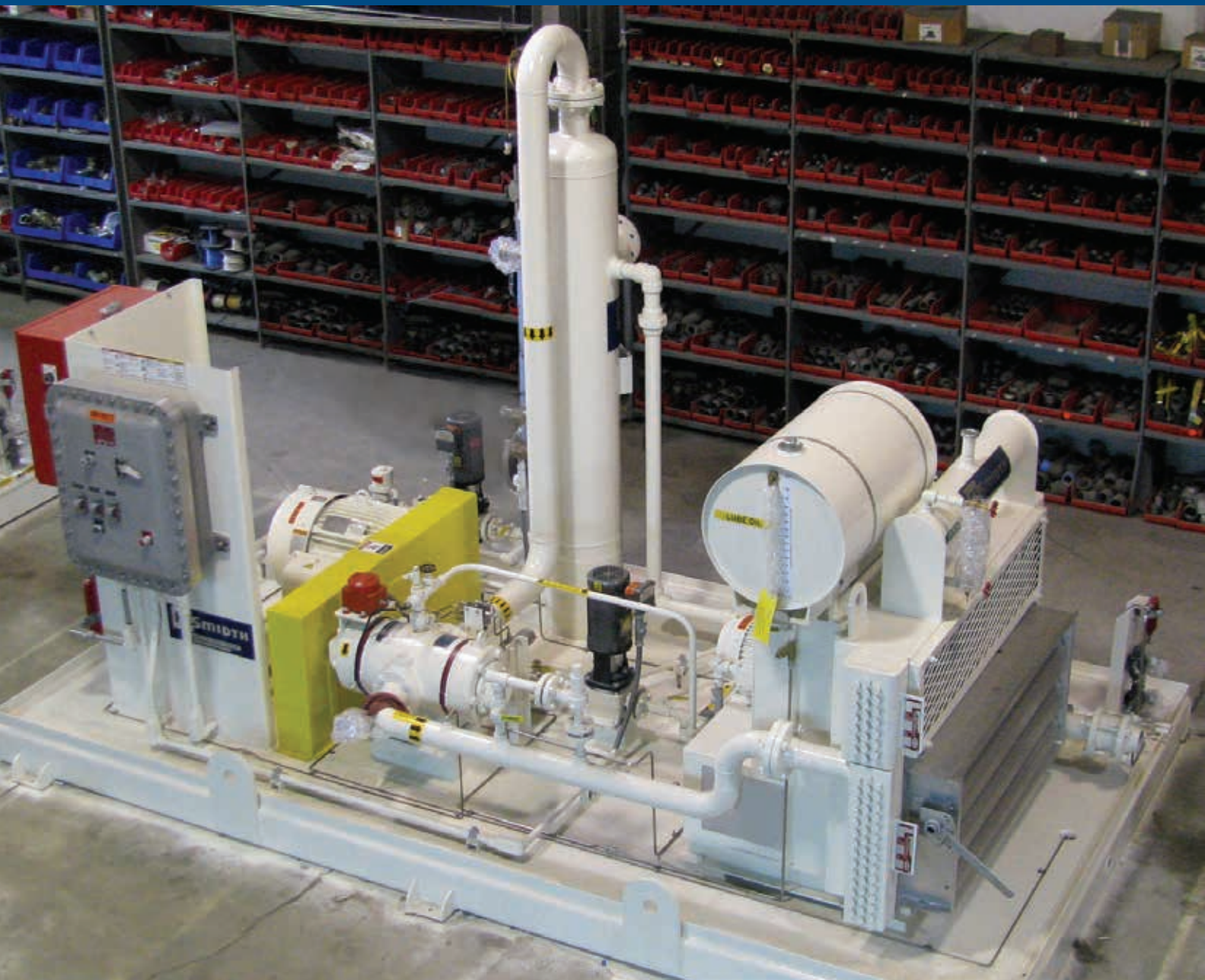


One Source

Ful-Vane™ Gas Compressor

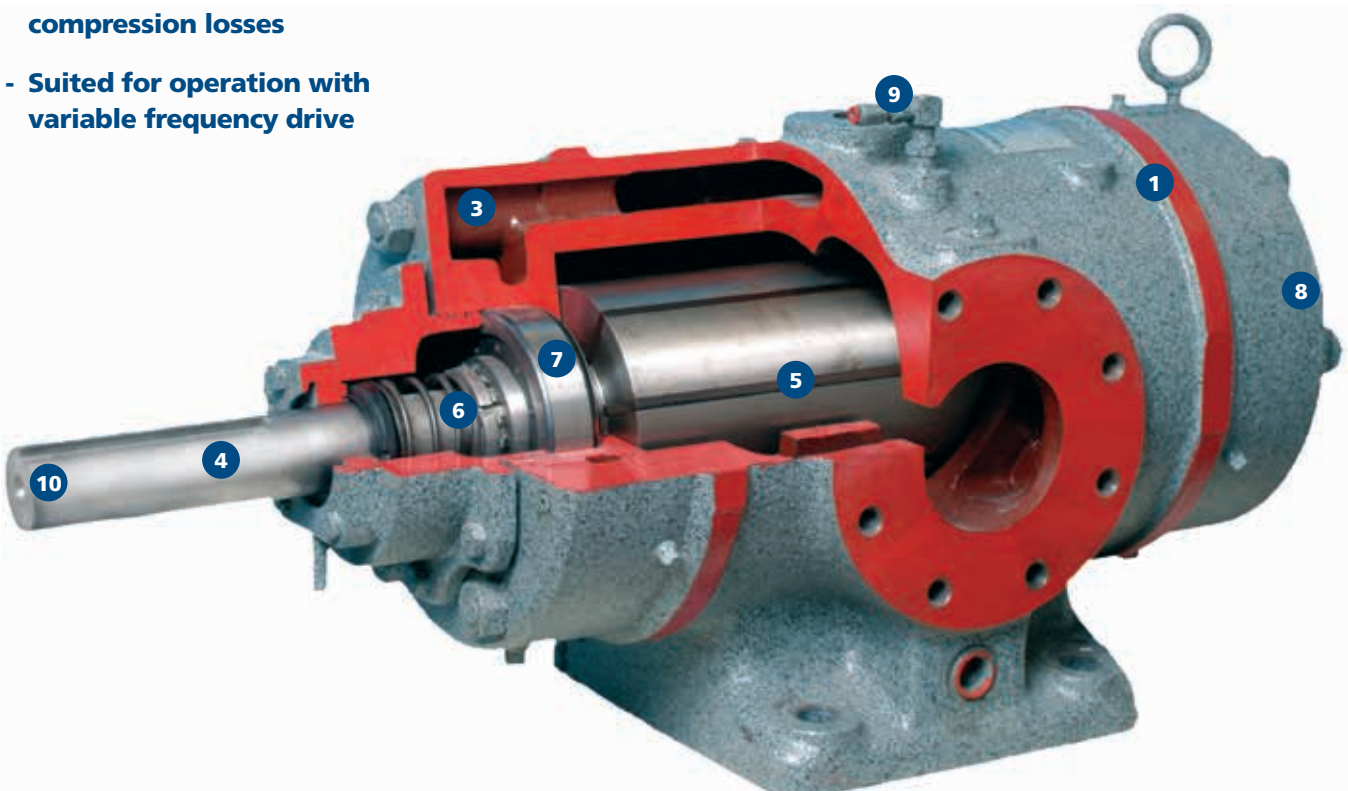


More compression, less energy

Developed from Fuller® design and technology, FLSmidth's Ful-Vane™ Gas Compressors provide more compression with less energy:

- Large inlet area provides efficient capture of large gas flows
- Only three moving parts for minimal mechanical losses
- Constant blade-to-cylinder contact results in constant compression efficiency
- Shaft and bearing design minimizes drive losses
- Inlet/outlet configuration eliminates internal compression losses
- Suited for operation with variable frequency drive

- 1 Cylinder head casting: ASTM 278 gray iron or ASTM 536 ductile iron
- 2 Inlet / outlet flange: ANSI 150# drilling pattern (250# drilling available on some models)
- 3 Cooling jacket: Integral in cylinder and heads (also in bearing retainer in some models)
- 4 Rotor and shaft: Single piece ASTM 536 ductile iron
- 5 Blades: B3000™ Carbon fiber laminate
- 6 Shaft seals: Single mechanical or double mechanical
- 7 Fixed (drive) end bearing: Cylindrical roller
- 8 Expansion end bearing: Cylindrical roller
- 9 Lubrication: Integral lube fittings with check valves
- 10 Drive options: Direct, belt, or gearbox. Shaft suited for maximum HP in all arrangements



Ful-Vane™ Gas Compressor Packages



Single-stage and Two-stage compressor packages

FLSmidth offers a full range of single stage and two-stage compressors- from critical parts to complete self-contained packages.

Packages may be custom built to project specifications or FLSmidth standards.

Additional auxiliary components are available upon request.

FLSmidth standard packages include:

Drive

- Synchronous belt
- Direct
- Gear box

Driver

- Electric motor
- Engine

Pressurized lubrication system

- Reservoir
- Pumping unit
- Tubing

Capacity control

- Variable frequency drive
- Automatic gas bypass

Structure

- Steel base
- ANSI gas piping
- ASME scrubbers

Ancillaries

- PLC control panel
- Closed loop cooling system
- Condensate removal
- Intercooler / aftercooler
- Instrumentation

Hydrocarbon service



Ful-Vane™ compressors are proven for a wide range of hydrocarbon services on both low and high molecular weight gases, and vacuum or pressure service. Ful-Vane compressors are also well suited for saturated, corrosive, and sour gas service.

- LPG loading / unloading
- Vapor recovery
- Casing head gas
- Natural gas
- Flare gas recovery
- Stock tank vapor recovery
- Sweet / sour gases
- Gas gathering
- Fuel gas boosting



MSCFD	SINGLE STAGE PERFORMANCE ¹					TWO STAGE PERFORMANCE ²				
	MODEL	BHP	NAME-PLATE HP	VE ³	AE ⁴	MODEL	BHP	NAMEPLATE HP	VE ³	AE ⁴
200	CC30	31	40	75.1%	77.2%	CC30-30H	51	60	74.7%	76.3%
350	CC60	49	60	77.1%	81.6%	CC60-60H	80	100	76.5%	81.1%
500	CC80	70	75	77.1%	82.7%	CC80-80H	112	125	76.6%	81.2%
750	CC120	94	100	81.8%	85.6%	CC120-120H	152	200	80.6%	85.0%
1000	CC150	124	150	81.8%	86.8%	CC150-150H	201	250	80.7%	85.8%
1250	CC200	154	200	81.8%	86.3%	CC200-200H	242	250	83.1%	86.2%
1500	CC225	185	200	81.8%	86.4%	CC225-225H	291	300	83.1%	86.3%
2000	CC300	247	250	81.8%	86.2%	CC300-300H	386	400	83.2%	86.5%
2500	C400	306	350	81.8%	88.4%	C350-350H	481	500	83.2%	86.6%
3500	C608	427	450	81.8%	88.5%	-	-	-	-	-

Performance based on Natural gas with the following properties: MW = 19.460, SG = 0.670, $C_p/C_v = 1.270$, $T_1 = 90^\circ\text{F}$, Elev. = 500 FASL

¹ $P_1 = 0$ psig, $P_2 = 50$ psig

³ VE = Volumetric Efficiency

² $P_1 = 0$ psig, $P_2 = 140$ psig

⁴ AE = Adiabatic Efficiency

Landfill gas service

Built with rugged construction and suited for harsh environments, Ful-Vane™ compressors provide low energy consumption, high volumetric efficiency, reliability and durability. Ful-Vane compressors also feature rebuildable housings and rotors and are field repairable, minimizing downtime and reducing maintenance and ownership costs.

Ful-Vane compressors are well suited for high CO₂ applications such as landfill gas.

FLSmidth offers a variable scope of supply meeting project needs ranging from critical components to complete packaged systems.



SCFM	VACUUM / PRESSURE SERVICE ¹					PRESSURE SERVICE ²				
	MODEL	BHP	NAMEPLATE HP	VE ³	AE ⁴	MODEL	BHP	NAMEPLATE HP	VE ³	AE ⁴
100	CC30	19	25	83.4%	71.9%	CC30	18	25	81.7%	83.4%
250	CC70	41	50	84.6%	76.8%	CC70	42	50	83.0%	86.6%
350	CC100	58	60	87.8%	77.5%	CC100	59	75	83.0%	87.1%
500	CC120	80	100	87.8%	76.6%	CC120	80	100	86.5%	86.5%
650	CC150	101	125	87.8%	78.7%	CC150	102	125	86.5%	87.9%
800	CC200	124	150	87.8%	78.2%	CC200	125	150	86.5%	87.6%
950	CC225	147	150	87.8%	78.6%	CC225	148	150	86.5%	87.8%
1200	CC300	184	200	87.8%	79.2%	CC250	190	200	86.5%	86.5%
1500	C450	219	250	87.8%	84.0%	CC300	239	250	86.5%	85.6%
2000	C608	296	300	87.8%	83.2%	C450	312	350	86.5%	88.6%
2500	-	-	-	-	-	C608	391	400	86.5%	88.6%

Performance based on Landfill gas with the following properties: MW = 30.015, SG = 1.040, $C_p/C_v = 1.310$, $T_1 = 100^\circ\text{F}$, Elev. = 500 FASL

¹ $P_1 = -90''\text{WC}$, $P_2 = 25$ psig

³ VE = Volumetric Efficiency

² $P_1 = 15''\text{WC}$, $P_2 = 45$ psig

⁴ AE = Adiabatic Efficiency

Digester gas service



Ful-Vane™ compressors are designed for reliable, efficient operation over many years in the most aggressive atmospheres. Oil lubrication protects internal surfaces. Simple design minimizes maintenance.

Widely used in digester gas applications, Ful-Vane compressors' scope of supply is flexible to meet project requirements.

Compressors include B3000™ carbon fiber blades, rugged cast construction and simple design for easy inspection and maintenance.

Available in a wide range of sizes.

LOW PRESSURE SERVICE ¹						MEDIUM PRESSURE SERVICE ²				
SCFM	MODEL	BHP	NAMEPLATE HP	VE ³	AE ⁴	MODEL	BHP	NAMEPLATE HP	VE ³	AE ⁴
150	CC50	13	20	86.3%	74.5%	CC50	22	25	81.0%	82.0%
300	CC70	27	30	86.9%	71.8%	CC70	42	50	82.2%	80.0%
450	CC100	41	50	86.9%	71.2%	CC100	65	75	82.2%	79.6%
600	CC120	52	60	89.9%	71.5%	CC120	81	100	86.0%	80.0%
800	CC150	68	75	89.9%	73.4%	CC150	106	125	86.0%	81.5%
1000	CC200	85	100	89.9%	72.6%	CC200	132	150	86.0%	80.8%
1250	CC225	107	125	89.9%	72.0%	CC225	167	200	86.0%	80.3%
1500	CC300	125	150	89.9%	73.7%	CC300	196	200	86.0%	81.6%
1750	C350	143	150	89.9%	75.4%	C350	226	250	86.0%	83.0%
2000	C450	159	200	89.9%	80.9%	C450	254	300	86.0%	85.2%
2500	C608	199	250	89.9%	78.5%	C608	318	350	86.0%	85.3%

Performance based on digester gas with the following properties: MW = 17.429, SG = 0.599, $C_p / C_v = 1.319$, Elev. = 500 FASL, $T_1 = 90^\circ\text{F}$

¹ $P_1 = 0$ psig, $P_2 = 15$ psig

³ VE = Volumetric Efficiency

² $P_1 = 0$ psig, $P_2 = 30$ psig

⁴ AE = Adiabatic Efficiency

Ammonia service

The Original Fuller® Low Stage Ammonia Boosters designed and built by FLSmidth.

FLSmidth manufactures the original low stage boosters including all "A" and "CA" sizes from 30 through 300, and more.

- OEM parts, including:
 - Bearings
 - B3000™ carbon fiber blades
 - Replacement seals

Also available:

- Replacement check valves
- Replacement lubrication systems
- Other OEM parts upon request
- Factory authorized service and rebuilds with new factory warranty



COMPRESSOR MODEL	NOMINAL SPEED (RPM)	40°F SATURATED SUCTION TEMPERATURE AND +10°F DISCHARGE TEMPERATURE			20°F SATURATED SUCTION TEMPERATURE AND +20°F DISCHARGE TEMPERATURE		
		TONS OF REFRIGERATION	ICFM	BHP	TONS OF REFRIGERATION	ICFM	BHP
CA30	1760	21.8	200	31	39.4	214	36
CA40	1760	27.9	246	38	48.6	264	43
CA50	1760	32.1	294	42	58.0	315	49
CA60	1180	35.2	322	43	62.7	391	50
CA70	1180	42.2	386	49	75.3	409	58
CA80	1180	50.0	457	59	89.3	489	70
CA100	1180	59.6	595	69	106.3	578	82
CA120	880	74.4	680	79	130.8	711	93
CA135	880	84.2	770	88	148.3	806	105
CA150	880	95.0	867	97	167.1	908	115
CA175	705	103.8	949	108	182.9	994	128
CA200	705	122.4	1119	127	215.7	1172	151
CA250	705	163.1	1491	168	287.3	1561	200
CA300	705	187.8	1717	193	330.7	1797	230

World-class Parts, Service and Support



FLSmidth manufactures all compressors at its Manheim, PA facility, ensuring that each and every compressor is built and tested to the most rigorous standards.

In addition, FLSmidth has a 24/7 emergency breakdown service for customers, a reconditioning and exchange program, and offers on site training for rebuilding compressors. We also have a customer consignment inventory management program.

In addition to our Manheim facility FLSmidth has factory-certified independent service centers and parts warehouses on all continents.

Compressor Exchange Program

The FLSmidth Compressor Exchange Program is designed to replace the cylinder assemblies on existing FLSmidth rotary compressors. The program minimizes downtime for replacement and is a highly economical method for restoring compressors to original performance standards.

This program is for those customers that require:

- Reduced downtime
- New and extended warranty
- Decreased maintenance hours
- Increased reliability



B3000™ Compressor Blades

FLSmidth's B3000 compressor blades last up to four times longer than conventional blades. Their carbon graphite construction repels abrasive particles for less wear and tear.

B3000 blades reduce man hours and maintenance costs, provide smooth operation and durability, and extend the life of the compressor.



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