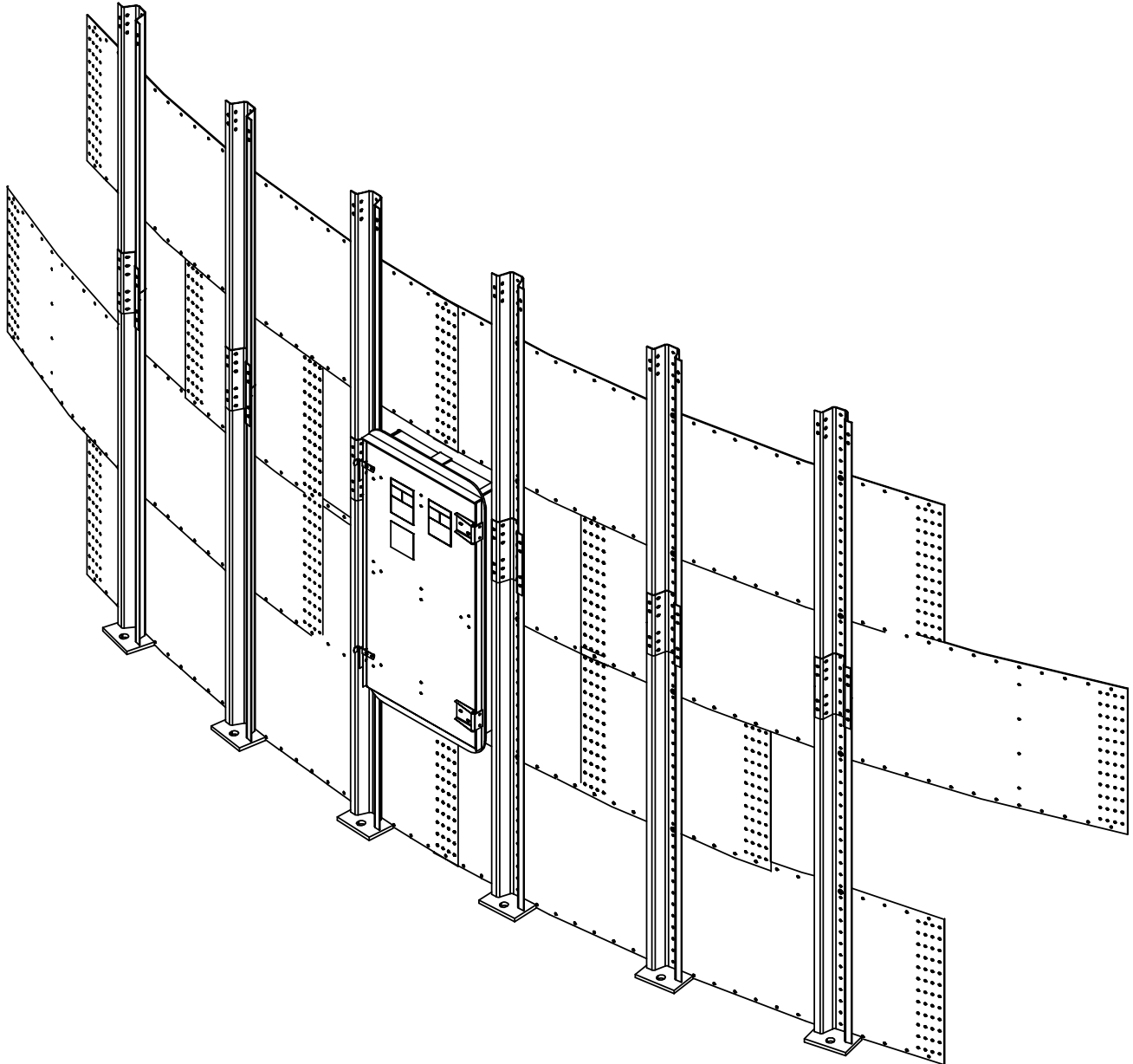


# **PNEG-1360 36'-30 RING AND 42'-60'-24RING EXTERNALLY STIFFENED SMALL 2 RING DOOR ASSEMBLY INSTRUCTIONS**

**PRINTED: 1/2004**

**REVISED: 3/2004**



PNEG-1360

# SAFETY GUIDELINES

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting **personal safety** and **preventing equipment problems**. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help you recognize this information, we use the symbols that are defined below. Please read the manual and pay attention to these sections. Failure to read this manual and its safety instructions is a misuse of the equipment and may lead to serious injury or death.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



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



**WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



**CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.



**NOTE** indicates information about the equipment that you should pay special attention to.

# General Safety Statement

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The GSI Group, Inc.'s, principal concern is your safety and the safety of others associated with grain handling equipment. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist and inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation, where serious injury or death may occur.

You should consider the location of the bin site relative to power line locations or electrical transmission equipment. We recommend you contact your local power company to review your installation plan or for information concerning required equipment clearance. Clearance of portable equipment that may be taken to the bin site should be reviewed and considered as well. Any electrical control equipment in contact with the bin should be properly grounded and installed in accordance with National Electric Code provisions and other local or national codes.

This product is intended for the use of grain storage only. Any other use is a misuse of the product!



This product has sharp edges! These sharp edges may cause serious injury. To avoid injury, handle sharp edges with caution and use proper protective clothing and equipment at all times.

Sidewall bundles or sheets must be stored in a safe manner. The safest method of storing sidewall bundles is laying horizontally with the arch of the sheet upward or over like a dome. Sidewall sheets stored on edge must be secured in a way that they cannot fall over and cause injury. Care should be taken in the handling and movement of sidewall bundles.

Personnel operating or working around equipment should 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.

# Safety

## FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. 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.

Keep your machinery in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your dealer.



## PRACTICE SAFE MAINTENANCE

Understand service procedures before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is in operation. Keep hands, feet, and clothing from all rotating parts.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any build up of grease, oil, or debris.

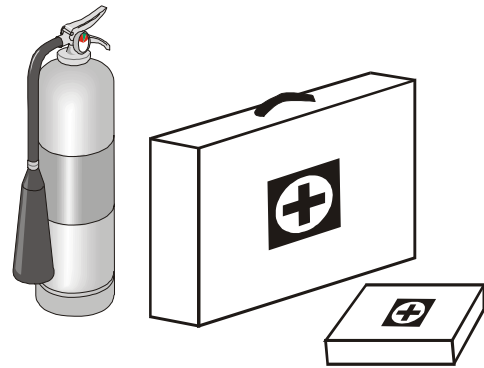


## PREPARE FOR EMERGENCIES

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



## WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

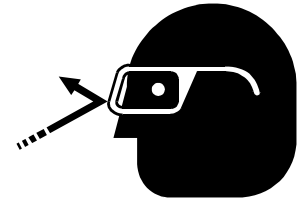
Safety glasses should be worn at all times to protect eyes from debris.

Wear gloves to protect your hands from sharp edges on plastic or steel parts.

A respirator may be needed to help prevent breathing potentially toxic fumes and dust.

Wear hard hat and steel toe boots to help protect your head and toes from falling debris.

### Eye Protection



### Gloves



### Steel Toe Boots



### Respirator




### Hard Hat

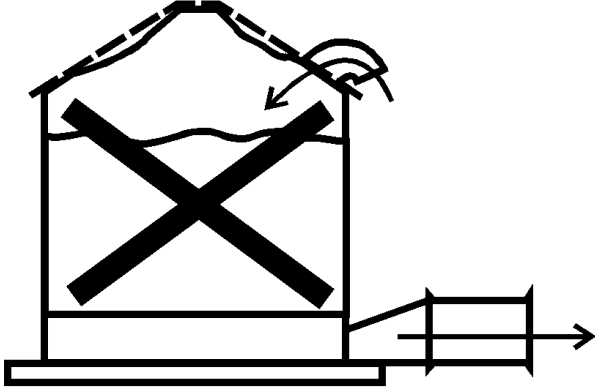


# CAUTION!

GSI DOES NOT WARRANT ANY ROOF DAMAGE CAUSED BY EXCESSIVE VACUUM OR INTERNAL PRESSURE FROM FANS OR OTHER AIR MOVING SYSTEMS. ADEQUATE VENTILATION AND/OR "MAKEUP AIR" DEVICES SHOULD BE PROVIDED FOR ALL POWERED AIR HANDLING SYSTEMS. GSI DOES NOT RECOMMEND THE USE OF DOWNWARD FLOW SYSTEMS (SUCTION). SEVERE ROOF DAMAGE CAN RESULT FROM ANY BLOCKAGE OF AIR PASSAGES. RUNNING FANS DURING HIGH HUMIDITY/COLD WEATHER CONDITIONS CAN CAUSE AIR EXHAUST OR INTAKE PORTS TO FREEZE.



## CAUTION!



**Excessive vacuum (or pressure) may damage roof. Use positive aeration system. Make sure all roof vents are open and unobstructed. Start roof fans when supply fans are started. Do not operate when conditions exist that may cause roof vent icing.**

## Safety Decal

ATTENTION: The decal shown below should be present on the inside of the door cover of the two ring door, 24" porthole door cover and the roof manway cover. If a decal has been damaged or is missing in any of these locations contact the manufacturer for a free replacement decal.

DECALS  
P.O. BOX 20  
ASSUMPTION, IL. 62510-0020  
(217) 226-4421



# DANGER



**Rotating flighting will  
kill or dismember.**



**Flowing material will  
trap and suffocate.**



**Crusted material will  
collapse and suffocate.**

## Keep clear of all augers. DO NOT ENTER this bin!

**If you must enter the bin:**

- 1. Shut off and lock out all power.**
- 2. Use a safety harness and safety line.**
- 3. Station another person outside the bin.**
- 4. Avoid the center of the bin.**
- 5. Wear proper breathing equipment or respirator.**

## Failure to heed these warnings will result in serious injury or death.

DC-GBC-1A

## Safety Decal

**ATTENTION:** The decal shown below should be present on the outside of the door cover on the two ring door, 24" porthole door cover and roof manway cover. If a decal has been damaged or is missing in any of these locations contact the manufacturer for a free replacement decal.

DECALS  
P.O. BOX 20  
ASSUMPTION, IL. 62510-0020  
(217)-226-4421



# WARNING



## DON'T



## DO

### UNLOADING INSTRUCTIONS:

1. Use **CENTER FLOOR OUTLET ONLY** until **NO** grain remains above this outlet.
2. Side floor outlets to be used **ONLY** when above condition is satisfied.
3. Lock all side floor outlets to avoid accidental premature use.
4. See manufacturers instructions for proper use of factory supplied sidedraw (wall) discharge systems.

**Failure to heed these warnings  
could result in serious injury, death,  
structural damage or collapse of tank.**

DC-GBC-2A



# Safety Sign-Off Sheet

It is necessary for the employer to train the employee in the safe operating and safety procedures for this equipment. We included this sign-off sheet for your convenience and personal record keeping. All unqualified persons are to stay out of the work area at all times. A person who has not read this manual and does not understand all operating and safety instructions is not qualified to operate this equipment.

DATE	EMPLOYER'S SIGNATURE	EMPLOYEE'S SIGNATURE
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
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	37	
	38	
	39	
	40	

# Introduction

READ THIS MANUAL carefully to learn how to properly use and install equipment. Failure to do so could result in personal injury or equipment damage.

INSPECT the shipment immediately upon arrival. The Customer is responsible for ensuring that all quantities are correct. Report any damage or shortages by recording a detailed description on the Bill of Lading to justify the Customer's claim from the Transport Firm. Our responsibility for damage to the equipment ends with acceptance by the delivering carrier. Save all paperwork and documentation furnished with any of the equipment/components.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your equipment and should be easily accessible when needed.

WARRANTY is provided as part of the company's support program for customers who use and maintain their equipment as described in the manual. The warranty is explained on the warranty page located on the inside back cover of this manual.

This warranty provides you the assurance that the company will back its products where defects appear within the warranty period. In some circumstances, the company also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the factory specifications, the warranty will become void and field improvements may be denied.

2/12/04

Revision:3

Page (A), 36'-30 RING OR 42'-60-24RING'

MANUAL# PNEG-1360

**Written Instructions for Installation of an NCWT0208-XXX (36'-30 Ring) OR NCWT0206-XXX (42'-60'-24 Ring) Two Ring Door Package in an Externally Stiffened Tank.**

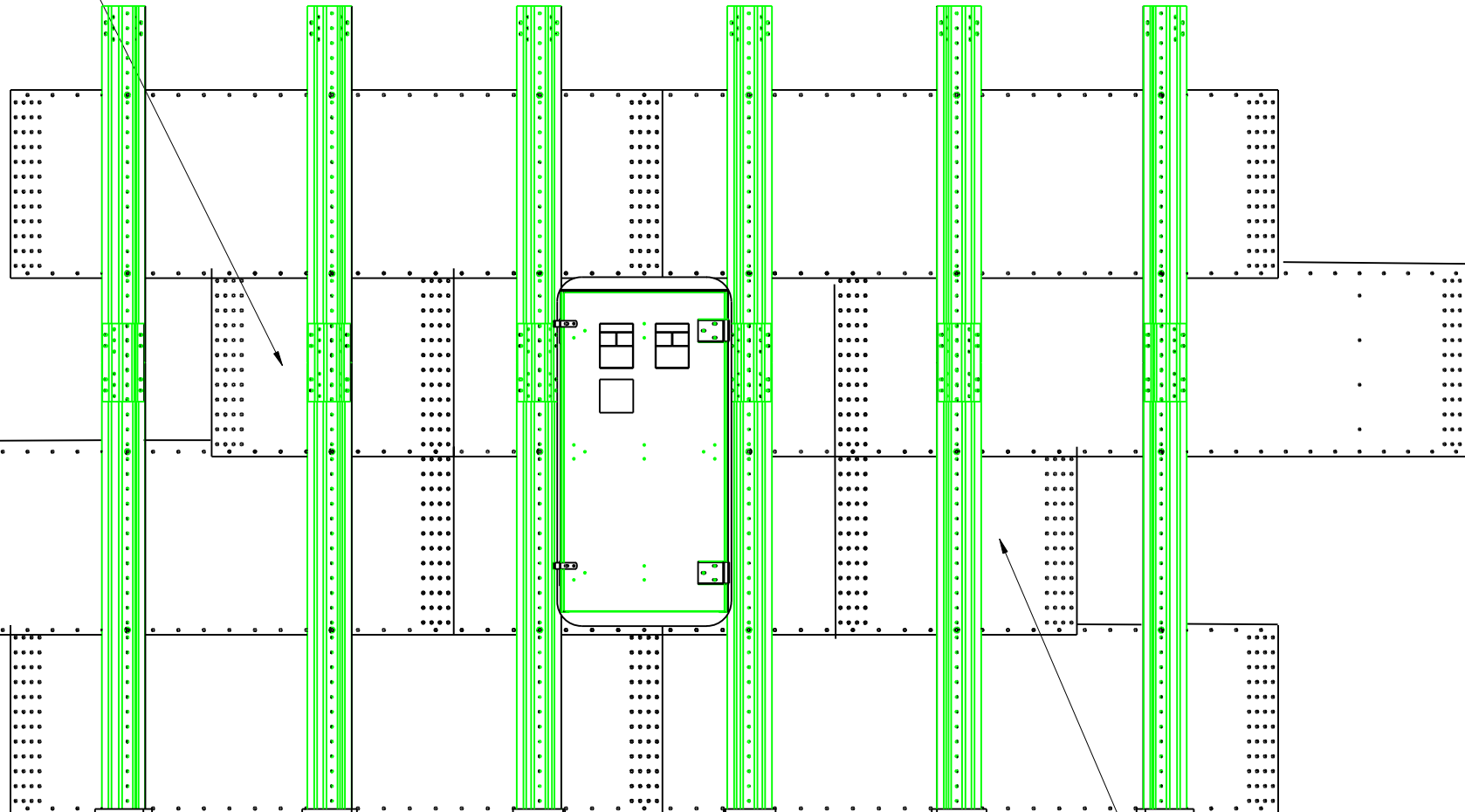
**\*NCWT0206-XXX MUST BE INSTALLED IN A 42-60' DIA TANK 24 RINGS AND SMALLER\***

**\*NCWT0208-XXX MUST BE INSTALLED IN A 36' DIA TANK 30 RINGS AND SMALLER\***

- 1.) The commercial two ring door may be installed in the bottom two rings or in the 2<sup>nd</sup> and 3<sup>rd</sup> rings. If the bin contains a full floor the door must be placed in the 2<sup>nd</sup> and 3<sup>rd</sup> rings.
- 2.) The door should normally be placed in line with the conveyor. An intermediate discharge well should be located near the wall to clear grain from the area of the access door (as with any access door).
- 3.) The door consists of a frame weldment, top and bottom inner panel, and an outer cover assembly. The frame weldment will bolt directly into the sidewall of the tank. The sidewall orientation must be as shown on page 1. Install the base stiffeners on each side of the door frame after door installation is complete. Caulk door frame weldment in the same manner as the sidewall sheets. Install all frame bolts and tighten. Use 3/8" x 1" bin bolts to install door. In certain cases 5/16" x 3/4" bin bolts may be used if sidewall gages are 14 gage or thinner.
- 4.) Assemble the top and bottom inner panels as shown on pages 3-4. Note orientation of the latches and hinges. Install bearing pins (WD-6224) and latch bar holders (WD-6234) in door frame as shown on page 5. Use a 5/16" x 2.1/2" bolts to attach the bearing pins to the door frame. Bolt head should be on the inside of the bin. Attach the latch bar holders to the door frame with 1/2" x 1.1/2" bolts. Use 1/2" flat washers to adjust the depth of the latch bar holders. A 1/2" lock washer must also be used on this connection. Do not fully tighten bearing pins or latch bar holders until the inner door panels have been installed and adjusted. Attach assembled top and bottom panels to door frame with 3/8" x 4.1/2" Gr. 2 bolt and lock nut. Adjust hinges as necessary to allow door panels to open and close smoothly. The bearing pins should be adjusted to fit door panel holes. Adjust the latch bar holders as necessary until the inner panel latches operate smoothly. Once the panels have been installed and adjusted, apply a foam seal strip all along the door frame to seal inner panels.
- 5.) Assemble the outer cover as shown on page 6. Attach outer cover hinge weldments to outer cover hinges with 3/8" x 4.1/2" Gr.2 bolts and 3/8" lock nuts. Be sure that the decals DC-GBC-1A and DCGBC-1S are on the inner side of the outer cover. Decals DC-GBC-2A, DC-GBC-2S, and DC-1754 must be placed on the outer side of the outer cover. Attach the outer cover angles (NCWT0205) to the frame weldment with 5/16" X 1.1/4" bin bolts. Use flat washer over on any slotted connections. Adjust hinge location so that door operates smoothly. Apply foam seal strip all along outer surface of frame weldment to seal outer cover. Fill all open holes with 3/8" x 1" bin bolts. Caulk around door frame as necessary to seal door and sidewall.
- 6.) Continue installing the rest of the sidewall sheets and base stiffeners

SHORT (38")  
SIDEWALL  
SHEET

NCWT0206-XXX (42-60' DOOR)  
OR NCWT0208-XXX(36' DOOR)  
PACKAGE ASSEMBLED.



SIDEWALL AND STIFFENER  
OREINTATION SCALE 0.035

SHORT (38") SIDEWALL  
SHEET(2)

\*ASSEMBLE SIDEWALL AND STIFFENERS AS SHOWN. DOOR MAY BE MOUNTED IN THE BOTTOM 2 RINGS OR IN THE 2ND AND 3RD RINGS. FOR TANKS WITH FULL FLOORS THE DOOR MUST BE MOUNTED IN THE 2ND AND 3RD RINGS. TWO SHORT SHEETS WILL BE POSITIONED ADJACENT TO THE DOOR AS SHOWN. BOLT DOOR SHEETS TO SIDEWALL WITH 3/8" x 1" BIN BOLTS. APPLY SIDEWALL CAULKING ALL ALONG OUTER EDGES OF DOOR SHEETS.

**VIEWED FROM OUTSIDE OF TANK**

Stack Size			
SIDEWALL/ STIFFENER LAYOUT			
Material			
PAGE 1			
Sheet 1 of 8		IMW	N/A
Weight Index		Sq. Ft.	N/A
Drawn By		Date	30-Dec-03
Checked By		Date	00-00-00
TOLERANCES (Unless Noted) Fractions +/- 1/32" Decimals +/- .031 Angles +/- 1.00		Scale	NONE
		Work to Dimensions Do Not Scale	
Drawing No.			PNEG-1360

No.	ECN	Revision Description	Date	By
2	10140	REVISED FRAME WELDMENT	3/12/04	TJH
1	9638	OVERALL REVISION, ADD DC-1754	2/12/04	TJH
Engineering Division				
THE GSI GROUP Assumption, IL				
GRAIN SYSTEMS				

SMALL NCWT DOOR ASSEMBLY

36'-30 RING OR 42-60' 24 RINGS

NOTE: HEADER STRIP INDICATES  
TOP OF DOOR WELDMENT

NCWT0193 TOP  
INNER DOOR PANEL  
ASSEMBLY SEE PAGE 4

NCWT0195 BOTTOM  
INNER PANEL  
ASSEMBLY SEE PAGE 3

NCWT0191-XXX (42-60) OR  
NCWT0209-XXX (36') NCWT  
DOOR FRAME WELDMENT

INSIDE OF BIN

OUTSIDE OF  
BIN

OUTER COVER  
ASSEMBLY SEE  
PAGE 6

\*BOLT DOOR FRAME WELDMENT (NCWT0191-XXX OR NCWT0209-XXX)  
TO SIDEWALL AS SHOWN. ATTACH TOP AND BOTTOM INNER PANEL  
ASSEMBLIES TO FRAME WELDMENT. SEE PAGES 3-5 FOR  
DETAILS. ATTACH OUTER COVER ASSEMBLY TO FRAME WELDMENT.  
SEE PAGE 6-7 FOR DETAILS. CAULK AS NECESSARY

Stock Size				EXPLODED ASSEMBLY			
Material				PAGE 2			
Sheet 2 of 8				IMW N/A		Drawing No.	
Weight Index N/A		Sq. Ft. N/A		Ship Wt. N/A			
Drawn By TJH		Date 30-Dec-03		Scale NONE		PNEG-1360	
Checked By TBD		Date 00-00-00		Work to Dimensions Do Not Scale			

No.	ECN	Revision Description	Date	By
2	10140	REVISED FRAME WELDMENT	3/12/04	TJH
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**THE GSI GROUP**  
Assumption, IL

Engineering Division  
**GRAIN SYSTEMS**

SMALL NCWT DOOR ASSEMBLY	TOLERANCES (Unless Noted) Fractions +/- 1/32" Decimals +/- .031 Angles +/- 1.00
36'-30 RING OR 42'-60' 24 RINGS	

NCWT0196 REINF. ANGLE  
USE 5/16" x 3/4" BIN  
BOLTS FOR ALL  
NON-HINGE CONNECTIONS

\*USE FLAT WASHER ON ALL  
SLOTTED CONNECTIONS\*

INSIDE OF BIN

WD-6037 & WD-6038  
ARE BOTH ON THE  
INSIDE OF ANGLES

USE 5/16" x 1.1/4" BIN BOLTS FOR  
ALL HINGE/REINF ANGLE CONNECTIONS

USE 5/16" x 3/4" BOLTS FOR  
ALL HINGE CONNECTIONS

SEE DETAIL A FOR  
HINGE ORIENTATION

USE 5/16" x 1.1/4" HEX  
HEAD BOLT WD-6040 LATCH  
BUSHING, AND S-5220 5/16"  
LOCK NUT

WD-6038 LEFT HAND  
INNER PANEL LATCH

REINF. RIBS  
MUST FACE THE  
INSIDE OF BIN.

NCWT0197 LATCH BAR

USE 5/16" x 3/4" SLOTTED  
TRUSS HEAD BOLTS  
(S-4303) TO CONNECT  
LATCH BARS TO LATCHES.

WD-6037 RIGHT HAND  
INNER PANEL LATCH

ISO VIEW  
SCALE 0.125

OUTSIDE OF BIN

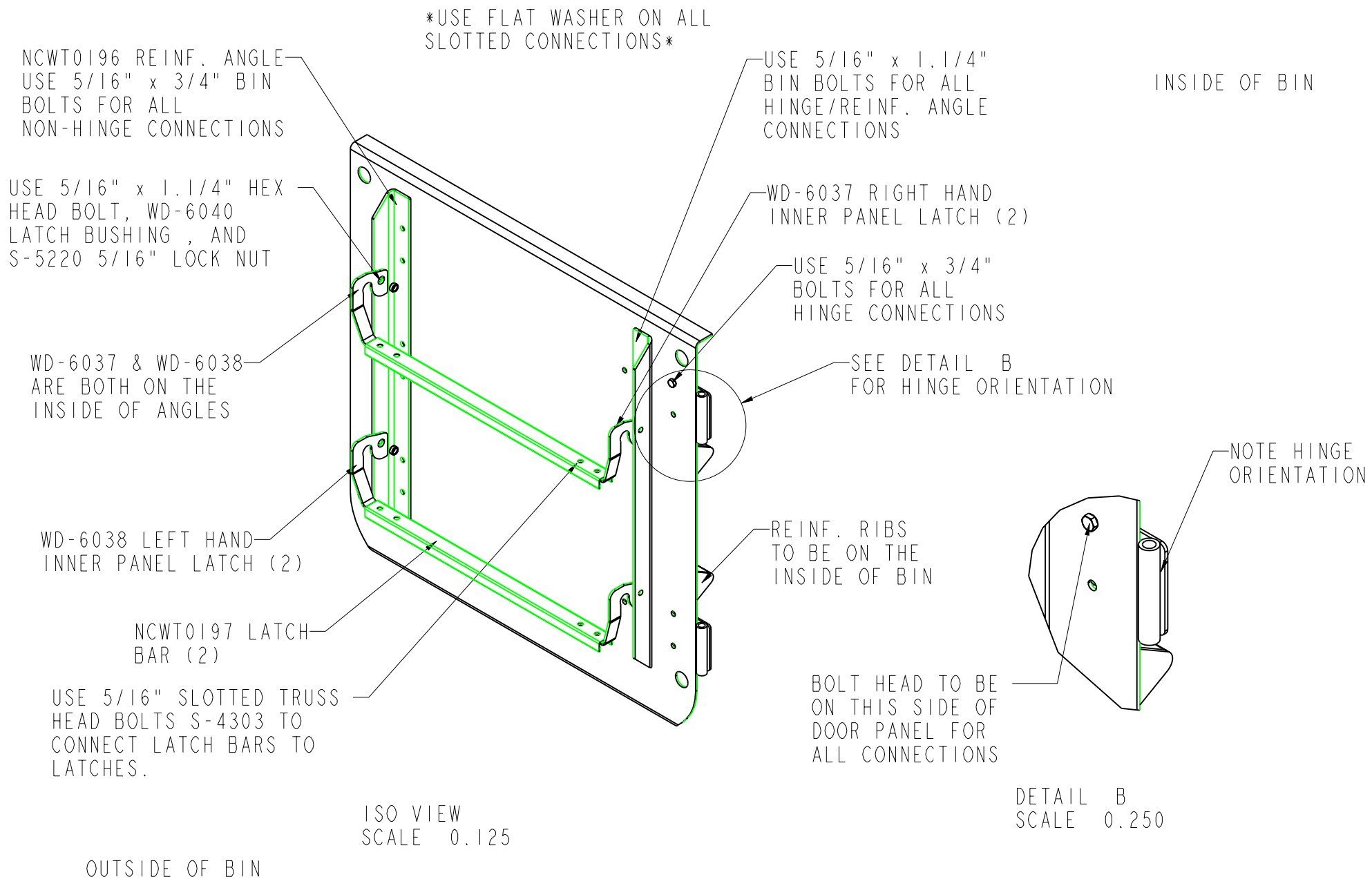
NOTE HINGE  
ORIENTATION

BOLT HEAD TO BE  
ON THIS SIDE OF  
DOOR PANEL FOR  
ALL CONNECTIONS


DETAIL A  
SCALE 0.250

Stock Size				TOP INNER PANEL ASSEMBLY			
Material				PAGE 3			
Sheet 3 of 8				IMW N/A		Drawing No.	
Weight Index N/A		Sq. Ft. N/A		Ship Wt. N/A			
Drawn By TJH		Date 30-Dec-03		Scale NONE		PNEG-1360	
Checked By TBD		Date 00-00-00		Work to Dimensions Do Not Scale			

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No.	ECN	Revision Description	Date	By
1	10140	REVISED FRAME WELDMENT	3/12/04	TJH


**THE GSI GROUP**  
 Assumption, IL  
 Engineering Division  
**GRAIN SYSTEMS**

SMALL NCWT DOOR ASSEMBLY	
36'-30 RING OR 42-60' 24 RINGS	

TOLERANCES (Unless Noted)
Fractions +/- 1/32"
Decimals +/- .031
Angles +/- 1.00

BOTTOM INNER PANEL ASSEMBLY			
PAGE 4			
Sheet 4 of 8		IMW	N/A
Weight Index	N/A	Sq. Ft.	N/A
Drawn By	TJH	Date	30-Dec-03
Checked By	TBD	Date	00-00-00
		Scale	NONE
		Work to Dimensions Do Not Scale	
Drawing No.			PNEG-1360

ATTACH BEARING PIN WD-6224  
TO FRAME WITH 5/16" x  
2.1/2" GR 5 BOLT HEAD TO  
THIS SIDE

USE 5/16" x 1.1/4" BOLTS  
FOR HINGE CONNECTION  
BOLT HEAD MUST BE TO  
THIS SIDE

ATTACH LATCH BAR  
HOLDER WD-6234 TO  
FRAME WITH 1/2" x  
1.1/2" GR 8 BOLTS  
USE WASHERS AS  
NECESSARY TO ADJUST  
POSITION OF WD-6234

CLOSE LATCH BARS OVER  
HOLDERS ADJUST AS  
NECESSARY UNTIL LATCH  
OPERATES SMOOTHLY

SEE DETAIL C

USE 3/8" x 4.1/2"  
GR 2 BOLTS WITH  
3/8" LOCK NUT TO  
ATTACH DOOR PANEL  
HINGE TO FRAME  
HINGE BRACKET

DETAIL C  
SCALE 0.188

TOP INNER PANEL  
ASSEMBLY NOT  
SHOWN FOR CLARITY

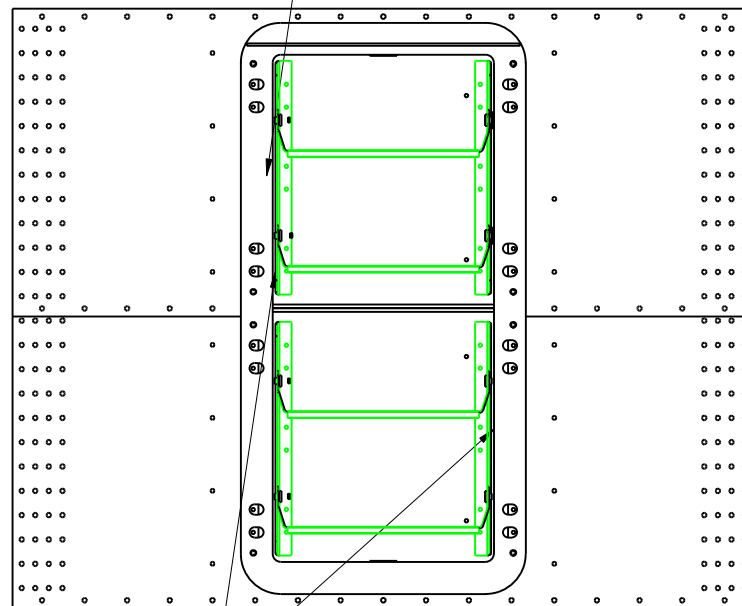
ADJUST HINGE  
POSITION TO  
CENTER DOOR  
PANEL ON  
BEARING PINS

NCWT0191-XXX  
NCWT0209-XXX  
FRAME WELDMENT

BOTTOM INNER  
PANEL ASSEMBLY

ISO VIEW  
SCALE 0.050

VIEWED FROM  
INSIDE OF TANK



INSTALL FOAM SEALANT  
ALL ALONG FRAME TO  
SEAL INNER PANELS

BACK VIEW SCALE 0.050  
VIEWED FROM OUTSIDE  
OF TANK

Stack Size: **INNER PANEL ASSEMBLY**

Material: **PAGE 5**

Sheet 5 of 8

IMW **N/A**

Drawing No.

Weight Index **N/A**

Sq. Ft. **N/A**

Ship Wt. **N/A**

Drawn By **TJH**

Date **30-Dec-03**

Scale **NONE**

Checked By **TBD**

Date **00-00-00**

Work to Dimensions  
Do Not Scale

**PNEG-1360**

**THE GSI GROUP**  
Assumption, IL

**GRAIN SYSTEMS**

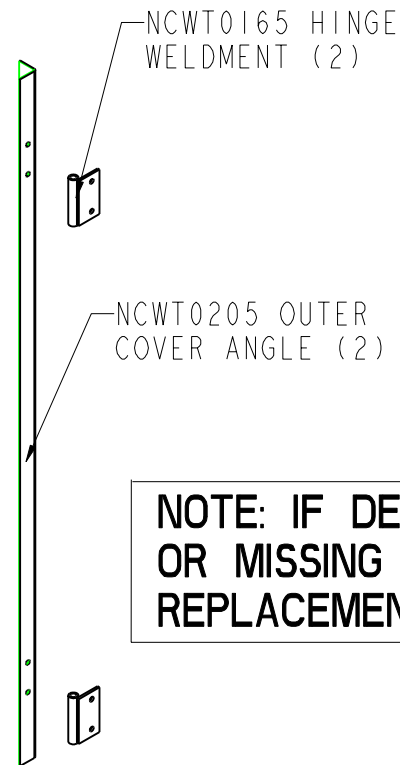
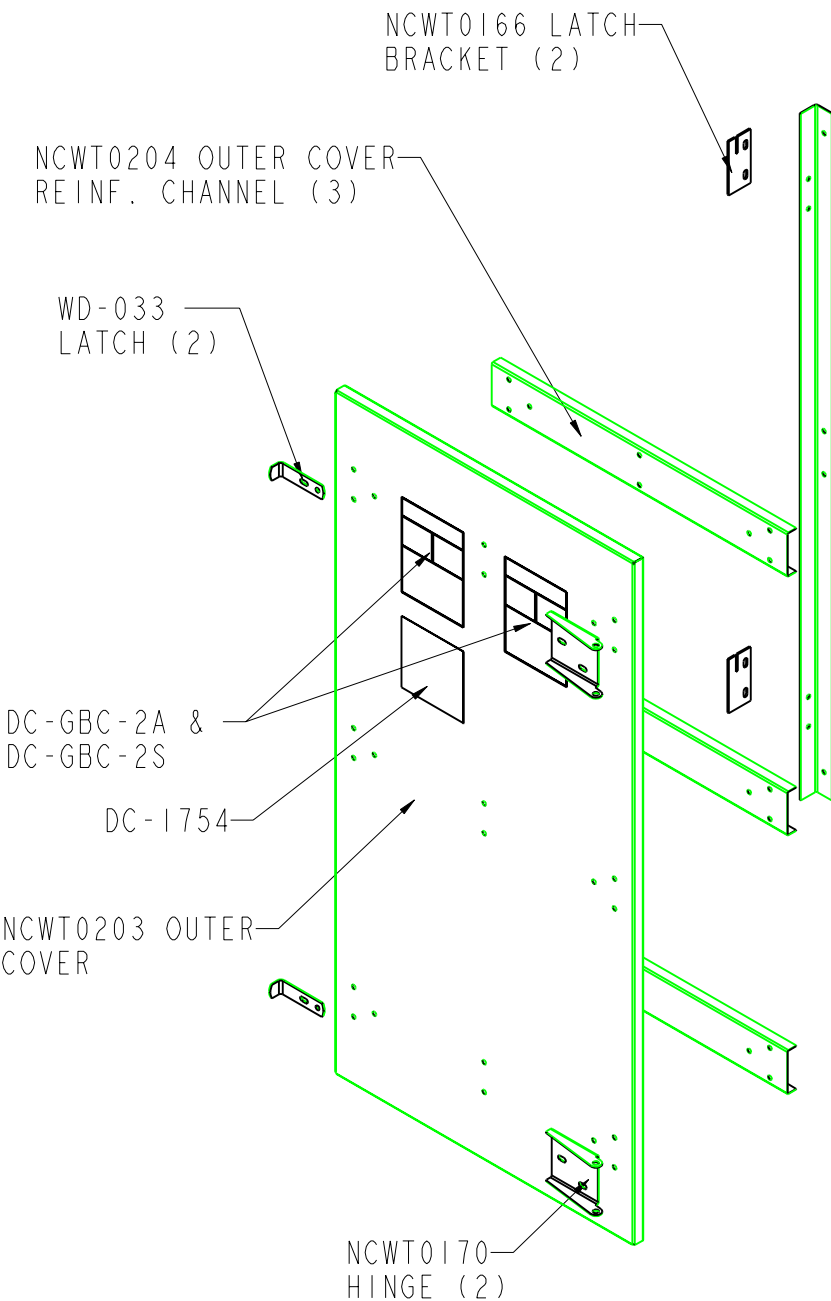
**SMALL NCWT DOOR ASSEMBLY**

**36'-30 RING OR 42'-60' 24 RINGS**

TOLERANCES  
(Unless Noted)  
Fractions +/- 1/32"  
Decimals +/- .031  
Angles +/- 1.00

No.	ECN	Revision Description	Date	By
1	10140	REVISED FRAME WELDMENT	3/12/04	TJH



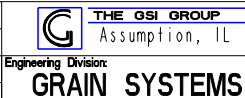


**NOTE: IF DECALS ARE DAMAGED OR MISSING CONTACT GSI FOR REPLACEMENT**

USE 5/16" HARDWARE FOR ALL CONNECTIONS. HINGE/OUTER COVER/ REINF. CHANNEL CONNECTIONS WILL USE 5/16" x 1.1/4" BIN BOLTS. ALL OTHER CONNECTIONS WILL USE 5/16" x 3/4" BIN BOLTS. ADJUST LATCHES AND HINGES AS NECESSARY TO ALLOW COVER TO OPEN AND CLOSE SMOOTHLY DECALS DC-GBC-2A, DC-GBC-2S, & DC-1754 MUST BE PRESENT ON THE OUTSIDE OF THE OUTER COVER. DECALS DC-GBC-1A } & DC-GBC-1S MUST BE PRESENT ON THE INSIDE OF THE OUTER COVER

Stock Size		OUTER COVER ASSEMBLY			
Material		PAGE 6			
Sheet 6 of 8		IMW		N/A	
Weight Index		Sq. Ft.		Ship Wt.	
N/A		N/A		N/A	
Drawn By		Date		Scale	
TJH		30-Dec-03		NONE	
Checked By		Date		Work to Dimensions Do Not Scale	
TBD		00-00-00			
				Drawing No.	
				PNEG-1360	

No.	ECN	Revision Description	Date	By
2	10140	REVISED FRAME WELDMENT	3/12/04	TJH
1	9638	OVERALL REVISION, ADDED DC-1754	2/12/04	TJH



### SMALL NCWT DOOR ASSEMBLY

36'-30 RING OR 42-60' 24 RINGS

TOLERANCES  
(Unless Noted)  
Fractions +/- 1/32"  
Decimals +/- .031  
Angles +/- 1.00

Drawing No.  
**PNEG-1360**

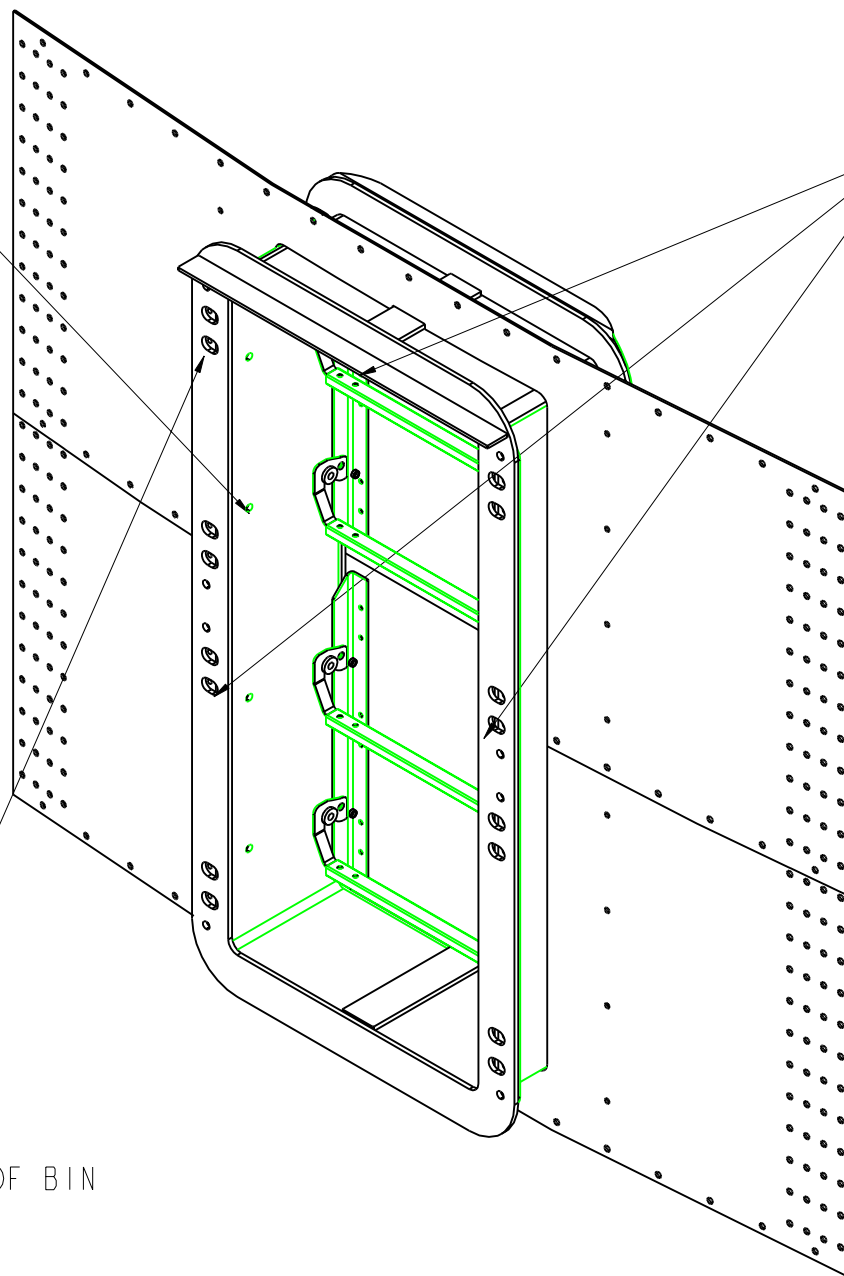
FILL ALL OPEN HOLES  
IN FRAME WELDMENT  
WITH 3/8" BIN BOLTS

INSTALL FOAM SEALANT  
ALL ALONG FRAME TO  
SEAL OUTER COVER

INSIDE OF BIN


ATTACH OUTER COVER ANGLES  
NCWT0205 TO FRAME WELDMENT  
WITH 5/16" x 1 1/4" BIN  
BOLTS. ATTACH OUTER COVER  
ASSEMBLY TO ANGLES AS SHOWN  
ON THE PREVIOUS PAGE.

OUTSIDE OF BIN



Stock Size		OUTER COVER INSTALLATION			
Material		PAGE 7			
Sheet 7 of 8		IMW		N/A	
Weight Index		Sq. Ft.		N/A	
Drawn By		TJH		Date 30-Dec-03	
Checked By		TBD		Date 00-00-00	
		Scale		NONE	
		Work to Dimensions Do Not Scale		Drawing No.	
				PNEG-1360	

No.	ECN	Revision Description	Date	By
1	10140	REVISED FRAME WELDMENT	3/12/04	TJH


**THE GSI GROUP**  
 Assumption, IL  
 Engineering Division  
**GRAIN SYSTEMS**

SMALL NCWT DOOR ASSEMBLY	
36'-30 RING OR 42'-60' 24 RINGS	

Drawing No.  
**PNEG-1360**