*Prime*Service
FOR TISSUE, PAPER AND BOARD MACHINES

Your local and trusted service partner

***Prime*Service FOR TISSUE, PAPER AND BOARD:**

- Satisfied customers worldwide are won over by facts
- Ready to assist quickly and at all times
- *Prime*Service for tissue and converting machines
- *Prime*Service for paper and board machines
- *Prime*Service for all kinds of machines
- Sustainability counts

Customer care "*Prime*Service" by ANDRITZ

WITH ANDRITZ AS YOUR PARTNER YOU HAVE ACCESS TO FULL-LINE SERVICES, FROM PULPER TO REEL

ANDRITZ Paper Mill Services is a global network of ideas, interdisciplinary thinking, and innovative solutions. Servicing hundreds of paper mills worldwide, we bring all of our experience to unleash the full potential of your paper mill.

Working closely with you, we listen carefully to your mill specialists to fully understand your operations needs. We work together to maximize process efficiency and overall production efficiency of your plant. With ANDRITZ value-added services you achieve the maximum mill availability, equipment reliability, and optimum performance over the entire lifecycle of the equipment.


R MILL
VICES
Stock Preparation
Paper Machine
PULPING
DEWATERING
REFINING
SCREENING
CLEANING
PAPER MACHINE SERVICE
FORMING FABRICS
PRESS FELTS
ROLL SERVICE
AUTOMATION SOLUTIONS

"Our experienced service specialists are ready for your challenges. Let's team up to maintain and improve your tissue, paper, or board production."

Riccardo Pierini
Customer Care Manager, Tissue
ANDRITZ PULP & PAPER

REDUCED DOWNTIMES WITH SCHEDULED MAINTENANCE

Customers who took advantage of scheduled maintenance plans on main components (burners, fans, hoods, exchangers, etc.) witnessed a 75% reduction in downtimes due to malfunctions or issues involving the inspected components.

How is scheduled maintenance handled: based on the component to be serviced and in accordance with the customer's technical department, we establish a servicing frequency and prepare an outline of the machine condition requirements that will allow servicing of the component, on the basis of which we consequently draw up an offer.

Maintenance is performed following a checklist of inspections to be carried out; the checklist is filled out at each servicing intervention, in addition to a final report that contains all the results and recommendations for machine optimization. Every 2 months, a meeting is scheduled with the customer to set the date for the next inspection.

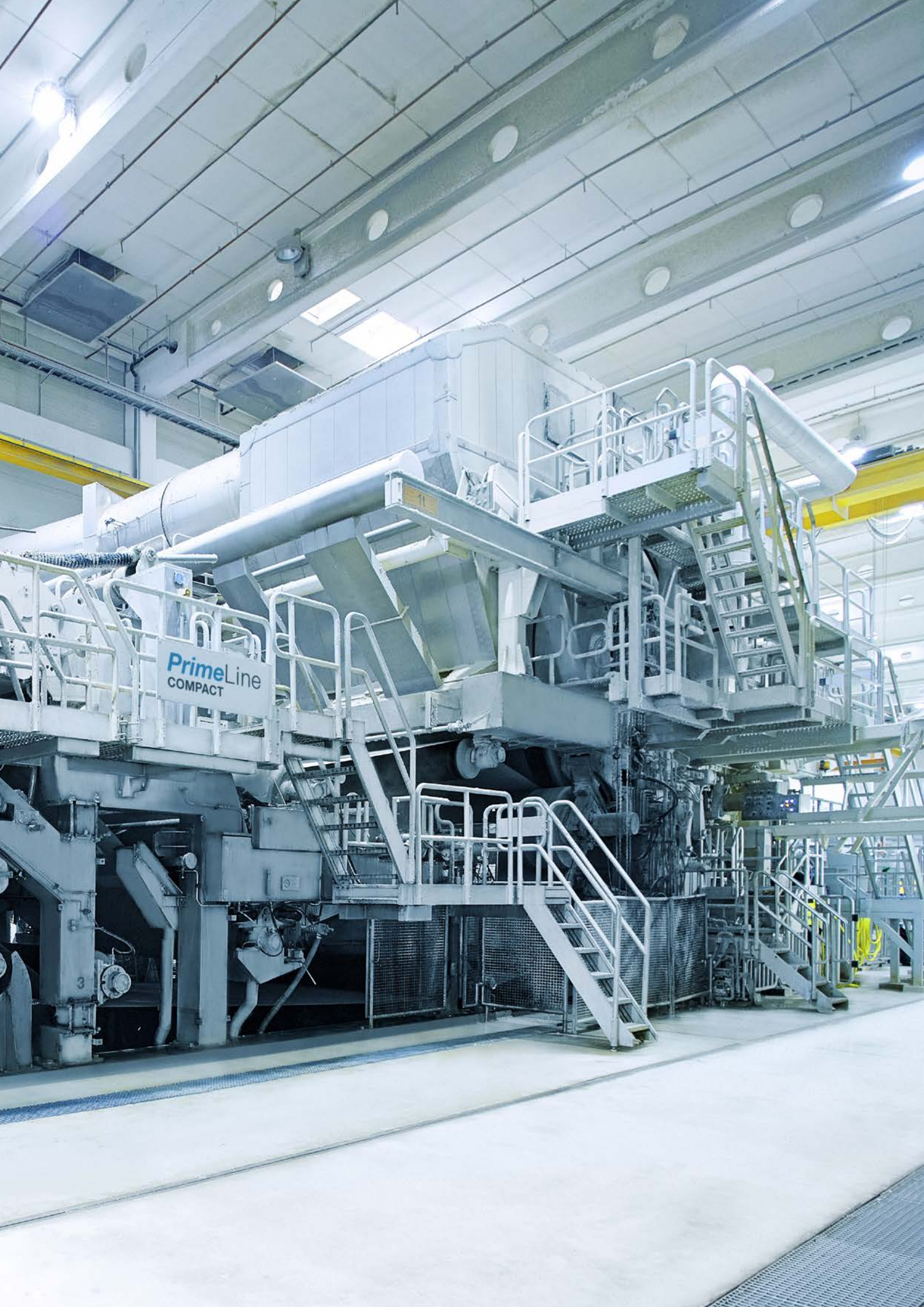
FAST RESPONSE TIMES TO ASSISTANCE REQUESTS

We respond to 60% of requests for assistance received by email or telephone within 4 hours. In the remaining cases, we respond within 24 hours of receiving the request.

FAST COMMERCIAL OFFERS

In 65% of cases concerning commercial offer requests, we are able to draw up our best offer within 3 working days. In the remaining cases, we send off an offer within 5 working days, based on the details requested.

General requests: papermachine-service@andritz.com


PrimeLine
COMPACT

Service personnel dedicated to your needs

Our personnel is specialized in every area:

- Personnel management for interventions and maintenance. Knowing how to optimize the resouces of the assistance department and keeping a bird's-eye view of the interventions ensures we assign the best personnel for your needs, in addition to being perfectly aligned with your time requirements.

- Management of the technical aspects. Support from technicians specialized in the processes of the systems handled by ANDRITZ allows us to provide you with assistance for all your technical needs.

- Management of customer care interventions and requests. A single interface for managing the interventions you have selected allows us to provide you with efficient assistance during every stage of the project and to handle all your requests in the best possible way.

- Implementation of offers. We not only offer replacement of the damaged components. Along with your technical team, we also analyze the cause of the malfunction to provide you with the best possible solution. Cooperation with our suppliers also means that we can guarantee the best possible price.

General requests: papermachine-service@andritz.com

WAREHOUSE FOR MAIN COMPONENTS

Thanks to our decision to keep some of the most important components in stock in our warehouses, we have been able to reduce unplanned downtimes by an average of 20%.

The following components are in stock in our warehouse:

- Pressure gauges;
- Temperature sensors;
- Burner controllers;
- Differential pressure indicators;
- Level transmitters;
- Manual steam valves;
- Positioners;
- Actuators;
- and many other components.

SPECIALIZED IN MANY PARTS OF YOUR SYSTEM

The ANDRITZ customer care department is specialized in the following systems:

- Steam and condensate systems for Yankees and paper and board machines;
- *Prime*Dry YES (Yankee Eco Steam System – patented) energy recovery system;
- Dust removal for tissue and converting machines;
- Mist removal;
- Yankee hoods and hoods for paper and board machines;
- Air systems for tissue, paper and board machines;
- Ambient conditioner units;
- Complete control systems for tissue machines;
- Yankee service and metallization.

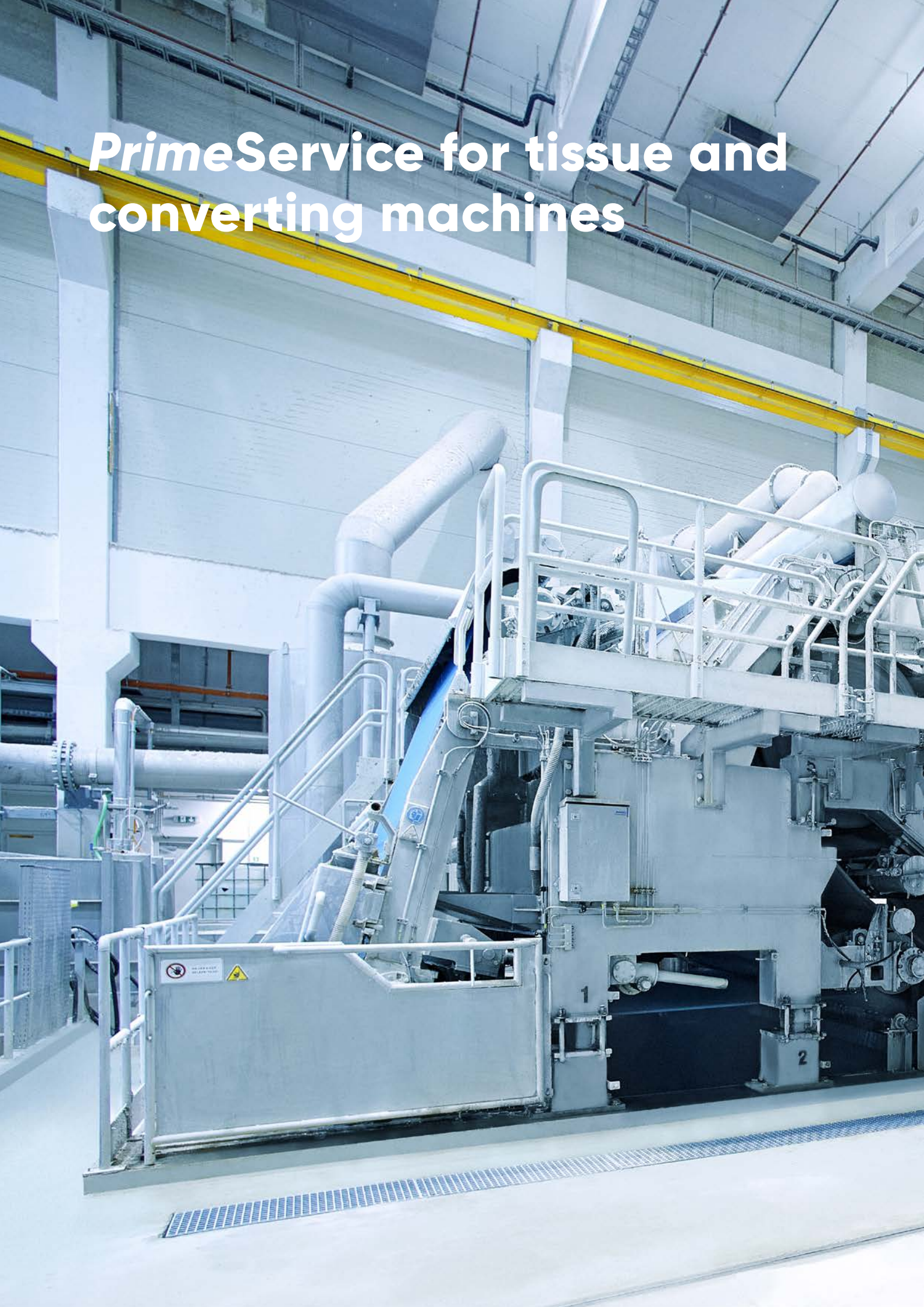
Ready to assist quickly and at all times

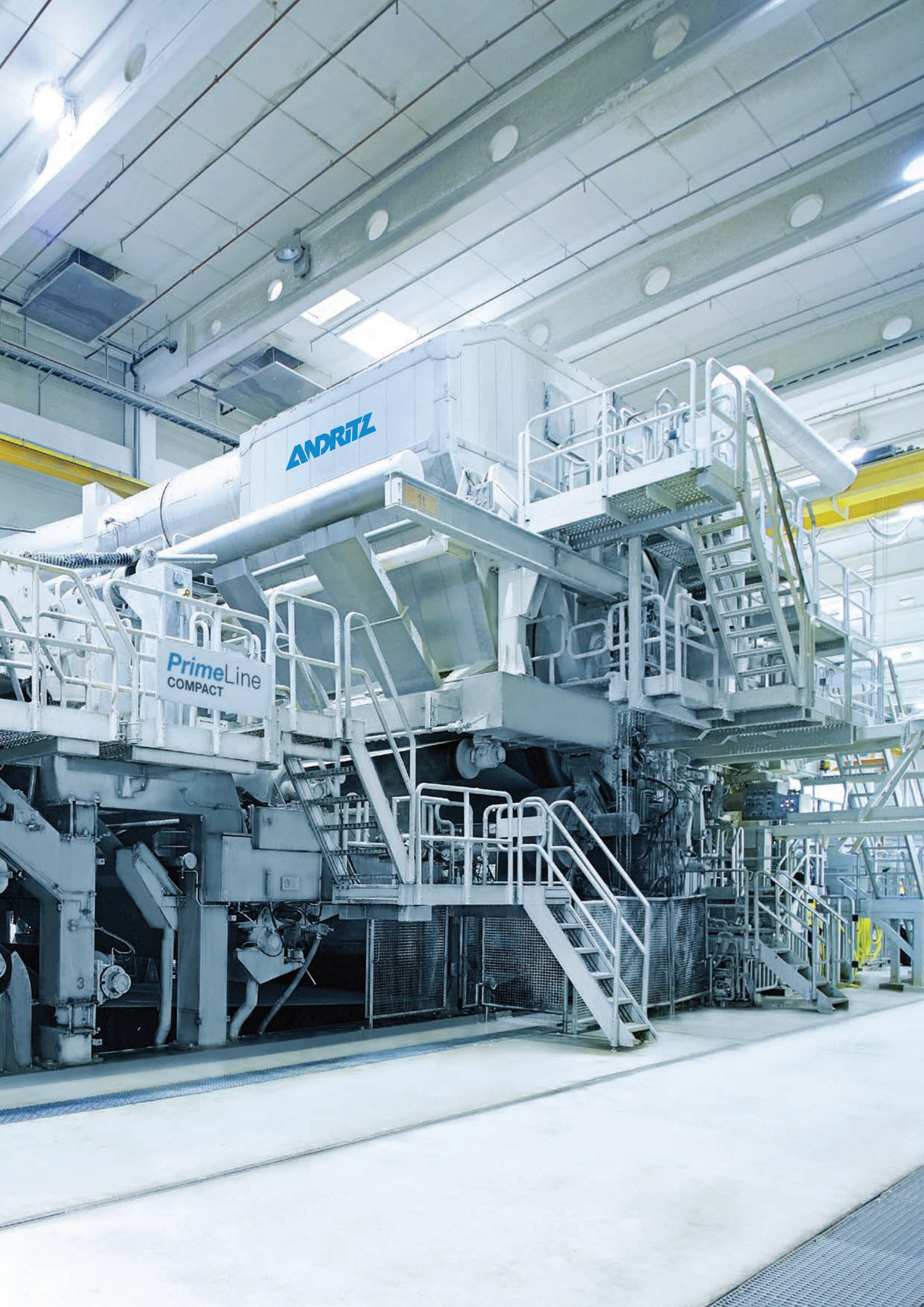
Constant analysis of solutions: Once a month, the customer care department analyzes your needs and finds general solutions for every type of system handled. A few examples are listed below:

TYPICAL PROBLEMS	GENERAL SOLUTIONS
Frequent stoppages due to malfunctions	• Scheduled maintenance • Survey • Appropriate spare parts
Drop in system performance	• Survey • Rebuilding • Scheduled maintenance • Mechanical/software interventions
Increased energy consumption	• Energy survey • Scheduled maintenance
Incorrect functioning /component breakdowns	• Analysis of component breakdowns • Analysis of best product based on the required performance levels
Personnel training not up-to-date	• On-site training by our technicians for our products • Targeted presentations

General requests: papermachine-service@andritz.com

*Prime*Service for tissue and converting machines




ANDRITZ
PrimeLine
COMPACT

*Prime*Service for steam and condensate systems

STEAM AND CONDENSATE SYSTEM SERVICES FOR TISSUE MACHINES

- Checks on main instrumentation (valves, sensors, transmitters, etc.);
- Control of the paper temperature profile using a calibrated thermographic camera;
- Control and replacement of internal parts of the condensate extraction system;
- Supervision of system start-up following a system stoppage or maintenance;
- Rebuilding (turnkey);
- Replacement of essential components (valves, thermocompressor, etc.);
- Scheduled maintenance for main components (thermocompressor, safety valves, etc.);
- Supply of spare parts;
- On-site training of mill personnel;
- Energetic survey: measures system performance and provides an analysis of the results and recommendations to improve or maintain system efficiency.

*Prime*Dry YES: YANKEE ECO STEAM SYSTEM

- Checks on main instrumentation (valves, sensor, transmitters, etc.);
- Thermal balancing of the air/steam exchanger;
- Supervision for start-up of the *Prime*Dry YES following a system stoppage or maintenance intervention;
- Replacement of essential components (valves, actuators, etc.);
- Scheduled maintenance for main components (actuated valves, safety valves, etc.);
- Supply of spare parts;
- On-site training of mill personnel;
- Energetic survey: measures system performance and provides an analysis of the results and recommendations to improve or maintain system efficiency.

General requests: papermachine-service@andritz.com

*Prime*Service for dust and mist removal systems

DUST REMOVAL SERVICES FOR TISSUE AND CONVERTING MACHINES

- Checks on main instrumentation (valves, sensor, transmitters, etc.);
- Internal (where possible) and external inspections;
- Supervision of system start-up following a system stoppage or maintenance;
- Replacement of essential components (valves, actuators, pumps, etc.);
- Scheduled maintenance for main components (valves, pumps, etc.);
- Supply of spare parts;
- On-site training of mill personnel;
- System balancing;
- Energetic survey: measures system performance and provides an analysis of the results and recommendations to improve or maintain system efficiency.

MIST REMOVAL SERVICES FOR TISSUE MACHINES

- Checks on main instrumentation (valves, sensors, transmitters, etc.);
- Internal (where possible) and external inspections;
- System efficiency check (conduit pressure, intake speed at suction boxes, position of the boxes, etc.);
- Supervision of system start-up following a system stoppage or maintenance;
- Replacement of essential components (valves, actuators, etc.);
- Scheduled maintenance for main components (valves, safety valves, etc.);
- Supply of spare parts;
- On-site training of mill personnel;
- System balancing;
- Energetic survey: measures system performance and provides an analysis of the results and recommendations to improve or maintain system efficiency.

General requests: papermachine-service@andritz.com

*Prime*Service for hood and air systems

HOOD AND AIR SYSTEM SERVICES FOR TISSUE

- Checks on main instrumentation (valves, sensors, etc.);
- Inspections of the inside of the machine conduits (machine stopped, ambient temperature conditions);
- Inspections of the inside of the hood (machine stopped, ambient temperature conditions);
- Inspections inside the burner (machine stopped, ambient temperature conditions);
- Temperature checks, using a calibrated thermographic camera at the critical points of the air system/ hood, to check for the presence of anomalies;
- Exchanger efficiency check;
- Calculation of the air flow rate in the various branches with the machine in stable condition;
- System balancing by analyzing the temperature of the edges, conduit pressures, steam humidity, etc.;
- Burner calibration and/or burner safety system check;
- Air emission checks and issue of a report outlining the checks carried out;
- Fan balancing checks and vibration analysis;
- Cleaning of exchangers, burners, hoods (if possible);
- Energetic survey: measures system performance and provides an analysis to improve/maintain efficiency.

AMBIENT CONDITIONING SYSTEM SERVICES

- Checks on main instrumentation (valves, sensors, etc.);
- Check of temperatures and air intake and delivery;
- Exchanger efficiency checks and system balancing;
- Supervision of system start-up following a system stoppage or maintenance;
- Replacement of essential components;
- Scheduled maintenance for main components (actuated valves, temperature sensors, etc.);
- Supply of spare parts;
- Ground temperature and humidity profile;
- Ceiling temperature and humidity profiles;
- Energetic survey: measures system performance and provides an analysis of the results and recommendations to improve or maintain system efficiency.

General requests: papermachine-service@andritz.com

*Prime*Service for the entire tissue machine systems

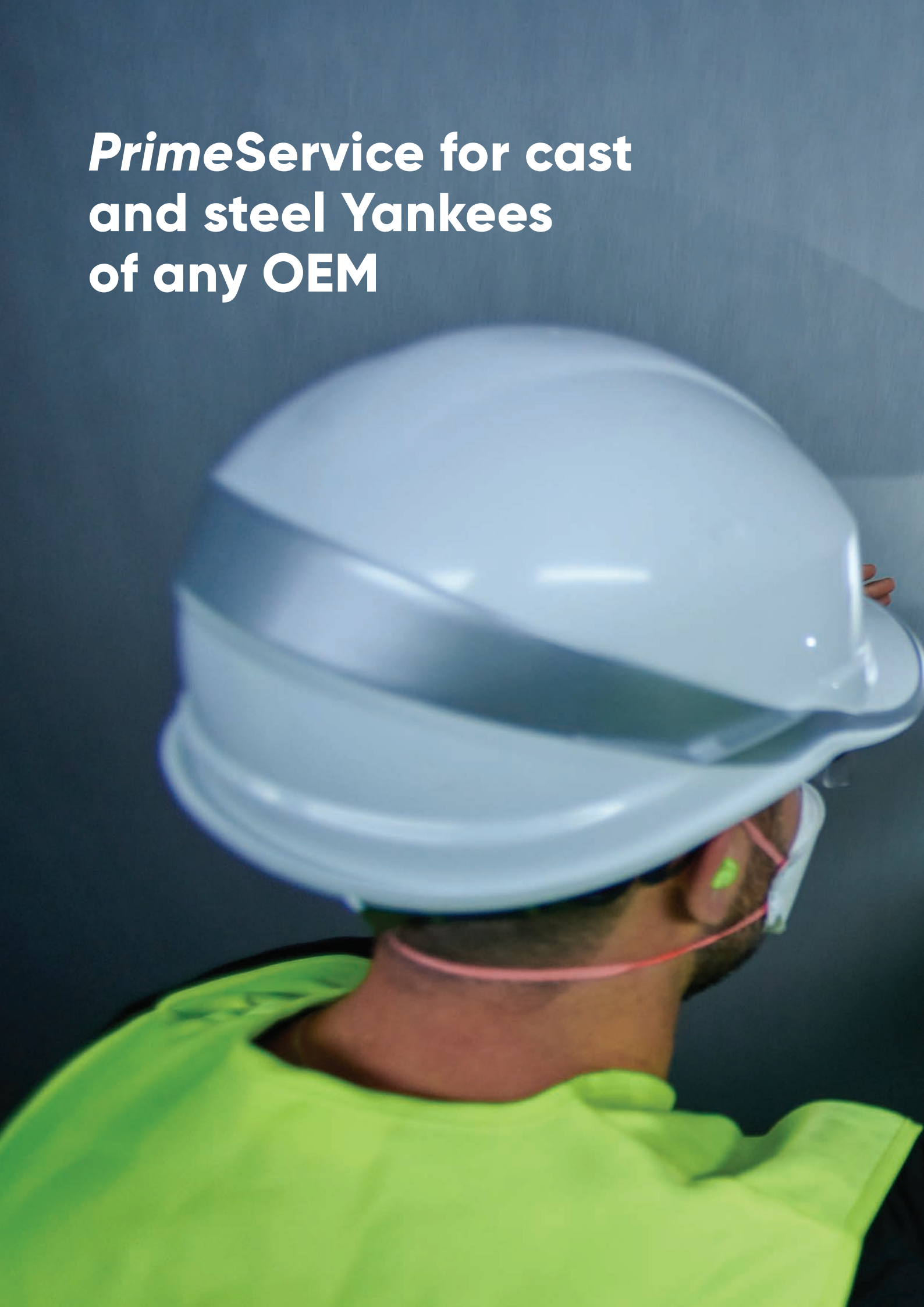
PAPER MACHINE CONTROL (PMC)

Our customer care solutions help you manage the entire tissue machine system.

- Tissue machine system start-ups from preparation of the pulp to the winder, including accessory systems (vacuum, effluent treatment, etc.);
- Process optimization from pulper to winder;
- Quality;
- Efficiency;
- Reliability;
- Check and optimization of the various machine sections;
- Possible reduction of consumptions such as water, electrical energy, gas.
- Analysis of process issues;
- Assistance in resolving production difficulties;
- Training of mill personnel.

General requests: papermachine-service@andritz.com

*Prime*Service for cast and steel Yankees of any OEM



*Prime*Service for cast and steel Yankees

The ANDRITZ Yankee service succeeds with lasting effect in improving your machine's efficiency as well as your Yankee's performance. The service range is suitable for all types of Yankee, for tissue or paper machines, MG paper or tobacco, steel or cast Yankees, old or new, regardless of the OEM. Our main focus is to be your long-term partner – maintaining and improving existing equipment and developing solutions for the future.

SAFETY, INSPECTION AND FIELD SERVICES

Regular checks are needed to confirm that the condition of the Yankee is in compliance with the pressure vessel safety regulations and other global standards (e.g. as required by insurance companies). The service package that we offer includes solutions and support for inspections (e.g. internal/routine/structural periodic inspections, fitness for service inspection), upgrades and replacements, safety issues, efficiency, production and diagnostics /analysis (e.g. on-the-run measurements, press NIP calibration, doctor blade adjustment). Apart from the Yankee onsite services, one highlight is the thermal coating solution *Prime*Coat Stratos that can be applied by ANDRITZ for the onsite Yankee's full-face metallization.

TROUBLESHOOTING

In the event of problems, the ANDRITZ experts are able to find solutions covering not only the mechanical side, such as Yankee surface and internal Yankee inspections, but also control logic difficulties in the steam and condensate system as well as automation issues. In addition, the dewatering rate can be checked and compared with the optimum design running conditions. As ANDRITZ covers the whole process, even runnability problems caused by coating chemicals, steam and condensate, boiler water chemical treatment, or doctor issues can be resolved.

YANKEE SERVICES AT A GLANCE

Service	Examples
Mechanical on-site services	Grinding, metallizing, spot-repair, upgrade and repair of internal parts, ...
Diagnostics and analysis	On-the-run measurement, performance measurement, coating measurements, ...
Logistics and engineering	Customized rebuild solutions, on-site services like assembly and welding, ...
Performance checks and consulting	Drying-limit calculation, runability and energy consumption evaluation, ...
Troubleshooting	Steam leaks, vibrations, reduced drying performance, wear on doctor blades, ...
Safety and risk management	Life time calculation, inspections such as ultrasonic or metallurgical testing, and acoustic measurements, ...

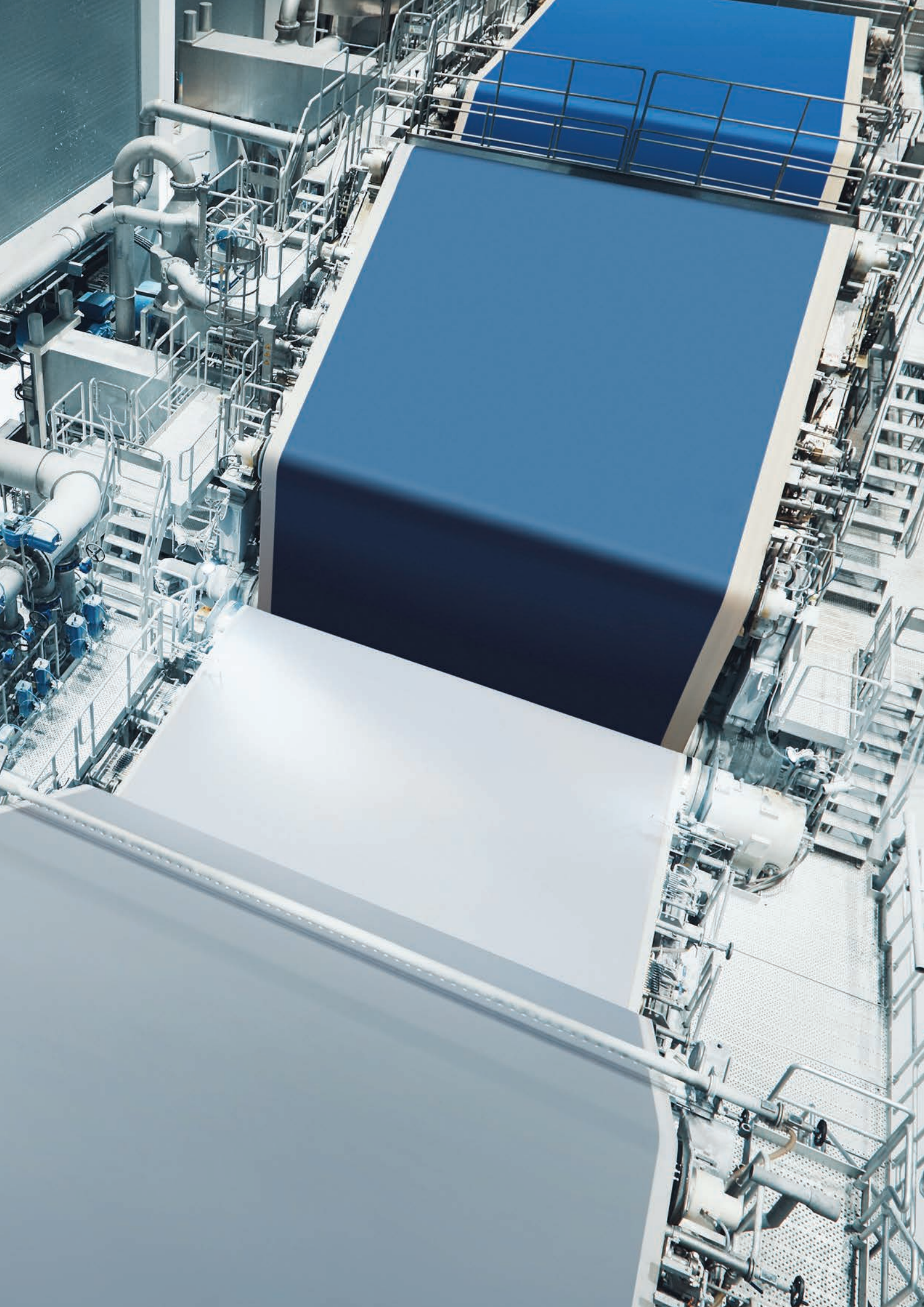
_Prime_Dry Steel Yankee

With diameters of up to 26 ft. and shell lengths of up to 7.4 m, ANDRITZ is the technology leader for large steel Yankees.

These high-performance drying cylinders are made entirely of steel, resulting in greater safety and better machine performance than cast-iron Yankees: the evaporation rate is 10–15% higher than in cast-iron models, which results in 8-10% better machine performance.

General requests: papermachine-service@andritz.com

*Prime*Service for paper and board machines




ANDRITZ
ANDRITZ
ANDRITZ
IGINEERED SUCCESS

*Prime*Service for paper and board machines

STEAM SYSTEM SERVICES

- Check on main instrumentation (vales, sensors, etc.);
- Cylinder thermal profile;
- Control of the paper temperature profile using a calibrated thermographic camera;
- Profile of humidity pockets (temperature, humidity);
- Supervision of system start-up following a system stoppage or maintenance;
- Rebuilding (turnkey solutions);
- Replacement of essential components (valves, thermocompressor, etc.);
- Scheduled maintenance for main components (thermocompressor, safety valves, etc.);
- Supply of spare parts;
- Energetic survey: measures system performance and provides an analysis of the results and recommendations to improve or maintain system efficiency.

HOOD SERVICES

- Checks on instrumentation (valves, sensors, fans, etc.);
- Inspections of the inside of the machine conduits (machine stopped, ambient temperature conditions);
- Inspections of the inside of the hood (machine stopped, ambient temperature conditions);
- Intake and delivery temperature checks;
- Exchanger efficiency checks;
- Calculation of air flow rates in the various branches with the machine in stable condition;
- System balancing through point zero and mist humidity;
- Profile of pockets by measuring humidity/temperature;
- Check for the presence of blowers and their positions;
- Fan balancing checks;
- Supervision of system start-up following a system stoppage or maintenance;
- Rebuilding (turnkey solutions);
- Replacement of essential components;
- Scheduled maintenance for main components;
- Supply of spare parts;
- Energetic survey: measures system performance and provides an analysis of the results and recommendations to improve or maintain system efficiency.

General requests: papermachine-service@andritz.com

*Prime*Service for all kinds of machines

Survey "green paper" for best possible energy savings

POSSIBLE AIMS OF THE ENERGETIC SURVEY

- Detect the causes of loss of system efficiency (i.e. deterioration or damage);
- Detect incorrect system balancing;
- Analyze the current system status;
- Improve atmospheric emissions (where possible);
- Increase energy efficiency by installing energy recovery instruments.

TO WHICH TYPE OF SYSTEM DOES IT APPLY?

- Systems with few years of service life;
- Systems with over 10 years of service life.

WHAT IS ISSUED ON COMPLETION OF EACH ENERGETIC SURVEY?

- Complete technical reports;
- Table of recommended actions/measures;
- Offers for possible improvements/upgrades.

General requests: papermachine-service@andritz.com

Solutions for all your needs

Customer care solutions to cover all your needs relating to existing systems: Years of experience in the papermaking industry help us to identify and offer the best spare parts for all the essential components of your system, be it ANDRITZ or not, such as, for example:

- Complete fans, burners, and spare parts;
- Complete thermocompressors and spare parts;
- Complete pumps and spare parts;
- Certified safety, manual, and actuated valves;
- Manual or actuated dampers;
- Stainless steel and fabric couplings for both low and high temperatures (up to 700°C);
- Process instrumentation such as temperature sensors, pressure transmitters, differential pressure switches, limit-switches, vibration transducers, etc.;
- Many other components.

Our experience in servicing and inspecting our systems also allows us to provide:

- Rebuilding (turnkey solutions) of the systems listed on the left;
- Interventions to restore damaged components (thermocompressor replacement, channel restoration, repair of closed hood section, etc.);
- Energetic surveys, providing the resulting data analysis report and recommendations/upgrades;
- Balancing;
- Materials, manpower, and supervision at start-up;
- Scheduled maintenance of essential components.

All our solutions are tailored to your objectives and offer everything you need to perform the required work in the best possible way.

Full focus on quality

REPORT
For the majority of interventions, inspections, and surveys, a detailed report is issued containing the activities carried out, the data measured, and recommendations to improve system efficiency.

INSTRUMENTATION
Each intervention and survey is performed in an appropriate manner, using: Safety instrumentation chosen in accordance with the work to be carried out, and instrumentation that is constantly calibrated/certified:

- Steam analyzers (measure CO, NO_x, etc.);
- Laser thermometers and thermographic cameras;
- Contact thermometers to measure cylinder surfaces;
- Temperature/humidity meters for pockets;
- Pressure gauges and vibration meters;
- Flow meters.

WORK TOOLS
Welding machines, 24VDC power boards.

GANTT PROJECT CHART
Where requested, a Gantt chart is developed in order to follow the timelines required by the customer.

SAFETY DOCUMENTS
Constantly updated and specific to each intervention.

General requests: papermachine-service@andritz.com

Preventive maintenance and service checklists for tissue machine key components

Prepare for maximum quality in your paper grades

Top-performing equipment for your stock preparation, is the key: Screen baskets and rotors, refiner plates, cleaner cones, pulper upgrades, disc filter bags, and much more. High-end equipment and our outstanding service product portfolio contribute to improved reliability, availability, and production while reducing overall operating costs.

We always work in close cooperation with the mill's operation and maintenance personnel, and with a clear view of your mill's goals. Whether you have a planned shutdown, an emergency case or whether you just want to populate your stock, ANDRITZ is your number one partner. Our most important goal is to keep your mill running.

The set-up of your stock preparation system basically depends on the raw material you use and the type of end products your mill produces. ANDRITZ can supply virtually all spare and wear parts required to run your stock preparation line at the highest level, regardless of make or model. Furthermore, we offer a wide variety of upgrade solutions that not only improve performance but also provide energy and cost savings as well as ROI within a very short space of time.

TYPICAL TISSUE STOCK PREPARATION LINE

Long and short fiber, chemical pulp

Process step	Equipment	ANDRITZ machine
Pulping	Long-fiber pulper	*Prime*Solve V
	Short-fiber pulper	*Prime*Solve V
Cleaning	HD cleaner	*Prime*Clean RB
Screening	Protection screen	*Prime*Screen CP
	Broke screen	*Prime*Screen X
Deflaking	Deflaker	*Prime*Deflaker
Refining	Disc refiner	TwinFlo *Prime*
	Cylindrical refiner	Papillon *Prime*
PM Approach	Short-flow blending system	ShortFlow F
	Headbox screen	*Prime*Screen HB
	Fan pump	ANDRITZ Fan pump
Broke line	HD cleaner	*Prime*Clean RB
	Deflaker	*Prime*Deflaker
	Under-the-machine pulper	*Prime*Solve U
Water system / Fiber recovery	Save-all disc filter	*Prime*Filter D

General requests: papermachine-service@andritz.com


ANDRITZ

Headbox

	Description	Action	Service package		Suggested time schedule		
			Small	**Large**	**Monthly**	**Annually**	**Demand**
1	Check for leakages on complete headbox	check		D			O
2	Headbox chemical cleaning	clean		D			S
3	Check of headbox jet geometry and possible adjustment	check	√		O/6		
4	Headbox lip spindles profiling (for CD BW bone dry improvement)	check	√		O/6		
5	Headbox lip spindles profiling to „zero"	check		D			S
6	Lamella, check for damages	check	√		S/6		
7	Sealings on lamella, top and bottom lip, check for damages (if applicable)	check		S		S	
8	Gear box for lip adjustment (noise and vibration)	check	√	√	O/6	O	
9	Gear box for lip adjustment (oil analysis)	check		D			S
10	Auma limit switch check vs lip opening	check		√		S	
11	Auma torque limit switch check	check		√		S	
12	Cross flow distributor (manifold)	check		√		S	
13	Cross flow distributor (manifold)	clean		√		S	
14	Check of the turbulence block and cleaning with high pressure (<40 bar)	check		√		2S	
15	Changing of the diffusor tubes (if in plastic material)	change		√		S10	

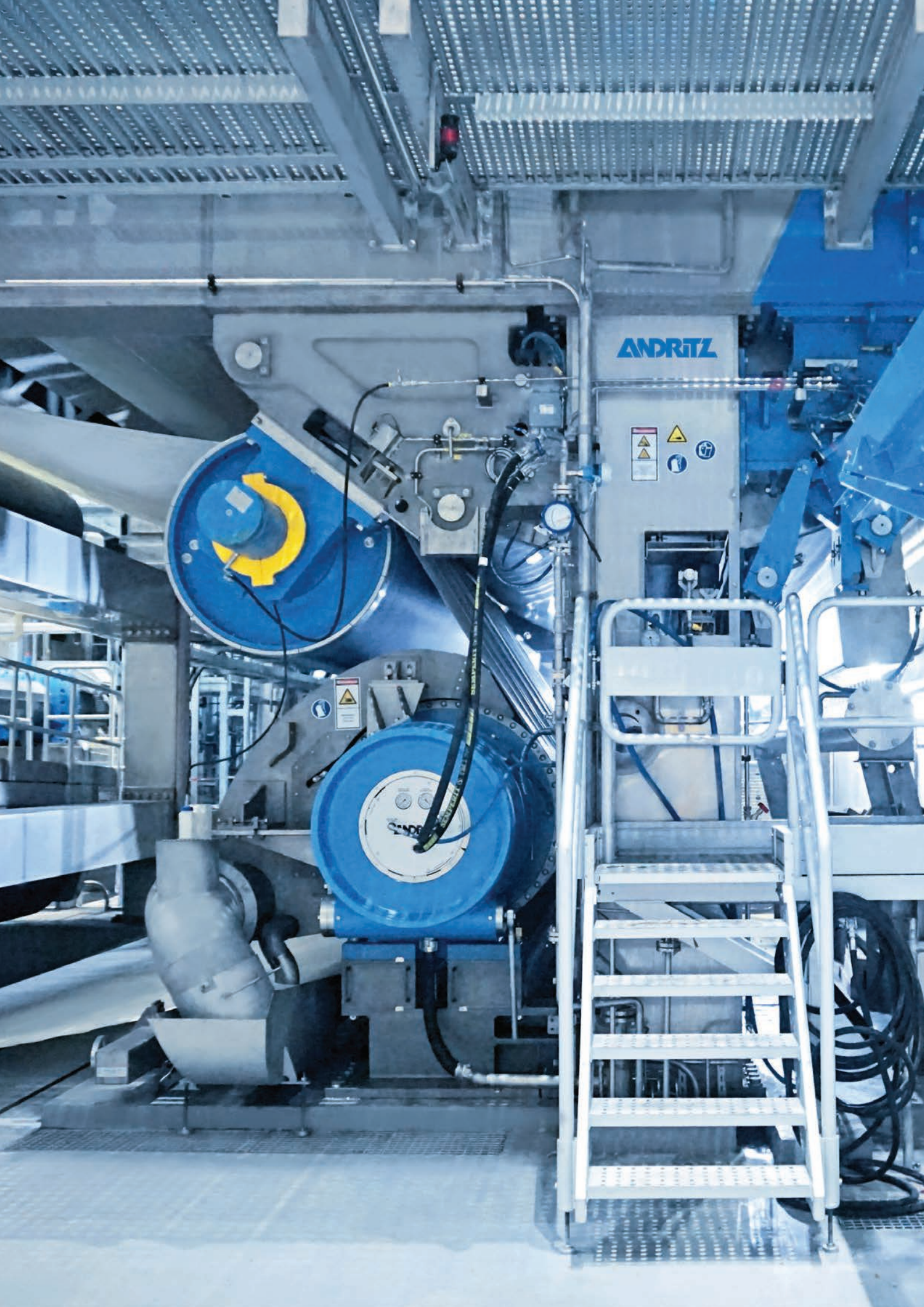
Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

Pressure roll and /or suction pressure roll

	Description	Action	Service package		Suggested time schedule		
			Small	**Large**	**Monthly**	**Annually**	**Demand**
1	Static and dynamic press roll NIP measurements	check	√	√	S/6	S	
2	Press roll load with dynamometric cells	clean		√-D		S	S
3	Crowning optimization	check		D			S - O
4	Bearing vibration monitoring (option: continous monitoring sensors)	check		D			O
5	Visual check of roll cover and roll venting conditions	check	√-D	√-D	O	O	O
6	Check of roll conditions including journal with bearing seats	check	√-D	√-D	O	O	O
7	Regular technical maintenance meetings: with fabrics and rolls application team at the customer to inform about innovations, review the roll cover and venting performance and agree on trials and optimization acitivities to develop the machine performance together with the customer		√-D	√-D	O	O	O
8	Check of doctor holders conditions	check		√-D		S	S

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

General requests: papermachine-service@andritz.com


ANDRITZ

Shoe press

	Description	Action	Service package			Suggested time schedule			
			S	**M**	**L**	**Monthly**	**Annually**	**2-3 years**	**Demand**
1	Bearing vibration monitoring (option: continous monitoring sensors)	check	D	D	D				O
2	Monitoring of production on day before shutdwon and visual condition checks	check		√	√		O	O	
3	Check behavior/settings of hydraulic service page (pressure adjustment)	check	√-D	√-D	√-D	O	O	O	O
4	Check of the inner press-side wearing of the belt	check		√	√		S	S	
5	Check/change of shoe plate	check		√	√		S	S	
6	Check of the beam loading system	check	√	√	√	S/6	S	S	
7	Check of the movement of boundary disc	check		√	√		S	S	
8	Replacement of all sealings and bearings at boundary discs (OS and DS)	change			√			S	
9	Check of the hydraulic system	check	√	√	√	S/6	S	S	
10	Replacement of hydraulic hoses inside the press	change			√			S	
11	Replacement of belt empty pump	change			√			S	
12	Check of the pneumatic system	check	√	√	√	S/6	S	S	
13	Replace all pneumatic hoses inside the shoe press including loading hoses tubes	change			√			S	
14	Check the seals of loading hoses	change		√			S		
15	Replacement of the loading hoses tube	change		D					S
16	Check of the mechanical press alignment	check			√-D			S	S
17	Check/change of filters on the hydraulic unit	check	√	√	√	O	O	O	
18	Check of oil contamination	check	√ -D	√ -D	√ -D	O/3	O	O	O
19	Belt change supervision	check		√	√		S	S	
20	Start-up assistance	check		√	√		O	O	
21	Check of doctor holders conditions (Suction Turning Roll - STR)	check		√-O	√-O		S		S

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

General requests: papermachine-service@andritz.com

Forming fabric /press felt and shoe press belt

	Description	Action	Service package	Suggested time schedule		
FORMING FABRIC			**Basic**	**Monthly**	**Annually**	**Demand**
1	Fabric tension check	check	√	O		
2	Fabric caliper measurement	check	√	O		
3	FSP (tension and caliper profile)	check	√ -D	S		S
4	Visual fabric check	check	√ -D	S		S
5	Wear and remaining life time judgement	check	√ -D	S		S
PRESS FELT						
6	Felt permeability measurement	check	√	O		
7	Felt moisture measurement	check	√	O		
8	Felt caliper measurement	check	√	O		
9	Felt tension check	check	√	O		
10	Check of vacuum level on suction boxes	check	√	O		
11	Visual check of cleaning showers	check	√	O		
SHOE PRESS BELT						
12	Putty imprints (void volume/wear profile)	check	√	S/2		
13	Surface pictures	check	√	S/2		
14	Visual belt check	check	√	S/2		
15	Used fabric/felt/belt analysis: Analysis of a CMD strip of every ANDRITZ fabric and roll clothing that runs on the machine. Discussion of the findings with the responsible Production Manager on site. (Remark: Samples need to be sent to our laboratories at Gloggnitz and Reutlingen by the customer).	Analysis	√ -D		O	O
16	Annual technical PMC meeting: With fabrics and rolls application team at the customer to inform about new innovations, review the performance of products and agree on trials and optimization to develop machine performance with the customer's production team.	Meeting	√ -D		O	O
17	Thermocamera analysis of the press felt and jumbo reel	Analysis	D			O

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) = ...Action suggested every 2 years (3 years, ..., etc.)

General requests: papermachine-service@andritz.com

Steel Yankee

	Description	Action	Service package			Suggested time schedule				
			S	**M**	**L**	**Monthly**	**Annually**	**Every 2 years**	**Every 5 years**	**Demand**
1	Visual check of thermal coating (metallization)	check	√	√	√	S/6	S	S	S	
2	Metallization roughness measurements	check	√	√	√	S/6	S	S	S	
3	Metallization micrographs and analysis	check	√	√	√	S/6	S	S	S	
4	Shell TIR - Total Indicated Runout (if possible) at grinding pressure	check	√	√	√	O/6	O	O	O	
5	Visual check of the steam leak at max. allowable working pressure (manholes, steam rotary joints, etc.)	check	√	√	√	O/6	O	O	O	
6	Check of condensate removal system, included straw position and conditions (random check of 30% of the soda straws inside the Yankee)	check		√			S			
7	Check of condensate removal system, included straw position and conditions	check			√			S	S	
8	Wall thickness measurements of the condensate removal system (riser pipes and headers) with ultrasonic test (UT)				√			S	S	
9	Visual check of the internal bolts/ screws and securing devices	check		√	√		S	S	S	
10	Visual examination of the internal surface 100% (shell, heads, center stay)	check		√	√		S	S	S	
11	Ultrasonic test (UT single beam) on 100% structural screws/bolts	check			√			S	S	
12	Structural welds checks with magnetic particle inspection (MT)	check			√			S	S	
13	Structural welds checks with ultrasonic test (UT single beam)	check			√			S	S	
14	Structural welds checks with Ultrasonic Phased Array and TOFD (Time Of Flight Diffraction) Test	check			√			S	S	
15	On The Run Measurement and analysis (including laser measurement of crown and wear)	check			√ -D		2O			O

	Description	Action	Service package			Suggested time schedule				
			S	**M**	**L**	**Monthly**	**Annually**	**Every 2 years**	**Every 5 years**	**Demand**
16	Boiler feedwater/boiler water/steam and condensate analysis and quality checks	check	√ -D	√ -D	√ -D	O/6				O
17	Chemicals/Organic coating analysis (build up, stripiness, etc.)	check			D					O
18	Thermographic analysis	check			D					O
19	Metallization thickness check (Pi-Tape and/or by UT method)	check			D					S
20	Doctoring system services (adjustment, alignment, angle, wear check, etc.)	check		√ -D	√ -D		S			S
21	Metallization spot repair	check			D					S
22	Static and dynamic press roll NIP measurements	check			D					S
23	Press roll load with dynamometric cells	check			D					S
24	Crowning optimization	check			D					S - O
25	Yankee steam rotary joints maintenance (check status, alignment, etc.)	check			√ -D		2S			S
26	Temperature profile of the Yankee Dryer surface with paper ON (or w/o paper)	check			D					O
27	Bearings vibration monitoring (option: continous monitoring sensors)	check			D					O
28	Lubrication oil analysis	check			D					S
29	Acoustic emission test (through qualified partner)	check			D					S

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) = ...Action suggested every 2 years (3 years, ..., etc.)

General requests: papermachine-service@andritz.com

Cast iron Yankee

	Description	Action	Service package			Suggested time schedule				
			S	**M**	**L**	**Monthly**	**Annually**	**Every 2 years**	**Every 5 years**	**Demand**
1	Visual check of the surface or of the thermal coating (metallization), if present	check	√	√	√	S/6	S	S	S	
2	Surface roughness measurements	check	√	√	√	S/6	S	S	S	
3	Metallization micrographs/analysis	check	√	√	√	S/6	S	S	S	
4	Shell TIR - Total Indicated Runout (if possible) at grinding pressure	check	√	√	√	O/6	O	O	O	
5	Visual check of the steam leak at max. allowable working pressure (manholes, steam rotary joints, head/ shell joints, etc.)	check	√	√	√	O/6	O	O	O	
6	Check of condensate removal system, included straw position and conditions (random check of 30% of the soda straws inside the Yankee)	check		√			S			
7	Check of condensate removal system, included straw position and conditions	check		√	√			S	S	
8	Wall thickness measurements of the condensate removal system (riser pipes and headers) with Ultrasonic Test (UT)			√	√			S	S	
9	Visual check of the internal bolts/ screws and securing devices	check		√	√		S	S	S	
10	Visual examination of the internal surface 100% (shell, heads, center stay)	check		√	√		S	S	S	
11	Magnetic Particle Inspection (MT) 100% of the shell/head flange (TS and DS), from inside and outside	check			√			S	S	
12	Magnetic Particle Inspection (MT) 100% of the journal/head flange (TS and DS), from inside and outside	check			√			S	S	
13	Magnetic Particle Inspection (MT) 100% of the hollow shaftl/head flange (TS and DS), from inside and outside	check			√			S	S	
14	Magnetic Particle Inspection (MT) 100% of hollow shaft internal connection flanges, from inside	check			√			S	S	

	Description	Action	Service package			Suggested time schedule				
			S	**M**	**L**	**Monthly**	**Annually**	**Every 2 years**	**Every 5 years**	**Demand**
15	Magnetic Particle Inspection (MT) 100% of head extension (TS and DS), from inside	check			√			S	S	
16	Magnetic Particle Inspection (MT) 100% of hollow shaft extension, from inside	check			√			S	S	
17	Magnetic Particle Inspection (MT) 100% of the reinforcement manholes (TS and DS), from inside and outside	check			√			S	S	
18	Ultrasonic Test (UT) 100% of the Yankee Dryer shell, from outside (option:use UT SCAN to register the scans)	check			√			S	S	
19	Ultrasonic Test (UT) 100% of the shell/ head flange (TS and DS), from outside	check			√			S	S	
20	Ultrasonic Test (UT) 100% of the journal/head flange (TS and DS), from outside	check			√			S	S	
21	Ultrasonic Test (UT) 100% of the hollow shaftl/head flange (TS and DS), from outside	check			√			S	S	
22	Ultrasonic Test (UT) 100% of the shell/ head bolts/screws (TS and DS)	check			√			S	S	
23	Ultrasonic Test (UT) 100% of the journal/head bolts/screws (TS and DS)	check			√			S	S	
24	Ultrasonic Test (UT) 100% of the hollow shaft/head bolts/screws (TS and DS)	check			√			S	S	
25	Ultrasonic Test (UT) 100% of the hollow shaft connection bolts	check			√			S	S	
26	Ultrasonic Test (UT) 100% of the manhole screws (TS and DS)	check			√			S	S	
27	Head tilt measurements (in cold and/ or hot condition)	check			√			S	S	
28	Spigot fit gap check	check			D					S
29	Root shell thickness measurements	check			√			S	S	
30	On The Run Measurement (OTR) and analysis (including laser measurement of crown and wear)	check			√ -D		2O			O
31	Boiler feedwater/boiler water/ steam and condensate analysis and quality checks	check	√ -D	√ -D	√ -D	O/6				O

	Description	Action	Service package			Suggested time schedule				
			S	**M**	**L**	**Monthly**	**Annually**	**Every 2 years**	**Every 5 years**	**Demand**
32	Chemicals/Organic coating analysis	check			D					O
33	Thermographic analysis	check			D					O
34	Metallization thickness check (Pi-Tape and/or by UT method)	check			D					S
35	Doctor system services (adjustment, alignment, angle, wear check, etc.)	check		√ -D	√ -D		S			S
36	Metallization spot repair	check			D					S
37	Static and dynamic press roll NIP measurements	check			D					S
38	Press roll load with dynamometric cells	check			D					S
39	Crowning optimization	check			D					S - O
40	Yankee steam rotary joints maintenance (check status, alignment, etc.)	check			√ -D		2S			S
41	Temperature profile of the Yankee Dryer surface with paper ON (or w/o paper)	check			D					O
42	Bearings vibration monitoring (option: continous monitoring sensors)	check			D					O
43	Lubrication oil analysis	check			D					S
44	Acoustic emission test (through qualified partner)	check			D					S

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

Hood

	Description	Action	Service package		Suggested time schedule		
			Small	**Large**	**Monthly**	**Annually**	**Demand**
1	Check of the status of the tail hoods	check		D			S
2	Check of the external and internal surface of the hood	check	√		S/6		
3	Check of the damper of the hoods	check		√		S	
4	Check of the roof cleaning system (washable roof, if present)	check	√		S/6		
5	Check of the distance between the hoods and Yankee	check		√		S/O	
6	Check of the internal pressure of the hoods and dampers check	check		√		S/O	
7	Check of the hood sealing status	check	√	√			
8	Check of the wheel-guide system	check		D			S
9	Check of the safety limit switch	check	√	√	S/6		
10	Check of the movement system (pistons or jack system)	check	√	√	S/6		
11	Hoods balancing	check		√		O	

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

Air system

	Description	Action	Service package			Suggested time schedule		
			S	**M**	**L**	**Monthly**	**Annually**	**Demand**
1	Heat exchanger internal and filter check	check	√	√	√	S/6		
2	Ducts external and internal check		√	√	√	S/6		
3	Burner(s) internal check	check	√	√	√	S/6		
4	Combustion chamber check	check	√	√	√	S/6		
5	Burner instrumentation check	check		√	√	O/6		
6	Burner perform check	check			√	O/6		
7	Burner safety check	check		√	√	S/6 - O/6		
8	Fans perform check (balancing, vibration test etc.)	check			√	O/6		
9	Fans internal inspection and lubrification check	check	√	√	√	S/6		
10	Dampers check	check		√	√		O	
11	Main instrumentation check	check			√		O	
12	Check of the duct temperature	check		√	√		O	
13	Check of the heat exchanger performance	check			√		O	
14	Check of the atmospheric emission	check		√		O/6		
15	Check of the atmospheric emission and relative adjustment of the process parameters	check			√	O/6		
16	Measurement of the performance of the entire system with analysis of the results and suggestions for improving or maintaining the system in efficiency	check			D			S - O
17	Flexible joints check	check	√	√	√		S	
18	Check of the fans transmission system	check	√	√	√	O/6		

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) = ...Action suggested every 2 years (3 years, ..., etc.)

Steam and condensate system

	Description	Action	Service package	Suggested time schedule		
			Basic	**Annually**	**Annually**	**Demand**
1	Main instrumentation check		√	S		
2	Automatic valves check and calibration		√	S		
3	Thermocompressor check		√	S		
4	Check of the pump(s)		√	S		
5	Visual check of the safety valve		√	O		
6	Check of the piping insulation		√	S		
7	Check of the logic and interblock		√	S - O		
8	Check of the piping for leakages		√	O		

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

PrimeDry YES

	Description	Action	Service package	Suggested time schedule		
			Basic	**Monthly**	**Annually**	**Demand**
1	Main instrumentation check		√		S	
2	Automatic valves check and calibration		√		S	
3	Heat exchanger internal check		√		S	
4	Check of the logic and interblock		√		S - O	
5	Check of the system performance		√		O	
6	Check of the pump(s)		√		S	
7	Visual check of the safety valve		√		O	
8	Check of the safety pressure trasmitters, etc.		√		S - O	
9	Check of the piping insulation		√		S	
10	Check of the piping for leakages		√		O	

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

Dust removal system

	Description	Action	Service package		Suggested time schedule		
			Small	**Large**	**Monthly**	**Annually**	**Demand**
1	Scrubber check	check	√	√	S/6	S	
2	Venturi check	check	√	√	S/6	S	
3	Ducts surface visual check	check	√	√	S/6	S	
4	Flexible joints check	check	√	√	S/6	S	
5	Check of the suction boxes internally and externally	check	√	√	S/6	S	
6	Measurement of the air flow in the suction box	check		√		O	
7	Fan performance check (balancing, vibration test...)	check		√		O	
8	Fan internal inspection and lubrication check	check	√	√	S/6	S	
9	Check of the fans transmission system	check	√	√	S/6	S	
10	Check of the dampers	check	√	√	S/6	S	
11	Balancing of the system	check		√		S/O	
12	Check of the pumps	check	√	√	S/6	S	
13	Check of the valves, filters, etc. on the water line	check	√	√	S/6	S	
14	Main instrumentation check	check		√		S - O	
15	Measurement of the dust in the enviroment	check		√		O	
16	Measurement of the noise on the roof (outside the building)	check		√		O	
17	Check of the logic and interblock	check		√		S - O	

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

General requests: papermachine-service@andritz.com

Mist removal system

	Description	Action	Service package	Suggested time schedule		
			Basic	**Monthly**	**Annually**	**Demand**
1	Ducts surface visual check	check	√		S	
2	Balancing of the system	check	√		O	
3	Drop separator internal check	check	√		S	
4	Visual check of the water line and of the discharge line to/from the drop separator (and nozzles)	check	√		S	
5	Check of the suction manifolds internally and externally	check	√		O	
6	Measurement of the air flow in the suction manifolds	check	√		O	
7	Fan performance check (balancing, vibration test...)	check	√		O	
8	Fans internal inspection and lubrication check	check	√		S	
9	Check of the fans transmission system	check	√		S	
10	Check of the dampers	check	√		S	
11	Check of the logic and interblock	check	√		S - O	
12	Main instrumentation check	check	√		O	

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

Hall ventilation

	Description	Action	Service package		Suggested time schedule		
			Small	**Large**	**Monthly**	**Annually**	**Demand**
1	Balancing of the system	check		√		O	
2	Main instrumentation check	check	√	√	S/6	S	
3	Ducts surface visual check	check	√	√	S/6	S	
4	Flexible joints check	check	√	√	S/6	S	
5	Check of the dampers	check	√	√	S/6	S	
6	Check of the valves, filters, etc. on the water line / glycol line	check	√	√	S/6	S	
7	Check of the AHE's safety components	check		√		S - O	
8	Check of the pumps	check	√	√	S/6	S	
9	Check of the AHE's performance (vibration, power consumption,..)	check		√		S - O	
10	Mechanical check of AHE's fans and lubrication	check	√	√	S/6	S	
11	Check of the temperature and humidity in the hall/under roof	check		√		O	
12	Check of the logic and interblock	check		√		S - O	
13	Check of the heat exchanger	check	√	√	S/6	S	

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

Reel

	Description	Action	Service package		Suggested time schedule		
			Small	**Large**	**Monthly**	**Annually**	**Demand**
1	Wear on the reel drum	check	√	√	S/6	S	
2	Wear of the doctor blade	check	√	√	S/6	S	
3	Check of the stopper at the spool magazine and spool station	check		√		S	
4	Hydraulic and / or pneumatic check	check		√		S - O	
5	Wear of the spool starter	check		√		S - O	
6	Wear of the spools	check		√		S - O	
7	Function of the turn up system (if installed)	check		√		S - O	
8	Check of the vacuum system for tail threading	check	√	√	S/6	S	
9	Check of all limit switches	check		√		S - O	
10	Check of the linear arms on primary arm	check	√	√	S/6 - O/6	S - O	
11	Check of the movement on secondary arm	check	√	√	S/6 - O/6	S - O	
12	Check of the weighting system (and in case of need, calibration of it)	check		√		S - O	
13	Check of the expandable shafts (if present)	check		√		S - O	
14	Bearings vibration monitoring (option: continous monitoring sensors)			D			O
15	Check of the inline core shaft puller	check		√		S - O	
16	Check of reel spools conditions (wear/ damage of roll covers, check of journal conditions incl. repair of bearing seats)	check	√-D	√-D	S	S	S
17	Check of doctor holders conditions	check		√-D		S	S

Legend: - = No action scheduled; O = Action during operation; S = Action only during shutdown; D = Action when needed; X/2 (/3,...) = ...Action suggested every 2 months (3 months, ..., 6 months, etc.); 2x (3x,...) =...Action suggested every 2 years (3 years, ..., etc.)

General requests: papermachine-service@andritz.com

DISCOVER OUR FULL-RANGE PORTFOLIO FROM FIBER PROCESSING TO PAPERMAKING

An outstanding paper product requires outstanding production – matched with the particular needs of raw material and final product. Discover the full-range portfolio from ANDRITZ: Excellent stock preparation that allows best fiber development according to furnish and with economical use of resources. *Prime*Line paper machines that are a synonym for producing top-quality tissue, paper, and board grades. Complete lines or single units, upgrades, and modernizations. Contact us and benefit from your individual package in papermaking technology.

AUSTRIA
ANDRITZ AG, Graz
p: +43 316 6902 0

PAPERMACHINE-SERVICE@ANDRITZ.COM

GET AN OVERVIEW
of our paper machine services