

NATIONAL POOL PRODUCTS



USFilter

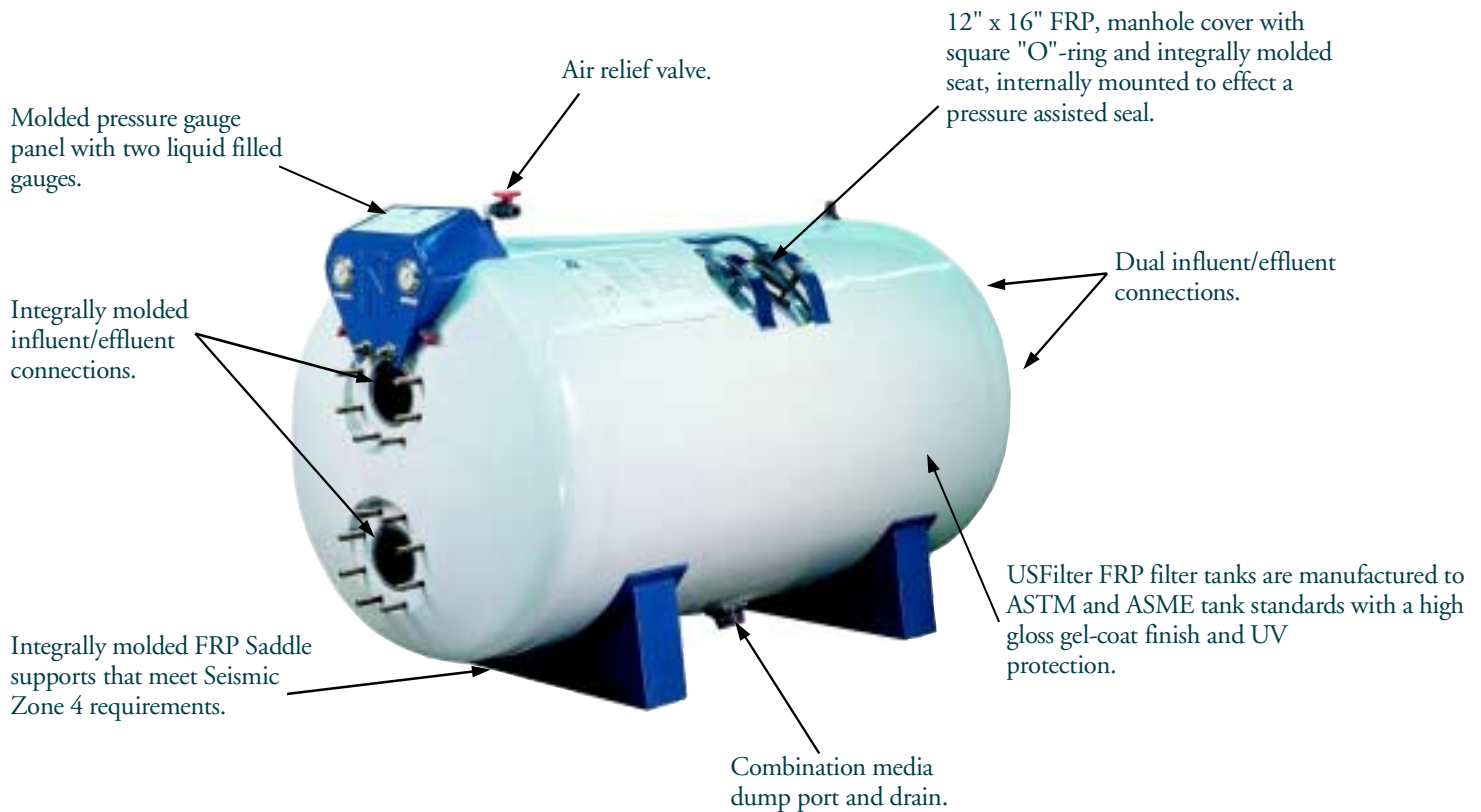
CONSTRUCTION

RUGGED NON-CORROSIVE DESIGN

National Filter Systems

USFilter National™ NFS-Series filter tanks are constructed of Fiberglass Reinforced Isophthalic Resin (FRP) and manufactured to ASTM and ASME tank standards using molded surfaces for all critical dimensions. The tanks are totally non-corrosive and have a high gloss gel-coat finish with UV protection. The filter systems are designed for working pressures of 50 PSIG with a 4 to 1 safety factor.

The filter systems are shipped with all internal components and media dump port in a fully assembled state. All USFilter National filter designs come with uniquely placed integrally molded influent/effluent connections, 12" x 16" integrally molded manhole seat with an internally mounted FRP cover, two (2) integrally molded FRP saddle supports and a molded pressure gauge panel with two (2) liquid filled gauges.



RELIABLE FILTRATION & BACKWASH



National NFS-Series Internal Component Design

The Upper Distribution System in all USFilter National filter systems, incorporate proprietary hydraulically engineered ABS plastic distribution lenses. The lenses are strategically placed to assure a flat uniform sand bed while preventing turbulence, media migration and channeling over a broad range of flow rates ranging from 5 to 20 USGPM per sq. ft. of filter area.

The Lower Collection System utilizes 2" ABS plastic laterals to retain multiple types of granular filter media or a single grade of #20 silica sand. The laterals are strategically placed to produce minimum head loss due to full filter bed coverage. The laterals are self-cleaning due to a molded V slot configuration and promote thorough filter media cleansing through balanced fluidization during backwash.

INSTALLATION ACCESSORIES

RENOVATION ACCESS HANDLING SOLUTIONS



USFilter National NFS-34-Series filter systems have an exterior molded surface for control of the 34" overall outside diameter. The controlled outside diameter and lightweight modular design allows for handling without special lifting equipment. All NFS-34-Series filter systems can be walked through openings as small as 34 1/4".

NFS-SERIES STACKING STANDS



The 34" & 42" Series filter system stacking stands provide a reliable solution to floor space constraints. The stacking stand design allows for ease of installation in limited (96") head space and provides for accurate tank-to-tank centerline alignment due to self-locking tapered saddle supports.

The stacking stands are constructed of Fiberglass Reinforced Isophthalic Resin (FRP) and manufactured to Seismic Zone 4 requirements. The lightweight, modular design is economical to ship, non-corrosive in design and capable of supporting up to a 36 sq. ft. filter tank.

The stacking stand provides for independent support of the top filter tank, which facilitates individual removal of the bottom filter tank where site conditions permit.

NFS-SERIES BALANCE TANKS



USFilter National NBT-Series balance tanks are constructed of Fiberglass Reinforced Isophthalic Resin (FRP) and are available in three vertical designs (34", 42" & 60" dia.) with a wide range of sizes from 320 US gallons to 1,110 US gallons. The tanks have a high gloss gel-coat finish with UV protection and are manufactured using molded surfaces for all critical dimensions. Piping nozzle selection, orientation and placement can be designed to suit site conditions or supplied in standard 2" to 4" configurations. Each tank comes complete with a 12" x 16" man-hole, and 2" drain. An optional National NFV Series Modulating Float

Valve is available in a wide range of sizes from 4" to 14". All National balance tanks are designed for atmospheric working pressures up to 25 ft. of static head.

VALVE & STRAINER ACCESSORIES

NFS-SERIES **DIAL VALVE KITS**



USFilter National dial valve kits are available in both vertical and horizontal configurations and are ideal operational control valves for both floor mounted and stacked filter systems. With operational flow rates up to 340 USGPM at pressure drops of less than 8 PSIG and working pressures of 50 PSIG, the dial valve kits are ideally suited for National NFS-Series filter systems.

The automatic dial valve kit operates through the use of low voltage integral electronic control circuits and 24 VAC electro-mechanical actuators. Backwash cycle initiation can be pressure and/or time based with adjustable cycle times. Backwash sequencing for multiple tank installations is achieved through the use of low voltage control wiring connected to each valve in the system.

The manually operated dial valve kit provides six indexed position functions (filter, backwash, rinse, drain, closed, recirculate) by turning the handle.

NFS-SERIES **FACE PIPING KITS**



USFilter National face piping kits are prefabricated utilizing Sch 80 PVC pipe and fittings with PVC butterfly valves. The face piping kits are available in single or multiple tank configurations with sizes ranging from 3" to 8". Versatile designs are available for use in right-handed or left-handed installations with filtered water backwash, uni-lever control or automation as additional options.

NFS-SERIES **ISOLATION & FLOW CONTROL VALVES**



USFilter National butterfly valves are constructed of non-corrosive (PVC, EPDM, and Viton) material, which will provide years of trouble free service. The butterfly valves are designed for working pressures up to 150 PSIG and are available in sizes ranging from 3" to 8". The butterfly valves are dynamically sealed for bubble-tight shut-off with excellent throttling characteristics.

**NFS-SERIES
STRAINERS**



USFilter National NSS-Series strainers are available in nine basic influent/effluent designs ranging from 2" to 14" with reducing configurations also available. The strainers are constructed of non-corrosive FRP materials and designed to meet working pressures up to 20 PSIG. Through the use of a proprietary vertically pleated strainer element, the strainers produce 0 PSIG head loss when clean resulting in longer

strainer operation without excessive cleaning. NSF International certifies all National NSS-Series strainers to ANSI/NSF Standard 50-1996 for both pool and spa applications.

**USFILTER NATIONAL NFS
SERIES FILTER SELECTION GUIDE**


USFilter National NFS-Series filter systems are available in three horizontal designs (34", 42" & 60" dia.) with various lengths to provide a wide range of filter bed surface areas from 12.6 sq. ft. to 50 sq. ft. All eleven filter sizes are provided with dual influent/effluent ports (two (2) blind flanges are provided for unused ports) for maximum flexibility during installation. All NFS-Series filtration systems can be used with multiple types of

granular filter media or one single grade of #20 silica sand. The NFS-60-Series filter systems have 27" of usable filter media bed depth and can be used in multi-media configurations. NSF International certifies all NFS Series filter systems to ANSI/NSF Standard 50-1996 for both pool and spa applications from 63 to 1,000 USGPM.


NFS-34-Series

	Model #	Filter Area Sq. Ft.	Pipe Size In.	Filter Rate USGPM	Backwash Rate USGPM	#20 Silica Sand Ft ³	Operating Weight Lbs.
	NFS-34-A-126	12.6	4	63 to 252	189	16	3,210
	NFS-34-A-153	15.3	4	76.5 to 306	229.5	20	3,900
	NFS-34-A-193	19.3	4	96.5 to 386	289.5	25.5	4,850
	NFS-34-A-237	23.7	4	118.5 to 474	355.5	32	5,965

NFS-42-Series

	Model #	Filter Area Sq. Ft.	Pipe Size In.	Filter Rate USGPM	Backwash Rate USGPM	#20 Silica Sand Ft ³	Operating Weight Lbs.
	NFS-42-A-225	22.5	6	112.5 to 450	337.5	35.5	6,720
	NFS-42-A-275	27.5	6	137.5 to 550	412.5	43	8,065
	NFS-42-A-193	31	6	155 to 620	465	49	9,135
NFS-42-A-237	36	6	180 to 720	540	56	10,355	

NFS-60-Series

	Model #	Filter Area Sq. Ft.	Pipe Size In.	Filter Rate USGPM	Backwash Rate USGPM	#20 Silica Sand Ft ³	Operating Weight Lbs.
	NFS-60-A-400	40	6	200 to 800	600	96	16,885
	NFS-60-A-450	45	6	225 to 900	675	108.5	19,010
	NFS-60-A-500	50	6	250 to 1,000	750	121	21,125

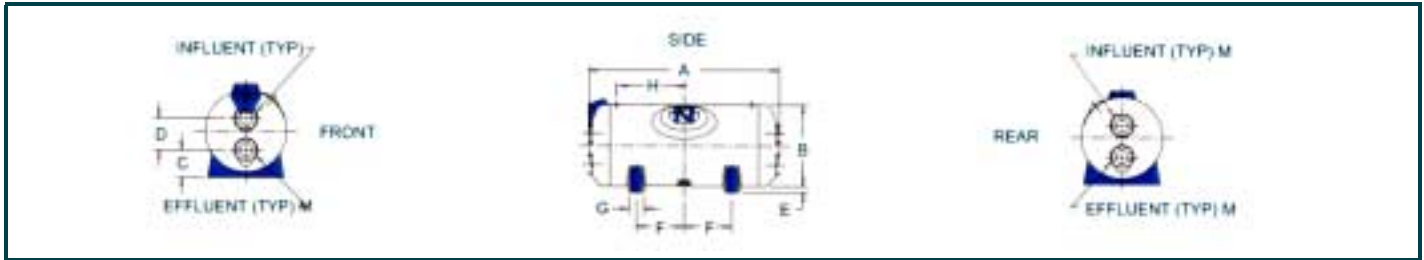
Note: NFS-Series filters are certified by NSF International to ANSI/NSF Standard 50-1996 for both pool and spa applications at filtration rates of 5 to 20 USGPM/sq. ft. Filter media and pumping equipment are NOT included with the filter tanks.

Engineering Notes: All National NFS-Series filter systems will have varying head loss that is dependent upon filter media and operational flow rates. Filters should be backwashed when 15 to 17 PSIG differential is indicated on the influent and effluent pressure gauges. When sizing the main recirculating pump, calculate maximum head loss at 15 to 20 PSIG through the filter and face piping.



In October 1999, the National NFS-Series filter design obtained an ACE (Award for Composite Excellence) for "Technical Innovation for Corrosion Applications" presented by the Composite Fabricators Association. All product entries were on display throughout the Composites '99 Trade Show held in Chicago. Products were judged on technical innovation, manufacturing quality and market viability by a judging panel consisting of industry representatives including material and process consultants, engineers, manufacturing experts, ACE Competition Sponsors, and raw material suppliers.

Ace Award Winner



Filter Dimension Chart, Inches

Model #	A	B	C	D	E	F	G	H	Ship Weight Lbs.
NFS-34-126	58	34	9.68	16.5	3	14.75	7	17.438	450
NFS-34-153	70	34	9.68	16.5	3	18.5	7	23.438	500
NFS-34-193	86.5	34	9.68	16.5	3	22.875	7	31.688	550
NFS-34-237	106	34	9.68	16.5	3	27	7	41.438	630
NFS-42-225	84	42.5	14	16.5	3	21	8	27.5	550
NFS-42-275	100	42.5	14	16.5	3	25	8	35.5	630
NFS-42-310	113	42.5	14	16.5	3	28	8	42	685
NFS-42-360	127	42.5	14	16.5	3	32	8	49	745
NFS-60-400	103	60	13	30.25	3	25.75	10	32.9	1150
NFS-60-450	115	60	13	30.25	3	28.75	10	38.9	1250
NFS-60-500	127	60	13	30.25	3	31.75	10	44.9	1350

	Stacking Stand Dimension Chart, Inches								
	Model #	A	B	C	D	E	F	G	H
NFS-34-STND-126	29.5	14.75	36	46	41.5	51.18	67.68	81.5	150
NFS-34-STND-153	37	18.5	36	46	41.5	51.18	67.68	81.5	150
NFS-34-STND-193	45.75	22.875	36	46	41.5	51.18	67.68	81.5	150
NFS-34-STND-237	54	27	36	46	41.5	51.18	67.68	81.5	150
NFS-42-STND-225	42	21	45	55	46.5	60.5	77	95	250
NFS-42-STND-275	50	25	45	55	46.5	60.5	77	95	250
NFS-42-STND-310	56	28	45	55	46.5	60.5	77	95	250
NFS-42-STND-360	64	32	45	55	46.5	60.5	77	95	250

Note: Filter tank and stacking stand dimensions should NOT be used for construction or installation unless confirmed by US-Filter Engineering Staff. All NFS-Series filter systems and NFS-STND-Series stacking stands are rated for Zone 4 Seismic requirements WHEN anchored according to USFilter Engineering specifications.

SERVICE & SUPPORT

As with all equipment and systems from USFilter Stranco Products, factory trained and certified local providers are available for system start-up and service. Factory start-up consists of site-specific, eight-hour system calibration and personnel training.

Our factory-trained service technicians are an organization of certified commercial recreational water sales and service providers represented throughout the world. They are dedicated to providing solutions for recreational water facilities by utilizing state-of-the-art technologies and ongoing client education and support. The cumulative experience of serving thousands of commercial recreational water facilities gives our technicians a bank of ideas and experience unrivaled in the industry.

Every authorized technician has demonstrated superior ethical business techniques that have made him or her industry leaders. Our representatives are required to pledge that they adhere to the highest ethical, moral and legal standards. They attend frequent meetings held around the world to keep up with the very latest technologies in construction, chemistry, recreational water facility design, equipment selection requirements and performance levels. They work closely with a community of experts consisting of health department officials, design consultants, competitive coaches and recreational leaders.

Our technicians are qualified to service all products we manufacture. They are available to provide on-site training at a time that is convenient for you and your staff.

CERTIFICATIONS

All filters are listed by the National Sanitation Foundation (ANSI/NSF Standard 50) for flow rates up to 20 gallons per minute, per square foot of filter area. Certified/stamped engineers drawings and calculations are available upon request, supporting working pressures and Seismic loading.

WARRANTY

A 10-year, no-nonsense warranty applies to USFilter's Stranco Products filtration systems herein. The first year is unconditional. The second through tenth year are limited and prorated.

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