

Metso

Inspection services

Filtration inspection packages



Filtration

Regular, systematic inspections provide you with a clear understanding of the current condition and maintenance needs of your equipment to keep your operations running.

3 Inspection packages for your Metso filters designed to reduce unplanned downtime, equipment failure, and risks associated with operating faulty equipment.



Undetected issues can lead to breakdowns and unplanned service work, significantly increasing repair costs and production losses.

Get fast, accurate information about the condition of your equipment, recommendations for maintenance and improved operation with our systematic filtration inspections.

The information provided will assist in minimizing unscheduled downtime and reduce long-term operating expenses. Our specialists can also recommend service agreements and spare parts.

Features

- Faster, easier inspections mean you get recommendations you can quickly act on
- Reports are clear, thorough and easy to share with colleagues
- Benchmark your filters and identify trends based on current and historical data
- Comprehensive data gathering improves your decision-making

Benefits

- Reduced downtime
- Extended filter lifetime
- Increased reliability
- Improved safety
- Minimized plant downtime
- Better visibility of maintenance requirements

1. Filter Visuals and Vitals

Gain a quick understanding of the condition of your filter

2. Filter Mechanical Verification

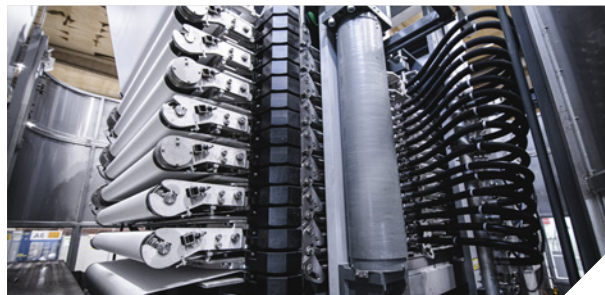
Standard inspection package with specific adjustments and fixes

3. Filter Comprehensive/Customized

Complete, in-depth package with additional check of hydraulic unit and field circuit

[Read more at metso.com](https://www.metso.com)

Metso filter inspection packages



	1. Visual and Vitals	2. Mechanical Verification	3. Comprehensive/Customized
Core benefit	A quick way to understand your filters overall condition for peace of mind	Maximized filter availability through a more detailed inspection with additional adjustments and services	Maximized filter performance and equipment longevity
Downtime required*	1/2 shift, total inspection time 1 shift	1 shift, total inspection time 2 shifts	3-5 shifts
Inspection frequency recommendation	1-2 times per year	Once a year	Once every 2-3 years
Inspection offering	<p>Inspection done during operation and quick shut-down</p> <ul style="list-style-type: none"> • OEM visual inspection of the filter, mainly during operation • Catch safety hazards, overall filtration results, maintenance intervals, leakages and hydraulic pressures • Performed over 1 shift with filter running and includes short stoppages • Historical data helps predict filter component performance over time • Detailed future inspections recommended if needed 	<p>Full mechanical inspection with filter operating and shutdown. Approximate inspection time allocated to 1 shift with filter running and 1 shift with filter shutdown. Includes the Filter Visuals and Vitals inspection as well as:</p> <ul style="list-style-type: none"> • OEM inspection with guards and covers removed • Plate pack inspection • Additional tests, measurements and services • Mechanical adjustments as required 	<p>Full visual, vitals and mechanical inspections including the adjustment of the hydraulics and system flushing. Performed over 3-5 shifts with filter stopped. Additional inspections, measurements and services performed such as:</p> <ul style="list-style-type: none"> • Hydraulic unit: condition inspection, pump calibration, functionality and leak check, valve adjustment, oil cooler and accumulator check • Hydraulic field circuit: cylinder functionality and leakage check, valve adjustment and functionality check • Reservoir cleaning and field circuit flushing • Reporting including measurements report and action recommendations • Modernization and upgrade recommendations • Spare part audit and availability check

*Number of shifts filter needs to be stopped to complete each inspection with optimum number of technicians (in addition to inspection while filter is in operation)
Components and tasks may vary depending on the type of filter



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Partner for positive change

PF Filter - Inspection packages

Category	Component	Task	Filter status	Operating or safety doors open	Locked. Including adjustments	
				Package 1	Package 2	Customized
				Filter Visuals and Vitals (1 shift)*	Filter Mechanical Verification (2 shift)*	Filter Comprehensive (3 to 5 shifts)*
Safety	Safety doors, Chain guards, pipeline shut off valves	Visual check of the components	Operation	●	●	●
	Jaw Guards, door limit switches, emergency stops	Visual checks plus functional check of switches and emergency stop buttons	Short stop	●	●	●
Cloth Drive and Tracking	Cloth and cloth movement	Visual check and lifetime of the cloth	Operation	●	●	●
	Rollers and bearings	Visual check for cake between roller and cloth, lubrication schedule	Short stop	●	●	●
	Scrapers	Operational check	Operation	●	●	●
Cloth tensioning device	Rollers and bearings	Visual check for position, tensioning pressure check, lubrication schedule	Operation	●	●	●
Closing mechanism	Cylinder fixing, columns, bellows and leakages	Visual check	Short stop	●	●	●
Plate Pack	Plate pack	Visual overall check	Short stop	●	●	●
	Plate pack opening closing	Operational check and pressures check	Operation	●	●	●
Pipelines	Pipelines	Visual check including auxiliaries, fastening leakages check.	Operation	●	●	●
	Hoses	Visual check	Short stop	●	●	●
	Cloth wash filter bag	Check when changed	Operation	●	●	●
	Pressure gauges & ejectors	Visual check of both components plus a functional check of ejectors	Operation	●	●	●
Valves and actuators	Valves	Visual check for floor level valves	Short stop	●	●	●
Hydraulics	Hydraulic motors & filters	Visual check, pressures check for motor, filter check on changeout	Operation	●	●	●
	Hoses	Visual check for leakages	Short stop	●	●	●
Pneumatics	Pneumatic box	Visual check from outside	Short stop	●	●	●
	Piping	Visual check and leakages check	Short stop	●	●	●
Corrosion	Corrosion	Visual check overall	Short stop	●	●	●
Process parameters	Process parameters	Collection and comparison to design criteria	Operation	●	●	●
Cloth drive and tracking	Rollers and bearings	Check for wear and leakages	Shutdown		●	●
	Cylinders, sensors and scrapers	Visual and functional check, adjustment of scrapers as required	Shutdown		●	●
Cloth tensioning device	Rollers and bearings	Visual check for wear and leakages	Shutdown		●	●
	Chains pulleys, chains and fastening links	Visual checks plus lubrication schedule for chains and links	Shutdown		●	●
Closing mechanism	QA Cylinder fixing	Check correct tightness	Shutdown		●	●
	Locking pins and sensors	Visual and functional test, lubrication schedule for locking pins, adjustment of sensors	Shutdown		●	●
Plate Pack	Seals, diaphragms, grids and vats	Visual check for wear leakages, diaphragm leakage test?	Shutdown		●	●
	Rollers	Visual check, lubrication schedule	Shutdown		●	●
	Slide pieces and plates	Visual check plus adjustment of slide pieces, alignment measurements for plates	Shutdown		●	●
	Feed openings, Suspension plate, pin and cotter	Visual check	Shutdown		●	●
Pipelines	Cloth wash filter bag & slurry sieve	Visual check of both components	Shutdown		●	●
	Transmitters & sensors	Visual check of both components plus functional check fo sensor	Shutdown		●	●
Valves and actuators	Valves & popping device (optional)	Visual check, leakage test and function check, optional popping device functional check	Shutdown		●	●
Hydraulics	Pump and clutch	Visual and functional check	Shutdown		●	●
	Accumulator	Nitrogen pre-charge check	Shutdown		●	●
Pneumatics	Pneumatic box & pressing regulator	Visual check inside pneumatic box, visual and functional check of regulator	Shutdown		●	●
Extra services	Spare parts	Spare parts stock audit & availability check	Shutdown			●
Hydraulic unit	Hydraulic pump	Condition inspection, calibration, functionality and leakage check	Shutdown			●
	Hydraulic valves	Condition inspection, adjustment and functionality check	Shutdown			●
	Oil cooler and accumulator	Condition inspection and functionality test	Shutdown			●
	Oil analysis (optional for package 1 & 2)	Oil sample	Shutdown			●
Hydraulic field circuit	Hydraulic cylinders	Functionality and leakage check	Shutdown			●
	Hydraulic valves	Valve adjustment and functionality check	Shutdown			●
Reservoir	Reservoir system	Cleaning and field circuit flushing	Shutdown			●

*Number of shifts filter needs to be stopped to complete each inspection with optimum number of technicians (in addition to inspection while filter is in operation)
Components and tasks may vary depending on the type of filter

FFP Filter - Inspection packages

Category	Component	Task	Filter status	Package 1	Package 2	Customized
				Filter Visuals and Vitals (1 shift)*	Filter Mechanical Verification (2 shifts)*	Filter Comprehensive (2 to 5 shifts)*
Safety	Safety gates, safety fence, isolation valves, main switches, warning stickers and signs	Visual check of the safety components	Operation	●	●	●
	Gate limit switches, emergency stops and pull wires	Visual checks plus functional check of switches & emergency stop buttons	Short stop	●	●	●
Crosshead, end piece	Locking pins operation, roller movement	Visual check of movements on locking pins and rollers	Operation	●	●	●
	Hydraulic piping, roller condition, piping and valves, bolt connections	Visual check, leakages, lubrication schedule	Short stop	●	●	●
	Locking pins, crosshead movement	Operational check	Operation	●	●	●
Headpiece, headpiece piping	Piping, headpiece condition	Visual check of leakages	Operation	●	●	●
	Bolt connections, o-rings	Visual check of bolts & torque check if needed, seal leakage check	Short stop	●	●	●
Skeleton, sidebars	Cylinder fixing, sidebars, locking pin holes	Visual check of condition	Operation	●	●	●
	Cylinder fixing, bolt connections, side bar sliding surface	Visual check of sliding surface, random bolt torque check	Short stop	●	●	●
Plate pack	Plate pack, slide pieces, lip seals, connecting links	Overall check of plate pack	Short stop	●	●	●
	Plate pack opening	Operational check, leakage & pressures check	Operation	●	●	●
Cloth shaking, cloth flushing	Cloth shaking performance, cloth flushing performance	Visual check of cloth washing system	Operation	●	●	●
	Cloth shaking operation, cloth flushing pipes and seals, bellows and mufflers	Visual and functional check, adjustment if needed	Shutdown	●	●	●
Filter cloth	Filter cloth operation	Condition monitoring during operations (OIU and cake discharge)	Operation	●	●	●
	Cloth condition, weight bars	Visual check of cloth	Short stop	●	●	●
Service tools	Plate lifting, cloth lifting tools	Visual check, tool functions	Operation	●	●	●
	Plate lifting, cloth lifting tools	Tool function test	Short stop	●	●	●
Valves, actuators, bellows	Valves, piping bellows	Visual check on condition	Short stop	●	●	●
Hydraulics	Hydraulic motors & filters	Visual check, motor check, filter check on changeout	Operation	●	●	●
	Hoses	Visual check for leakages	Short stop	●	●	●
Pneumatics	Pneumatic box	Visual check from outside box	Operation	●	●	●
	Piping	Visual check and leakages check	Short stop	●	●	●
Corrosion	Corrosion, corrosion protection	Visual check on filter painting and corrosion protection	Short stop	●	●	●
Process parameters	Process parameters	Collection and comparison to design criteria	Operation	●	●	●
Swivel plates	Vat cleanliness, operation	Visual cleanliness check, check swivel plate leakages to conveyor	Operation		●	●
	Bearings, sensors, bolt connections	Visual checks plus lubrication schedule	Shutdown		●	●
Hydraulic cylinders	QAC, sealing cylinders	Visual check of operation	Operation		●	●
	Pressing head, cylinder fixing, eye bearings, rod condition	Visual and functional test, lubrication schedule, leakage check	Shutdown		●	●
Plate Pack	Seals, membranes,	Visual check for wear leakages, membrane leakage test	Shutdown		●	●
	Slide pieces and connecting links	Visual check for plate movement	Shutdown		●	●
	Plate condition and channels	Visual check of plates	Shutdown		●	●
Pipelines	Connections, transmitters & sensors	Visual check for leakages, conditional & functional check	Shutdown		●	●
Hydraulics	Pump and clutch	Visual and functional check, sound when rotating	Shutdown		●	●
	Oil analysis	Oil sample analysis	Shutdown		●	●
	Accumulator	Nitrogen pre-charge check	Shutdown		●	●
Pneumatics	Pneumatic box & pressing regulator	Visual check inside pneumatic box, regulator visual & functional check	Shutdown		●	●
Extra services	Spare parts	Spare part stock audit	Operation			●
Hydraulics	Hydraulic unit	Pump condition monitoring & valve adjustment check, (P&Q) amplifier calibration, reservoir cleaning & field circuit flushing	Shutdown			●
	Oil cooling system	Functional and performance check	Shutdown			●

*Number of shifts filter needs to be stopped to complete each inspection with optimum number of technicians (in addition to inspection while filter is in operation)

CC Filter - Inspection packages

Category	Component	Task	Filter status	Package 1	Package 2	Customized
				Filter Visuals and Vitals (1 shift)*	Filter Mechanical Verification (2 shifts)*	Filter Comprehensive (2 to 5 shifts)*
General inspection	Filter frame and painting	Visual check	Operation	●	●	●
Agitator	Agitator motor	Visual check, check for noises, measure temperature	Operation	●	●	●
Drum, distribution valve, plates & scrapers	Drum & drum motor	Visual check, measure temperature	Operation	●	●	●
	Filtrate piping on the drum & scraper arms	Visual check	Operation	●	●	●
	General condition of the distribution valve	Visual check, leaks, during filtration and plate regeneration	Operation	●	●	●
	General condition of plates	Visual check, during operation and plate regeneration	Operation	●	●	●
Piping, filtrate receiver & pumps	General condition of the piping & filtrate receiver	Visual overall check	Operation	●	●	●
	Actuated valves	Functional check for each actuator valve	Short stop	●	●	●
	Back-flushing expansion tank & vacuum hoses	Visual check, leaks, during filtration	Operation	●	●	●
	Acid piping	Visual check, leaks, during plate regeneration	Operation	●	●	●
	Slurry feeding piping, vacuum and filtration pump	Visual check during filtration	Operation	●	●	●
	Oxalic acid pump (Hi-flow, option)	Visual check during plate regeneration	Operation	●	●	●
	Vacuum pump & distribution valve rotameters (Hi-flow)	Visual check during filtration	Operation	●	●	●
	High pressure pump (option)	Visual check	Operation	●	●	●
Ultrasonic cleaning	Ultrasonic generators	Generator Amps, visual washing results check after combined washing	Operation	●	●	●
Electrical & instrumentation	Valves & instruments	Visual check	Operation	●	●	●
	Electrical panel cooling	Check temperature, condition of filter (if applicable)	Short stop	●	●	●
	Emergency stop circuits, safety fence function (option)	Test functionality	Short stop	●	●	●
	Filtrate receiver level probes & tank level probes (option)	Test functionality	Operation	●	●	●
	Pressure transmitter	Test functionality	Operation	●	●	●
	Back-flushing flow switch & flow transmitters	Test functionality	Operation	●	●	●
Control panel	Indication lights	Test operation, illumination	Short stop	●	●	●
	Switches/push buttons and OIU	Test operation	Short stop	●	●	●
	Acid pumping indication lamp	Check during plate regeneration (acid feed)	Operation	●	●	●
	Remote start warning system (option)	Test operation	Operation	●	●	●
Lubrication, pressures & parameters	Lubrication	External visual check for grease distribution points & visible bearings	Short stop	●	●	●
	Process parameters	Collection and comparison to design criteria/recommendations	Operation	●	●	●
Agitator	Gearbox	Visual check, oil level, noises during operation	Shutdown		●	●
	Flexible couplings and bearings	Visual check, measure & check clearances	Shutdown		●	●
Drum, distribution valve, plates & scrapers	Drum gearboxes	Visual check, oil level, leaks, noises during operation	Shutdown		●	●
	Drum bearing & scrapers	Visual check, check/test clearances	Shutdown		●	●
	Tensioning spring / Pressure springs (Hi-flow)	Visual check, measure clearances	Shutdown		●	●
	Plate alignment, hoses, distribution valve & inner parts	Visual check	Shutdown		●	●
Piping, filtrate receiver & pumps	B/f filter, pressure regulator(s) & relief valve (Classic)	Visual check, disconnect and pressure test	Shutdown		●	●
	Cake wash system (option)	Visual check, test with cake wash water	Shutdown		●	●
	High pressure wash system (option)	Visual check, test with wash water	Shutdown		●	●
	Nitric / Sulphuric acid pump	Overhaul	Shutdown		●	●
	Vacuum relief valve (option)	Disconnect and vacuum test	Shutdown		●	●
Ultrasonic cleaning	Ultrasonic transducers	Measurements: Capacitance and Resistance, nF, Ohms.	Shutdown		●	●
Electrical & instrumentation	Solenoid valves	Check functionality	Shutdown		●	●
Extra services	Spare parts	Stock audit and parts recommendations	Operation			●

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