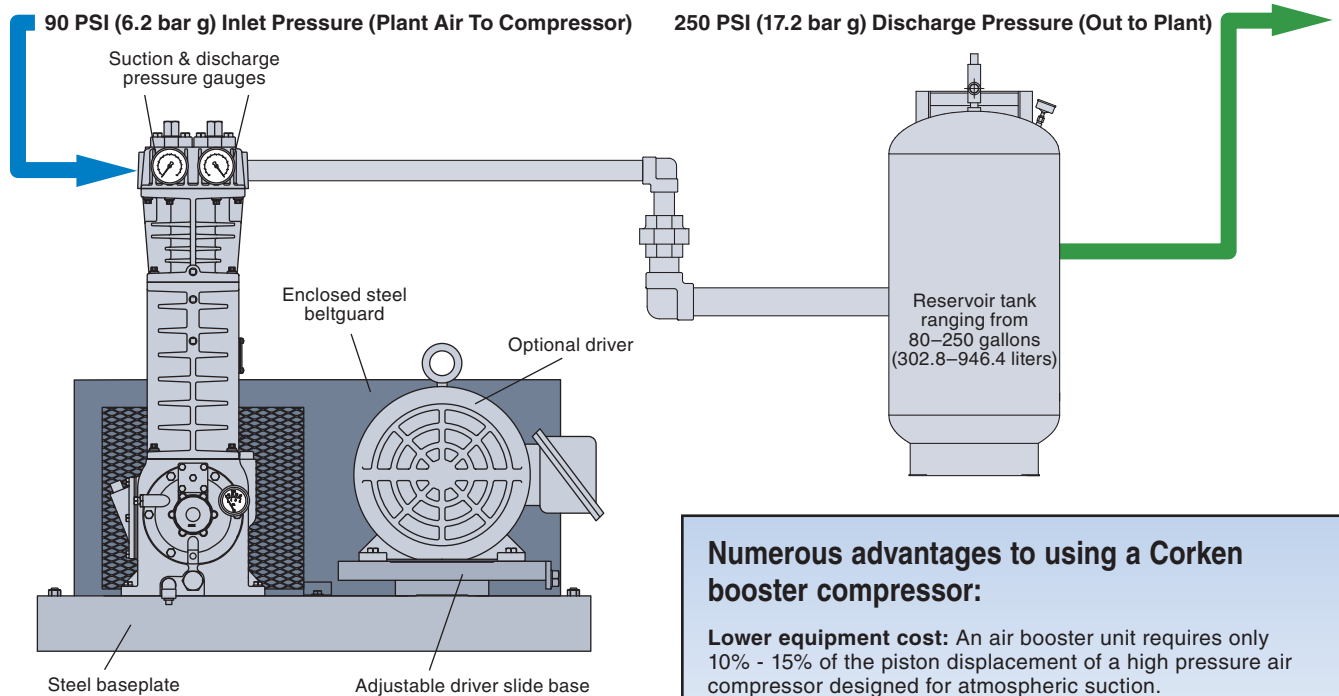


# Oil-Free Air Booster Compressors

## Application Bulletin 30



The vast majority of plant-air systems are capable of generating up to 125 psig (8.6 bar g). Special applications within a plant may require air, oil free or lubricated, at higher pressures.

An economical way of providing higher pressure air is to use a Corken booster compressor. A booster takes plant air and increases it up to 1,080 psig (74.5 bar g).

### Numerous advantages to using a Corken booster compressor:

**Lower equipment cost:** An air booster unit requires only 10% - 15% of the piston displacement of a high pressure air compressor designed for atmospheric suction.

**Lower installation cost:** A smaller, more compact unit will cost less to install.

**Lower maintenance cost:** A booster can normally operate in intermittent-duty service, lowering power consumption and extending the life of compressor and parts.

**Flexibility in locating:** Smaller compressor footprint requires less space in the plant and can be easily relocated.

### General Corken Compressor Air Booster Selection Guide (see 100, 125 and 150 psig inlet pressures on back) 50 (3.4 bar g) psig Inlet Pressure

Single Stage								
Compressor model	D91	D291	D491	D491-3	D691	D691-4	WFD691	WFD691-4
Max working psig (bar g)	335 (23.1)	335 (23.1)	335 (23.1)	600 (41.4)	335 (23.1)	600 (41.4)	335 (23.1)	600 (41.4)
Max operating psig (bar g)	200 (13.8)	200 (13.8)	200 (13.8)	200 (13.8)	200 (13.8)	200 (13.8)	225 (15.5)	225 (15.5)
Max SCFM <sup>a</sup> (N•m <sup>3</sup> /hr) <sup>b</sup>	24 (39)	53 (85)	91 (146)	58 (93)	179 (288)	140 (225)	173 (278)	134 (215)

Two Stage										
Compressor model	FD151	D191	FD351	WFD351	D391	WD391	WFD551	FD591	WFD591	D791
Max working psig (bar g)	1200 (82.8)	600 (41.4)	1200 (82.8)	1200 (82.8)	610 (42.1)	610 (42.1)	1000 (69.0)	600 (41.4)	600 (41.4)	600 (41.4)
Max operating psig (bar g)	250 (17.2)	350 (24.1)	500 (34.5)	700 (48.3)	400 (27.6)	550 (37.9)	600 (41.4)	450 (31.0)	540 (37.2)	500 (34.5)
Max SCFM <sup>a</sup> (N•m <sup>3</sup> /hr) <sup>b</sup>	18 (29)	27 (43)	24 (39)	24 (39)	57 (92)	51 (82)	75 (121)	140 (225)	129 (207)	183 (294)

<sup>a</sup> Max SCFM based on inlet temperature of 90°F, discharge pressure of listed maximum operating pressure

<sup>b</sup> Max N•m<sup>3</sup>/hr based on inlet temperature of 32°C, discharge pressure of listed maximum operating pressure

## General Corken Compressor Air Booster Selection Guide (continued)

### 100 psig (6.9 bar g) Inlet Pressure

Single Stage								
Compressor model	D91	D291	D491	D491-3	D691	D691-4	WFD691	WFD691-4
Max working psig (bar g)	335 (23.1)	335 (23.1)	335 (23.1)	600 (41.4)	335 (23.1)	600 (41.4)	335 (23.1)	600 (41.4)
Max operating psig (bar g)	300 (20.7)	300 (20.7)	300 (20.7)	375 (25.9)	300 (20.7)	375 (25.9)	300 (20.7)	400 (27.6)
Max SCFM <sup>a</sup> (N•m <sup>3</sup> /hr) <sup>b</sup>	44 (71)	78 (125)	123 (198)	95 (153)	280 (450)	220 (354)	280 (450)	215 (346)

Two Stage										
Compressor model	FD151	D191	FD351	WFD351	D391	WD391	WFD551	FD591	WFD591	D791
Max working psig (bar g)	1200 (82.8)	600 (41.4)	1200 (82.8)	1200 (82.8)	610 (42.1)	610 (42.1)	1000 (69.0)	600 (41.4)	600 (41.4)	600 (41.4)
Max operating psig (bar g)	500 (34.5)	500 (34.5)	900 (62.1)	1080 (74.5)	CF	CF	900 (62.1)	CF	CF	CF
Max SCFM <sup>a</sup> (N•m <sup>3</sup> /hr) <sup>b</sup>	31 (50)	48 (77)	42 (68)	41 (66)	CF	CF	131 (211)	CF	CF	CF

### 125 psig (8.6 bar g) Inlet Pressure

Single Stage								
Compressor model	D91	D291	D491	D491-3	D691	D691-4	WFD691	WFD691-4
Max working psig (bar g)	335 (23.1)	335 (23.1)	335 (23.1)	600 (41.4)	335 (23.1)	600 (41.4)	335 (23.1)	600 (41.4)
Max operating psig (bar g)	300 (20.7)	300 (20.7)	300 (20.7)	475 (32.8)	300 (20.7)	475 (32.8)	300 (20.7)	500 (34.5)
Max SCFM <sup>a</sup> (N•m <sup>3</sup> /hr) <sup>b</sup>	55 (88)	99 (159)	156 (251)	94 (151)	359 (577)	217 (349)	359 (577)	194 (312)

Two Stage										
Compressor model	FD151	D191	FD351	WFD351	D391	WD391	WFD551	FD591	WFD591	D791
Max working psig (bar g)	1200 (82.8)	600 (41.4)	1200 (82.8)	1200 (82.8)	610 (42.1)	610 (42.1)	1000 (69.0)	600 (41.4)	600 (41.4)	600 (41.4)
Max operating psig (bar g)	600 (41.4)	540 (37.2)	1000 (69.0)	1080 (74.5)	CF	CF	900 (62.1)	CF	CF	CF
Max SCFM <sup>a</sup> (N•m <sup>3</sup> /hr) <sup>b</sup>	38 (61)	58 (93)	54 (87)	54 (87)	CF	CF	161 (259)	CF	CF	CF

### 150 psig (10.3 bar g) Inlet Pressure

Single Stage								
Compressor model	D91	D291	D491	D491-3	D691	D691-4	WFD691	WFD691-4
Max working psig (bar g)	335 (23.1)	335 (23.1)	335 (23.1)	600 (41.4)	335 (23.1)	600 (41.4)	335 (23.1)	600 (41.4)
Max operating psig (bar g)	300 (20.7)	300 (20.7)	300 (20.7)	540 (37.2)	300 (20.7)	540 (37.2)	300 (20.7)	540 (37.2)
Max SCFM <sup>a</sup> (N•m <sup>3</sup> /hr) <sup>b</sup>	67 (108)	120 (193)	188 (302)	99 (159)	437 (703)	237 (381)	437 (703)	236 (379)

Two Stage										
Compressor model	FD151	D191	FD351	WFD351	D391	WD391	WFD551	FD591	WFD591	D791
Max working psig (bar g)	1200 (82.8)	600 (41.4)	1200 (82.8)	1200 (82.8)	610 (42.1)	610 (42.1)	1000 (69.0)	600 (41.4)	600 (41.4)	600 (41.4)
Max operating psig (bar g)	750 (51.7)	540 (37.2)	1080 (74.5)	1080 (74.5)	CF	CF	900 (62.1)	CF	CF	CF
Max SCFM <sup>a</sup> (N•m <sup>3</sup> /hr) <sup>b</sup>	45 (72)	69 (111)	61 (98)	61 (98)	CF	CF	177 (285)	CF	CF	CF

<sup>a</sup> Max SCFM based on inlet temperature of 90°F, discharge pressure of listed maximum operating pressure

<sup>b</sup> Max N•m<sup>3</sup>/hr based on inlet temperature of 32°C, discharge pressure of listed maximum operating pressure

CF=Consult Factory



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