

# NANO CHEM<sup>®</sup>

## NANO CHEM<sup>®</sup> Purification Hardware Mechanical Specifications

(Note that Nippon Sanso Matheson reserves the right to change specifications without notice.)

Model	White Knight™	MegaShield™	MAX™
Model Numbers	WK-70 WK-75 WK-300 WK-500 WK-700 WK- 2500 WK-5000	WK-9000H	MS-4 MS-8 MS-16 MS-32 HF-10000-HP
Media Bed Volume	50 mL 55 mL 300 mL 500 mL 700 mL 2500 mL 5000 mL	9 Liters	4 Liters 8 Liters 16 Liters 32 Liters
Connection Type	WK-70 thru WK-2500 1/4" male face seal WK- 2500 available with 1/4" and 1/2" male face seal WK-5000 1/2" male face seal (inlet and outlet)	1/2" face seal (female inlet, male outlet)	1/2" female face seal 1/2" male face seal (inlet and outlet) 1/4" male face seal (sample port)
Valve Type	Poppet valve available	3/8" springless diaphragm valve	3/8" springless diaphragm valve <sup>(4)</sup>
Valve Actuation	Manual isolation valves available	Manual	Manual
Wetted Part Materials	316L Stainless Steel Nickel 200 gaskets	316L Stainless Steel Nickel 200 gaskets Elgilyo diaphragm PCTFE comp. ring	316L Stainless Steel Nickel 200 gaskets PCTFE valve seats TFE comp. ring 304 stainless steel 316L stainless steel Nickel 200 gaskets PCTFE valve seats
Outlet Filter Material	316L Stainless Steel	PTFE	316L Stainless Steel
Outlet Filter Performance	99.9999999% (9-log) of all particles ≥ 0.003 μm		100 μm
Inboard Leak Rate	1 x 10 <sup>-9</sup> sccs of helium		
Maximum Pressure (psig)	WK-70 1000 WK-75 1000 WK-300 500 WK-500 500 WK-700 500 WK-2500 500 WK- 5000 500	250	350
Temperature Range	-40°C to 70°C		-40°C to 40°C
Maximum Typical Flow <sub>2</sub> (slpm of nitrogen)	WK-70 10 WK-75 10 WK-300 75 WK-500 150 WK-700 225 WK-2500 500 WK-5000 800	2000 single purifier 4000 dual purifier in parallel	1000
Bypass	3-Valve Bypass, Optional	N/A	3-Valve Bypass, Optional
Endpoint Detection	N/A		Available for NANO CHEM <sup>®</sup> INX, INX-Plus, In2Go, OMA, OMS, OMX and OMX-Plus media only
Exhausted Enclosure	N/A		Special Order

Model	A-Series™	L-Series™	H-Series™	HP-Series™
Model Numbers	A-60 A-300 A-500 A-2000	L-60 L-300 L-300-HF L-500 L-500-HF L-2000 L-2000-HF	H-500	HP-300 HP-500
Media Bed Volume	60 mL 300 mL 500 mL 2000 mL	60 mL 300 mL 500 mL 2000 mL	500 mL	300 mL 500 mL
Connection Type	1/4" face seal (female inlet, male outlet)			
Valve Type	1/4" springless diaphragm valve		1/4" springless diaphragm or bellows valve	
Valve Actuation	Manual		Manual or Pneumatic	
Wetted Part Materials	316L Stainless Steel Nickel 200 gaskets Elgiloy diaphragm PCTFE valve seat		316L Stainless Steel Nickel 200 gaskets 300 Series Stainless Steel Bellows or Elgiloy diaphragm PCTFE valve seat or insert	
Outlet Filter Material	316L Stainless Steel or PTFE			
Outlet Filter Performance	99.9999999% (9-log) of all particles ≥ 0.003 μm			
Inboard Leak Rate	1 x 10 <sup>-9</sup> sccs of helium			
Maximum Pressure (psig) <sup>(1)</sup>	150 with endpoint 500 without endpoint			2,850
Temperature Range	-40°C to 70°C			
Maximum Typical Flow <sup>(2)</sup>	A-60 8 A-300 15 A-500 50 A-2000 150	L-60 8 L-300 15 L-300-HF 50 L-500 50 L-500-HF 75 L-2000 50 L-2000-HF 150	50	50
Bypass	N/A	3-Valve Bypass, Optional	Standard	
Endpoint Detection	Available for NANO-CHEM® INX, INX-Plus, In2Go, OMA, OMS, OMX and OMX-Plus media only (except A-60)	Available for NANO-CHEM® INX, INX-Plus, In2Go, OMA, OMS, OMX and OMX-Plus media only (except L-60)	Available for NANO-CHEM® INX, INX-Plus, In2Go, OMA, OMS, OMX and OMX-Plus media only	N/A
Exhausted Enclosure	SideCar	N/A	N/A	N/A

**Note 1:** The endpoint detector, if fitted, limits the maximum pressure rating to 150 psig.

**Note 2:** The maximum typical flow is dependent both on the allowable pressure drop through the filter element, and the characteristics of the purification media. Higher flows may be possible. Contact Nippon Sanso Matheson for recommendations for specific applications and/or refer to the pressure drop curves for that purifier model.

**Note 3:** All MS-4, MS-8, MS-16 and MS-32 purifiers for ammonia service come with a filter which removes 99.9999999% (9-log) of all particles ≥ 0.003mm. This filter limits the maximum flow to 150 slpm of nitrogen.

**Note 4:** Valves on all MS-Series purifiers have 1/2" VCR type inlet and outlet connections, but are connected to 3/8" Stainless Steel tubing.

**Note 5:** Filters on all L-Series purifiers provide 9-log retention at the highest rated flow rate for particles ≥ 0.003 μm. The exception is the filter on the L-500-HF. While it offers 9-log retention at low flow rates (up to 6 lpm), the removal efficiency decreases to 4-log retention at the maximum rated flow rate of 75 slpm.

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