x1,5	12	10	7	55	36	20	27	30	22	700	203	GRV 16 10S VH2	254514

T-Reducer

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1/T3	T2	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6	L7	L8	L9	S1	S2/ S4	S3	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	10	M18x1,5	M14x1,5	7	6	4	10	7	34	25	17,5	33	25	18	34	25	17,5	17	22	17	700	177	TRV 10 06 10S VH2	254512
	16	M24x1,5	M14x1,5	12	6	4	16	12	43	33	24,5	41	33	26	43	33	24,5	24	30	17	700	365	TRV 16 06 16S VH2	254513
	16	M24x1,5	M18x1,5	12	10	7	16	12	43	33	24,5	42	33	25,5	43	33	24,5	24	30	22	700	382	TRV 16 10 16S VH2	254514

Hydrogen Fittings by Volz

Tested according to ISO DIS 19887:2023 Clause 5.3

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- **Test medium:** Gaseous hydrogen
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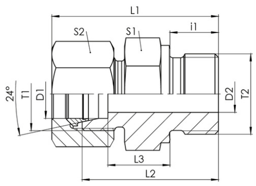
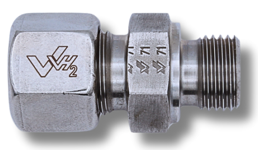
- **ISO DIN 19887 limit value:** ≤ $2{,}8\times10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4{,}8\times10^{-7}$ mbar·L/s (He/N_2)

Male Stud Connector

Stainless steel (1.4571/AISI 316Ti)

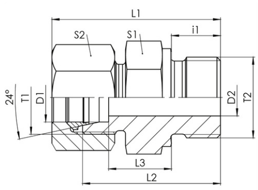


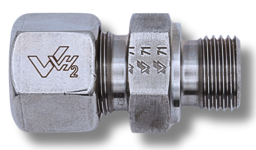


Series	D1	T1	T2	D2	L1	L2	L3	i1	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	G1/4	4	40	32	13	12	19	17	700	61	GEV 06S R1/4 VH2	254546
	10	M18x1,5	G3/8	7	43,5	34,5	15	12	22	22	700	99	GEV 10S R3/8 VH2	254547
	16	M24x1,5	G1/2	12	51	41	18,5	14	27	30	700	178	GEV 16S R1/2 VH2	254548

Male Stud Connector

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	T2	D2	L1	L2	L3	i1	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	M12x1,5	4	39,5	31,5	12,5	12	17	17	700	55	GEV 06S M12x1,5 VH2	254543
	10	M18x1,5	M16x1,5	7	43,5	34,5	15	12	22	22	700	97	GEV 10S M16x1,5 VH2	254544
	16	M24x1,5	M22x1,5	12	51	41	18,5	14	27	30	700	184	GEV 16S M22x1,5 VH2	254545

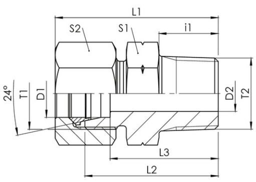
Hydrogen Fittings by Volz

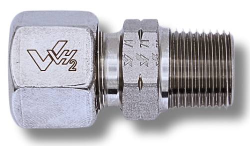
Tested according to ISO DIS 19887:2023 Clause 5.3

- **Nominal working pressure:** 70 MPa / 700 bar
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** $\leq 2{,}8 \times 10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4{,}8 \times 10^{-7}$ mbar·L/s (He/N_2)

Male Stud Connector

Stainless steel (1.4571/AISI 316Ti)

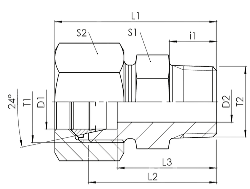


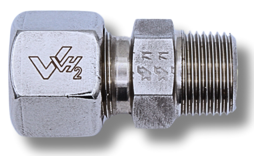


Series	D1	T1	T2	D2	L1	L2	L3	i1	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	1/4 NPT	4	43	35	28	15,5	17	17	700	62	GEV 06S 1/4 NPT VH2	254538
	10	M18x1,5	3/8 NPT	7	44	35	27,5	15,5	19	22	700	91	GEV 10S 3/8 NPT VH2	254539
	16	M24x1,5	1/2 NPT	12	54	44	35,5	20	27	30	700	183	GEV 16S 1/2 NPT VH2	254540

Male Stud Connector

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	T2	D2	L1	L2	L3	i1	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	R1/4 keg.	4	37	29	22	12	17	17	700	54	GEV 06S R1/4 keg.VH2	254535
	10	M18x1,5	R3/8 keg.	7	41	32	24,5	12	19	22	700	87	GEV 10S R3/8 keg. VH2	254536
	16	M24x1,5	R1/2 keg.	12	48	38	29,5	14	24	30	700	161	GEV 16S R1/2 keg. VH2	254537

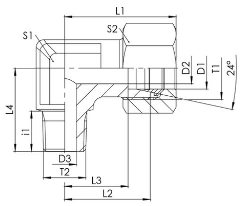
Hydrogen Fittings by Volz

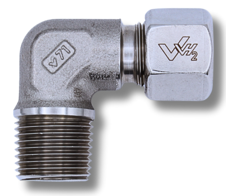
Tested according to ISO DIS 19887:2023 Clause 5.3

- **Nominal working pressure:** 70 MPa / 700 bar
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** ≤ $2{,}8\times10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4{,}8\times10^{-7}$ mbar·L/s (He/N_2)

Male Elbow Connector

Stainless steel (1.4571/AISI 316Ti)

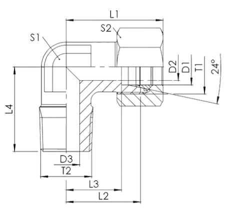


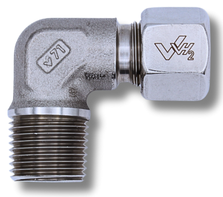


Series	D1	T1	T2	D2	D3	L1	L2	L3	L4	i1	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	1/4 NPT	4	4	32	24	17	26	15	12	17	700	62	WEV 06S 1/4 NPT VH2	254529
	10	M18x1,5	3/8 NPT	7	7	34	25	17,5	28	15,5	17	22	700	106	WEV 10S 3/8 NPT VH2	254530
	16	M24x1,5	1/2 NPT	12	12	43	33	24,5	33,5	20	24	30	700	217	WEV 16S 1/2 NPT VH2	254531

Male Elbow Connector

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	T2	D2	D3	L1	L2	L3	L4	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	R1/4 keg.	4	4	31	23	16	26	12	17	700	63	WEV 06S R1/4 keg. VH2	254532
	10	M18x1,5	R3/8 keg.	7	7	34	25	17,5	28	17	22	700	106	WEV 10S R3/8 keg. VH2	254533
	16	M24x1,5	R1/2 keg.	12	12	43	33	24,5	32	24	30	700	216	WEV 16S R1/2 keg. VH2	254534

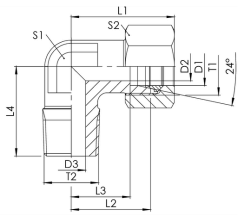
Hydrogen Fittings by Volz

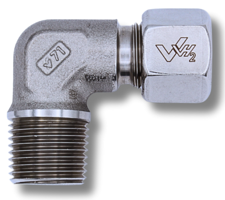
Tested according to ISO DIS 19887:2023 Clause 5.3

- **Nominal working pressure:** 70 MPa / 700 bar
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** ≤ $2,8\times10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4,8\times10^{-7}$ mbar·L/s (He/N_2)

Male Elbow Connector

Stainless steel (1.4571/AISI 316Ti)

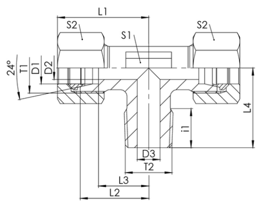


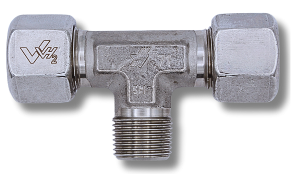


Series	D1	T1	T2	D2	D3	L1	L2	L3	L4	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	M12x1,5	4	4	31	23	16	26	14	17	700	60	WEV 06S M12x1,5 keg. VH2	254526
	10	M18x1,5	M16x1,5	7	7	34	25	17,5	28	17	22	700	105	WEV 10S M16x1,5 keg. VH2	254527
	16	M24x1,5	M22x1,5	12	12	43	33	24,5	32	24	30	700	222	WEV 16S M22x1,5 keg. VH2	254528

Branch Tee

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	T2	D2	D3	L1	L2	L3	L4	i1	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
S	6	M14x1,5	1/4 NPT	4	4	31	23	16	26	15	12	17	700	99	TEV 06S 1/4 NPT VH2	254517
	10	M18x1,5	3/8 NPT	7	7	34	25	17,5	28	15,5	17	22	700	165	TEV 10S 3/8 NPT VH2	254518
	16	M24x1,5	1/2 NPT	12	12	43	33	24,5	36	20	24	30	700	344	TEV 16S 1/2 NPT VH2	254519

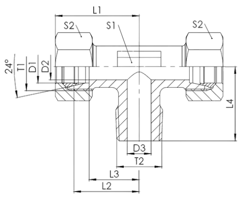
Hydrogen Fittings by Volz

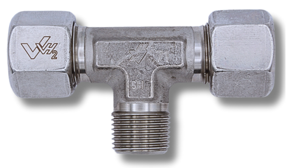
Tested according to ISO DIS 19887:2023 Clause 5.3

- **Nominal working pressure:** 70 MPa / 700 bar
- **Test medium:** Gaseous hydrogen
- **Operating temperature range:** -40 °C ... 85 °C
- **ISO DIN 19887 limit value:** ≤ $2,8 \times 10^{-4}$ mbar L/s (H_2)
- **Measured leakage rate:** down to $4,8 \times 10^{-7}$ mbar·L/s (He/N_2)

Branch Tee

Stainless steel (1.4571/AISI 316Ti)

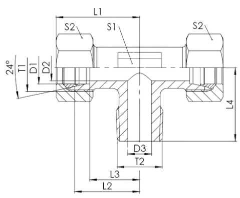


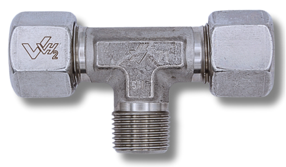


Series	D1	T1	T2	D2	D3	L1	L2	L3	L4	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
	6	M14x1,5	R1/4 keg.	4	4	31	25	16	26	12	17	700	99	TEV 06S R1/4 keg. VH2	254523
S	10	M18x1,5	R3/8 keg.	7	7	34	25	17,5	28	17	22	700	166	TEV 10S R3/8 keg. VH2	254524
	16	M24x1,5	R1/2 keg.	12	12	43	33	24,5	34	24	30	700	344	TEV 16S R1/2 keg. VH2	254525

Branch Tee

Stainless steel (1.4571/AISI 316Ti)





Series	D1	T1	T2	D2	D3	L1	L2	L3	L4	S1	S2	WP	Total weight	Name	Article No.
	mm			mm	mm	mm	mm	mm	mm	mm	mm	bar	g		
	6	M14x1,5	M12x1,5 keg.	4	4	31	23	16	26	12	17	700	97	TEV 06S M12x1,5 keg. VH2	254520
S	10	M18x1,5	M16x1,5 keg.	7	7	34	25	17,5	28	17	22	700	164	TEV 10S M16x1,5 keg. VH2	254521
	16	M24x1,5	M22x1,5 keg.	12	12	43	33	24,5	32	24	30	700	349	TEV 16S M22x1,5 keg. VH2	254522