



Equipment Audit Report



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AUDIT DATE: Indianapolis, IN
TECHNICIAN: Aserota Wright
AUDIT REPORT # / QUOTE #: OPP: 45647 - Quote# 157502

MODEL: BPTW-6000
S/N: 210012

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These symbols are used throughout the report to indicate our findings:

OK

Looks or checks out OK

!

Needs attention (cleaning, adjusting, oil, etc.)

X

Needs to be replaced and/or repaired

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Scope

This report will include summaries of the individual assemblies, including a list of worn components and an estimate of the cost for an Nvenia technician to install replacement components.

An evaluation of the equipment will be conducted to determine any areas affecting its safety and reliability, and secondly, it had to be evaluated regarding any retrofits or modifications needed in order to be brought up to current standards.

The audit portion of this machine will consist of a safety evaluation to ensure it could be operated safely and a detailed dynamic evaluation of the overall functionality of the machine was done so that worn components and other issues could be identified.

Audit Summary

Machine looks to be in good condition and should be dependable machine with proper maintenance. All of the individual assemblies will be detailed throughout the report, but initial observations indicate some component replacements will be required.

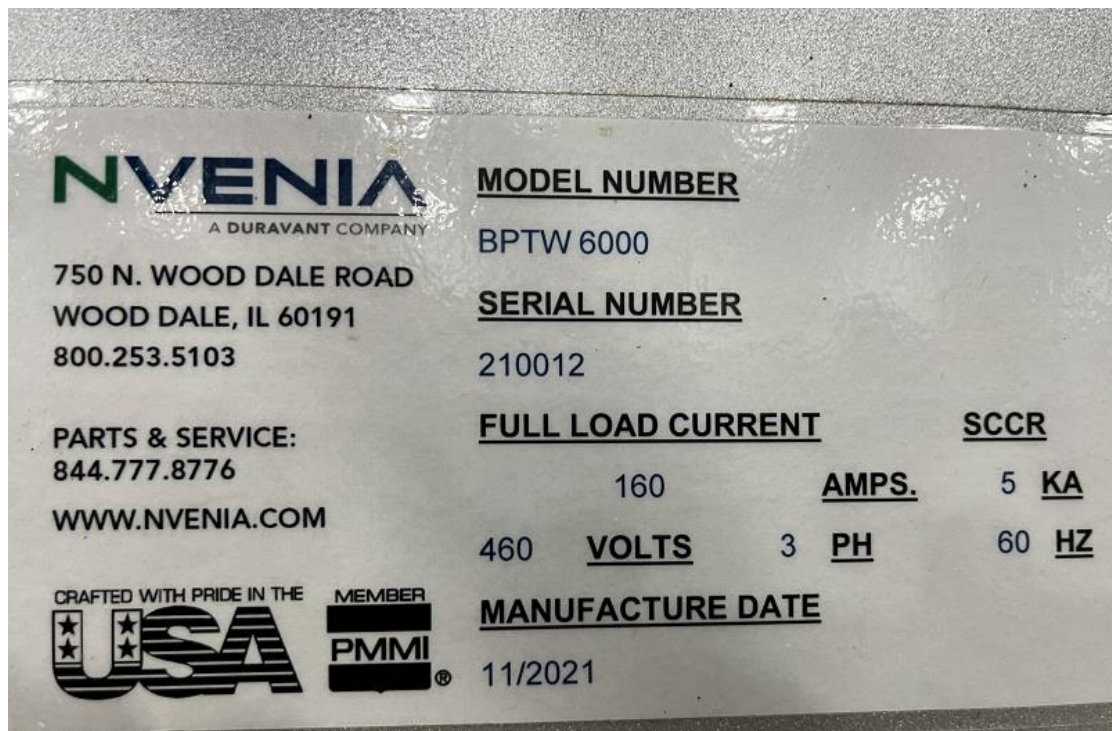
Electrically, all wiring inside and outside the electrical control panel are in good condition. The pneumatic systems seem to be functioning properly.

Retrofits / Modifications

No retrofit is required at this time.

Data Plate for SN 210012

The data plate identifies the machine, serial number, and power requirements.



Incoming Utilities

Voltage	460 VAC
(Within Normal Range)	
Air Pressure	95 PSI
(Below required 80 psi)	

Safety Concerns

All covers in place	OK	Guard door switches	OK
Guard doors in place	OK	Lock out functionality	OK
E-stop operation and recovery	OK	Safety labeling in place	OK
Door latches	OK		

COMMENTS / OBSERVATIONS

- All guards and safety switches are in good condition.



Safety Concerns –Recommended Parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Cleanliness

Inspect external surfaces	OK	Inspect electrical cabinet cleanliness	OK
Inspect area around machine	OK	Inspect machine internal overall cleanliness	OK

COMMENTS / OBSERVATIONS

- All components appear to be in fair condition



Cleanliness –Recommended Pats					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Enclosure

Inspect top guard doors for scratches and cleanliness	OK	Inspect door guard circuit	OK
Verify all decals and safety info in place	OK	Inspect bottom guard doors for scratches and cleanliness	OK
Check all door latches	OK	Inspect door hinges and mounting hardware	OK

COMMENTS / OBSERVATIONS

- Machine enclosure seems to be clean and in good condition



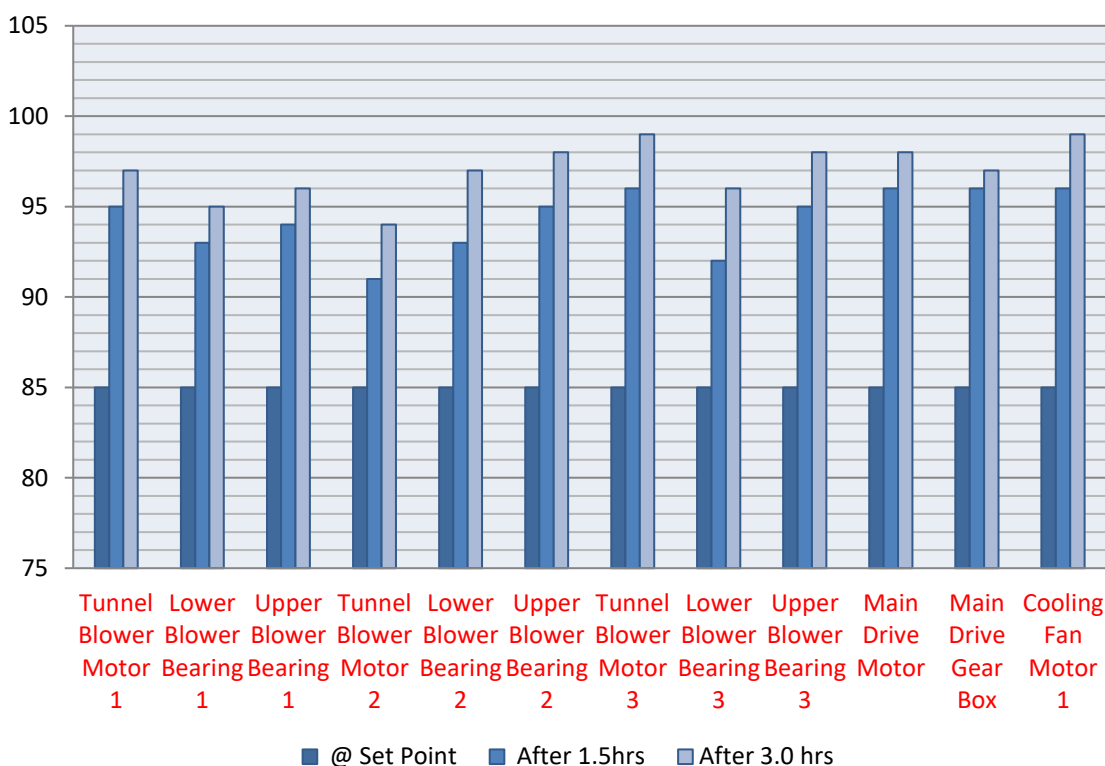
Enclosure – Recommended Parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Predictive Maintenance Checks

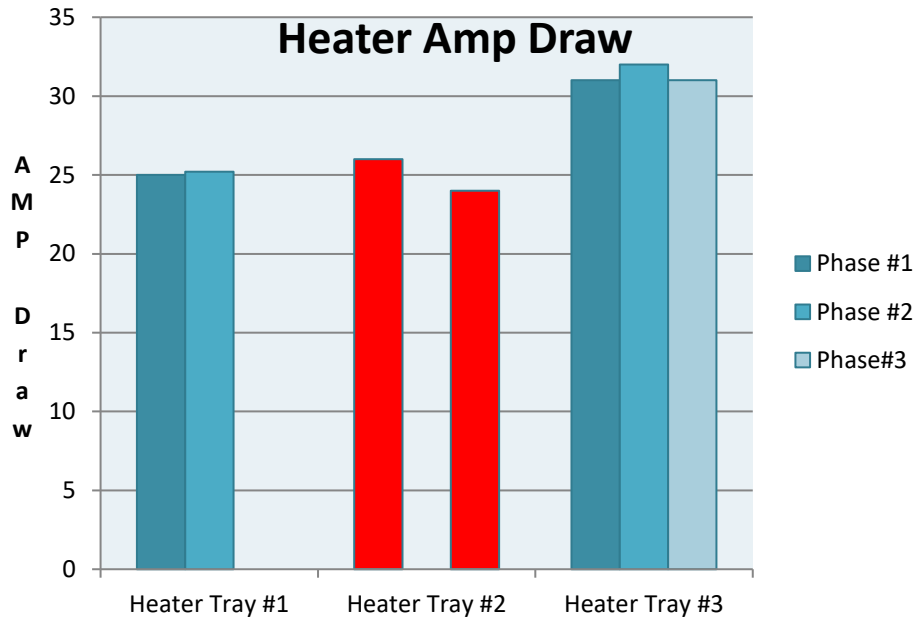
Motor-Thermal

The tunnel blower motor, main drive motor and gearbox, cooling fan motor and the tunnel blower bearings were thermally measured over a four hour period and recorded in the chart below. Other bearings were spot checked during the test period.

All are within normally expected ranges.



Heater Element Tray



COMMENTS / OBSERVATIONS

- Zone1 heater is missing one phase due to bad contactor, need to replace contactor.
- Zone 2 heater has a bad fuse.

Individual Assemblies

Main Drive

Inspect Main drive motor	OK	Inspect main drive chain	OK
Inspect gearbox	OK	Central grease system has some broken lines that should be repaired	OK
Inspect lubrication of main drive gearbox	OK		

COMMENTS / OBSERVATIONS

- The main drive components are in good condition.



Main Drive – Recommended Parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Infeed Components

Inspect infeed belt	OK	Inspect turn bar	OK
Inspect sprockets	OK	Inspect entry shafts and bearings	OK
Check gearbox lube	OK	Inspect chains	OK
Check infeed guide rails	OK	Inspect conveyor frame	OK
Belt Sprockets	X		

COMMENTS / OBSERVATIONS

- All components appear to be in fair condition
- Conveyor belt sprockets are worn



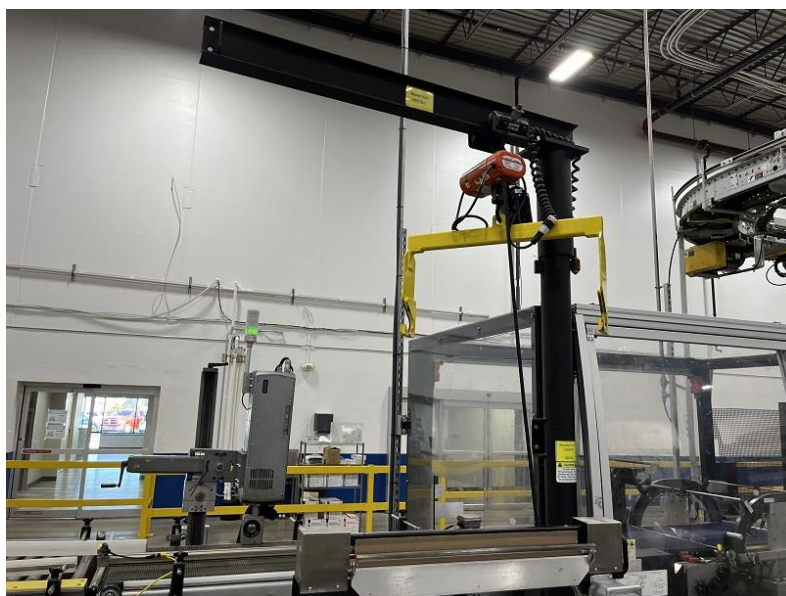
Infeed – Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
809071	7	SPKT, 12T, 1 SQ BORE, 2.3" PD, SERIES 1100	EA	\$56.00	\$392.00
815786	2	RING, RETAINING, 1.00 SQ. SHAFT, SS	EA	\$28.00	\$56.00
809086	6	SPKT, 20T, 1-1/2 SQ BORE, 3.8 PD	EA	\$52.00	\$312.00
800970	2	RING, RETAINER, SELF SET, 1-1/2" SQ SHAFT	EA	\$43.00	\$86.00

Jib Crane

Trolley	OK	"U" bar or film straps	OK
Boom	OK	Pole	OK
Hoist	OK		

COMMENTS / OBSERVATIONS

- Jib Crane is in good condition.



Hoist – Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Dancer Bars

Inspect idler rollers and shafts	OK	Static bar system	OK
Inspect stationary dancer bars	OK	Inspect take up roller and shafts	OK
Check bearings	OK	Inspect air cylinder	OK

COMMENTS / OBSERVATIONS

- The dancer bar assembly is in good condition.



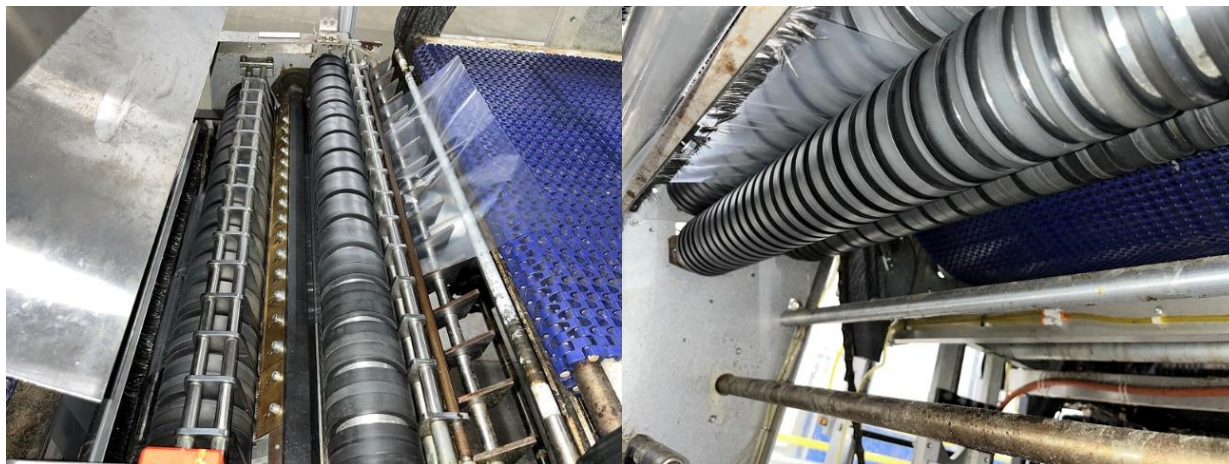
Dancer Bar - Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Film Feed Section

Inspect upper rollers	X	Check air bar	OK
Inspect bottom rollers	X	Inspect spring tensions	OK
Inspect roller lagging	OK	Inspect knife blade assembly	OK
Inspect film transition plate	OK	Inspect timing belts	OK
Inspect bearings	OK	Inspect pulleys	OK

COMMENTS / OBSERVATIONS

- The film feed rollers are worn and need to be replaced.



Film Feed – Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
238437	1	ROLLER, TENSION, UPPER	EA	\$2,707.00	\$2,707.00
111429-000D	1	ROLLER, UPPER, PINCH, 1ST, BPTW-70	EA	\$2,734.00	\$2,734.00
324803	1	ROLLER, LOWER, PINCH, 27 1/2 LG, BPTW-70	EA	\$2,690.00	\$2,690.00
111428-000D	1	ROLLER, RUBBER, PINCH	EA	\$2,676.00	\$2,676.00

Film Rack Components

Inspect film supply roll shafts	OK	Inspect articulating leveler	OK
Inspect Delrin journals	OK	Inspect clutches	OK
Inspect air inflation gun	OK	Inspect air shaft with valve	OK
Inspect brakes	OK	Inspect film spindles	OK
Inspect bladders	OK	Inspect splice bar	OK
Verify safety guards on brakes	OK	Low film photo-eyes	OK

COMMENTS / OBSERVATIONS

- All components appear to be in fair condition



Film Rack - Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Splice Bar

Inspect Rubber	OK	Inspect Teflon Tape	OK
Inspect Hot Wire	OK	Inspect Cylinder	OK
Inspect Springs	OK		

COMMENTS / OBSERVATIONS

- All components appear to be in fair condition



Splice Bar - Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Overwrap Flight Bar

Inspect all chains	OK	Inspect brackets	OK
Check all flight bars	OK	Inspect shafts	OK
Inspect film detection sensors	OK	Check servo motor	OK
Inspect gears	OK	Inspect timing belt	OK
Inspect frame bar	OK	Film flaps	OK
Inspect Chain Profiles	OK		

COMMENTS / OBSERVATIONS

- All components appear to be in fair condition



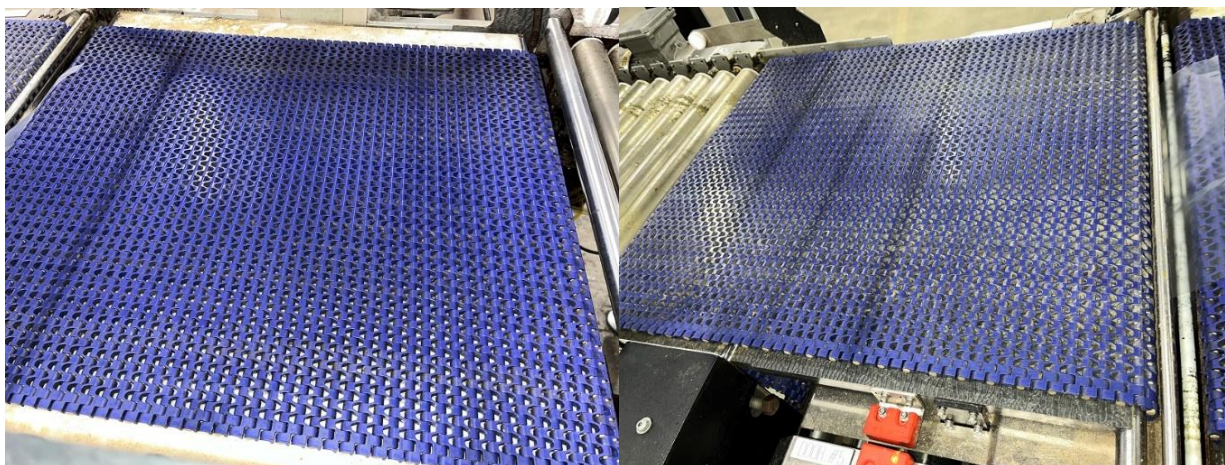
Overwrap Flight Bar – Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Overwrap Conveyor

Inspect shafts & bearings	OK	Check chain tensions	OK
Inspect rollers and bed plate	OK	Inspect Belt	OK
Inspect Sprockets	OK		

COMMENTS / OBSERVATIONS

- All components appear to be in fair condition



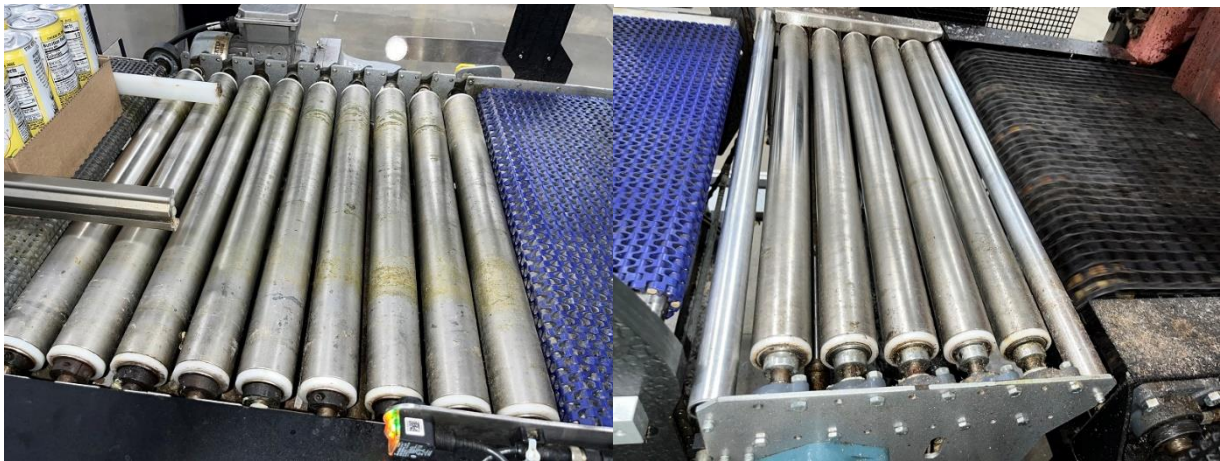
Overwrap Conveyor – Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Transition Conveyor

Inspect shafts & bearings	OK	Inspect Shafts	OK
Inspect rollers	OK	Inspect Belt	OK
Inspect Sprockets	OK		

COMMENTS / OBSERVATIONS

- Transition roller conveyor is in good condition



Transition Conveyor – Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Operator Controls

Verify stack lights	OK	Verify HMI screens	OK
PLC	OK	Frequency drives	OK
Inspect temp controllers	OK		

COMMENTS / OBSERVATIONS

- Operator controls are in good condition.



Operator Controls - Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
No Recommended Parts					

Tunnel and Drive Components

Inspect gear boxes for proper oil level	OK	Inspect tunnel curtains	X
Inspect drive chain tension & wear	OK	Inspect tunnel blower belts	OK
Inspect blower shafts and bearings	OK	Inspect drive chain cover	OK
Inspect chain take-up sprockets	OK	Verify tunnel intakes are clean and open	OK
Inspect sprockets and alignment	OK	Inspect tunnel idler rollers for film buildup	OK
Inspect condition of tunnel belt	OK	Inspect tunnel cooling fans	OK
Inspect condition of tunnel belt sprockets and chains	OK	Inspect smooth product transfers	OK
Inspect cooling fans	OK		

COMMENTS / OBSERVATIONS

- All components appear to be in fair condition
- Need new tunnel curtains
- Zone 1 heater contactor is damaged and need to be replaced.
- The tunnel conveyor belt is old and worn.



Tunnel Assembly - Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
199535-022	2	CURTAINS, RED, 38W X 36H	EA	\$247.20	\$494.40
845760	40	BELT, HIGH TEMP, UNI OWL 66%, 25.4" W	FT	\$355.00	\$14,200
845761	10	SPROCKET, OWL, Z11, BORE 1.5" SQ,	EA	\$164.00	\$1,640.00
845819-001	1	RETAINER, UNI, SPKT, 1.5" SQ, SET OF 4	EA	\$47.00	\$47.00

Pneumatic Components

Inspect compressed air filter	OK	Inspect pressure gauge	OK
Solenoid valves	OK	Inspect valves	OK
Inspect flow regulator	X	Inspect filter regulators	OK

COMMENTS / OBSERVATIONS

- All components appear to be in fair condition
- The main air regulator is not working properly, not able to control air pressure to the machine.



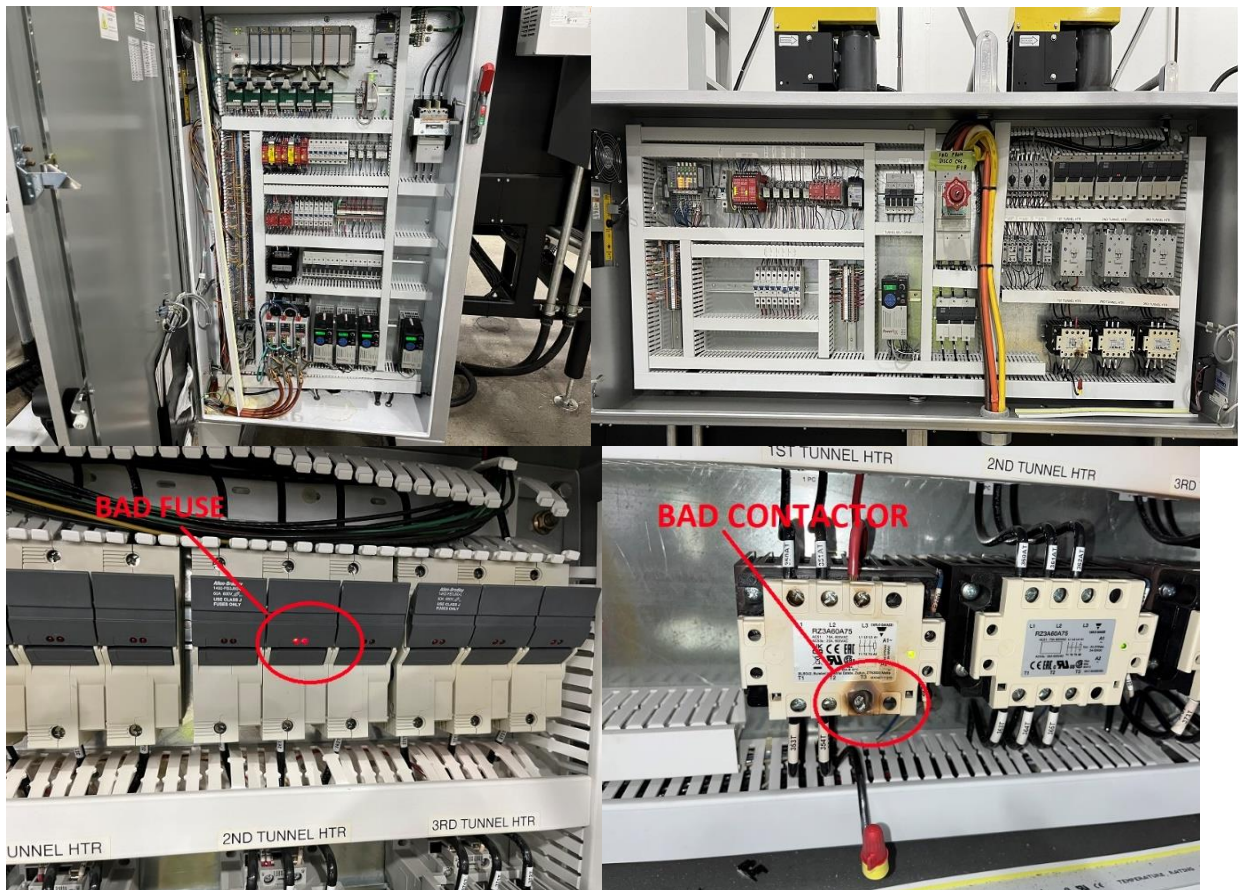
Pneumatic Components - Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
870565	1	ASSY, AIR PREP, FILTER, REG, SWITCH, DUMP	EA	\$879.00	\$879.00

Electrical Cabinet

Inspect electrical cabinet for loose wires	OK	AC Unit	OK
Inspect heater contactors	X	Check for cleanliness	OK

COMMENTS / OBSERVATIONS

- The electrical cabinet is clean and in good condition.
- Zone 1 heater contactor is burnt and needs to be replaced.



Electrical Cabinet - Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
804002-123	1	CONTACTOR, SAFETY, IEC 3P 30A COIL	EA	\$392.65	\$392.65
804015-293	3	FUSE, 25A, 600V, FAST ACTING, CLASS CC	EA	\$68.00	\$204.00
804016-015	8	HEATER, 3500W 240V	EA	\$111.00	\$888.00

Parts Summary

These parts are listed below for convenience. This is the same as the individual listing above in the report per assembly.

Infeed – Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
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Film Feed – Recommended parts					
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111429-000D	1	ROLLER, UPPER, PINCH, 1ST, BPTW-70	EA	\$2,734.00	\$2,734.00
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Tunnel Assembly - Recommended parts					
Part#	QTY	Description	U/M	Unit Price	Ext. Price
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- END -					

Available Preventative Maintenance Program Recommendations

Duravant Lifecycle Services is committed to assisting customers with maximizing the equipment operational reliability, increased overall effectiveness and improved production efficiency. To that end, we have developed Preventative Maintenance Programs (PMP) pertaining to Reliability Maintenance (RM), which includes functionality checks, Predictive Maintenance (PdM), Preventive Maintenance (PM) and customize training programs.

Customers that purchase these programs realize higher levels of sustainable productivity and lower total cost of ownership, resulting in increased Overall Equipment Effectiveness (OEE) and improved return on investment.

The tangible benefits that **Preventative Maintenance Programs** deliver include:

- Improved equipment productivity
- Reliable equipment that meets production demands
- Skilled operations staff developed through ARPAC training
- Reduced cost of ownership
- Controlled unplanned maintenance costs using proactive audits and predictive maintenance techniques
- Consistently producing high quality packages without rework
- Helps organizations realize their financial goals
- Reduced operational risk
- Development of standard operating practices ("Best Practices")

Regularly scheduled maintenance is critical to the performance of any machine. Working together with an organization's operational staff, Duravant Lifecycle Services offers PM Programs designed with one goal in mind, to maximize machine productivity. Our PM Programs are performed by factory-trained service technicians on a regularly scheduled basis. Think of Duravant Lifecycle Services as an extension of your maintenance staff, helping you to meet your company's productivity objectives, control maintenance costs and increase the life expectancy of your physical equipment assets.

Duravant Lifecycle Services's PM Program include the following:

- ✓ A safety review of the equipment.
- ✓ Inspection, testing and adjustment of machine.
- ✓ Identification of worn parts requiring replacement.
- ✓ Hands-on remedial training of machine operators and maintenance technicians for "Best Practices".
- ✓ Objective review of the machine condition.
- ✓ An assessment of the level of maintenance being performed and recommendations for improvements.
- ✓ Predictive maintenance techniques including thermal imaging are employed to document the health of the equipment.

- ✓ Supporting the efforts of lean plant maintenance resources by assisting with necessary equipment repairs.
- ✓ Documented machine inspection results to ISO standards for proof of continuous improvement initiatives.
- ✓ A written report that includes RM findings and recommendations.

Duravant Lifecycle Services is experienced in providing custom-designed training programs that will target specific models, machine serial numbers or specific training needs of your personnel. Our programs are designed to meet the practical, theoretical and operational requirements necessary for the safe and proper operation of your ARPAC equipment. All classes will be tailored to the skill and experience levels in your plant.

While using a proven four point adult learning method: **Present, Prove, Practice, and Perform** our training session gives the participants the fundamentals and skill set to operate, clean, maintain, changeover and repair all aspects of the equipment.

Presenting - in a classroom environment is critical to learning the theory and basics of the machine. The instructor will use visual aids, videos and labs to ensure interactive classroom participation.

Proving - demonstrating each aspect on the actual machine, as presented in the classroom, is vital to visual stimulation and understanding the best techniques for each task. The instructor will perform each task to reinforce classroom theory.

Practice - allows each individual participant time to hone their skills and gain confidence in each task.

Perform - testing on each key component both in the classroom and hands on at the machine, ensures the employer each individual is ready, confident and able to perform their role with the machine(s) on a daily basis.