

Roots-Flo Rotary Blower, Frames 404, 406, 409, 412

# ROOTS-FLO® Rotary Blower



## Howden

**PSI Prolew Inc.**

975 Selkirk, Pointe-Claire  
Québec, Canada H9R 4S4  
Tél: (514) 697-7867  
Fax: (514) 697-0057  
www.psiprolew.com



**PSI Prolew Inc.**

3770A Laird Road, Unit 1,  
Mississauga, ON L5L 0A7  
Tel: (905) 820-6330  
Fax: (905) 820-6338  
www.psiprolew.com



### Design and construction features

- Cast iron housing per ASTM A-48 Class 30B.
- Shaft sleeves are cast iron ASTM A-48 and hardened.
- Headplates are per ASTM A-48 Class 30B.
- Splash lubricated at both ends.
- Top drive horizontal flow.
- Left hand or right hand drive with vertical flow.

**ROOTS-FLO® rotary positive displacement blowers are heavy duty rotary units in a compact, sturdy design engineered for reliable pneumatic conveying of grain and similar products.**

### Basic Blower Operations

The basic model features a ribbed cast iron casing and rigid headplates, carburized and ground alloy steel spur timing gears secured to steel shafts with a taper mounting and locknut, and ductile iron impellers. Oversized anti-friction bearings are used, with a cylindrical roller bearing at the drive shaft to withstand V-belt pull. Detachable rugged steel mounting feet permit easy in-field adaptability to either vertical or horizontal installation requirements.

The ROOTS-FLO is splash lubricated from oversized oil reservoirs. Roots gearbox design improves oil distribution and lengthens bearing and gear life.

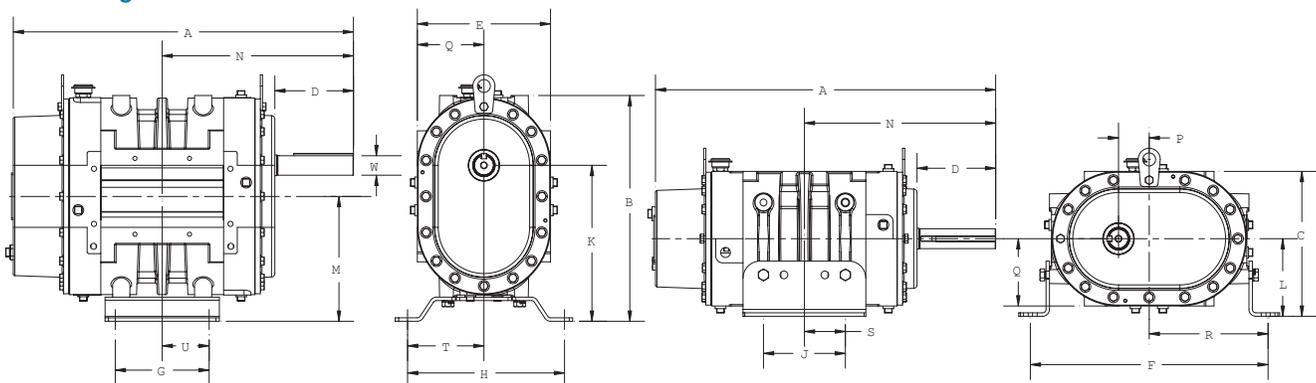
### Warranty period

**Impellers** - Machined and dynamically balanced ductile iron impellers with integral shafts per ASTM 536 Class 60-45-12 and 80-60-3 for additional strength for maximum load operations. Impellers are computer designed for maximum efficiency.

**Bearings** - At maximum load and speed our extra capacity cylindrical roller drive shaft bearing has 2.5 to 3 times longer bearing life than the competitive units using ball bearings. **Gears** - Gears are spur type SAI 8620 steel carburized and ground to 58-62RC for tough continuous operations, without inducing harmful thrust loads.

**Seals** - Main air seals are piston ring type for minimal leakage. Bearing and drive shaft oil seals are Viton lip. All are proven Dresser Roots® design and rated for severe duty.

### Outline drawing and dimension table



Frame	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	W	WGT
404	18.43	16.37	10.5	4.19	9.75	17.5	4.88	11.5	5.0	11.35	5.62	9.10	10.02	2.25	4.88	8.75	2.5	5.75	2.44	1.44	200
406	21.93	16.37	10.5	5.69	9.75	17.5	6.88	11.5	7.0	11.35	5.62	9.10	12.52	2.25	4.88	8.75	3.5	5.75	3.44	1.44	240
409	24.93	16.37	10.5	5.69	9.75	17.5	6.88	11.5	7.0	11.35	5.62	9.10	14.02	2.25	4.88	8.75	3.5	5.75	3.44	1.44	280
412	27.93	16.37	10.5	5.69	9.75	17.5	9.88	11.5	10.0	11.35	5.62	9.10	15.52	2.25	4.88	8.75	5.0	5.75	4.94	1.44	330



**PSI Prolew Inc.**

975 Selkirk, Pointe-Claire  
 Québec, Canada H9R 4S4  
 Tél: (514) 697-7867  
 Fax: (514) 697-0057  
 www.psiprolew.com



**PSI Prolew Inc.**

3770A Laird Road, Unit 1,  
 Mississauga, ON L5L 0A7  
 Tel: (905) 820-6330  
 Fax: (905) 820-6338  
 www.psiprolew.com

**For further information contact**

**Howden Roots**  
 900 W. Mount St.  
 Connersville  
 Indiana  
 USA  
 47331  
 Tel: +1 765 827 9200  
 Web: www.howden.com

**Performance tables**

Pressure Performance Table For Air Inlet Temp = 68° F, Barometer = 14.7 PSIA													
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
404	1750	133	3.5	120	5.2	108	6.8	99	8.5	90	10.2	-	-
	2950	265	6.3	252	9.1	240	11.9	231	14.7	222	17.6	209	21.8
	4000	381	9.2	367	13.0	356	16.8	346	20.7	337	24.5	333	30.3
406	1750	207	5.2	188	7.8	172	10.3	158	12.9	145	15.4	-	-
	2950	407	9.2	388	13.6	372	17.9	358	22.1	345	26.5	328	32.8
	4000	583	13.1	564	19.2	548	25.0	533	30.6	520	36.6	503	45.2
409	1750	313	7.8	284	11.6	261	15.4	240	19.2	221	23.0	-	-
	2950	613	13.6	584	20.0	561	26.4	540	32.9	521	39.3	495	49.0
	4000	875	19.2	847	28.0	823	36.7	802	45.4	783	54.1	758	67.2
412	1750	426	10.3	391	15.4	361	20.5	335	25.6	312	30.7	-	-
	2950	826	17.9	791	26.5	761	35.1	735	43.6	711	52.2	679	65.0
	4000	1175	25.2	1140	36.8	1111	48.5	1085	60.1	1061	71.7	1029	89.1

Vacuum Performance Table For Air Inlet Temp = 68° F, Discharge Pressure = 30 HGA															
Model	RPM	4" HG		6" HG		8" HG		10" HG		12" HG		15" HG		16" HG	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
404	1750	148	1.8	136	2.6	124	3.4	112	4.2	100	5.1	-	-	-	-
	2950	280	3.4	268	4.8	256	6.1	244	7.5	232	8.9	211	11.0	-	-
	4000	395	5.3	383	7.1	371	9.0	359	10.9	347	12.8	326	15.6	318	16.5
406	1750	228	2.6	211	3.9	194	5.1	177	6.4	159	7.6	-	-	-	-
	2950	429	4.8	411	7.0	394	9.1	377	11.1	359	13.3	329	16.4	-	-
	4000	604	7.2	586	10.2	570	13.1	553	15.7	535	18.8	505	22.9	493	24.3
409	1750	344	3.9	318	5.7	293	7.6	268	9.5	242	11.3	-	-	-	-
	2950	644	7.0	618	10.2	593	13.3	568	16.4	542	19.6	498	24.3	-	-
	4000	906	10.3	880	14.6	855	18.9	831	23.1	804	27.4	760	33.8	744	35.9
412	1750	465	5.1	433	7.6	402	10.0	371	12.6	338	15.1	-	-	-	-
	2950	865	9.2	832	13.4	801	17.1	770	21.7	737	25.9	682	32.2	-	-
	4000	1214	13.4	1182	19.0	1151	23.7	1120	30.4	1087	36.1	1032	44.6	1011	47.4

Frame	Inlet and Discharge Connections	Mounting Bolt Hole Diameter
404	4" NPT	0.69
406	4" NPT	0.69
409	4" NPT or 5" NPT	0.69
412	6" NPT	0.69