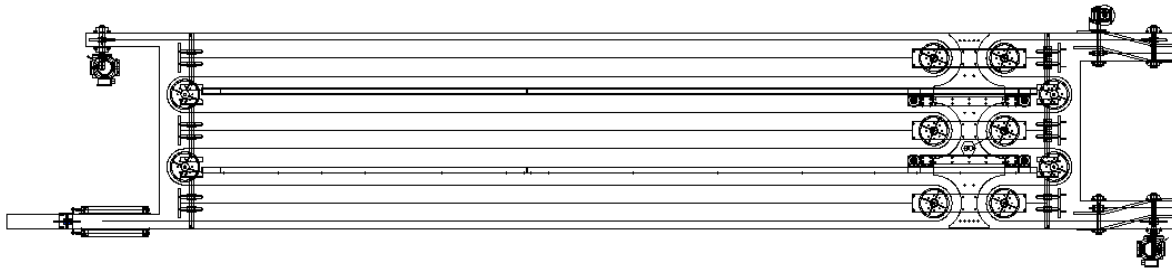




NERCON

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FLEX FLOW ACCUMULATOR INSTALLATION AND SERVICE MANUAL



NERCON PROPRIETARY STATEMENT

The following information is proprietary information of NERCON and must not be used except in connection with our work, nor in any manner disclosed to any third party without the prior written consent of NERCON. All rights of design and invention are reserved.

Recipient of this manual acknowledges that they will abide by the instructions contained in this manual and in any optional training classes purchased from NERCON. Installation and startup supervision services are also available for purchase from NERCON. Recipient will not tolerate any operation that is contrary to these instructions. If the recipient observes equipment that presents a hazard, he will promptly inform NERCON so that a solution can be achieved.

Warning

*Failure to follow these rules can
result in injury*

Note: The safety standards outlined in this manual have NOT been exactly duplicated from the latest issue of the ANSI booklet, *Safety Standards for Conveyors and Related Equipment B20.1-20--*. We recommend that all operators and maintenance personnel review this booklet, which you can obtain by contacting the American Society of Mechanical Engineers at the following address:

American National Standards Institute @ www.ansi.org

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Section: 1 - Introduction

1-1: How to Use this Manual

This manual is supplied to assist you in installing, maintaining and servicing the FLEX FLOW ACCUMULATOR. It is essential for safe and efficient operation that the information and guidelines presented here are properly understood and implemented. Following is a brief description of the information contained in each section:

1. *Introduction:* Basic information about the manual and the system and trademarks/servicemarks (if any) used in the manual.

2. *Safety:* Safety precautions for Flex Flow Accumulator operation and maintenance.

3. *Installation:* Mechanical and Electrical information about the installation of the Flex Flow Accumulator.

5. *Periodic Inspection Guide:* One of the most important factors in the overall cost effectiveness of your Flex Flow Accumulator is the periodic inspection; that is, eliminating the cause of potential trouble before the trouble occurs. This concept makes it possible to perform maintenance and repair operations on a predetermined schedule rather than according to chance. Implementing a periodic inspection program on your NERCON equipment serves to increase its dependability, longevity, and efficiency, all of which add up to lower operating costs.

6. *Troubleshooting:* Despite the best operating techniques and preventive maintenance program, machines do sometimes fail. This section contains suggested step-by-step methods to aid in detecting the cause or causes of these failures.

Observe the equipment when it is functioning properly in order to detect failure and/or to perform maintenance or adjustment on the equipment.

1-2: Integration

- The flex flow accumulator is designed to accumulate product if downstream equipment is faulted or paused. If the equipment directly downstream of the flex flow is no longer taking product away, the flex flow will continue to accumulate product until the slide travels to the full position and makes contact with the storage full limit. Nercon recommends using a photo eye to detect any jams on the conveyor as well as monitoring the drive signal of the downstream equipment. Likewise the same care must be taken with the upstream equipment as to not overload the infeed of the flex flow. If the flex flow chain is stopped or pauses, the infeed equipment must also stop. The infeed equipment should not be allowed to restart until the flex flow has discharged product downstream and the slide has pulled off of the storage full limit.

1-3: Operational Concepts

- The flex flow accumulator is powered by 2 motors. One to drive the infeed chain and one to drive the discharge chain.
- The flex flow accumulator consists of a slide mechanism with conveyor chain sprockets that allow the infeed drive to operate independently of the discharge drive.
- When the infeed drive operates, storage is consumed. When the discharge drive operates, storage is replenished.
- If both drives are in operation at the same time, the discharge drive is set up to run slightly faster than the infeed drive allowing the accumulator to slowly de-accumulate product until the slide reaches the almost empty position. If the slide reaches the almost empty position, the discharge drive will run slower than the infeed drive allowing product to accumulate again for a short time.
- If the slide reaches its physical travel limits on each end of the accumulator, full or empty, the infeed drive or discharge drive will stop to prevent damage to the machine.

Section: 2 – Safety

2-1: General Safety

Note: The safety procedures/policies listed in this chapter are not intended to address fire-related considerations. Your system must comply with any applicable national, state, and local codes.

Follow safety precautions for industrial work at all times. With any piece of industrial equipment, conditions exist that might cause injury to you or your co-workers. Because it is not possible to describe each potentially hazardous situation that might develop, you must be alert at all times for unsafe conditions. To avoid injury, use maximum possible care and common sense and adhere to all safety standards.

Take special care while maintaining and inspecting electrical equipment and devices. All personnel working on or around the system should be aware of, and adhere to, all **CAUTION, DANGER, and WARNING** signs. These signs are posted to reduce the risk of injury to all personnel. Maintain signs in a legible condition. Contact your supervisor to post additional safety signs if you feel they are necessary.

Follow these general safety rules, as well as specific regulations and guidelines listed in this publication:

2-2: Mechanical Safety Guidelines

- Do not touch moving parts.
- Do not walk, ride or climb on the belt.
- Do not operate the flex flow accumulator with the protective guards removed or with personnel inside a customer defined safety perimeter.
- Keep jewelry, clothing, hair, etc., away from any and all moving parts.
- Know the location and function of all start/stop devices and keep those devices free from obstruction.
- Clear all personnel from the equipment before starting.
- Do not attempt to clear product jams while the flex flow is running.
- Allow only trained and authorized personnel to maintain or repair the flex flow accumulator.

- Do not load the flex flow beyond the specified design limits.
- Do not attempt to make repairs to the flex flow while it is running
- Do not modify equipment without checking with the manufacturer.
- Do not operate or perform maintenance on the equipment when taking any type of drug or sedative, or when over fatigued or under the influence of alcohol.
- Do not operate the flex flow if any part is damaged or improperly installed.
- Be sure that all replacement parts are interchangeable and of equal quality as original parts supplied.

When the flex flow is stopped for maintenance or repair purposes, you must lock out or tag out the starting devices, prime movers, or powered accessories in accordance with a formalized procedure designed to protect everyone involved against an unexpected restart. Also, alert all personnel to the hazard of stored energy, which can exist after the power source is locked out. For additional information, refer to the latest issue of ANSI Z244.1-20--, American National Standard for Personnel Protection - *Lockout/Tagout of Energy Sources - Minimum Safety Requirements*. Also, OSHA 29CFR Part 1910.147 "*Control of Hazardous Energy sources (Lockout/Tagout)*", which includes requirements for release of stored energy

2-3: Electrical Safety Guidelines

When an equipment problem occurs, the first priority is to ensure that power is disconnected from the affected area, as well as from the control panel where troubleshooting and repairs are performed.

Once you verify that power is locked out, make sure you inform other personnel in the area of the situation so they do not unexpectedly restore power.

After you inform your co-workers, recheck the power supply to ensure that power is disconnected in the affected control panel. Remove fuses only with insulated fuse pullers and check terminal strips for current-carrying wires. Before you perform any repairs with an exposed conductor or terminal, use an approved voltmeter to check for continuity to ground and continuity between other current-carrying conductors.

When you perform any kind of maintenance or repair involving electrical components, follow the guidelines listed below:

- **NEVER** reset a circuit breaker or replace an open fuse before determining and correcting the cause of the circuit interruption.
- **NEVER** bypass or use a jumper to replace any limit switch, fuse, circuit breaker, or other circuit protection or safety device.
- **NEVER** replace an open fuse with another that is not rated at the proper current and voltage. Always double check correct fuse specifications rather than replace the open fuse with one of the same current and voltage rating.
- **NEVER** rest tools on motors, transformers, terminal strips, or other control panel or electrical components. All tools used should be kept in a tool box or pouch.
- **NEVER** restore power or restart equipment before verifying that all tools, spare parts, etc., are removed from the work area and are safely stored.
- **NEVER** restore power or restart equipment before verifying that ALL personnel are aware of the condition and are safely clear of the equipment.
- **ALWAYS** replace any safety devices or guards removed during maintenance or repair before you restore power or restart equipment.
- **ALWAYS** use extreme caution and follow recommended safety procedures while you perform any electrical inspection or maintenance operations

2-3.1: Electrical Code

All electrical installations and wiring must conform to the National Electrical Code (Article 670 and other applicable articles) published by the National Fire Protection Association and approved by the American National Standards Institute, Inc.

2-3.2: Control Stations

Arrange control stations so that equipment operation is visible from the stations and clearly mark or label each station to indicate its function.

The emergency stop devices installed with your system are designed so that they cannot be overridden from other locations. Keep the area around your control station clear. Remove all miscellaneous equipment (such as inactive and unused actuators, controllers, and wiring) from control stations and panel boards, as well as obsolete diagrams, indicators, control labels, and other material that might confuse the operator.

2-3.3: Safety Devices

All safety devices, including wiring of electrical safety devices, are designed to operate in a "fail-safe" manner; that is, if power or the device fails, a hazardous condition will not result.

2-3.4: Emergency Stops and Restarts

In case of an emergency stop, first determine the cause of the stoppage and correct the situation that warranted the stop. To resume operation after a stoppage, manually reset or start at the location where the emergency stop occurred.

Note: Before you try to correct the situation, lock out or tag out the starting device, unless it must be operated to determine the cause or to safely remove the stoppage. For additional information, refer to the latest issue of ANSI Z244.1-20--, American National Standard for Personnel Protection Lockout/Tagout of Energy Sources - Minimum Safety Requirements.

2-4: Application Safety

The equipment used in your system is designed to convey specified commodities or materials within a certain rate and speed. It might not be possible to safely use the equipment outside of the intended capacities or speeds. Check with your supervisor if you have questions regarding the safe operation of the equipment.

2-5: Transfer, Loading, and Discharge Points

Prevent free-falling material that might result from flooding, ricocheting, or uncontrolled free-fall from occurring.

At transfer, loading, and discharge points, prevent unconfined and uncontrolled free-fall of material resulting from flooding, ricocheting, overloading, trajectory, leakage, or a combination thereof, if the material would create a hazard to personnel

Section 3: Installation

Note: All equipment must be installed to conform to the National and Local Safety Codes. In the event that any caution or warning labels affixed to the equipment are damaged in shipping or obscured from vision because of the position of the equipment on site, you should order the appropriate replacement labels before operating the equipment.

3-1: Installation

Nercon pre-assembles and pre-tests all flex flow accumulators prior to shipment. This allows us to ship the unit nearly completely assembled. The units are sometimes split into smaller lengths and placed on skids separately. Additional bracing is added to support any critical non-removable parts. To protect certain areas during shipping they will be removed and packaged separately. These sections are clearly labeled when shipped and can be easily installed per the detail drawings provided.

3-1.1: Unloading

In most cases the flex flow accumulator will arrive on a single skid and it is recommended to be pushed or pulled with a fork truck. Each unit is custom and an estimated weight will be provided so that the installation contractor may plan for appropriate fork truck capacity.

3-1.2: Completing Assembly

Connect all remaining joints, carefully check conveyor for correct elevation and level, and then tighten the fasteners to secure the section being installed. Ideally every transition from one conveyor to the next should have a slight drop in elevation so that the products do not snag or hang up. Typically 1/16" is adequate from conveyor to conveyor. Once the flex flow is positioned as required, the infeed and discharge elevations have been verified, the unit should be lagged to the floor and any other bracing added.

3-1.3: Wiring

As noted above in section 2-5, be sure to follow all National Electrical Code and any local stated codes. Also be sure to follow all recommendations noted above in sections 2-3 through 2-8.

Note: Brake Motors

Some units required a brake motors on the belt drive to ensure stoppage of the belt. Brake motors will be prewired and programmed accordingly to the Nercon supplied enclosure.

The wiring, programing, and sequencing for all the drives in the flex flow system should be aligned with the recommendations noted above and all provided schematics. Failure to do so will lead to premature chain wear and possible product or equipment damage.

3-1.4: System Sensors

The flex flow accumulator units have a total of 9 sensors that monitor the accumulator's performance while in operation. A backup/jam detect photoeye is located at both the infeed and discharge points of the accumulator. If either of these photoeyes remain blocked for a predetermined amount of time they are designed to generate a fault and stop the accumulator drives. Four inductive proximity sensors are mounted on the accumulator frame to monitor the location of the flex flow slide. These four sensors will be in the "empty", "almost empty", "almost full", and "full" locations. These proximity sensors are designed so that the control program will monitor the four signals to control the accumulator drives appropriately based on the location of the accumulator slide. Two cylinder position sensors will be mounted on the take up cylinder. One sensor is mounted at the end of the cylinder stroke and one is mounted slightly before the end of the cylinder stroke. The cylinder sensor mounted before the end of stroke is designed to create a warning signal that the take up is almost out of chain. The accumulator drives are still permitted to run if this signal is on. The cylinder sensor mounted at the end of stroke is designed to stop the accumulator drives from running if the take up is out of chain. The final sensor on the flex flow accumulator unit is a pressure switch on the air feed to the take up. The pressure switch is designed to stop the accumulator drives if no air pressure is detected.

3-1.5: Chain Installation

Before installing the chain become familiar with the manufacturer's installation and maintenance manual provided in addition to this manual. For installation convenience, proper belt orientation is also noted on the detailed drawings.

After the unit has been properly positioned, lagged, and wired, the chain can be installed. Make sure that the take-up cylinders are complete retracted before chain installation. The most effective way to install the belt is to start at the infeed of the unit as described on the detailed drawing. Tie a rope to one end of the chain and carefully feed the other end of the rope along the chains return path. Pull the rope and chain in the infeed return and up around the infeed drive sprocket and stop. The same procedure applies for the discharge return except start at the take-up end and pull the chain through the return and up around the discharge drive sprocket and stop. The carry way chain can now be threaded along the chain path on top of the unit and connected to the ends of the return chains you previously pulled in. Be sure to follow the belt path as exactly shown on the detail drawings supplied for your specific unit. Notches have been designed into the chain guide wear strips at the infeed drive and the take-up to allow for chain pin removal and connection.

3-1.6: Proper Chain Quantity

To initially obtain the proper amount of chain in the system, be sure the chain is pulled as taught as possible by hand throughout the system and the take-up is located in the fully retracted position. This will require monitoring as the system completes its break in period. Reference the periodic inspection guide for schedule and cleaning requirements.

Once the chain has been properly installed you can move onto the initial on-site start-up. (Note: Nercon runs all units in house prior to shipping.)

Section 4: Initial Start-up

4-1: Initial Start-up Check List

- Flex flow accumulator is securely fastened to the floor and all supplied cross bracing and tie brackets are mounted.
- Check that the proper amount of chain is in the system. (Section 3-2.6)
- Check the entire chain path for any obstructions, snags, or tight spots that may have been created during shipping or installation.
- Be sure there is nothing on the belt before initial on-site start-up. (i.e. tools, computers, etc.)
- Check that the sensors are functioning properly.
- E-stop relay must be set.
- All faults must be identified and cleared.
- Ensure that 22psi of air is supplied to the take-up cylinders.
- The flex flow is supplied with an air pressure switch which will fault the unit if the pressure falls below the set point of 15psi.

Section 5: Periodic Inspection Guide

5-1: Introduction

NERCON equipment is designed to operate with a minimum of maintenance. Downtime on any part of a system involves both time and money. Certainly not all breakdowns or failures can be detected before they occur; however, many can be prevented if you follow a regular periodic inspection program. When you install new equipment, you should establish a schedule of periodic inspection. The inspection procedures outlined in this manual provide an easy means of determining the operational status of the equipment. This will enable you to identify possible trouble areas, so that the suspect condition does not deteriorate to the point of equipment failure.

5-2: Purpose

The objective of the periodic inspection schedule is to ensure that the equipment performs at maximum efficiency over a long period of time. This helps to eliminate costly repairs. Do not assume that trouble will occur and, therefore, pass over inspection items. Standardized procedures ensure effective control over maintenance operations and enable you to compare equipment in order to evaluate the inspection program.

Note: Replace any faulty parts immediately upon discovery during scheduled inspections.

5-3: Periodic Inspection

In the course of flex flow operation, periodic inspection of the system is required to detect problems and make repairs before serious damage occurs. The important thing is to set up a regular inspections and maintenance schedule.

Multiflex Chain Checklist: (Daily/Weekly/Monthly)

- D:** During operation monitor chain performance for any irregularities.
- D:** Check for any product spillage or build up that would affect chain performance.
- D:** Monitor the surface of the wear strips for any contaminants that could affect the friction relationship between the chain and the wear strips.

- D:** Chain length / take-up position. (Daily for first 500 hours of operation only)
- W:** Chain length / take-up position. (Weekly after 500 hours of operation only)
- W:** Inspect entire chain length for any damaged or missing top plates.
- W:** Check for any foreign debris on or around the chain path.
- W:** Look for unusual wear patterns on the chain surface and inner edge.
- W:** Examine sprockets for signs of dirt build-up in tooth pockets.
- M:** Examine drive sprockets for signs of excessive wear.
- M:** Check the carry ways and return way wearstrips for excessive wear.

5-4: Cleaning

In general, the flex flow accumulation conveyor can be treated like most other conveyor in the plant. Some major differences apply based on the level of washdown you have purchased. This is directly related to the operational environment your flex flow will reside in. Regardless of environment, **at no point should any lubricants be applied to the tabletop chain or mattop belt.**

5-4.1: Non-Washdown Flex Flows

- Non-washdown flex flows are not intended to be completely sprayed down. However if absolutely required “spot” rinsing can be an effective way to clean isolated areas of contaminants. These areas should be dried immediately when cleaning is complete to prevent any unwanted corrosion.
- Non-washdown units are recommended to be wiped down with clean rags until clean.

Section 6: Troubleshooting

PROBLEM	CAUSE	ACTION
Infeed Motor Overload Trip	<ul style="list-style-type: none"> • VFD overload parameter is incorrectly set. • Chain damaged. • Chain wear strips worn. • Foreign material or product has built up in the chain path. • Chain guide discs are blocked or jammed preventing them from moving freely. 	<ul style="list-style-type: none"> • Verify that the VFD overload parameter is set as listed in the electrical schematics. • Check the chain for any damage or excessive wear. Replace if necessary. • Check the chain wear strips for any damage or excessive wear. Replace if necessary. • Check for build up or foreign material in the chain path. Clear the chain path if buildup exists. • Check for product build up or foreign material in the path of the carriage guide wheels. • Verify that the chain guide discs move freely.
Discharge Motor Overload Trip	<ul style="list-style-type: none"> • VFD overload parameter is incorrectly set. • Chain damaged. • Chain wear strips worn. • Foreign material or product has built up in the chain path. • Chain guide discs are blocked or jammed preventing them from moving freely. 	<ul style="list-style-type: none"> • Verify that the VFD overload parameter is set as listed in the electrical schematics. • Check the chain for any damage or excessive wear. Replace if necessary • Check the chain wear strips for any damage or excessive wear. Replace if necessary. • Check for any build up or foreign material in the chain path. Clear the chain path if buildup exists. • Check for product build up or foreign material in the path of the carriage guide wheels. • Verify that the chain guide discs move freely.
Chain jumping	<ul style="list-style-type: none"> • Misaligned carriage causing it to travel non-parallel to the flex flow table frame. • Chain sprockets are misaligned. 	<ul style="list-style-type: none"> • Verify that the carriage is adjusted properly and traveling parallel to the table frame. • Verify that the chain sprockets are aligned properly.
Table Does Not Run	<ul style="list-style-type: none"> • E-Stop pushbutton is pressed. • One or more motor disconnects are switched off. • Pneumatic take-up has insufficient air pressure. • Take-up is out of space to take up any additional chain. 	<ul style="list-style-type: none"> • Verify that the safety circuit is reset. • Verify that all motor disconnects are switched on. • Verify that the chain take-up unit's air is turned on and that the air pressure switch signal is on. • Verify that the chain take-up maximum limit sensor is not active. If sensor is active, remove excess chain.

Stalled Motor	<ul style="list-style-type: none"> • Over current on brake motors. 	<ul style="list-style-type: none"> • Verify that brake motors are wired according to electrical schematics. • Verify that brake fuses are installed or not blown. • Check chain guide discs for damage or misalignment. • Check rail brackets to verify no damage
Chain guide disc has a forward pitch	<ul style="list-style-type: none"> • Discs' shaft is loose or bent. 	<ul style="list-style-type: none"> • Tighten loose shaft. • Replace bent shaft.
Chain Jam	<ul style="list-style-type: none"> • Chain is installed backwards. 	<ul style="list-style-type: none"> • Remove chain and install in the proper direction. The "points" should be facing in the direction of travel.
Excessive plastic chain shavings on discs	<ul style="list-style-type: none"> • Excessive chain tension. • Chain is riding up on the guide discs into the hold-down. 	<ul style="list-style-type: none"> • Verify air pressure on pneumatic take-up (22 psi).
Bent rail brackets	<ul style="list-style-type: none"> • Rail brackets catch on the carriage. 	<ul style="list-style-type: none"> • Set the height of the rail brackets to a height that will not catch on the carriage.
Chain break	<ul style="list-style-type: none"> • Rail brackets catch on the carriage 	<ul style="list-style-type: none"> • Set the height of the rail brackets to a height that will not catch on the carriage. • Check disc alignment • Replace chain
Bent Shaft on chain guide discs	<ul style="list-style-type: none"> • Carriage catching on low guide rail brackets preventing the carriage from moving. 	<ul style="list-style-type: none"> • Adjust rail brackets to avoid inference with the carriage. • Tighten shaft if it is loose; replace if bent.

HMI DISPLAY FAULT	CAUSE	ACTION
Accumulator Infeed Drive Is Faulted	<ul style="list-style-type: none"> • VFD controlling the infeed drive is faulted. 	<ul style="list-style-type: none"> • View VFD LCD display to gather fault code. • Perform the necessary action to clear the VFD fault.
Accumulator Infeed Drive Motor Disconnect Has Been Turned Off	<ul style="list-style-type: none"> • Infeed drive motor disconnect is switched off. 	<ul style="list-style-type: none"> • Switch the motor disconnect on.
Accumulator Infeed Zone (CRM) Control Relay Master Is Not Reset	<ul style="list-style-type: none"> • Infeed subzone safety relay has not been reset following an E-Stop. 	<ul style="list-style-type: none"> • Press the Infeed subzone blue reset pushbutton and verify that the pilot light is illuminated and solid blue.
Accumulator Infeed Zone Stop Pushbutton Is Pressed At The Main Enclosure	<ul style="list-style-type: none"> • Infeed subzone E-Stop pushbutton has been pressed at the main enclosure. 	<ul style="list-style-type: none"> • Twist and pull the Infeed subzone E-Stop pushbutton so that the red pilot light is no longer illuminated.
Accumulator Infeed Conveyor Jam Fault Detected	<ul style="list-style-type: none"> • Product jam at the infeed of the accumulator. • Photoeye and reflector are misaligned at the infeed of the accumulator. 	<ul style="list-style-type: none"> • Verify that the photoeye and reflector are aligned properly • Clear the product jam at the infeed of the accumulator.
Accumulator Discharge Drive Is Faulted	<ul style="list-style-type: none"> • VFD controlling the discharge drive is faulted. 	<ul style="list-style-type: none"> • View VFD LCD display to gather fault code. • Perform the necessary action to clear the VFD fault.
Accumulator Discharge Drive Motor Disconnect Has Been Turned Off	<ul style="list-style-type: none"> • Discharge drive motor disconnect is switched off. 	<ul style="list-style-type: none"> • Switch the motor disconnect on.
Accumulator Discharge Zone (CRM) Control Relay Master Is Not Reset	<ul style="list-style-type: none"> • Discharge subzone safety relay has not been reset following an E-Stop. 	<ul style="list-style-type: none"> • Press the Discharge subzone blue reset pushbutton and verify that the pilot light is illuminated and solid blue.
Accumulator Discharge Zone Stop Pushbutton Is Pressed At Main Enclosure	<ul style="list-style-type: none"> • Discharge subzone E-Stop pushbutton has been pressed at the main enclosure. 	<ul style="list-style-type: none"> • Twist and pull the Discharge subzone E-Stop pushbutton so that the red pilot light is no longer illuminated.
Accumulator Discharge Conveyor Jam Fault Detected	<ul style="list-style-type: none"> • Product jam at the discharge of the accumulator. • Photoeye and reflector are misaligned at the discharge of the accumulator. 	<ul style="list-style-type: none"> • Verify that the photoeye and reflector are aligned properly • Clear the product jam at the infeed of the accumulator.
Global (CRM) Control Relay Master Is Not Reset	<ul style="list-style-type: none"> • Global zone safety relay has not been reset following an E-Stop. 	<ul style="list-style-type: none"> • Press the Global zone blue reset pushbutton and verifies that the pilot light is illuminated and solid blue.
Global E-Stop Pushbutton Is Pressed At The Main Enclosure	<ul style="list-style-type: none"> • Global zone E-Stop pushbutton has been pressed at the main enclosure. 	<ul style="list-style-type: none"> • Twist and pull the Discharge subzone E-Stop pushbutton so that the red pilot light is no longer illuminated.
Pneumatic Take-up Air Pressure Fault Present	<ul style="list-style-type: none"> • Air pressure at the pneumatic take-up unit is below the minimum required level of 15 psi. 	<ul style="list-style-type: none"> • Apply air pressure to the pneumatic take-up. • Increase the air pressure and verify that he air pressure at the pneumatic take-up is set to 22 psi.

Pneumatic Take-up Out Of Chain Take-up Space	<ul style="list-style-type: none"> • Pneumatic take-up air cylinder has been extended to its maximum distance. There is no room to take-up anymore chain slack in the accumulator 	<ul style="list-style-type: none"> • Remove chain links from chain and move cylinder rod from maximum extended position. • Verify that there is sufficient tension on the chain.
Pneumatic Take-up First Sensor On Warning Almost Out Of Space	<ul style="list-style-type: none"> • Pneumatic take-up is extended to a position close to its maximum distance. 	<ul style="list-style-type: none"> • This is a warning only and will not prevent the accumulator from operating. • Remove chain links from the chain. • Verify that there is sufficient tension on the chain.

Section 7: Support Drawings

7-1: Flex Flow Accumulator Nomenclature



GENERIC FLEX FLOW
MECHANICAL.pdf

Section 8: Electrical Drawings



GENERIC FLEX FLOW
TABLE ELEC.pdf

Section 9: Supplemental Manuals

9-1: Intralox Belting



INTRALOX 400
SERIES.pdf



INTRALOX BELT
MANUAL.pdf

9-2: Multiflex Chain



1710 tab k.pdf

9-3: SEW Eurodrive Brake Motor & Reducer



SEW EURODRIVE
GEARMOTOR PARTS



SEW EURODRIVE
MOTOR AND INTERGI



SEW EURODRIVE
INDIVIDUAL BRAKE.p



SEW EURODRIVE
SA_SH67_DR.pdf



SEW EURODRIVE
TERMINAL BOX.pdf

9-4: Bearings



AMI FLANGE
MOUNTED BEARINGS

9-5: Cylinder (Take-Up)



BIMBA
M_3116_DXPB.pdf