

ACCESSORIES

IMI Norgren offers a complete range of vacuum accessories to meet specific application requirements.



Cartridges for custom applications

Reduce noise levels









Sensing and feedback

Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering vacuum range. If you can't see the option you require please contact us.

● Accessories

<p>Cartridges For custom vacuum applications</p>  <p>Page 253</p>	<p>Silencers To reduce the noise of vacuum generators</p>  <p>Page 282</p>	<p>Switches/Sensors Precision control feedback for system monitoring</p>  <p>Page 286</p>	<p>Check Valves Check valves designed specifically for vacuum</p>  <p>Page 312</p>	<p>Gauges Accurate monitoring of vacuum levels</p>  <p>Page 314</p>
<p>Filters Compact in-line filters to vacuum lines</p>  <p>Page 315</p>				

CARTRIDGES

- Saves space – eliminates the need for an external generators, install close to vacuum point
- High Productivity – powerful vacuum up to 28"Hg (948mbar), fast response time
- Compact & lightweight – reduces overall equipment weight
- Efficient – minimal air consumption, high performance
- Straight through design – reliable, no moving parts to wear out or get clogged, no maintenance
- Performance Optimization – precise control of flow and vacuum level

Technical Data

Fluid

Filtered (50 Micron) unlubricated, non-corrosive dry gases

Operating Pressure

80 PSI (5.5 bar) or 60 PSI (4.1 bar)

Operating Temperature

-30° to ~250°F (-34° to ~121°C)

Materials

Cartridge: Nylon & Buna-N O-rings

Custom Materials

Cartridge: Brass, Stainless Steel, PVC, Peek, Teflon™, Acetal

O-rings available in additional materials

Min Series

Supply Line

Min. 5/32" (4mm) tube, 1/4" OD (6mm) tube preferred for lines exceeding 3' (1M)

Vacuum Line

1/4" OD (6mm) tube

Mid Series

Supply Line/Vacuum Line

1/4" OD (6mm) tube for size

60 and 90

3/8" OD (10mm) tube for size

100 and 150

Max Series

Supply Line/Vacuum Line

3/8" OD (10mm) tube

Performance Level Designations

"L" 0-10"Hg (0 to 339mbar) for low vacuum/high flow applications

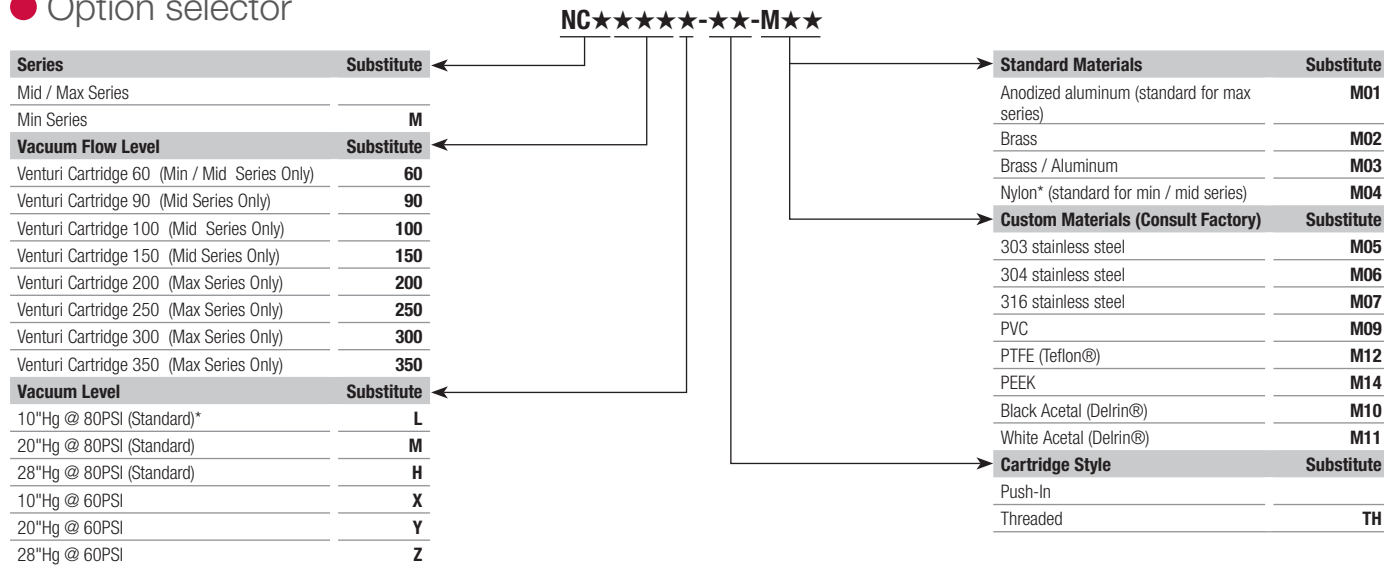
"M" 0-20"Hg (0 to 677mbar)

for medium vacuum/high flow applications

"H" 0-28"Hg (0 to 948mbar) for high vacuum/standard flow applications

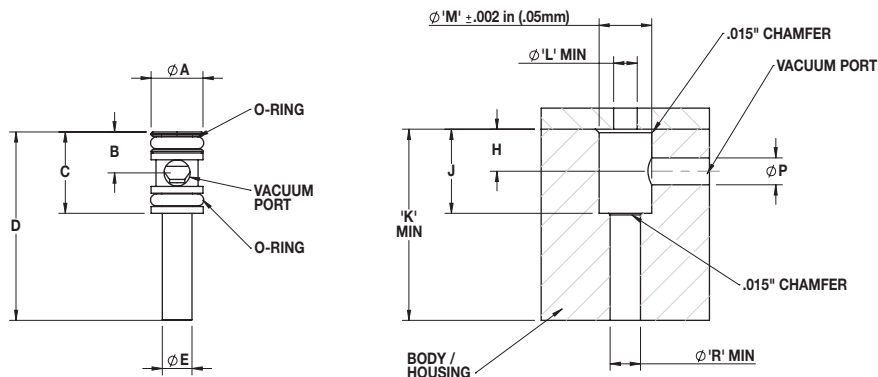


Option selector



*Not available in 60 Series

● Min Dimensions

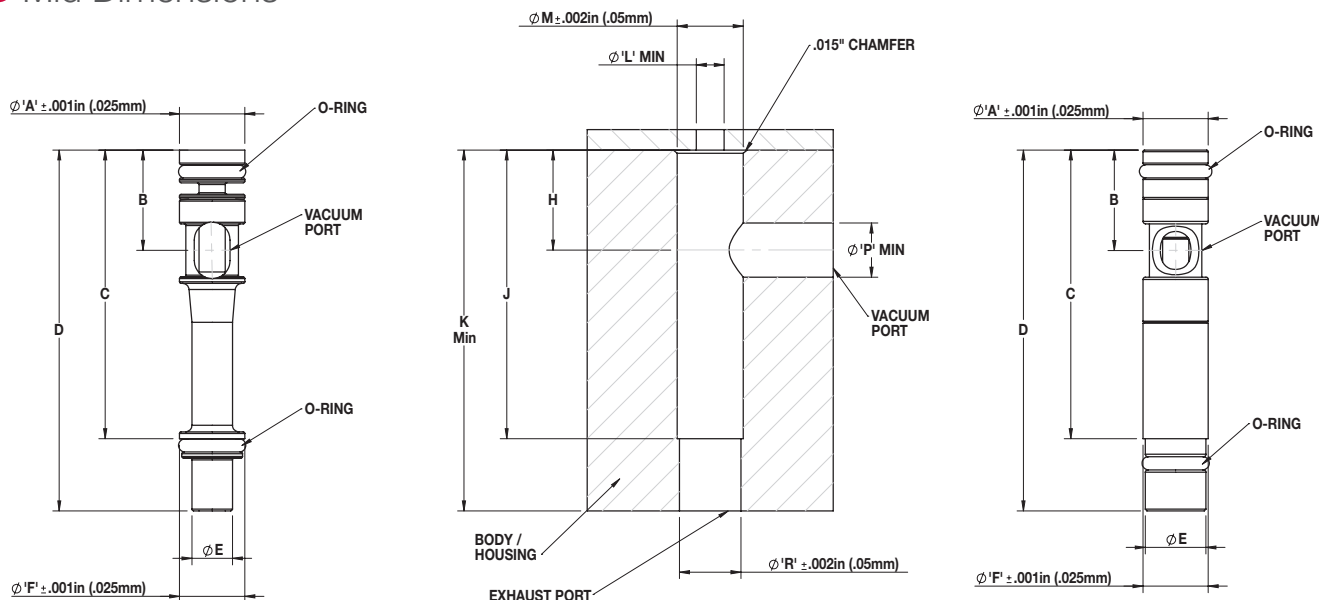


Min Series Cartridge dimensions are the same for nylon and brass

Min Series Cartridge housing

Model	Units	A	B	C	D	E	H	J	K	L	M	P	R
NCM60	Imperial	0.31	0.25	0.49	1.13	0.17							
	(Metric)	(7.92)	(6.20)	(12.30)	(28.60)	(4.30)							
Housing	Imperial						0.25	0.49	1.14	0.16	0.31	0.16	0.18
	(Metric)						(6.40)	(12.70)	(29.00)	(4.10)	(7.90)	(4.10)	(4.60)

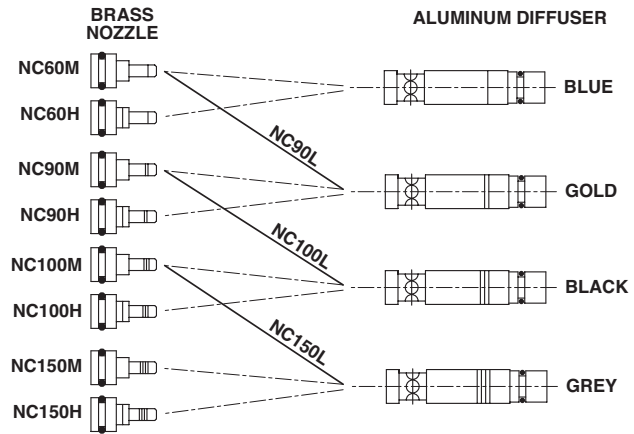
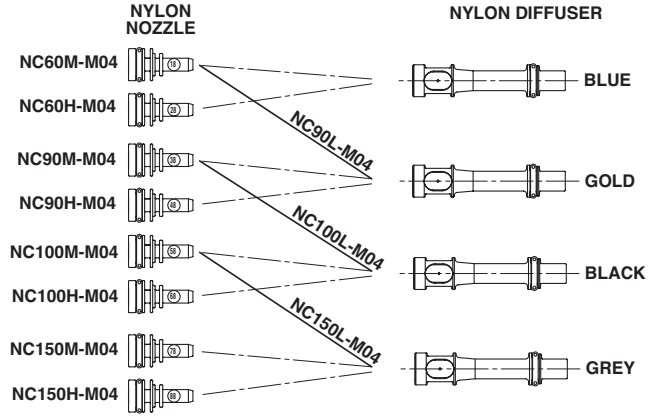
● Mid Dimensions



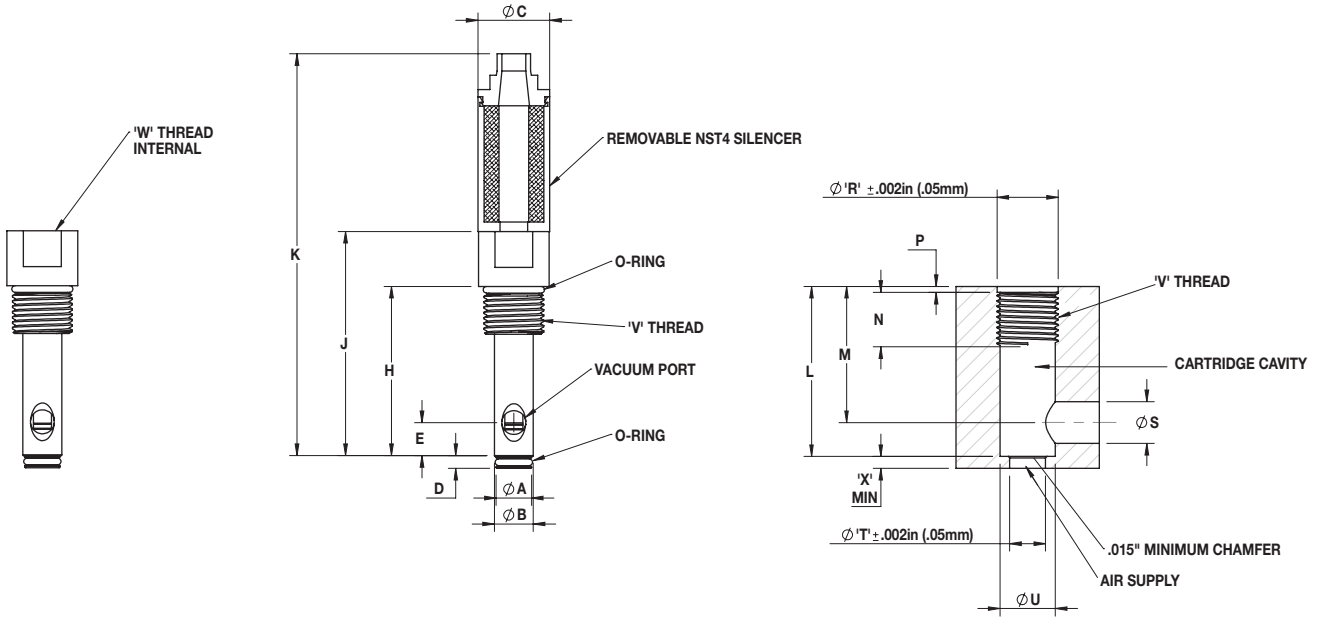
Cartridge housing for both nylon and metal cartridges

Model	Units	A	B	C	D	E	F	H	J	K	L	M	P	R
NC60, 90, 100, 150 (Nylon Cartridges)	Imperial	0.398	0.61	1.76	2.20	0.25	0.398							
	(Metric)	(10.11)	(15.50)	(44.70)	(55.90)	(6.30)	(10.11)							
NC60, 90, 100, 150 (Metal Cartridges)	Imperial	0.398	0.61	1.76	2.20	0.37	0.398							
	(Metric)	(10.11)	(15.50)	(44.70)	(55.90)	(9.40)	(10.11)							
Housing	Imperial							0.61	1.78	2.21	0.14	0.40	0.33	0.38
	(Metric)							(15.50)	(45.10)	(56.10)	(3.60)	(10.21)	(8.30)	(9.65)

● Mid Series Identification Chart

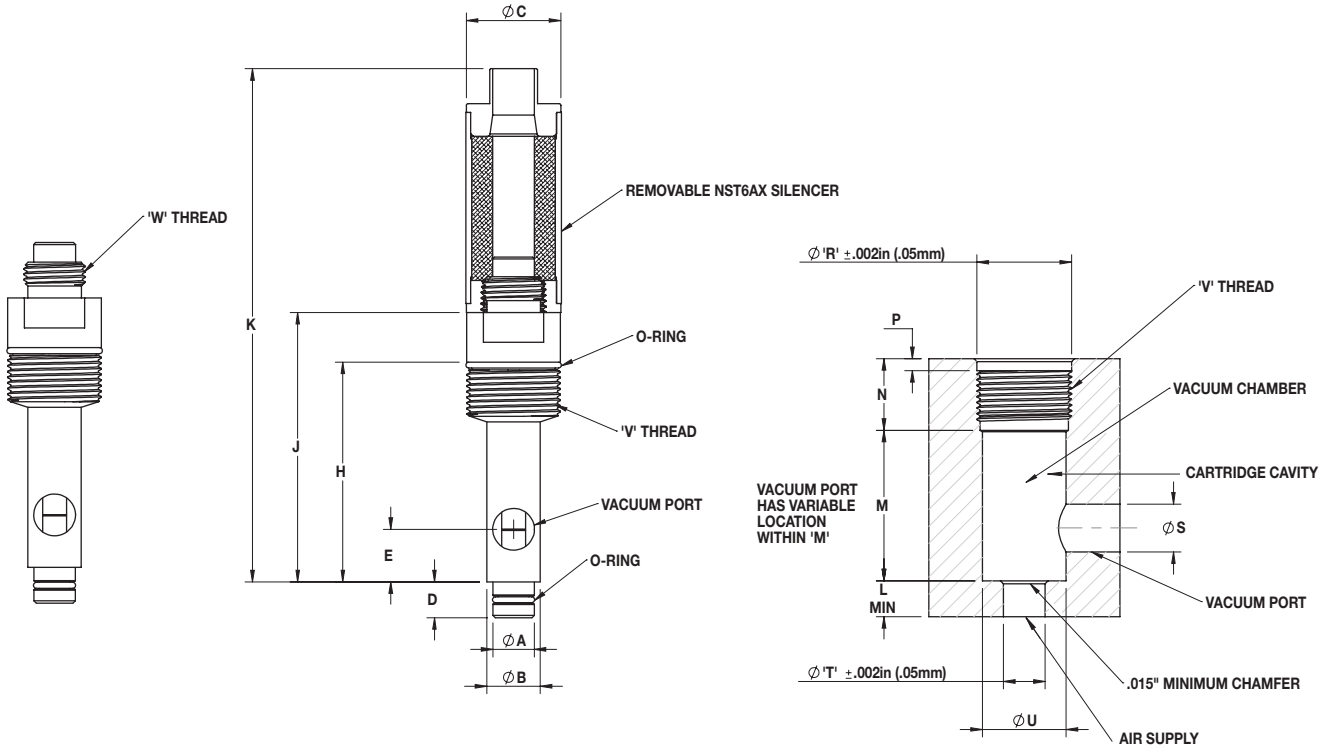


● Mid - Threaded Dimensions



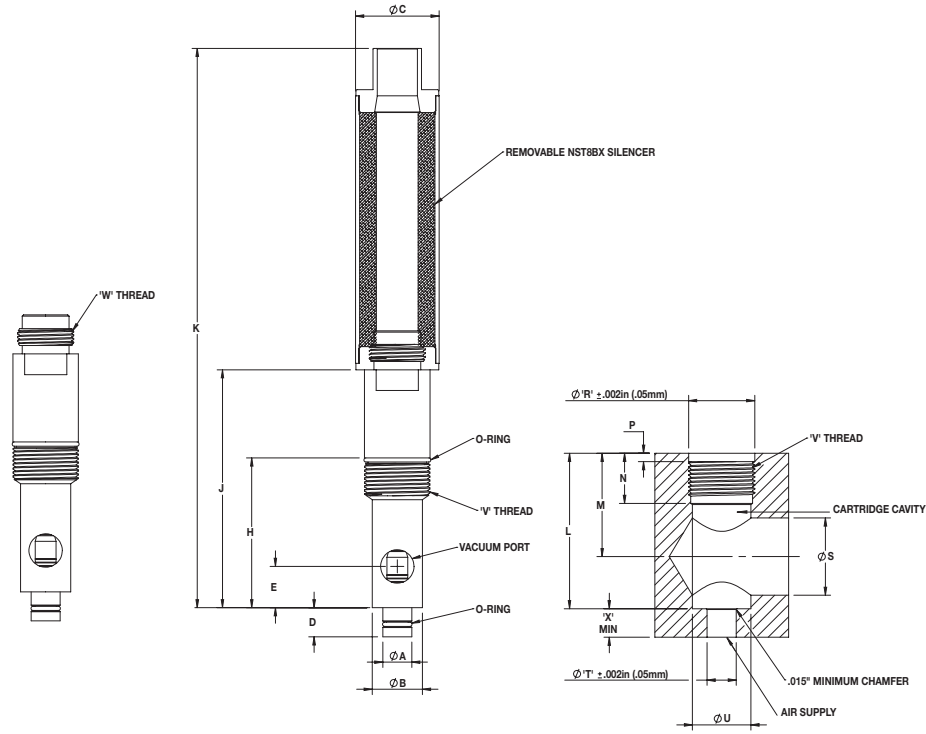
NC60°-150°-TH	Units	A	B	C	D	E	H	J	K	L	M	N	P	R	S	T	U	V	W	X
Cartridge	Imperial	0.370	0.41	0.75	0.13	0.36	1.78	2.36	4.22									5/8-18 UNF	1/4-18 NPS	
	(Metric)	(9.40)	(10.36)	(19.05)	(3.18)	(9.14)	(45.21)	(59.94)	(107.06)									(M16x1.5)	(1/4-18 NPS)	
Cavity	Imperial									1.78	1.43	0.63	0.06	0.64	0.44	0.38	0.58	(5/8-18 UNF)	-	0.13
	(Metric)									(45.21)	(36.32)	(16.00)	(1.60)	(16.26)	(11.11)	(9.53)	(14.50)	(M16x1.5)	-	(3.30)

● Max - Threaded Dimensions



NC200*-250*-TH	Units	A	B	C	D	E	H	J	K	L	M	N	P	R	S	T	U	V	W
Cartridge	Imperial	0.430	0.56	1.00	0.38	0.55	2.30	2.82	5.37									7/8-20 UNEF	3/8-18 NPS
	(Metric)	(11.00)	(14.22)	(25.40)	(9.65)	(13.97)	(58.42)	(71.63)	(136.42)									(M25x1.5)	(3/8-18 NPS)
Cavity	Imperial									0.38	1.58	0.75	0.13	0.99	0.50	0.44	0.63	7/8-20 UNEF	-
	(Metric)									(9.65)	(40.13)	(19.05)	(3.30)	(25.15)	(12.70)	(11.18)	(16.00)	(M25x1.5)	-

● Max - Threaded Dimensions



NC300*-350*-TH	Units	A	B	C	D	E	H	J	K	L	M	N	P	R	S	T	U	V	W	X
Cartridge	Imperial	0.430	0.75	1.25	0.44	0.62	2.24	3.56	8.36									7/8-20 UNEF	1/2-14 NPS	
	(Metric)	(11.00)	(19.05)	(31.75)	(11.18)	(15.70)	(56.90)	(90.35)	(212.39)									(M25x1.5)	(1/2-14 NPS)	
Cavity	Imperial									2.33	1.55	0.75	0.13	0.99	1.16	0.44	0.81	7/8-20 UNEF	-	0.44
	(Metric)									(59.06)	(39.24)	(19.05)	(3.18)	(25.15)	(29.36)	(11.11)	(20.57)	(M25x1.5)	-	(22.00)

NC-MSR SERIES

Threaded Cartridge

- Maintenance Free - straight through design allows debris to pass through without clogging
- No downtime - screws directly into existing multi-stage generators
- Efficient - minimal air consumption
- Performance Optimization - precise control of vacuum and flow levels
- Direct Replacement - no plumbing, no tools required, change in minutes

Technical Data

Fluid
Filtered (50 Micron) unlubricated, non-corrosive dry gases

Operating Temperature
-30° to ~250° F (-34° to ~121°C)

Operating Pressure
80 PSI (5.5 bar) Standard or 60 PSI (4.1 bar)

Materials
Generator Body: Anodized Aluminum

Recommended Supply Line
M07 1/4" (6mm) OD
M14 3/8" (10mm) OD
M25 1/2" (12mm) OD

Recommended Vacuum Port
M07 1/8 NPTF (G1/8 F)
M14 3/8 NPTF (G1/2 F)
M25 1/2 NPTF (G1/2 F)



Standard Models

Part Number	Max. Vacuum Level	Max. Vacuum Flow	Air Consumption
NCM60H1-M07-MSR-M01	28.0	0.8	0.8
NCM60M1-M07-MSR-M01	20.0	0.5	0.5
NC060H1-M14-MSR-M01	28.0	0.8	0.8
NC060M1-M14-MSR-M01	20.0	0.5	0.5
NC090H1-M14-MSR-M01	28.0	1.2	1.8
NC090M1-M14-MSR-M01	20.0	1.4	1.4
NC150H1-M14-MSR-M01	28.0	3.2	4.8
NC150M1-M14-MSR-M01	20.0	3.5	2.8
NC200H1-M25-MSR-M01	28.0	5.4	7.8
NC200M1-M25-MSR-M01	20.0	6.0	4.8
NC250H1-M25-MSR-M01	28.0	9.0	12.5
NC250M1-M25-MSR-M01	20.0	9.5	7.8
NC300M1-M25-MSR-M01	20.0	20.0	12.5
NC350M1-M25-MSR-M01	20.0	28.0	22.0

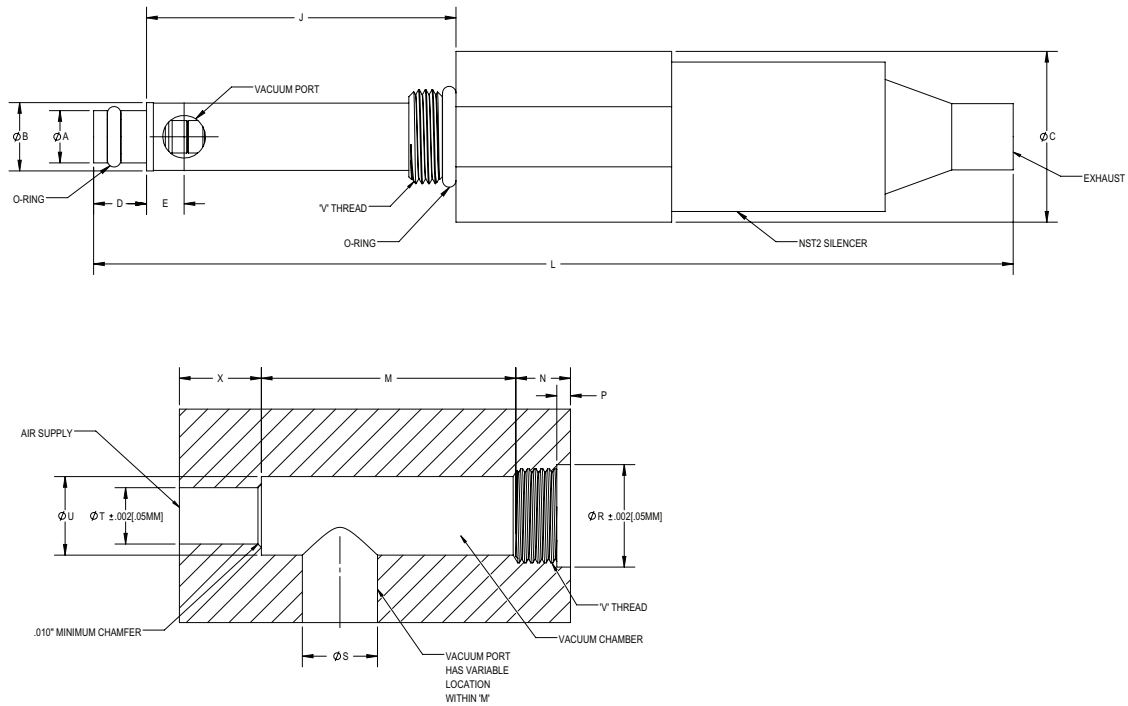
Option selector

NC ★★★★★ - M★★ - MSR - M01

Series	Substitute	Material	Substitute
Mid., Max. (Metric)	NC	Anodized Aluminum	M01
Vacuum Flow	Substitute	Mating Body	Substitute
0.5 SCFM (Min)	M60	MSV07 (Min)	M07
0.5 SCFM (Mid)	060	MSV14 (Mid)	M14
1.2 - 1.4 SCFM (Mid)	090	MSV25 (Max)	M25
2.0 - 2.1 SCFM (Mid)	100		
3.2 - 3.5 SCFM, 10 "Hg (Mid)	150		
6.0 SCFM (Max - Short)	200		
6.0 - 9.0 SCFM, (Max - Short)	250		
20 SCFM, (Max - Long)	300		
28 SCFM, (Max - Long)	350		
Vacuum Level	Substitute		
10 "Hg, 80 PSI [5.5 bar] (Mid, Max)	L1		
20 "Hg, 80 PSI [5.5 bar] (Min, Mid, Max)	M1		
28 "Hg, 80 PSI [5.5 bar] (Min, Mid, Max)	H1		
10 "Hg, 60 PSI [4.0] (Mid, Max)	X1		
20 "Hg, 60 PSI [4.0] (Min, Mid, Max)	Y1		
28 "Hg, 60 PSI [4.0] (Min, Mid, Max)	Z1		

NC-MSR SERIES (M07-MSR) Threaded Cartridge

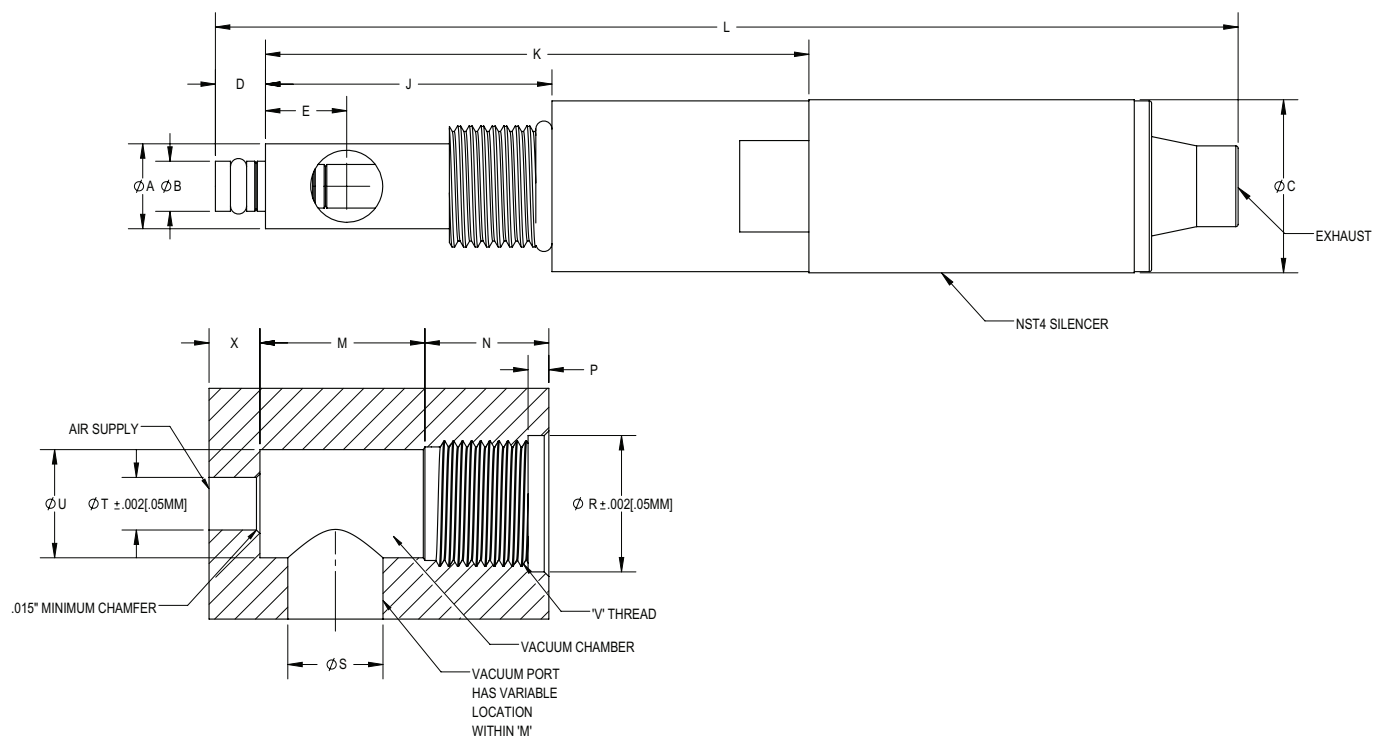
● Dimensions inches (mm)



Model	Units	A	B	C	D	E	J	L	M	N	P	R	S	T	U	V	X
NCM60X1-M07-MSR	Imperial	0.15	0.20	0.50	0.16	0.11	0.91	4.43	1.58	0.75	0.90	0.99	0.70	0.44	0.88	M7 x 0.5	N/A
CAVITY	Imperial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.75	0.16	0.04	0.30	0.22	0.17	0.23	M07 X 0.5	0.24
NCM60X1-M07-MSR	(Metric)	(3.80)	(5.10)	(12.70)	(4.10)	(2.80)	(23.10)	(112.5)	(40.10)	(19.10)	(22.90)	(25.10)	(17.80)	(11.20)	(22.40)	(M7 x 0.5)	(N/A)
CAVITY	(Metric)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(19.05)	(4.06)	(1.02)	(7.62)	(5.59)	(4.32)	(5.84)	(M07 X 0.5)	(6.10)

NC-MSR SERIES (M14-MSR) Threaded Cartridge

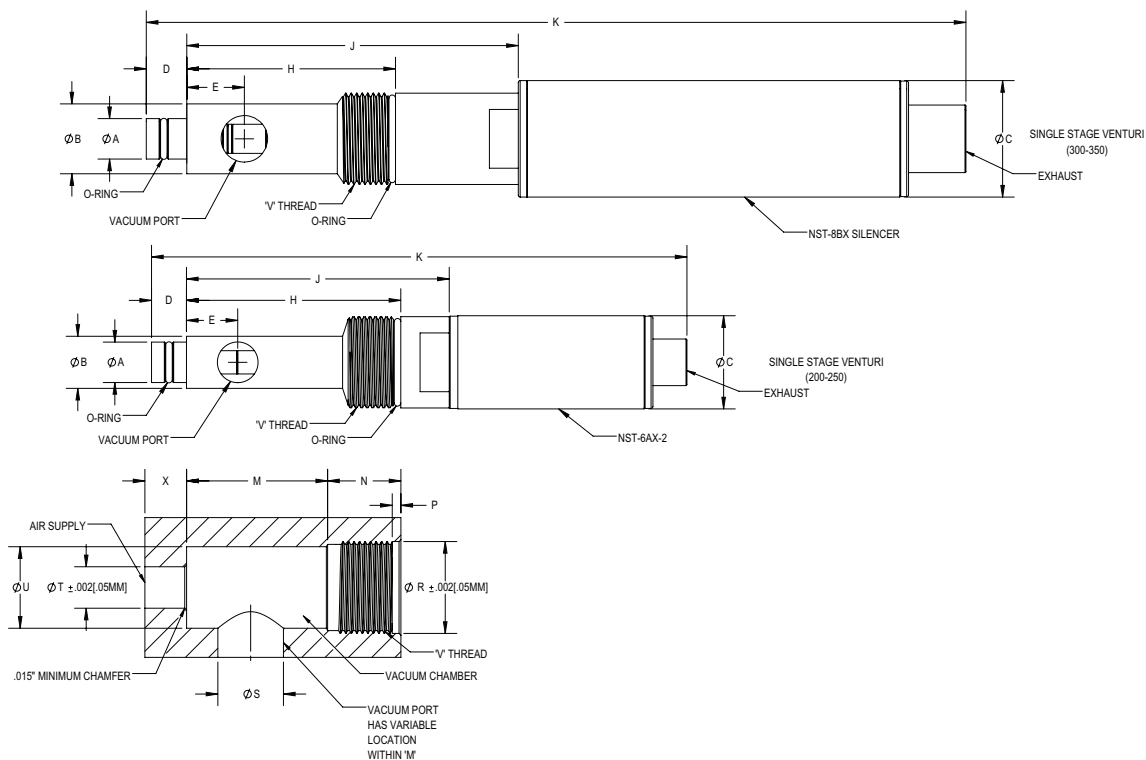
● Dimensions inches (mm)



Model	Units	A	B	C	D	E	J	K	L	M	N	P	R	S	T	U	V	X
NCXXX1-M14-MSR	Imperial	0.22	0.37	0.75	0.22	0.35	1.24	2.36	4.43	1.58	0.75	0.90	0.99	0.70	0.44	0.88	M14 x 1.0	N/A
CAVITY	Imperial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.72	0.54	0.09	0.59	0.41	0.23	0.47	M14 X 1.0	0.22
NCXXX1-M14-MSR	(Metric)	(5.60)	(9.40)	(19.10)	(5.60)	(8.90)	(31.50)	(59.90)	(112.50)	(40.10)	(19.10)	(22.90)	(25.10)	(17.80)	(11.20)	(22.40)	(M14 x 1.0)	(N/A)
CAVITY	(Metric)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	N/A	38.35	20.06	2.29	25.15	17.78	11.43	22.35	M25 X 1.5	5.6

NC-MSR SERIES (M25-MSR) Threaded Cartridge

● Dimensions inches (mm)

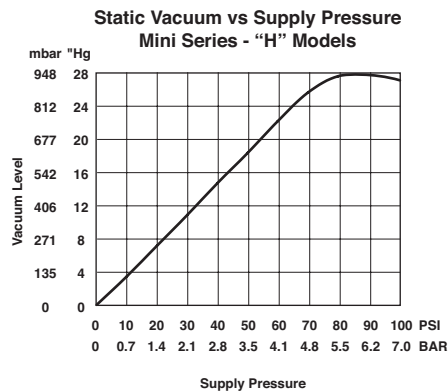
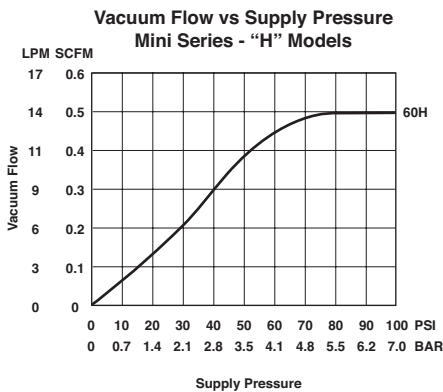
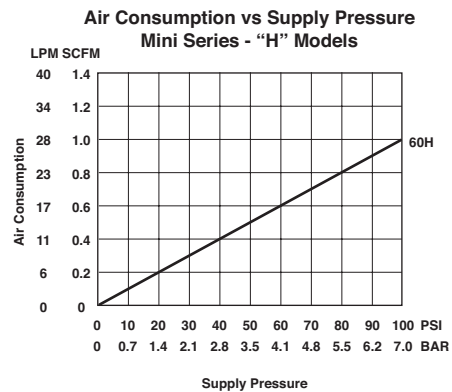
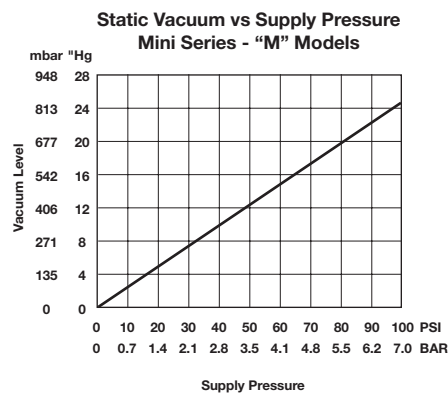
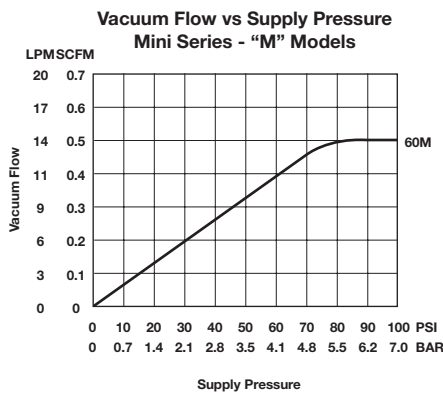
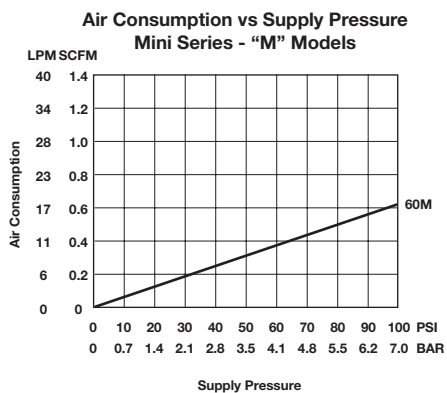


Model	Units	A	B	C	D	E	H	J	K	L	M	N	P	R	S	T	U	V	X
NC2XXX1-M25-MSR	Imperial	0.43	0.56	1.00	0.38	0.55	2.30	2.82	5.37	0.45	1.58	0.75	0.90	0.99	0.70	0.44	0.88	M25 x 1.5	N/A
NC3XXX1-M25-MSR	Imperial	0.43	0.75	1.25	0.43	0.62	2.30	3.56	8.36	0.45	1.58	0.75	0.90	0.99	0.70	0.44	0.88	M25 x 1.5	N/A
CAVITY	Imperial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.51	0.79	0.09	0.99	0.70	0.45	0.88	M25 X 1.5	0.45
NC2XXX1-M25-MSR	(Metric)	(10.90)	(14.20)	(25.40)	(9.70)	(14.00)	(58.40)	(71.60)	(136.40)	(11.40)	(40.10)	(19.10)	(22.90)	(25.10)	(17.80)	(11.20)	(22.40)	(M25 x 1.5)	(N/A)
NC3XXX1-M25-MSR	(Metric)	(10.90)	(19.10)	(31.80)	(10.90)	(15.70)	(58.40)	(90.40)	(212.30)	(11.40)	(40.10)	(19.10)	(22.90)	(25.10)	(17.80)	(11.20)	(22.40)	(M25 x 1.5)	(N/A)
CAVITY	(Metric)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(38.35)	(20.06)	(2.29)	(25.15)	(17.78)	(11.43)	(22.35)	(M25 X 1.5)	(5.6)

● Performance Data - Mini Series

Model	Air Consumption SCFM (L/min)	Vacuum Level "Hg (mbar)	0"Hg (0)	3"Hg (102)	6"Hg (203)	9"Hg (305)	12"Hg (406)	15"Hg (508)	18"Hg (609)	20"Hg (677)	21"Hg (711)	24"Hg (813)	27"Hg (914)	28"Hg (948)
60M	0.50 (14.16)	Vacuum Flow SCFM (L/min)	0.50 (14.20)	0.40 (11.30)	0.30 (8.50)	0.22 (6.20)	0.15 (4.20)	0.08 (2.30)	0.03 (0.80)	0.00 (0.00)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0.00 (0.00)	12.50 (0.40)	25.10 (0.90)	43.90 (1.60)	68.60 (2.40)	99.30 (3.50)	153.70 (5.40)	227 (8.00)	- (-)	- (-)	- (-)	- (-)
60H	0.80 (22.70)	Vacuum Flow SCFM (L/min)	0.50 (14.20)	0.38 (10.80)	0.32 (9.10)	0.30 (8.50)	0.27 (7.60)	0.23 (6.50)	0.20 (5.70)	- (-)	0.13 (3.70)	0.05 (1.40)	0.02 (0.60)	0.00 (0.00)
		Evacuation time (seconds)	0.00 (0.00)	15.00 (0.50)	29.80 (1.10)	50.60 (1.80)	74.50 (2.60)	102.80 (3.60)	135.90 (4.80)	- (-)	182.20 (6.50)	245.90 (8.70)	410.20 (14.50)	790.80 (27.90)

Evacuation time in seconds based on 1 cubic foot volume / "Hg (1 Liter Volume / mbar)



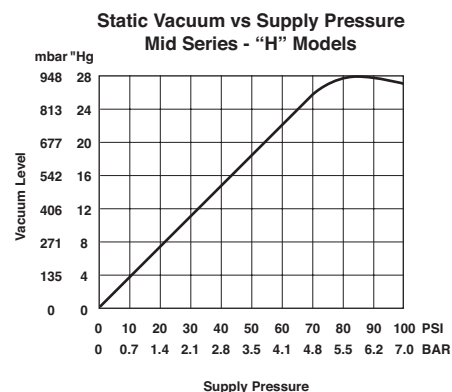
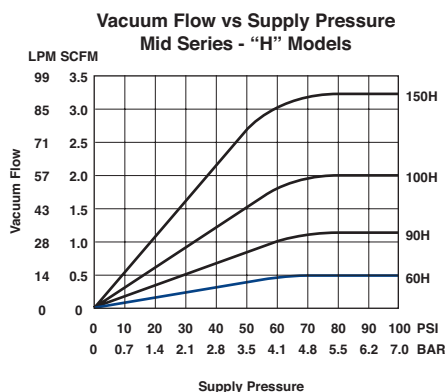
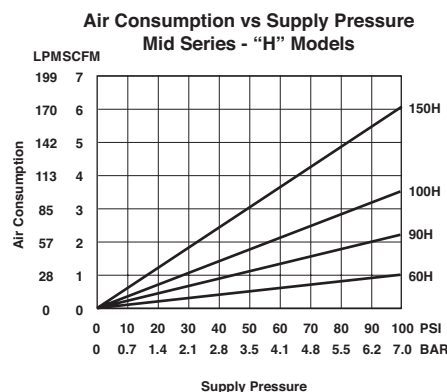
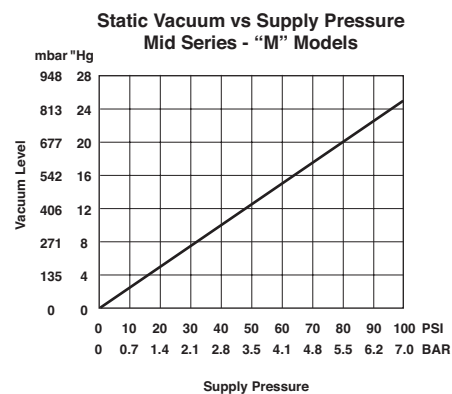
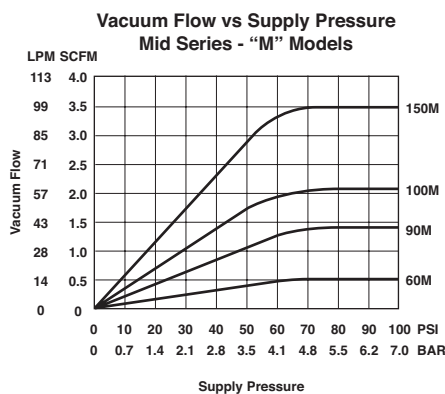
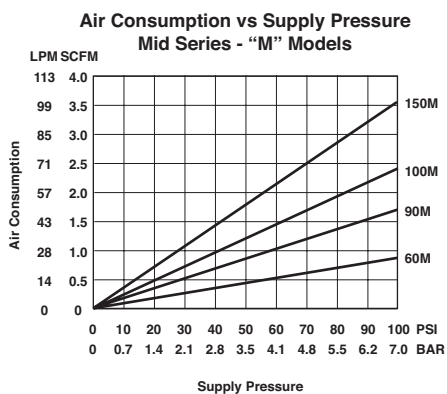
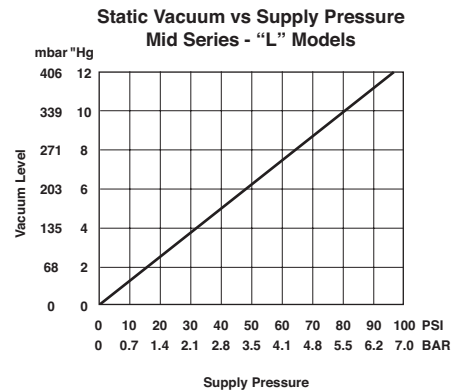
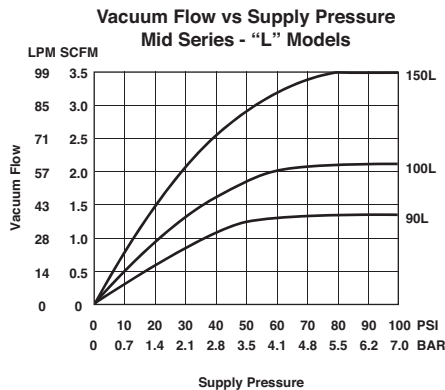
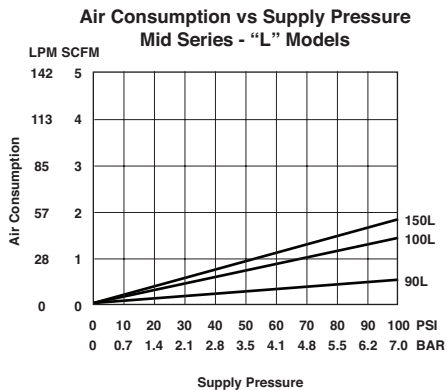
Notes: Standard operating pressure for IMI Norgren generators is 80 PSI [5.5 bar]. Generators can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

● Performance Data - Mid Series

Model	Air Consumption SCFM (L/min)	Vacuum Level "Hg (mbar)	0"Hg (0)	3"Hg (102)	6"Hg (203)	9"Hg (305)	10"Hg (339)	12"Hg (406)	15"Hg (508)	18"Hg (609)	20"Hg (677)	21"Hg (711)	24"Hg (813)	27"Hg (914)	28"Hg (948)
90L	0.50 (14.2)	Vacuum Flow SCFM (L/min)	1.30 (36.80)	1.10 (31.10)	0.70 (19.80)	0.20 (5.70)	0.00 (0.00)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0.00 (0.00)	3.26 (0.10)	7.93 (0.30)	18.65 (0.70)	39.63 (1.40)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
100L	1.40 (39.6)	Vacuum Flow SCFM (L/min)	2.10 (59.50)	1.60 (45.30)	1.10 (31.10)	0.50 (14.20)	0.00 (0.00)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0.00 (0.00)	2.33 (0.10)	4.66 (0.20)	10.88 (0.40)	24.00 (0.90)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
150L	1.80 (51)	Vacuum Flow SCFM (L/min)	3.50 (99.10)	2.50 (70.80)	1.90 (53.80)	0.70 (19.80)	0.00 (0.00)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0.00 (0.00)	1.54 (0.10)	4.36 (0.20)	10.77 (0.40)	22.83 (0.80)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
60M	0.50 (14.2)	Vacuum Flow SCFM (L/min)	0.50 (14.20)	0.40 (11.30)	0.30 (8.50)	0.22 (6.20)	- (-)	0.15 (4.20)	0.08 (2.30)	0.03 (0.80)	0.00 (0.00)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0.00 (0.00)	12.50 (0.40)	25.10 (0.90)	43.90 (1.60)	- (-)	68.60 (2.40)	99.30 (3.50)	153.70 (5.40)	227.00 (8.00)	- (-)	- (-)	- (-)	- (-)
90M	1.40 (39.6)	Vacuum Flow SCFM (L/min)	1.40 (39.60)	1.25 (35.40)	1.20 (34.00)	1.05 (29.70)	- (-)	0.85 (24.10)	0.65 (18.40)	0.25 (7.10)	0.00 (0.00)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0.00 (0.00)	3.75 (0.10)	7.20 (0.30)	12.40 (0.40)	- (-)	19.10 (0.70)	29.90 (1.10)	52.00 (1.80)	104.00 (3.70)	- (-)	- (-)	- (-)	- (-)
100M	1.80 (51)	Vacuum Flow SCFM (L/min)	2.10 (59.50)	2.00 (56.60)	1.85 (52.40)	1.75 (49.60)	- (-)	1.60 (45.30)	1.25 (35.40)	0.80 (22.70)	0.00 (0.00)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0.00 (0.00)	2.65 (0.10)	5.80 (0.20)	9.90 (0.30)	- (-)	16.20 (0.60)	22.90 (0.80)	36.20 (1.30)	56.60 (2.00)	- (-)	- (-)	- (-)	- (-)
150M	2.80 (79.3)	Vacuum Flow SCFM (L/min)	3.50 (99.10)	3.20 (90.60)	2.95 (83.50)	2.75 (77.90)	- (-)	2.50 (70.80)	1.80 (51.00)	0.95 (26.90)	0.00 (0.00)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0.00 (0.00)	1.35 (0.00)	3.20 (0.10)	5.20 (0.20)	- (-)	7.70 (0.30)	11.80 (0.40)	23.40 (0.80)	52.00 (1.80)	- (-)	- (-)	- (-)	- (-)
60H	0.80 (22.7)	Vacuum Flow SCFM (L/min)	0.50 (14.20)	0.38 (10.80)	0.32 (9.10)	0.30 (8.50)	- (-)	0.27 (7.60)	0.23 (6.50)	0.20 (5.70)	- (-)	0.13 (3.70)	0.05 (1.40)	0.02 (0.60)	0.00 (0.00)
		Evacuation time (seconds)	0.00 (0.00)	15.00 (0.50)	29.80 (1.10)	50.60 (1.80)	- (-)	74.50 (2.60)	102.80 (3.60)	135.90 (4.80)	- (-)	183.20 (6.50)	245.90 (8.70)	410.20 (14.50)	790.80 (27.90)
90H	1.80 (51)	Vacuum Flow SCFM (L/min)	1.20 (34.00)	1.00 (28.30)	0.95 (26.90)	0.90 (25.50)	- (-)	0.85 (24.10)	0.75 (21.20)	0.70 (19.80)	- (-)	0.52 (14.70)	0.47 (13.30)	0.20 (5.70)	0.00 (0.00)
		Evacuation time (seconds)	0.00 (0.00)	6.50 (0.20)	12.30 (0.40)	18.90 (0.70)	- (-)	32.50 (1.10)	47.00 (1.70)	65.40 (2.30)	- (-)	92.20 (3.30)	130.00 (4.60)	222.20 (7.80)	281.30 (9.90)
100H	2.80 (79.3)	Vacuum Flow SCFM (L/min)	2.00 (56.60)	1.85 (52.40)	1.75 (49.60)	1.57 (44.50)	- (-)	1.40 (39.60)	1.25 (35.40)	1.05 (29.70)	- (-)	0.84 (23.80)	0.70 (19.80)	0.35 (9.90)	0.00 (0.00)
		Evacuation time (seconds)	0.00 (0.00)	2.70 (0.10)	6.50 (0.20)	11.20 (0.40)	- (-)	17.50 (0.60)	25.80 (0.90)	38.40 (1.40)	- (-)	55.20 (1.90)	79.20 (2.80)	166.70 (5.90)	251.80 (8.90)
150H	4.80 (135.9)	Vacuum Flow SCFM (L/min)	3.20 (90.60)	2.80 (79.30)	2.50 (70.80)	2.30 (65.10)	- (-)	2.00 (56.60)	1.60 (45.30)	1.40 (39.60)	- (-)	1.20 (34.00)	0.80 (22.70)	0.50 (14.60)	0.00 (0.00)
		Evacuation time (seconds)	0.00 (0.00)	2.30 (0.10)	3.80 (0.10)	6.50 (0.20)	- (-)	10.20 (0.40)	14.20 (0.50)	21.30 (0.80)	- (-)	44.90 (1.60)	55.00 (1.90)	81.00 (2.90)	125.00 (4.40)

Evacuation time in seconds based on 1 cubic foot volume / "Hg (1 Liter Volume / mbar)

● Performance Data - Mid Series



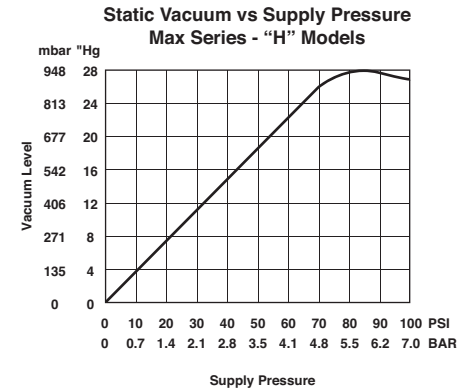
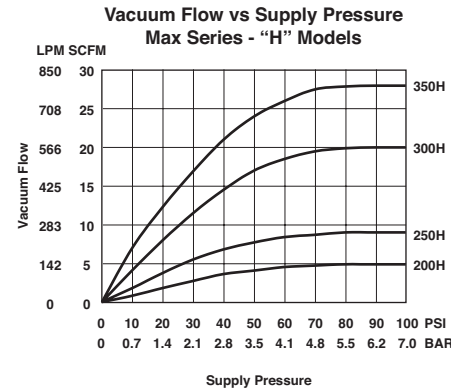
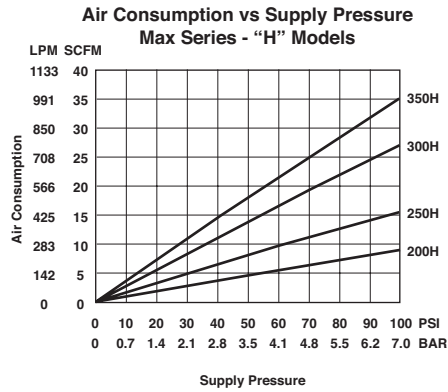
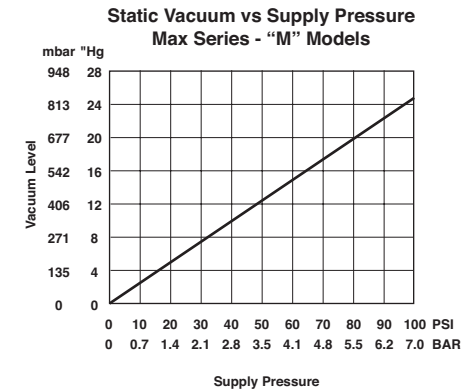
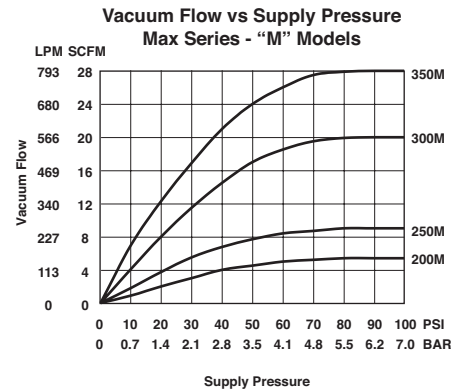
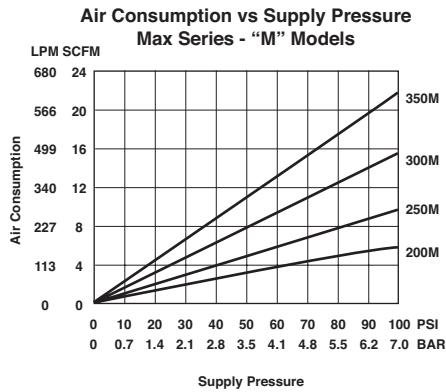
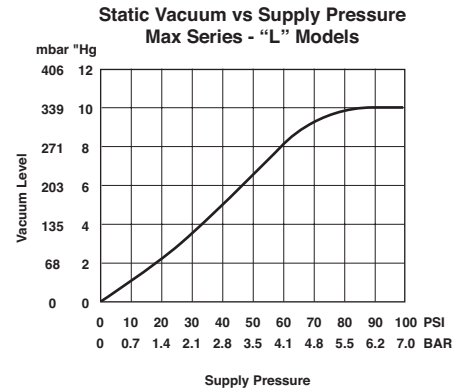
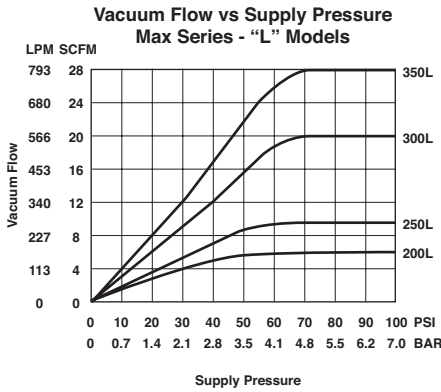
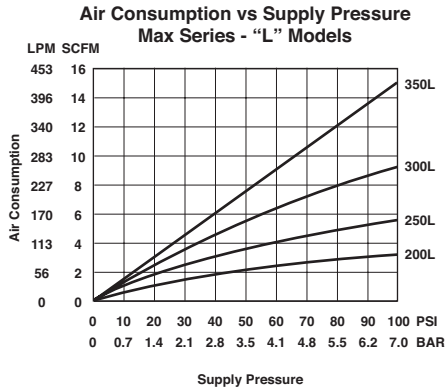
Notes: Standard operating pressure for IMI Norgren generators is 80 PSI [5.5 bar]. Generators can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

● Performance Data - Max Series

Model	Air Consumption SCFM (L/min)	Vacuum Level "Hg (mbar)	0"Hg (0)	3"Hg (102)	6"Hg (203)	9"Hg (305)	10"Hg (339)	12"Hg (406)	15"Hg (508)	18"Hg (609)	20"Hg (677)	21"Hg (711)	24"Hg (813)	27"Hg (914)	28"Hg (948)
200L	2.80 (79.3)	Vacuum Flow SCFM (L/min)	6.00 (169.90)	5.80 (164.20)	4.30 (121.80)	1.70 (48.10)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0 (0)	0.77 (0)	2.05 (0.10)	4.62 (0.20)	13.34 (0.50)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
250L	4.80 (135.9)	Vacuum Flow SCFM (L/min)	9.50 (269)	7.90 (223.70)	5.70 (161.40)	2.20 (62.30)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0 (0)	0.52 (0)	1.28 (0)	3.08 (0.10)	7.95 (0.30)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
200M	4.80 (135.9)	Vacuum Flow SCFM (L/min)	6.00 (169.90)	5.30 (150.10)	4.90 (138.80)	4.00 (113.30)	- (-)	3.50 (99.10)	2.50 (70.80)	1.10 (31.10)	0 (0)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0 (0)	0.75 (0)	1.90 (0.10)	3.20 (0.10)	- (-)	5.30 (0.20)	8.70 (0.30)	17.10 (0.60)	42.60 (1.50)	- (-)	- (-)	- (-)	- (-)
250M	7.80 (220.9)	Vacuum Flow SCFM (L/min)	9.50 (269)	9.20 (260.5)	8.30 (235)	7.00 (198.20)	- (-)	4.70 (133.10)	3.40 (96.30)	2.20 (62.30)	0 (0)	- (-)	- (-)	- (-)	- (-)
		Evacuation time (seconds)	0 (0)	0.45 (0)	1.10 (0)	2.40 (0.10)	- (-)	3.80 (0.10)	6.00 (0.20)	9.70 (0.30)	15.40 (0.50)	- (-)	- (-)	- (-)	- (-)
200H	7.80 (220.9)	Vacuum Flow SCFM (L/min)	5.40 (152.90)	4.70 (133.10)	3.85 (109)	3.30 (93.40)	- (-)	3.00 (85)	2.60 (73.60)	2.10 (59.50)	- (-)	1.60 (45.30)	1.20 (34)	0.60 (17)	0 (0)
		Evacuation time (seconds)	0 (0)	1.20 (0)	2.10 (0.10)	3.40 (0.10)	- (-)	5.20 (0.20)	7.70 (0.30)	11.50 (0.40)	- (-)	20.00 (0.70)	33.50 (1.20)	62.60 (2.20)	98.10 (3.50)
250H	12.50 (354)	Vacuum Flow SCFM (L/min)	9.00 (254.90)	8.50 (240.70)	7.85 (222.30)	7.00 (198.20)	- (-)	6.50 (184.10)	5.30 (150.10)	3.90 (110.40)	- (-)	2.50 (70.80)	1.80 (51)	0.90 (25.50)	0 (0)
		Evacuation time (seconds)	0 (0)	0.75 (0)	1.30 (0)	2.20 (0.10)	- (-)	3.50 (0.10)	5.60 (0.20)	9.10 (0.30)	- (-)	17.40 (0.60)	30.10 (1.10)	56.00 (2)	76.00 (2.70)

Evacuation time in seconds based on 1 cubic foot volume / "Hg (1 Liter Volume / mbar)

● Performance Data - Max Series



Notes: Standard operating pressure for IMI Norgren generators is 80 PSI [5.5 bar]. Generators can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

NC-CH AND NC-MS SERIES

Threaded Cartridge

- Efficient - minimal air consumption
- High Productivity
- Performance Optimization - precise control of vacuum and flow levels
- Lightweight & Compact - install close to work space, quick response
- Direct Replacement - no plumbing, no tools required, change in minutes
- Cost Effective - no filter required

Technical Data

Fluid

Filtered (50 Micron) unlubricated, non-corrosive dry gases

Operating Temperature

-30° to ~250° F (-34° to ~121°C)

Operating Pressure

58-78 PSI (4-6 bar) Standard L & H, 2 or 3 stage
24.7-58 PSI (1.7-4 bar) Standard M, 2 or 3 stage)

Materials

Cartridge: Nylon
Seals: NBR

Holder: Anodized Aluminum

Recommended Supply Line

M07 1/4" (6mm) OD

M14 3/8" (10mm) OD

M25 1/2" (12mm) OD

Recommended Vacuum Line

M07 1/8 NPTF (G1/8 F)

M14 3/8 NPTF (G3/8 F)

M25 1/2 NPTF (G1/2 F)



Standard Models

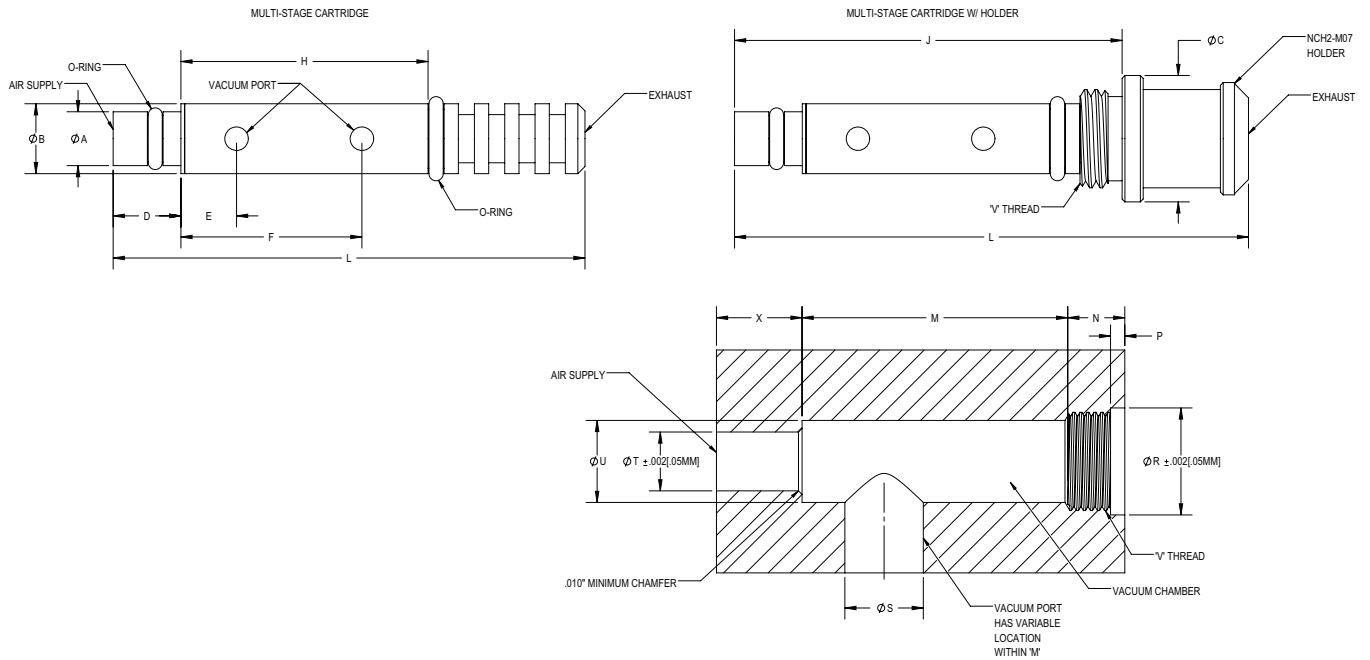
Part Number	Max. Vacuum Level	Max. Vacuum Flow	Air Consumption
NCM60L2-M07-MS-M04	22.0	0.6	0.3
NCM60H2-M07-MS-M04	27.0	0.6	0.4
NC090L2-M14-MS-M04	22.0	1.4	1.6
NC091H2-M14-MS-M04	28.0	1.6	1.2
NC091L2-M14-MS-M04	22.0	1.6	1.0
NC100H3-M14-MS-M04	28.0	2.4	1.2
NC100L3-M14-MS-M04	22.0	2.4	1.0
NC200H2-M25-MS-M04	28.0	6.0	4.8
NC200L2-M25-MS-M04	22.0	6.3	4.6
NC265H3-M25-MS-M04	28.0	13.1	4.8
NC265L3-M25-MS-M04	22.0	12.7	4.6
NCM60L2-M07-CH-M04	22.0	0.6	0.3
NCM60H2-M07-CH-M04	27.0	0.6	0.4
NC090L2-M14-CH-M04	22.0	1.4	1.6
NC091H2-M14-CH-M04	28.0	1.6	1.2
NC091L2-M14-CH-M04	22.0	1.6	1.0
NC100H3-M14-CH-M04	28.0	2.4	1.2
NC100L3-M14-CH-M04	22.0	2.4	1.0
NC200H2-M25-CH-M04	28.0	6.0	4.8
NC200L2-M25-CH-M04	22.0	6.3	4.6
NC265H3-M25-CH-M04	28.0	13.1	4.8
NC265L3-M25-CH-M04	22.0	12.7	4.6

Option selector

Series	Substitute	Material	Substitute
Min, Mid, Max	NC	Nylon	M04
Size	Substitute	Accessories	Substitute
0.6 SCFM, 22.1 "Hg 2 Stage (Min)	M60L2	Multi-stage cartridge	MS
0.6 SCFM, 25.1 "Hg 2 Stage (Min)	M60M2	Multi-stage cartridge with holder	CH
0.7 SCFM, 27.2 "Hg 2 Stage (Min)	M60H2		
1.4 SCFM, 21.6 "Hg 2 Stage (Mid)	090L2		
1.5 SCFM, 26.6 "Hg 2 Stage (Mid)	091M2		
1.6 SCFM, 27.8 "Hg 2 Stage (Mid)	091H2		
1.6 SCFM, 22.1 "Hg 2 Stage (Mid)	091L2		
2.4 SCFM, 22.1 "Hg 2 Stage (Mid)	100L3		
2.4 SCFM, 26.6 "Hg 3 Stage (Mid)	100M3		
2.4 SCFM, 27.8 "Hg 3 Stage (Mid)	100H3		
6.3 SCFM, 22.1 "Hg 2 Stage (Max)	200L2		
6.0 SCFM, 28.1 "Hg 2 Stage (Max)	200H2		
12.7 SCFM, 22.1 "Hg 3 Stage (Max)	265L3		
13.1 SCFM, 28.1 "Hg 3 Stage (Max)	265H3		
		Mating Body	Substitute
		MSV07 (Min)	M07
		MSV14 (Mid)	M14
		MSV25 (Max)	M25

NC-CH AND NC-MS SERIES (M07) Threaded Cartridge

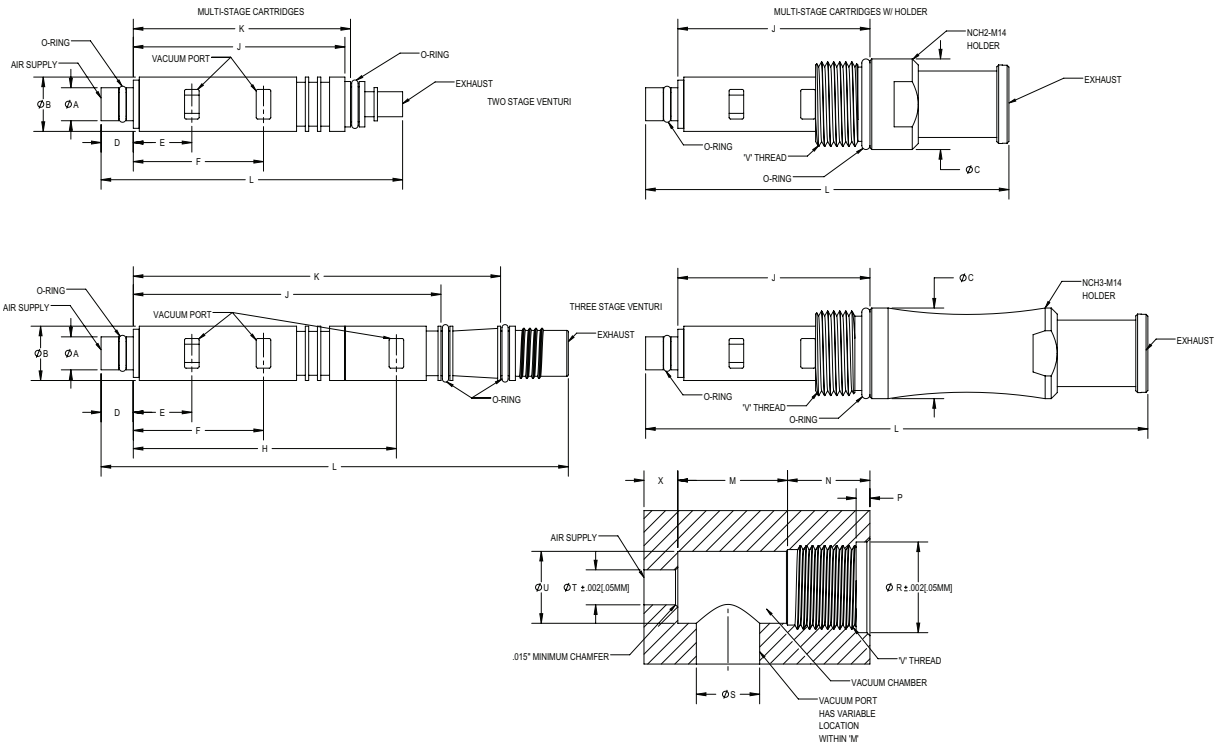
● Dimensions inches (mm)



Model	Units	A	B	C	D	E	F	H	J	L	M	N	P	R	S	T	U	V	
NCM60X2-M07-MS	Imperial	0.15	0.20	0.35	0.19	0.16	0.51	0.69	N/A	1.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
NCM60X2-M07-CH	Imperial	0.15	0.20	0.35	0.19	0.16	0.51	N/A	1.09	1.44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Cavity	Imperial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.75	0.16	0.04	0.30	0.22	0.17	0.23	(M07 x 0.5)	0.24
NCM60X2-M07-MS	(Metric)	(3.80)	(5.10)	(8.90)	(4.80)	(4.10)	(13.0)	(17.50)	N/A	(33.50)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
NCM60X2-M07-CH	(Metric)	(3.80)	(5.10)	(8.90)	(4.80)	(4.10)	(13.0)	N/A	(27.70)	(36.60)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Cavity	(Metric)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(19.04)	(4.06)	(1.02)	(7.62)	(5.59)	(4.32)	(5.84)	(M07 x 0.5)	6.10

NC-CH AND NC-MS SERIES (M14) Threaded Cartridge

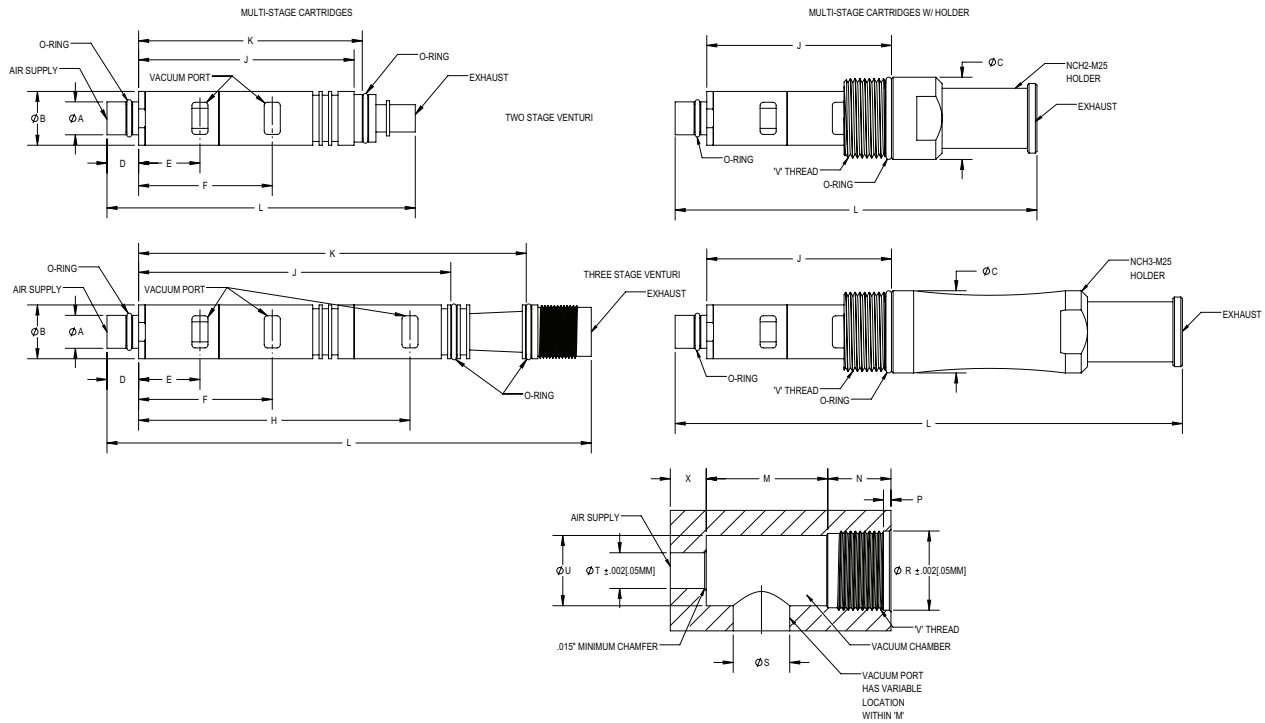
● Dimensions inches (mm)



Model	Units	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	X
NCXXX2-M14-MS	Imperial	0.22	0.35	0.59	0.21	0.38	1.38	1.71	1.38	1.42	1.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCXXX2-M14-CH	Imperial	0.22	0.35	0.59	0.21	0.38	1.38	1.71	1.25	N/A	2.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M14 x 1.0
NCXXX3-M14-MS	Imperial	0.22	0.35	0.59	0.21	0.38	1.38	1.71	2.00	2.40	3.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M14 x 1.0
NCXXX3-M14-CH	Imperial	0.22	0.35	0.59	0.21	0.38	1.38	1.71	1.25	N/A	3.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M14 x 1.0
Cavity	Imperial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.72	0.54	0.09	0.59	0.41	0.23	0.47	M14 x 1.0	0.22
NCXXX2-M14-MS	(Metric)	(5.60)	(8.90)	(15.00)	(5.30)	(9.70)	(35.10)	N/A	(35.10)	(36.10)	(50.00)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCXXX2-M14-CH	(Metric)	(5.60)	(8.90)	(15.00)	(5.30)	(9.70)	(35.10)	N/A	(31.80)	N/A	(60.20)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M14 x 1.0
NCXXX3-M14-MS	(Metric)	(5.60)	(8.90)	(15.00)	(5.30)	(9.70)	(35.10)	43.50	(50.80)	(61.00)	(77.50)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCXXX3-M14-CH	(Metric)	(5.60)	(8.90)	(15.00)	(5.30)	(9.70)	(35.10)	0.00	(31.80)	N/A	(83.10)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M14 x 1.0
Cavity	(Metric)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(18.20)	(13.70)	(2.30)	(15.00)	(10.40)	(5.80)	(11.90)	M14 x 1.0	(5.60)

NC-CH AND NC-MS SERIES (M25) Threaded Cartridge

● Dimensions inches (mm)



Model	Units	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	X
NCXXX2-M25-MS	Imperial	0.41	0.67	1.02	0.39	0.76	1.66	3.38	2.68	3.89	3.84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCXXX2-M25-CH	Imperial	0.41	0.67	1.02	0.39	0.76	1.66	3.38	2.30	N/A	4.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCXXX3-M25-MS	Imperial	0.41	0.67	1.02	0.39	0.76	1.66	3.38	3.89	4.83	6.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M25 x 1.5
NCXXX3-M25-CH	Imperial	0.41	0.67	1.02	0.39	0.76	1.66	3.38	2.30	N/A	6.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M25 x 1.5
Cavity	Imperial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.51	0.79	0.09	0.99	0.70	0.45	0.88	M25 x 1.5	0.45
NCXXX2-M25-MS	(Metric)	(10.40)	(17.00)	(25.90)	(9.90)	(19.30)	(42.20)	N/A	(68.10)	(68.10)	(97.50)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCXXX2-M25-CH	(Metric)	(10.40)	(17.00)	(25.90)	(9.90)	(19.30)	(42.20)	(85.90)	(58.40)	(58.40)	(114.30)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M25 x 1.5
NCXXX3-M25-MS	(Metric)	(10.40)	(17.00)	(25.90)	(9.90)	(19.30)	(42.20)	(85.90)	(98.80)	(98.80)	(153.20)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NCXXX3-M25-CH	(Metric)	(10.40)	(17.00)	(25.90)	(9.90)	(19.30)	(42.20)	(0.00)	(58.40)	(58.40)	(160.50)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M25 x 1.5
Cavity	(Metric)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(38.35)	(20.06)	(2.29)	(25.15)	(17.78)	(11.43)	(22.35)	M25 x 1.5	(5.60)



NC-CH AND NC-MS SERIES

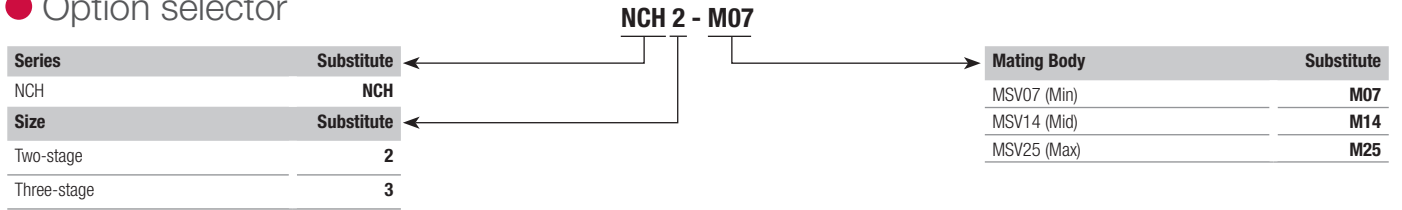
Accessories - Cartridge Holder

● Option selector

NCH 2 - M07

Series	Substitute
NCH	NCH
Size	Substitute
Two-stage	2
Three-stage	3

Mating Body	Substitute
MSV07 (Min)	M07
MSV14 (Mid)	M14
MSV25 (Max)	M25



NC-CH AND NC-MS SERIES
Low Vacuum Levels with Lower Flow Rates

● Performance Data

Model #	Operating Pressure (psi)	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)										-CH Sound level (db)
			0" Hg	3" Hg	5.9" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	Max." Hg		
60L2	58.00	0.20	0.50	0.29	0.18	0.13	0.08	-	-	-	16.80	70.00	
	72.50	0.20	0.55	0.35	0.19	0.16	0.12	0.08	-	-	20.70		
	87.00	0.30	0.60	0.43	0.22	0.16	0.14	0.11	0.07	-	22.20		

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg									
			0" Hg	3" Hg	5.9" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	Max." Hg	
60L2	58.00	0.20	0	10.50	39.90	79.30	144.40	-	-	-	-	-
	72.50	0.20	0	9.90	34.00	70.80	116.10	186.90	314.30	-	-	-
	87.00	0.30	0	9.60	31.10	68.00	116.10	175.60	254.90	404.90	-	-

Model #	Operating Pressure (psi)	Air Consumption SCFM	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)										-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	Max. mbar		
60L2	4.00	6.00	142.00	81.00	52.00	38.00	22.00	-	-	-	570.00	70.00	
	5.00	7.00	157.00	100.00	55.00	45.00	34.00	22.00	-	-	700.00		
	6.00	8.00	169.00	122.00	63.00	46.00	39.00	30.00	20.00	-	750.00		

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Liter Volume/mbar									
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar		
60L2	4.00	6.00	0.00	0.37	1.41	2.80	5.10	-	-	-	-	-
	5.00	7.00	0.00	0.35	1.20	2.50	4.10	6.60	11.10	-	-	-
	6.00	8.00	0.00	0.34	1.10	2.40	4.10	6.20	9.00	14.30	-	-

Note 1: Evacuation time is linear with volume. A 2 cu. ft. volume will take twice as long to evacuate as 1 cu. ft. volume.
 Note 2: Min Series multi-stage cartridges utilize the Norgren M07 body or competitor products using an M7x0.5 cartridge

NC-CH AND NC-MS SERIES

Medium Vacuum Levels with Moderate Flow

● Performance Data

Model #	Operating Pressure (psi)	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)									Max." Hg	-CH Sound level (db)
			0" Hg	3" Hg	5.9" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg			
60M2	65.30	0.30	0.53	0.35	0.17	0.14	0.12	0.09	0.06	-	24.80	78.00	
	72.50	0.30	0.55	0.41	0.23	0.14	0.12	0.09	0.06	-	22.20		
	87.00	0.40	0.61	0.50	0.33	0.16	0.12	0.08	0.05	-	26.30		

Model #	Operating Pressure (psi)	Air Consumption SCFM	Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg									Max." Hg
			0" Hg	3" Hg	6" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg		
60M2	65.30	0.30	0	11.30	36.80	90.60	130.30	184.10	277.50	433.30	727.70	-
	72.50	0.30	0	8.50	25.50	68.00	121.80	189.70	269.00	399.30	623.80	-
	87.00	0.40	0	5.70	19.80	48.10	104.80	167.10	269.00	410.60	634.60	-

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)									Max. mbar	-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar			
60M2	4.50	9.00	149.00	99.00	48.00	41.00	33.00	26.00	17.00	-	840.00	78	
	5.00	10.00	156.00	116.00	66.00	40.00	33.00	26.00	17.00	-	750.00		
	6.00	11.00	172.00	142.00	93.00	45.00	33.00	23.00	14.00	-	890.00		

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Liter Volume/mbar									800 mbar
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar		
60M2	4.50	9.00	0	0.40	1.30	3.20	4.60	6.50	9.80	15.30	25.70	-
	5.00	9.50	0	0.30	0.90	2.40	4.30	6.70	9.50	14.10	22.03	-
	6.00	10.50	0	0.20	0.70	1.70	3.70	5.90	9.50	14.50	22.41	-

Note 1: Evacuation time is linear with volume. A 2 cu. ft. volume will take twice as long to evacuate as 1 cu. ft. volume.

Note 2: Min Series multi-stage cartridges utilize the Norgren M07 body or competitor products using an M7x0.5 cartridge

NC-CH AND NC-MS SERIES

High Vacuum Levels with High Flow

● Performance Data

Model #	Operating Pressure (psi)	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)										-CH Sound level (db)
			0" Hg	3" Hg	5.9" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	23.6" Hg	Max." Hg	
60H2	58.00	0.60	0.69	0.63	0.48	0.32	0.22	0.18	0.12	0.06	-	26.90	72
	87.00	0.80	0.66	0.61	0.53	0.46	0.34	0.21	0.10	0.06	-	26.90	

Model #	Operating Pressure (psi)	Air Consumption SCFM	Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg										
			0" Hg	3" Hg	6" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	Max." Hg		
60H2	58.00	0.60	-	5.70	14.20	31.10	62.30	96.30	147.20	254.90	491.60	-	-
	87.00	0.80	-	5.70	14.20	25.50	42.50	73.60	133.10	218.00	455.60	-	-

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)										-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	800 mbar	Max. mbar	
60H2	4.00	16.00	195.00	177.00	135.00	90.00	61.00	50.00	33.00	18.00	-	910.00	72
	6.00	22.00	187.00	174.00	151.00	131.00	97.00	60.00	27.00	18.00	-	900.00	

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Liter Volume/mbar										
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	800 mbar		
60H2	4.00	16.00	-	0.20	0.50	1.10	2.20	3.40	5.20	9.00	17.36	-	-
	6.00	21.50	-	0.20	0.50	0.90	1.50	2.60	4.70	7.70	16.09	-	-

Note 1: Evacuation time is linear with volume. A 2 cu. ft. volume will take twice as long to evacuate as 1 cu. ft. volume.
 Note 2: Min Series multi-stage cartridges utilize the Norgren M07 body or competitor products using an M7x0.5 cartridge

NC-CH AND NC-MS SERIES

Low Vacuum Levels with Low Flow Rates

● Performance Data

Model #	Operating Pressure (psi)	Air Consumption SCFM	Imperial - Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)									-CH Sound level (db)
			0" Hg	3" Hg	5.9" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	Max." Hg	
090L2	87.00	1.60	1.41	1.34	1.08	0.94	0.78	0.60	0.42	0.12	21.30	77.00
	58.00	0.70	1.55	1.20	0.80	0.51	0.38	0.23	-	-	17.70	
091L2	72.50	0.80	1.62	1.41	1.01	0.61	0.45	0.34	0.22	-	20.70	62.00
	87.00	1.00	1.62	1.48	1.15	0.80	0.42	0.35	0.29	0.21	22.20	
100L3	58.00	0.70	2.12	1.34	0.85	0.53	0.41	0.24	-	-	17.70	68.00
	72.50	0.80	2.33	1.41	1.13	0.67	0.47	0.35	0.23	-	20.70	
	87.00	1.00	2.40	1.48	1.27	0.85	0.46	0.36	0.30	0.22	22.20	

Model #	Operating Pressure (psi)	Air Consumption SCFM	Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg								-CH Sound level (db)	
			0" Hg	3" Hg	6" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg		
090L2	87.00	1.60	0	1.10	5.10	11.00	17.60	26.90	41.60	87.80	21.30	-
	58.00	0.70	0	2.00	7.10	15.90	28.90	53.50	148.40	-	17.70	-
091L2	72.50	0.80	0	2.00	6.20	13.30	24.10	433.30	68.00	182.10	20.70	-
	87.00	1.00	0	2.00	5.70	11.00	21.00	38.20	60.60	94.90	22.20	-
100L3	58.00	0.70	0	1.70	6.20	15.00	26.30	48.70	130.50	-	17.70	-
	72.50	0.80	0	1.70	5.40	12.50	23.50	38.20	63.10	179.20	20.70	-
	87.00	1.00	0	1.40	5.40	10.80	19.30	35.70	58.90	86.40	22.20	-

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)									-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	Max. mbar	
090L2	6.00	46.00	400.00	380.00	305.00	267.00	220.00	170.00	120.00	35.00	720.00	77.00
	4.00	19.00	440.00	340.00	226.00	144.00	108.00	64.00	-	-	600.00	
091L2	5.00	23.00	460.00	400.00	285.00	173.00	128.00	95.00	61.00	-	700.00	62.00
	6.00	27.00	460.00	420.00	326.00	226.00	120.00	98.00	83.00	59.00	750.00	
100L3	4.00	19.00	600.00	380.00	240.00	149.00	115.00	68.00	-	-	600.00	68.00
	5.00	23.00	660.00	400.00	320.00	191.00	133.00	99.00	65.00	-	700.00	
	6.00	27.00	680.00	420.00	360.00	240.00	130.00	102.00	84.00	63.00	750.00	

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Liter Volume/mbar								-CH Sound level (db)	
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar		
090L2	6.00	46.00	0	0.04	0.18	0.39	0.62	0.95	1.47	3.10	720.00	-
	4.00	19.00	0	0.07	0.25	0.56	1.02	1.89	5.24	-	600.00	-
091L2	5.00	23.00	0	0.07	0.22	0.47	0.85	15.30	2.40	6.43	700.00	-
	6.00	27.00	0	0.07	0.20	0.39	0.74	1.35	2.14	3.35	750.00	-
100L3	4.00	19.00	0	0.06	0.22	0.53	0.93	1.72	4.61	-	600.00	-
	5.00	23.00	0	0.06	0.19	0.44	0.83	1.35	2.23	6.33	700.00	-
	6.00	27.00	0	0.05	0.19	0.38	0.68	1.26	2.08	3.05	750.00	-

Note 1: Evacuation time is linear with volume. A 2 cu. ft. volume will take twice as long to evacuate as 1 cu. ft. volume.

Note 2: Mid Series multi-stage cartridges utilize the Norgren M14 body or competitor products using an M14x1.0 threaded cartridge

NC-CH AND NC-MS SERIES
Medium Vacuum Levels with Moderate Flow Rates

● Performance Data

Model #	Operating Pressure (psi)	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level (“Hg)										-CH Sound level (db)
			0” Hg	3” Hg	5.9” Hg	8.9” Hg	11.8” Hg	14.8” Hg	17.7” Hg	20.7” Hg	Max.” Hg	Max.” Hg	
091M2	24.70	0.70	1.27	0.67	0.37	0.23	0.10	-	-	-	-	12.70	68.00
	31.90	0.80	1.34	0.99	0.55	0.39	0.27	0.13	-	-	-	17.10	
	45.50	1.00	1.48	1.27	0.90	0.53	0.37	0.31	0.23	0.15	0.07	26.60	
	58.00	1.20	1.48	1.34	1.06	0.81	0.53	0.28	0.21	0.15	0.04	26.00	
100M3	24.70	0.70	1.62	0.70	0.37	0.25	0.11	-	-	-	-	12.70	71.00
	31.90	0.80	1.84	1.06	0.42	0.29	0.20	0.10	-	-	-	17.10	
	45.50	1.00	2.19	1.34	0.99	0.35	0.27	0.24	0.17	0.10	0.05	26.60	
	58.00	1.20	2.40	1.41	1.20	0.85	0.40	0.20	0.15	0.11	0.04	26.00	

Model #	Operating Pressure (psi)	Air Consumption SCFM	Evacuation Time in Seconds based on 1 Cubic Foot Volume/”Hg										-CH Sound level (db)
			0” Hg	3” Hg	6” Hg	8.9” Hg	11.8” Hg	14.8” Hg	17.7” Hg	20.7” Hg	Max.” Hg	Max.” Hg	
091M2	24.70	0.70	0	4.20	15.60	35.70	82.10	-	-	-	-	12.70	-
	45.50	1.00	0	4.00	10.50	24.90	44.70	78.70	-	-	-	17.10	-
	58.00	1.20	0	3.40	8.20	16.70	30.30	52.70	75.30	122.60	190.30	26.60	-
	58.00	1.20	0	3.40	7.40	13.90	21.80	42.50	70.20	112.70	199.60	26.00	-
100M3	24.70	0.70	0	2.30	8.80	19.80	37.70	71.90	-	-	-	12.70	-
	31.90	0.80	0	1.70	5.90	12.70	26.60	44.70	68.00	108.50	171.90	17.10	-
	45.50	1.00	0	1.70	5.90	10.80	19.00	35.70	66.80	106.20	186.00	26.60	-
	58.00	1.20	0	1.70	5.90	10.80	19.00	35.70	66.80	106.20	186.00	26.00	-

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)										-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	800 mbar	Max. mbar	
091M2	1.70	19.00	360.00	190.00	105.00	66.00	28.00	-	-	-	-	430.00	68.00
	2.20	23.00	380.00	280.00	155.00	110.00	77.00	38.00	-	-	-	580.00	
	3.10	29.00	420.00	360.00	256.00	149.00	104.00	89.00	66.00	42.00	19.00	900.00	
	4.00	33.00	420.00	380.00	300.00	230.00	150.00	80.00	59.00	43.00	11.00	880.00	
100M3	1.70	19.00	460.00	198.00	105.00	70.00	30.00	-	-	-	-	430.00	71.00
	2.20	23.00	520.00	300.00	120.00	82.00	58.00	27.00	-	-	-	580.00	
	3.10	29.00	620.00	380.00	280.00	100.00	77.00	67.00	48.00	29.00	14.00	900.00	
	4.00	33.00	680.00	400.00	340.00	240.00	114.00	57.00	42.00	30.00	12.00	880.00	

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Liter Volume/mbar										-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	800 mbar	Max. mbar	
091M2	1.70	19.00	0	0.15	0.55	1.26	2.90	-	-	-	-	430.00	-
	2.20	22.50	0	0.14	0.37	0.88	1.58	2.78	-	-	-	580.00	-
	3.10	29.00	0	0.12	0.29	0.59	1.07	1.86	2.66	4.33	6.72	900.00	-
	4.00	33.00	0	0.12	0.26	0.49	0.77	1.50	2.48	3.98	7.05	880.00	-
100M3	1.70	19.00	0	0.13	0.52	1.22	2.75	-	-	-	-	430.00	-
	2.20	22.50	0	0.08	0.31	0.70	1.33	2.54	-	-	-	580.00	-
	3.10	29.00	0	0.06	0.21	0.45	0.94	1.58	2.40	3.83	6.07	900.00	-
	4.00	33.00	0	0.06	0.21	0.38	0.67	1.26	2.36	3.75	6.57	880.00	-

Note 1: Evacuation time is linear with volume. A 2 cu. ft. volume will take twice as long to evacuate as 1 cu. ft. volume.

Note 2: Mid Series multi-stage cartridges utilize the Norgren M14 body or competitor products using an M14x1.0 threaded cartridge

NC-CH AND NC-MS SERIES

High Vacuum Levels with High Flow Rates

● Performance Data

Model #	Operating Pressure (psi)	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)										-CH Sound level (db)
			0" Hg	3" Hg	5.9" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	23.6" Hg	Max." Hg	
091H2	65.30	1.00	1.55	1.41	1.00	0.66	0.38	0.33	0.24	0.16	0.08	26.90	78.00
	72.50	1.10	1.55	1.41	1.08	0.78	0.48	0.31	0.23	0.16	0.07	27.80	
	87.00	1.20	1.48	1.41	1.17	0.95	0.66	0.33	0.22	0.16	0.05	27.50	
100H3	65.30	1.00	2.26	1.41	1.13	0.64	0.40	0.34	0.26	0.17	0.10	26.90	74.00
	72.50	1.10	2.33	1.41	1.20	0.85	0.50	0.33	0.24	0.17	0.08	27.80	
	87.00	1.20	2.40	1.55	1.20	1.06	0.71	0.37	0.23	0.17	0.06	27.50	

Model #	Operating Pressure (psi)	Air Consumption SCFM	Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg										-CH Sound level (db)
			0" Hg	3" Hg	6" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	23.6" Hg	Max." Hg	
091H2	65.30	1.00	0	3.10	7.60	14.70	27.80	29.70	68.20	109.60	175.60	26.90	-
	72.50	1.10	0	3.40	7.60	13.60	23.50	42.20	70.50	106.80	175.30	27.80	-
	87.00	1.20	0	3.40	7.40	12.70	20.40	34.30	66.00	104.20	179.80	27.50	-
100H3	65.30	1.00	0	1.70	5.40	11.30	21.50	41.10	62.60	98.80	157.20	26.90	-
	72.50	1.10	0	1.40	5.40	10.50	18.70	35.70	60.60	97.70	158.60	27.80	-
	87.00	1.20	0	1.40	5.10	9.90	16.70	28.90	59.50	93.70	162.00	27.50	-

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)										-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	800 mbar	Max. mbar	
091H2	4.50	28.00	440.00	400.00	284.00	188.00	107.00	94.00	69.00	46.00	23.00	910.00	78.00
	5.00	30.00	440.00	400.00	306.00	222.00	135.00	89.00	66.00	45.00	20.00	940.00	
	6.00	35.00	420.00	400.00	330.00	269.00	187.00	94.00	62.00	46.00	14.00	930.00	
100H3	4.50	28.00	640.00	400.00	320.00	180.00	113.00	97.00	73.00	49.00	27.00	910.00	74.00
	5.00	30.00	660.00	400.00	340.00	240.00	143.00	93.00	69.00	48.00	24.00	940.00	
	6.00	35.00	680.00	440.00	340.00	300.00	200.00	105.00	65.00	49.00	17.00	930.00	

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Liter Volume/mbar										-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	800 mbar	Max. mbar	
091H2	4.50	27.50	0	0.11	0.27	0.52	0.98	1.05	2.41	3.87	6.20	910.00	-
	5.00	30.00	0	0.12	0.27	0.48	0.83	1.49	2.49	3.77	6.19	940.00	-
	6.00	34.50	0	0.12	0.26	0.45	0.72	1.21	2.33	3.68	6.35	930.00	-
100H3	4.50	27.50	0	0.06	0.19	0.40	0.76	1.45	2.21	3.49	5.55	910.00	-
	5.00	30.00	0	0.05	0.19	0.37	0.66	1.26	2.14	3.45	5.60	940.00	-
	6.00	34.50	0	0.05	0.18	0.35	0.59	1.02	2.10	3.31	5.72	930.00	-

Note 1: Evacuation time is linear with volume. A 2 cu. ft. volume will take twice as long to evacuate as 1 cu. ft. volume.

Note 2: Mid Series multi-stage cartridges utilize the Norgren M14 body or competitor products using an M14x1.0 threaded cartridge

NC-CH AND NC-MS SERIES

High Vacuum Levels with High Flow Rates

● Performance Data

Model #	Operating Pressure (psi)	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level (“Hg)									-CH Sound level (db)
			0” Hg	3” Hg	5.9” Hg	8.9” Hg	11.8” Hg	14.8” Hg	17.7” Hg	20.7” Hg	Max.” Hg	
200L2	58.00	4.20	6.07	4.80	3.25	2.12	1.55	0.93	0.37	-	17.70	82.00
	72.50	4.40	6.36	5.51	4.10	2.54	1.69	1.27	0.95	0.45	20.70	
	87.00	4.60	6.29	5.79	4.73	3.32	1.77	1.34	1.13	0.65	22.20	
265L3	58.00	4.20	12.36	5.37	3.88	2.26	1.77	0.94	0.41	-	17.70	82.00
	72.50	4.40	13.06	6.53	4.41	3.18	1.77	1.28	0.96	0.49	20.70	
	87.00	4.60	13.77	7.42	4.77	3.53	2.30	1.24	1.07	0.65	22.20	

Model #	Operating Pressure (psi)	Air Consumption SCFM	Evacuation Time in Seconds based on 1 Cubic Foot Volume/”Hg									-CH Sound level (db)
			0” Hg	3” Hg	6” Hg	8.9” Hg	11.8” Hg	14.8” Hg	17.7” Hg	20.7” Hg	Max.” Hg	
200L2	58.00	4.20	0	1.10	2.30	4.50	5.70	13.30	27.80	-	17.70	-
	72.50	4.40	0	1.10	2.30	4.00	7.10	11.00	17.80	33.10	20.70	-
	87.00	4.60	0	1.10	2.30	3.70	5.90	10.20	15.60	24.40	22.20	-
265L3	58.00	4.20	0	0.80	2.30	4.20	7.40	12.50	26.60	-	17.70	-
	72.50	4.40	0	0.80	2.00	3.70	6.50	10.80	17.30	30.30	20.70	-
	87.00	4.60	0	0.80	1.40	2.80	5.10	10.20	15.90	24.60	22.20	-

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)									-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	Max. mbar	
200L2	4.00	120.00	1720.00	1360.00	920.00	600.00	440.00	262.00	105.00	-	600.00	82.00
	5.00	125.00	1800.00	1560.00	1160.00	720.00	480.00	360.00	269.00	128.00	700.00	
	6.00	130.00	1780.00	1640.00	1340.00	940.00	500.00	380.00	320.00	183.00	750.00	
265L3	4.00	120.00	3500.00	1520.00	1100.00	640.00	500.00	267.00	115.00	-	600.00	82.00
	5.00	125.00	3700.00	1850.00	1250.00	900.00	500.00	362.00	273.00	139.00	700.00	
	6.00	130.00	3900.00	2100.00	1350.00	1000.00	650.00	351.00	303.00	183.00	750.00	

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Liter Volume/mbar									-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	Max. mbar	
200L2	4.00	120.00	0	0.04	0.08	0.16	0.20	0.47	0.98	-	600.00	-
	5.00	125.00	0	0.04	0.08	0.14	0.25	0.39	0.63	1.17	700.00	-
	6.00	130.00	0	0.04	0.08	0.13	0.21	0.36	0.55	0.86	750.00	-
265L3	4.00	120.00	0	0.03	0.08	0.15	0.26	0.44	0.94	-	600.00	-
	5.00	125.00	0	0.03	0.07	0.13	0.23	0.38	0.61	1.07	700.00	-
	6.00	130.00	0	0.03	0.05	0.10	0.18	0.36	0.56	0.87	750.00	-

Note 1: Evacuation time is linear with volume. A 2 cu. ft. volume will take twice as long to evacuate as 1 cu. ft. volume.

Note 2: Max Series multi-stage cartridges utilize the Norgren M25 body or competitor products using an M25x1.5 threaded cartridge

NC-CH AND NC-MS SERIES

High Vacuum Levels with High Flow Rates

Performance Data

Model #	Operating Pressure (psi)	Air Consumption SCFM	Imperial - Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)											-CH Sound level (db)
			0" Hg	3" Hg	5.9" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	23.6" Hg	26.6" Hg	Max." Hg	
200H2	65.30	4.20	6.00	4.80	3.53	2.05	1.41	1.27	0.88	0.63	0.41	0.11	26.90	89.00
	72.50	4.40	6.00	4.94	3.74	2.61	1.62	1.20	0.85	0.62	0.38	0.10	28.10	
	87.00	4.80	5.72	5.01	4.10	3.25	2.40	1.41	0.79	0.63	0.33	0.08	27.80	
265H3	65.30	4.20	12.36	6.18	4.24	2.82	1.55	1.15	0.87	0.63	0.41	0.11	26.90	89.00
	72.50	4.40	12.71	6.71	4.41	3.35	2.30	1.27	0.92	0.62	0.38	0.10	28.10	
	87.00	4.80	13.42	7.77	4.59	3.71	3.18	1.91	0.92	0.63	0.33	0.08	27.80	

Model #	Operating Pressure (psi)	Air Consumption SCFM	Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg											
			0" Hg	3" Hg	6" Hg	8.9" Hg	11.8" Hg	14.8" Hg	17.7" Hg	20.7" Hg	Max." Hg			
200H2	63.10	4.20	0	1.10	2.30	4.20	7.90	13.00	18.70	28.00	42.80	87.80	26.90	-
	72.50	4.40	0	1.10	2.30	4.00	6.80	11.60	18.70	28.90	43.00	92.60	28.10	-
	87.00	4.80	0	1.10	2.30	4.00	5.70	8.50	16.10	26.90	43.90	104.80	27.80	-
265H3	65.30	4.20	0	0.80	2.00	3.70	6.50	10.80	17.80	27.50	42.50	92.00	26.90	-
	72.50	4.40	0	0.80	2.00	4.00	5.90	10.50	17.60	28.00	41.30	91.50	28.10	-
	87.00	4.80	0	0.80	1.40	2.80	4.50	7.60	13.30	24.40	41.10	111.00	27.80	-

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)											-CH Sound level (db)
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	800 mbar	900 mbar	Max. mbar	
200H2	4.50	120.00	1700.00	1360.00	1000.00	580.00	400.00	360.00	250.00	178.00	117.00	31.00	910.00	89.00
	5.00	125.00	1700.00	1400.00	1060.00	740.00	460.00	340.00	240.00	176.00	108.00	29.00	950.00	
	6.00	135.00	1620.00	1420.00	1160.00	920.00	680.00	400.00	225.00	178.00	94.00	23.00	940.00	
265H3	4.50	120.00	3500.00	1750.00	1200.00	800.00	440.00	327.00	245.00	178.00	116.00	32.00	910.00	89.00
	5.00	125.00	3600.00	1900.00	1250.00	950.00	650.00	360.00	260.00	176.00	108.00	28.00	950.00	
	6.00	135.00	3800.00	2200.00	1300.00	1050.00	900.00	540.00	260.00	178.00	93.00	22.00	940.00	

Model #	Operating Pressure (bar)	Air Consumption (L/Min)	Evacuation Time in Seconds based on 1 Liter Volume/mbar											
			0 mbar	100 mbar	200 mbar	300 mbar	400 mbar	500 mbar	600 mbar	700 mbar	Max. mbar			
200H2	4.40	120.00	0	0.04	0.08	0.15	0.28	0.46	0.66	0.99	1.51	3.10	910.00	-
	5.00	125.00	0	0.04	0.08	0.14	0.24	0.41	0.66	1.02	1.52	3.27	950.00	-
	6.00	135.00	0	0.04	0.08	0.14	0.20	0.30	0.57	0.95	1.55	3.70	940.00	-
265H3	4.50	120.00	0	0.03	0.07	0.13	0.23	0.38	0.63	0.97	1.50	3.25	910.00	-
	5.00	125.00	0	0.03	0.07	0.14	0.21	0.37	0.62	0.99	1.46	3.23	950.00	-
	6.00	135.00	0	0.03	0.05	0.10	0.16	0.27	0.47	0.86	1.45	3.92	940.00	-

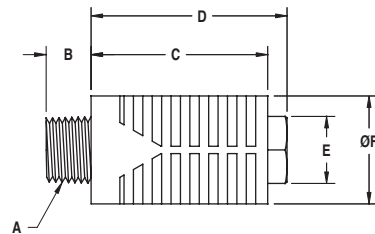
SILENCERS

● NAA Series Silencers

- Compact
- Lightweight
- Durable
- 3 Thread sizes 1/8, 1/4, 3/8
- Closed-end silencer
- Maximize performance – silences pneumatic equipment without back pressure.
- Increase productivity and operator safety – reduces irritating noise, improves working environment
- Closed-end silencer – contaminants can't escape
 - maintains clean environment
 - reduces maintenance costs
 - increases equipment life



NAA Series silencers have excellent noise reducing characteristics with minimal resistance to air flow. NAA Series silencers are one third smaller than comparable products, providing considerable space savings. The large surface of the felt element resists contamination far more than other materials such as sintered bronze, steel mesh or porous polyethylene.



Part Number	Dimensions						Weight oz (g)	Construction				Noise Level
	A* in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)		Body	Baffle	Screen	Element	
NAA2	1/8	0.23 (5.80)	0.97 (24.60)	1.08 (27.40)	0.39 (9.91)	0.61 (15.50)	0.10 (3.00)					58dB
NAA4	1/4	0.32 (8.10)	1.26 (32.00)	1.39 (35.30)	0.47 (11.94)	0.77 (19.60)	0.20 (6.00)	Nylon	Nylon	Nylon	Felt	62dB
NAA6	3/8	0.41 (10.40)	1.74 (44.20)	1.86 (47.20)	0.62 (15.75)	0.96 (24.40)	0.40 (11.00)					70dB

*Fits NPT, BSPP and BSPT threads.

NAA Series Silencers Operating Specifications:

Max. Operating Pressure: Not to exceed 150 PSI (10 bar)

Noise level: Measured 4.5 ft on the diagonal from the silencer while attached to a IMI Norgren generator. Noise levels will vary on IMI Norgren and non-IMI Norgren products.

Note 1: IMI Norgren strongly recommends the use of silencers on all vacuum generators.

Note 2: IMI Norgren silencers may be used on all types of pneumatic devices i.e. air-operated vacuum generators, air motors, valves, cylinders and more.

How to Specify:

- **For Silencer only:** Order by Model #.
- **IMI Norgren generator/silencer combinations:** IMI Norgren recommends silencers that have been sized to ensure maximum generator performance. See specific generator for silencer options.
- **Non-IMI Norgren pneumatic devices:** The thread size on the exhaust port of the pneumatic device determines the size of the silencer.
- Equipment and applications may vary. Consult factory for proper silencer selection.

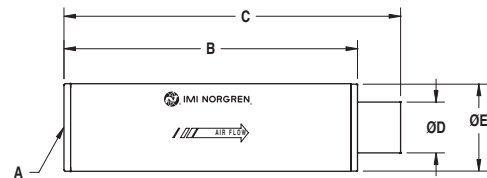
● NST Series Silencers

- Straight-through design
- Felt liner provides low frequency sound
- Male and female connections
- 19 models
- Reliable – straight through design – non-clogging
- Maximize performance – silences pneumatic equipment without back pressure
- Increase productivity and operator safety
- Reduces irritating noise, improves working environment
- Increase savings – reduces maintenance costs, increases equipment life



The NST Series Silencers are designed with a straight through flow path that eliminates clogging by allowing the contaminants to pass directly through the silencer. Each silencer is tuned in proportion to its exhaust flow to minimize noise.

As air passes through the silencer, the dense felt element absorbs the noise, thus reducing high pitch exhaust noise to a gentle, low frequency sound. Even in the most adverse conditions, contaminants pass through the silencer making the NST Series ideal for silencing vacuum generators that are continuously ingesting dirt and debris.



● NST Series Silencers: Female Threads

Part Number	Dimensions					Weight oz (g)	Construction Body	Element	Noise Level
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)				
NST4AX	1/4 NPT F	3.19 (81.00)	3.56 (90.40)	0.50 (12.70)	1.00 (25.40)	1.80 (51.00)	Anodized Aluminum	Felt	75dB
NST6AX2	3/8 NPT F	2.17 (55.10)	2.55 (64.70)	0.50 (12.70)	1.00 (25.40)	1.80 (51.00)			75dB
NST6BX	3/8 NPT F	4.19 (106.40)	4.82 (122.40)	0.72 (18.30)	1.25 (38.10)	3.40 (96.00)			77dB
NST8BX	1/2 NPT F	4.19 (106.40)	4.80 (121.90)	0.73 (18.50)	1.25 (31.80)	3.10 (88.00)			76dB
NST16FC	1 NPT F	6.39 (162.30)	7.14 (181.40)	1.25 (31.80)	2.00 (50.80)	7.60 (215.00)			80dB
NST24FC	1 1/2 NPT F	7.10 (180.30)	7.85 (199.40)	1.25 (31.80)	2.00 (50.80)	7.90 (224.00)			82dB

NST Series Silencers Specifications:

Max. Operating Pressure: Not to exceed 150 PSI

Noise level: Measured 4.5 ft on the diagonal from the silencer while attached to a IMI Norgren generator. Noise levels will vary on IMI Norgren and non-IMI Norgren products.

Note 1: IMI Norgren strongly recommends the use of silencers on all vacuum generators.

Note 2: IMI Norgren silencers may be used on all types of pneumatic devices i.e. air-operated vacuum generators, air motors, valves, cylinders and more.

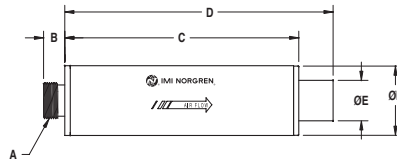
Note 3: NST Silencers may be used on all IMI Norgren vacuum generators.

Note 4: For Metric availability, consult factory.

How to Specify:

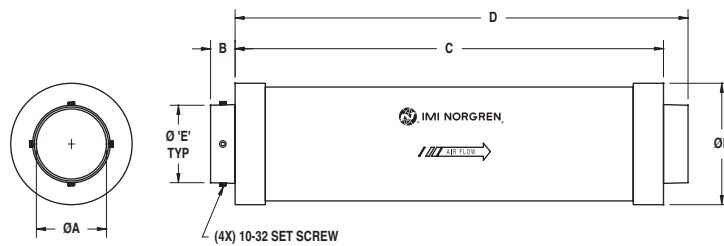
- **For Silencer only:** Order by Model #.
- **IMI Norgren generator/silencer combinations:** IMI Norgren recommends silencers that have been sized to ensure maximum generator performance. See specific generator for silencer options.
- **Non-IMI Norgren pneumatic devices:** The thread size on the exhaust port of the pneumatic device determines the size of the silencer.
- Equipment and applications may vary. Consult factory for proper silencer selection.

● NST Series Silencers: Male Threads



Part Number	Dimensions						Weight oz (g)	Construction Body	Element	Noise Level
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)				
NST2	1/8 NPS M	0.30 (7.60)	0.63 (16.00)	1.00 (25.40)	0.20 (5.10)	0.44 (11.20)	0.20 (6.00)	Acetal	N/A	68dB
NST4	1/4 NPS M	0.30 (7.60)	1.49 (37.80)	1.86 (47.20)	0.35 (8.90)	0.75 (19.10)	0.60 (17.00)	Acetal	Felt	68dB
NST4A	1/4 NPS M	0.37 (9.40)	3.19 (81.00)	3.56 (90.40)	0.50 (12.70)	1.00 (25.40)	1.80 (51.00)	Anodized Aluminum	Felt	70dB
NST4A2	1/4 NPS M	0.37 (9.40)	2.18 (55.40)	2.56 (65.00)	0.50 (12.70)	1.00 (25.40)	1.40 (40.00)	Anodized Aluminum	Felt	72dB
NST6A	3/8 NPS M	0.38 (9.70)	3.19 (81.00)	3.56 (90.40)	0.50 (12.70)	1.00 (25.40)	1.80 (51.00)	Anodized Aluminum	Felt	72dB
NST6B	3/8 NPS M	0.38 (9.70)	4.19 (106.40)	4.82 (122.40)	0.72 (18.30)	1.25 (31.80)	3.10 (88.00)	Anodized Aluminum	Felt	72dB
NST8A	1/2 NPS M	0.38 (9.70)	3.19 (81.00)	3.56 (90.40)	0.50 (12.70)	1.00 (25.40)	1.80 (51.00)	Anodized Aluminum	Felt	74dB
NST8B	1/2 NPS M	0.38 (9.70)	4.19 (106.40)	4.82 (122.40)	0.72 (18.30)	1.25 (31.80)	3.10 (88.00)	Anodized Aluminum	Felt	76dB
NST12C	3/4 NPS M	0.34 (8.60)	6.18 (157.00)	6.93 (176.00)	1.25 (31.80)	2.00 (50.80)	7.80 (221.00)	Anodized Aluminum	Felt	80dB
NST16C	1 NPS M	0.50 (12.70)	6.18 (157.00)	6.93 (176.00)	1.25 (31.80)	2.00 (50.80)	7.70 (218.00)	Anodized Aluminum	Felt	80dB

Note: All NPS threads fit G Port threads



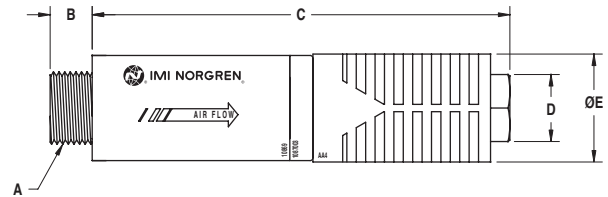
Part Number	Dimensions						Weight oz (g)	Construction Body	Element	Noise Level
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)				
NST2020	Ø 1.99						11.00 (311.00)			
NST2020-5	Ø 1.24	0.70 (17.80)	12.23 (310.60)	12.93 (328.40)	2.21 (56.10)	3.46 (87.90)	13.30 (377.00)	PVC	Foam	82dB
NST2020-7	Ø 1.49						12.70 (360.00)			

● NSTAA Series Silencers

- Compact
- Lightweight
- Durable
- Ultra quiet operation
- 2 Thread sizes 1/4, 3/8 NPT
- Maximize performance – silences pneumatic equipment without back pressure
- Increase productivity and operator safety
- Reduces irritating high pitch frequency noise
- Improves working environment
- Maintain clean environment – reduces maintenance costs, increases equipment life



A hybrid silencer that offers increased noise reduction by combining an NST silencer with an NAA silencer. The (closed-end) NAA silencer is attached to the end of a modified NST silencer, thus removing the flow through feature of the standard NST Series silencers.



Model #	Dimensions					Weight oz (g)	Construction				Noise Level
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)		Body	Baffle	Screen	Element	
NSTAA4	1/4 NPS M	0.30 (7.60)	2.96 (75.20)	0.48 (12.20)	0.47 (11.90)	0.70 (20.00)	Acetal/ Nylon	Felt/ Nylon	Nylon	Felt	58dB
NSTAA6	3/8 NPS M	0.38 (9.70)	5.15 (130.80)	0.63 (16.00)	0.62 (15.70)	1.80 (51.00)	Aluminum/ Nylon				64dB

NSTAA Series Silencers Specifications:

Max. Operating Pressure: Not to exceed 150 PSI [10 bar]

Noise level: Measured 4.5 ft on the diagonal from the silencer while attached to a IMI Norgren generator. Noise levels will vary on IMI Norgren and non-IMI Norgren products.

Note 1: IMI Norgren strongly recommends the use of silencers on all vacuum generators.

Note 2: IMI Norgren silencers may be used on all types of pneumatic devices i.e. air-operated vacuum generators, air motors, valves, cylinders and more.

Note 3: For Metric availability, consult factory.

How to Specify:

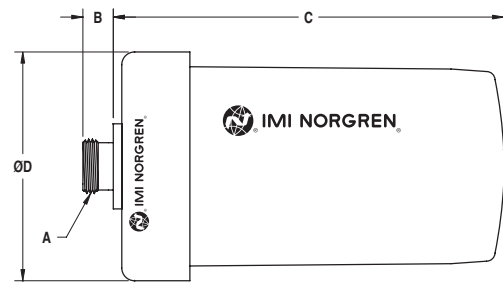
- For Silencer only: Order by Model #.
- **IMI Norgren generator/silencer combinations:** IMI Norgren recommends silencers that have been sized to ensure maximum generator performance. See specific generator for silencer options.
- **Non-IMI Norgren pneumatic devices:** The thread size on the exhaust port of the pneumatic device determines the size of the silencer.
- Equipment and applications may vary. Consult factory for proper silencer selection.

● NFA-51 Series Silencers

- Closed-end
- 3 Thread sizes 1/4, 3/8, 1/2
- Replacement elements available
- Safe – closed-end high flows won't cause potentially dangerous projectiles
- Quiets large vacuum generators, valves, cylinders, air motors, and more
- Durable – more area inside to absorb sound and debris
- Economical – lasts longer, lower cost, replacement elements available
- Reliable – no back pressure on high flow applications
- Maintain clean environment – reduces maintenance costs, increases equipment life



The NFA-51 Series silencers offer remarkable noise reduction for high volume exhaust applications without causing back pressure. These silencers are ideal for quieting large air valves that must exhaust quickly to maintain high cycle rates. IMI Norgren uses the FNA-51 silencers on all high flow venturi vacuum generators where even a small amount of back pressure would decrease performance.



Part Number	Dimensions				Weight oz (g)	Construction Body	Baffle	Screen	Element	Noise Level
	A* in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)						
NFA-51-.250	1/4 NPS M	0.30 (7.60)								
NFA-51-.375	3/8 NPS M	0.38 (9.60)	5.74 (145.80)	3.36 (85.30)	12.70 (357.00)	Steel	Foam	Steel	Paper	72dB
NFA-51-.500	1/2 NPS M	0.38 (9.60)								
NRF-51	N/A	N/A	4.76 (120.90)	3.03 (77.00)	6.20 (176.00)					

NFA-51 Series Silencers Operating Specifications:

Max. Operating Pressure: Not to exceed 150 PSI [10 bar]

Noise level: Measured 4.5 ft on the diagonal from the silencer while attached to a IMI Norgren generator. Noise levels will vary on IMI Norgren and non-IMI Norgren products.

Note 1: IMI Norgren strongly recommends the use of silencers on all vacuum generators.

Note 2: IMI Norgren silencers may be used on all types of pneumatic devices i.e. air-operated vacuum generators, air motors, valves, cylinders and more.

How to Specify:

- **For Silencer only:** Order by Model #.
- **IMI Norgren generator/silencer combinations:** IMI Norgren recommends silencers that have been sized to ensure maximum generator performance. See specific generator for silencer options.
- **Non-IMI Norgren pneumatic devices:** The thread size (1/4, 3/8, 1/2) on the exhaust port of the pneumatic device determines the size of the silencer i.e. NFA-51-.250
- **P/N: NRF-51 - Replacement Element:** Fits all NFA-51 models
- Equipment and applications may vary. Consult factory for proper silencer selection.

SWITCHES/SENSORS

● Electronic Vacuum Sensor

Ultra-miniature, precision control

- Closed-end
- 3 Thread sizes 1/4, 3/8, 1/2
- Replacement elements available
- Compact – placed at point of use for accurate reading and quick response time
- Lightweight – ideal for End-of-Arm Tooling, robotic end effectors
- Low power consumption
- Mountable to both IMI Norgren or non-IMI Norgren
- M5 vacuum port
 - Swivel fitting – operates in any position
 - RoHS compliant and meets EMC standards
- Standard with M8, 3-pin Quick Disconnect on 6" Pigtail



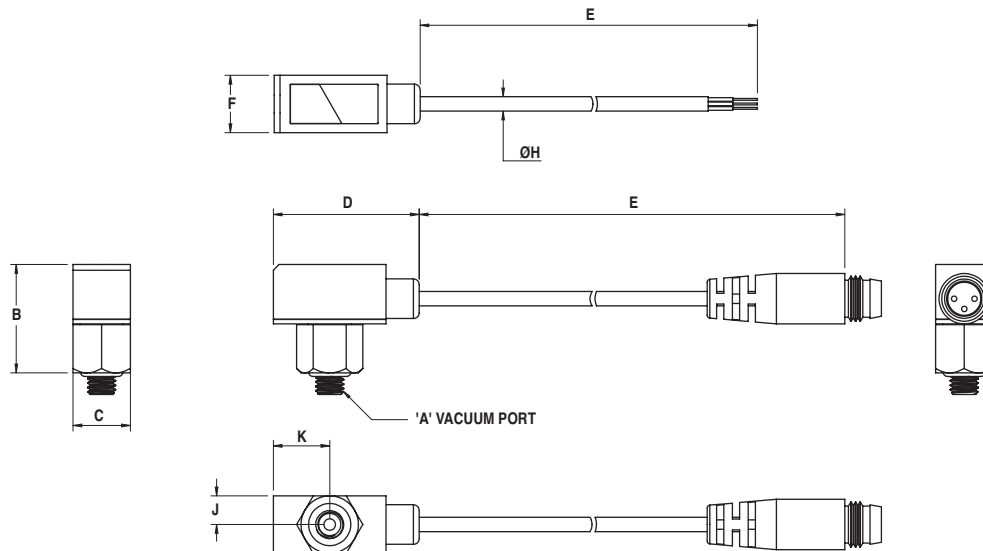
IMI Norgren's ultra-mini electronic vacuum sensors provide continuous voltage output (1-5v) proportional to the system vacuum level. Connected to a feedback interface such as a digital display or PLC, the NVTMV-QD-6 is a cost effective, reliable sensor that maintains application consistency. Sensors can be mounted directly to IMI Norgren's Modular NVP Series generators.

How to Specify:

Sensor: NVTMV-QD-6 - Sensor with 6" pigtail and Quick Disconnect

Accessory Options: NQDS-8-3F - Cordset with M8,3-pin female connector with 5M lead wire

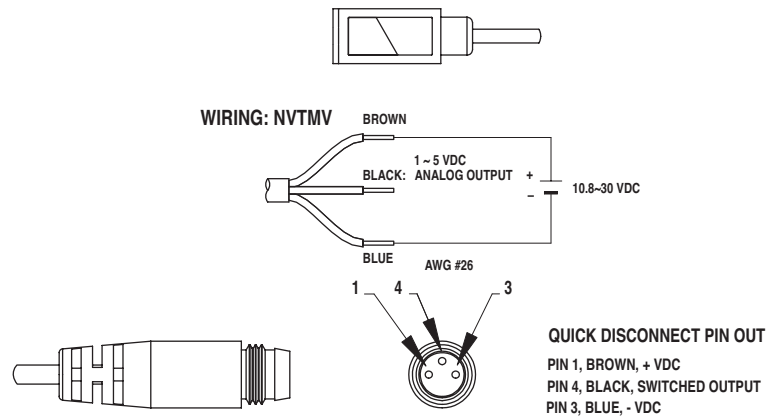
● NVTMV-QD-6 Sensor with Quick Disconnect:



Part Number	Imperial Dimensions (in)		C	D	E	F	H	J	K	Weight oz
	A	B								
NVTMV-QD-6	10-32	0.75	.040	1.01	6.00	0.40	0.10	0.20	0.39	1.20

Part Number	Metric Dimensions (mm)		C	D	E	F	H	J	K	Weight
	A	B								
NVTMVM-QD-6	M5	19.05	10.11	25.73	152.40	10.11	2.54	5.05	9.96	34.02g

● Wiring Schematic for NVTMV-QD-6



● NVTMV-QD-6 Electronic Vacuum Sensor Specifications:

NVTMV-QD-6	
Rated Vacuum Range:	0" to 30" Hg [0 mbar to -1015 mbar]
Burst Pressure:	29 PSI (2 bar)
Media:	Non-Corrosive, Dry Gases
Supply Voltage:	10.8 to 30VDC
Current Consumption:	20 mA Max.
Sensing/Switching Material:	Single Crystal Silicon
Output:	1 to 5VDC
Electrical Connection:	3 Wire - 26 AWG - 6" (152.40 mm) with 3 pin, M8 Quick Disconnect
Response Time:	Approximately 1 ms
Circuit Protection:	None
Linearity:	+/- 0.5% Full Scale
Thermal Error:	+/- 2% Full Scale/121°F (50°C)
Thermal Compensation:	32°F to 121°F (0°C to 50°C)
Display:	None
IP Protection:	IP00
Operating Temperature:	15°F to 140°F (-10°C to 60°C)
Operating Humidity:	35 to 85% RH (No Condensation)
Construction:	Glass filed ABS/Aluminum/Buna
Fitting/Connection:	M5x.8 - 360° swivel male fitting
Weight:	1.20 oz (34.02g)
Safety and Environmental Compliance:	CE, RoHS

● Electronic Vacuum Switches

Ultra-miniature, precision control

- Part present detection
- End-of-Arm Tooling/ Robotic assembly
- Material handling
- Pick & place
- Manifold mount
- Compact – placed at point of use for accurate reading and quick response time
- Lightweight – ideal for End-of-Arm Tooling, robotic end effectors
- Precision Control – offers field-adjustable set-point for the full vacuum range
- Reliable LED for visual confirmation – easy set-up
- Standard with M8, 3-pin Quick Disconnect on 6" Pigtail
- Swivel fitting – operates in any position
- Mountable to both IMI Norgren or any non-IMI Norgren M5 vacuum port
- Low power consumption
- RoHS compliant and meets EMC standards



IMI Norgren's miniature electronic vacuum switches provide a switched output for part present detection and can be easily mounted to IMI Norgren's Modular VP Series generators.

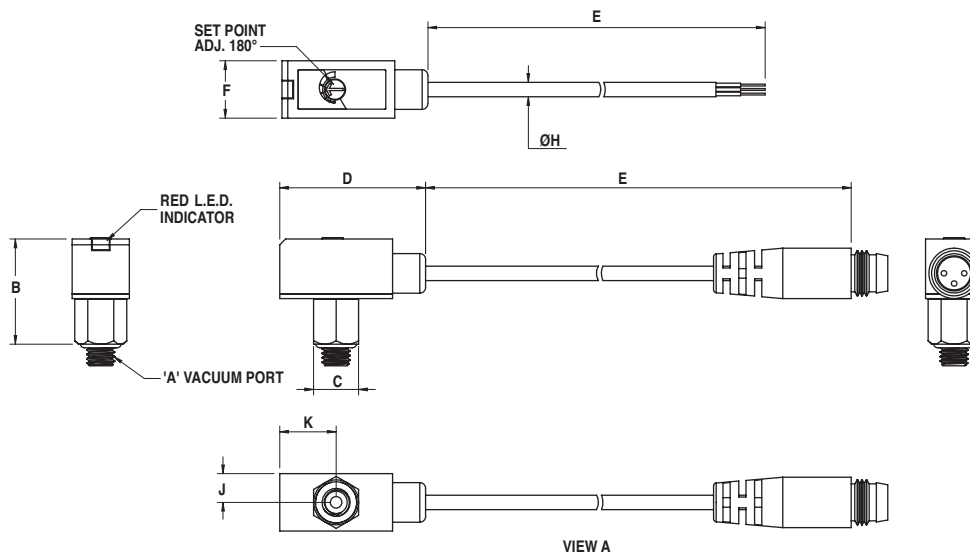
2 Models Available:

- NVSMN-QD-6 - NPN, 6" Pigtail
- NVSM-P-QD-6 - PNP, 6" Pigtail

Accessory Options:

- NQDS-8-3F - Cordset with M8,3-pin female connector with 5M lead wire

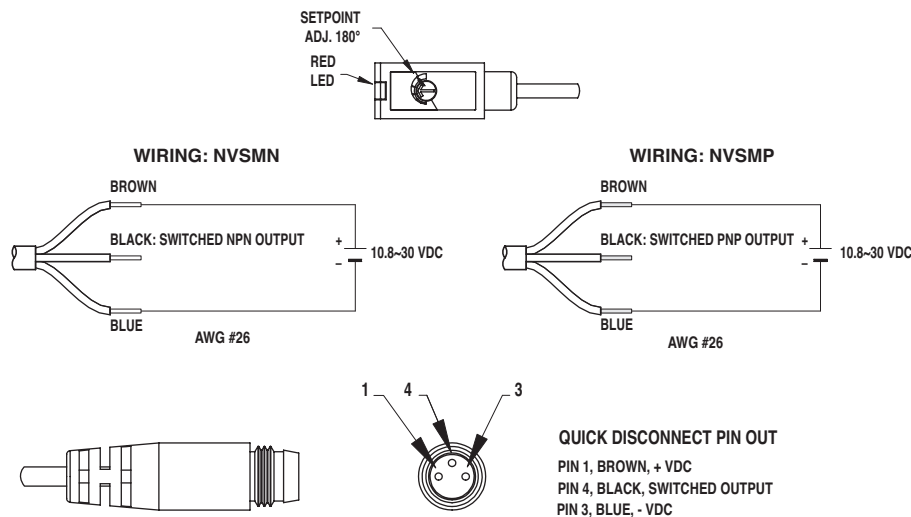
● NVSM(N or P) Series Switch with Quick Disconnect:



Part Number	Imperial Dimensions (in)									Weight
	A	B	C	D	E	F	H	J	K	
NVSM(N)(P)-QD-6	10-32	0.73	0.31	1.01	6.00	0.40	0.10	0.20	0.39	1.20

Part Number	Metric Dimensions (mm)									Weight
	A	B	C	D	E	F	H	J	K	
NVSM(N)(P)M-QD-6	M5	18.57	7.95	25.73	152.40	10.11	2.54	5.05	9.96	34.02g

● Wiring Schematic for NVSM (N or P)-QD-6



● NVSM (N or P)-QD-6 Electronic Vacuum Switch Specifications:

NVSMN-QD-6 / NVSMP-QD-6	
Rated Vacuum Range:	0" to 30" Hg (-0 to -1015 mbar)
Burst Pressure:	29 PSI (2 bar)
Media:	Non-Corrosive, Dry Gases
Supply Voltage:	10.8 to 30VDC
Current Consumption:	20 mA Max.
Sensing/Switching Material:	Single Crystal Silicon
Switched Output:	NPN / PNP
Electrical Connection:	3 Wire - 26 AWG - 6" (152.40 mm) w/ 3 pin, M8 Quick Disconnect
Hysteresis:	2% Full Scale Max
Repeatability:	+/- 0.3% Full Scale
Response Time:	1 ms Max.
Circuit Protection:	NONE
Max. Switch Voltage Load:	30VDC
Max. Switched Current Load:	80mA
Linearity:	+/- 0.5% Full Scale
Thermal Error:	+/- 2% Full Scale/121°F (50°C)
Thermal Compensation:	32°F to 121°F (0°C to 50°C)
Display:	Single Red LED
Switch Indication:	Red LED ON (Switched Output ON)
IP Protection:	IP00
Operating Temperature:	15°F to 140°F (-10°C to 60°C)
Operating Humidity:	35 to 85% RH (No Condensation)
Construction:	Glass filed ABS/Aluminum/Buna
Fitting/Connection:	M5x.8 - 360° swivel male fitting
Weight:	1.2 oz (34.02g)
Safety and Environmental Compliance:	CE, RoHS

● Electronic Vacuum Switch with Digital Display

NVDX(N or P)-QD-6 Series – 2 Switched Outputs

- Robotic control
- Pick & place
- Part present detection
- Material handling
- Monitoring vacuum
- Leak testing
- Fully Programmable – simple push button calibration – no tools required
- 2 switched outputs
- Convenient – standard with M8, 4-pin Quick Disconnect with 6" Pigtail
- Vacuum port – Available with 1/8" NPT w/ 10-32 female or G 1/8M w/ M5 female fitting
- Full 3 digit display – red LED
- Globally accepted display scales: "Hg, mmHg, PSI, bar, mbar, gf/cm sq, kgf/cm sq, kPa
- Dust and drip proof enclosure to IP65 IEC standards
- RoHS compliant



NVDXN-QD-6

The NVDX Series compact all-in-one output device and digital gauge reduces the number of components in your system. With 2 switched outputs it's possible to monitor the high and low limits for vacuum control. In pick & place and robotic material handling applications, use the first switch for part present so that the robot or tooling can move, and the second switch to signal that the working vacuum level has been achieved. The NVDX Series can be directly mounted to a wide variety of IMI Norgren generators. Complete with M8, 4-pin connector.

2 Models Available:

NVDXN-QD-6 (NPN)
NVDXP-QD-6 (PNP)

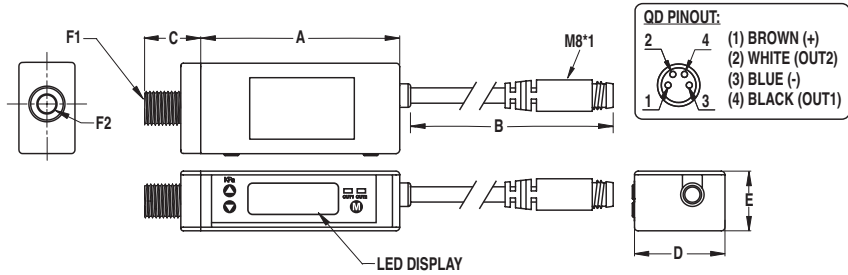
Accessory Options:

NQDS-8-4F - Cordset with M8, 4-pin female connector with 5M lead wire

● NVDX(N, P)-QD-6 Series Switch/Sensor



NVDX Series Switch/Sensor

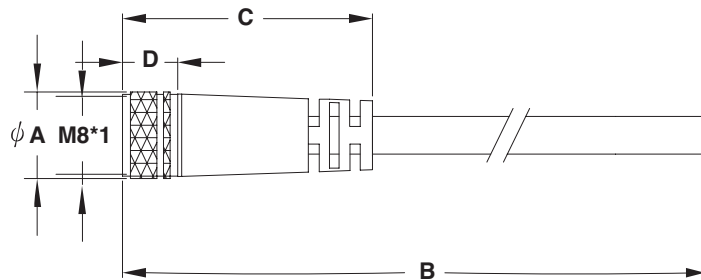


Part Number	Dimensions					F1	F2	Weight (with male connection) oz (g)
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)			
NVDX(N) (P)-QD-6	2.17	6.00	0.49	0.98	0.65	1/8 NPT	10-32	1.20
NVDX(N)(P)M-QD-6	(55.00)	(152.40)	(12.50)	(25.00)	(16.50)	G 1/8	M5	(34.02)

● Cordset with M8, 4-Pin Female Connector with 5M Lead Wire

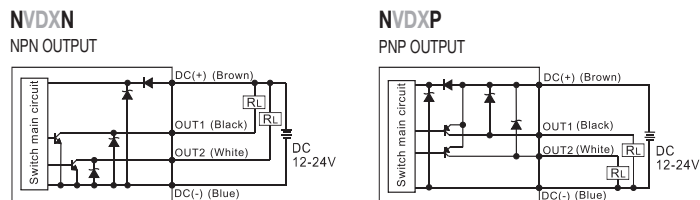


Cordset



Part Number	Dimension				Weight oz (g)
	A in. (mm)	B ft. (M)	C in. (mm)	D in. (mm)	
NQDS-8-4F	0.35 (9.00)	16.40 (5M)	1.26 (32.00)	0.28 (7.000)	4.90 (140.00)

● Wiring Schematic for NVDX-Series



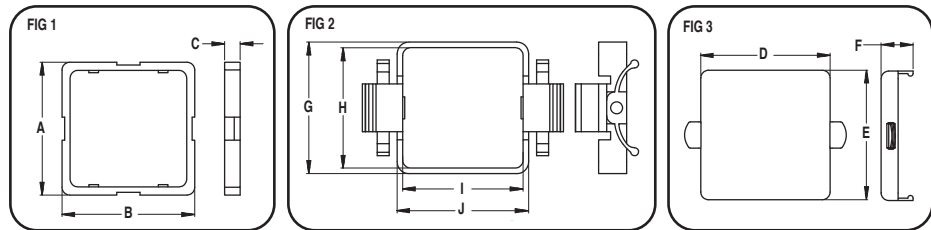
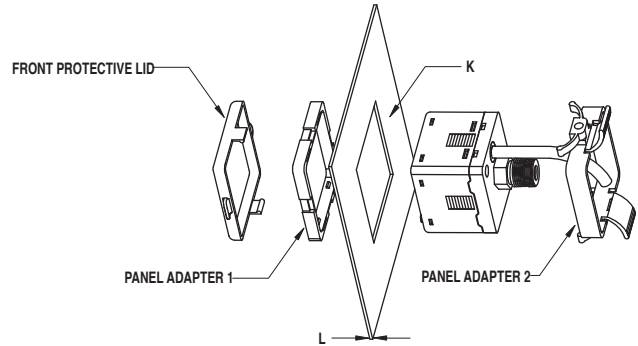
● NVDX(N)(P)-QD-6 Series Specifications:

	NVDXN-QD-6	NVDXP-QD-6
Rated Pressure Range:	-101.3 ~ 0.0 kPa (-29.9 ~ 0" Hg)	
Setting Pressure Range:	-101.3 ~ 10.0 kPa (-29.9" Hg ~ 1.45 PSI)	
Withstand Pressure:	300 kPa (43.5 PSI)	
Fluid:	Air, Non-Corrosive Gases, Incombustible Gases	
Set Pressure Resolution	kPa	0.1
	MPa	-
	kgf/cm²	0.001
	bar	0.001
	PSI	0.01
	InHg	0.1
	mmHg	1
mmH₂O	0.1	
Power Supply Voltage:	12 to 24VDC ± 10%, Ripple (P-P) 10% or less	
Current Consumption:	≤ 55mA	
Switch Output:	2 NPN open collector Max. load current: 80mA Max. supply voltage: 30VDC Residual voltage: ≤1V (load current 80mA)	2 PNP open collector Max. load current: 80mA Max. supply voltage: 24VDC Residual voltage: ≤1V (load current 80mA)
Repeatability (Switch Output):	≤±0.2% F.S. ±1 digit	
Hysteresis:	Adjustable	
Hysteresis Mode	Fixed (3 digits)	
Window Comparator Mode	Fixed (3 digits)	
Response Time:	≤2.5ms (chattering-proof function: 24ms, 192ms, and 768ms selections)	
Output Short Circuit Protection:	Yes	
7 Segment LCD Display:	3 digit LED 7 segment display (Sampling rate: 5 times/1 sec.)	
Indicator Accuracy:	≤±2% F.S. ±1 digit (ambient temperature: 25 ± 3°C)	
Switch On Indicator:	Green LED (OUT 1) Red LED (OUT 2)	
Environment	Enclosure	IP 40
	Amb. temp range	Operation: 0~50°C, Storage: -20 ~ 60°C (no condensation or freezing)
	Amb. humidity range	Operation/Storage: 35 ~ 85% RH (no condensation)
	Withstand Voltage	1000VAC in 1-min (between case and lead wire)
	Insulation resistance	50Mohm min. (at 500VDC between case and lead wire)
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y, and Z
Shock	980m/s ² (100g), 3 times each in direction of X, Y, and Z	
Temperature Characteristic:	≤±2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C	
Port Size:	1/8" NPT, G 1/8, 10-32, M5	
Lead Wire:	Oil Resistance cable (0.15M)	
Weight:	Approx. *34g (with male connector)	

● Optional Mounting Brackets: Panel Mount Bracket – NPMC-VDM



NVDM Series Panel Mount Bracket

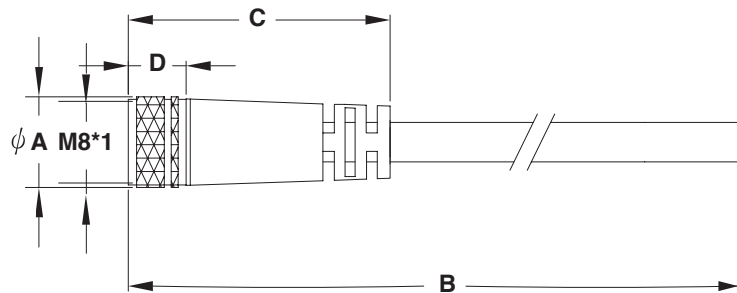


Part Number	Dimensions											
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	I in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)
NPMC-VDM Panel Mount w/Cover	1.35 (34.40)	1.35 (34.40)	0.16 (4.00)	1.35 (34.40)	1.35 (34.40)	0.33 (8.50)	1.30 (33.00)	1.19 (30.20)	1.19 (30.20)	1.30 (33.00)	1.22 X 1.2 ± 0.02 (31 X 31 ± 0.4)	t ≤ 0.18 (t ≤ 4.5)

● Cordset with M8 Female Connector with 5M Lead Wire



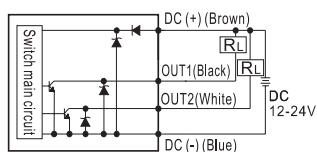
Cordset



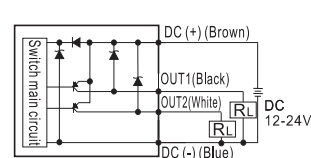
Part Number	Dimensions			
	A in. (mm)	B ft. (M)	C in. (mm)	D in. (mm)
NQDS-8-4F	0.35 (9.00)	16.40 (5.00)	1.26 (32.00)	0.28 (7.00)

● Wiring Schematic for NVDM Series

NVDMN
NPN OUTPUT



NVDMP
PNP OUTPUT



● NVDM Series Specifications:

	NVDMN-QD-6	NVDMP-QD-6
Rated Pressure Range:	-101.3 ~ 0.0 kPa (-29.9 ~ 0" Hg)	
Setting Pressure Range:	-101.3 ~ 10.0 kPa (-29.9" Hg ~ 1.45 PSI)	
Withstand Pressure:	300 kPa (43.5 PSI)	
Fluid:	Air, Non-Corrosive Gases, Incombustible Gases	
Set Pressure Resolution	kPa	0.1
	MPa	–
	kgf/cm²	0.001
	bar	0.001
	PSI	0.01
	InHg	0.1
	mmHg	1
mmH2O	12 to 24VDC ± 10%, Ripple (P-P) 10% or less	
Power Supply Voltage:	12 to 24VDC ± 10%, Ripple (P-P) 10% or less	
Current Consumption:	≤ 40mA (With no load)	
Switch Output:	2 NPN open collector Max. load current: 125mA Max. supply voltage: 30VDC Residual voltage: ≤ 1.5v (load current 125mA)	2 PNP open collector Max. load current: 125mA Max. supply voltage: 24VDC Residual voltage: ≤ 1.5v (load current 125mA)
Repeatability (Switch Output):	≤ 2.5ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms, and 1500ms selectable)	
Hysteresis:	Adjustable	
Hysteresis Mode		
Window Comparator Mode		
Response Time:	≤ 2.5ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms, and 1500ms selectable)	
Output Short Circuit Protection:	Yes	
7 Segment LCD Display:	Two Color (Red/Green) main & unit display, Orange sub-display (Sampling rate: 5 times/1sec.)	
Indicator Accuracy	≤ ±2% F.S. ±1 digit (ambient temperature: 25 ± 3°C)	
Switch On Indicator:	Orange 1 & 2 Indicator	
Environment	Enclosure	IP 40
	Amb. temp range	Operation: 0~50°C, Storage: -10 ~ 60°C (no condensation or freezing)
	Amb. humidity range	Operation/Storage: 35 ~ 85% RH (no condensation)
	Withstand Voltage	1000VAC in 1-min (between case and lead wire)
	Insulation resistance	50Mohm min. (at 500VDC between case and lead wire)
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y, and Z
Shock	100m/s ² (10g), 3 times each in direction of X, Y, and Z	
Temperature Characteristic:	≤ ±2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C	
Port Size:	1/8" NPT, G 1/8, 10-32, M5	
Lead Wire:	Oil Resistance cable (0.15M)	
Weight:	Approx. *39g (with male connector)	

● Electronic Vacuum Switch and Sensor Electronic Vacuum Switch and Sensor with Digital Display

NVDS(N or P)-QD-6 Series –
2 Switched Outputs and 1 Analog Output

- Robotic control
- Pick & place
- Part present detection
- Material handling
- Monitoring vacuum
- Leak testing
- 2 switched outputs and 1 1-5 VDC Analog output
- Full 3 digit display – red LED
- Fully Programmable – simple push button calibration – no tools required
- 2 ports – back and bottom for easy plumbing and design flexibility, 1/8" NPT or G 1/8M
- Choice of switched output types – PNP or NPN
- Globally accepted display scales: "Hg, mmHg, PSI, bar, mbar, gf/cm sq, kgf/cm sq, kPa
- Dust and drip proof enclosure to IP65 IEC standards
- Standard with M12, 5-pin Quick Disconnect with 6" Pigtail
- RoHS compliant



NVDSN-QD-6

The NVDS Series compact all-in-one output device and digital gauge reduces the number of components in your system. With 2 switched outputs and one analog output it's possible to monitor the high and low limits for vacuum control and system conditions. In pick & place and robotic material handling applications, use the first switch for part present so that the robot or tooling can move, and the second switch to signal that the working vacuum level has been achieved.

The analog output allows software control over the entire vacuum and pressure range with the ability to track system vacuum/pressure changes in real time. The switches are highly flexible due to selectable output functions such as switching point hysteresis and window comparator. Complete with M12, 5-pin connector.

2 Models Available:

NVDSN-QD-6 (2 NPN and 1 Analog)

NVDSN-QD-6 (2 PNP and 1 Analog)

Accessory Options:

NMB & NPMC - Mounting Bracket Kits

– Rear and bottom mount kit,

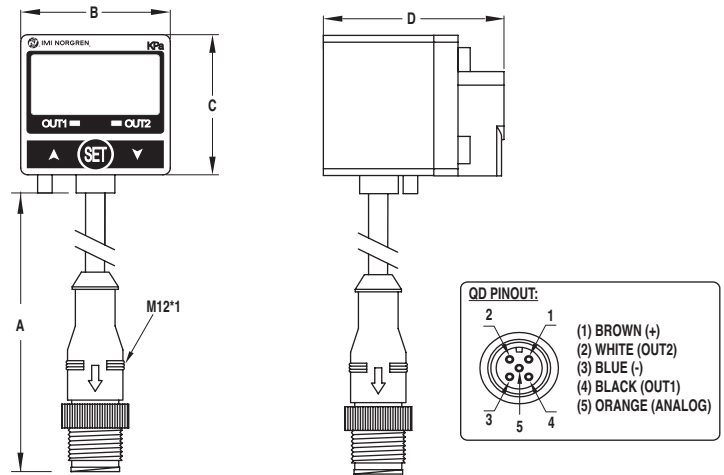
Panel Mount Kit

NQDS-12-5F - Cordset with M12, 5-pin female connector with 5M lead wire

● NVDS(N, P)-QD-6 Series Switch/Sensor



NVDS Series Switch/Sensor

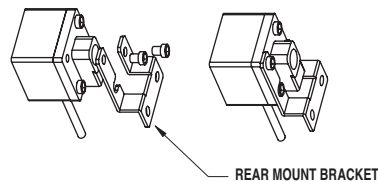


Part Number	Dimensions				Weight oz (g)
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	
NVDS (N) (P)-QD-6	6.00	1.22	1.22	1.44	2.48
NVDS(N)(P)M-QD-6	(152.40)	(31.00)	(31.00)	(36.50)	(70.31)

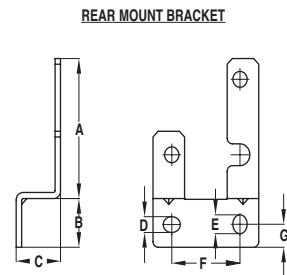
● Optional Mounting Brackets: Rear & Bottom Mount Brackets – NMB



NVDS Series Rear Mount Bracket



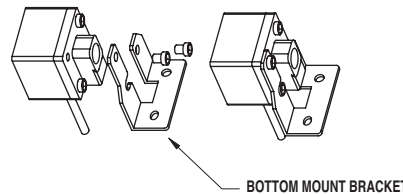
REAR MOUNT BRACKET



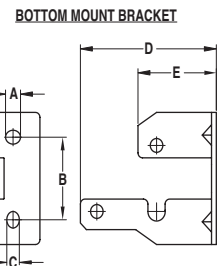
REAR MOUNT BRACKET



NVDS Series Bottom Mount Bracket



BOTTOM MOUNT BRACKET

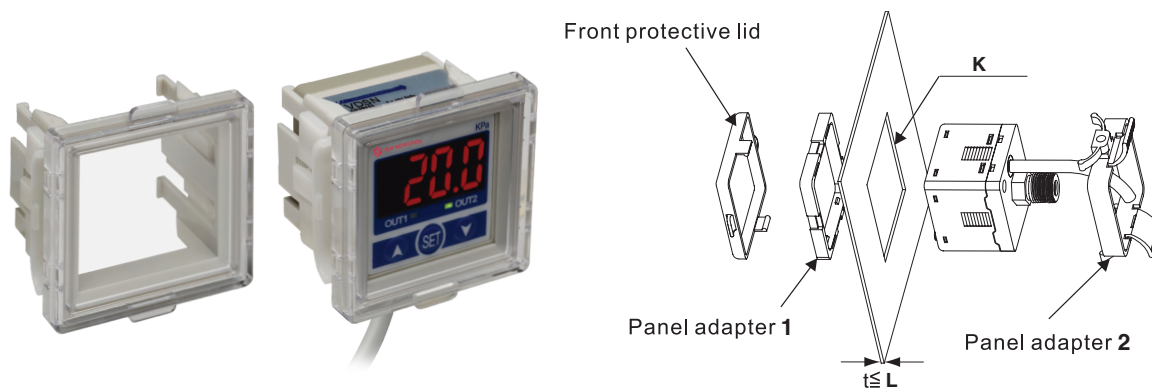


BOTTOM MOUNT BRACKET

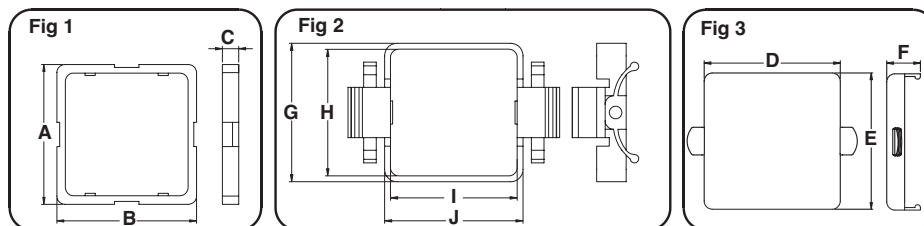
Part Number	Dimensions						
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)
NMB Rear Mount Bracket	1.46 (37.10)	0.51 (12.9)	0.51 (13.00)	0.17 (4.20)	0.20 (5.10)	0.78 (20.00)	0.24 (6.10)

Part Number	Dimensions				
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)
NMB Bottom Mount Bracket	0.20 (5.00)	0.98 (25.00)	0.17 (4.20)	1.79 (45.50)	1.03 (26.20)

● Optional Mounting Brackets: Panel Mount Bracket – NPMC



NVDS Series Panel Mount Bracket

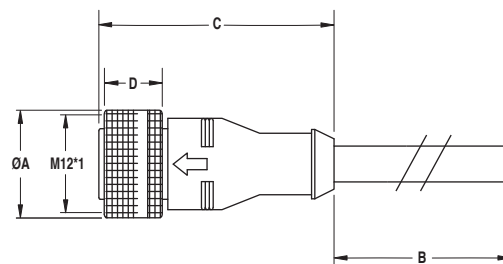
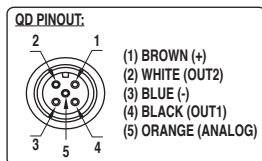


Part Number	Dimensions									
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	I in. (mm)	J in. (mm)
NPMC Panel Mount w/Cover	1.58 (40.00)	1.58 (40.00)	0.18 (4.50)	1.40 (35.50)	1.67 (42.40)	1.67 (42.40)	0.28 (7.00)	1.87 (47.40)	1.42 X 1.42 ± 0.01 (36 X 36 ± .03)	t ≤ 0.18 (t ≤ 4.5)

● Cordset with M12, 5-Pin Female Connector with 5M Lead Wire



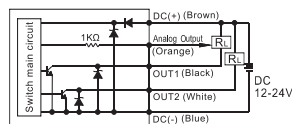
Cordset/Connector/Lead Wire



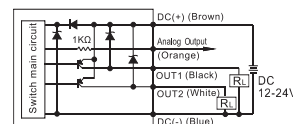
Part Number	Dimensions			
	A in. (mm)	B ft. (M)	C in. (mm)	D in. (mm)
NQDS-12-5F	0.35	16.40 (5M)	1.26 (32.00)	0.28 (7.00)

● Wiring Schematic for NVDS-Series

NVDSN
NPN OUTPUT



NVDSP
PNP OUTPUT



● NVDS Series Specifications:

	NVDSN-QD-6	NVDSP-QD-6
Rated Pressure Range:	-101.3 ~ 0.0 kPa (-29.9 ~ 0" Hg)	
Setting Pressure Range:	-101.3 ~ 10.0 kPa (-29.9" Hg ~ 1.45 PSI)	
Withstand Pressure:	300 kPa (43.5 PSI)	
Fluid:	Air, Non-Corrosive Gases, Incombustible Gases	
Set Pressure Resolution	kPa	0.1
	MPa	-
	kgf/cm²	0.001
	bar	0.001
	PSI	0.01
	InHg	0.1
	mmHg	1
	mmH2O	0.1
Power Supply Voltage:	12 to 24VDC ± 10%, Ripple (P-P) 10% or less	
Current Consumption:	55mA	
Switch Output:	2 NPN open collector Max. load current: 80mA Max. supply voltage: 30VDC Residual voltage: 1v (load current 80mA)	2 PNP open collector Max. load current: 80mA Max. supply voltage: 30VDC Residual voltage: 1.5v (load current 80mA)
Repeatability (Switch Output):	±0.2% F.S. ±1 digit	
Hysteresis:	Adjustable	
Hysteresis Mode	Fixed (3 digits)	
Window Comparator Mode	Fixed (3 digits)	
Response Time:	2.5ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms, and 1500ms selectable)	
Output Short Circuit Protection:	Yes	
7 Segment LCD Display:	3 1/2 digit LED display (Sampling rate: 5 times/1 sec.)	
Indicator Accuracy:	±2% F.S. ±1 digit (ambient temperature: 25 ± 3°C)	
Switch On Indicator:	Green LED (OUT 1) Red LED (OUT 2)	
Analog Output (Voltage Output):	Output Voltage: 1 to 5v ± 2.5% F.S. (within pressure range) Linearity: ± 1% F.S.	
Environment	Enclosure	IP 65
	Amb. temp range	Operation: 0~50°C, Storage: -20 ~ 60°C (no condensation or freezing)
	Amb. humidity range	Operation/Storage: 35 ~ 85% RH (no condensation)
	Withstand Voltage	1000VAC in 1-min (between case and lead wire)
	Insulation resistance	50Mohm min. (at 500VDC between case and lead wire)
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y, and Z
Shock	980m/s ² (100G), 3 times each in direction of X, Y, and Z	
Temperature Characteristic:	±2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C	
Port Size:	1/8" NPT, G1/8"	
Lead Wire:	Oil Resistance cable (0.15M)	
Weight:	Approx. *70g (with male connector)	

● Pneumatic Vacuum Switch

Converts a vacuum signal into a pneumatic signal
NVSP Series

- Clamping and vacuum chucking
- Pick & place of heavy loads
- Hold vacuum while molds cool
- Vessel evacuation
- Lifting systems
- Handling applications
- Vacuum forming
- Normally closed
- Lightweight 2.6 oz (74g)
- Intrinsically safe – no electricity required
- Adjustable operating range from 0 to 25"Hg (0 to 847 mbar)
- Rugged and durable – all aluminum construction
- 3 Sensing ports for design flexibility – operates in any position
- Economical – saves energy – minimizes compressed air consumption
- Reliable and repeatable – diaphragm operated – long life
- Easily installed and plumbed
- Options:
Adjustment knob or slotted screw adjustment
2 Mounting options:
panel or flat mount



NVSP-NC

IMI Norgren's Pneumatic Vacuum Switch provides a repeatable pneumatic output signal when reaching the user-defined vacuum set-point level and is appropriate for use in all vacuum systems.

The output signal is a voluminous 2.5 SCFM at 100 PSI, with a response time of 64 ms at 90 PSI. This high flow and fast response makes the switch ideal for high-speed pneumatic circuits with lengthy plumbing lines and for continuously monitored vacuum applications such as vacuum clamping (chucking), vacuum forming, vessel evacuation, and pick and place.

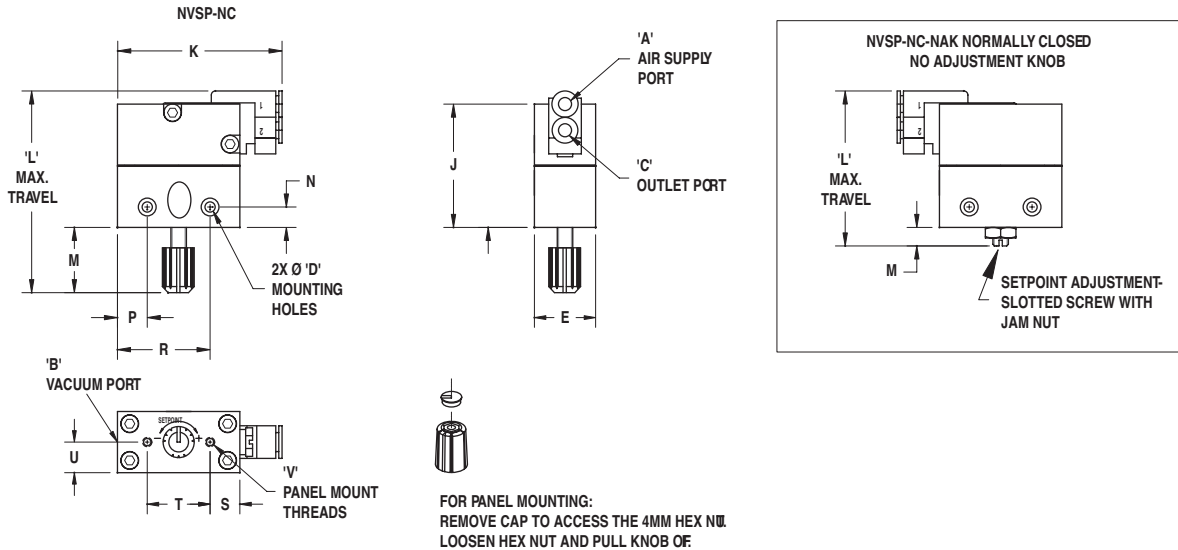
As an integral component of the Air Saver Generators, this switch supplies the pneumatic pilot signal that closes the main valve when the preset vacuum level is reached, minimizing compressed air consumption.

The pneumatic vacuum switch is constructed of an all-aluminum body ensuring sturdy installation and durable plumbing connections that last after repeated use.

Instant push-to-connect fittings connect the air supply quickly and easily, saving assembly time and eliminating the need for additional fittings. Three 10-32 vacuum ports allow for design and plumbing flexibility, while ensuring safe, neat, and space-saving fixtures.

The adjustment knob is smooth turning for fine adjustment. If you prefer a slotted adjustment mechanism, simply remove the knob to expose the slot.

● Pneumatic Vacuum Switch



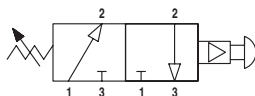
Part Number	Dimensions																Weight oz (g)
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	M in. (mm)	N in. (mm)	P in. (mm)	R in. (mm)	S in. (mm)	T in. (mm)	U in. (mm)	V in. (mm)	
NVSP-NC	5/32-PTC	10-32	5/32-PTC	0.12 (3.00)	0.75 (19.10)	1.51 (38.40)	2.01 (51.00)	2.47 (62.70)	0.78 (19.80)	0.25 (6.40)	0.36 (9.10)	1.13 (28.70)	0.36 (9.10)	0.77 (19.60)	0.40 (9.50)	4-40 (N/A)	2.60 (74.00)
NVSP-NC-NAK	5/32-PTC	10-32	5/32-PTC	0.12 (3.00)	0.75 (19.10)	1.51 (38.40)	2.01 (51.00)	1.68 (42.70)	0.22 (5.60)	0.25 (6.40)	0.36 (9.10)	1.13 (28.70)	0.36 (9.10)	0.77 (19.60)	0.40 (9.50)	4-40 (N/A)	2.60 (74.00)

*PTC—Push-to-Connect—accepts 5/32 (4 mm) tubing

Switch Operation:

The pneumatic switch is a diaphragm-actuated air valve. At vacuum levels below the switch set point, the diaphragm depresses the valve plunger, closing the valve. When the vacuum level reaches the set point, the diaphragm releases the plunger, opening the valve, and allowing air to flow from port 1 to port 2. To change the set point, turn either the adjustment knob or slotted screw.

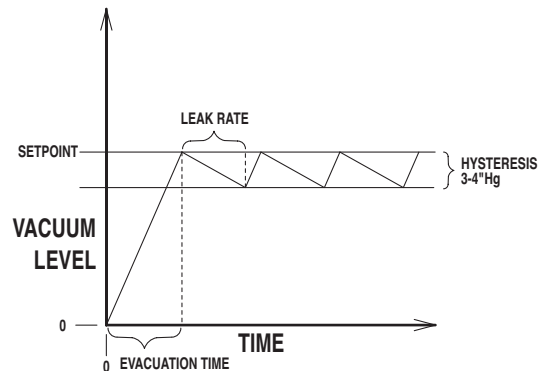
ANSI Symbol:



How to Specify:

Normally Closed: P/N: NVSP-NC

To order with slotted screw adjustment use P/N: NVSP-NC-NAK



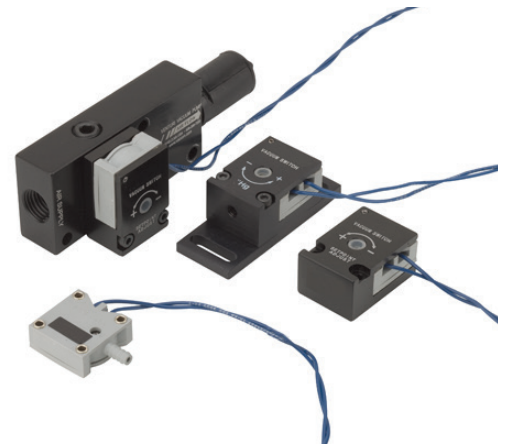
● Pneumatic Vacuum Switch Specifications:

Rated Vacuum Range:	0" to 25" Hg (0 to 847 mbar)
Hysteresis:	3" to 4" Hg (102 mbar to -135 mbar)
Port Sizes:	Vacuum – 10-32 Female
Valve Type:	Plunger operated – air assisted servo controlled element
Operating Pressure:	20-115 PSI
Flow Rate:	2.5 SCFM @ 100 PSI
Cv Rating:	0.06
Response Time:	64 ms
Ambient Temp:	14°F to 140°F [-10C to 60C]
Mechanical Life:	10 million operations

● Adjustable Mechanical Vacuum Switch

NVS-5 Series, NSX-5 Series, and NSX-5SB Series

- Robotic applications
- Assembly applications
- Control applications
- Monitoring applications
- Accurate and reliable repeatability – utilizes low stress deflecting contacts
- Compact and lightweight – operates in any position
- Economical – diaphragm operated – long life
- Easy to install – 12" flying leads, 24 AWG
- Vacuum Level Range – VS-5, SX-5, SX-5SB - 0.4"-29.7"Hg (251mbar - 1 bar)



Vacuum Switches:

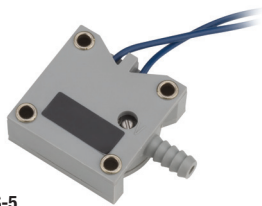
IMI Norgren vacuum switches are ideal in automated systems to generate a low-current electrical signal for input to a PLC or other logic controllers. The adjustable switches are normally open, diaphragm operated, and contain low-stress deflecting contacts instead of sliding or pivoting parts for high reliability and long life.

Switch Options:

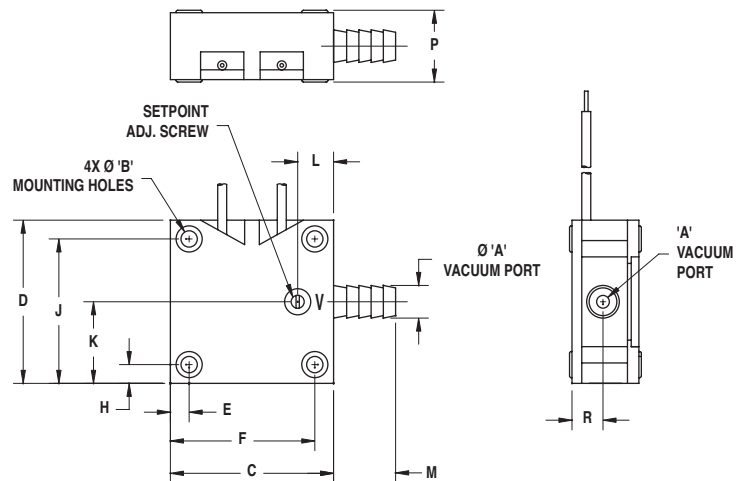
Housings for ease of mounting on vacuum generators

Sub base for ease of installation on non-IMI Norgren vacuum generators

● Adjustable Mechanical Vacuum Switch: NVS-5

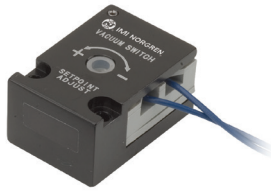


NVS-5

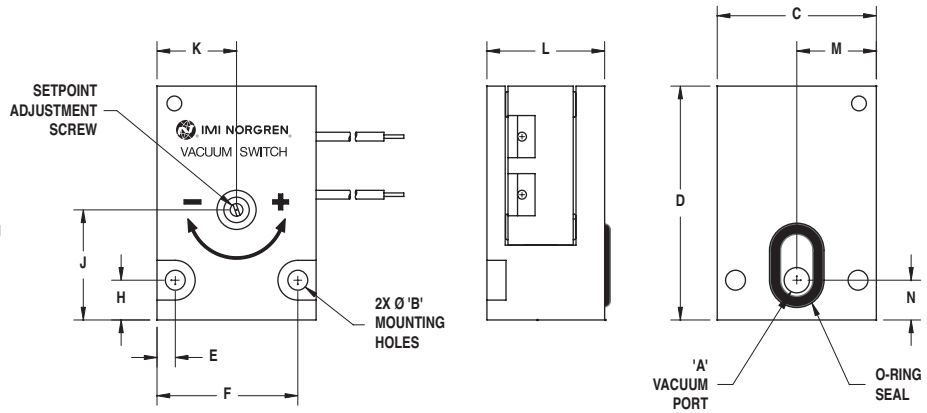


Part Number	Dimensions															Weight oz (g)	Lead Length
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	K in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	M in. (mm)	N in. (mm)	P in. (mm)	R in. (mm)	S in. (mm)		
NVS-5	0.22 (0.22)	0.10 (2.50)	1.00 (25.40)	1.00 (25.40)	0.12 (3.00)	0.77 (19.60)	0.12 (3.00)	0.77 (19.60)	0.50 (12.70)	0.22 (5.60)	0.38 (9.70)	N/A (N/A)	0.44 (11.20)	0.20 (5.10)	0.50 (12.70)	0.50 (14.00)	12 (305)

● Adjustable Mechanical Vacuum Switch: NSX-5 (Switch with housing)



NSX-5 Switch with housing

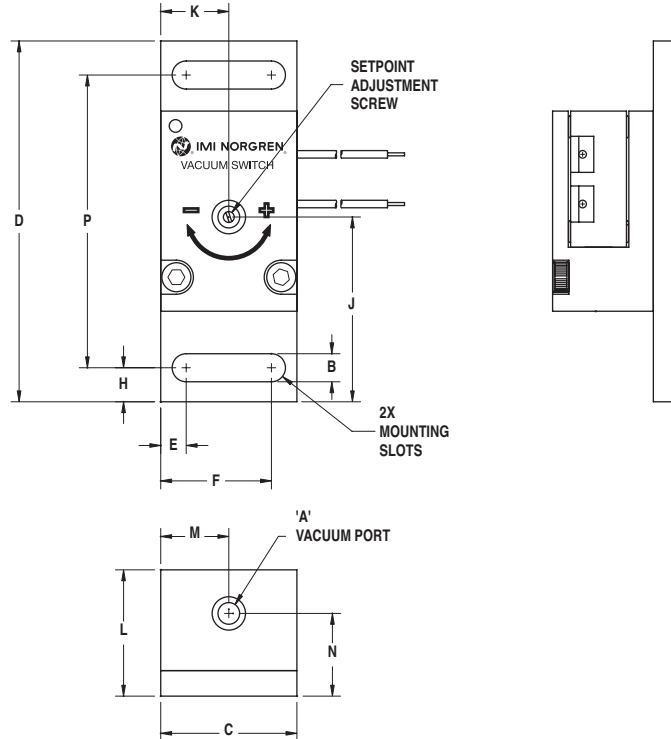


Part Number	Dimensions												Weight oz (g)	Lead Length
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	M in. (mm)	N in. (mm)		
NSX-5	10-32 F	0.13	1.00	1.47	0.12	0.89	0.25	0.69	0.50	0.74	0.50	0.25	1.50	12
	(10-32 F)	(3.30)	(25.40)	(37.30)	(3.00)	(22.60)	(6.40)	(17.50)	(12.70)	(18.80)	(12.70)	(6.40)	(43.00)	(305)

● Adjustable Mechanical Vacuum Switch: NSX-5SB (Switch with housing and sub base)

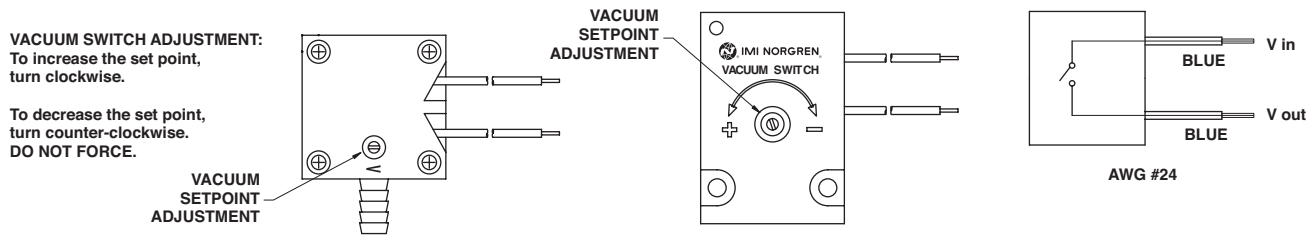


NSX-5SB Switch with housing and sub base



Part Number	Dimensions													Weight oz (g)	Lead Length
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	M in. (mm)	N in. (mm)	P in. (mm)		
NSX5-SB	10-32 F	0.21	1.00	2.65	0.19	0.81	0.25	1.36	0.50	0.93	0.50	0.61	2.15	2.10	12
	(10-32 F)	(5.30)	(25.40)	(67.30)	(4.80)	(20.60)	(6.40)	(34.50)	(12.70)	(23.60)	(12.70)	(15.50)	(54.60)	(60.00)	(305)

● Wiring Schematic for NVS-5, NSX-5, NSX-5SB



Important Notice For All NVS-5, NSX-5, NSX-5SB

1. The electrical current flows from one terminal through the rivet to the contact blade and from the other terminal through the rivet to the adjustment blade.
2. The adjustment screw is in contact with the diaphragm and is part of the electrical circuit.
3. To avoid potential shock, use an insulated screwdriver when making adjustments.

● NVS-5, NSX-5, NSX-5SB Specifications:

	NVS-5	NSX-5, NSX-5SB
Rated Vacuum Range:	7.4" to 30" Hg (-250 to -1015 mbar)	7.4" to 30" Hg (-250 to -1015 mbar)
Proof Pressure:	N/A	
Burst Pressure:	25 PSI [1.7 bar]	
Media:	Non-Corrosive, Dry Gases	
Switch Type:	Differential Pressure, Mechanical Diaphragm	
Sensing/Switching Material:	Gold Plated, Phosphor Bronze	
Output:	SPST - NO	
Electrical Connection:	2 Wire - 24 AWG 1' [0.3M]	
Hysteresis:	0.5% Full Scale	
Max. Switch Voltage Load:	24VDC/500VAC	
Max. Switched Current Load:	20mA	
Display:	NONE	
Switch Indication:	NONE	
IP Protection:	NONE	
Operating Temperature:	-40°F to 250°F [-40°C to 120°C]	
Operating Humidity:	35 to 85% RH (No Condensation)	
Mechanical Life:	100,000,000 Cycles	
Construction:	GF Polyester/Polyurethane	GF Polyester/Polyurethane/Anodized Aluminum
Fitting/Connection:	3/16" barb	10-32 Female, Face Seal mount
Weight:	0.50 oz (14g)	NSX-4 & 5 - 1.50 oz (43g), NSX-4 & 5SB - 2 oz (57g)
Safety and Environmental Compliance:	RoHS	

How to Specify:

For switch only: Order by model number, i.e. NSX-5

● Adjustable Mechanical Vacuum Switch

Compact, sealed vacuum switch for automation and process control applications
NVSW5A Series

- Hazardous applications
- Wash down applications
- Dust-laden air environment
- High amperage line voltage 120vAC
- Vacuum range 5" to 30"Hg (-170 to 1015mbar)
- Durable – Nema 6 Enclosure (IP65) protection for extremely dirty environments
- Flexible – field adjustable between vacuum ranges
- Easy to install – common electrical connection DIN 43650A
- Safe – UL and CSA Approved
- Versatile – can be wired for normally open or normally closed

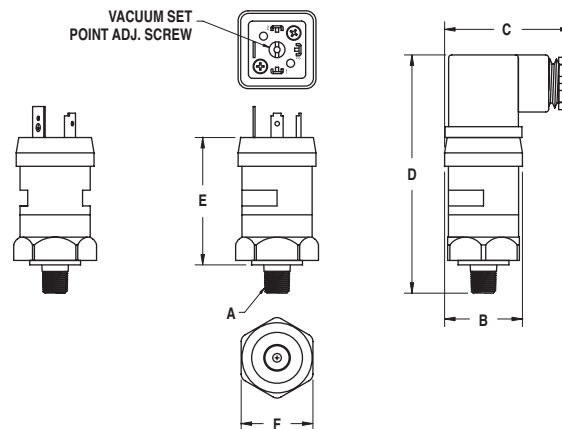
Vacuum Switches:

IMI Norgren's NVSW5A is a high-current capacity switch capable of switching line voltage loads from 5 Amps to 125vAC. The sealed vacuum switch is field adjustable from 5 to 28"Hg (169 to 948 mbar). The vacuum level adjustment screw is easily accessed below the DIN connector. Wiring can be either normally open or normally closed.



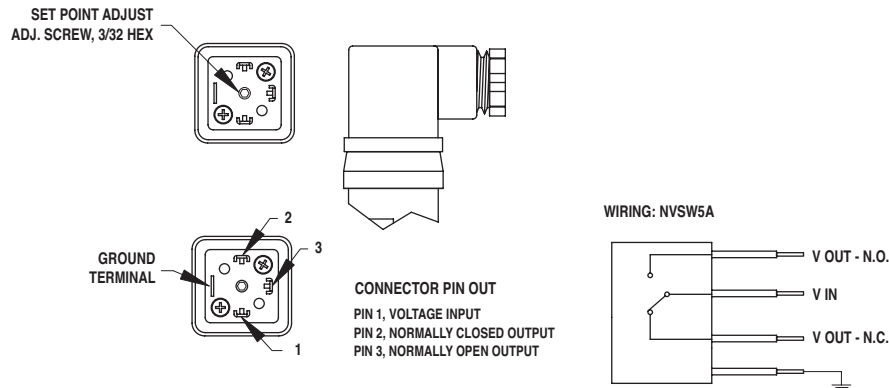
NVSW5A – High amperage line voltage 120vAC

● Adjustable Mechanical Vacuum Switch: NVSW5A



Part Number	Dimensions						Weight oz (g)
	A	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	
NVSW5A	1/8 NPT M 1/8 NPT M	1.22 (31.00)	1.98 (50.30)	3.74 (95.00)	2.00 (50.80)	1.13 (28.70)	4.10 (116.00)

● Wiring Schematic for NVSW5A: Set Point Adjustment



1. Remove center screw and DIN adaptor.
2. Place a 3/32" allen wrench into center hole.
3. Adjust counter-clockwise to increase set point, clockwise to decrease set point.
4. When desired setting is met, remove allen wrench and replace DIN adaptor and tighten screw.

● VSW5A Specifications:

Rated Vacuum Range:	5" to 30" Hg (-170 to -1015 mbar)
Proof Pressure:	45 PSI (3.1 bar)
Burst Pressure:	350 PSI (24 bar)
Media:	Non-Corrosive, Dry Gases
Switch Type:	Nitrile Diaphragm
Sensing/Switching Material:	N/A
Output:	SPDT
Electrical Connection:	DIN 43650A
Hysteresis:	3" to 4" Hg (-102 mbar to -135 mbar)
Repeatability:	+/- 2% Full Scale
Max. Switched Voltage Load:	12/24VDC, 125/250VAC
Max. Switched Current Load:	5A for 12/24VDC and 125VAC, 3A - for 250VAC
Display:	NONE
Switch Indication:	NONE
IP Protection:	IP65
Operating Temperature:	-20°F to 180°F (-28°C to 82°C)
Operating Humidity:	35 to 85% RH (No Condensation)
Mechanical Life:	100,000,000 Cycles
Construction:	Brass Housing, Nitrate Diaphragm
Fitting/Connection:	1/8" NPT Male
Weight:	4.0 oz. (113g)
Safety and Environmental Compliance:	UL, CSA, VDE and UR

How to Specify:

Order by part number: NVSW5A

● Cordsets

For Electronic Vacuum Switches & Sensors
NQDS Series

- Robotic devices
- Automated assembly devices
- Heavy-duty industrial environments
- IP 67
- Factory installed or field-attachable
- Threaded couplings for harsh environments
- Quick replacement & easy field conversion
- Easy disconnect for system maintenance
- RoHS compliant



Female cordset

Depending on your wiring needs, IMI Norgren offers 5 meter female cordsets for complete wiring systems for quick, easy and safe connection to system controllers, PLC's, and other electronic extension connectors.

Quick Disconnect Options:

3-Pin, 4-Pin, or 5-Pin Cordsets
M8 and M12 Threads

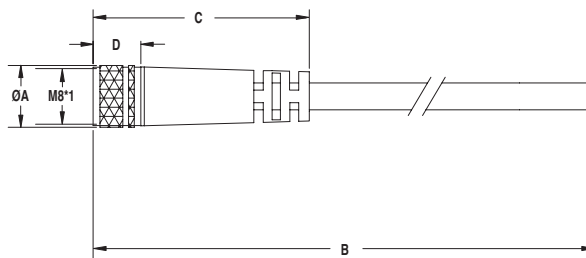
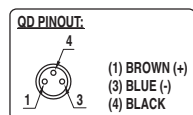
Molded Single End Cordsets				
Model #	Pin Connection	Thread Size	IP Rating	IMI Norgren Sensor/Switch
NQDS-8-3F	3-Pin Female	M8	IP 67	NVTMV-QD-6, NVSMN-QD-6, NVSMP-QD-6
NQDS-8-4F	4-Pin Female	M8	IP 67	NVDXN-QD-6, NVDXP-QD-6, NVDMN-QD-6, NVDMP-QD-6, NVDMC-QD-6, NVDMV-QD-6
NQDS-12-5F	5-Pin Female	M12	IP 67	NVDSN-QD-6, NVDSP-QD-6

Note: Standard cordset length is 5 meters. Other lengths available. Consult factory.

● M8 Single-Ended Cordset – 3-Pin Female



NQDS-8-3F



Part Number	Dimensions				Weight oz (g)
	A in. (mm)	B ft. (M)	C in. (mm)	D in. (mm)	
NQDS-8-3F	0.35 (9.00)	16.40 (5M)	1.26 (32.00)	0.28 (7.00)	4.90 (140.00)

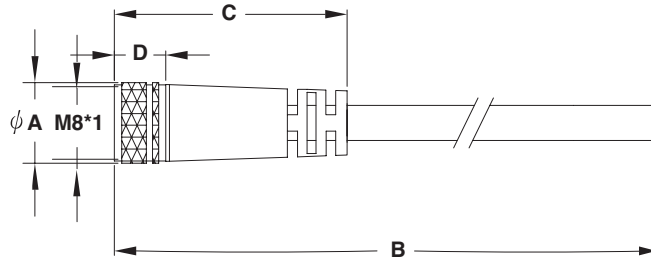
● Specifications:

Cable:	Grey, PVC cable jacket
Conductors:	3x #24 AWG [3 x 0.22 mm]
Outside Diameter:	0.177" [4.5mm]
Electrical:	60 VAC/VDC
Amperage:	3A
Environmental:	IP 67
Ambient Operating Temp:	-48° to 176°F [-20° to 80°C]
Cord Length:	5 meters – Consult factory for other lengths

● M8 Single-Ended Cordset – 4-Pin Female



NQDS-8-4F

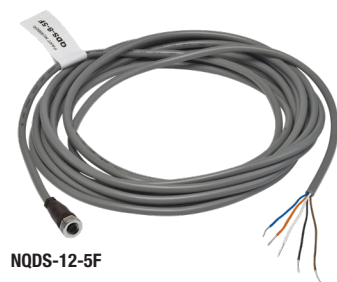


Part Number	Dimensions		C in. (mm)	D in. (mm)	Weight oz (g)
	A in. (mm)	B ft. (M)			
NQDS-8-4F	0.35 (9.00)	16.40 (5M)	1.26 (32.00)	0.28 (7.00)	4.90 (140.00)

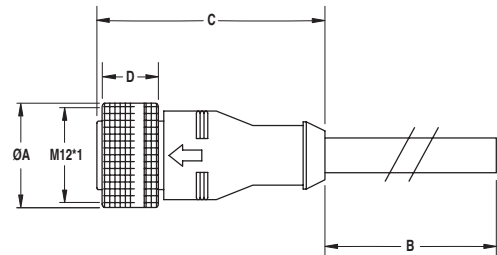
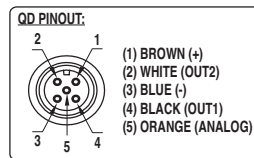
● Specifications:

Cable:	Grey, PVC cable jacket
Conductors:	4x #24 AWG (4 x 0.22 mm)
Outside Diameter:	0.177" (4.50 mm)
Electrical:	60 VAC/VDC
Amperage:	3A
Environmental:	IP 67
Ambient Operating Temp:	-48° to 176°F (-20° to 80°C)
Cord Length:	5 meters – Consult factory for other lengths

● M12 Single-Ended Cordset – 5-Pin Female



NQDS-12-5F



Part Number	Dimensions		C in. (mm)	D in. (mm)	Weight oz (g)
	A in. (mm)	B ft. (M)			
NQDS-12-5F	0.35 (9.00)	16.40 (5M)	1.26 (32.00)	0.28 (7.00)	4.20 (119.00)

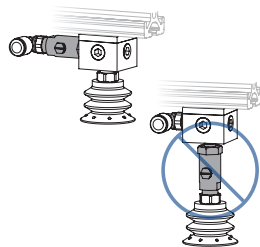
● Specifications:

Cable:	Grey, PVC cable jacket
Conductors:	5 x #25 AWG (5 x 0.34 mm)
Outside Diameter:	0.197" (5 mm)
Electrical:	60 VAC/VDC
Amperage:	4A
Environmental:	IP 67
Ambient Operating Temp:	-48° to 167°F (-20° to 80°C)
Cord Length:	5 meters – Consult factory for other lengths

CHECK VALVES

● NVCV Series

- Clamping and vacuum chucking
- Pick & place of heavy loads
- Hold vacuum while molds cool
- Vessel evacuation
- Material handling applications
- Productive – high flow capacity for rapid evacuation
- Safe – minimum flow restriction ensures holding force
- Energy efficient – extremely low cracking pressure <1" Hg (34mbar) reaches vacuum level quickly
- Compact & lightweight – easily mounts to IMI Norgren or non-IMI Norgren vacuum products



Vacuum check valves are not designed to directly support load bearing forces of any kind.

- Options:
Optional sensor/switch for positive pressure release
- 3 Body sizes
- 4 Thread sizes – 1/8" to 1/2" NPT



IMI Norgren vacuum check valves seal and hold vacuum for safe, energy efficient operations for clamping, pick & place and vessel evacuation applications. IMI Norgren vacuum check valves are designed specifically for vacuum applications. They offer high flow capacity with minimal flow restriction and feature extremely low cracking pressures of less than 0.5" Hg (16.93mbar). The large unrestricted flow path ensures high flow at low vacuum levels. The low cracking pressure allows the vacuum system to reach its maximum vacuum level before the check valve seals off the system.

With their high flow capacity and low cracking pressure, IMI Norgren vacuum check valves offer rapid evacuation which increases process or production speed and reduces cycle times for more efficient operations.

In contrast, most spring-loaded check valves marketed today are designed for high pressure systems and have high cracking pressures. When used in vacuum applications, spring-loaded check valves severely restrict vacuum flow, hindering the performance of the vacuum generator by slowing down evacuation speed and wasting energy.

IMI Norgren vacuum check valves are made of durable anodized aluminum with an internal flexible valve sealing mechanism.

IMI Norgren Vacuum Check Valves may be used with non-IMI Norgren vacuum products.

Part Number	Cracking Pressure	Maximum Vacuum Flow w/ Zero Flow Restriction	Body Material	Valve Material	Operating Temperature	Proper Check Valve/Generator Combination (matched by flow and port size)
NVCV-75-18	4.30" H ₂ O (10.70 mbar)	4.0 SCFM (113 lpm)	Anodized Aluminum	EPDM	-20°F to +220°F (-29°C to +105°C)	NHVP-100 NJ Series generators 60 through 150 NVP Series generators 60 through 150
NVCV-75-14	4.30" H ₂ O (10.70 mbar)	4.0 SCFM (113 lpm)	Anodized Aluminum	EPDM	-20°F to +220°F (-29°C to +105°C)	NHVP-200 VDF 100 and 150 NVP Series generators 60 through 150
NVCV-100-14	1.60" H ₂ O (4.00 mbar)	20.00 SCFM (566 lpm)	Anodized Aluminum	Silicone	-50°F to +392°F (-46°C to +200°C)	NHVP-300 NVDF 20 and 25
NVCV-100-38						NJ Series - 200 and 250 NVP80 Series - 200 and 250
NVCV-100-12						For use with non-IMI Norgren products
NVCV-125-38	2.70" H ₂ O (6.70 mbar)	30.0 SCFM (849 lpm)	Anodized Aluminum	EPDM	-20°F to +220°F (-29°C to +105°C)	NJ Series - 200 and 250 NVP80 Series - 200 and 250
NVCV-125-12						NVDF-37 NJ Series 300 and 350 NVP Series 300 and 350

● NVCV Series



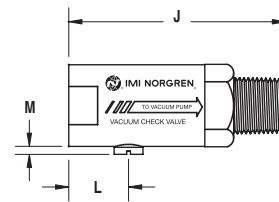
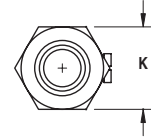
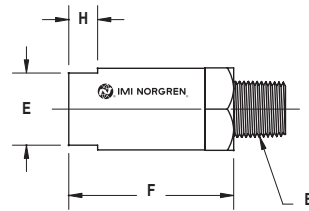
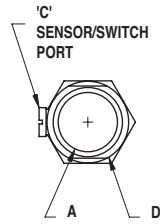
NVCV-75 Series



NVCV-100 Series



NVCV-125 Series



Part Number	Imperial Dimensions (in.)											Weight oz
	A	B	C	D	E	F	H	J	K	L	M	
NVCV-75-18	1/4 NPT F	1/8 NPT M	10-32	0.74	0.63	1.50	0.25	1.90	0.75	0.59	0.25	0.70
NVCV-75-14	1/4 NPT F	1/4 NPT M						1.90				0.80
NVCV-100-14	1/2 NPT F	1/4 NPT M	10-32	0.99	0.88	2.00	0.35	2.50	1.00	0.73	0.25	1.50
NVCV-100-38	1/2 NPT F	3/8 NPT M						2.44				1.40
NVCV-100-12	1/2 NPT F	1/2 NPT M						2.60				1.50
NVCV-125-38	3/4 NPT F	3/8 NPT M	10-32	1.24	1.13	2.00	0.35	2.60	1.25	0.73	0.25	2.50
NVCV-125-12	3/4 NPT F	1/2 NPT M						2.60				2.10

Part Number	Metric Dimensions (mm)											Weight g
	A	B	C	D	E	F	H	J	K	L	M	
NVCVM-75-18	G 1/4	G 1/8	10-32	18.80	15.90	38.10	6.40	48.30	19.10	14.90	6.40	20.00
NVCVM-75-14	G 1/4	G 1/4						48.30				23.00
NVCVM-100-14	G 1/2	G 1/4	10-32	25.10	22.20	50.80	8.90	63.50	25.40	18.40	6.40	43.00
NVCVM-100-38	G 1/2	G 3/8						62.00				40.00
NVCVM-100-12	G 1/2	G 1/2						66.00				43.00
NVCVM-125-38	G 3/4	G 3/8	10-32	31.50	28.60	50.80	8.90	66.00	31.80	18.40	6.40	71.00
NVCVM-125-12	G 3/4	G 1/2						66.00				60.00

How to Specify:

Order check valve by part number i.e. NVCV-125-12.

For metric availability, please consult factory.

VACUUM GAUGES

Center, Bottom and Panel Mount Styles

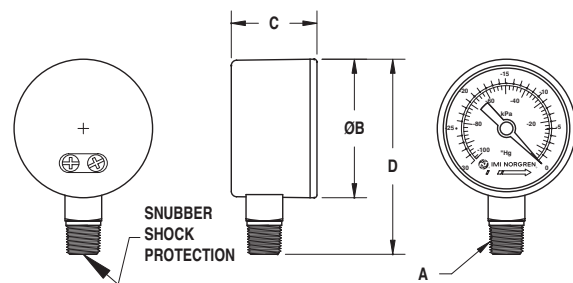
- Accurate monitoring – easy visual confirmation for operator, ensures consistent performance
- Effective diagnostic tool – debug and troubleshoot systems
- Economical – low cost, long life
- Dry or glycerin filled
- 3 mounting positions: bottom mount, center back mount or panel mount
- 2 dial sizes
- Materials available: Black ABS or Steel



IMI Norgren vacuum gauges are used in almost every area of automation including applications in pneumatics, process control, packaging, printing, medical, food and pharmaceutical.

Glycerin filled gauges extend gauge life and increase readability by dampening pulsing and vibration. All glycerin filled gauges feature a stainless steel case and bezel.

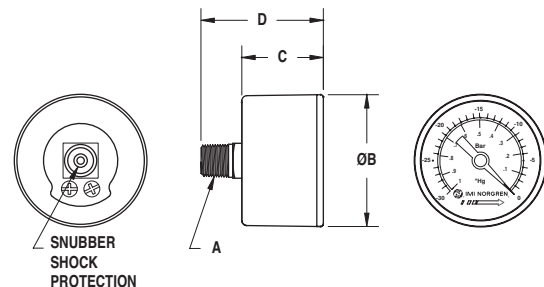
All gauges are protected with a limiting orifice to limit pressure shock. Standard dial faces have a dual scale in "Hg and bar.



● Vacuum Gauge: Bottom Mount

Part Number	Type	A Port Connection	B - Face Diameter in. (mm)	C in. (mm)	D in. (mm)	Weight oz (g)
NVG-150	Dry	1/8 NPT	1.62 (41.10)	1.00 (25.40)	2.28 (57.90)	1.50 (43.00)
NVG-150-GF	Glycerin filled	1/8 NPT	1.85 (47.00)	1.10 (27.90)	2.42 (61.50)	2.70 (77.00)
NVG-200-SS	Dry	1/4 NPT	2.28 (57.90)	1.10 (27.90)	3.10 (78.70)	3.10 (88.00)

● Vacuum Gauge: Center Back Mount



Part Number	Type	A Port Connection	B - Face Diameter in. (mm)	C in. (mm)	D in. (mm)	Weight oz (g)
NVG-150-CBM	Dry	1/8 NPT	1.62 (41.10)	1.00 (25.40)	1.50 (38.10)	1.60 (45.00)

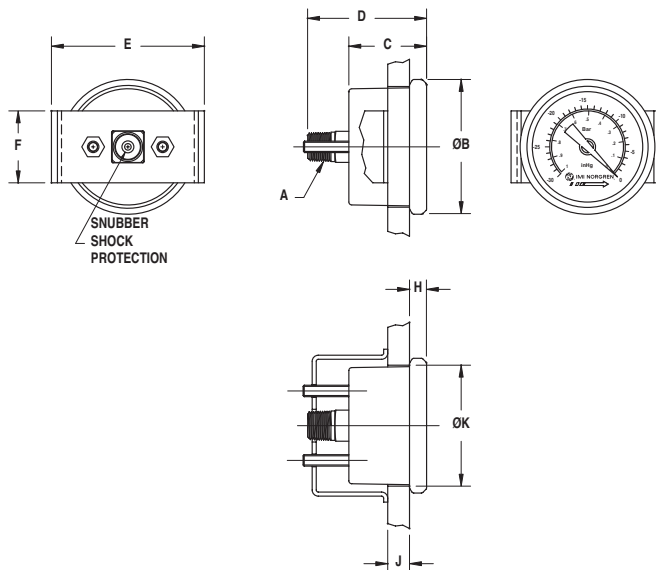
● Vacuum Gauge: Panel Mount



NVG-150-PM/NVG-200-PM



NVG-150-PMG



Part Number	Type	A Port Connection	B - Face Diameter in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	H in. (mm)	J - Max. Panel Thickness in. (mm)	K - Panel Cutout +/- .03 in. (mm)	Weight oz (g)
NVG-150-PM	Dry	1/8 NPT	1.85 (47.00)	1.07 (27.20)	1.64 (41.70)	2.11 (53.60)	0.99 (25.10)	0.24 (6.10)	0.30 (7.60)	1.67 (42.30)	3.30 (94.00)
NVG-150-PMG	Glycerin filled	1/8 NPT	1.85 (47.00)	1.07 (27.20)	1.90 (48.30)	2.38 (60.50)	1.02 (25.90)	0.24 (6.10)	0.80 (20.30)	1.67 (42.30)	3.60 (102.00)

Part Number	Type	Dial Size	Dual Scale Dial Range	Case	Bezel	Crystal	Bourdon Tube	Movement and Connection	Shock Protection	Accuracy
Lower Mount										
NVG-150	Dry	1.50"	0 to 30"Hg (0 to -1 bar)	Black ABS	None	Snap-on polycarbonate	Phosphor Bronze	Brass	0.5mm restrictor orifice	ASME B 40.1 Grade B (±3% of span)
NVG-150-GF	Glycerin filled			Stainless Steel	Stainless Steel	Polycarbonate				
NVG-200-SS	Dry	2.00"								
Center Back Mount										
NVG-150-CBM	Dry	1.50"	0 to 30"Hg (0 to -1 bar)	Black ABS	None	Snap-on polycarbonate				
Panel Mount										
NVG-150-PM	Dry	1.50"	0 to 30"Hg (0 to -1 bar)	Stainless Steel	Stainless Steel	Polycarbonate				
NVG-150-PMG	Glycerin filled									

Please note: Gauges should be ordered by model number as a separate line item as they are individually packaged for protection during shipping. For material availability, please consult factory.

IN-LINE VACUUM FILTERS

- High flow – no restrictions, maximum operating efficiency
- 10 Micron filtration – protects generators and equipment from dirt and dust
- 10 Models and sizes – fit most manufacturers vacuum generators and models
- Easy to install and service – without removing from production line
- Economical – pleated element's large surface area provides longer filter life. Low-cost replacement elements available.
- Reliable, durable and worry-free operation – protects generators, valves, and equipment from dirty, dusty environments
 - Long Life
 - Longer service time
 - Less maintenance
 - Low operating costs



In-Line Vacuum Filters

Add IMI Norgren's compact in-line vacuum filters to vacuum lines or air-supply lines to trap dirt and debris from entering the process, or to the exhaust port to capture airborne contaminants.

IMI Norgren's pleated-element design offers a filter with significantly longer life and much higher flow capacity than non-pleated, porous plastic designs. The large surface area increases filter life while reducing maintenance costs.

Ideal for use in dirty, dusty applications:

- Material handling equipment
- Printing
- Paper and pulp
- Wood chips
- Powder and plastic dust

The durable injection molded nylon and polycarbonate construction of the NVF models and the metal construction of the NVFC-1500F handle the most challenging environments. The 10-micron paper filters are rated for full vacuum to 150 PSI (10 bar) pressure.

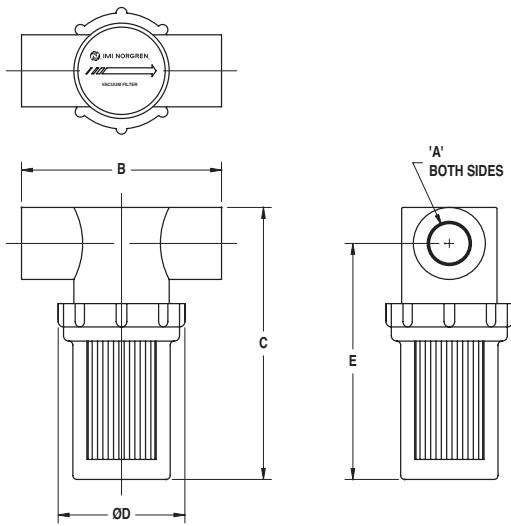
You can use IMI Norgren inline-filters in conjunction with any manufacturer's vacuum generators.

Please Note: Under normal conditions, IMI Norgren's unique single-stage generators do not require vacuum filters for maximum operating efficiency.

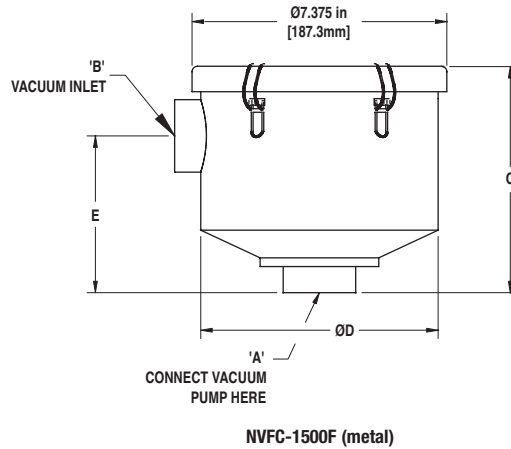
Filter Options:

- Low (short) and tall (long) profiles
- Male and female NPT connections
- Plastic or metal filters

● Dimensions



NVF models (nylon/clear polycarbonate)



NVFC-1500F (metal)

Model #	Dimensions					Weight oz (g)	Housing	Replacement Elements oz (g)
	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)			
NVF125LPF	1/8 NPT F	3.00 (76.20)	2.40 (61.00)	1.90 (48.30)	1.97 (50.00)	1.90 (54.00)	Nylon & Clear Polycarbonate	RE1 - 3 Pack 0.80 (24.90)
NVF125LPM	1/8 NPT M	3.04 (77.20)	2.40 (61.00)	1.90 (48.30)	1.97 (50.00)	1.90 (54.00)		
NVF250LPM	1/4 NPT M	3.04 (77.20)	2.40 (61.00)	1.90 (48.30)	1.97 (50.00)	2.00 (57.00)		
NVF250LPF	1/4 NPT F	3.00 (76.20)	2.40 (61.00)	1.90 (48.30)	1.97 (50.00)	2.00 (57.00)		
NVF375LPM	3/8 NPT M	3.04 (77.20)	2.40 (61.00)	1.90 (48.30)	1.97 (50.00)	2.00 (57.00)		
NVF250F	1/4 NPT F	3.00 (76.20)	3.77 (95.80)	1.90 (48.30)	3.38 (85.90)	2.00 (57.00)		
NVF375F	3/8 NPT F	3.00 (76.20)	3.79 (96.30)	1.90 (48.30)	3.20 (81.30)	2.00 (57.00)		
NVF500F	1/2 NPT F	3.58 (90.90)	5.06 (128.50)	2.93 (74.40)	4.46 (113.30)	5.60 (159.00)	RE2 - 3 Pack 3.70 (115.10)	
NVF750F	3/4 NPT F	3.58 (90.90)	5.06 (128.50)	2.93 (74.40)	4.46 (113.30)	5.60 (159.00)		
NVF1000F	1 NPT F	4.94 (125.50)	6.50 (165.10)	4.10 (104.10)	5.59 (142.00)	7.80 (221.00)	RE3 - 3 Pack 7.00 (217.70)	
NVF1500F	1 1/2 NPT F	5.08 (129.00)	8.06 (204.70)	4.10 (104.10)	6.94 (176.30)	7.80 (221.00)	RE4 - 3 Pack 7.20 (223.90)	
NVFC-1500F	1 1/2 NPT F	1 1/2 NPT F	7.31 (185.70)	6.81 (173.00)	6.50 (165.10)	4lb 5oz (2.0kg)	Metal	RE-848 - 1 Pack 14.60 (454.10)

How to Specify:

When ordering specify model number: NVF1500F.

Consider size of tubing, fittings and generator. Consult factory for assistance.