



National Vacuum Equipment, Inc.



304 HEAVY DUTY VACUUM PUMPS

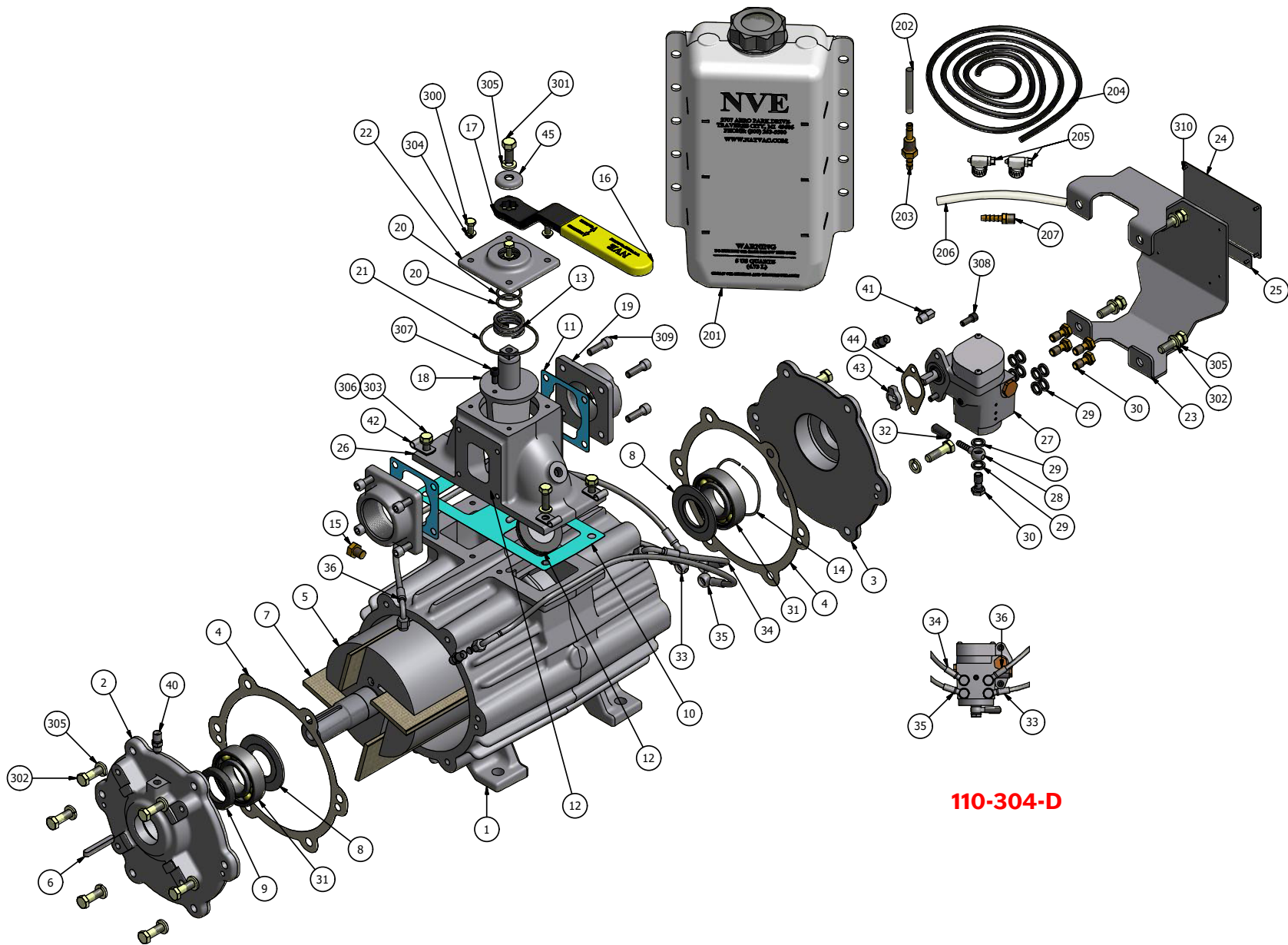
PARTS CATALOG

Challenger Series
VACUUM PUMPS & BLOWERS



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110-304-D

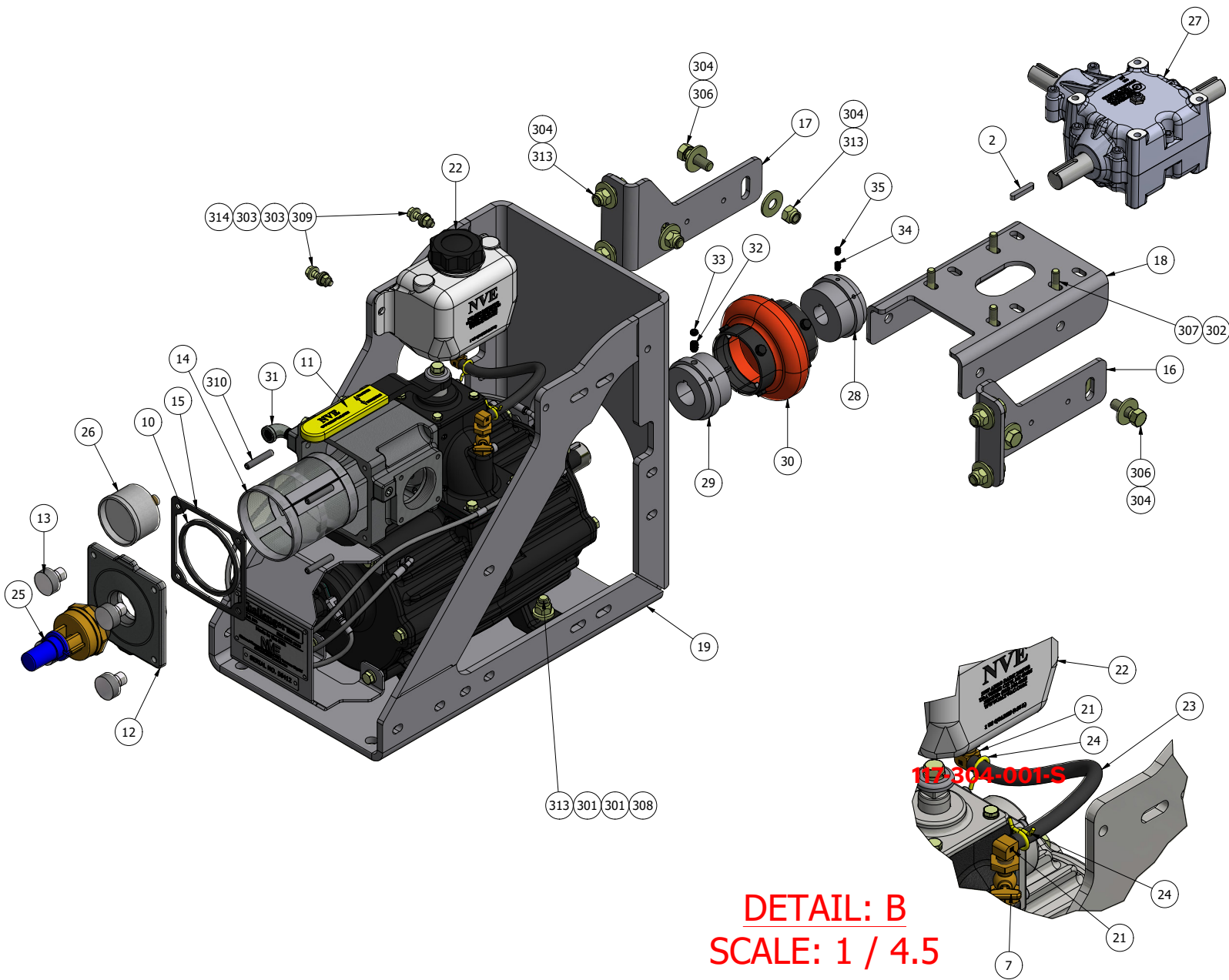
304 Challenger Series | Parts List



MADE IN THE USA

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	120-001-001	HOUSING 304
2	1	120-003-006	ENDPLATE 304 DRIVE
3	1	120-003-007	ENDPLATE 304 NON-DRIVE
4	2	120-004-304	GASKET ENDPLATE 304
5	1	120-005-003-D 120-005-003-S	ROTOR 304 CW ROTOR 304 CCW
6	1	120-006-184	KEY .25" X .25" X 1.875"
7	4	120-007-304	VANE 304
8	2	120-009-002	BEARING SPACER 304
9	1	120-018-002	SEAL, 35 X 52 X 7 DOUBLE LIP
10	1	120-039-001	GASKET MANIFOLD 304
11	2	120-039-002	GASKET INTAKE MANIFOLD 304
12	1	120-041-003	SWING CHECK 304
13	1	120-045-003	SPRING 4-WAY 304
14	1	120-045-004	SPRING WAVE BEARING 304
15	1	120-058	PLUG BRASS HEX HEAD 1/8" NPT
16	1	120-060-005	GRIP 3/8" HANDLE W/ LOGO
17	1	120-060-006	HANDLE 3/8"
18	1	120-062-003	PLUG 304 MACHINED
19	2	120-063-304	FLANGE 4-WAY 2" NPT
20	2	120-064-025	O-RING 2-120 VITON
21	1	120-064-026	O-RING 2-144 VITON
22	1	120-065-003	TOWER 304 MACHINED
23	1	120-079-010	GUARD NVE OIL PUMP 304 W/ TAG MOUNT
24	1	120-105-304	NAME PLATE SS, 304
25	1	120-107-001	SERIAL TAG SS
26	1	120-320-004	MANIFOLD 304 MACHINED
27	1	123-000-004	OIL PUMP 4 PORT BIDIRECTIONAL
28	1	123-408-017	BANJO ADAPTER TO 0.250" HB
29	10	123-013-001	WASHER 3/8" SEALING NBR
30	5	123-408-014	BANJO BOLT 1/8" BSPP
31	2	310-AM55	BEARING 6207
32	1	320-083-011	CAP OIL PUMP FEED LINE FITTING
33	1	320-407-017	OIL LINE -3 SST FEMALE JIC TO BANJO 8.5" (MAKE)
34	1	320-407-018	OIL LINE -3 SST 90 DEG JIC TO BANJO 8.75" (MAKE) *ONLY USED ON CW MODEL (110-304-D)
35	1	320-407-019	OIL LINE -3 SST 90 DEG JIC TO BANJO 20.25" (MAKE) *ONLY USED ON CW MODEL (110-304-D)
36	1	320-407-020	OIL LINE -3 SST 90 DEG JIC TO BANJO 23.75" (MAKE) *ONLY USED ON CW MODEL (110-304-D)

ITEM	QTY	PART NUMBER	DESCRIPTION
37	1	320-407-021	OIL LINE -3 SST 90 DEG JIC TO BANJO 22.75" (MAKE) *ONLY USED ON CCW MODEL (110-304-S)
38	1	320-407-022	OIL LINE -3 SST 90 DEG JIC TO BANJO 11" (MAKE) *ONLY USED ON CCW MODEL (110-304-S)
39	1	320-407-023	OIL LINE -3 SST 90 DEG JIC TO BANJO 22.25" *ONLY USED ON CCW MODEL (110-304-S)
40	3	320-408-016	FITTING STR -3 MJIC X 1/8 MNPT
41	1	320-408-017	FITTING ELBOW -3 MJIC X 1/8 MNPT
42	4	320-409-003	P-CLIP, OIL LINE 1/4" X 5/16
43	1	320-LF8	DRIVE TAB
44	1	320-R31	GASKET, OIL PUMP
45	1	412-020-001	WASHER, CUP 4-WAY
201	1	320-082-001	OIL TANK, 5QT, W/ LOGO
202	1	320-083-009	OIL TANK FILTER, 100 MESH
203	1	320-083-010 W/HB	FILTER FITTING, OIL TANK 1/4 NPT
204	5 FT	320-407-003	OIL LINE, BLK 1/4" ID 30R7
205	2	416-025-1WC	CLAMP, WORM, 1/4" DIA
206	6 IN	320-R102	OIL LINE, 3/8" X 1/4" ID X 6" LG
207	1	310-LP5	HOSE BARB, 1/4" X 1/8" NPT STRAIGHT
300	4	HHCS - 1/4-20 UNC X 0.75	HEX HEAD CAP SCREW - 1/4-20 UNC X 0.75
301	1	HHCS - 3/8-16 UNC X 0.75	HEX HEAD CAP SCREW - 3/8-16 UNC X 0.75
302	12	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25
303	4	HHCS - 5/16-18 UNC x 1.00	HEX HEAD CAP SCREW - 5/16-18 UNC x 1.00
304	4	LW - 1/4	LOCK WASHER, 1/4"
305	13	LW - 3/8	LOCK WASHER, 3/8"
306	4	LW - 5/16	LOCK WASHER, 5/16"
307	1	SHCS - 1/4-20 UNC X 0.50	SHCS - 1/4-20 UNC X 0.50
308	2	SHCS - 1/4-20 UNC X 0.75	SOCKET HEAD CAP SCREW 1/4" - 20 X 3/4"
309	8	SHCS - 5/16-18 UNC X 1	SHCS - 5/16-18 UNC X 1
310	6	RVT 3/32 D X 1/4L SS	BLIND RIVET, 3/32 DIA X 1/4 GRIP, SS



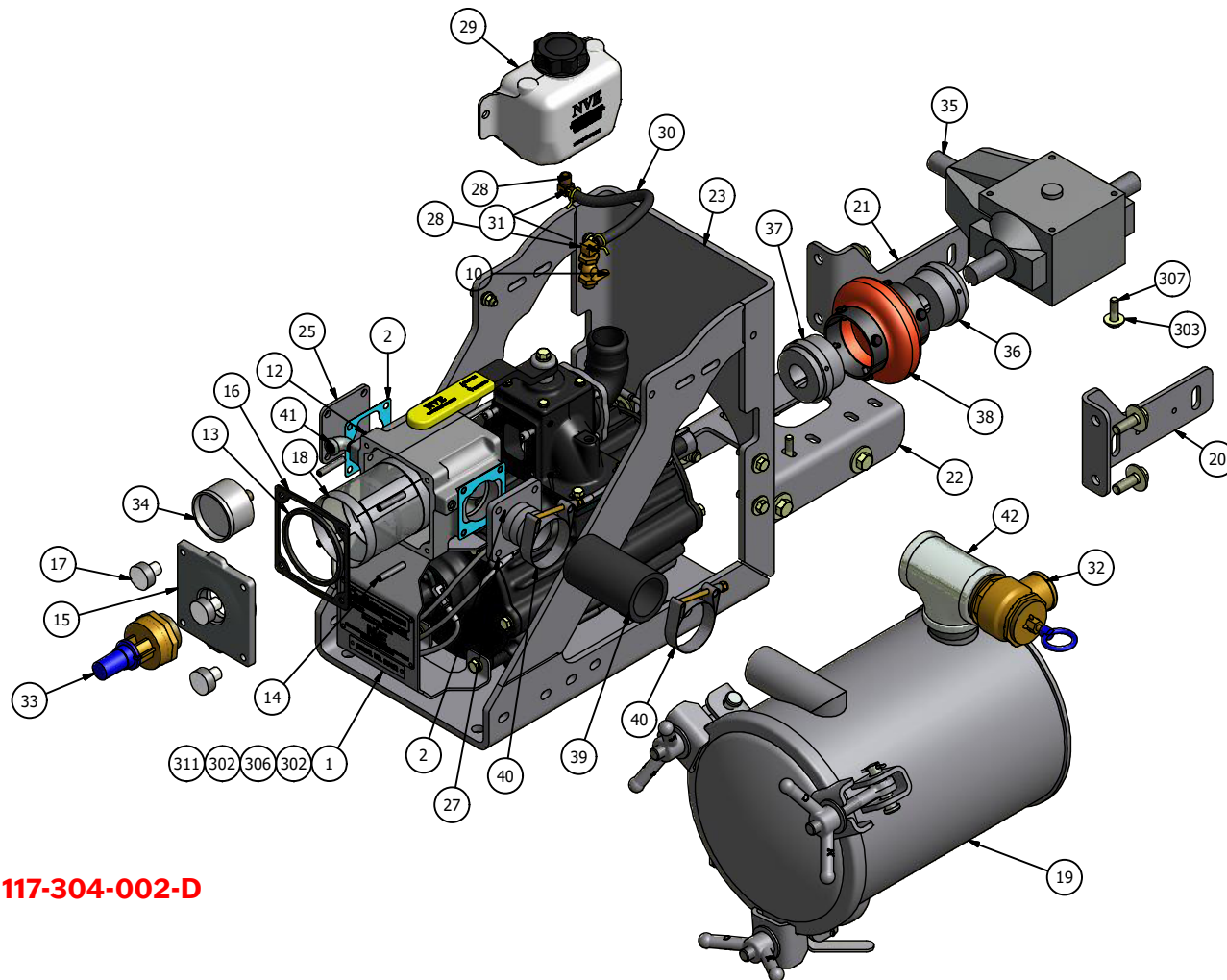
304 Pump Stand Complete | Parts List



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	110-304-S	CHALLENGER 304 CCW
2	1	120-006-003	KEY 0.250" X 0.250" X 1.50" 1018 un ber
3	1	120-039-002	GASKET INTAKE MANIFOLD 304
4	1	120-100-001	DECAL NVE MUFFLER PAK 4" X 2"
5	1	120-100-013	DECAL GEARBOX VENT INSTALL
6	1	120-100-017	DECAL FLUSHING FLUID - 1 QT TANK
7	1	120-103	VALVE, DRAIN 1/4" NPT
8	1	120-104-001	DECAL IMPORTANT RESPONSIBILITY 4" X 2"
9	1	120-039-002	GASKET INTAKE MANIFOLD 304
10	1	120-064-033	O-RING, SQUARE, 7-342 NBR-70
11	1	120-309-304	FILTER HOUSING 304 MACHINED
12	1	120-310-304	FILTER COVER 304 MACHINED
13	4	120-312-002	KNOB, 5/16-18UNC
14	1	120-314-004	INTAKE FILTER 304
15	1	120-315-001	GASKET, FILTER COVER, 304
16	1	280-304-GBB-1	BRKT GEARBOX LH
17	1	280-304-GBB-2	BRKT GEARBOX RH
18	1	280-304-GBB-4	BRKT GEARBOX CTR
19	1	280-350-020	304 PUMP STAND
20	1	280-355-184	304 FILTER BOX COVER PLATE
21	2	310-LP4	HOSE BARB 1/4" NPT X 1/4" 90 DEG ELBOW BRASS
22	1	320-082-003Z	FLUSH TANK ASSY HDPE 1QT
23	1	320-407-003	OIL LINE BLK 1/4" ID 30R7
24	2	320-409-013	SPRING CLIP CONSTANT-TENSION 1/2 OD HOSE
25	1	366-150	VACUUM RELIEF, 1 1/2" NPT
26	1	408-200-009	GAUGE, VAC/PRESSURE, BACK CONNECT
27	1	422-200-1	GEARBOX 200 SERIES 1:1 RATIO
28	1	424-050-100	HUB 1" BORE 1/4" KEY E5
29	1	424-050-125	HUB 1.25" BORE 1/4" KEY E5
30	1	424-050-E5	COUPLER FLEX ELEMENT E5
31	1	428-0250-E	ELBOW 1/4 STREET GAL
32	1	864-015	KNURLED CUP POINT SET SCREW 3/8"-16 UNC X 0.375"
33	1	864-016	FLAT TIP SET SCREW 3/8"-16 UNC X 0.375"
34	1	864-017	KNURLED CUP POINT SET SCREW 1/4"-20 UNC X 0.4375"
35	1	864-018	FLAT TIP SET SCREW 1/4"-20 UNC X 0.375"

ITEM	QTY	PART NUMBER	DESCRIPTION
301	8	FW - 1_2	FLAT WASHER - 1/2"
302	4	FW - 3/8	FLAT WASHER, 3/8"
303	4	FW - 5/16 SAE	FLAT WASHER, 5/16 SAE
304	16	FW - 1/2	FLAT WASHER, 1/2
305	4	HHCS - 1/2-13 UNC X 2.00	HEX HEAD CAP SCREW - 1/2-13 UNC X 2.00
306	8	HHCS - 1/2-13 UNC X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50
307	4	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25
308	4	HHCS - 5/16-18 UNC x 0.75	HEX HEAD CAP SCREW - 5/16-18 UNC x 0.75
309	2	HHCS - 5/16-18 UNC X 1.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.25
312	4	LW - 5/16	LOCK WASHER, 5/16
313	12	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC
314	2	NYLOCK NUT - 5/16 UNC	NYLOCK NUT - 5/16 UNC
315	1	PLUG - 1/4 NPT SH	SOCKET HEAD PLUG - 1/4 NPT

NOTE: Item numbers 300 and above are listed for reference only and may be sourced



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* Item shown is clockwise gearbox drive; also available in hydraulic drive as well as counter-clockwise orientation for both drive options. For the hydraulic drive parts list, refer to page 8.

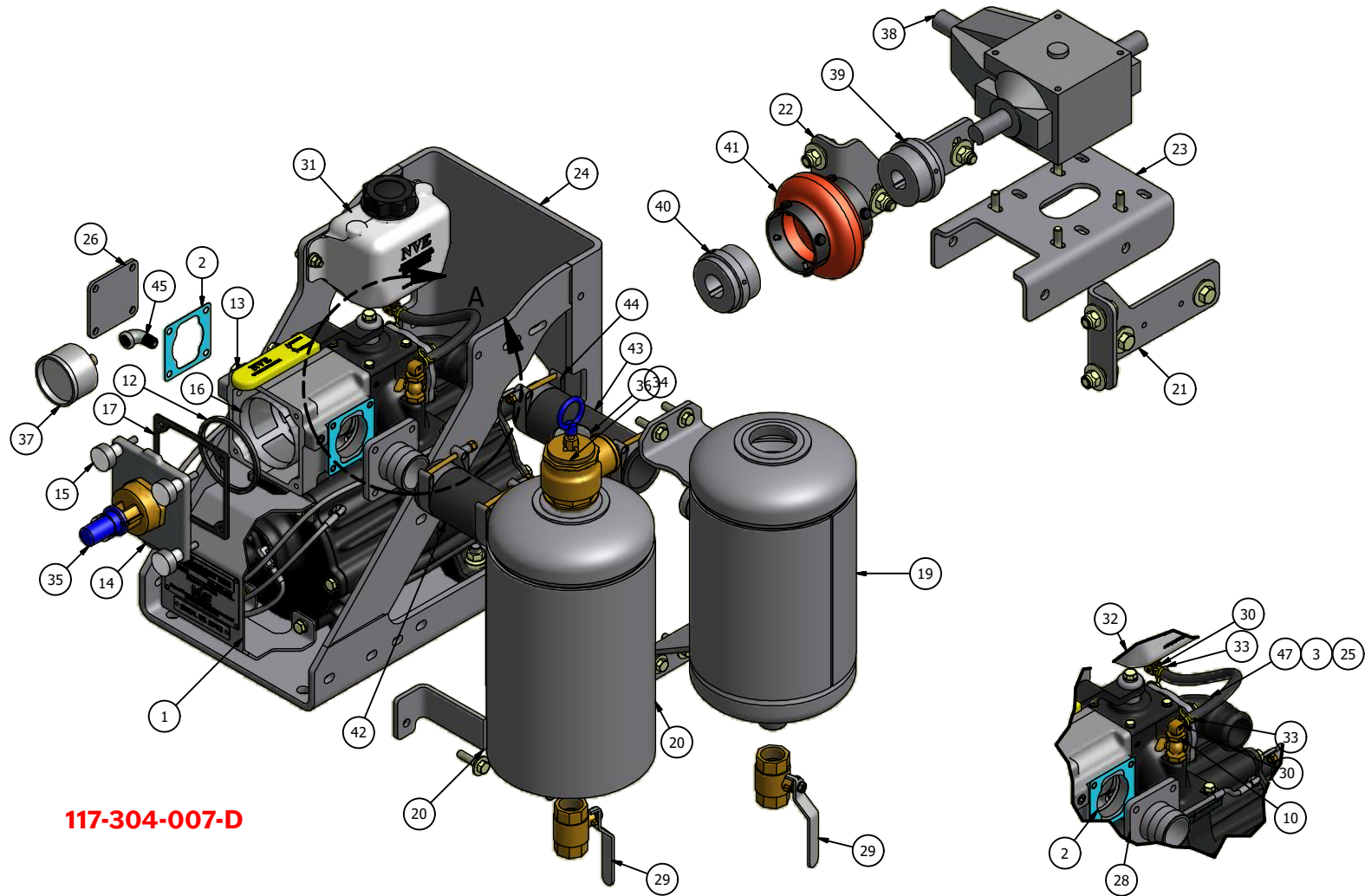
304 Horizontal Package | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	110-304-S	CHALLENGER 304 CCW
2	2	120-039-002	GASKET INTAKE MANIFOLD 304
3	1	120-064-031	O-RING 2-332 VITON
4	1	120-100-001	DECAL NVE MUFFLER PAK 4" X 2"
5	1	120-100-011	DECAL DRAIN DAILY - YELLOW
6	1	120-100-012	DECAL CLEAN FILTER REGULARLY YELLOW
7	1	120-100-013	DECAL GEARBOX VENT INSTALL
8	1	120-100-014	DECAL PRESSURE RELIEF MUST BE SET
9	1	120-100-017	DECAL FLUSHING FLUID - 1 QT TANK
10	1	120-103	VALVE, DRAIN 1/4" NPT
11	1	120-104-001	DECAL IMPORTANT RESPONSIBILITY 4" X 2"
12	1	120-309-304	FILTER HOUSING 304 MACHINED
13	1	120-064-033	O-RING, SQUARE, 7-342 NBR-70
14	4	SS - 5/16-18 UNC X 1.75	HEXAGON SOCKET SET SCREW - 5/16-18 UNC X 1.75 SS
15	1	120-310-304	FILTER COVER 304 MACHINED
16	1	120-315-001	GASKET, FILTER COVER, 304
17	4	120-312-002	KNOB, 5/16-18UNC
18	1	120-314-004	INTAKE FILTER 304
19	1	218-100-005	MT 10" HORIZ 304 RH
20	1	280-304-GBB-1	BRKT GEARBOX LH
21	1	280-304-GBB-2	BRKT GEARBOX RH
22	1	280-304-GBB-4	BRKT GEARBOX CTR
23	1	280-350-020	304 PUMP STAND
24	1	280-355-116	FLANGE, 2" ADJ ELBOW
25	1	280-355-184	304 FILTER BOX COVER PLATE
27	1	280-355-191	2IN FLANGE TO 2" TUBE
28	2	310-LP4	HOSE BARB 1/4" NPT X 1/4" 90 DEG ELBOW BRASS
29	1	320-082-003Z	FLUSH TANK ASSY HDPE 1QT
30	1	320-407-003-231	OIL LINE BLK 1/4" ID 30R7
31	2	320-409-013	SPRING CLIP CONSTANT-TENSION 1/2 OD HOSE
32	1	364-306-2	PRESSURE RELIEF, 2"
33	1	366-150	VACUUM RELIEF, 1 1/2" NPT
34	1	408-200-009	GAUGE, VAC/PRESSURE, BACK CONNECT
35	1	422-200-1	GEARBOX, 200 SERIES 1:1 RATIO
36	1	424-050-100	HUB 1" BORE 1/4" KEY E5
37	1	424-050-125	HUB 1.25" BORE 1/4" KEY E5
38	1	424-050-E5	COUPLER FLEX ELEMENT E5
39	1	426-200-TAR-0450	HOSE 2"D X 4.5" L

ITEM	QTY	PART NUMBER	DESCRIPTION
40	2	426-225-TBC	CLAMP T-BOLT FOR 2" HOSE
41	1	428-0250-E	ELBOW 1/4 STREET GAL
42	1	428-200-003	TEE 2" FNPT
43	1	803-063-014	ELBOW 2" 90 DEG ADJ ALUM ECOAT
301	16	FW - 1/2	FLAT WASHER, 1/2
302	8	FW - 1/2	FLAT WASHER - 1/2"
303	16	FW - 3/8	FLAT WASHER, 3/8"
304	4	FW - 5/16 SAE	FLAT WASHER, 5/16 SAE
305	8	HHCS - 1/2-13 UNC X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50
306	4	HHCS - 1/2-13 UNC X 2.00	HEX HEAD CAP SCREW - 1/2-13 UNC X 2.00
307	4	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25
308	6	HHCS - 3/8-16 UNC X 1.50	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.50
309	2	HHCS - 5/16-18 UNC X 1.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.25
310	1	LW - 1/2	LOCK WASHER, 1/2
311	12	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC
312	6	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC
313	2	NYLOCK NUT - 5/16 UNC	NYLOCK NUT - 5/16 UNC
314	1	PLUG - 1/4 NPT SH	SOCKET HEAD PLUG - 1/4 NPT

304 Combo Moisture Trap/Muffler Package | Parts Diagram

Challenger Series

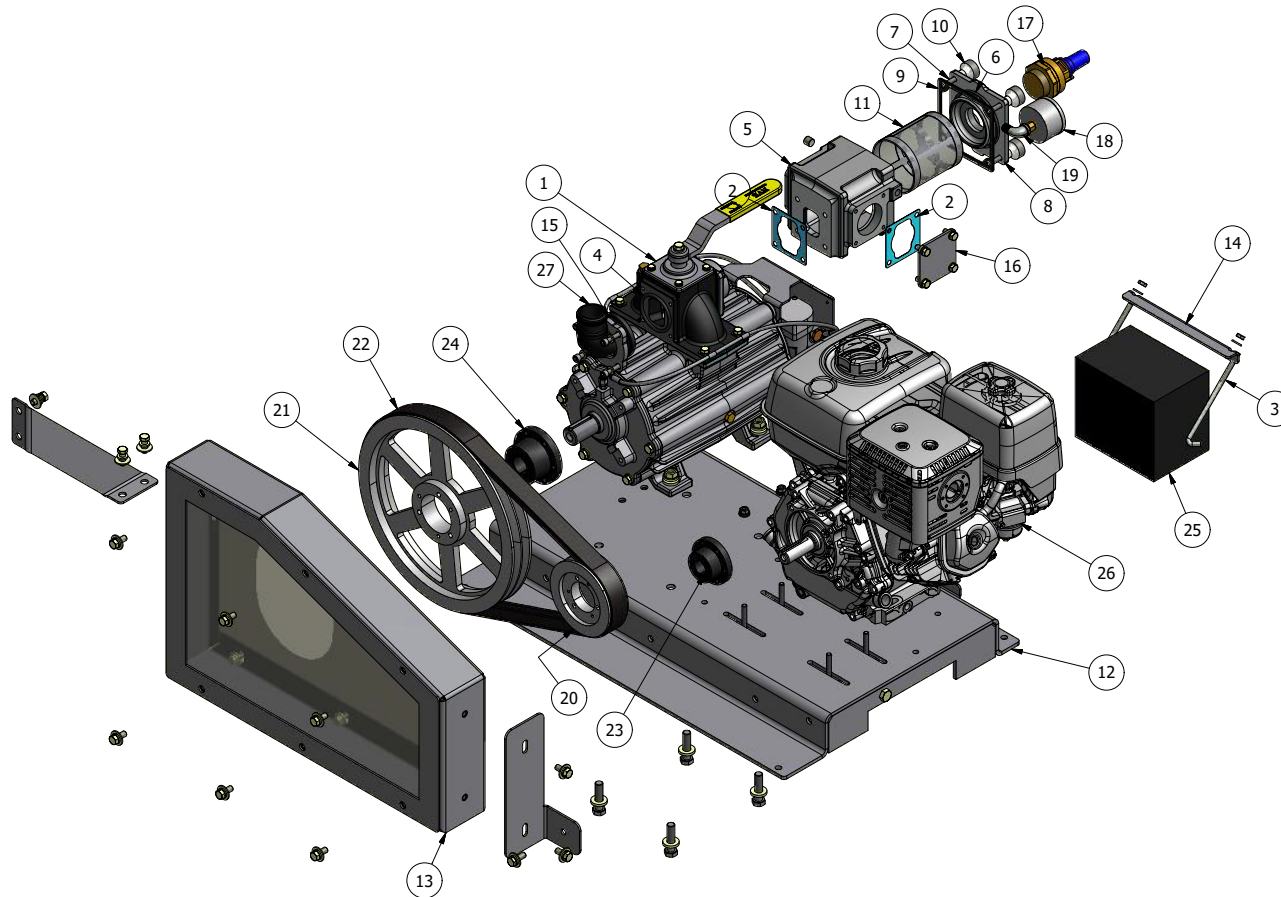


117-304-007-D

304 Combo Moisture Trap/Muffler Package | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	110-304-S	CHALLENGER 304 CCW
2	2	120-039-002	GASKET INTAKE MANIFOLD 304
3	1	120-064-031	O-RING 2-332 VITON
4	1	120-100-001	DECAL NVE MUFFLER PAK 4" X 2"
5	1	120-100-011	DECAL DRAIN DAILY - YELLOW
6	1	120-100-012	DECAL CLEAN FILTER REGULARY YELLOW
7	1	120-100-013	TOE TAG DECAL GEARBOX VENT INSTALL
8	1	120-100-014	TOE TAG DECAL RELIEF MUST BE SET
9	1	120-100-017	DECAL FLUSHING FLUID - 1 QT TANK
10	1	120-103	VALVE, DRAIN 1/4" NPT
11	1	120-104-001	DECAL IMPORTANT RESPONSIBILITY 4" X 2"
12	1	120-064-033	O-RING, SQUARE, 7-342 NBR-70
13	1	120-309-304	FILTER HOUSING 304 MACHINED
14	1	120-310-304	FILTER COVER 304 MACHINED
15	4	120-312-002	KNOB, 5/16-18UNC
16	1	120-314-004	INTAKE FILTER 304
17	1	120-315-001	GASKET, FILTER COVER, 304
18	4	SS - 5/16-18 UNC X 1.75	HEXAGON SOCKET SET SCREW - 5/16-18 UNC X 1.75 SS
12.1	1	120-039-002	GASKET INTAKE MANIFOLD 304
19	1	212-800-2FPT-3	OCM 8" DIA 2" FPT W/HB CARBON
20	1	216-800-002	MT 8" 304 PACKAGE
21	1	280-304-GBB-1	BRKT GEARBOX LH
22	1	280-304-GBB-2	BRKT GEARBOX RH
23	1	280-304-GBB-4	BRKT GEARBOX CTR
24	1	280-350-020	304 PUMP STAND
25	1	280-355-116	FLANGE, 2" ADJ ELBOW
26	1	280-355-184	304 FILTER BOX COVER PLATE
28	1	280-355-191	2IN FLANGE TO 2" TUBE
29	2	288-100	DRAIN VALVE BRASS 1" IPS
30	2	310-LP4	HOSE BARB 1/4" NPT X 1/4" 90 DEG ELBOW BRASS
31	1	320-082-003Z	FLUSH TANK ASSY HDPE 1QT
32	1	320-407-003-231	OIL LINE BLK 1/4" ID 30R7
33	2	320-409-013	SPRING CLIP CONSTANT-TENSION 1/2 OD HOSE
34	1	364-306-2	PRESSURE RELIEF, 2"
35	1	366-150	VACUUM RELIEF, 1 1/2" NPT
36	1	380-320-2	KING NIPPLE 2" STEEL ZINC PLATED
37	1	408-200-009	GAUGE, VAC/PRESSURE, BACK CONNECT
38	1	422-200-1	GEARBOX, 200 SERIES 1:1 RATIO
39	1	424-050-100	HUB 1" BORE 1/4" KEY E5

ITEM	QTY	PART NUMBER	DESCRIPTION
40	1	424-050-125	HUB 1.25" BORE 1/4" KEY E5
41	1	424-050-E5	COUPLER FLEX ELEMENT E5
42	1	426-200-TAR-0500	HOSE 2"D X 5.0" L
43	1	426-200-TAR-0750	HOSE 2" TAR & ASPHALT 7.5" LONG
44	4	426-225-TBC	CLAMP T-BOLT FOR 2" HOSE
45	1	428-0250-E	ELBOW 1/4 STREET GAL
46	1	428-290-TE	ELBOW 90 DEG 2" GALV
47	1	803-063-014	ELBOW 2" 90 DEG ADJ ALUM ECOAT



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	110-304-S	CHALLENGER 304 CCW
2	2	120-039-002	GASKET INTAKE MANIFOLD 304
3	1	120-044-001	BOLT BATTERY HOLD DOWN 304 EDR (PKG 2)
4	1	120-064-031	O-RING 2-332 VITON
5	1	120-309-304	FILTER HOUSING 304 MACHINED
6	1	120-064-033	O-RING, SQUARE, 7-342 NBR-70
7	4	SS-5/16-18 UNCX1.75	HEXAGON SOCKET SET SCREW-5/16-18 UNCX1.75 SS
8	1	120-310-304	FILTER COVER 304 MACHINED
9	1	120-315-001	GASKET, FILTER COVER, 304
10	4	120-312-002	KNOB, 5/16-18UNC
11	1	120-314-004	INTAKE FILTER 304
12	1	280-355-075	ENGINE FRAME FOR 304 EDR
13	1	280-355-076	BELT GUARD FOR 304 EDR
14	1	280-355-077	BATTERY RETAINER

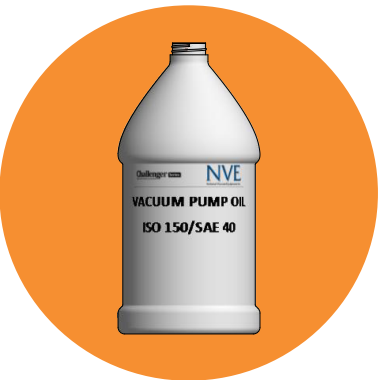
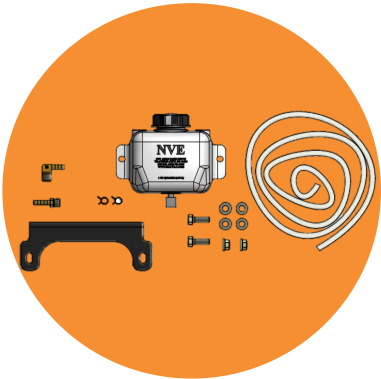
ITEM	QTY	PART NUMBER	DESCRIPTION
15	1	280-355-116	FLANGE, 2" ADJ ELBOW
16	1	280-355-184	304 FILTER BOX COVER PLATE
17	1	366-150	VACUUM RELIEF, 1 1/2" NPT
18	1	408-200-009	GAUGE, VAC/PRESSURE, BACK CONNECT
19	1	428-0250-E	ELBOW 1/4 STREET GAL
20	1	430-100-029	PULLEY 5.0X2B-SDS
21	1	430-100-030	PULLEY 13.6X2B-SK
22	1	430-200-019	BELT 2/B55 POWERBAND NON COGGED
23	1	430-300-024	BUSHING SDS 1" 1/4" KEYWAY
24	1	430-300-025	BUSHING SK 1-1/4 1/4" KEYWAY
25	1	450-100-018	BATTERY 150 CCA L&G
26	1	460-100-002	ENGINE HONDA 13HP ELECT START
27	1	803-063-014	ELBOW 2" 90 DEG ADJ ALUM ECOAT

304 Maintenance Items



Features

- The NVE Challenger repair kits come with or without bearings and include the seals, gaskets, and vanes required for repair.
- The NVE Challenger flush kits come with all the required items to properly flush your Challenger vacuum pumps.
- The NVE Challenger Pump Oil is ISO 150; though this oil is not required, it is recommended to keep your vacuum pump lubricated properly, particularly in extreme conditions. Sold by the case, six (6) gallons per case.



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Essential Black Box - Pump Tool Kit	120-OT15	20 lbs
Repair Kit	115-304-0	7 lbs
Repair Kit (without bearings)	115-304-0B	4 lbs
Flush Fluid Kit	320-081-002	2 lbs
Oil Vacuum Pump R&O ISO 150/SAE 40 ND. Price per Gallon. 6 Gallons per Case.	150-220-VPOIL-150	7 lbs



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NVE
National Vacuum Equipment, Inc.

Challenger **Series**
VACUUM PUMPS & BLOWERS