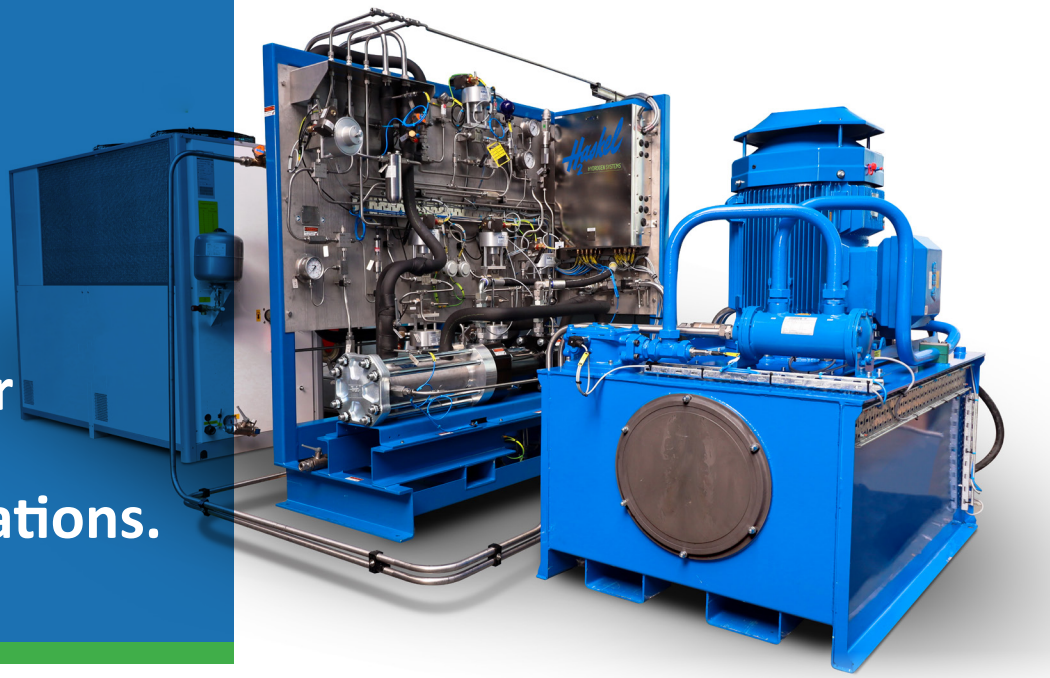
Haskel

An Ingersoll Rand Business

VALVES & COMPRESSORS FOR HYDROGEN COMPRESSION, TRANSFER AND HANDLING

Providing the proven expertise and support required for your high-pressure hydrogen applications.



For 75 years and counting, Haskel has been recognized as the world's leading provider of high-pressure industrial gas and liquid handling equipment. Haskel hydrogen technology is safely and successfully used in a range of mission critical applications around the world every day - just as it has been for over two decades.

We manufacture a full range of hydrogen handling equipment, including compressors, hydraulic and pneumatic-driven gas boosters, high-pressure valves and fittings and other system components. All of which use specific materials designed for hydrogen use based on pressure and flow requirements to address embrittlement issues metals face when exposed to a hydrogen environment.

As the world's leading provider of high-pressure hydrogen solutions, we have a team of experts who will work with you to provide the best solution for your chosen application.

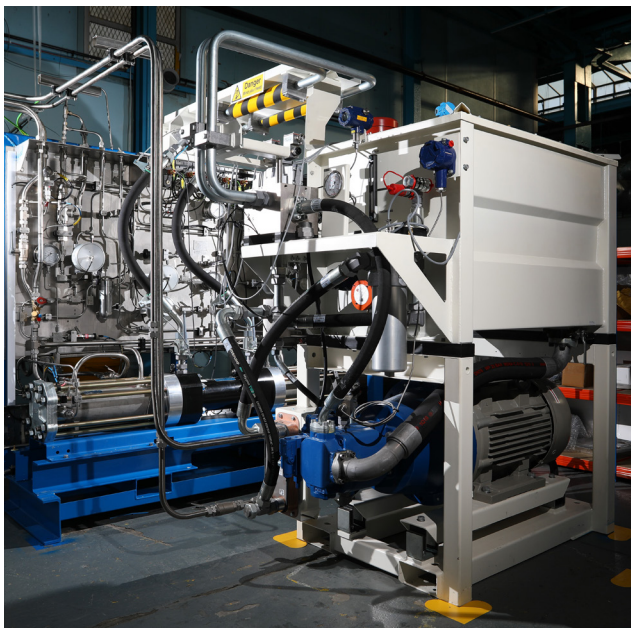
MARKETS AND APPLICATIONS

- Hydrogen Refuelling & Filling Stations
- Hydrogen Compression, Storage and Transfer
- Hydrogen Generation
- Pressure & Leak Testing for Valves, Piping and Pressure Vessel
- Gas Distribution Panels
- Proof Test; Catalyst Optical Fiber
- R&D Lab Gas Distribution
- Semiconductor Manufacturing
- Vessel Proof Testing
- Fuel Cell: Mobile, Portable and Stationary

HYDRAULIC DRIVE COMPRESSION SKIDS

Compact and transportable packaged systems configured to individual fuelling requirements.

Configurable and engineered to order, the compression skids can be designed to meet specific refueling, vessel filling and pressure testing requirements for a range of applications. Compact and simple to operate, the packaged systems can be easily transported and offer an efficient entry-level solution for hydrogen refuelling.



Features and Benefits

- Fully integrated hydrogen compression skids capable of pressures up to 1,000 bar (100 MPa)
- Haskel hydraulic H-Drive compression technology
- Hydrogen gas purity maintained via compressor design
- PLC and electrical integration possible to meet customer specification
- Compact, transportable, and simple to relocate
- Simple to operate
- Engineered to order
- Can be used to direct fill or integrated as part of a complete refuelling station

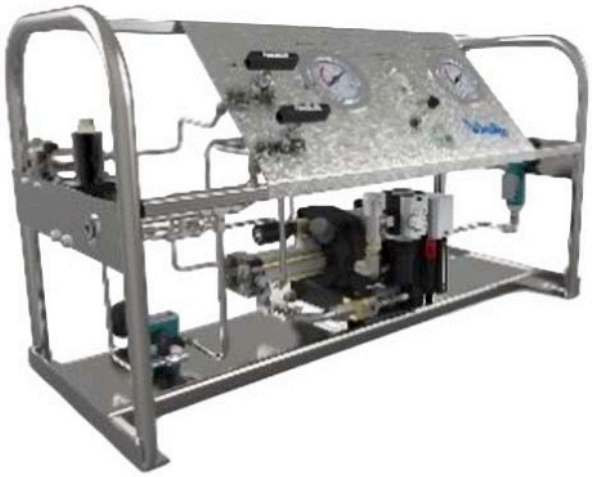
PNEUMATIC ROLL BAR HYDROGEN REFUELLING SYSTEM

A manually operated, air driven gas booster solution suitable for rapid start up and intermittent refuelling needs.

Haskel pneumatic roll bar systems are ideal for low-capacity / low-flow applications where rapid refuelling is not required. Roll bar systems are reliable, easy to operate and maintain, and offer a flexible and low-cost hydrogen refuelling option for small fleets and demonstration projects.

Features and Benefits

- Haskel air-driven booster technology
- Low cost
- Easy to operate and maintain
- Suitable for rapid start up and intermittent use
- Compact design
- Engineered to order



H-DRIVE HYDRAULIC DRIVEN GAS BOOSTERS

The H-Drive gas booster series sets the standard for functionality and reliability.

Designed specifically for hydrogen gas compression, the H-Drive booster is ideal for hydrogen high-pressure gas transfer and refuelling, and delivers everything you have come to expect from the world's leader in high-pressure generation.

Features and Benefits

- Designed for hydrogen gas service
- Range of modular double-acting single-stage and two-stage models allow compression up to 1,000 bar (14,500 psi)
- Capacity range from 25kg/day up to 3,000kg/day
- Reliable seal design for extended life
- CE marked and ATEX certified for the European market
- Designed for simple and easy maintenance
- High efficiency design for minimal energy consumption

AIR-DRIVEN GAS BOOSTERS

Built for safe operation and optimal performace.

Designed with precipitation-hardened stainless steel gas barrels and high pressure gas seals for optimal seal performance at pressure ranges up to 1,000 bar (14,500 psi).

Features and Benefits

- Vent ports combined into one outlet for safe operation with hydrogen
- Gas barrels are date stamped for recommended 8-year replacement
- Supplied with test certification
- Integrated systems available
- Boosters are self-cooled using the exhausted drive air

8" Air Drive Models

Booster Model	H2 Booster Part Number	Pressure Limit (PSI)	Pressure Limit (bar)
8SGD-1	83549	300	21
8AGD-2	83524	300	21
8AGD-2.8	87782	800	55
8AGD-5	83512	2,500	172

5.75" Air Drive Models

Booster Model	H2 Booster Part Number	Pressure Limit (PSI)	Pressure Limit (bar)
AG-15	87082	4,000	275
AG-30	87083	4,500	310
AG-62	86979	9,000	620
AG-75	86980	15,000	1,034
AG-152	86981	15,000	1,034
AGD-1.5	83550	300	21
AGD-4	83551	1,250	86
AGD-7	86982	2,500	172
AGD-14	83421	5,000	344
AGD-15	86983	4,000	275
AGD-30	86984	9,000	620
AGD-32	86985	15,000	275
AGD-62	86986	15,000	620
AGD-75	86987	2,500/4,000	1,034
AGD-152	86988	2,500/9,000	1,034
AGT-7/15	86989	2,500/9,000	172/275
AGT-7/30	86990	4,000/9,000	172/620
AGT-14/62	86991	4,000/15,000	172/620
AGT-15/30	86992	9,000/15,000	275/620
AGT-15/75	86993	4,000/9,000	275/1,034
AGT-30/75	86994	4,000/15,000	620/1,034
AGT-32/62	86995	4,000/9,000	275/620
AGT-32/152	86996	4,000/15,000	275/1,034
AGT-62/152	86997	9,000/15,000	620/1,034

Haskel's line of BuTech hydrogen valves and components are designed to handle pressures up to 1,380 bar (20,000 psi).

Available in 316SS, our BuTech hydrogen valves are designed to withstand the demands of hydrogen service, including hydrogen storage, compression and dispensing applications, as well as in hydrogen fuel cell testing, production, and process facilities.

Needle Valves

Ideally suited for service in limited access areas or where space and weight is at a premium.

20K PSI 2-Way Straight Needle Valve

Description	Part No.
1/4" MP Needle Valve	20UV41V-H2-*
3/8" MP Needle Valve	20UV61V-H2-*
9/16" MP Needle Valve	20UV91V-H2-*
3/4" MP Needle Valve	20UV121V-H2-*
1" MP Needle Valve	20UV161V-H2-*
Low Temp. (Liquid)	Add-LT to Part No.

*H2-S = Treated 316 Stem
H2-N = High Nickle

Catalog No.	Stem Style	Connection	A	B	C	D	E	F	G	H	I	J	K	L	Thk.	Fig.
20UV41V-H2-*	Vee	1/4"M/P tube	2.00"	1.00"	2.00"	4.50"	1.62"	1.19"	0.62"	0.38"	3.00"	0.25"	-	-	0.75"	1
20UV41R-H2-*	Reg		(50.8)	(25.4)	(50.8)	(114.3)	(41.1)	(30.2)	(15.7)	(9.7)	(76.2)	(6.4)	-	-	(19.1)	1
20UV61V-H2-*	Vee	3/8"M/P tube	2.00"	1.00"	2.00"	4.50"	1.62"	1.19"	0.62"	0.38"	3.00"	0.25"	-	-	0.75"	1
20UV61R-H2-*	Reg		(50.8)	(25.4)	(50.8)	(114.3)	(41.1)	(30.2)	(15.7)	(9.7)	(76.2)	(6.4)	-	-	(19.1)	1
20UV91V-H2-*	Vee	9/16"M/P tube	2.50"	1.25"	2.88"	6.32"	2.38"	1.75"	0.69"	0.50"	4.00"	0.34"	-	-	1.00"	1
20UV91R-H2-*	Reg		(63.5)	(31.8)	(73.2)	(160.5)	(60.5)	(44.5)	(17.5)	(12.7)	(101.6)	(8.6)	-	-	(25.4)	1
20UV121V-H2-*	Vee	3/4"M/P tube	3.00"	1.50"	3.75"	8.75"	3.00"	2.25"	0.88"	0.62"	8.00"	0.43"	-	-	1.38"	1
20UV121R-H2-*	Reg		(76.2)	(38.1)	(95.3)	(222.3)	(76.2)	(57.2)	(22.4)	(15.7)	(203.2)	(10.9)	-	-	(35.1)	1
20UV161V-H2-*	Vee	1"M/P tube	4.12"	2.06"	4.75"	10.19"	3.75"	2.81"	1.25"	1.12"	10.00"	0.56"	-	-	1.75"	1
20UV161R-H2-*	Reg		(104.6)	(52.3)	(258.8)	(258.8)	(95.3)	(71.4)	(31.8)	(28.4)	(254.0)	(14.2)	-	-	(44.5)	1

20K PSI 2-Way Angle Needle Valve

Description	Part No.
1/4" MP Needle Valve	20UV42V-H2-*
3/8" MP Needle Valve	20UV62V-H2-*
9/16" MP Needle Valve	20UV92V-H2-*
3/4" MP Needle Valve	20UV122V-H2-*
1" MP Needle Valve	20UV162V-H2-*
Low Temp. (Liquid)	Add-LT to Part No.

*H2-S = Treated 316 Stem
H2-N = High Nickle

Catalog No.	Stem Style	Connection	A	B	C	D	E	F	G	H	I	J	K	L	Thk.	Fig.
20UV42V-H2-*	Vee	1/4"M/P tube	2.00"	1.00"	2.00"	4.50"	1.62"	1.19"	0.62"	0.38"	3.00"	0.25"	-	-	0.75"	1
20UV42R-H2-*	Reg		(50.8)	(25.4)	(50.8)	(114.3)	(41.1)	(30.2)	(15.7)	(9.7)	(76.2)	(6.4)	-	-	(19.1)	1
20UV62V-H2-*	Vee	3/8"M/P tube	2.00"	1.00"	2.00"	4.50"	1.62"	1.19"	0.62"	0.38"	3.00"	0.25"	-	-	0.75"	1
20UV62R-H2-*	Reg		(50.8)	(25.4)	(50.8)	(114.3)	(41.1)	(30.2)	(15.7)	(9.7)	(76.2)	(6.4)	-	-	(19.1)	1
20UV92V-H2-*	Vee	9/16"M/P tube	2.50"	1.25"	2.88"	6.32"	2.38"	1.75"	0.69"	0.50"	4.00"	0.34"	-	-	1.00"	1
20UV92R-H2-*	Reg		(63.5)	(31.8)	(73.2)	(160.5)	(60.5)	(44.5)	(17.5)	(12.7)	(101.6)	(8.6)	-	-	(25.4)	1
20UV122V-H2-*	Vee	3/4"M/P tube	3.00"	1.50"	3.75"	8.75"	3.00"	2.25"	0.88"	0.62"	8.00"	0.43"	-	-	1.38"	1
20UV122R-H2-*	Reg		(76.2)	(38.1)	(95.3)	(222.3)	(76.2)	(57.2)	(22.4)	(15.7)	(203.2)	(10.9)	-	-	(35.1)	1
20UV162V-H2-*	Vee	1"M/P tube	4.12"	2.06"	4.75"	10.19"	3.75"	2.81"	1.25"	1.12"	10.00"	0.56"	-	-	1.75"	1
20UV162R-H2-*	Reg		(104.6)	(52.3)	(258.8)	(258.8)	(95.3)	(71.4)	(31.8)	(28.4)	(254.0)	(14.2)	-	-	(44.5)	1

Air Actuators

Designed for remote control, single-acting actuators have a fail-safe feature: The Air-to-Open actuator closes the valve on loss of operating pressure, while the Air-to-Close actuator opens the valve on loss of operating pressure-safety features necessary in critical systems.

Valve Model			Normally Open Air-to-Close Actuators psi (bar)			Normally Open Air-to-Open Actuators psi (bar)			Double-Acting Pneumatic Actuators psi (bar)		
			ATC5	ATC8	2XATC5	AT05	AT08	2XAT05	DA5	DA8	2XDA5
20UV4 - 20UV6	MAWP	psi (bar)	18,000 (1241)			18,000 (1241)			18,000 (1241)		
	Req'd Actuator Pressure	psi (bar)	74 (5)			82 (6)	55 (4)		63 (4)		
20UV9	MAWP	psi (bar)	18,000 (1240)	18,000 (1240)	18,000 (1240)	10,000 (689)	18,000 (1240)	18,000 (1240)	18,000 (1240)		18,000 (1240)
	Req'd Actuator Pressure	psi (bar)	100 (7)	49 (3)	55 (4)	84 (6)	58 (5)	67 (5)	98(7)		49 (5)
20V12	MAWP	psi (bar)		18,000 (1240)	10,000 (689)		12,500 (860)	10,500 (720)		18,000 (1240)	12,000 (830)
	Req'd Actuator Pressure	psi (bar)		100 (7)	90 (6)		66 (1)	79(5)			89(2)
20V16	MAWP	psi (bar)		12,000 (830)	8,000 (550)		7,500 (520)			12,000 (830)	
	Req'd Actuator Pressure	psi (bar)		100 (3)	52 (4)		66 (5)			89(4)	

Check Valves

Rugged construction provides assurance of fail-safe operation at pressures up to 1,380 bar (20,000 psi) and operation in temperatures ranging from -320° to 500°F (-195° to 260°C).

Catalog No.	Connection	MAWP	CV	A	B	C	D
20SC4-H2-S	1/4" M/P tube	18,000 psi 1240 bar	0.25	2.94" (74.7)	2.50" (63.6)	1.00" (25.4)	0.88" (22.4)
20SC6-H2-S	3/8" M/P tube	18,000 psi 1240 bar	0.80	3.12" (79.2)	2.62" (66.5)	1.12" (28.4)	0.88" (66.5)
20SC9-H2-S	9/16" M/P tube	18,000 psi 1240 bar	2.30	4.23" (107.4)	3.50" (88.9)	1.38" (35.1)	1.38" (35.1)
20SC12-H2-S	3/4" M/P tube	18,000 psi 1240 bar	3.40	5.89" (149.6)	4.75" (120.7)	1.75" (44.5)	1.38" (35.1)
20SC16-H2-S	1" M/P tube	18,000 psi 1240 bar	7.40	6.50" (165.1)	5.55" (141.0)	2.12" (53.8)	1.75" (44.5)

Operating Temperature Ranges		
O-ring Material	Operating Temp. Range	Catalog Suffix
Viton	-40° to +500° F (-40° to +260° C)	-
Teflon	-320° to +400° F (-195° to +204° C)	-TFE

Also available are check and regulating valves, tubing, fittings, and connection components, as well as a variety of BuTech tools to help you ensure proper operations, including **hand tools, power tools, tube vices and tube benders.**

THE WORLD TRUSTS Haskel TO HANDLE HIGH PRESSURE.

An Ingersoll Rand Business

For more information on our high-pressure products, visit Haskel.com or contact your local Haskel representative.

Haskel is the leading global innovator and manufacturer of high-pressure technology solutions. We specialize in mission critical applications that help make the world a better, safer place through a proven reputation for reliability, expertise and customer support. As an Ingersoll Rand business, we are positioned to add compounding value to customers around the globe.

www.haskel.com | sales@haskel.com