

# Oil Free Air Boosters



*Performance Under Pressure™*

# Trust... it's what we build

## Who is Hycomp?

Hycomp has been earning our customers' trust and respect since 1969 by manufacturing quality oil free air and gas compressors, while providing unparalleled engineering and service expertise.

We begin by acknowledging that every application, and therefore every customer, has unique requirements. With this open mind set we investigate the details of your application, allowing us to solve problems before they occur. Trust Hycomp to understand your needs and provide you with a reliable solution.



**Building Trust...  
Since 1969**

## Have Your Engineer Talk To Our Engineer



Hycomp engineers get involved from inquiry through installation to ensure the booster system provided is an exact match to your application. We follow an Engineer-to-Engineer (E2E) process as we work through the specifics of each application and as we design your system.

## Endless Tech Support

Need technical guidance? Unlimited tech support is included at no additional charge with every Hycomp compressor. There are no annual tech subscription fees, just Hycomp technicians that are available to assist you 24 hours a day.

## Large Design - Small Booster

Hycomp utilizes heavy duty construction that incorporates the benefits of larger designs into our compressors and boosters. We manufacture compressors that provide longevity and continuous oil free service by taking advantage of cast iron cylinders/heads, pressure oil lubricated crankcases, thick PTFE based piston rings and radial tangent packings.

## Made In The USA & Fully Stocked

Every compressor we build is manufactured at our plant in Utah. Replacement parts are stocked on our shelves and available for next day delivery.



## Less Horsepower More Pressure

It takes more power to begin compression from ambient air. For example: when you are compressing air from 0 psig to 600 psig the compression ratio is 41.8. However, when compressing air from 100 psig to 600 psig the compression ratio is 5.4. A smaller compression ratio equates to smaller equipment and lower operating costs.

# The Air Booster Advantage



## Why Use an Air Booster?

Standard compressed air systems in industrial facilities are typically designed for pressures of 80 to 130 psig. When higher pressures are required it is very effective to use a portion of your plant air and apply an air booster to obtain the desired pressure. Other methods of acquiring higher pressure air such as stand-alone air compressors, air amplifiers and increasing the pressure of the entire plant are more costly and less efficient.

## Simple Is Better

All you need is electricity and low pressure air. Air boosters take air from your existing network and compress it to a higher pressure. Think of an air booster as a second or third stage to your existing air compressor.

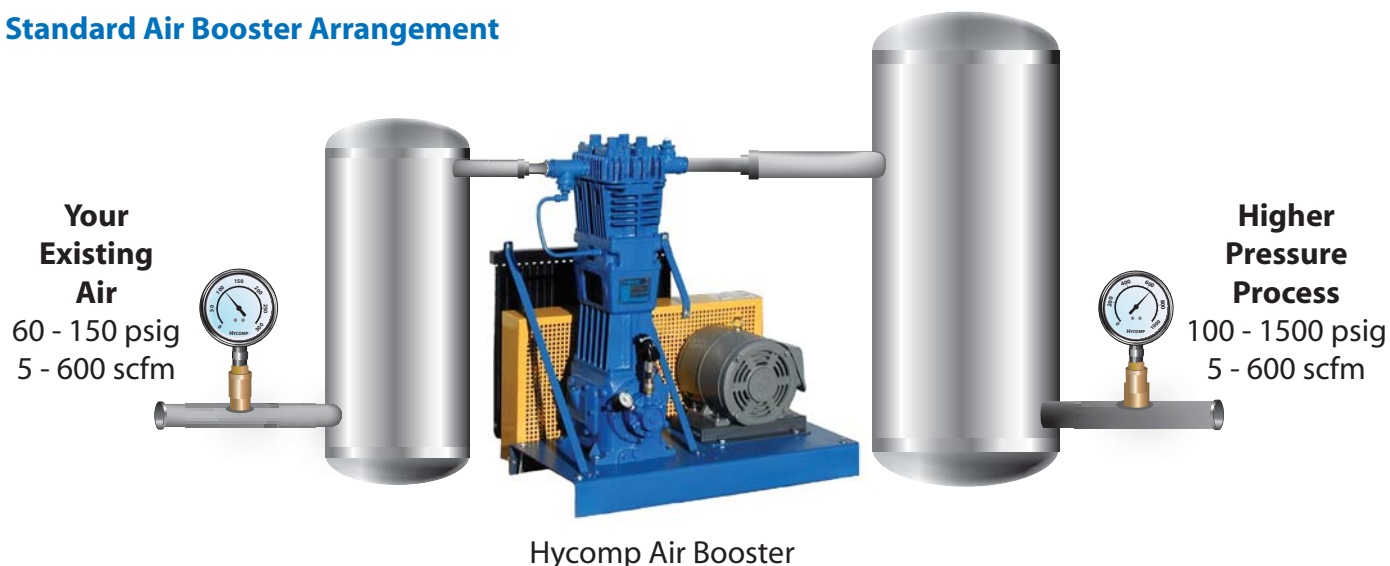
## No Air Loss

What you put in is what you get out. Unlike pneumatically driven air amplifiers that use up to 60% of your air flow to power the machine, our air boosters are electrically driven.

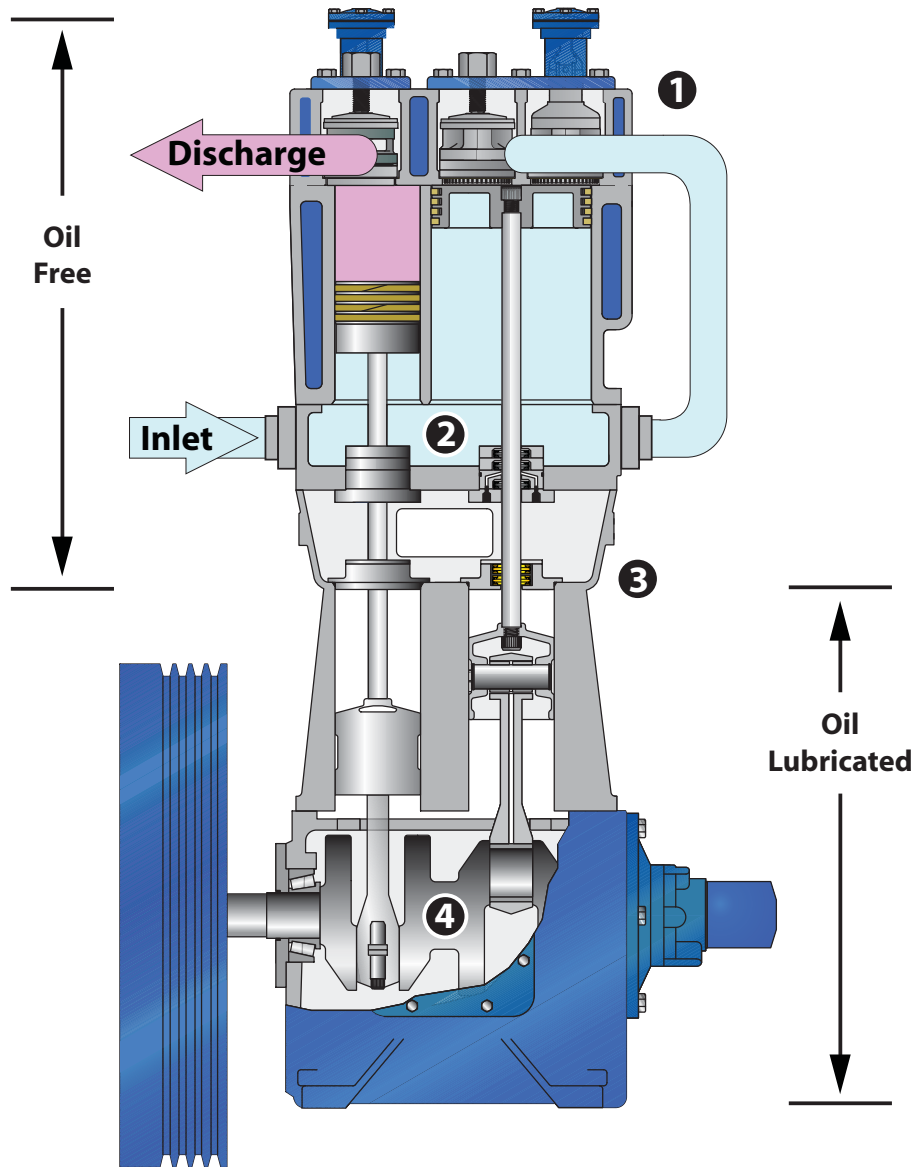
## Size Does Matter

Sometimes smaller is better. Hycomp air boosters are physically smaller and use less horsepower than traditional stand-alone air compressors. A smaller machine makes your system less expensive to purchase, install, operate and maintain.

## Standard Air Booster Arrangement



# Inside A Hycomp Oil Free Air Booster



## 1 Cast Iron & Steel Construction

Our major castings are iron or steel. Unlike aluminum, these materials hold their shape and don't warp at elevated temperatures. They provide additional vibration dampening and allow Hycomp boosters to operate for years without major component replacement.

## 2 Plenum Intake

Our unique "Plenum Intake" design receives air below the compression cylinder through the plenum chamber. This innovative style of intake and compression provides three major benefits:

- Cooling effect on rings and packings
- Balanced piston rod loads
- Internal air reservoir

## 3 Oil Isolation

Our distance piece and piston rod oil scrapers keep the oil isolated to the crosshead cylinder and crankcase and away from your compression. Oil scrapers remove oil from the piston rod while the open distance piece protects against oil vapor entering the air stream.

## 4 Pressure Oil Lubricated

Our crankcase is pressurized to provide generous lubrication to all moving parts. Unlike splash lubrication that spreads oil sporadically, the oil in our crankcase is liberally delivered with pinpoint accuracy. The Hycomp oil lubricated bottom end decreases running temperatures, allows for higher discharge pressures and provides longevity.

# Why Is Hycomp Your Best Solution?



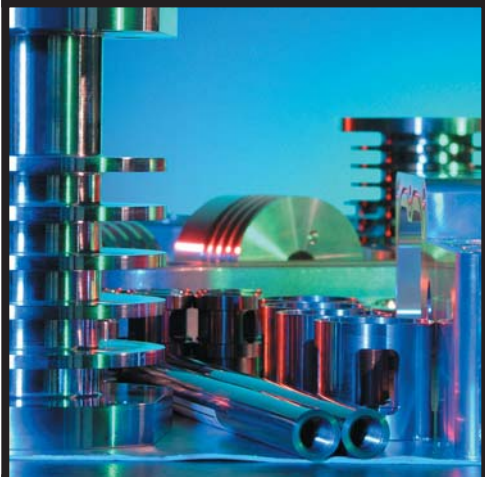
## **Spend Less - Get More**

When combined with your plant air, a Hycomp air booster pays for itself in short order. Because an air booster starts with an elevated inlet pressure, you are using a smaller machine to meet your requirements. This translates to lower installation costs, less energy used, and reduced maintenance. To lower your overhead and increase your profits, trust Hycomp.



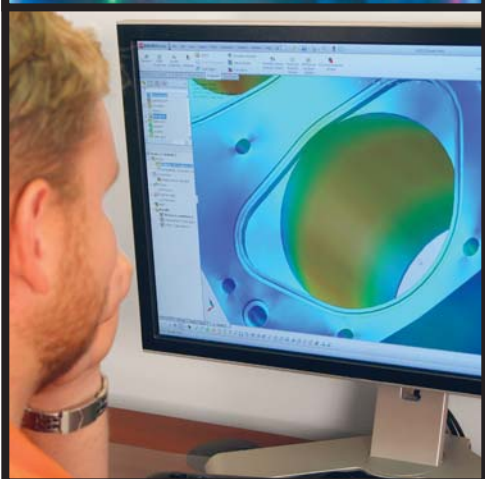
## **Your Schedule - Continuous Duty**

Hycomp air boosters are truly continuous duty. Traditionally continuous duty is defined as: When unload time is less than load time per hour. Our compressors are engineered for slower running speeds to handle 60 minutes per hour, 24 hours a day, 365 days a year of continuous operation. When unplanned downtime is not an option, trust Hycomp.



## **Custom Build - Standard Price**

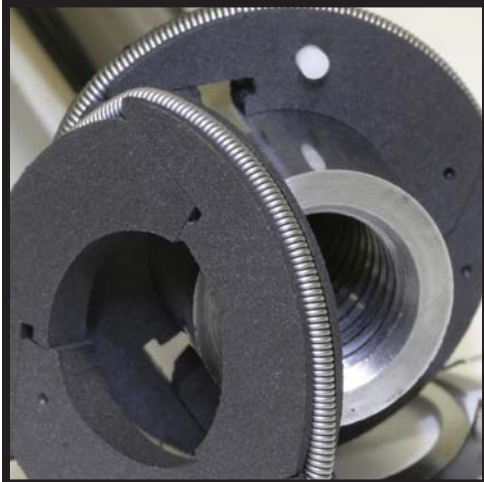
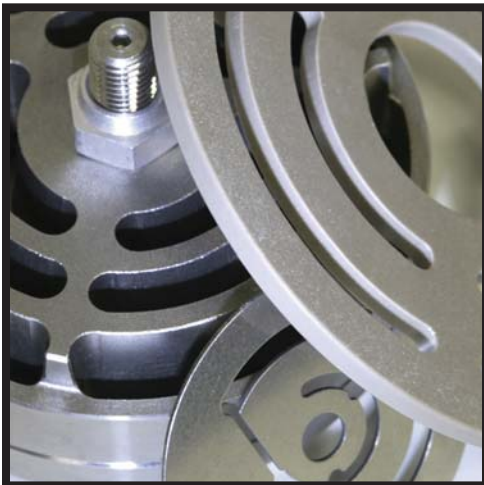
Hycomp compressors are completely modular. We offer 2 cooling methods, 9 block sizes, 6 packing arrangements and 20 cylinder sizes. This means we have nearly endless component and material configurations which equates to custom built air boosters without the custom price. For custom solutions and standard pricing, trust Hycomp.



## **Flexible Engineering - Application Specific**

Hycomp air boosters are uniquely flexible allowing us to meet your needs rather than you changing to meet ours. You are not locked into specific suction or discharge pressures because our modular style of engineering and manufacturing creates nearly endless compression possibilities. When you bring us your problem, trust Hycomp to give you an exact solution.

# No Small Details



## Valves:

Hycomp valve bodies are made from only the highest quality 400 series stainless steels which have been heat treated for hardness and toughness. Our valve plates are machined precipitation hardenable stainless steel or crystallized PEEK, depending upon the pressures and temperatures of the service.

By design, our valve plates are frictionless guided so there is no valve cage wear. The port design of our valves has been refined to provide improved flow efficiency, saving power and decreasing valve impact forces. Our larger valves are dampened, providing additional wear reduction without sacrificing flow efficiency. And of course, all of our valves are removable with minimal effort and rebuildable on site.

## Piston Rings:

Our standard air booster piston ring is a PTFE based material, with bronze, molybdenum disulfide and several proprietary fillers. The bronze provides excellent heat conductance and wear resistance, while the PTFE and moly are natural oil-free lubricants. Our proprietary fillers add to the lubricity of the ring while stabilizing the other fillers against oxidation.

Our angle cut design allows for flexing of the ring end to seal the gap better than butt cut designs, while retaining its strength vs. step cut designs. In smaller cylinders where gap leakage becomes significant, we use a 2-piece 'L' style design that removes the end gap by using an inner and outer ring for sealing.

## Rod Packings:

Piston rod packings prevent air leakage out of the booster, while providing pressure on the underside of the pistons to balance the rod loads. Our tangentially cut segmented packings are free floating and self adjusting for long wear life. The design inherently continues to seal as the packing wears. A pair of packings are pinned together at the proper rotational offset to ensure that the leakpath created by the cuts are sealed.

Unlike chevron type packings, our segmented packings do not need constant adjustment to ensure a tight seal. While they are more difficult to manufacture than a simple chevron shape, our customers agree they are worth the trouble-free service they provide.

## Piston Rod Oil Scrapers:

Oil scrapers perform the essential service of preventing oil from migrating out of the crankcase and into the air stream. Combined with our open distance piece design which allows residual oil vapor to escape the machine, our piston rod oil scrapers provide a leak free seal on our pressure oil lubricated bottom end.

Our segmentally cut scrapers are based on a similar principal to our gas packings, as they continue to adjust as they wear. The sharp edges machined into the brass scraper removes oil from the rods, while the liberal porting allows the oil to flow back into the crankcase. As they are a softer material than the piston rod, the brass scraper wears while the rod does not.

# Continuous Oil Free Air Up To 1500 psig

		A Block	B Block	C Block	D Block	E Block	F Block	G Block	H Block	V Block
Stroke	in (cm)	2.5 (6.35)	2.5 (6.35)	3 (7.62)	3.5 (8.89)	4 (10.16)	5 (12.7)	4 (10.16)	5 (12.7)	4 (10.16)

Number of Stages	1	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1, 2 or 3
Number of Cylinders	1	2	2	2	2	2	2	2	2	4

Maximum Bore Diameter	Single Stage	in (cm)	3 (7.6)	3 (7.6)	4 (10.2)	4 (10.2)	5.75 (14.6)	7.5 (19.1)	4.5 (11.4)	5.75 (14.6)	4.5 (11.4)
	Two Stage	in (cm)	---	3.5x2 (8.9x5.1)	4.5x2.5 (11.4x6.4)	6x3.25 (15.2x8.3)	7.5x4 (19.1x10.2)	10.56x5.25 (26.8x13.3)	6x3.25 (15.2x8.3)	7.5x4 (19.1x10.2)	6x3.25 (15.2x8.3)
	Three Stage	in (cm)	---	---	---	---	---	---	---	---	4.5x3.5x2.0 (11.4x8.9x5.1)

Maximum Displacement at 600 RPM	Single Stage	f <sup>3</sup> /min (m <sup>3</sup> /hr)	6.1 (10.4)	12.3 (20.8)	26.2 (44.5)	38.7 (65.6)	72.1 (122.9)	153.4 (260.5)	44.2 (75.0)	90.1 (153.5)	88.4 (150.0)
	Two Stage	f <sup>3</sup> /min (m <sup>3</sup> /hr)	---	8.2 (14.2)	16.6 (28.1)	34.4 (58.3)	61.4 (104.2)	152.1 (258.2)	39.3 (66.7)	76.7 (130.2)	78.5 (133.4)
	Three Stage	f <sup>3</sup> /min (m <sup>3</sup> /hr)	---	---	---	---	---	---	---	---	44.2 (75.0)

Maximum Inlet Pressure	psig (bar)	250 (17.2)	165 (11.4)	165 (11.4)	150 (10.3)	150 (10.3)	140 (9.6)	150 (10.3)	150 (10.3)	150 (10.3)
Maximum Discharge Pressure	psig (bar)	800 (54.7)	500 (34.2)	1250 (85.4)	750 (51.2)	750 (51.2)	1000 (68.3)	750 (51.2)	750 (51.2)	1500 (102.5)

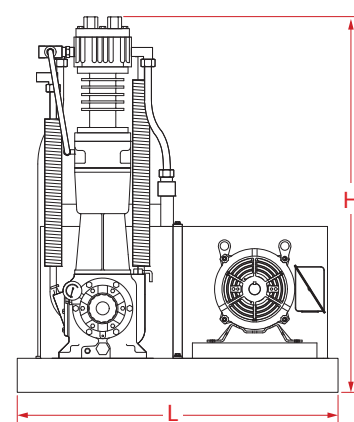
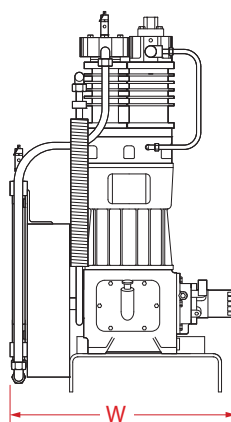
Horse Power Range	2 - 7.5	2 - 7.5	2 - 15	5 - 25	10 - 40	25 - 75	5 - 20	10 - 40	10 - 40
Minimum RPM	370	370	370	370	370	370	370	370	370
Maximum RPM	900	900	900	900	900	850	900	900	900
Cooling Method	Air	Air/Water	Air/Water	Air/Water	Air/Water	Air/Water	Air/Water	Air/Water	Air
Lubrication Method	Splash	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure

Oil Capacity	qt (lt)	0.88 (0.83)	1.5 (1.4)	2 (1.9)	6 (5.7)	7 (6.6)	10 (9.5)	6 (5.7)	7 (6.6)	7 (6.6)
Approx. Shipping Weight ★	lbs (kg)	330 (149.7)	420 (190.5)	375 (306.2)	985 (446.8)	1540 (698.5)	2550 (1156.7)	985 (446.8)	1540 (698.5)	2325 (1054.6)

★ Skid Mounted Air Booster with Motor

Dimensions: in (cm)

	L	W	H
A	35.0 (88.9)	21.0 (53.3)	38.8 (95.6)
B	37.0 (94.0)	23.0 (58.4)	39.4 (100.1)
C	41.0 (104.1)	25.3 (64.3)	45.2 (114.8)
D	48.3 (122.7)	29.5 (74.9)	53.0 (134.6)
E	50.1 (127.3)	37.1 (94.2)	55.0 (139.7)
F	61.5 (156.2)	42.6 (108.2)	66.2 (168.1)
G	48.3 (122.7)	29.5 (74.9)	53.0 (134.6)
H	50.1 (127.3)	37.1 (94.2)	58.0 (147.3)
V	70.4 (178.8)	37.1 (94.2)	60.1 (152.7)



# Additional Products:

## Gas Compressors

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### When you need to compress any gas other than air.

Hycomp oil free gas compressors deliver a wide range of flows at pressures from a few psig to over 1,500 psig. We compress gases such as: nitrogen, natural gas, argon, helium, and carbon dioxide, to name just a few. These gases are accommodated with our safe, reliable and flexible oil free gas compressors.

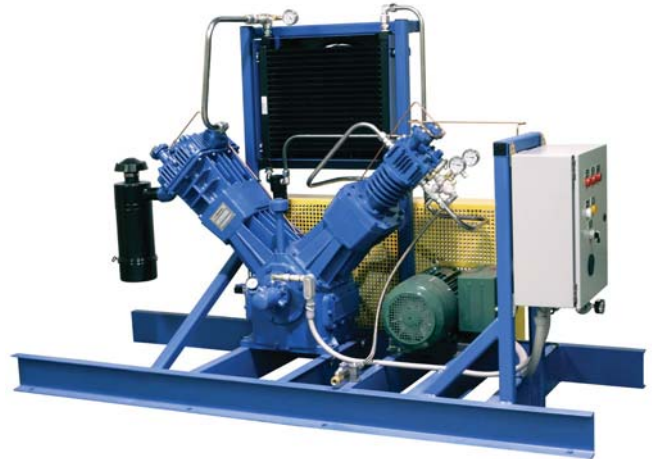


## Air Compressors

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### When you need continuous oil free air.

Hycomp reciprocating air compressors are designed to provide continuous duty oil free air up to 450 psig standard. We apply heavy duty construction to incorporate the benefits of large industrial designs into our smaller oil free compressors.



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**We do more than manufacture oil free compressors...  
We build trust.**

Contact Hycomp today for your oil free compression solution. We will work with you throughout the design, manufacturing and delivery process to provide you with a compressor tailored to your application.



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