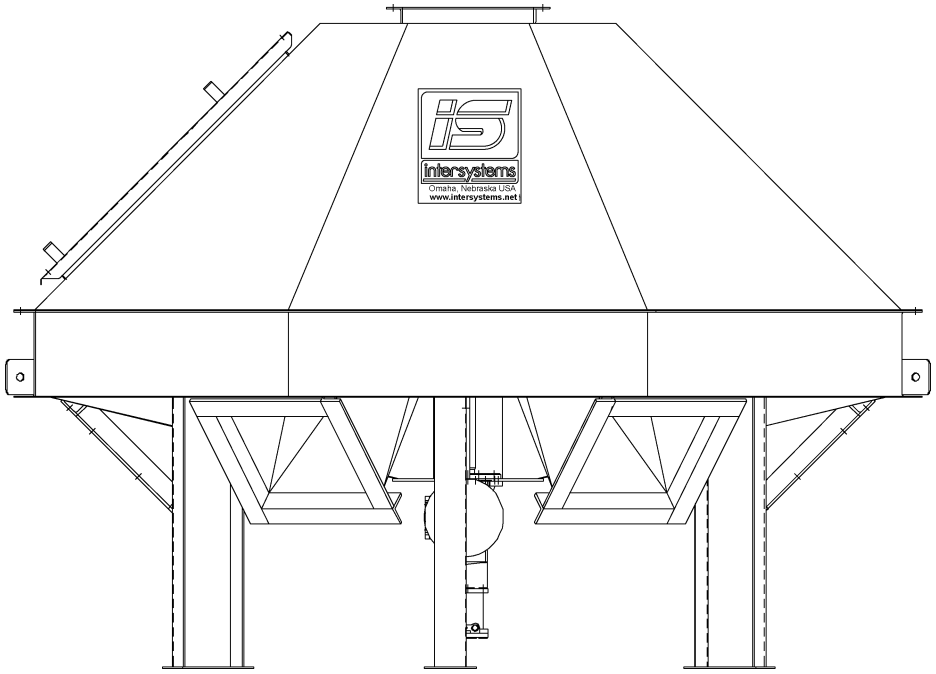


Distributor

Installation and Operation Manual

PNEG-2122

Version: 1.0

Date: 11-03-16

PNEG-2122

All information, illustrations, photos, and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Contents

General Information

InterSystems reserves the right to improve its product whenever possible and practical to do so. We reserve the right to change, improve and modify products at any time without obligation to make changes, improvements and modifications on equipment sold previously.

This manual covers the installation and operation for the Distributor. This manual provides guidelines for installing the product. You must retain a qualified contractor to provide on-site expertise. INTERSYSTEMS IS NOT RESPONSIBLE FOR THE INSTALLATION OF THIS PRODUCT.

DO NOT exceed the distributor's rating. A certified drawing or drawings furnished with the distributor gives its capacity in BPH (Bushels Per Hour). The drawing also specifies the encoder wiring diagram and operating speed of the spout and other pertinent data. Consult Intersystems before making any changes to the distributor or its operating environment; in particular, any change in the speed of the distributor drive. Careless changes could result in death or serious injury to people, and/or reduce the performance and service life of the equipment.

Never perform any service on this distributor or any other powered equipment until all power has been shut off and locked out so that it cannot be restored without the consent and knowledge of the person who interrupted power. Power includes electrical, fluid, mechanical (cable, belt, chain, shaft, etc.), or gravity where the load or part of the equipment is suspended. Failure to observe all safety precautions, including those dictated by ordinary common sense, can result in death or serious injury to personnel, loss of product (distributed material), and damage or destruction of the equipment.

General Safety Statements

1. The distributor is designed and manufactured with operator safety in mind. However, residual hazards remain due to the nature of material handling, and specific material hazards. Use extreme caution at all times.
2. Modifications to equipment may cause extremely dangerous situations that could result in damage to the equipment as well as serious injury or death. Never modify the equipment.
3. Intersystems recommends that you contact the local power company to have a representative survey the installation to ensure wiring is compatible with their system and adequate power is supplied to the unit.

Replacement Parts

The certified drawings furnished with the distributor list the components, which are likely to require replacement. Replacements for any other components, including structural members can be supplied upon request.

For direct parts orders or requests for technical assistance to your sales representative or to:

InterSystems
9575 No. 109TH AVE
Omaha, NE. 68142
Phone: (402) 330-1500
FAX: (402) 330-3350

Please have available the Model Number and Serial Number of the equipment in question, as well as the facility name, city, and state where the equipment is INSTALLED.

Safety Guidelines

Safety guidelines are general-to-specific safety rules that must be followed at all times. This manual is written to help you understand safe operating procedures and problems that can be encountered by the operator and other personnel when using this equipment. Save these safety guidelines for future reference.

As owner or operator, you are responsible for understanding the requirements, hazards, and precautions that exist and to inform others as required. Unqualified persons must stay out of the work area at all times.

Alterations must not be made to the equipment. Alterations can produce dangerous situations resulting in SERIOUS INJURY or DEATH.

This equipment must be installed in accordance with the current installation codes and applicable regulations, which must be carefully followed in all cases. Authorities having jurisdiction must be consulted before installations are made.

When necessary, you must consider the installation location relative to electrical, fuel and water utilities.

Personnel operating or working around equipment must read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

ST-0001-3

Cautionary Symbol Definitions

Cautionary symbols appear in this manual and on product decals. The symbols alert the user of potential safety hazards, prohibited activities and mandatory actions. To help you recognize this information, we use the symbols that are defined below.

DANGER — This symbol indicates an imminently hazardous situation which, if not avoided, **will result in serious injury or death.**

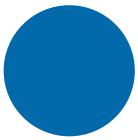
WARNING — This symbol indicates a potentially hazardous situation which, if not avoided, **can result in serious injury or death.**

CAUTION — This symbol indicates a potentially hazardous situation which, if not avoided, **can result in minor or moderate injury.**

NOTICE — This symbol is used to address practices not related to personal injury.

This symbol indicates a general hazard.

This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005-2

Safety Cautions

Use Personal Protective Equipment

- Use appropriate personal protective equipment:

Eye Protection

Respiratory Protection

Foot Protection

Hearing Protection

Head Protection

Fall Protection

Hand Protection

- Wear clothing appropriate to the job.
- Remove all jewelry.
- Tie long hair up and back.

ST-0004-1

Follow Safety Instructions

- Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.
- Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.
- If you do not understand any part of this manual or need assistance, contact your dealer.

ST-0002-1

Maintain Equipment and Work Area

- Understand service procedures before doing work. Keep area clean and dry.
- Never service equipment while it is operating. Keep hands, feet, and clothing away from moving parts
- Keep your equipment in proper working condition. Replace worn or broken parts immediately.

ST-0003-1

Stay Clear of Hoisted Equipment

- Always use proper lifting or hoisting equipment when assembling or disassembling equipment.
- Do not walk or stand under hoisted equipment.
- Always use sturdy and stable supports when needed for installation. Not following these safety precautions creates the risk of falling equipment, which could crush personnel and cause serious injury or death.

ST-0047-1

Sharp Edge Hazard

- This product has sharp edges, which can cause serious injury.
- To avoid injury, handle sharp edges with caution and always use proper protective clothing and equipment

ST-0036-2

Install and Operate Electrical Equipment Properly

- Electrical controls must be installed by a qualified electrician and must meet the standards set by applicable local codes (National Electrical Code for the US, Canadian Electric Code, or EN60204 along with applicable European Directives for Europe).
- Lock-out power source before making adjustments, cleaning, or maintaining equipment.
- Make sure all equipment and bins are properly grounded.

ST-0027-3

Confined Space Hazards and Entry Procedures

- Note that the interior of this equipment is considered a confined space. Maintenance of this equipment can require access to the confined space.
- Access doors must be shut and locked except when access is required.
- Doors giving access to dangerous equipment must be safety interlocked.
- The following entry procedures must be followed:
  - — Be aware of all possible hazards present inside the confined space and wear personal protective equipment (PPE) as needed.
  - — Complete a permit to work and follow all permit required confined space entry procedures defined by the site manager.
  - — Make sure that the area has been purged of any hazardous products or gases. Check the atmosphere for harmful gases or vapors with a suitable gas analyzer and make sure levels are safe before entering.
  - — Do not smoke or use naked flames.
  - — Lock out and tag out power supplies and fuel supplies to all equipment.
  - — Do not work alone. Work in teams of at least three so that help is immediately available in the event of an emergency.
  - — Confirm that all personnel have safely exited the equipment and tools have been recovered once work is complete.

ST-0055-1

Flying Material Hazard

- Flying material can cause severe eye injury or blindness.
- Wear safety glasses around operating equipment.

ST-0074-1

Safety Sign-Off Sheet

Below is a sign-off sheet that can be used to verify that all personnel have read and understood the safety instructions. This sign-off sheet is provided for your convenience and personal record keeping.

Date	*Employee Name*	*Supervisor Name*

ST-0007

The safety decals on your equipment are safety indicators which must be carefully read and understood by all personnel involved in the installation, operation, service and maintenance of the equipment.
To replace a damaged of missing decal, contact us to receive a free replacement.

InterSystems
9575 N. 109th Ave.
Omaha, Nebraska 68142
Toll Free: (800) 228-1483

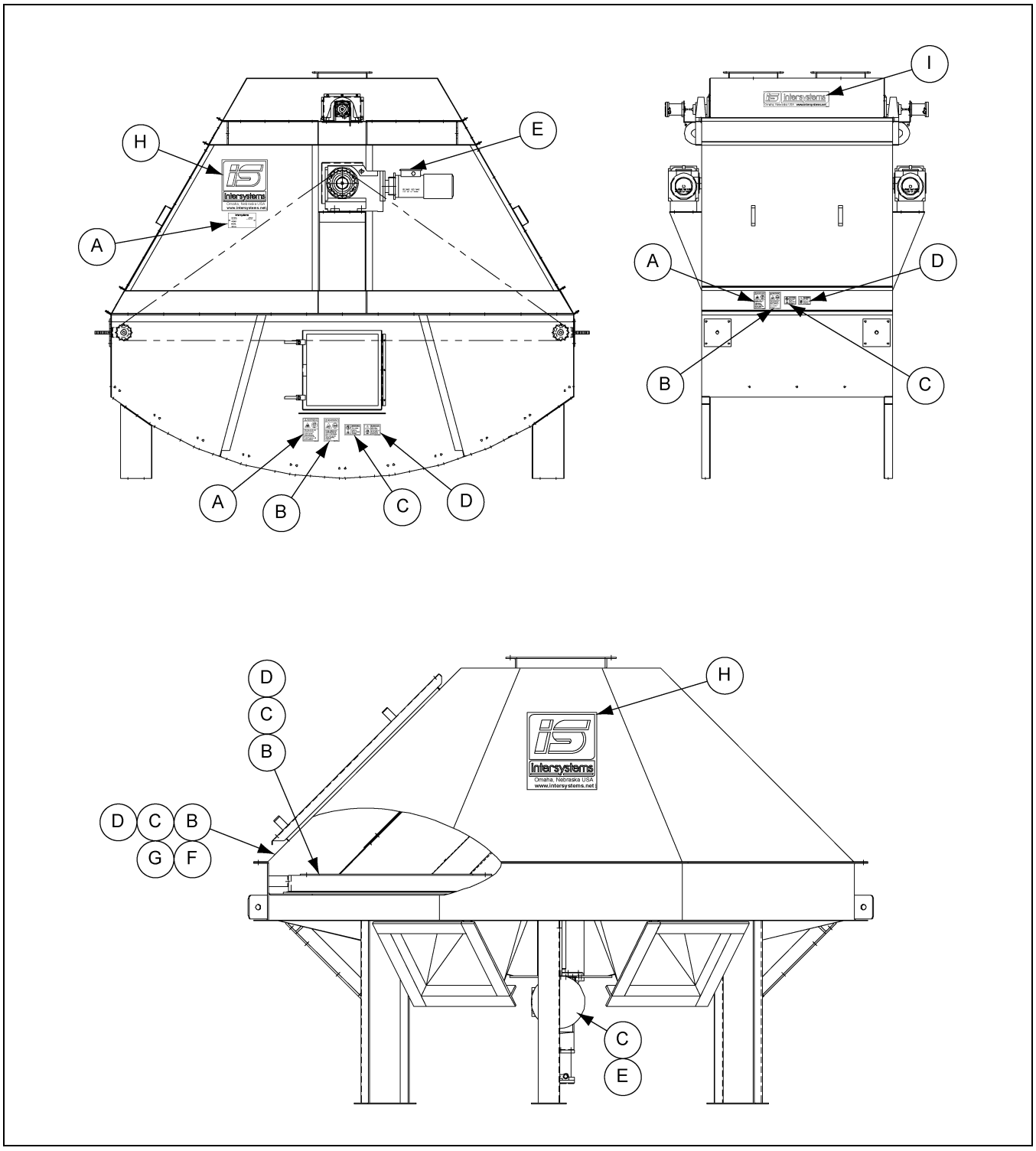
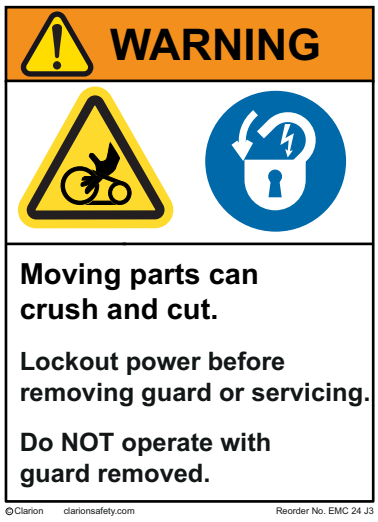


Figure 3A *Distributor Safety Decals Locations*

Ref #	Decal #	Decals	Description
A	EMC 24 J3		Moving Parts
B	EMC 28 J3		Eye Protection
C	EMC 403 34		Stay Clear

Ref #	Decal #	Decals	Description
D	EMC 402 34		Lock Out Machine
E	EMC 11 34		High Voltage
F	EMC 32 J3		Confined Space
G			Intersystems Serial No. Tag

3. Decals

Ref #	Decal #	Decals	Description
H	IS 5214X11		Intersystems Logo
I	IS 5517X4		Intersystems Strip

NOTE: *Thoroughly read safety information on Pages 5-14 before beginning installation and startup.*

Receiving Inspection

1. Carefully inspect the shipment for damage as soon as it is received. Verify that the quantity of parts or packages actually received corresponds to the quantity shown on the packing slip. One or more cartons containing the fasteners required for assembly are included with the shipment. Report any damage or shortage to the delivering carrier as soon as possible.
2. Intersystems responsibility for damage to the equipment ended with acceptance by the delivering carrier. Refer to the bill of lading for more detailed information.
3. Save all paperwork and documentation furnished with any of the conveyor components; for example, motor and reducer installation and lubrication instructions, etc.

Pre-Installation Preparation

1. The **MOST IMPORTANT** preparations are retaining a licensed engineer to plan the installation and a qualified millwright or contractor to mount the distributor and the accompanying equipment and structures. Before starting the distributor installation, review this manual, the drawing(s) furnished with the equipment and other applicable documents, including but not limited to, O.S.H.A. Regulations and the National Electrical Code.
2. Intersystems is the vendor of the Distributor and certain of its optional accessories only, and does not assume responsibility for the installation.
3. The installation recommendations contained within this manual are for consideration only. The user or installer should consult a civil or structural engineer regarding the design, construction, and supervision of the entire installation, including the support foundation and/or bracing system.
4. Intersystems Distributors are designed to be supported at the support gussets. The distributor has not been designed to support other equipment such as cleaners, other distributors, spouting, etc. Separate structures must be provided for any accessory equipment.

Distributor Mounting

In the process of leveling the distributor, Intersystems recommends welding the distributor around its perimeter and at its lifting points before the connected spouts are in place and tightened.

Incorrect attachment of lifting cables to distributor or bracing from an adjoining structure will result in support failure, collapse of the distributor and death or severe injury to anyone in the area. Attach only at distributor support/lifting points.

NEVER attach any bracing directly to the sheet metal body. Sheet metal lacks the necessary stiffeness and thickness for sound structural joints.

The engineer or contractor supervising distributor installation is ultimately responsible for determining suitable guying and/or bracing methods and materials.

Distributor Intake

The elevator discharge, spout, chute, screw conveyor, etc., that feeds material into the distributor MUST enter the inlet tube at a minimum angle of 45° from horizontal plane (D). This is to ensure even distribution of material throughout the internal spout and to prevent clogging the inlet. A vertical section above the inlet equal to **1.5 X THE INLET DIAMETER HELPS THE MATERIAL FORM A VERTICAL FLOW AND MUST BE INSTALLED ATOP THE DISTRIBUTOR INLET.** (e.g. 14" diameter inlet requires at least 21" of vertical flow). Without the vertical section installed, it will be difficult to achieve sufficient distribution of material to all distributor outlets.

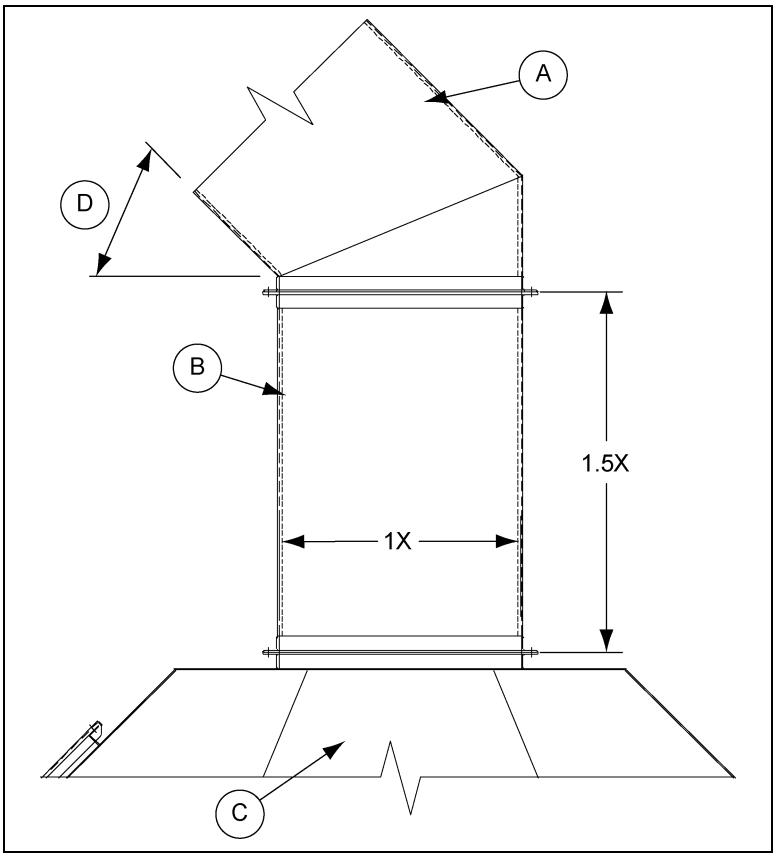


Figure 4A *Minimum Acceptable Inlet Configuration*

Ref #	Description	Ref #	Description
A	Incoming Material Spout	C	Main Distributor Body
B	Vertical Inlet Spout	D	45° or Greater, Dependent on Material Characteristics

In nearly all installations, material enters the inlet tube (B) at an angle. An inlet tube (B) is to be attached to the distributor (C) to allow material to enter from a more vertical direction. Grain will not flow through the distributor as designed if it is being fed at an angle.

Distributor Discharge

1. Spouting to carry off the material must be sized so that its capacity equals or exceeds the maximum capacity of the distributor to prevent material plugging in the inner spout or in the incoming spout.
2. **The distributor IS NOT designed to support the weight of any accessory equipment. Spouting, cleaners, valves, etc. must have their own supporting structures.**

Motor

Motor for Round Distributors

The motor used on round, or horizontally rotating, distributors is an INVERTER DUTY MOTOR. The distributor is designed to operate using a motor that operates at a frequency range of 4 Hz to 12 Hz. A Variable Frequency Drive (VFD) should be used to supply power to the motor at the correct frequency. An Intersystems control panel contains a VFD and is preset to supply power at the correct frequency. If an Intersystems control panel is not purchased then the customer is responsible for ensuring that the customer supplied VFD is set correctly. Refer to engineering for the correct frequency for each individual distributor.

Motor for Swing Style Distributors

The motor used on swing style distributors is a BRAKE MOTOR. The distributor is designed to operate using a motor that operates at full line voltage. A normally engaged brake on the motor is required to maintain location when power is not supplied. An Intersystems control panel contains REVERSING STARTERS and is preset to supply power at the correct overload current setting. If an Intersystems control panel is not purchased then the customer is responsible for ensuring that the customer supplied REVERSING STARTER is set correctly. Refer to engineering for the correct overload current for each individual distributor.

Encoder

Encoder with Optional Control Panel and VFD/Reversing Starter

All Intersystems distributors are supplied with a 4-20mA Explosion Proof Encoder. The Intersystems control panel is designed to work with these 4-20mA encoders. Refer to Installing the Distributor with Control Panel for installation procedures.

1. The Intersystems control panel uses a PLC and the supplied ENCODER to determine the position of the inner spout. With this information the PLC controls the VFD or reversing starter, which in turn powers the motor.
2. The Intersystems control panel contains the VFD/REVERSING STARTER therefore no further equipment is required except for field wiring.

Encoder without Optional Control Panel and VFD/Reversing Starter

An optional 12 bit Gray Code encoder is available for purchase to be used independent of Intersystems' control panel. If the distributor is controlled by a control panel obtained independent of the distributor, those ordering the control panel must be aware of a number of requirements.

1. The installer should determine the PLC and input card that will best work for their installation.
2. The control panel provider shall be responsible for ensuring the PLC and its input card is compatible with the provided 4-20 mA encoder and that the control panel can properly operate the distributor, or if the optional 12 bit GRAY CODE encoder should be purchased instead.
3. The PLC system must be able handle a resolution of at least 4,096 units per 360°.
4. A VFD is required to supply power at the correct frequencies to the inverter duty motor for rotary distributors and REVERSING STARTERS are required for supply power at the correct overload current to the brake motors for swing distributors.

IMPORTANT: *Intersystems is not liable for any damages or malfunctions to the distributor, surrounding equipment, or personnel due to input from an independently obtained control panel.*

Installing the Distributor

Installation of the distributor must not be started until the supporting structures and the guying anchors (if any are needed) have been completed and developed maximum strength.

IMPORTANT: *Regardless of who installs the equipment or the method of installation, the distributor must be level. If it is not level then it is likely to not operate as designed.*

The distributor needs to be secured and mounted into place before the motor is supplied with power. There are two (2) options when installing the distributor, installing the unit with the Intersystems control panel, and without the optional control panel. There are separate installation procedures based on which distributor is being installed. The three (3) types are Full Round, Flat Back and Swing. Distributors not being controlled by Intersystems control panels please refer to Distributor Control Setup and Homing Procedures *on Page 19*. Instructions on how to HOME the distributor or to MANUALY JOG the inner spout can be found.

Control Panel Installation

Full Round and Flat Back Distributor

1. Ensure that the distributor is secured and mounted in place, and that the unit is level.
2. Connect all field wiring to the unit as shown in the wiring diagrams on the CERTIFIED DRAWINGS. Check all wiring for proper connection and voltages. **NOTE:** *The motor supply wiring and the encoder shielded cabling must be in separate conduit.*
3. Open the outside door to the distributor to help locate the center spout. Care should be taken and all safety measures should be in place to avoid unnecessary contact and exposure to dangerous situations.
4. Turn ON the power to the control panel.

Swing Style Distributor

1. Ensure that the distributor is secured and mounted in place, and that the unit is level.
2. Connect all field wiring to the unit as shown in the wiring diagrams on the CERTIFIED DRAWINGS. Check all wiring for proper fit and voltages. **NOTE:** *The motor supply wiring and the encoder shielded cabling must be in separate conduit.*
3. Open the outside door to the distributor to help locate the center spout. Care should be taken and all safety measures should be in place to avoid unnecessary contact and exposure to dangerous situations. Never place any body part inside the distributor.
4. Turn ON power to the control panel.

Distributor Control Setup and Homing Procedures

Distributor Setup Homing and Operation (Rotary and Flat Back)

1. When powering up the distributor the following screen will appear. *(See Figure 5A.)*

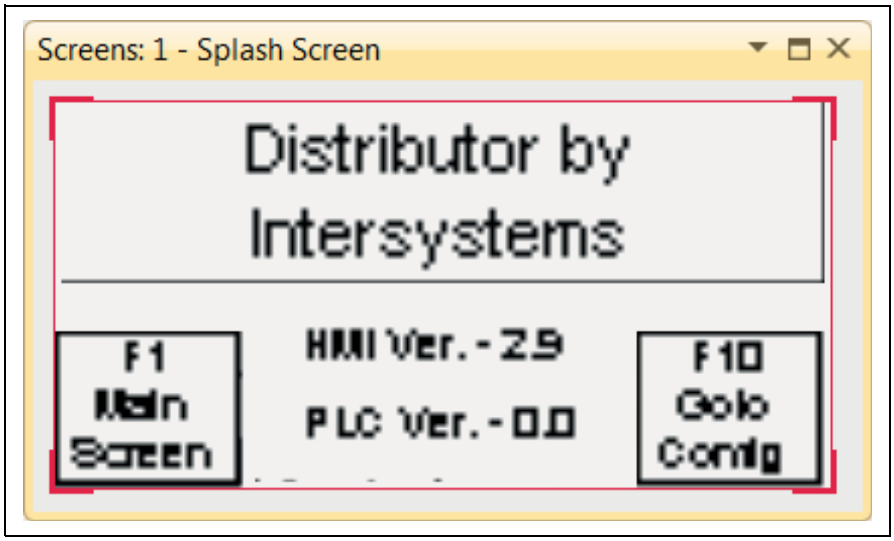


Figure 5A

2. Press **F1**. The following screen will appear as in *Figure 5B.* There are two (2) options. In normal operation, press **F6** and then enter the spout location. The other option is to press **F1** to go to the distributor setup screen.

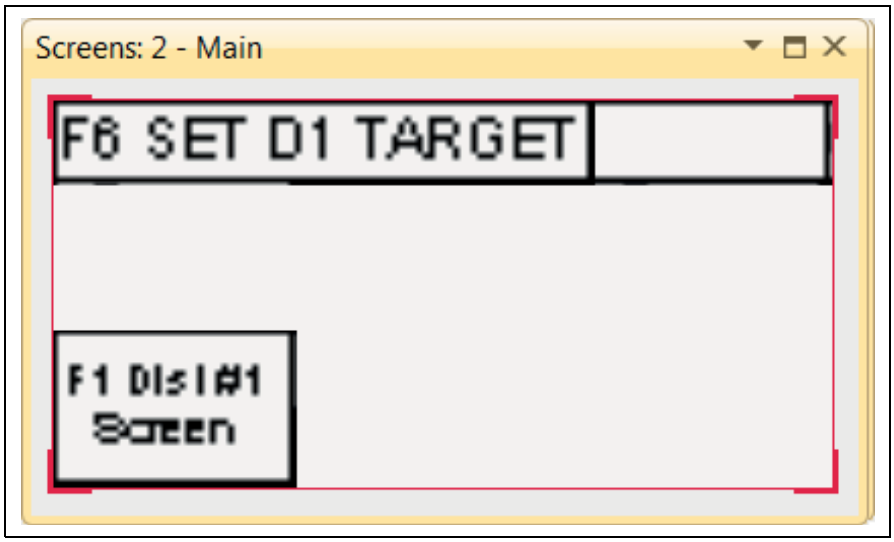


Figure 5B

3. Press **F1**. The following screen will appear as in *Figure 5C.* By pressing the **F3** key, the user will be taken to the jog screen. Use this option to jog the spout manually, home the distributor and troubleshoot the system. This option will be discussed later. By pressing the **F4** key, the user will be taken to the setup screen. Use this option to setup the distributor control for the angle of sweep and the number of spouts in preparation of performing the distributor homing operation.

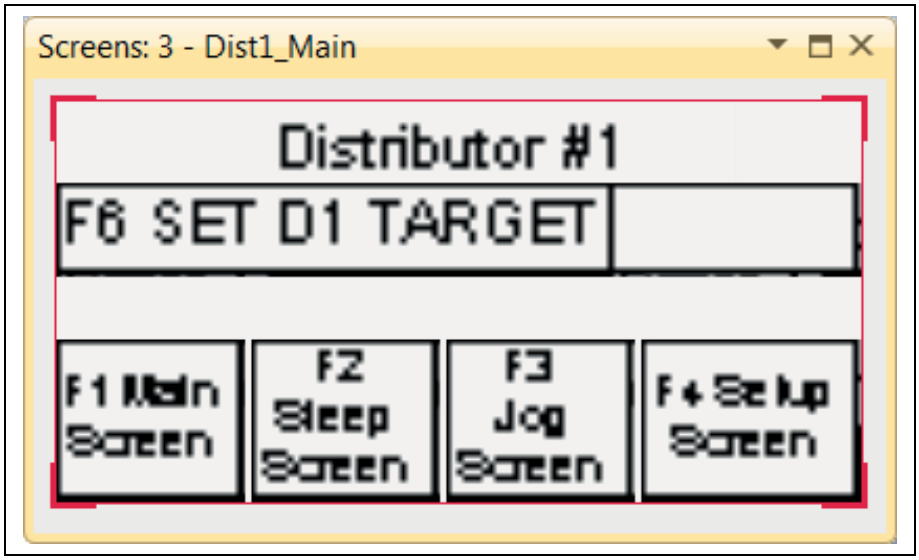


Figure 5C

4. Press the **F4** key. A **user** window will appear. Enter **"2"** and press "Enter"↵. The **password** window will appear: Enter **"1500"** for the password and press "Enter"↵. Upon pressing enter, the next screen will be the disclaimer screen. Press **F3** (OK). *(See Figure 5D.)*

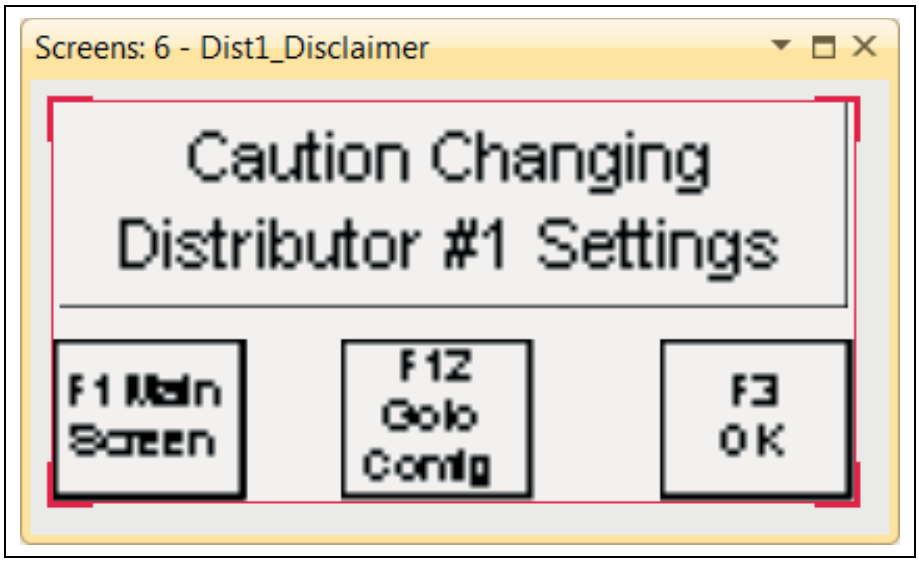


Figure 5D

5. After pressing **F3**, the following screen will appear as in *Figure 5E.* If the distributor is a flat back, press **F6** to show 180°. If the distributor is full round, press **F6** to show **360°**. Next press **F2** to enter the number of spout positions.

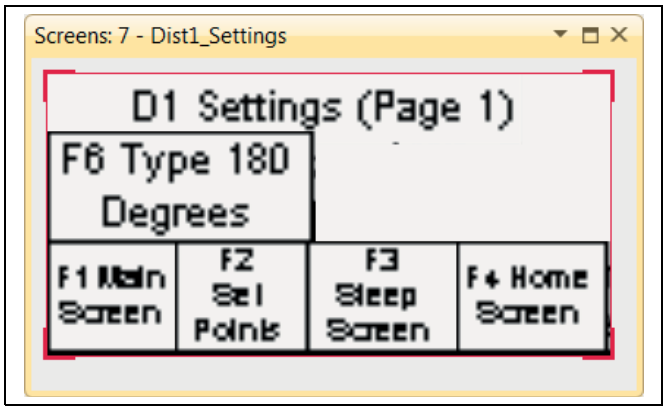


Figure 5E

6. After pressing **F2**, the following screen will appear as in *Figure 5F.* Press **F2** and enter in the number of spout holes in the distributor. Ignore he sweep angle setting. After entering in the number of positions, press the **F6 Update key**. This updates the settings that have been entered. The Reteach Home will be flashing. This is a reminder that the distributor must be homed. Press the **F4** Return key. This will take the user back to the previous screen.

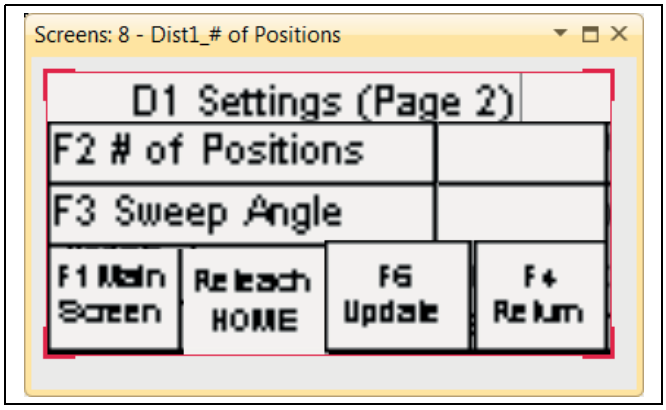


Figure 5F

7. After pressing the **F4** Return key, the screen will appear again as in *Figure 5G.* Press the **F1** Main Screen key.

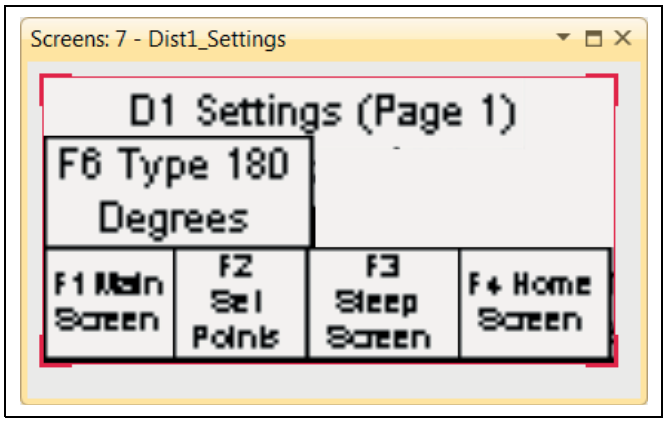


Figure 5G

8. Press the **F1** Main Screen key. The screen will appear as in *Figure 5H.*

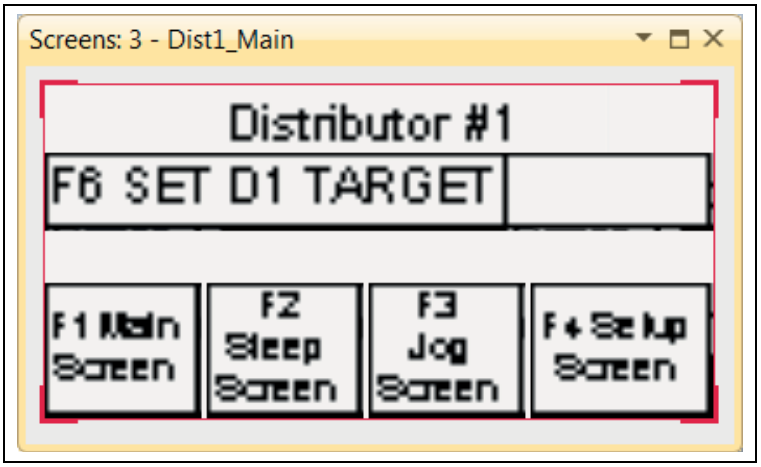


Figure 5H

9. Press the **F3** Jog Screen key. The following screen will appear as in *Figure 5I.* Use the **F6** and **F8** keys to move the spout forward and reverse.

   NOTE: *When jogging the spout forward, the spout must travel counterclockwise as looking down on the distributor. At the same time, the D1 degrees display must count up.*

   If not, have a certified electrician change the motor rotation or check the encoder wiring. Jog the spout to the center of the access panel opening. This is the **Home** position. Once in the Home position, press the **F3 Home Screen** key.

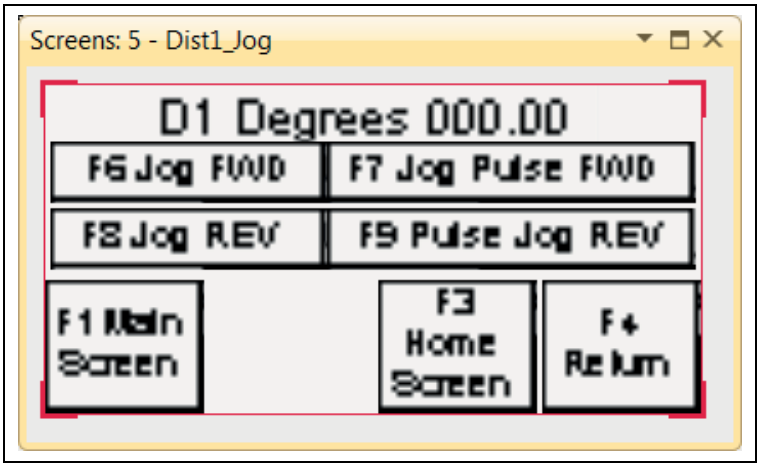


Figure 5I

10. After pressing the **F3** Home Screen key, the following screen will appear as in *Figure 5J.* Press the **F3** Teach Home key.

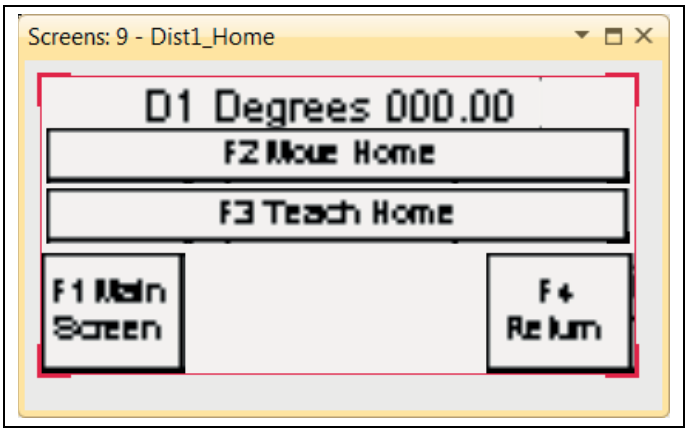


Figure 5J

11. After pressing the **F3** Teach Home key, the disclaimer screen will appear as in *Figure 5K.* Press the **F3 Yes** key if you wish to perform the home operation.

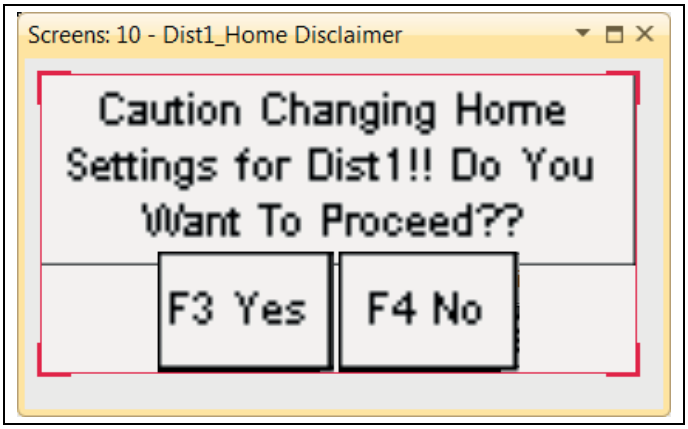


Figure 5K

12. Press the **F3** Yes key, the homing operation will be performed and the screen will appear again as in *Figure 5L.*

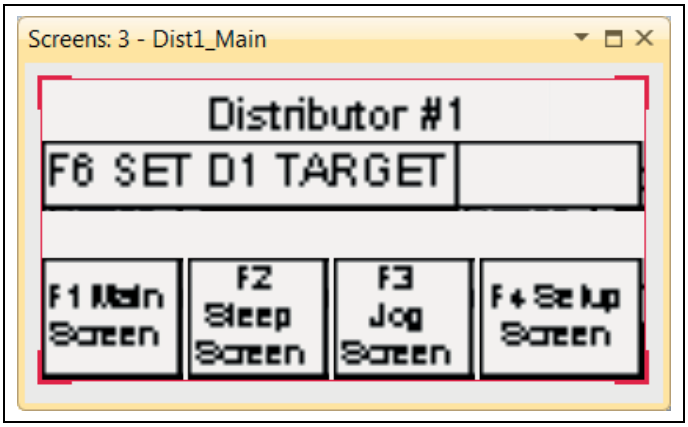


Figure 5L

13. After the homing operation, press the **F1 Main Screen** as in *Figure 5L on Page 23* to return to the Main Screen: The screen will appear as in *Figure 5M.*

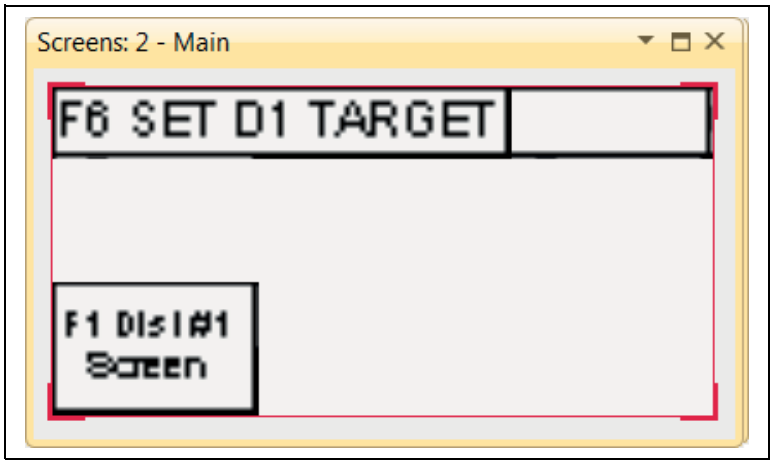


Figure 5M

14. Press the **F6** key and enter the number of the spout position you wish to make the spout travel to. Press the **enter key** ↵, the following screen as in *Figure 5N* will appear while the spout is moving into position:

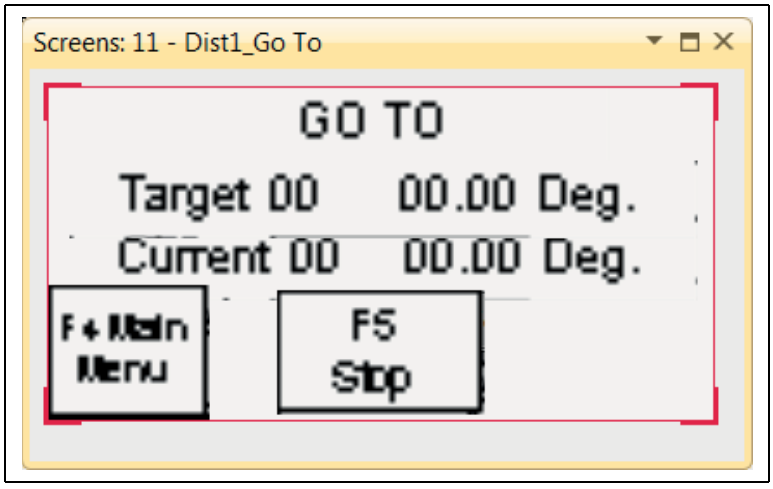


Figure 5N

15. The target degrees will be displayed and the current degrees will count up or down until the spout reaches the target degrees. After the spout is in position, the In **Position** light will light and the main screen will appear again as in *Figure 5M.* The distributor is now homed and ready to use.

Distributor Control Setup, Homing and Operation, Swing type Distributor

1. Upon powering up, the screen will appear as in *Figure 5O.* Press **F1** for Main Screen.

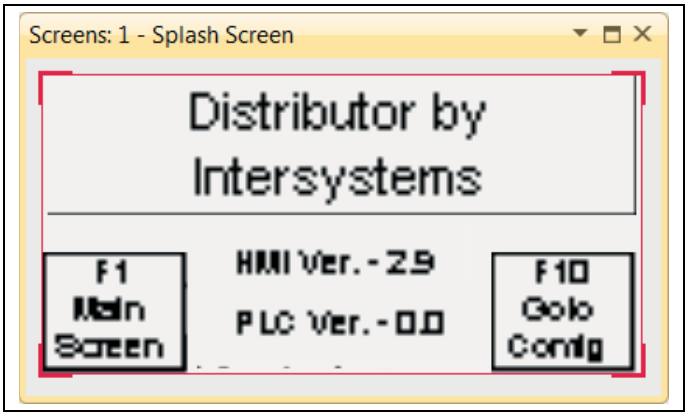


Figure 5O

2. After pressing **F1**, the following screen will appear as in *Figure 5P.* There are two (2) options. In normal operation, press **F6** or **F7** and then enter the spout location. The other option is to go to each spout's setup screen.

   NOTE: *If the distributor is a single spout type, only the F1 option will appear. If the distributor is a double swing, the F1 and F2 options will appear. If the distributor is a triple swing, F1, F2 and F3 will appear.*

Figure 5P

3. After pressing **F1**, the screen will appear as in *Figure 5Q.* By pressing the **F3** key, the user will be taken to the jog screen. Use this option to jog the spout manually, home the distributor and troubleshoot the system. This option will be discussed later. By pressing the **F4** key, the user will be taken to the setup screen. Use this option to setup the distributor control for the angle of sweep and the number of spouts in preparation of performing the distributor homing operation.

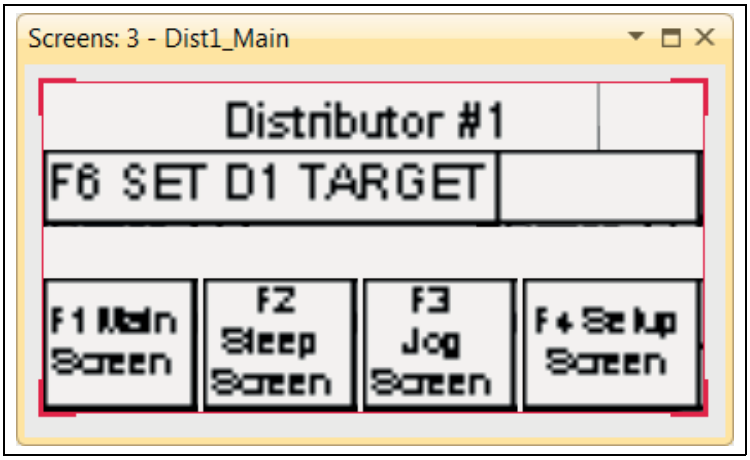


Figure 5Q

4. After pressing the **F4** key, the user will be taken to the **user screen**. Enter **"2"** and then press "Enter"↵. The next screen will be the **password screen**: Enter **"1500"** for the password and press "Enter"↵. Upon pressing enter the next screen will be the disclaimer screen as in *Figure 5R.* Press **F3** (OK).

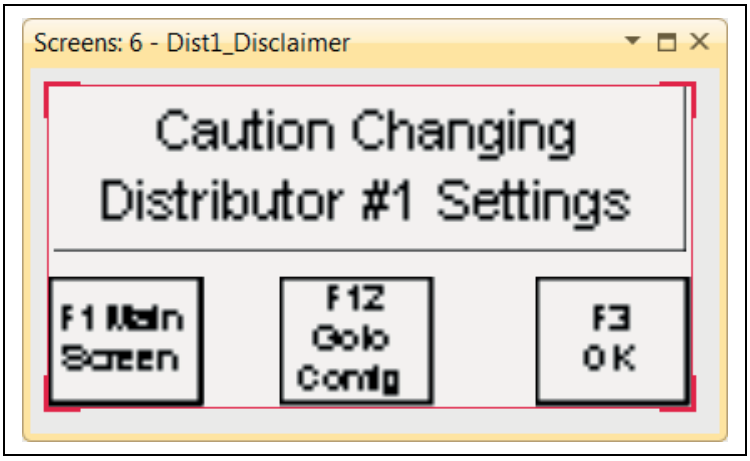


Figure 5R

5. After pressing **F3**, the screen will appear as in *Figure 5S.* Press **F2** Select Points.

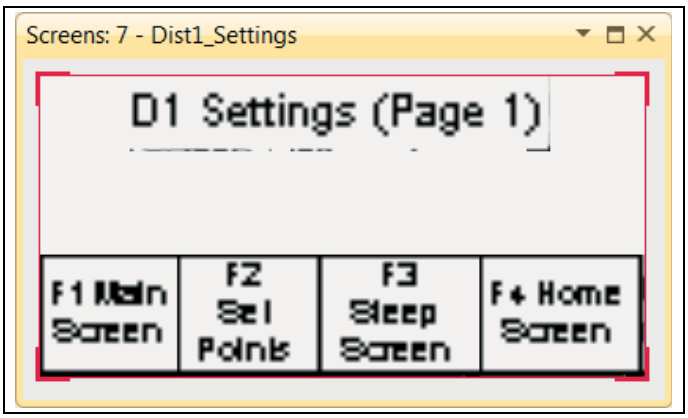


Figure 5S

6. After Pressing **F2**, the screen will appear as in *Figure 5T.*

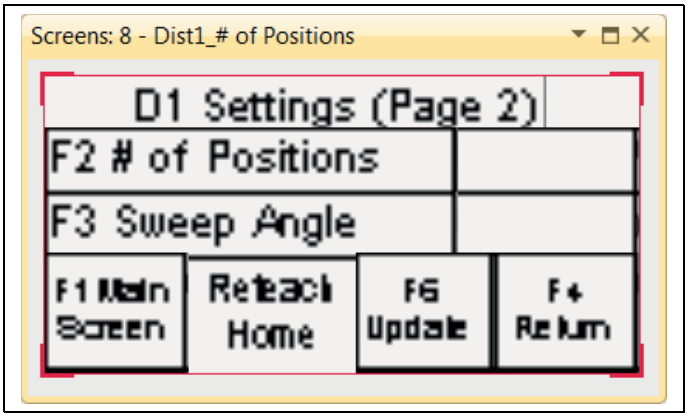


Figure 5T

7. Refer to the certified drawing that was included with the distributor for the following information to be entered: Press **F2**, enter in the number of spout locations for that spout, and then press "Enter"↵. Press **F3**, enter the sweep angle, and then press "Enter"↵. After entering in the sweep angle, press the **F6 Update** key. This updates the settings that have been entered. The Reteach Home will be flashing. This is a reminder that the distributor must be homed. Press the **F4** Return key, the screen will appear as in *Figure 5U.*

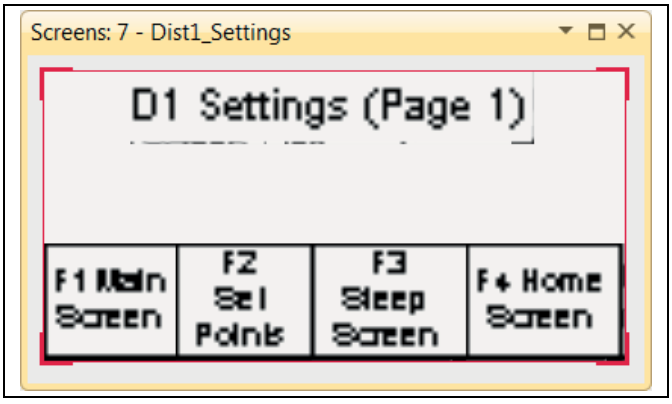


Figure 5U

8. Press the **F4** Home Screen key to display the screen as in *Figure 5V.*

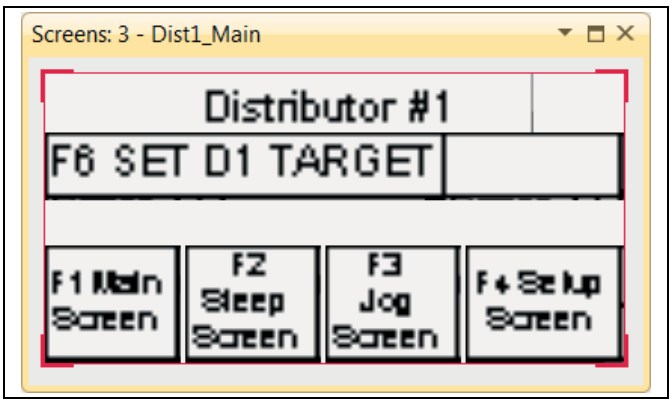


Figure 5V

9. Press **F3 Jog Screen**.

10. After pressing the **F3** Jog Screen key, the screen will appear as in *Figure 5W.* Use the **F6** and **F8** keys to move the spout forward and reverse.

    NOTE: *When jogging the spout forward the D1 degrees display must count up.*

    If not, have a certified electrician check the motor rotation and the encoder wiring. Jog the spout to the center of the access door opening. This is the **Home** position. Once in the home position, press the **F3** Home Screen key.

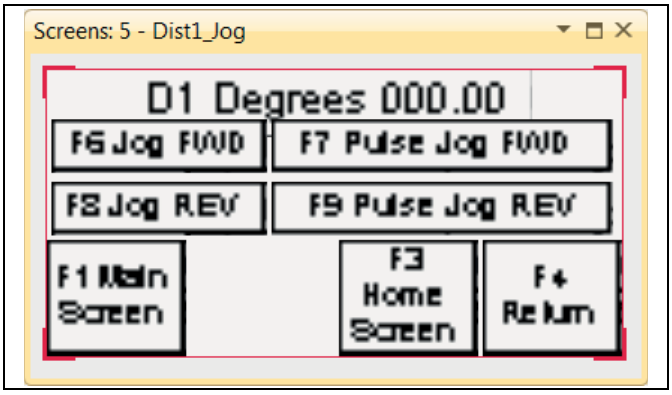


Figure 5W

11. After pressing the **F3 Home Screen** key, the following screen will appear. *(See Figure 5X.)*

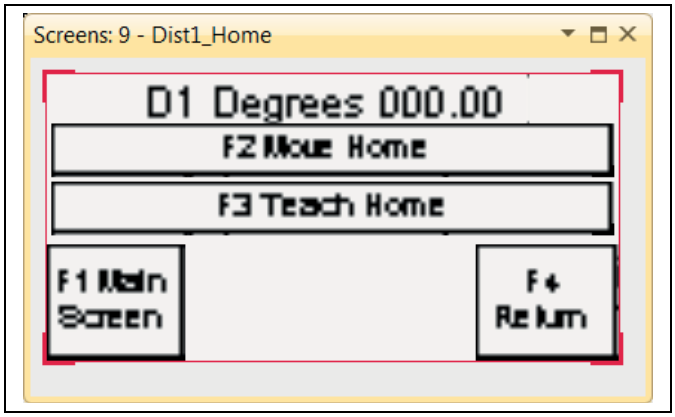


Figure 5X

12. Press **F3 Teach Home** and the screen will appear as in *Figure 5Y.*

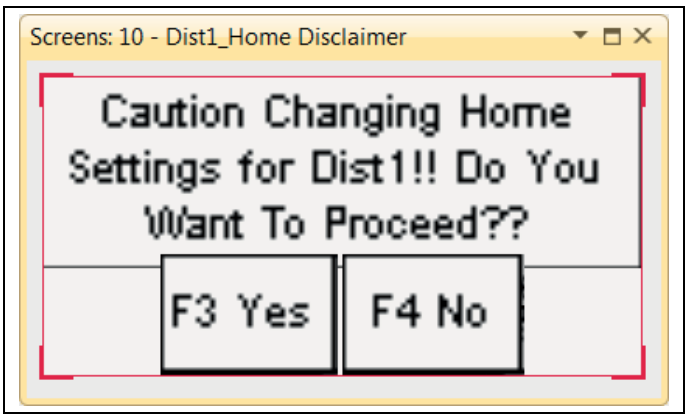


Figure 5Y

13. Press **F3 Yes** to finish homing the spout. After pressing F3, the screen will appear as in *Figure 5Z.*

Figure 5Z

14. This is the main screen. The distributor number 1 is now homed and ready to use. Press **F6** or **F7** and enter the number of the spout position you wish to make the spout travel to. Upon pressing the **Enter** ↵ key, following screen as in *Figure 5AA* will appear while the spout is moving into position.

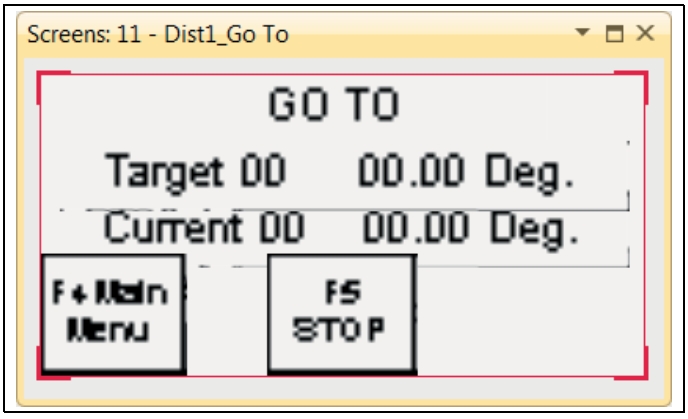


Figure 5AA

15. The target degrees will be displayed and the current degrees will count up or down. After the current degrees reaches the target degrees, the **IN Position** light will illuminate, and the main screen will appear again. If distributor number 2 needs to be homed, press **F2** and perform all of the same steps as shown above for distributor number 1. *(See Figure 5AB.)*

Figure 5AB

Connecting the Intersystems Control Panel to an Independent PLC

The PLC built into the optional control panel has an ethernet cable connection that allows it to connect to an independently obtained PLC system. Communication must first be established between the two (2) PLC units. Then certain registry bits need to be programmed into the independently obtained PLC. Refer to Engineering for the specific registry bits for your unit. They contain the following information:

1.	Set Target Position	Write to this tag to move distributor.
2.	PV Notify Change Target	Write to this tag to notify of change.
3.	Selected Target Position	Shows which position is selected.
4.	Target Degrees	Shows what the target degree position is.
5.	Current Position	Shows the current position.
6.	Current Degrees	Shows the current degree.

Distributor Installation without Intersystems Control Panel

Care should be taken when selecting a control panel and PLC system to ensure that the independently obtained PLC has capabilities to handle the different inputs and control the different outputs for the distributor being ordered. Information on the inverter duty motor and encoder can be found in their respective sections listed previously.

Distributor Sleep Mode

If the distributor is freezing up at night when the distributor is not in use, use this procedure to enter the sleep mode. When the distributor is in the sleep mode, a timer will count down and the spout will move from its current position to the home position and then back to the current position. This mode will operate continuously until the sleep mode is suspended.

1. Upon powering up, the following screen will appear as in *Figure 5AC.*

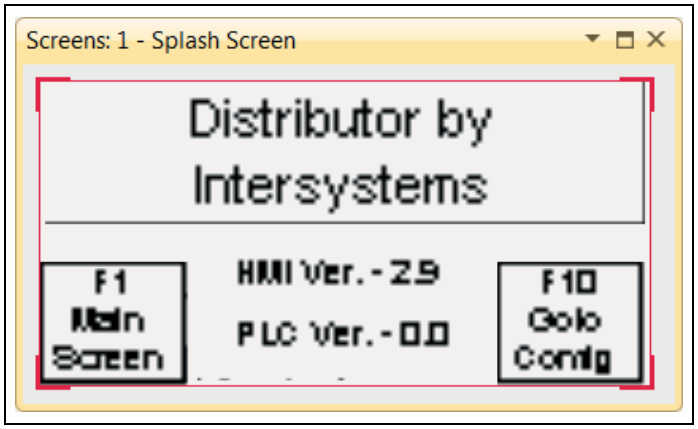


Figure 5AC

2. Press **F1** and the screen will appear as in *Figure 5AD.*

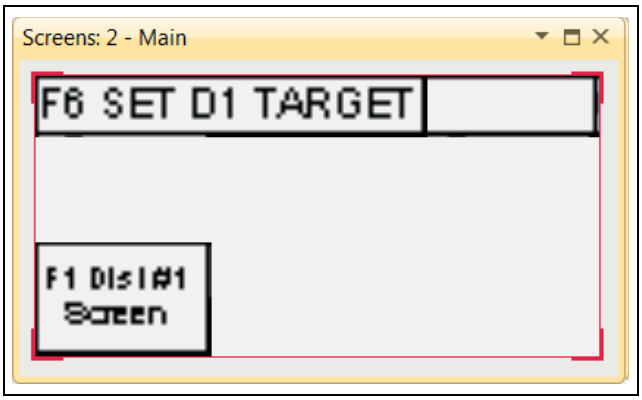


Figure 5AD

3. Press **F1** and the following screen will appear as in *Figure 5AE.*

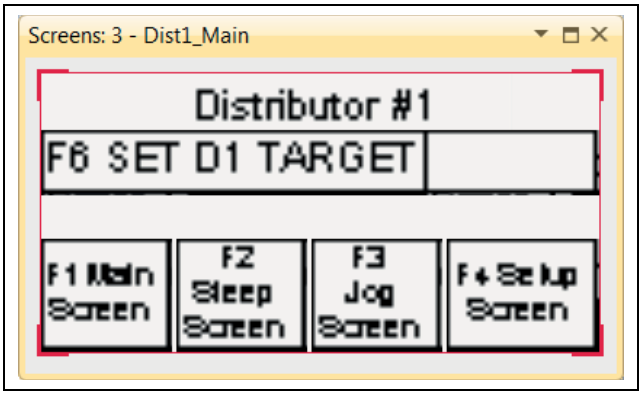


Figure 5AE

4. Press the **F2** key to enter the sleep mode menu. To set the time between cycles, press **F6**. Enter the time value desired in minutes and press **Enter**↵. Enter a value between 10 and 999 minutes. Verify the Sleep Cycle is Enabled by pressing the **F3** key. *(See the bottom right box in Figure 5AF.)* While in this screen, the **Time to Next Cycle** will count down to zero and then the spout will automatically move to the home position and back to the current position. The time to next cycle will begin to count down again.

   NOTE: *By pressing the F1 Main Screen key, the distributor will go back to the main screen and the sleep cycle will be suspended.*

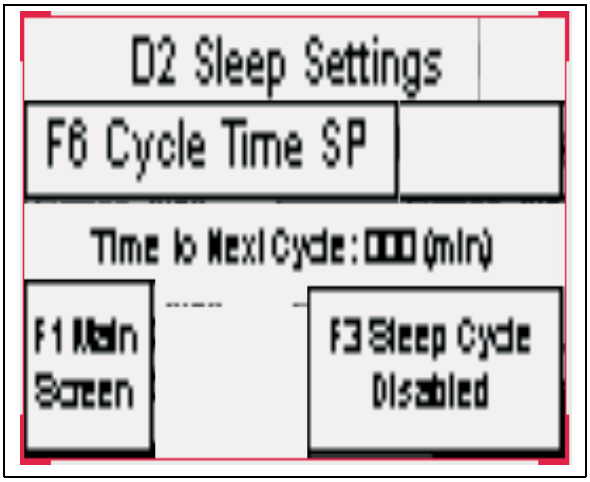


Figure 5AF

5. After pressing the **F1** key, the main screen will appear as in *Figure 5AG* and the sleep mode will be suspended.

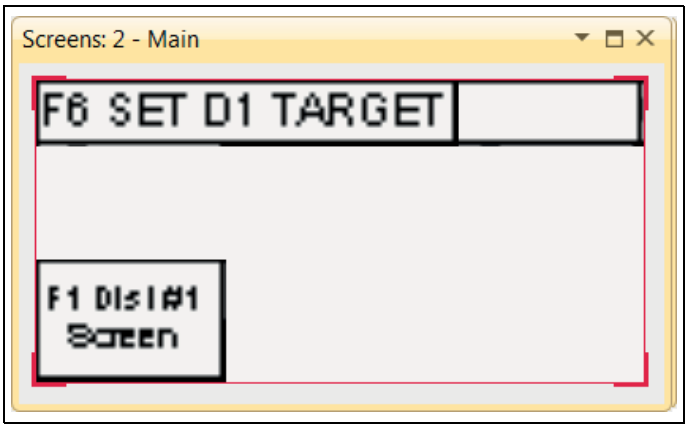


Figure 5AG

6. Repeat the procedure to go back into the sleep mode again.

NOTE: *Thoroughly read safety information on Pages 5-14 before beginning installation and startup.*

Before any maintenance is performed on the distributor, power must be shut OFF and locked out to prevent accidental start-up.
Failure to observe all safety rules, written, implied, and those suggested by obvious common sense, can result in death, serious injury, and/or equipment damage.

General Maintenance

A good maintenance program involves thorough general housekeeping, periodic inspection, adequate lubrication, and timely adjustment.

General Housekeeping and Periodic Inspection

At frequent and regular intervals, perform these housekeeping chores and inspections:

1. Remove accumulated dirt from the motor, reducer housings and bearings.
    a. Motors depend upon unobstructed airflow over their housings for effective cooling.
    b. Reducer gear cases must also be free of dirt for effective heat radiation. Most reducers have a pressure vent to relieve internal pressure. If dirt blocks a vent, internal pressure can rupture seals. Leaking lubricant can contaminate the product being handled by the distributor and reducer failure and subsequent equipment downtime may result.
    c. Check the reducer's lubricant level and condition on a regular basis. If the level is low, find and correct the leak. If the lubricant is dirty or shows signs of overheating, schedule a change of lubricant as soon as possible.
    d. Listen carefully for a noisy motor, reducer, or bearings. Any of these sounds can be a forewarning of overheating and fire or explosion. Correct any problem discovered immediately.
2. Periodically remove the inspection door from the distributor and clean the interior of all accumulated dirt and material.
3. Examine the distributor lining. Extreme wear patterns can sometimes distort the discharge and if not corrected, wear completely through the distributor. Spouting may also wear through.
4. Inspect all flanges and spouting. Tighten any loose fasteners. Note any damage to the distributor and support structure and schedule immediate repair. Also, schedule replacement for any damaged spouting, platform structural members, or floor grates. While inspecting platforms and ladders, be sure to examine mounting brackets and/or bracing. Note any defects and schedule immediate repair.
5. It is also advisable to check the condition of all inlet and discharge spouting associated with the distributor for damage and wear.

Lubrication

In all cases, the manufacturers of the individual components have precise recommendations for periodic lubrication of their products. Strict adherence to these procedures will result in a minimum of down time and maximum component life.

Reducer

Refer to the documentation furnished with the reducer. The user must interpret this information in light of the severity of duty in each application. If there is any doubt, contact the manufacturer or a local supplier of the reducer for specific recommendations.

Motor

Many motors have sealed and permanently lubricated bearings; with these, no lubrication is possible or desirable. If bearings of this type become noisy or overheat, they must be replaced.

Motors having bearings that can be re-lubricated are usually larger integral horsepower sizes. Special pressure lubricating equipment may be required. Refer to the documentation furnished with the motor. All replacement motors must have INVERTER DUTY CAPABILITIES and all replacement motors for SWING STYLE DISTRIBUTORS must be INVERTER DUTY BRAKE MOTORS.

Shaft Bearings

Mounted bearings DO require periodic lubrication. The amount and frequency depends in large extent upon the severity of the operating environment and the duty cycle. Refer to manufacturer’s recommendations for frequency, type and amount of lubrication.

Roller Chain (Swing Style Distributors Only)

If the distributor includes a roller chain furnished by Intersystems, the chain will have to be lubricated periodically. Refer to proper chain lubrication guidelines for proper lubrication schedules.

Many roller chain catalogs include instructions for properly tensioning roller chains and give specific values. Excessive tension can cause accelerated chain and sprocket wear, destroy bearings, and bend shafts. In extreme cases, excessive tension can cause structural damage.

Problem	Solution
Inner spout won't turn.	1. Check for and relieve choked spouting.
	2. Check for and remove internal obstructions.
	3. Check for and relieve extra downward pressure from input flange.
	4. Check for and relieve tight clearance of white UHMW ring around flat plate.
Inner spout continues to turn indefinitely.	1. Check for changing degrees on the Control Panel and correct wiring.
	2. Insure that the PLC input card is receiving a changing signal from the encoder.
	3. Check the encoder coupling and tighten or replace if necessary.

NOTES

InterSystems, Inc. reserves the right to make changes in design or in construction of equipment and components without obligation to incorporate such changes in equipment and components previously ordered.

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