

# NRV Series Rotary Vane Vacuum Pump



Models: NRV06, NRV08, NRV10, NRV16,  
NRV20, NRV31, NRV41, NRV64, NRV161,  
NRV201, NRV251, NRV301, NRV400, NRV630

**Description:** Single Stage Oil-Flooded Rotary Vane  
Vacuum Pump

**Models:** NRV06, NRV08, NRV10, NRV16, NRV20, NRV31,  
NRV41, NRV64, NRV161, NRV201, NRV251,  
NRV301, NRV400, NRV630

**Power Range:** 0.5-25 HP

**Capacity Range:** 4.2-447 CFM

**Ultimate Vacuum:** 0.5 mbara

## OVERVIEW

NES Company Inc. is proud to present the NRV Series single stage oil flooded rotary vane vacuum pumps. NES Company Inc. NRV Series vacuum pumps are performance tested and include a 2-year warranty against manufacturer's defects.

## DESCRIPTION

NRV series pumps are a line of single stage oil circulated rotary vane vacuum pumps, perfect for smaller applications. The pumps function by the combination of spring-loaded rotor vanes and lubricating/sealing oil to seal incoming gases between a series of vanes on its rotor.

## FEATURES

- **Reliable Medium Vacuum Performance:** Achieve consistent vacuum levels with our rotary vane pumps, ensuring efficient and reliable operation in myriad applications.
- **Quiet Operation:** Engineered for low noise levels, our rotary vane pumps provide a quieter working environment without compromising on performance, maintaining stability with low vibration as well.
- **Compact Design:** The NRV Series rotary vane pumps are designed with diminutive dimensions, saving valuable space in your facility.
- **Easy Installation and Operation:** Designed for user-friendly installation and operation, our rotary vane pumps come with clear instructions and intuitive controls.



## NOTES

NES Company Inc. presents the NRV Series Single Stage Oil Flooded Rotary Vane Vacuum Pumps. NES Company Inc. NRV Series vacuum pumps are factory performance tested and include a 2-year warranty against manufacturer's defects.

NES Company Inc. 333 Route 46 West, Building A, Fairfield, NJ 07004

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### GENERAL TECHNICAL DATA

Series Name	Motor Power [HP]	Volume [CFM]	Ult. Press. w/ float valve [mbar]	Ult Press. w/o float valve [mbar]	Rotation Speed RPM	Operating Temperature (°F)	Oil Volume (qts.)	Sound Level (dBA)
NRV-06	0.5	4.2	2	20	1720	104	0.42	50
NRV-08	0.5	5.6	0.5	20	1720	104	0.31	59
NRV-10	0.75	7	0.5	20	1680	104	0.42	58
NRV-16	0.75	11.2	2	20	3600	104	0.31	60
NRV-20	1	14.25	2	20	3600	104	0.4	61
NRV-31	1.5	21	0.5	20	1800	104	1	64
NRV-41	2	28.25	0.5	20	1800	104	1	67
NRV-64	5	70.5	0.5	20	1800	104	2.25	68
NRV-101	5	70.68	0.5	20	1800	104	2.25	70
NRV-161	7.5	112	0.5	20	1800	104	7.25	72
NRV-201	7.5	141.25	0.5	20	1800	104	7.25	74
NRV-251	10	176.5	0.5	20	1800	104	7.25	74
NRV-301	15	212	0.5	20	1800	104	7.25	76
NRV-400	20	282.2	0.5	20	1200	104	13.7	72
NRV-630	25	447	0.5	20	1200	104	15.85	74

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## Application table

<b>Applications</b>
Vacuum Forming
Packaging
Reactor Vacuum
Degassing and Dehydration
Printing
Vacuum Degassing
Reactor Drying
HVACs
Vacuum Lifting Systems
Solvent Recovery
Pharmaceutical Processing
Chemical Processing
Container Filling
Filtering
Extruder Venting
Eviscerating
Foods & Fats

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### Pump Length, Height & Breadth

Series Model	Length (Inches)		Height (Inches)	Width (Inches)
	With Motor	Bare Shaft		
NRV-06	13.3	8.2	7.4	6.3
NRV-08	12	8	6.3	9.2
NRV-10	16	10	8.5	9
NRV-16	12	8	6.3	9.2
NRV-20	16	10.5	8.5	9
NRV-31	24	17.5	10	9
NRV-41	25.5	18	10	9
NRV-64	28.5	21.5	12	16.5
NRV-161	35	32	16.5	16.5
NRV-201	36.5	34	16.5	16.5
NRV-251	39.5	32	16.5	16.5
NRV-301	42	34	16.5	16.5
NRV-400	58.5	41.3	26.3	26.3
NRV-630	67	49	26.3	26.3

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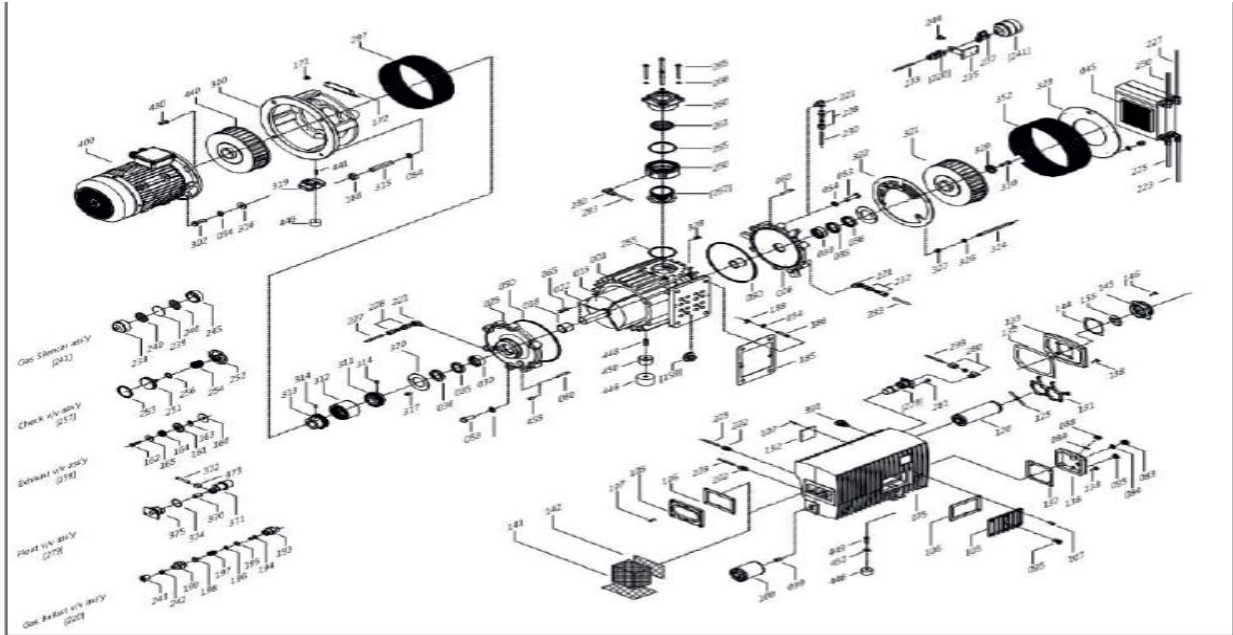
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## Exploded View



NO.	Part Name	Q'ty	NO.	Part Name	Q'ty	NO.	Part Name	Q'ty	NO.	Part Name	Q'ty
		064			064			064			064
1	Cylinder	1	142	Expanded metal	1	234	Gas ballast valve lip	1	319	Assist base foot	1
15	Rotor	1	144	Exhaust cover (C)	1	235	Gas ballast spring	1	321	Fan (pump sided)	1
18	Bearing	2	145	Exhaust cover (C)	1	236	Gas ballast valve plate	1	323	Fan cover (pump sided)	1
22	Vane	3	152	O-ring	1	237	Gas ballast valve filter	1	325	Bolt	2
25	A-end plate	1	155	Exhaust screen-in	1	238	Gas ballast valve nut	1	326	Washer	1
26	B-end plate	1	156	Exhaust screen-out	1	239	Gas ballast valve ring	1	370	Nozzle Body	1
30	Bearing	2	[159]	Exhaust valve Ass'y	2	250	Check valve body	1	371	Float valve ball	1
35	Retainer	2	160	Exhaust valve lip	2	251	Check valve cock	1	372	Float valve pin	1
42	Cover	2	161	Exhaust valve body	2	252	Check valve guide	1	373	Float valve rubber	1
50	O-ring	2	162	Exhaust valve bolt	2	253	Check valve o-ring	1	374	Float valve o-ring	1
53	Bolt	6	163	Exhaust valve nut	2	254	Check valve spring	1	376	Float valve body	1
54	Washer	10	164	Exhaust valve spring	2	255	O-ring	2	391	Bolt	1
60	Taper pin	4	165	Exhaust valve washer	2	[257]	Check valve Ass'y	1	400	Motor	1
65	key(A-end plate sided)	1	185	Gasket	1	260	Inlet flange	1	430	key	1
66	key(B-end plate sided)	1	186	Bolt	4	261	Inlet screen	1	460	Name plate	1
75	Oil sump	1	188	Nut	6	265	Bolt	4			
83	Oil sight glass	1	190	Rubber foot	2	266	Washer	4			
84	O-ring	2	191	Bolt	2	275	Nonreturn (optional)	1			
88	Plug	1	[220]	Gas ballast valve Ass'y	1	278	Washer	1			
95	Plug	1	221	Hydraulic fitting	3	[279]	Float valve Ass'y	1			
99	Oil filter bolt	1	222	Nipple	1	280	BSLM Nipple	3			
100	Oil filter	1	223	Pipe	1	281	Bolt	2			
105	Oil sump cover	1	224	Pipe	1	293	Pipe	1			
106	Gasket	1	225	BSLM Nipple	2	300	Coupling guard	1			
107	Bolt	18	226	BSLM Nipple	2	302	Bolt	4			
120	Exhaust filter	2	228	Pipe	1	311	Coupling Hub(F)/M28	1			
125	Filter spring	2	230	Gas ballast valve cock	1	312	Coupling sleeve/M28	1			
136	Oil inlet plate	1	231	Gas ballast valve body	1	313	Coupling Hub(M)/M28	1			
137	Gasket	1	232	Gas ballast valve nipple	1	314	Bolt	2			
141	Demister	1	233	Gas ballast valve guide	1	315	Bolt	3			

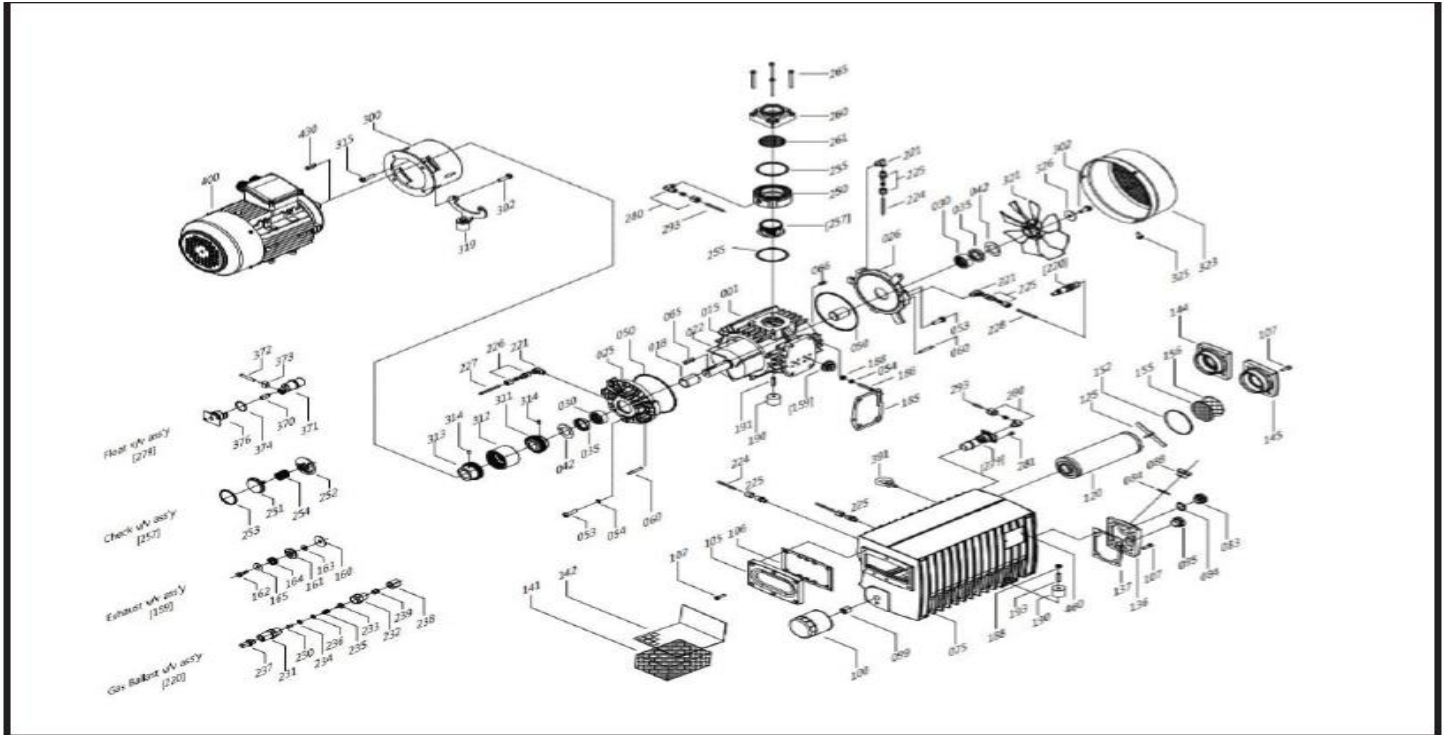
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NO.	Part Name	Qty 301	NO.	Part Name	Qty 301	NO.	Part Name	Qty 301	NO.	Part Name	Qty 301
1	Cylinder	1	152	Name plate	1	242	Gas ballast valve ring	1	327	Nut	12
15	Rotor	1	155	Exhaust screen	1	243	Gas ballast valve nut	1	328	Key	1
18	Bearing	2	[159]	Exhaust valve Assy	4	244	Bolt	2	352	Cooler mounting screen	1
22	Vane	3	160	Exhaust valve lip	4	245	Silencer body	1	370	Nozzle Body	1
25	A-end plate	1	161	Exhaust valve body	4	250	Check valve body	1	371	Floater	1
26	B-end plate	1	162	Exhaust valve bolt	4	251	Check valve cock	1	372	Pin	1
30	Bearing	2	163	Exhaust valve nut	4	252	Check valve guide	1	373	Bolt	1
35	Retainer	2	164	Exhaust valve spring	4	253	Check valve o-ring	1	374	O-ring	1
36	Retainer	2	165	Exhaust valve washer	4	254	Check valve spring	1	375	Floater cap	1
45	Oil cooling	1	170	Clamp	2	255	O-ring	2	391	Bolt	1
50	O-ring	2	171	Bolt	9	256	O-ring	1	400	Motor	1
53	Bolt	9	172	Protection mesh	1	[257]	Check valve Assy	1	430	Key	1
54	Washer	20	185	Gasket	1	260	Inlet flange	1	440	Fan (Motor sided)	1
60	Taper pin	4	186	Bolt	4	261	Inlet screen	1	441	Bolt	4
65	Key(A-end plate sided)	1	188	Nut	7	265	Bolt	4	441	Bolt	4
75	Oil sump	1	193	Gas ballast valve body	1	266	Washer	4	448	Bolt	1
83	Oil sight glass	1	194	Gas ballast valve cock	1	278	Washer	1	449	Bolt	1
84	O-ring	2	195	Gas ballast valve lip	1	[279]	Floater valve Assy	1	450	Assist ring	2
88	Plug	1	196	Gas ballast valve plat	1	280	BSLM Nipple	2	452	Washer	1
95	Plug	2	197	Gas ballast valve spring	1	281	Bolt	2	446	Rubber foot	3
99	Oil filter bolt	1	198	Gas ballast valve guide	1	293	Pipe	1			
100	Oil filter	1	199	Gas ballast valve nipple	1	297	Motor mountingscreen	1			
105	Oil sump cover	2	[220]	Gas ballast valve Assy	1	300	Couplingguard	1			
106	Gasket	2	221	Hydraulic fitting	3	302	Bolt	4			
107	Bolt	14	222	BSLM Nipple	2	311	CouplingHub(P)/M42	1			
120	Exhaust filter	4	223	Pipe	1	312	Coupling sleeve/M42	1			
125	Filter spring	4	225	Pipe	1	313	CouplingHub(M)/M42	1			
131	Exhaust filter guide	1	226	BSLM Nipple	2	314	Bolt	2			
132	Gasket	1	227	Pipe	1	315	Bolt	3			
133	Exhaust cover	1	230	Pipe	1	316	Washer	2			
136	Oil inlet plate	1	232	BSLM Nipple	1	317	Bolt	4			
137	Gasket	1	233	Pipe	1	319	Assist base foot	1			
138	Bolt	7	235	Gas ballast valve bracket	1	320	Retainer cover	2			
141	Demister	1	257	Ball valve	1	321	Fan (pump sided)	1			
142	Expanded metal	1	238	Silencer body	1	322	Fan cover brakel body	1			
144	Gasket	1	239	Silencer screen	1	323	Fan cover brakel cover	1			
145	Exhaust cover	1	240	Silencer filter	2	324	Bolt	6			
146	Bolt	4	[241]	Silencer Assy	1	326	Washer	12			

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## Pump Weight

Series Name	Weight (lbs.)
NRV-06	26.5
NRV-08	40
NRV-10	44
NRV-16	40
NRV-20	44
NRV-31	75
NRV-41	84
NRV-64	165
NRV-161	385
NRV-201	408
NRV-251	445
NRV-301	480
NRV-400	1210
NRV-630	1474