



LIQUID RING VACUUM PUMPS & COMPRESSORS

SOMARAKIS* REPLACEMENTS

Pumps. Systems. Service. Support. — One Source.

NES SOMARAKIS* REPLACEMENTS — LIQUID RING VACUUM PUMPS & COMPRESSORS

MODELS: 0808, 1211, 1414, 1818, 2023, 2523, 3028, 3633, 4440, 5348, 5372, 5986



Drop-in replacements for Somarakis* liquid ring vacuum pumps and compressors — 12 frame sizes, 0808 through 5986.

— DESIGN

One moving part with no metal-to-metal sliding contact.

— ROTOR

20 forward-curved, shrouded blades working against two stationary cones.

— SEALING

Split lip shaft seals run drop-tight with no external seal water; packing available.

— SERVICE

Vacuum or pressure — offered as vacuum pumps and as compressors.

One moving part. Built for continuous duty.

NES Somarakis* Replacements are liquid ring vacuum pumps and compressors built as drop-in replacements for Somarakis* liquid ring units. An offset rotor turns in a body partially filled with water; the rotating liquid ring draws air in through the cone inlet ports and forces it out through the discharge ports, so the same machine can serve as a vacuum source or a source of pressure.

FRAME SIZES

12 Models

0808 through 5986

RATED VACUUM

15 / 20 / 25"

HgV — cone port sizes 1, 2, 3

PUMP WEIGHT

250–39,000

lb, complete pump

SEAL WATER

4–225 GPM

Start-up flow, all sizes

SPECIFICATION SUMMARY

Type	Liquid ring, single moving part, two stationary cones
Service	Vacuum pumps and compressors
Frame Sizes	0808, 1211, 1414, 1818, 2023, 2523, 3028, 3633, 4440, 5348, 5372, 5986
Cone Port Sizes	No. 1, 2 or 3 — e.g. model 1818-2 has No. 2 cone ports
Rated Vacuum Levels	15, 20 and 25" HgV
Performance Basis	60°F seal water
Shaft Sealing	Split lip seals (standard); packing (alternate)
Bearings	Anti-friction, grease lubricated (NLGI #2)
Construction	Cast iron, cast iron with stainless trim, or stainless steel

DESCRIPTION

The rotor carries 20 forward-curved, shrouded blades that form chambers with hollow centers and air passages to the two stationary cones. Water rotates with the rotor and seals at the blade tips, so each chamber fills and empties once per revolution. Air is the only product moved in volume; most of the water stays in the pump and is topped up with seal water.

FEATURES

- ▶ **One moving part** — no metal-to-metal sliding contact.
- ▶ **Drop-tight shaft sealing** — dual split lip seals at each end of the shaft, with no external seal-water lines; split for easy replacement.
- ▶ **Packing alternative** — gland, lantern ring and packing available in place of lip seals.
- ▶ **Grease-lubricated bearings** — bearing housings with grease relief holes.
- ▶ **Vacuum or compressor service** — compressors fitted with pressure-equalizing piping between heads.
- ▶ **Factory performance tested** — every pump is tested and greased before shipment.
- ▶ **Accessories** — standard base, inlet and discharge manifolds, integral gear drives (4440, 5348, 5372) and accessory kits.
- ▶ **Spare parts** — NES also supplies spare parts for Somarakis* liquid ring vacuum pumps and compressors.

NOTES

Pumps are flushed with soluble oil before shipment. Seal water at 60°F is the basis for rated performance; warmer seal water reduces capacity (see Seal Water data). Inlet and discharge piping must connect through flexible connections.

FULL TECHNICAL DATA

Capacity, horsepower and speed vary by frame size and cone port size. **Contact NES** at info@nescompany.com or 800-297-3550 for performance curves and certified drawings for your application. NES also supplies spare parts for Somarakis* pumps and compressors. A Somarakis* / Nash* / NES interchange chart follows.

Interchange Chart / Somarakis* / Nash* / NES

Somarakis* models below are interchangeable with the Nash* models shown, per the Somarakis* interchange chart. NES NL Series pumps are drop-in aftermarket replacements for Nash* Classic CL Series pumps, with directly interchangeable parts. Somarakis* model numbers are shown without the series prefix.

SOMARAKIS* TO NASH* TO NES INTERCHANGE

Somarakis* Model	Is Interchangeable With	NES NL Series Equivalent
0808	Nash* CL-200	NL-200 †
1211	Nash* CL-400	NL-400 (NL-402, NL-403)
1414	Nash* CL-700	NL-700 (NL-701, NL-702, NL-703)
1818	Nash* CL-1000	NL-1000 (NL-1001, NL-1002, NL-1003)
2023	Nash* CL-1500	NL-1500 (NL-1501, NL-1502)
2523	Nash* CL-2000	NL-2000 (NL-2001, NL-2002, NL-2003)
3028	Nash* CL-3000	NL-3000 (NL-3001, NL-3002, NL-3003)
3633	Nash* CL-4000	NL-4000 (NL-4001, NL-4002, NL-4003)
4440	Nash* CL-6000	NL-6000 (NL-6001, NL-6002, NL-6003)
5348	Nash* CL-9000	NL-9000 (NL-9001, NL-9002, NL-9003)
5372	Nash* CL-14000	NL-14000 †
5986	None	—
HV-7	Nash* K5, L6, or H7	—
HV-7C	Nash* HC-7	—

Each NES NL model replaces the Nash* CL model with the same number (e.g. NL-1002 replaces Nash* CL-1002). † NL-200 and NL-14000 are listed on the NES NL Series specification sheet but do not appear in the model table on [nescompany.com](#); confirm availability with NES. — No NES NL equivalent, confirm availability with NES.

Seal Water / Operating Data

SEAL WATER ADDITION — START-UP (TOTAL GPM, BOTH ENDS)

Model	15" HgV	20" HgV	25" HgV	Model	15" HgV	20" HgV	25" HgV
0808	4	5	8	3028	20	40	45
1211	5	8	15	3633	25	30	60
1414	8	10	14	4440	40	60	95
1818	10	12	18	5348	75	80	130
2023	11	16	21	5372	90	100	160
2523	12	17	30	5986	125	140	225

Liquid ring compressors: all models require ¼ GPM per BHP. With saturated process air, operating seal water can be reduced by up to 20% because of condensate in the incoming air. Seal water pressure 10 PSI before the orifice unions (5 PSI minimum); quench water 10 PSI at the spray nozzles.

SEAL WATER TEMPERATURE / CAPACITY FACTORS (60°F PROCESS AIR)

Inlet Seal Water Temp.	15" Hg Vacuum	20" Hg Vacuum	25" Hg Vacuum
60°F	1.00	1.00	1.00
80°F	.97	.96	.91
100°F	.94	.91	.76
120°F	.88	.84	.58

Example factors only — water discharged by the pump runs 20–30°F warmer than the water supplied.

SEAL & QUENCH WATER QUALITY — CAST IRON PUMPS (OUTGOING WATER 100°F OR LESS)

Constituent	Maximum Level
Calcium Carbonate	300 ppm
Chlorides	200 ppm
Sulphates	200 ppm
Total Dissolved Solids	1000 ppm

Water should be clean and non-abrasive; hardness below 300 ppm calcium carbonate is recommended for all materials to limit scale build-up.

Weights / Materials

PUMP & COMPRESSOR WEIGHTS (LB)												
Part	0808	1211	1414	1818	2023	2523	3028	3633	4440	5348	5372	5986
Body	67	158	277	307	362	690	1,280	1,950	3,430	5,350	8,500	10,694
Head, ea.	45	125	145	199	356	516	730	1,085	2,130	2,510	2,890	3,636
Cone, ea.	3	14	24	30	54	64	110	180	390	520	750	944
Rotor	37	72	138	230	478	630	1,180	1,570	2,720	4,573	7,610	9,574
Shaft	13	35	58	107	186	250	425	648	940	1,560	2,780	3,497
Bearing, ea.	1	4	6	9	10	11	16	25	47	60	67	85
Brg. Hsg., ea.	N/A	N/A	N/A	N/A	18	40	40	70	175	180	250	315
Inner Cap, ea.	1	2	6	9	N/A	13	12	13	23	26	30	38
Outer Cap, ea.	1	2	5	8	9	15	24	25	34	41	55	69
Total Weight	250	600	1,020	1,180	2,050	3,150	5,320	9,330	14,800	20,440	31,000	39,000
Standard Base	30	50	70	90	110	200	600	1,200	1,600	2,000	2,600	3,000
Integral Gears	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,660	2,045	2,687	N/A
Inlet Manifold	30	75	85	130	150	180	380	500	720	920	1,440	1,600
Disch. Manifold	28	50	70	120	140	160	230	425	550	720	1,120	1,250
Accessory Kit	10	15	20	25	30	35	40	45	50	55	60	65

MATERIALS OF CONSTRUCTION AVAILABLE	
Irons & Steels	Cast iron A48 CL30 / CL40, ductile iron, nodular iron, cast steel, Ni-Resist (22% Ni), 3% and 8-1/2% nickel
Stainless & Alloys	303, 304, 316, 316L, 317, 329 and 410 stainless; Ferralium 255; Hastelloy; bronze
Coatings	Urethane, Teflon, epoxy, Stellite, hard chrome, nickel, ceramic
Elastomers	Buna N, Viton, neoprene, Teflon, urethane, rubber
Packing (alternate)	Teflon, graphite and Teflon-cotton packing

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