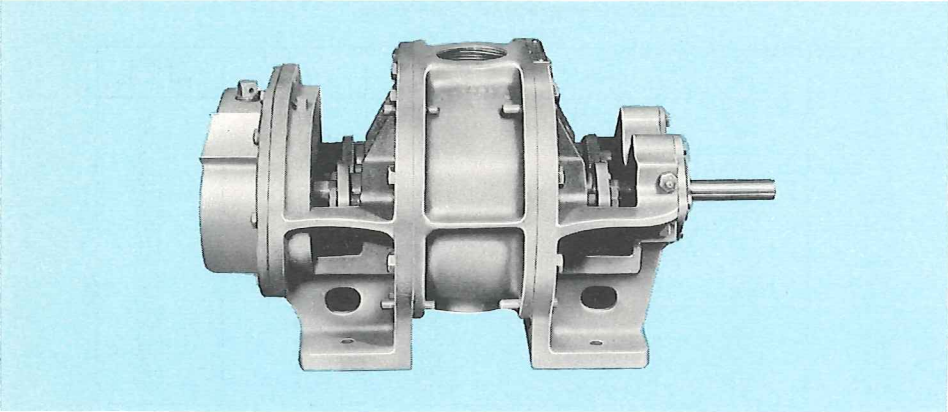
SPECIFICATION SHEET

ROOTS XA GAS PUMP

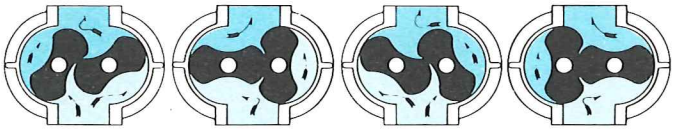
FRAMES 22 thru 717



- Power economy—develops only sufficient pressure to overcome system resistance
- No internal contact of moving parts
- No surging at reduced capacities
- Positive gas displacement
- Fewer moving parts—no springs valves or vanes to wear
- Parts interchangeable on same-size models
- Oil free gas delivery
- High volumetric efficiency
- Compact
- Low mechanical friction—minimizes power losses
- Optimum sizes and ratings

ROOTS XA GAS PUMP

FRAMES 22 thru 717 Series XA rotary positive gas pumps are standard duty units suitable for either pressure or vacuum service. The compact, sturdy design is intended specifically for continuous duty with no service interruptions when operated within proper speed and pressure ratings.



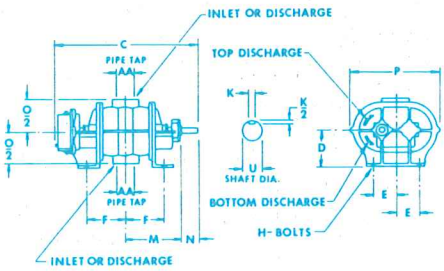
Two figure eight lobe impellers mounted on parallel shafts rotate in opposite directions. As each impeller lobe passes the pump inlet, it traps a definite volume of gas and carries it around the case to the pump outlet, where the gas is discharged.
Timing gears on each impeller shaft control the relative position of the impellers to each other and maintain the clearances. With constant speed operation, the displaced volume is essentially the same regardless of pressure, temperature or barometric pressure.

BASIC MODEL: The basic model, suitable for either rotation, consists of a cast iron casing, alloy steel gears, steel shafts, cast iron impellers, split lip-type clipper seals on each shaft and ball bearings. The unit has splash lubrication on the gear end and grease lubrication on the drive end. After standard tests, the unit is painted with our standard protective paint. The unit is then placed on skids or boxed and shipped. Six copies of instruction manuals are provided.

MODIFICATIONS: Available modifications include arrangement for right hand drive.

ACCESSORIES: Available accessories include pressure regulator, inlet and discharge snubbers, check valve, extended base, V-belt drive and flexible coupling.

ALL DIMENSIONS IN INCHES



DESIGN AND CONSTRUCTION FEATURES

1. Rigid one piece casing
2. Straight tooth spur gears
3. Anti-friction bearings
4. Timing gears splash lubricated
5. Inlet and discharge connections in standard pipe sizes
6. Straight two-lobed impellers
7. Headplates machined on all mating surfaces
8. Large diameter high carbon steel shaft
9. Clipper seals minimize gas leakage
10. Rotating parts balanced
11. Precision machined internally

FRAME SIZE	A	B	C	D	O	P	U	W	APPX. WT. [LBS.]
22	4	5	13¾	3¾	6 7/16	9¼	.5875	1	40
24	4	7½	15¾	3¾	6 7/16	9¼	.5875	1	50
315	5¾	5½	15 7/16	5	8 7/16	12 1/16	.6562	¾	75
33	5¾	7 5/16	17 1/16	5	8 7/16	12 1/16	.6562	2	95
36	5¾	10	19 7/16	5	8 7/16	12 1/16	.6562	2½	105
42	6¼	6¾	15 7/16	6¼	10 5/16	13 1/16	.7812	1½	115
44	6¼	8	18½	6¼	10 5/16	13 1/16	.7812	2	120
47	6¼	11¼	21 7/16	6¼	10 5/16	13 1/16	.7812	2½	150
53	8½	8 3/16	20 5/16	6¾	12	17¼	.9687	2½	175
55	8½	9½	21¾	6¾	12	17¼	.9687	2½	190
59	8½	14	26¼	6¾	12	17¼	.9687	3	210
65	9	10½	28 3/16	8½	16¼	19¾	1.250	3	350
67	9	13	30 7/16	8½	16¼	19¾	1.250	3	400
610	9	15½	33 3/16	8½	16¼	19¾	1.250	3	430
615	9	20½	38 3/16	8½	16½	19¾	1.250	4	490
76	10½	12	30¼	10¼	19½	23¼	1.500	3	510
710	10½	16	34¼	10¼	19½	23¼	1.500	4	590
717	10½	23	41¼	10¼	19½	23¼	1.500	5	720

RATING TABLES

FRAME SIZE	PIPE OPENING DIA.	SPEED RPM	1 PSI		2 PSI		3 PSI		4 PSI		5 PSI		6 PSI		8 PSI	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
22	1"	1160	10	.29	7	.37	4	.45								
		1750	20	.44	16	.56	14	.68	11	.80						
		2600	33	.65	30	.83	27	1.0	25	1.2						
24	1½"	1160	21	.37	14	.53										
		1750	40	.56	33	.80										
		2600	67	.83	60	1.2										
315	¾"	1160	17	.50	11	.62	7	.73								
		1750	32	.77	26	.97	22	1.2	19	1.4	16	1.6	13	1.8		
		1850	34	.80	29	1.0	25	1.2	21	1.4	18	1.6	15	1.8		
33	2"	860	34	.52	26	.75	19	.98	14	1.2						
		1160	52	.70	44	1.0	38	1.3	33	1.6						
		1850	94	1.1	86	1.6	80	2.1	75	2.6						
36	2½"	860	55	.67	43	1.0										
		1160	86	.90	73	1.4										
		1850	157	1.4	143	2.3										
42	1½"	1160	53	.78	45	1.0	40	1.4	35	1.7	31	2.0	28	2.3		
		1530	75	1.0	68	1.4	62	1.8	58	2.2	54	2.6	50	3.0		
		1620	81	1.1	73	1.5	68	1.9	63	2.4	59	2.8	55	3.2		
44	2"	860	50	.68	39	1.0	32	1.4	25	1.7						
		1160	77	.92	65	1.4	58	1.8	51	2.3						
		1620	117	1.3	106	1.9	99	2.5	92	3.1						
47	2½"	860	91	.95	71	1.6										
		1160	139	1.3	119	2.1										
		1620	212	1.8	192	2.9										
53	2½"	690	70	.82	61	1.2	54	1.6	48	2.0	43	2.4	39	2.8		
		860	92	1.0	83	1.5	76	2.0	70	2.5	66	3.0	61	3.5		
		1300	150	1.5	141	2.3	134	3.0	128	3.8	123	4.5	119	5.3		
55	2½"	690	90	.93	78	1.4	70	2.0	62	2.5						
		860	119	1.2	107	1.8	99	2.4	91	3.1						
		1300	193	1.8	182	2.7	173	3.7	166	4.6						
59	3"	690	171	1.4	149	2.4										
		860	226	1.7	204	2.9										
		1300	367	2.6	346	4.5										
65	3"	575	97	1.0	85	1.6	76	2.1	68	2.7	62	3.2	55	3.8	44	4.9
		690	123	1.2	111	1.9	101	2.6	94	3.2	87	3.9	81	4.5	70	5.9
		1080	208	1.9	196	3.0	187	4.0	179	5.0	172	6.1	166	7.1	155	9.2
67	3"	575	146	1.3	128	2.1	114	3.0	103	3.8						
		690	184	1.6	166	2.6	152	3.6	140	4.5						
		1080	312	2.4	294	4.0	280	5.6	269	7.1						
610	3"	575	195	1.6	171	2.7	152	3.8	137	4.9						
		690	246	1.9	221	3.2	203	4.5	188	5.9						
		1080	417	3.0	393	5.0	374	7.1	359	9.2						
615	4"	575	292	2.1	256	3.8										
		690	368	2.6	332	4.5										
		1080	626	4.0	590	7.1										
76	3"	575	196	1.6	181	2.7	169	3.7	159	4.7	150	5.7	143	6.8	128	8.8
		690	243	2.0	227	3.2	216	4.4	206	5.6	197	6.8	189	8.0	175	10.5
		925	338	2.6	322	4.3	310	5.9	301	7.5	292	9.2	284	10.8	270	14.1
710	4"	575	326	2.3	301	4.0	282	5.7	267	7.4						
		690	405	2.8	379	4.8	360	6.8	343	8.9						
		925	563	3.7	537	6.4	518	9.2	501	11.9						
717	5"	575	555	3.5	511	6.4										
		690	687	4.2	643	7.7										
		925	956	5.6	912	10.3										

NOTES: 1. Ratings based on inlet air at standard temperature 68°F, ambient pressure 14.7 psia and specific gravity of 1.0.
2. All specifications subject to change without notice.

ROOTS DRESSER

DRESSER INDUSTRIES INC.
INDUSTRIAL PRODUCTS DIVISION
900 WEST MOUNT STREET
CONNERSVILLE, INDIANA 47331

S-5265

PRINTED IN U.S.A.