

# Atlas Copco

Oil-free Scroll Compressors  
SF 1-22 (1.5-22 kW/2-30 hp)



*Sustainable Productivity*



# ISO 8573-1 CLASS 0

## Atlas Copco sets a new industry standard



When it comes to clean, oil-free compressed air for your critical processes, you can't afford to compromise. Whether your activities are in pharmaceutical production, food processing, critical electronics or a similarly exacting industry, it is essential to eliminate risk. Atlas Copco, a pioneer in oil-free air technology, is known for its range of compressors designed especially for applications that require pure, oil-free air. Now Atlas Copco has achieved a new milestone: setting the standard for air purity as the first manufacturer to be certified ISO 8573-1 CLASS 0.

### WHY A NEW CLASS?

To address the needs of critical applications where air purity is essential, the ISO 8573-1 compressed air standard was revised in 2001. Along with a more comprehensive measuring methodology, a new and more stringent class was added to the five existing purity classes: ISO 8573-1 CLASS 0.

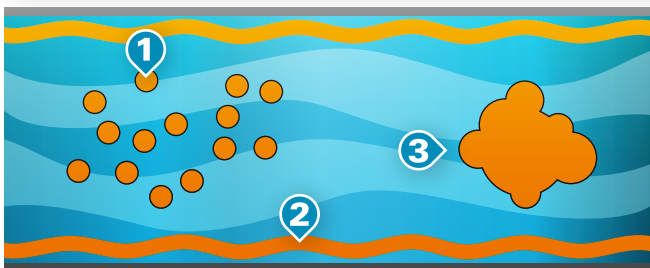
CLASS	Concentration total oil (aerosol, liquid, vapor) mg/m <sup>3</sup>
<b>0</b>	<b>As specified by the equipment user or supplier and more stringent than class 1</b>
1	< 0.01
2	< 0.1
3	< 1
4	< 5

### FIRST TO ACHIEVE ISO 8573-1 CLASS 0

As the industry leader committed to meeting the needs of the most demanding customers, Atlas Copco requested the renowned TÜV institute to type-test its SF range of oil-free scroll compressors. Using the most rigorous testing methodologies available, all possible oil forms were measured across a range of temperatures and pressures. The TÜV found no traces of oil at all in the output air stream. Thus Atlas Copco not only became the first compressor manufacturer to receive CLASS 0 certification, but also exceeded ISO 8573-1 CLASS 0 specifications.



### THE MOST STRINGENT AIR PURITY TESTING AVAILABLE



Most manufacturers prefer 'partial flow' testing, which targets only the center of the air flow. The Atlas Copco range of oil-free compressors was tested using the more stringent 'full flow'

- 1 Aerosols**  
Minute droplets of oil suspended in the air stream
- 2 Wall flow**  
Oil in liquid form, which creeps along the pipe wall
- 3 Vapors or oil mist**  
Vaporized oil in a cloud form

method. This examines the entire air flow to measure aerosols, vapors and wall flow. Even with such rigorous testing, no traces of oil were found in the output air stream.

Move up to a risk-free standard.  
Visit [www.classzero.com](http://www.classzero.com)

# Cost-efficient, high-quality air

With its range of state-of-the-art oil-free compressor technologies such as screw, tooth, centrifugal, reciprocating and scroll, Atlas Copco provides the right solutions to meet your specific needs. As high-quality, oil-free compressed air is a prerequisite for the continuity and quality of your manufacturing processes, we ensure consistent oil-free air by preventing oil from entering

your compressed air system. The SF range of oil-free scroll air compressors unites Atlas Copco's vast experience and knowledge in a class-leading package. Reliable and compact, they answer your demands through innovative technologies and supreme energy efficiency without compromising on quality.



## PURE OIL-FREE AIR

As there is no metal-to-metal contact between the compression scrolls, there is no need for oil lubrication in the compression chamber. Therefore, the scroll compression principle guarantees high-quality, oil-free air. The scroll element is belt-driven, eliminating the need for a gearbox. As a result, the SF compressor is oil-free in every way.



## EXTREMELY LOW NOISE LEVEL

The slow speed of the scroll compression elements ensures that the SF scroll compressors are extremely quiet. SF units are *WorkPlace Air System™* compressors, making them suitable for installation in any working environment.



## ENERGY EFFICIENCY

The SF scroll compressors are suited for sensitive applications in which flexibility and energy efficiency are needed. Unloaded power consumption is eliminated thanks to the simple start/stop control. The SF 6-22 uses Variable Flow Technology to match the compressed air output to the air demand.



## SIMPLICITY AND RELIABILITY

The SF scroll compressors stand for simplicity and reliability. The scroll design has a minimal number of moving parts, ensuring a long operating life with a minimum number of service interventions.



## MINIMAL FOOTPRINT AND COMPACTNESS

Atlas Copco's space-saving SF scroll compressors have a minimal footprint and are highly compact.



# SF 1-4 Skid: Modular



### SF-SKID

SF-Skid models are designed with simplicity in mind, making them suitable for installation at the point of use or for integration into an existing air network. Skid variants are self-contained units equipped with a single scroll element, drive motor, aftercooler and integrated starter, all contained in a modern silenced acoustic canopy.



### SF-SKID RECEIVER MOUNTED

This model consists of an SF-Skid module mounted on a fully approved 270 liter (72 gallon) air receiver. All SF air receivers are internally coated to prevent corrosion.



### SF-TWIN RECEIVER MOUNTED

A tandem installation of SF-Skid modules on a fully approved 500 liter (132 gallon) air receiver. Each module has its own self-contained starter providing the highest level of flexibility when compressed air demands vary. Both compressors are equipped with a separate pressure switch, allowing each module to operate independently or together, depending on the air demand.



### HIGH EFFICIENCY



High-efficiency paper cartridge air inlet filter eliminating dust and particles down to 1  $\mu$ m.

### EASY ACCESSIBILITY



Protective, hinged silencing hood for easy access.

### OUTSTANDING RELIABILITY



Air-cooled scroll compressor element.



Totally enclosed air-cooled IP55 class F motor.



Compressed air aftercooler.



Simple drive belt tension system.



Internally coated air receiver.

# SF 1-4: Super silent



## SF 1-4

The SF 1-4 is a complete scroll compressor package. The SF 1-4 unites the compression element, drive motor, aftercooler and starter in a super silent acoustic enclosure. The SF 1-4 is a true *WorkPlace Air System*<sup>™</sup>. With noise levels as low as 53 dB(A), the SF 1-4 can be installed directly into the quietest work environments.

## SF 1-4 FF (FULL FEATURE)

The SF 1-4 is available as a Full Feature unit. Atlas Copco Full Feature compressors include a refrigerant air dryer integrated into the compressor enclosure. The dryers are pre-wired to the compressor power supply, so only a single power connection is required.

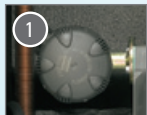


## SF 1-4 RECEIVER MOUNTED

Two different receiver versions are available, both are standard options ordered from the factory. The SF 1-4 can be delivered with an extended canopy that includes two integrated 16 liter (4 gallon) galvanized air receivers located within the bottom section of the unit canopy or the unit can be externally mounted on a 270 liter (72 gallon) horizontal receiver (shown) which is spray coated internally to protect against moisture and corrosion.



## HIGH EFFICIENCY



High-efficiency paper cartridge air inlet filter eliminating dust and particles down to 1 µm.



Automatic start/stop when the required working pressure is reached, thus avoiding unnecessary energy costs.

## OUTSTANDING RELIABILITY

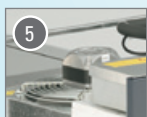


Air-cooled scroll compressor element offering proven durability and reliability in operation.



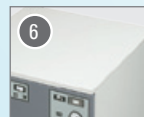
Totally enclosed (TEFC) air-cooled IP 55 class F motor for heavy duty operation.

## HIGH-QUALITY AIR



A compact, integrated refrigerant dryer ensures the delivery of dry quality air.

## SIMPLE INSTALLATION



Interchangeable top and back canopy panels allow a change in cooling air flow direction, extending the possibilities for installation and integration.

## EXTREMELY LOW NOISE LEVEL



A sound-insulated canopy ensures reduced noise levels as low as 53 dB(A).

# SF 6-15: Flexible



## TOTAL FLEXIBILITY

The SF 6-15 extends the oil-free scroll technology up to 20 hp. Between two and four compressor modules are integrated into one canopy, incorporating all the benefits and flexibility of a modular system. SF 6-15 units are available as silenced Pack and Full Feature variants with integrated refrigerant dryer. Optional extended (higher) canopy can be ordered at initial time of order entry. This allows the addition of up to two (2) more future scroll modules, upgrading the multi-core package to an SF 11 and/or SF 15.



## EFFICIENCY IN OPERATION

SF 6-15 scroll compressors are equipped with Atlas Copco's Elektronikon® – Multi Scroll Compressor Controller (MSCC). The Elektronikon® continuously monitors the status of each element and starts and stops the compression elements, thereby ensuring that the compressed air output matches the air demand.



## HIGH EFFICIENCY



High-efficiency paper cartridge air inlet filter eliminating dust and particles down to 1 µm.

## OUTSTANDING RELIABILITY

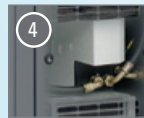


Totally enclosed (TEFC) air-cooled IP55 class F motor greased for life.



Fan-cooled scroll compressor element.

## HIGH-QUALITY AIR



Integrated refrigerant dryer ensuring the delivery of dry high-quality air.

## TOTAL SUPERVISION AND MONITORING



Elektronikon® monitoring and control system.

## EASY ACCESSIBILITY



Scroll modules are mounted on a sliding platform for easy servicing.

# SF 17-22: Cutting-edge

## INNOVATION

At the forefront of technological innovation, Atlas Copco continues to develop and expand its range of oil-free scroll compressors. The introduction of the brand-new and exclusive SF 17-22 range marks a new milestone in this respect. Equipped with a unique 7.5 hp scroll element – designed and engineered by Atlas Copco – the SF 17-22 multicore range ensures improved performance and enhanced efficiency, and introduces new exclusive *duplex* medical versions into the market.



## EFFICIENT PURITY

The SF 17-22 range is the ideal solution for sensitive applications where oil contamination threatens end-product quality and production efficiency. They are highly compact, have a powerful scroll element and ensure a lower Total Cost of Ownership. Moreover, the perfect air quality and user-friendliness of these units guarantee a superior production process. With the new SF range, you can obtain up to 51% more FAD and 7% less energy consumption than with the previous designs. The SF 17-22 scroll compressors have lower noise levels ( $\leq 65$  dB(A)) and a smaller footprint (-40 to -50%) compared to compressors with other oil-free technologies. In addition, less units are necessary to reach a certain amount of kW.



## HIGH EFFICIENCY



- Optimized cooling flow design.
- New 7.5 hp element ensures lower power consumption, longer lifetime and less wear.
- Double inlet instead of single inlet reduces inlet losses by up to 2%.
- 10-15% power savings and 27-35°F temperature reduction due to minimized internal leakage.

## OUTSTANDING RELIABILITY



- Greased-for-life bearings in element and motor.

## DUPLEX MEDICAL VERSIONS



- Duplex set-up with one or two modules and one or two modules as back up.
- Enclosed in a sound-insulated bodywork.
- Elektronikon® regulates each set of compressor modules.
- Two electrical cabinets, which include the motor starters, are installed behind the front door.

## TOTAL SUPERVISION AND MONITORING



- Intelligent temperature monitoring and safe control.

## USER-FRIENDLINESS



- Easier service access to machine and element.

# Superior monitoring and control

## VARIABLE FLOW TECHNOLOGY (VFT)

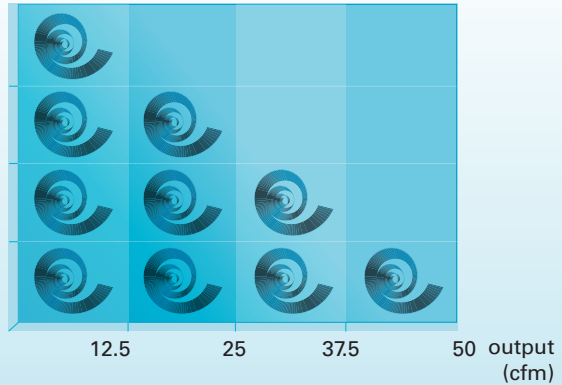
All SF 6-22 units are equipped with the unique VFT control system, which provides maximum flexibility of air delivery. The VFT system, included in the Elektronikon® controller, automatically starts and stops the scroll elements to exactly match the demands of your compressed air system. The Elektronikon® control algorithm ensures that the system pressure is kept within a very narrow

pressure band. This optimizes the efficiency of the compressor and guarantees a very stable system pressure. The Elektronikon® also gives an instant read out of all operational data and continuously scans and monitors the operation of the SF compressor.



1 module  
2 modules  
3 modules  
4 modules

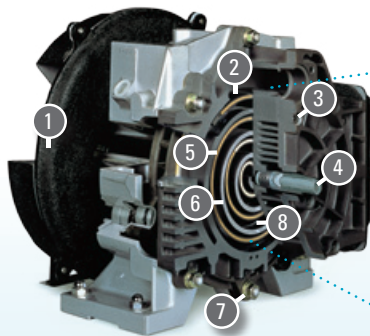
### SF 15 Variable Flow Technology



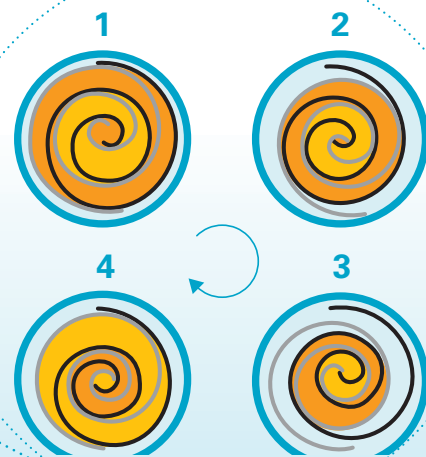
## Innovation in action

Air compression is achieved by the interaction of a fixed and an orbiting scroll. Air at inlet pressure enters the compression chamber at the exterior side of the scroll element. Once air is drawn in, the orbiting scroll seals off the inlet port. As the scroll continues to orbit, the air is progressively compressed into

an increasingly smaller 'pocket'. A continuous flow of compressed air leaves the scroll element through a discharge port in the center of the fixed scroll. This process is continuously repeated, resulting in the delivery of pulse-free compressed air.



- 1 Cooling fan
- 2 Suction chamber
- 3 Suction opening
- 4 Delivery opening
- 5 Fixed scroll
- 6 Orbiting scroll
- 7 Fail-safe temperature sensor for unit protection
- 8 Compression chamber



## ADVANCED CORE INNOVATION

Today, Atlas Copco introduces a unique scroll compressor element, used in different models ranging from SF 17 compressors with three 7.5 hp elements, to SF 22 units with four 7.5 hp elements, and new duplex variants of 15, 20 and

30 hp. With this new range – that further expands and refines Atlas Copco's product portfolio – reliability is increased and production efficiency is boosted.



# WorkPlace Air System™ compressors: the sound of silence

Atlas Copco WorkPlace Air System™ compressors are much more than low noise air compressors with integrated air treatment equipment. To help you save energy and costs, they are designed to give the most efficient source of compressed air within a production environment.



## QUIET AND COMPACT

A low noise level enables the compressor to be installed close to the compressed air application, minimizing the size of the air distribution system and reducing pressure loss and the potential for leakage.



## A SOLUTION THAT FITS

Thanks to the broad range of Atlas Copco air treatment technology, you can select the most efficient system to meet your specific compressed air requirements.



## COST-SAVING

As the air treatment is completely integrated, the installation costs are substantially reduced, making multiple compressor installations practical and financially viable.



## SUPREME ENERGY EFFICIENCY

To ensure maximum energy efficiency, Atlas Copco offers both traditional on/off regulating systems where the air demand is constant. Wherever a fluctuating air demand is required, the unique VFT control concept efficiently matches the compressed air output to the air demand.



## PEACE OF MIND

With the SF, Atlas Copco does not just offer the most reliable and efficient compressors. From filter kits to a complete piping installation, Atlas Copco can take responsibility of your entire compressed air system to provide you with best-in-class air.

Choose from a wide range of Atlas Copco after sales products and services that will have your SF performing at its best for years to come. Qualified Atlas Copco support is available in over 170 countries.

# Specifications

COMPRESSOR TYPE 50 Hz / 60 Hz	Max. working pressure		Capacity FAD*			Installed motor power		Noise level**	Dimensions L x W x H		Weight	
	bar(e)	psig	l/s	m <sup>3</sup> /min	cfm	kW	hp	dB(A)	mm	inch	kg	lbs
<b>SKID VERSIONS</b>												
SF 1	8	116	2.7	0.16	5.7	1.5	2	65	800 x 600 x 540	31.5 x 23.6 x 21.3	105	232
	10	145	2.1	0.13	4.4	1.5	2	65			105	232
SF 2	8	116	4.0	0.24	8.5	2.2	3	67	(Receiver mounted) 1267 x 600 x 1154	(Receiver mounted) 49.9 x 23.6 x 45.4	110	243
	10	145	3.4	0.20	7.2	2.2	3	67			110	243
SF 4	8	116	6.6	0.40	14.0	3.7	5	68	(Receiver mounted) 1267 x 600 x 1154	(Receiver mounted) 49.9 x 23.6 x 45.4	120	265
	10	145	5.60	0.30	11.9	3.7	5	68			120	265
<b>SKID VERSIONS – DUPLEX TANK MOUNTED</b>												
SF 6T	8	116	10.6	0.64	22.5	5.9	8	72	2043 x 600 x 1154	80.4 x 23.6 x 45.4	365	805
	10	145	9.0	0.54	19.1	5.9	8	72			365	805
SF 8T	8	116	13.2	0.80	28.0	7.4	10	73	2043 x 600 x 1154	80.4 x 23.6 x 45.4	375	827
	10	145	11.2	0.67	23.7	7.4	10	73			375	827
<b>FULLY SILENCED – WORKPLACE AIR SYSTEM™</b>												
SF 1	8	116	2.7	0.16	5.7	1.5	2	53	590 x 600 x 850	23.2 x 23.6 x 33.5	97	214
	10	145	2.1	0.13	4.4	1.5	2	53			97	214
SF 2	8	116	4.0	0.24	8.5	2.2	3	55	590 x 600 x 850	23.2 x 23.6 x 33.5	97	214
	10	145	3.4	0.20	7.2	2.2	3	55			97	214
SF 4	8	116	6.6	0.40	14.0	3.7	5	57	590 x 600 x 850	23.2 x 23.6 x 33.5	102	225
	10	145	5.6	0.34	11.9	3.7	5	57			102	225
SF 6	8	116	10.4	0.62	22.0	5.9	8	63	1450 x 750 x 1040	57.1 x 29.5 x 40.9	340	750
	10	145	8.8	0.53	18.6	5.9	8	63			340	750
SF 8	8	116	13.4	0.80	28.4	7.4	10	63	1450 x 750 x 1040	57.1 x 29.5 x 40.9	345	761
	10	145	11.3	0.68	23.9	7.4	10	63			345	761
SF 11	8	116	20.2	1.21	42.8	11	15	63	1450 x 750 x 1844	57.1 x 29.5 x 72.6	480	1058
	10	145	17.0	1.00	36.0	11	15	63			480	1058
SF 15	8	116	26.4	1.58	55.0	15	20	63	1450 x 750 x 1844	57.1 x 29.5 x 72.6	560	1235
	10	145	22.8	1.37	48.3	15	20	63			560	1235
SF 17 M	8	116	30.6	1.8	64.7	17	23	64	1630 x 750 x 1850	64 x 29.4 x 72.7	572	1258
SF 22 M	8	116	40.6	2.4	85.6	22	30	65			662	1456
SF 11 DM	8	116	9.7	0.6	20.5	5.5	7	63	1630 x 750 x 1850	64 x 29.4 x 72.7	503	1107
SF 15 DM	8	116	13.2	0.8	27.9	7.5	10	63			564	1241
SF 22 DM	8	116	19.5	1.2	41.1	11	15	65	1630 x 750 x 1850	64 x 29.4 x 72.7	683	1503

\* Unit performance measured according to ISO 1217, Annex C, latest edition.

\*\* Noise level measured at a distance of 1m according to Pneuop/Cagi PN8NTC2 test code.

**Reference conditions:**

- absolute inlet pressure 1 bar (14,5 psig)
- intake air temperature 20°C (68°F)

## Available options SF 1-15

	Integrated refrigerant dryer	Integrated 2 x 16 liter receivers	270 liter (72 gallon) air receiver	Timed air receiver drain	EWD zero loss drain	-40°F PDP CD Air dryer
SF 1-4 Skid			●			● **
SF 6-8T Skid Tank-mounted						●
SF 1-4	●	●	●	● *		●
SF 6-15	●				●	

\* The timed air receiver drain can only be used in combination with the integrated 2 x 16 liter receivers.

\*\* CD desiccant air dryers (factory version) are only available with tank-mounted units.

## Available options SF 17-22

	SF 17-22
Integrated refrigerant dryer	●
EWD for compressor	●
Integrated DDp filter	●
Integrated DDp + PDp filter	●
Special RAL color	●
Extra module upgrade SF 17 M to SF 22 M	●
Extra module upgrade SF 11 DM to SF 22 DM	●
Main switch	●
Channel duct inlet (for canopy cooling air and compressing air)	●
Audible alarm	●
MED cubicle (audible alarm included)	●
Witness performance test and inspection	●

## Extra module upgrade

From	To	SF 11	SF 15	SF 22 M	SF 22 DM
SF 8		●	●		
SF 11			●		
SF 11 DM					●
SF 17 M				●	



### Driven by innovation

With more than 135 years of innovation and experience, Atlas Copco delivers the products and services to help maximize your company's efficiency and productivity. As a global industry leader, we are dedicated to offering high air quality at the lowest possible cost of ownership. Through continuous advancements, we strive to safeguard your bottom line and bring you peace of mind.



### Local interaction

Atlas Copco Compressors LLC is headquartered in Rock Hill, SC. Our 187,000 sq. ft. manufacturing plant is one of several Atlas Copco production units across the U.S., including a custom design facility in Houston, TX. We take the best possible care of our customers through four regional customer centers, supported by a 131,000 sq. ft. distribution center and a network of field based personnel throughout the country. Across all of our different business types and brands, Atlas Copco employs approximately 3,300 people in the U.S.



### Committed to sustainability

In 2010, Atlas Copco was named one of the Top 100 Sustainable Companies in the World for the fifth consecutive year. Through our Water for All organization, Atlas Copco is committed to supporting projects that supply clean water to those who need it most. Visit [www.water4all.org](http://www.water4all.org) for more information. All Atlas Copco Compressors facilities in the United States are triple certified to ISO 14001, ISO 9001 and OHSAS 18001; a set of standards to protect the environment, ensure product quality, and promote our employees' health and occupational safety.

[www.atlascopco.us](http://www.atlascopco.us)  
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