

DuroFlow® Industrial Series

Positive Displacement Blowers
& Vacuum Pumps



GD
GARDNER DENVER

Experience Proven Results



The Gardner Denver DuroFlow® Family of Products

For nearly fifty years, Gardner Denver DuroFlow positive displacement blowers/vacuum pumps have combined leading-edge technology and on-the-job experience to continuously deliver enhanced designs and improved performance.

At-A-Glance Features

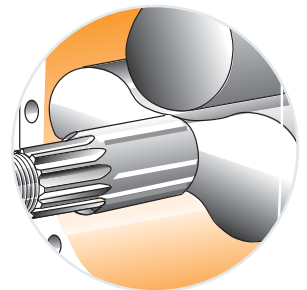
- Each model delivers clean, oil-free air to a wide range of industrial applications
- World-class engineering and design
- Manufactured under rigid ISO 9001 standards by quality craftspersons
- Exhaustively tested to meet strict performance criteria to ensure unequaled service life under the most severe operating conditions
- Available in the 30, 45 & 70 Series with various configurations and rotor lengths
- Horizontal or vertical mounting configuration available for each blower
- Supported by a worldwide network of trained professionals and backed by a manufacturer's warranty
 - 18 months from the date of shipment or
 - 12 months from the date of installation, whichever occurs first



30 Series Model 3004
Also available 3006

Durable

- Oversized bearings for added support and greater durability
 - Gear-end bearings support rotor shafts, while drive-end double-row angular contact ball bearings fix the rotor position
 - Prevents destructive axial rotor movement commonly caused by misaligned V-belt drives
- Durable single-piece cast iron cylinder with integral ribs¹
 - Provides greater strength and rigidity
 - Ribs improve heat dissipation and prevent distortion that can affect internal clearances and reduce performance
- Innovative rotor/shaft design machined from a single, high-strength ductile iron casting and dynamically balanced
 - Assures extra strength and rigidity to handle maximum loads on a continuous basis without fatigue, deflection or vibration
- Solid rotors (30 & 45 Series only)
 - Eliminates potential for vibration caused when hollow rotors become unbalanced due to build-up of ingested material inside the rotor cavities



DuroFlow = Durable, Reliable & Efficient

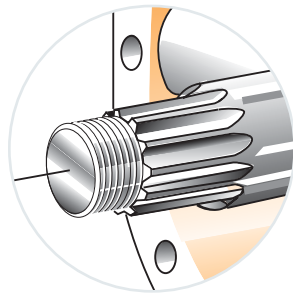
The DuroFlow Product Line Delivers

- Pressure to 15 psig
- Vacuum to 16" Hg
- Airflow to 4282 cfm

Experience Proven Results with Gardner Denver — the Leader in Durability, Reliability and Efficiency

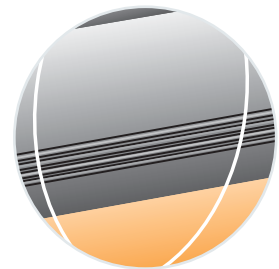
Reliable

- Dual Splash Lubrication
 - Provides superior gear and bearing lubrication for longer life at all operating conditions
 - Reduces maintenance
- Advanced oil and air seal designs²
 - Piston rings and flinger maximize seal life in continuous, severe duty applications
 - Provides leak-free operation
 - O-rings placed under the drive shaft wear sleeve creates better sealing and prolongs life of rotors
- Timing gears are mounted on precision machined shaft splines
 - Assures secure non-slip rotor timing even under surge conditions or high torque start-up



Efficient

- Helical timing gears, precision machined from alloy steel forgings
 - Guarantees quiet and smooth mechanical operation at all speeds
- Innovative rotor profile with serrated tips²
 - Increases blower efficiency and air sealing
 - Reduces power consumption and cooler operating temperature
- Noise Reduction
 - Extra cylinder mass and progressive porting aid in reducing noise
- Vertical or horizontal mounting configuration with each blower
 - Provides greater flexibility for installing into any new or existing system



¹ Integral ribs are not available on models 4504 and 4506

² 45 Series only

Applications to Meet Your Industry Needs



Industry	Application
Aquaculture	Aeration
Cement & Lime	Fluidization & Conveying
Chemical	Vacuum Processing & Conveying
Dairy	Automated Milking
Dry Bulk Hauling	Trailer Unloading & Aeration
Environmental Services	Sewer Cleaning & Portable Restroom Services
Industrial	Material Vacuuming
Milling & Baking	Blending & Conveying
Power Generation	Fly Ash Conveying & Aeration
Pulp & Paper	Chip Conveying & Process Vacuum
Resin & Plastic	Processing & Conveying
Vacuum Excavation	Potholing & Slurry Recovery
Wastewater	Aeration & Backwashing

The table above illustrates industries which depend upon the DuroFlow Industrial Series to deliver clean, oil-free air to a wide range of global applications.



Reach Higher with the DuroFlow 45 Series

Product Design	DuroFlow 45 Series	Competitor A	Competitor B	DuroFlow Advantages
Models	5 sizes	4 sizes	4 sizes	<ul style="list-style-type: none"> • Greater flow capacity
Cylinder Design¹	One piece cylinder	Two piece cylinder	One piece cylinder	<ul style="list-style-type: none"> • More rigid and durable • Noise & pulsation dampening • Ensures better tip clearance accuracy • Easier assembly / disassembly
Cylinder Rib Design^{1, 2}	Integral cylinder ribs	Minimal cylinder ribs	Minimal cylinder ribs	<ul style="list-style-type: none"> • Improves heat dissipation • Reduces torsion on cylinder
Drive End Bearings¹	Oversized double row ball angular contact (drive & non-drive shafts)	Single row ball (non-drive shaft)	Cylindrical roller	<ul style="list-style-type: none"> • Increases bearing life • Better equipped to handle radial & axial loads commonly caused by misaligned V-belt drives
Dual Splash Lubrication¹	Common oil sump	Separate oil reservoirs	Separate oil reservoirs	<ul style="list-style-type: none"> • Simpler maintenance
Gear End Bearings	Roller bearing	Single row ball	Double row ball	<ul style="list-style-type: none"> • Increases bearing life
Gear Type¹	Helical	Straight spur	Helical	<ul style="list-style-type: none"> • Quiet & smooth mechanical operation • Reduces backlash
Gear Attachments¹	Spline gear fit	Taper gear fit	Keyed interference fit	<ul style="list-style-type: none"> • Eliminates timing loss and improves reliability
Impeller Tips	Serrated	Radius	Radius	<ul style="list-style-type: none"> • Improves performance • Reduces power consumption • Cooler operating temperatures
Main Air Seal	Piston ring	Piston ring	Piston ring	<ul style="list-style-type: none"> • Longer seal life • Less wear
Main Oil Seal	Two piston ring seals with slinger and groove	Lip seal	Lip seal	<ul style="list-style-type: none"> • Superior oil sealing
Shaft Seal¹ & Seal Surface	Viton lip seal with o-rings wear sleeve	Viton lip seal on shaft	Lip seal on shaft	<ul style="list-style-type: none"> • Improves sealing method • Extended shaft life

¹ Also standard features on the 30 and 70 Series

² Model sizes 4509, 4512 & 4518

45 Series Design Advantages



Model 4504

Model 4506

Model 4509

Model 4512

Model 4518

Dual Splash Lubrication

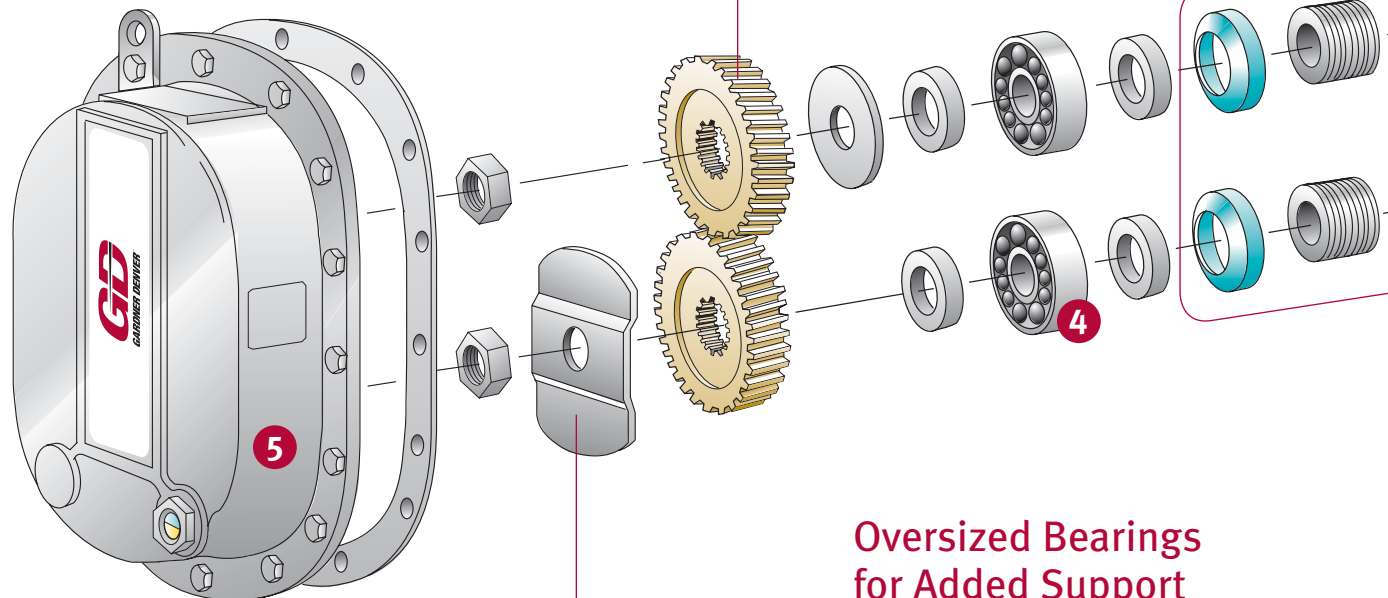
- Reliable splash lubrication at both gear and drive ends for longer product life (5)

Shaft Splines Assure Non-Slip Rotor Timing

- Helical timing gears are mounted on shaft splines (6)
- Provides quiet and smooth mechanical operation at all speeds

Improved Design Provides Leak-Free Operation

- Advanced Oil and Air Seals
- Piston rings and flinger maximize seal life in continuous, severe duty applications



Efficient Lubrication

- Slinger ensures lubricant is distributed to gears and bearings

Oversized Bearings for Added Support and Greater Durability

- Drive-end double-row angular contact ball bearings fix the rotor position (3)
- Gear-end roller bearings support each shaft (4)

Striving for More

Solid Rotors Eliminate Potential for Vibration

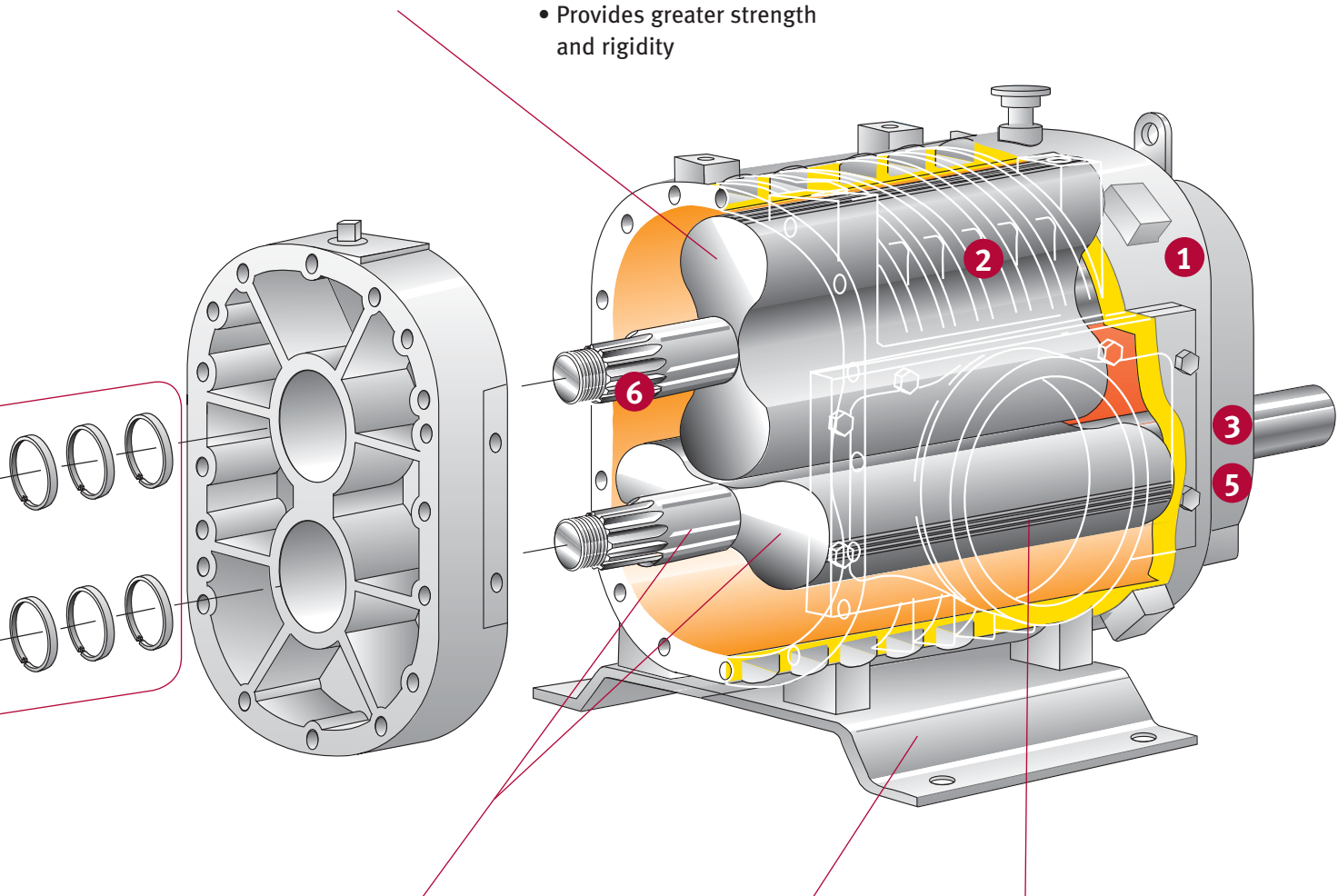
- Hollow rotors can become unbalanced due to build-up of ingested material inside the rotor

Single Piece Cylinder Prevents Distortion (1)

- Heavy-duty reinforced cast iron cylinder retains internal clearances
- Provides greater strength and rigidity

Cooler Operating Temperatures

- Integral ribs improve heat dissipation and improve performance (2)



Durable Rotors & Shafts

- Machined from a single, high-strength ductile iron casting
- Dynamically balanced

Vertical or Horizontal Mounting Configuration

- Flex-Mount™ design standard with each blower
- Flexibility for installing into any new or existing system

Serrated Tips Reduce Power Consumption

- Innovative rotor profile provides tighter clearances
- More air flow with less horsepower
- Precision machined with advanced CNC milling technology

Dimensional Data

30 Series

Model	WT.	Port Size Conn.	Shaft Diam.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
3004	90	2.5" NPT	1.00	17.20	11.62	8.91	2.06	8.82	12.50	4.00	9.00	4.00	8.06	4.50	6.56	8.36	1.50	4.41	6.25	2.00	4.50
3006	110	3" NPT	1.00	19.20	11.62	8.81	2.06	8.82	12.50	5.50	9.00	5.50	8.06	4.50	6.56	9.36	1.50	4.31	6.25	2.75	4.50

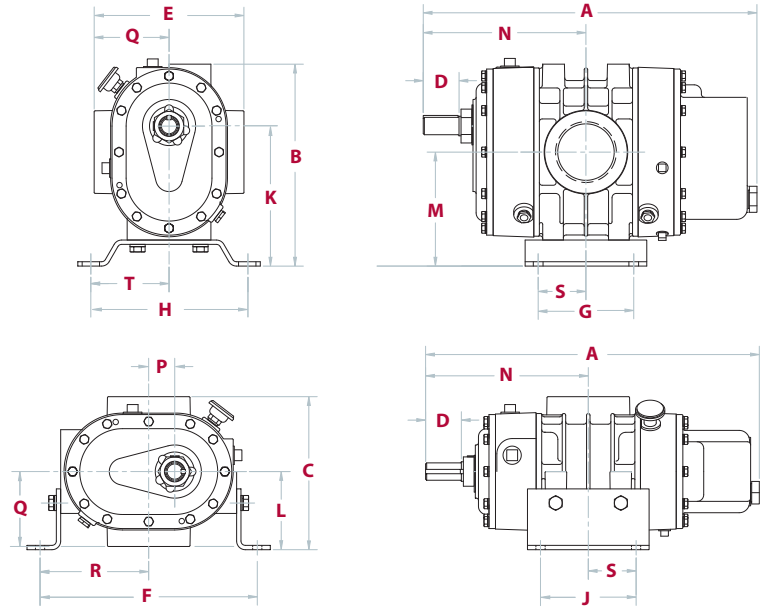
Weights are in pounds and include shipping cartons or pallets.

All dimensions shown in inches.

30 Series Mounting Bolt Hole Diameter = .56 inches.



30 Series Model 3004



70 Series

Model	WT.	Port Size Conn.	Shaft Diam.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
7009	740	6" NPT	2.50	32.42	23.62	17.25	5.68	18.00	22.00	12.50	15.00	2.75	15.25	8.25	11.75	17.49	3.50	9.00	11.00	6.25	7.50
7012	850	8" Flange	2.50	35.43	23.62	17.25	5.68	18.00	22.00	15.50	15.00	2.75	15.25	8.25	11.75	18.99	3.50	9.00	11.00	7.75	7.50
7015	940	8" Flange	2.50	38.44	23.62	17.25	5.64	18.00	22.00	18.50	15.00	2.75	15.25	8.25	11.75	20.47	3.50	9.00	11.00	9.25	7.50
7018	990	10" Flange	2.50	41.44	23.62	17.25	5.64	18.00	22.00	21.50	15.00	2.75	15.25	8.25	11.75	21.97	3.50	9.00	11.00	10.75	7.50
7023	1100	12" Flange	2.50	46.44	23.62	17.25	5.62	18.00	22.00	26.50	15.00	2.75	15.25	8.25	11.75	24.47	3.50	9.00	11.00	13.25	7.50
7028	1200	12" Flange	2.50	51.44	23.62	17.25	5.62	18.00	22.00	31.50	15.00	2.75	15.25	8.25	11.75	26.97	3.50	9.00	11.00	15.75	7.50

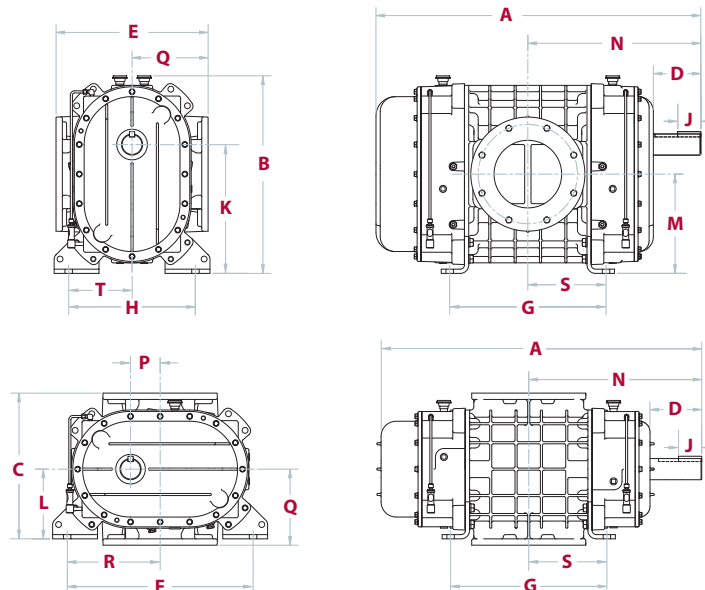
Weights are in pounds and include shipping cartons or pallets.

All dimensions shown in inches.

70 Series Mounting Bolt Hole Diameter = .88 inches.



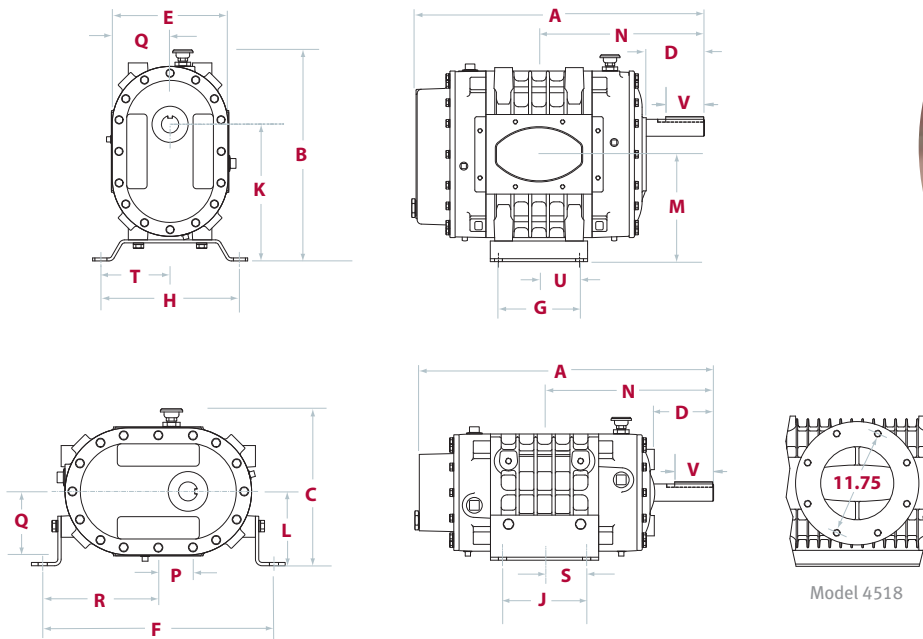
70 Series Model 7015



45 Series

Model	WT.	Port Size Conn.	Shaft Diam.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V
4504	190	4" NPT	1.44	18.01	17.54	11.88	3.43	9.75	17.50	4.87	11.50	5.00	11.35	5.62	9.10	10.05	2.25	4.87	8.75	3.50	5.75	2.44	3.00
4506	220	4" NPT	1.44	21.51	17.54	11.88	4.93	9.75	17.50	6.87	11.50	7.00	11.35	5.62	9.10	12.55	2.25	4.87	8.75	3.50	5.75	3.44	3.50
4509	260	4" or 5" NPT	1.44	24.45	17.54	11.88	4.93	9.75	17.50	6.87	11.50	7.00	11.35	5.62	9.10	14.03	2.25	4.87	8.75	3.50	5.75	3.44	3.50
4512	300	6" NPT	1.44	27.51	17.54	11.88	4.93	9.75	17.50	9.87	11.50	10.00	11.35	5.62	9.10	15.55	2.25	4.87	8.75	5.00	5.75	4.94	3.50
4518	460	8" Flange	1.44	33.51	17.54	11.88	4.93	13.00	17.50	15.87	11.50	16.00	11.35	5.62	9.10	18.53	2.25	6.50	8.75	8.00	5.75	7.94	3.50

Weights are in pounds and include shipping cartons or pallets. All dimensions shown in inches. 45 Series Mounting Bolt Hole Diameter = .69 inches. 4518 dimensional variations available upon request.



45 Series Model 4509

Flex-Mount™ Design Provides Maximum Installation Versatility

- Flex-Mount™ Design and available porting connectors provide installation flexibility
- Assures interchangeability of existing installed DuroFlow models or compatibility as replacement for most competitive models
- Reduces inventory requirements due to machine flexibility



70 Series Model 7015
Also available 7009, 7012, 7018, 7023, 7028

Pressure Performance Data

30 Series

MODEL	RPM	4 PSIG		6 PSIG		8 PSIG		10 PSIG		12 PSIG		15 PSIG	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3004	2,950	94	2.5	85	3.7	78	4.8	72	6.0	66	7.1		
	3,550	121	3.1	112	4.5	105	5.9	99	7.3	93	8.7	85	10.8
	4,000	141	3.6	133	5.2	125	6.8	119	8.3	113	9.9	105	12.3
3006	2,950	146	3.7	133	5.4	123	7.2	114	8.9	105	10.7		
	3,550	186	4.6	174	6.7	164	8.8	154	10.9	146	13.0	135	16.1
	4,000	217	5.2	205	7.6	194	10.0	185	12.4	177	14.7	165	18.3

45 Series

MODEL	RPM	4 PSIG		6 PSIG		8 PSIG		10 PSIG		12 PSIG		15 PSIG	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
4504	1,750	137	3.7	123	5.4	112	7.2	102	8.9	93	10.6		
	2,950	271	7.3	258	10.2	247	13.0	237	15.9	228	18.8	216	23.1
	4,000	389	11.6	375	15.5	364	19.4	354	23.3	345	27.2	333	33.1
4506	1,750	214	5.5	196	8.1	181	10.6	167	13.2	155	15.8		
	2,950	415	10.5	397	14.8	382	19.1	369	23.5	357	27.8	340	34.3
	4,000	592	16.3	574	22.2	559	28.0	545	33.9	533	39.8	517	48.5
4509	1,750	324	8.4	297	12.2	275	16.1	255	19.9	238	23.8		
	2,950	626	16.3	600	22.7	577	29.2	558	35.7	540	42.2	516	51.9
	4,000	891	25.8	864	34.6	842	43.4	822	52.1	805	60.9	781	74.1
4512	1,750	454	11.0	424	16.2	399	21.3	377	26.4	357	31.5	329	39.2
	2,950	858	21.0	828	29.6	802	38.3	780	46.9	760	55.5	732	68.5
	4,000	1,210	32.6	1,180	44.4	1,155	56.1	1,133	67.8	1,113	79.5	1,085	97.1
4518	1,750	696	16.3	654	24.0	618	31.7	587	39.3				
	2,950	1,300	30.2	1,259	43.1	1,223	56.1	1,192	69.1				
	4,000	1,830	45.8	1,788	63.3	1,752	80.9	1,721	98.5				

70 Series

MODEL	RPM	4 PSIG		6 PSIG		8 PSIG		10 PSIG		12 PSIG		15 PSIG	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
7009	1,500	622	15.8	563	23.5	513	31.2	469	38.9	429	46.7		
	1,800	799	19.1	740	28.4	690	37.7	646	46.9	606	56.2	552	70.1
	2,650	1,300	29.3	1,241	42.9	1,191	56.5	1,147	70.2	1,108	83.8	1,054	104.3
7012	1,500	853	21.0	779	31.4	716	41.7	660	52.0	610	62.4		
	1,800	1,090	25.4	1,016	37.8	953	50.2	897	62.6	847	75.0	779	93.6
	2,650	1,762	38.5	1,687	56.8	1,624	75.0	1,569	93.3	1,519	111.5	1,451	138.9
7015	1,500	1,088	26.0	1,002	38.8	929	51.6	866	64.5	808	77.3		
	1,800	1,382	31.4	1,296	46.8	1,223	62.2	1,160	77.5	1,102	92.9	1,024	116.0
	2,650	2,215	47.3	2,129	69.9	2,056	92.6	1,993	115.2	1,935	137.9	1,857	171.8
7018	1,500	1,322	31.2	1,221	46.7	1,136	62.1	1,061	77.5	993	93.0		
	1,800	1,676	37.7	1,575	56.2	1,490	74.7	1,415	93.2	1,308	111.8	1,211	139.5
	2,650	2,679	56.5	2,578	83.8	2,493	111.1	2,418	138.3	2,310	165.6	2,214	206.5
7023	1,500	1,709	41.9	1,578	61.6	1,479	81.4	1,386	101.1	1,303	120.9		
	1,800	2,162	51.5	2,037	75.2	1,932	98.9	1,839	122.6	1,756	146.3		
	2,650	3,370	80.8	3,245	115.0	3,140	149.2	3,047	183.5	2,964	217.7		
7028	1,500	2,094	51.4	1,944	75.4	1,818	99.5	1,707	123.6				
	1,800	2,646	63.4	2,496	92.2	2,370	121.1	2,259	150.0				
	2,600	4,118	100.3	3,968	142.0	3,842	183.8	3,731	225.5				

Performance based on inlet air at standard temperature of 68°F, an ambient pressure of 14.7 psia and 36% relative humidity. For performance at non-standard conditions, contact your authorized Gardner Denver representative.

Vacuum Performance Data

30 Series

MODEL	RPM	4" Hg		6" Hg		8" Hg		10" Hg		12" Hg		14" Hg		15" Hg	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3004	2,950	104	1.3	96	1.9	88	2.5	80	3.0	72	3.6				
	3,550	131	1.7	123	2.4	115	3.1	107	3.8	99	4.5	90	5.1		
	4,000	151	2.0	143	2.8	135	3.6	127	4.4	119	5.1	110	5.9	106	6.3
3006	2,950	159	1.9	148	2.8	137	3.6	126	4.5	114	5.4	102	6.2		
	3,550	200	2.4	189	3.5	178	4.5	167	5.5	155	6.6	142	7.6	136	8.1
	4,000	231	2.8	219	4.0	208	5.2	197	6.3	186	7.5	173	8.7	166	9.2

45 Series

MODEL	RPM	4" Hg		6" Hg		8" Hg		10" Hg		12" Hg		14" Hg		15" Hg		16" Hg	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
4504	1,750	151	2.0	139	2.8	127	3.6	115	4.4	103	5.2						
	2,950	286	4.2	273	5.5	262	6.8	250	8.1	237	9.4	224	10.7				
	4,000	403	7.1	391	8.8	379	10.5	367	12.1	355	13.8	341	15.5	334	16.3	326	17.1
4506	1,750	233	2.9	217	4.1	201	5.3	185	6.6	168	7.8						
	2,950	435	5.8	418	7.8	402	9.8	386	11.8	369	13.8	351	15.8	341	16.8	330	17.8
	4,000	611	9.7	595	12.3	579	14.9	563	17.5	546	20.0	527	22.6	517	23.9	507	25.2
4509	1,750	352	4.4	328	6.2	305	8.1	281	9.9	257	11.7						
	2,950	655	9.2	631	12.2	607	15.1	584	18.1	559	21.1	532	24.0	517	25.5	502	27.0
	4,000	919	15.7	895	19.5	872	23.3	848	27.0	824	30.8	797	34.6	782	36.5	766	38.4
4512	1,750	487	5.7	459	8.2	433	10.6	406	13.1	378	15.6	347	18.0				
	2,950	890	11.7	863	15.7	836	19.7	809	23.7	781	27.7	750	31.7	734	33.7	716	35.7
	4,000	1,243	19.5	1,215	24.6	1,189	29.8	1,162	34.9	1,134	40.0	1,103	45.2	1,087	47.8	1,069	50.3
4518	1,750	741	8.3	703	12.0	666	15.8	628	19.5	589	23.2	546	26.9				
	2,950	1,346	16.4	1,308	22.5	1,271	28.6	1,233	34.7	1,194	40.8	1,151	46.8	1,128	49.9	1,103	52.9
	4,000	1,875	26.5	1,837	34.4	1,800	42.3	1,762	50.2	1,723	58.2	1,680	66.1	1,657	70.0	1,632	74.0

70 Series

MODEL	RPM	4" Hg		6" Hg		8" Hg		10" Hg		12" Hg		14" Hg		15" Hg		16" Hg	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
7009	1,500	687	7.9	632	11.7	580	15.5	528	19.3	472	23.1	412	26.9				
	1,800	864	9.7	809	14.3	757	18.8	705	23.4	649	27.9	589	32.5				
	2,650	1,365	15.4	1,311	22.1	1,259	28.8	1,206	35.5	1,151	42.2	1,090	48.9	1,058	52.2	1,023	55.6
7012	1,500	935	10.5	866	15.6	801	20.7	734	25.7	665	30.8	589	35.9				
	1,800	1,172	12.8	1,103	18.9	1,038	25.0	971	31.1	902	37.2	826	43.3	784	46.3		
	2,650	1,844	19.9	1,775	28.9	1,709	37.9	1,634	46.8	1,573	55.8	1,497	64.8	1,456	69.3	1,412	73.7
7015	1,500	1,182	13.0	1,103	19.3	1,027	25.5	951	31.8	870	38.1	783	44.4				
	1,800	1,476	15.7	1,397	23.3	1,321	30.8	1,245	38.4	1,164	46.0	1,077	53.5	1,029	57.3		
	2,650	2,309	24.2	2,230	35.4	2,154	46.5	2,078	57.6	1,997	68.7	1,910	79.9	1,862	85.4	1,812	91.0
7018	1,500	1,432	15.5	1,340	23.1	1,251	30.7	1,161	38.3	1,067	45.9	964	53.4				
	1,800	1,786	18.8	1,694	27.9	1,605	37.0	1,515	46.1	1,421	55.2	1,318	64.3	1,262	68.9		
	2,650	2,789	28.8	2,697	42.2	2,608	55.6	2,518	69.0	2,424	82.4	2,321	95.8	2,265	102.5	2,205	109.2
7023	1,500	1,847	21.8	1,732	31.5	1,622	41.2	1,510	50.9	1,393	60.6	1,266	70.3				
	1,800	2,300	27.4	2,185	39.0	2,075	50.6	1,963	62.3	1,846	73.9	1,719	85.6	1,650	91.4		
	2,600	3,508	45.9	3,393	62.7	3,283	79.6	3,171	96.4	3,054	113.2	2,927	130.0	2,858	138.4	2,784	146.8
7028	1,500	2,258	26.9	2,121	38.7	1,989	50.5	1,855	62.4	1,715	74.2	1,563	86.0				
	1,800	2,810	34.0	2,673	48.2	2,541	62.4	2,407	76.5	2,267	90.7	2,115	104.9	2,032	112.0		
	2,600	4,282	57.9	4,145	78.4	4,013	98.9	3,879	119.4	3,739	139.8	3,587	160.3	3,504	170.6	3,415	180.8

Performance based on inlet air at standard temperature of 68°F, an ambient pressure of 14.7 psia and 36% relative humidity.
For performance at non-standard conditions, contact your authorized Gardner Denver representative.

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