15 Service and Maintenance

WARNING: No maintenance should ever be performed until the system has been properly powered down and Lock Out Tag Out (LOTO) procedures implemented. It is the end user's responsibility to establish LOTO procedures that meet their facility's safety requirements.

The following tables describe routine maintenance for the CASi-IBOD hardware, on a **D**aily, **W**eekly, **M**onthly, and **Q**uarterly basis. Certain components are maintained based on hours of use, as indicated. Additional information may be found in the OEM (outside equipment manufacturer's) documentation located on the USB flash drive.

15.1 Cleaning and Sanitation

Table 7 – General System Cleaning Schedule

Item	Description	D	W	M	Q
Conveyance	Ensure all photoeyes, light curtains, drive cards and rollers are free of dust and debris which could interfere with normal operation.	X			
Sorters, Pushers, Diverters, Scales	Ensure all photoeyes, light curtains, drive cards and rollers are free of dust and debris which could interfere with normal operation.	X			

15.2 General Electrical

Table 8 – General Electrical Maintenance Schedule

Item	Maintenance	D	W	M	Q
Emergency Stop Circuit	Check the functionality of all E-Stop Equipment.	X			
Photoeyes/Sensors	Verify photoeyes are functioning.	X			
	Clean photoeye lenses and reflectors with a dry cloth to remove dust.		X		
Light Curtains	Ensure light curtains are free of dust and debris which could interfere with normal operation.		X		
Electrical Connections	Ensure all electrical connections are in place and fully connected.		X		
Flex Conduit	Ensure any/all flex conduit is free of nicks, cuts, or abrasions.		X		

15.3 General Mechanical

Table 9 – General Mechanical Maintenance Schedule

Item	Maintenance	D	W	M	Q
Floor Anchors	Ensure all floor anchor nuts are tight.				X
Roller Motors	Ensure the Motor Roller fasteners are tight.  **CAUTION:** Do not turn the Motor Rollers unless the Motor Cable is unplugged. Failure to do so may damage the Motor Drive Card.		X		
System Visual Inspection	Perform visual inspection for broken or damaged components.	X			
Bearings	Apply grease/lubricant to any bearings on system, using installed Zerk fittings.				X
Robot	Grease the vertical shaft weekly using AFB Grease.				X
Hardware Checks	1. Ensure all nuts and bolts are tight. 2. Ensure belts are snug and do not slip. 3. Ensure Idler rollers are free spinning. 4. Check Roller motors for visible damage.			X	
Optional Tool Changer	Ensure tool changer head is free of debris. Grease the master tool changer with a light amount of bearing grease.		X		
Detector Batteries	Batteries should be replaced more often if the controller is frequently shut down or shut down for long periods of time.	**Replace Quarterly**			

15.4 General Pneumatics

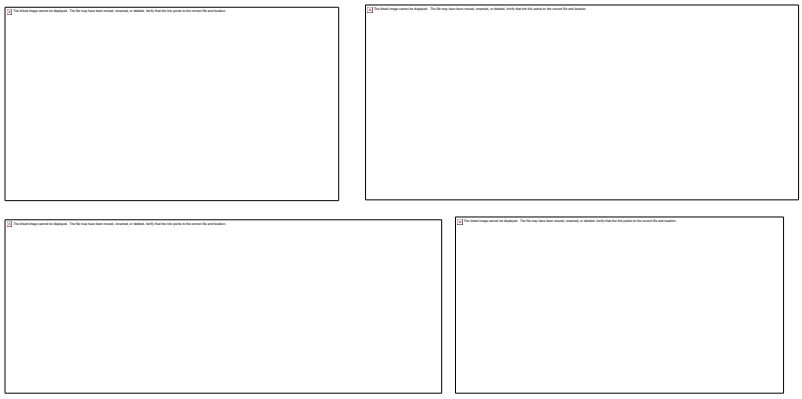
Table 10 – General Pneumatics Maintenance Schedule

Item	Maintenance	D	W	M	Q
Air Pressure	Ensure proper air pressure is maintained for the system and water is not accumulated in regulators.	X			
Hoses and Filters	25. Ensure all hoses are connected properly and are free of binds and kinks. 26. Ensure water is not accumulated in regulator.	X			
Air Leaks	Check the fittings, connectors, hoses, etc. for leaks. Repair leaks, or replace parts, as required.		X		

15.5 Snugger Bearings Lubrication

The lubrication cycle of the Snugger bearings is based on the travel distance of the bearing. Per the manufacturer, it should be lubricated approximately every 30,000 cycles. If boxes are being run at a rate of 450 units per hour, this would approximate the lubrication cycle being done after every 70 run hours. If running 2 shifts, this would then result in a weekly lubrication schedule.

Table 11 – Snugger Lubrication Schedule

Item	Maintenance	D	W	M	Q
Snugger Bearings	Lubricating the Bearings: 1. E-stop the CASi-IBOD 2. Move the Snugger to the lube position, 5-1/2" from side guard 3. Remove the blue plug from a round rail pillow block bearing 4. Apply 3-5 pumps of THK AFB-LF Grease to the round rail pillow block bearing. **Note:** If replacing with new bearings, initial lubrication is 10 drops per bearing, then maintenance is 5 drops. 5. Replace the blue plug 6. Repeat Steps 3-5 for the other round rail pillow block bearing 7. Open a lube port lid on the snugger rail 8. Apply 2-3 drops of Mobile SHC 630 Gear and Bearing Oil to lube port 9. Close lube port lid 10. Repeat Steps 7-9 for the remaining snugger rail lube ports 11. Cycle Snugger back and forth by hand to distribute oil 		X		

15.6 Conveyors

Table 12 – General Conveyors Maintenance Schedule

Item	Maintenance	Frequency			
		D	W	M	Q
Power Rollers  **IMPORTANT NOTICE:** Refer also to the OEM manual for detailed instructions.	Tighten any loose Motor Roller fasteners that are found.  **CAUTION:** Do not turn the Power Rollers unless the Motor Cable is unplugged. Failure to do so may damage the Motor Drive Card.	X	X		
	Check Roller Drive for visible damage.			X	
	Ensure roller shaft is secured properly.	**Annually**			
	Dust and dirt in combination with humidity may bridge the electric circuit. Regularly blow off dust and dirt by using low compressed air.	**As Needed**			
Motor Drive Cards  **IMPORTANT NOTICE:** Refer also to the OEM manual for detailed instructions.	***WITH POWER OFF*** - Check looseness or backlash of bolts/screws. Tighten them, if necessary.	X			
	Check the drive card leads for visible damage.			X	
	Ensure the screws of the Z-Card are still tight and that the cables are still laid properly and connected to the terminals.	**Annually**			
	Dust and dirt in combination with humidity may bridge the electric circuit. Regularly blow off dust and dirt by using low compressed air.	**As Needed**			
Roller Drive Belts	Inspect for wear, replace as necessary.			X	
Entire Conveyor (Power & Gravity)	Conduct daily and weekly walkthroughs of system. Look for any abnormal action of conveyor, oil leaks (where applicable), unusual noises, etc. Repair at once.	X	X		