



Rack and Pinion Slide Gates

Assembly and Operation Manual

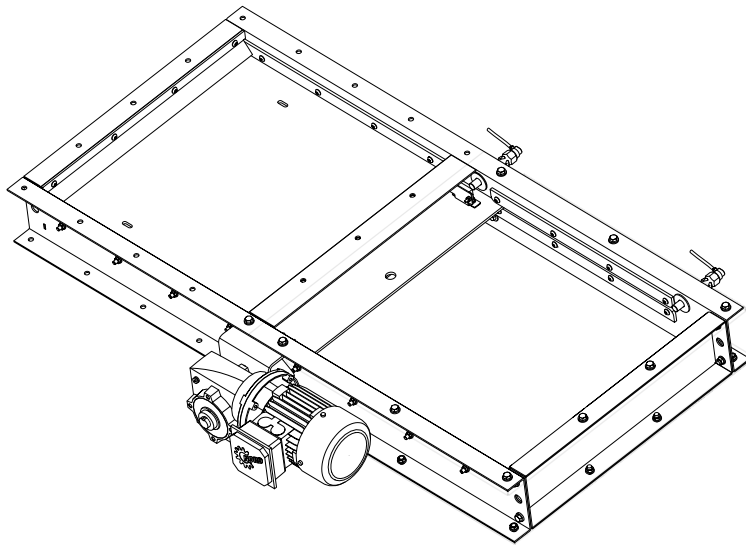
This manual applies to the following models:

Single/Dual Rack and Pinion Gates, Electric

Single/Dual Rack and Pinion Gates, Manual Wheel

Flush Mount Rack and Pinion Gate, Electric

Dual Rack and Pinion Gate, Manual Chain Wheel



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: 8210-30046

Revised: September 2023

Original Instructions

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1. Introduction

Follow the instructions in this manual for safe use of this slide gate. Following proper operation and maintenance will help to keep the slide gate running in optimal condition.

Keep this manual handy for frequent reference and to review with new personnel. A sign-off form is provided on the inside front cover for your convenience. If any information in this manual is not understood or if you need additional information, please contact AGI or your representative for assistance.

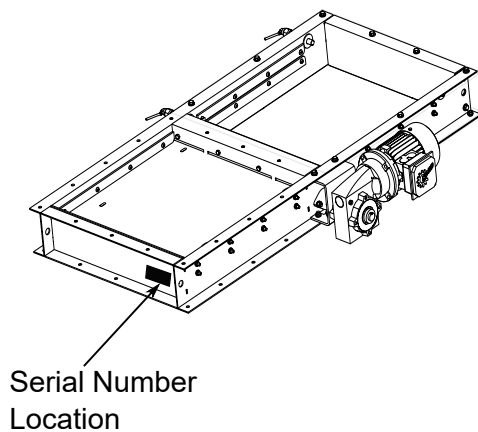
This manual should be regarded as part of the equipment.

1.1. Intended Use

The slide gate is intended for use as described throughout this manual and as specified on the approval drawing. Use in any other way is considered contrary to the intended use and is not covered by the warranty.

1.2. Serial Number Location

Figure 1. Typical Slide Gate Serial Number Location




2. Safety


2.1. Safety Alert Symbol and Signal Words





This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

Signal Words: Note the use of the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.

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

 **WARNING** Indicates a hazardous situation that, if not avoided, could result in serious injury or death.

 **CAUTION** Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

 **NOTICE** Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

2.2. General Safety Information

Read and understand all safety instructions, safety decals, and manuals and follow them when operating or maintaining the equipment.

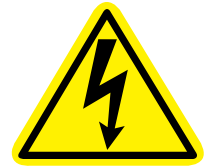
- Owners must give instructions and review the information initially and annually with all personnel before allowing them in the work area. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- Use for intended purposes only.
- Modification of the slide gate in any way without written permission from the manufacturer is not covered by the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.
- Follow applicable local codes and regulations.



2.3. Electrical Equipment Safety

WARNING Power Source

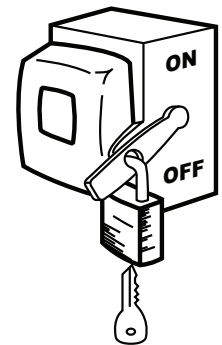
- Electrical equipment and controls shall be installed and serviced by a qualified electrician and must meet all local codes and standards.
- Locate main power disconnect switch within reach from ground level to permit ready access in case of an emergency.
- All electrical equipment must be properly grounded.
- Covers and guards must be in place and secure.
- Ensure electrical wiring and cords remain in good condition; replace if necessary.



Lockout

- Lockout power source before making adjustments, cleaning, maintaining equipment or when not in use. Ensure that all personnel are clear before turning on power to equipment

SERVICE DISCONNECT



2.4. Emergency Shutdown

The slide gate electrical system is equipped with a Disconnect Switch (DS). To engage the DS, turn the switch to the OFF position on the PLC Panel or at the gate location (if applicable). Advise all operating personnel of the location and operation of all emergency controls and devices. Maintain clear access to these controls and devices. Lock out power before correcting the problem.

2.5. Safety Decals

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available **free of charge** from your distributor, dealer, or factory as applicable.

2.5.1 Decal Installation/Replacement

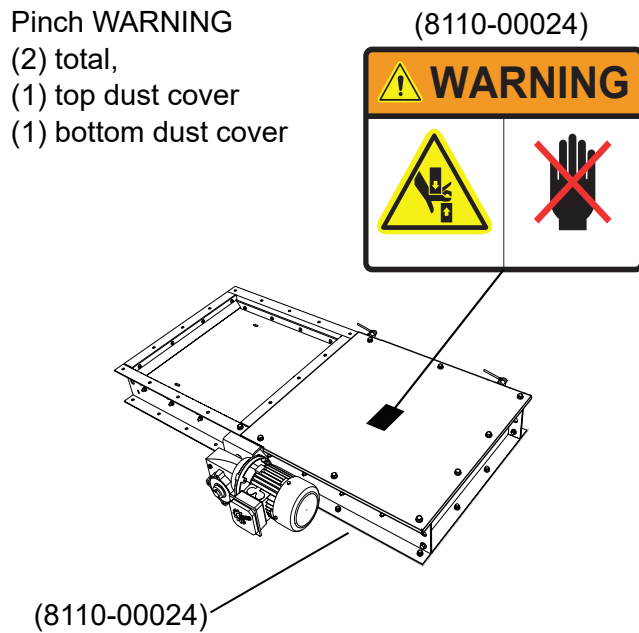
1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.

4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the decal backing paper.

2.5.2 Safety Decal Locations and Details

Replicas of the safety decals that are attached to the slide gate and their messages are shown in the figure(s) that follow. Safe operation and use of the slide gate requires that you familiarize yourself with the various safety decals and the areas or particular functions that the decals apply to, as well as the safety precautions that must be taken to avoid serious injury, death, or damage.

Figure 2. Typical Safety Decal Locations



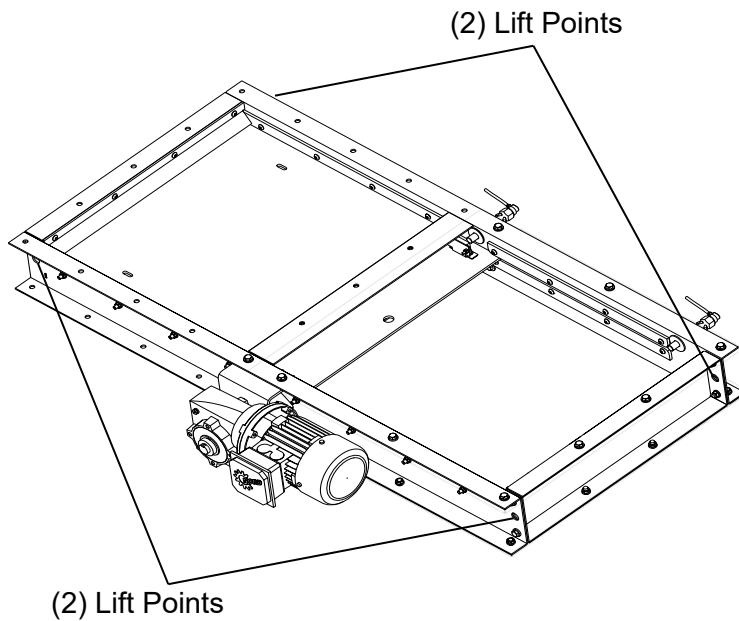
2.6. Lifting and Moving

⚠ WARNING

- Inspect all slings and lifting equipment prior to each lift.
- Extreme care must be taken to prevent damage when moving assembled equipment or components.
- Consider unusually heavy items such as drives and gates when choosing support points due to loading balance and its shifting effects.
- Create a barrier using tape or rope to prevent bystanders from entering the work area.
- Never lift with only one support point. Refer to [Figure 3 on page 8](#).

Figure 3. Typical Slide Gate Lift Points

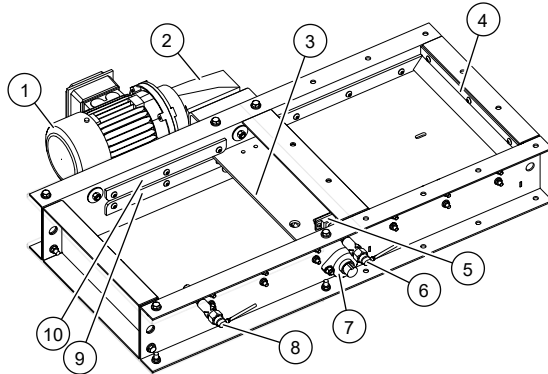
(4) total lift points
per gate assembly



3. Features

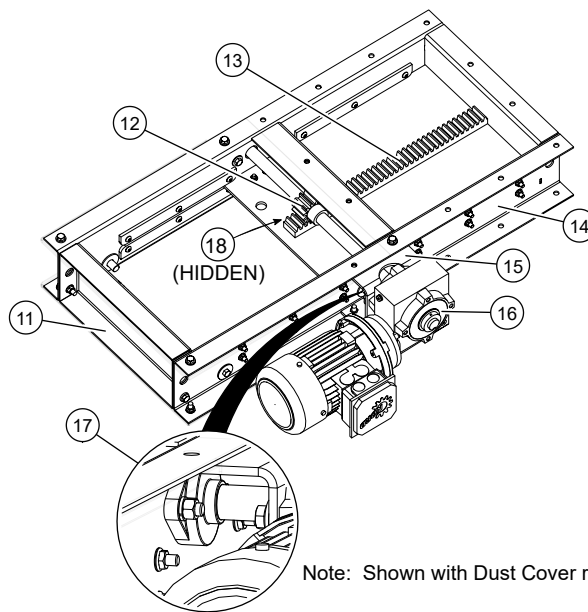
Single Rack and Pinion Gate (Electric) Components

Figure 4. Top View



Note: Shown with Dust Cover removed.

Figure 5. Bottom View



Note: Shown with Dust Cover removed.

Item	Description	Item	Description	Item	Description
1	Electric Motor	7	Outboard Bearing	13	Gear Rack
2	Gear Reduction Drive	8	Open Position Sensor	14	Gate, Main Body
3	Slide Plate	9	Lower Guide Bar	15	Drive Torque Plate
4	Front Guide Bar	10	Upper Guide Bar	16	Drive Bushing Kit
5	Magnetic Target	11	Removable Back Panel	17	Inboard Bearing
6	Closed Position Sensor	12	Pinion Gear	18	Slide Gate Seals (Hidden)

Dual Rack and Pinion Gate (Electric) Components

Figure 6. Top View

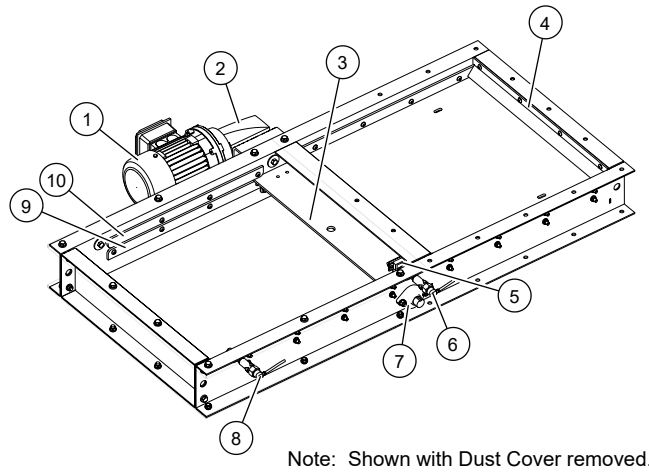
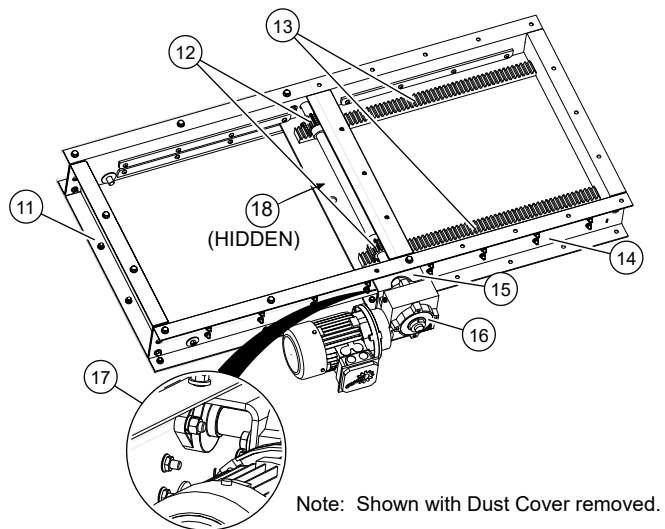


Figure 7. Bottom View



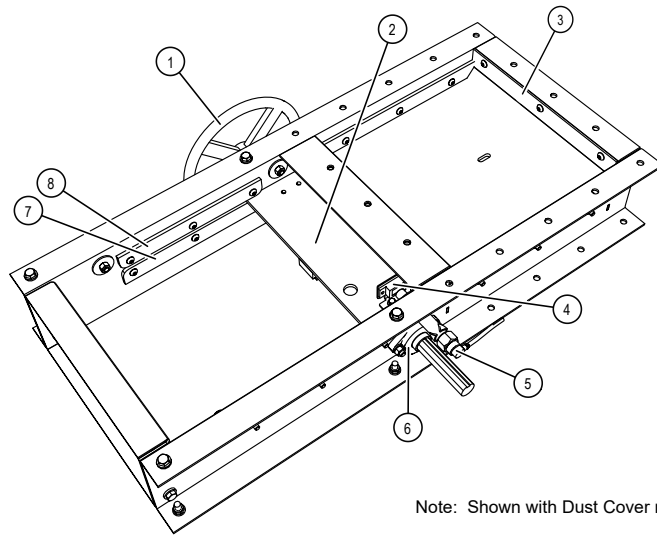
Item	Description
1	Electric Motor
2	Gear Reduction Drive
3	Slide Plate
4	Front Guide Bar
5	Magnetic Target
6	Closed Position Sensor

Item	Description
7	Outboard Bearing
8	Open Position Sensor
9	Lower Guide Bar
10	Upper Guide Bar
11	Removable Back Panel
12	Pinion Gear

Item	Description
13	Gear Rack
14	Gate, Main Body
15	Drive Torque Plate
16	Drive Bushing Kit
17	Inboard Bearing
18	Slide Gate Seals (Hidden)

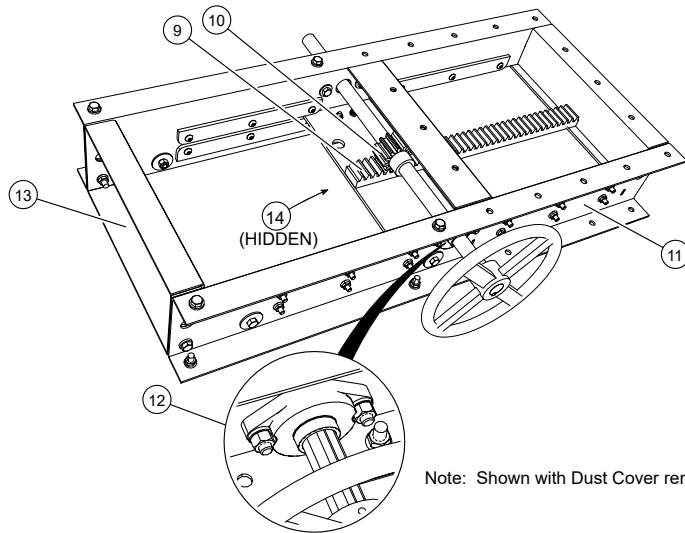
Single Rack and Pinion Gate (Manual Wheel) Components

Figure 8. Top View



Note: Shown with Dust Cover removed.

Figure 9. Bottom View



Note: Shown with Dust Cover removed.

Item	Description
1	Hand Wheel
2	Slide Plate
3	Front Guide Bar
4	Magnetic Target
5	Position Sensor

Item	Description
6	Outboard Bearing
7	Lower Guide Bar
8	Upper Guide Bar
9	Gear Rack
10	Pinion Gear

Item	Description
11	Gate, Main Body
12	Inboard Bearing
13	Removable Back Panel
14	Slide Gate Seals (Hidden)

Dual Rack and Pinion Gate (Manual Wheel) Components

Figure 10. Top View

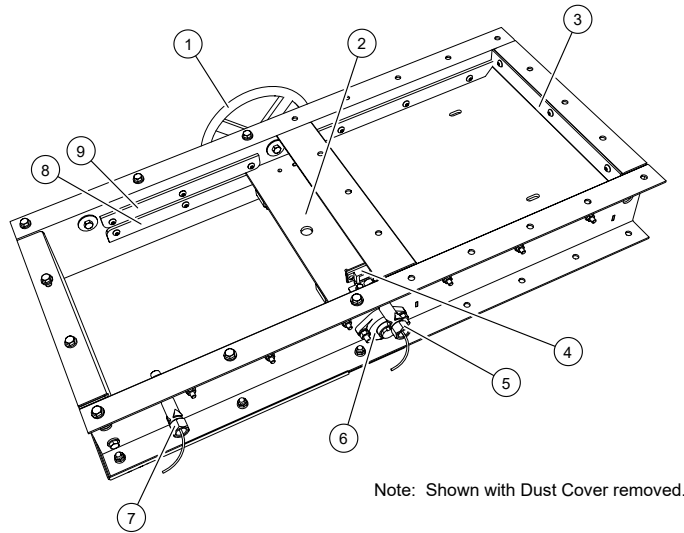
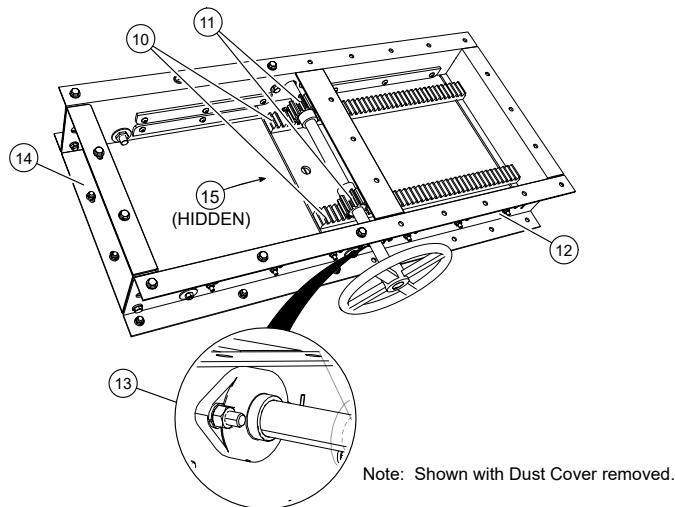


Figure 11. Bottom View



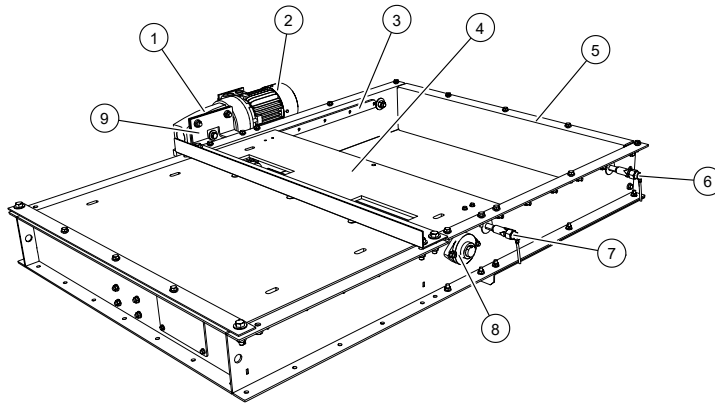
Item	Description
1	Hand Wheel
2	Slide Plate
3	Front Guide Bar
4	Magnetic Trigger
5	Closed Position Sensor

Item	Description
6	Outboard Bearing
7	Open Position Sensor
8	Lower Guide Bar
9	Upper Guide Bar
10	Gear Rack

Item	Description
11	Pinion Gear
12	Gate, Main Body
13	Inboard Bearing
14	Removable Back Panel
15	Slide Gate Seals (Hidden)

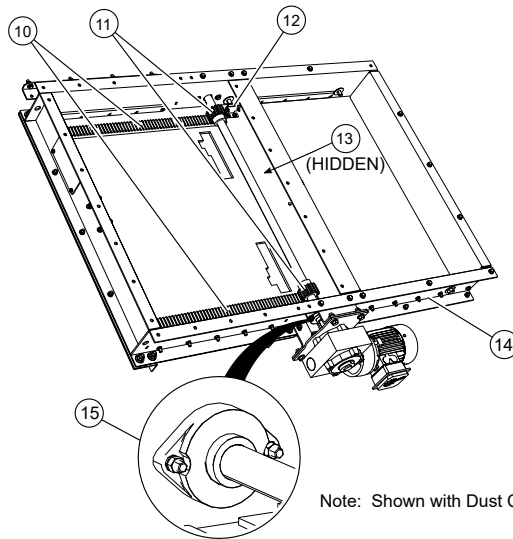
Flush Mount Rack and Pinion Gate (Electric) Components

Figure 12. Top View



Note: Shown with Dust Cover removed.

Figure 13. Bottom View



Note: Shown with Dust Cover removed.

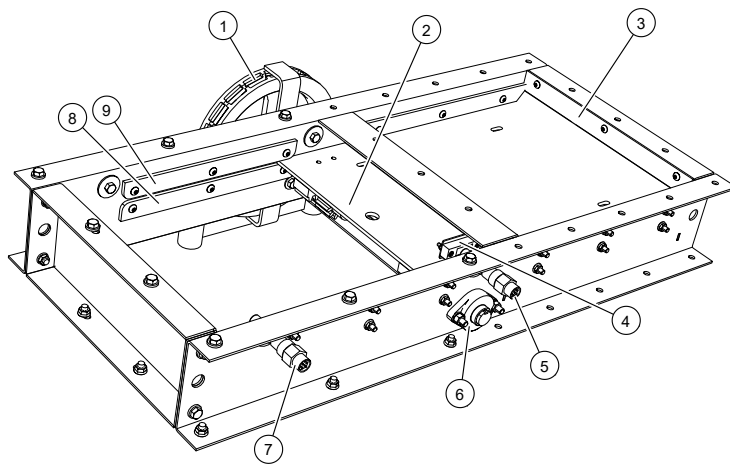
Item	Description
1	Gear Reduction Drive
2	Electric Motor
3	Slide Plate Guide Bar
4	Slide Plate
5	Removable Back Panel

Item	Description
6	Closed Position Sensor
7	Open Position Sensor
8	Outboard Bearing
9	Drive Torque Plate
10	Gear Rack

Item	Description
11	Pinion Gear
12	Magnetic Target
13	Slide Gate Seals (Hidden)
14	Gate, Main Body
15	Inboard Bearing

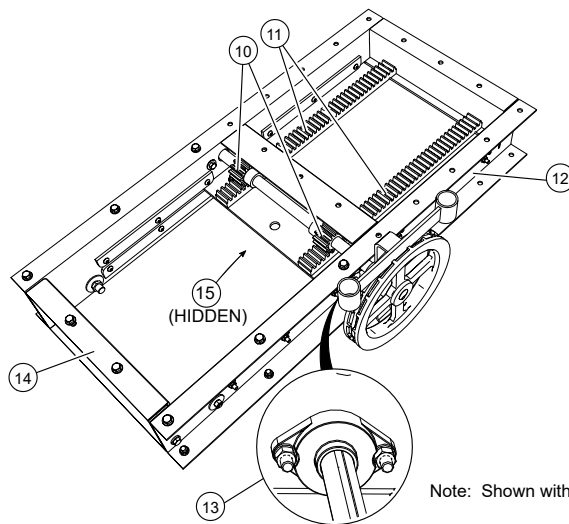
Dual Rack and Pinion Gate (Manual Chain Wheel) Components

Figure 14. Top View



Note: Shown with Dust Cover removed.

Figure 15. Bottom View



Note: Shown with Dust Cover removed.

Item	Description
1	Chain Wheel
2	Slide Plate
3	Front Guide Bar
4	Magnetic Target
5	Closed Position Sensor

Item	Description
6	Outboard Bearing
7	Open Position Sensor
8	Lower Guide Bar
9	Upper Guide Bar
10	Pinion Gear

Item	Description
11	Gear Rack
12	Gate, Main Body
13	Inboard Bearing
14	Removable Back Panel
15	Slide Gate Seals (Hidden)

4. Pre-Installation

4.1. Approval Drawing

An approval drawing from AGI is provided with the slide gate. Use the approval drawing when assembling/installing as it contains specific information about component placement and locations.

4.2. Inspect the Shipment

1. Check if the loads have shifted or have been damaged during transport.
2. Inspect all sides of the shipment for any visible signs of damage. Look for deformation of the housing. Take photos of the damaged components on the truck.
3. Inspect drives, electric motors, and position sensors for visible signs of damage. Look for bent or cracked components. Take photos of the damaged components on the truck.
4. Check that all components listed on delivery receipt are included.
5. If components are damaged or missing, note these on the delivery receipt and immediately report all missing or damaged parts to the freight company.

4.3. Receiving

- Check all assemblies and parts against shipping papers, and inspect all items upon arrival. Look for deformation of the body and flanges.
- Check all drives, electric motors, position sensors, and any visible wiring harness or cabling for damage.
- Check all boxes containing additional hardware against shipping papers, and ensure everything has been received as required.
- Never assemble or install broken or damaged parts.
- For damaged parts, file an immediate claim with the carrier.
- The supplier should be notified of any damages, including all required repairs performed during the equipment's installation.
- Prior to installation, make sure that all supplementary instructions are included. If items are missing, consult the supplier.

5. Installation

5.1. Installation Safety

⚠ WARNING Before continuing, ensure you have completely read and understood this manual's Safety section, in addition to the safety information in the section(s) below.

- Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
- Make sure you have sufficient space and adequate lighting for the work area.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.
- The equipment shall be installed in accordance with applicable local codes and regulations.
- All installation and servicing operations are to be carried out by qualified technicians.
- All electrical connections shall be made by a qualified electrician and must meet the applicable local codes and regulations.
- When testing the slide gate, be aware of moving components and avoid all potential pinch points.

5.2. Electrical Safety

Electrical system shall be installed and serviced by a qualified electrician. The system should be installed in accordance with the local electrical regulation.

5.3. Gate Installation

This section provides general instructions for installation of rack and pinion style slide gates. Details may vary depending on the application.

Important

Slide gate mounting flange and other mating flanges should be checked for bends, warping, dirt, and damage. Flanges must be clean, flat, and square with all attached equipment before tightening any bolts.

Install the slide gate according to the following steps to ensure smooth operation and accurate movement of the slide plate. When installed properly, the slide gate should move smoothly from fully open to fully closed position with no binding.

Slide gate assembly provides four lift points for use in lifting and positioning the slide gate during installation. Refer to [Section 2.6 – Lifting and Moving on page 8](#) for additional information.

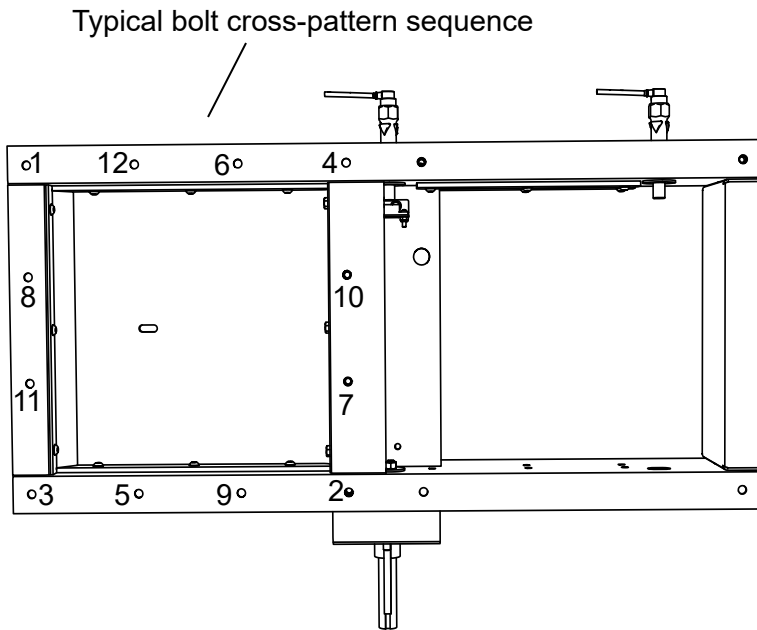
Installation Procedure

Note

Sealant can also be applied before placing the slide gate into position. If this method is preferred, use care not to disturb the sealant during lifting and positioning procedures.

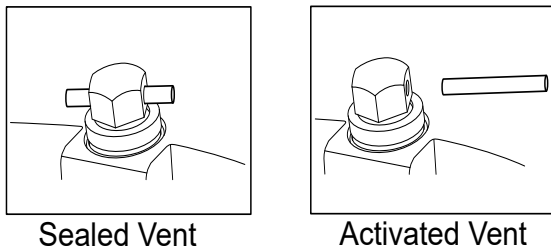
1. Using the appropriate slings (attached to the four lift points) raise the slide gate assembly and move into position for installation.
2. Install flange bolts and nuts in four corners of the slide gate flange (near the lifting points) and the mounting flange of the equipment to be connected.
3. Hand-tighten four flange bolts, keeping a square alignment between the flanges. Leave a small gap between flange mating surfaces for sealant.
4. Apply a small bead of silicone sealant to one flange of each connection.
5. Install all remaining fasteners. Carefully draw all flange connections together evenly keeping flanges square and straight with one another. Use a cross-pattern sequence as shown in the following figure. Snug all fasteners in sequence and in several stages to minimize distortion. Tighten all bolts (in sequence) to the recommended torque. Refer to [Section 9.1 – Bolt Torque on page 32](#) as required.

Figure 16. Flange Bolt Tightening Sequence Example



6. After the slide gate is fully installed and connected, operate the slide gate from fully open to fully closed. If the gate has position sensors, check for proper operation with gate in both open and closed commanded positions. Refer to [Section 7.10 – Position Sensor Maintenance on page 27](#) as required.
7. Check that top and bottom gate seals are seated correctly. If seal-to-plate gap exceeds .015” at any single point, refer to [Section 7.4 – Adjusting the Gate Guide Bars on page 21](#) and adjust gate seals.
8. Install dust covers as necessary.
9. After equipment is fully assembled and known to be operating normally, engage full-flow of product through the system. Open and close gate several times when loaded with product.
10. Monitor for proper gate function and no product leakage. If no problems, gate can be used in normal operation. If problems are encountered, refer to [Section – Troubleshooting on page 29](#) for more information.
11. Remove the shipping insert from the gear reducer breather vent as shown in the example below. Ensure breather plug hole is open and unobstructed.

Figure 17. Typical Gear Drive Breather Vent Activation



6. Operation



Before continuing, ensure you have completely read and understood this manual's Safety section.

This section does not cover specific operation of the electric gates, as operation may depend on the system in which the slide gate is integrated into.

Below are some general guidelines to keep in mind when operating the slide gate.

- Read and understand the operation of the system for which the slide gate is installed.
- Visually inspect the equipment. Refer to Maintenance Section for inspection instructions.
- Inspect wiring, cabling, and electrical connections for loose or damaged components.
- Before adding material from the upstream equipment, confirm functionality of the gate by cycling the gate from fully open to fully closed 2 to 3 times.
- Monitor equipment regularly during normal operation.
- Perform scheduled maintenance as required.

6.1. Shutdown

When operation has been completed:

1. Once the slide gate is clear of product, lock out the power source.
2. Clean the entire work area.

6.2. Extended Shutdown

After the season's use, the slide gate should be thoroughly inspected and prepared for extended shutdown.

1. Clean the slide gate thoroughly and remove all dirt, mud, debris, or residue.
2. Inspect all moving or rotating parts to see if anything has become entangled in them. Remove any entangled material.
3. Touch up all paint nicks and scratches to prevent rusting.
4. Inspect the slide gate for cracks and tightness of fasteners. Replace worn or damaged components as necessary.
5. Cover the motor with waterproof tarpaulin if stored outside to protect from weather. Do not seal motor tarpaulin around the motor. Always provide a path for moisture to evaporate.
6. Remove dust covers and clean all components of the slide gate, including the top and bottom of the gate assembly. Ensure the magnetic target is clean, and has a clear path of travel to between the two position sensors.
7. Inspect rack and pinion gears. Remove any debris and rust. Keep both gears clean and dry. Do not lubricate.
8. Lubricate bearings as required. Refer to [Section 7.8 – Lubricate the Equipment on page 24](#) for maintenance intervals.

7. Maintenance



Before continuing, ensure you have completely read and understood this manual's safety section.

7.1. Maintenance Safety

⚠ WARNING

- Keep components in good condition. Follow the maintenance procedures.
- Ensure the service area is clean, dry, and has sufficient lighting.
- Do not modify any components without written authorization from the manufacturer. Modification can be dangerous and result in serious injuries.
- Shut down and lock out power before maintaining equipment.
- After maintenance is complete, replace all guards, service doors, and/or covers.
- Use only genuine AGI replacement parts or equivalent. Use of unauthorized parts will void warranty. If in doubt, contact AGI or your local dealer.




7.2. Maintenance Schedule

Follow the Maintenance Schedule below. Keep good records of the hours the slide gate has been operated and the maintenance performed.

Maintenance Intervals
Daily:
Check equipment for proper operation during startup up. If a problem is encountered, repair the problem before continuing normal operations. Refer to Section – Troubleshooting on page 29 as necessary.
Monthly:
Refer to Section 7.3 – Visually Inspect the Equipment on page 21 .
Quarterly:
Refer to Section 7.4 – Adjusting the Gate Guide Bars on page 21 .
Refer to Section 7.5 – Adjusting the Slide Gate Seals on page 23
Semiannually:
Refer to Section 7.6 – Cleaning the Slide Gate on page 23 .
Annually:
Refer to Section 7.7 – Inspecting the Wiring, Controls, and Electric Motor on page 24 .

As required:
Refer to Section 7.8 – Lubricate the Equipment on page 24.
Refer to Section 7.9 – Gear Drive Maintenance on page 25.
Refer to Section 7.10 – Position Sensor Maintenance on page 27.

7.3. Visually Inspect the Equipment

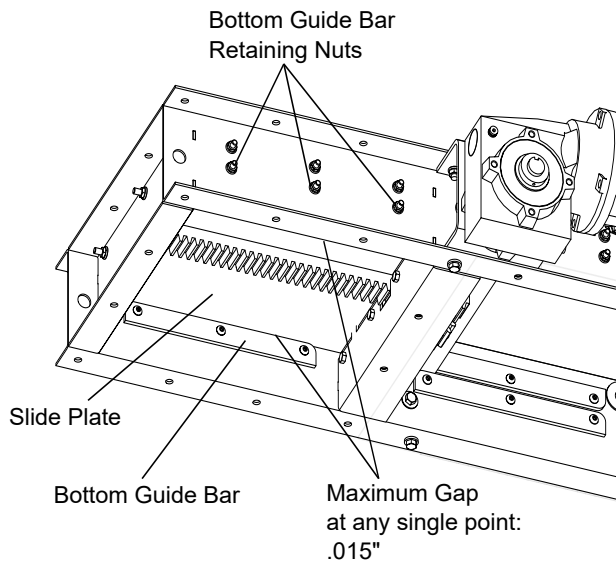
 **WARNING** Lock out power before inspecting.

Check the following during a visual inspection:

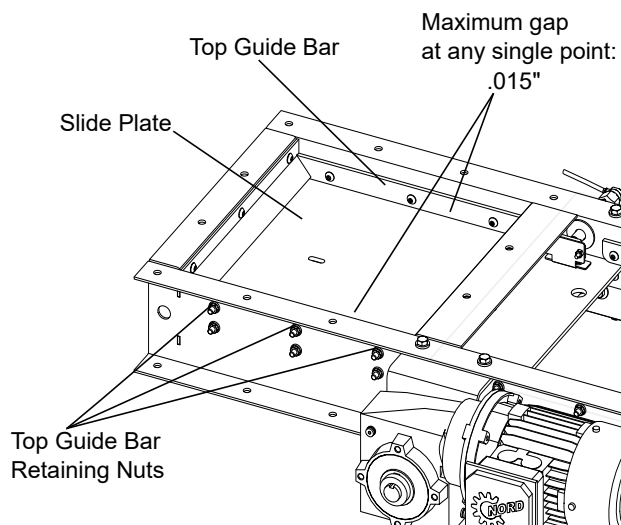
1. Examine the slide gate for damage or unusual wear.
2. Check that the bin or hopper is free of obstruction. Remove obstructions as necessary.
3. Be sure safety decal is in place and legible.
4. Check for dirt, debris, or other obstructions that may restrict slide gate movement. Clean and remove obstructions as necessary.
5. Check for missing or loose slide gate mounting hardware. Replace or tighten hardware as required.
6. Check that all components of the slide gate assembly are properly aligned and tightly secured. Realign parts and tighten hardware as necessary.
7. Check that visible portions of the two slide gate positions sensors are not damaged and are tightly secured. Replace sensor if damaged. Verify proper sensor-to-magnet air gap and tighten sensor as required. Refer to [Section 7.10 – Position Sensor Maintenance on page 27.](#)

7.4. Adjusting the Gate Guide Bars

1. Ensure the attached hopper or bin is free of product. Operate the system until no product remains above the slide gate.
2. Clean all remaining product from the top and bottom of the slide gate assembly using a vacuum.
3. Move the slide gate to the fully closed position.
4. Lockout the slide gate power.
5. Remove the top and bottom dust covers.
6. Inspect for excessive gap between the slide plate and both bottom guide bars. If gap exceeds .015” at any single point, loosen retaining nuts and firmly push guide bar up against the slide plate. Tighten retaining nuts and recheck gap. Readjust as required. Tighten retaining nuts to proper torque. Refer to [Section 9.1 – Bolt Torque on page 32.](#)

Figure 18. Typical Slide Gate Bottom Guide Bar Adjustment

7. Inspect for excessive gap between the slide plate and both top guide bars. If gap exceeds .015" at any single point, loosen retaining nuts and push guide bar fully against the slide plate. Tighten retaining nuts and recheck gap. Readjust as required. Tighten retaining nuts to proper torque.

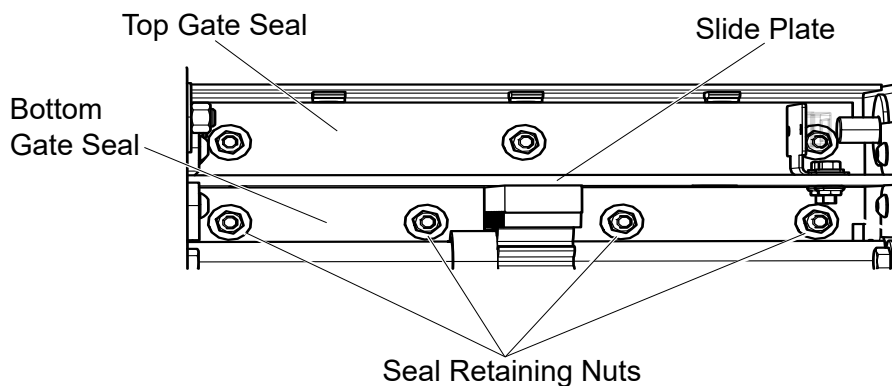
Figure 19. Typical Slide Gate Top Guide Bar Adjustment

8. Reinstall dust covers.
9. Remove lockout and restore power to slide gate.
10. Operate the slide gate from open to closed several times to verify proper operation.

7.5. Adjusting the Slide Gate Seals

1. Ensure the attached hopper or bin is free of product. Operate the system until no product remains above the slide gate.
2. Clean all remaining product from the top and bottom of the slide gate assembly using a vacuum.
3. Move the slide gate to the fully closed position.
4. Lockout the slide gate power.
5. Remove the top and bottom dust covers.
6. Remove back panel as necessary.
7. Inspect for excessive gap between the slide plate and the top slide gate seal. If gap exceeds .015" at any single point, loosen all retaining nuts and firmly push gate seal down against the slide plate. Tighten retaining nuts and recheck gap. Readjust as required. Tighten retaining nuts to proper torque. Refer to [Section 9.1 – Bolt Torque on page 32](#).

Figure 20. Typical Slide Gate Seals



Note: View with back panel removed, looking inside towards slide plate.

8. Inspect for excessive gap between the slide plate and bottom slide gate seal(s). If gap exceeds .015" at any single point, loosen all retaining nuts and push gate seal(s) up against the slide plate. Tighten retaining nuts and recheck gap. Readjust as required. Tighten retaining nuts to proper torque.
9. Reinstall back panel. Tighten bolts to proper specification.
10. Reinstall dust covers.
11. Remove lockout and restore power to slide gate.
12. Operate the slide gate from open to closed several times to verify proper operation.

7.6. Cleaning the Slide Gate

1. Use vacuum to remove any buildup from exterior of the gate assembly.
2. Open the slide gate dust covers.

3. Use vacuum to remove any material, dirt, or debris left on the top and bottom of the slide plate , as well as in the gaps between slide plate guides.
4. Ensure that the target magnetic strip is clear of all obstructions or debris.
5. Ensure that the rack and pinion gears are free of material buildup and operating freely.

7.7. Inspecting the Wiring, Controls, and Electric Motor

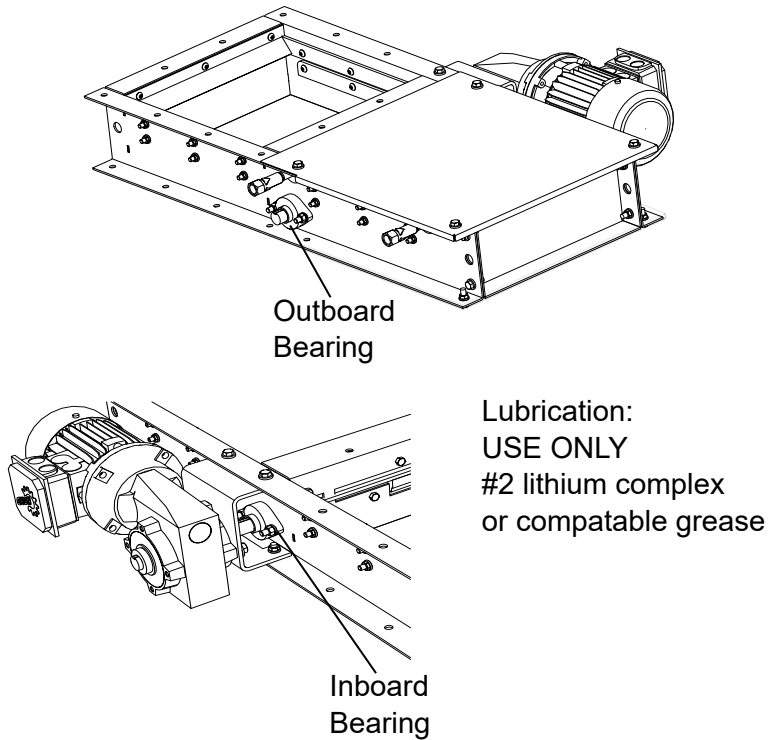
- Check electric motor, external components, and cable connections for damage. Repair as necessary.
- Check for frayed/exposed wiring. Replace wiring as necessary.
- Ensure all electrical connections are secure. Tighten and secure wiring connections as required.
- Ensure the strain reliefs retain wiring firmly and are properly attached to the gate body.
- Replace damaged and defective components.
- Follow the drive manufacturer’s instructions for routine maintenance.

7.8. Lubricate the Equipment

Note

The required lubrication period of a bearing is dependant upon speed, load, and working environment of a specific installation. A maintenance routine can be determined by equipment observation.

- Apply grease at each lubrication point until a small amount of grease is forced out of the bearing ends. It is recommended to lubricate bearings while they are in motion when possible.
- Select a grease that is compatible with #2 lithium complex grease.
- Suggested lubrication intervals are every four months, based on 8 hours per day.
- Rack and pinion gears should be clean and dry. Do not lubricate.

Figure 21. Typical Slide Gate Inboard and Outboard Bearings

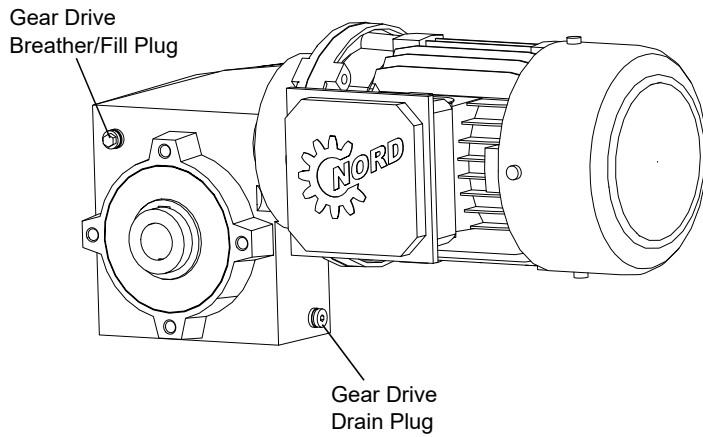
7.9. Gear Drive Maintenance

Check the following regularly:

- Check the exterior of the gear drive unit and attached components for damage. Replace damaged components as required.
- Check gear drive seals for leakage. Replace seals as required. Refer to gear drive manufacturer's documentation.
- Check the gear drive's breather vent for obstructions and clogging. Clean or replace breather vent as required.
- Check that torque arm bolts are tightened to proper torque. Refer to [Section 9.1 – Bolt Torque on page 32](#) for fastener torque specifications.

Gear Drive Lubrication Replacement

Figure 22. Typical Gear Drive, Drain Plug and Fill Plug Locations



Note

For the recommended oil type, check the data plate attached to the housing of the gear drive.

Table 1. Recommended Drive Maintenance Interval

Lubrication	Interval
Mineral oil	Replace mineral oil every 10,000 hours or every 2 years.
Synthetic oil	Replace synthetic oil every 20,000 hours or every 4 years.
Oil analysis	Replace gear drive oil if: <ul style="list-style-type: none"> • Viscosity change is in excess of 10% • Debris particles exceed 25 ppm • Iron content exceeds 150 ppm • Water content is greater than 0.05% or 500 ppm • Total Acid Number (TAN) change is in excess of 5%

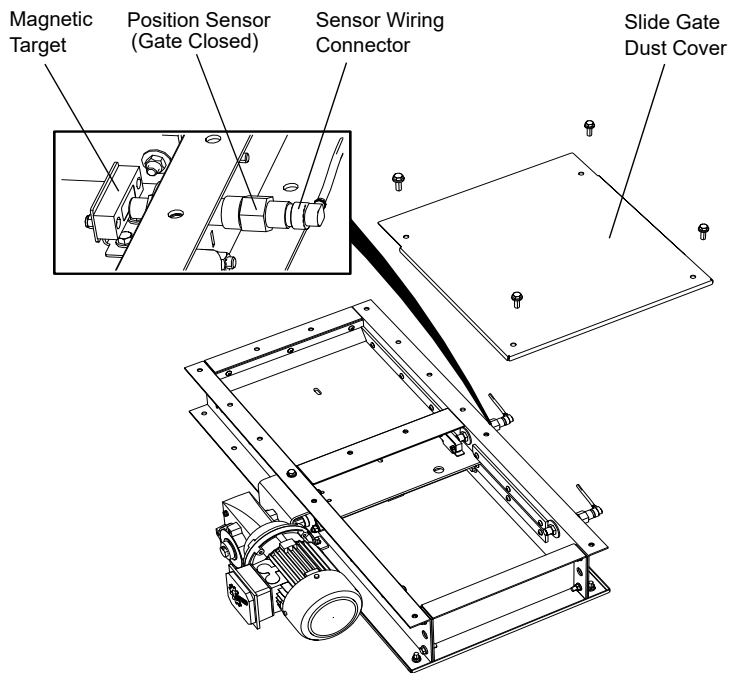
7.10. Position Sensor Maintenance

- Check position sensors for damage. Replace defective or damaged sensors as required and perform the air-gap adjustment procedure.
- Check that sensors are attached tightly and that they do not screw in or out by hand. If a loose sensor is found, perform the following air-gap adjustment procedure.
- Check that magnetic target is tightly secured.
- Check magnetic target for damage and bent hardware. Replace damaged target or hardware as required.
- Check for loose or damaged wiring or connectors at sensors. Secure or repair as required.

Position Sensor Air-Gap Adjustment

1. Operate gate until magnetic target is in front of sensor to be adjusted (fully open or fully closed position).

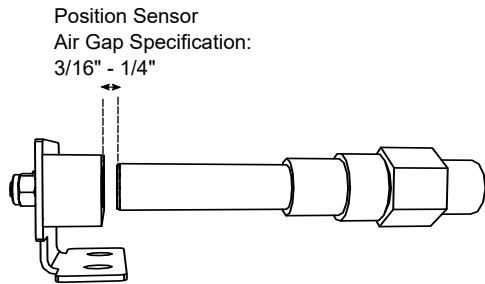
Figure 23. Typical Sensor and Magnetic Target Locations



2. Lock out slide gate power.
3. Check that magnetic target is tightly secured and properly aligned with sensor.

4. Measure air-gap between magnetic target and tip of sensor. Air-gap specification is $3/16''$ - $1/4''$.

Figure 24. Typical Position Sensor Air Gap Specification



5. Loosen and rotate sensor jam-nuts and adjust to the specified air-gap as required.
6. While keeping the sensor body in position, tightly snug the jam-nuts to prevent sensor movement.
7. After securing the sensor, recheck air-gap. Readjust as necessary.
8. Using a $7/8''$ wrench, tighten one sensor jam nut to 12-22 lb-ft (20-30 Nm).
9. Remove lock out and restore slide gate power.
10. Operate slide gate and verify proper function and control.

8. Troubleshooting

Find causes and solutions to common problems that can be encountered.

Troubleshooting

⚠ WARNING Shut down and lock out all power sources before diagnosing any of the causes or attempting any of the solutions below.

The following section covers some causes and solutions to some of the problems that may be encountered.

If there is a problem that is difficult to solve, even after having read through this section, please contact your representative or AGI. Have this manual and the serial number available.

Problem	Cause	Solution
Gate leaks product at the back side	Worn Seals	<ul style="list-style-type: none"> Adjust seals if possible. If adjustment is not possible, replace seals. Contact equipment manufacturer for replacement parts.
Gate leaks product at the front side	Slide plate is not fully closed	<ul style="list-style-type: none"> Move slide plate to fully closed position. Check position sensors and trigger magnet for correct alignment. Adjust as required. Check gate front guide alignment. Adjust as required.
<p>NOTE: For Rack and Pinion Slide Plates, the bottom seals will never seal 100%. An opening around the rack gears will allow for some product to leak. It is recommended to have a scheduled maintenance and clean out product buildup regularly.</p>		
Gate does not open	Motor Failure	<ul style="list-style-type: none"> Check circuit breaker. Check motor overload settings. Check electrical connection in junction box. Check motor bearings. Check motor for internal moisture.
	Controls don't work	<ul style="list-style-type: none"> Check position sensor settings. Check sensors for damage. Check sensor target alignment. Check airgap between sensors and target.

Problem	Cause	Solution
		<ul style="list-style-type: none"> • Check settings in control room. • Check for adequate power. • Check electrical connections at the gate and in the electrical room.
	Damaged slide plate	<ul style="list-style-type: none"> • Check for plate deformations. • Check condition of racking gears.
	Deformation of gate housing	<ul style="list-style-type: none"> • Check for ground/foundation shifting causing equipment and equipment support structures to shift/twist.
	External factors	<ul style="list-style-type: none"> • Material sitting on top of the gate for too long. • Excessive force pushing down on the slide plate. • Damaged gears and bearings. Replace parts. Contact equipment manufacturer for assistance. • Insufficient torque. Contact equipment manufacturer for assistance. • Damaged drive. Replace parts. Contact equipment manufacturer for assistance. • Damaged motor. Replace parts. Contact equipment manufacturer for assistance. • Damaged/disengaged coupling. Remove motor and check for damage. Adjust if possible. Replace if damaged. Contact equipment manufacturer for assistance. • Damaged Shaft. Replace parts. Contact equipment manufacturer for assistance. • Hand wheel (manually operated gates only). Check wheel for proper engagement. Replace if damaged. Contact equipment manufacturer for assistance. • Chain wheel (manually operated gates only). Check wheel for proper

Problem	Cause	Solution
		engagement. and condition of chain. Replace if damaged. Contact equipment manufacturer for assistance.
*Gate does not close	*Refer to <i>Gate does not open.</i>	
Motor operating but Slide plate does not move	Damaged/disengaged coupling	<ul style="list-style-type: none"> • Remove motor and check for damage. • Adjust coupler if possible. • Replace coupler if damaged. Contact equipment manufacturer for assistance.
	Damaged drive	<ul style="list-style-type: none"> • Replace parts. Contact equipment manufacturer for assistance.
	Rack and pinion gears	<ul style="list-style-type: none"> • Check gears for proper alignment. • Check key stocks in pinion gears. • Check gears for damage.
	Damaged Shaft	<ul style="list-style-type: none"> • Replace if damaged. Contact equipment manufacturer for assistance.

9. Appendix

9.1. Bolt Torque

Table 2 gives the correct torque values for various hardware. Tighten all bolts to the torque specified, unless otherwise noted. Check tightness periodically, using Table 2 as a guide. Replace the hardware with the same strength bolt, contact AGI if you are unsure.

Table 2. Recommended Bolt Torque

Size	Dry or Lubricated	Threads per inch (Course/Fine)	Area of Bolt (sq in.)		Recommended Torque (ft-lb)							
					Grade 2		Grade 5		Grade 8		8.8 S/S	
					Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine
1/4"	Dry	20/28	0.0318	0.0364	5.5	6.3	8	10	12	14	6.3	7.8
	Lubricated				6.3	4.7	6.3	7.2	9	10	-	-
5/16"	Dry	18/24	0.0524	0.058	11	12	17	19	24	27	11	11.8
	Lubricated				8	9	13	14	18	20	-	-
3/8"	Dry	16/24	0.0775	0.0878	20	23	30	35	45	50	20	22
	Lubricated				15	17	23	25	35	35	-	-
7/16"	Dry	14/20	0.1063	0.1187	32	36	50	55	70	80	31	33
	Lubricated				24	27	35	40	50	80	-	-
1/2"	Dry	13/20	0.1419	0.1599	50	55	75	85	110	120	43	45
	Lubricated				35	40	55	65	80	90	-	-
9/16"	Dry	12/18	0.182	0.203	70	80	110	120	150	170	57	63
	Lubricated				55	60	80	90	110	130	-	-
5/8"	Dry	11/18	0.226	0.256	100	110	150	170	210	240	93	104
	Lubricated				75	85	110	130	160	180	-	-
3/4"	Dry	10/16	0.334	0.373	175	200	260	300	380	420	128	124
	Lubricated				130	140	200	220	280	310	-	-
7/8"	Dry	9/14	0.462	0.508	170	180	430	470	600	670	194	193
	Lubricated				125	140	320	350	180	180	-	-
1"	Dry	8/14	0.606	0.679	250	280	640	720	910	1020	287	289
	Lubricated				190	210	480	540	680	760	-	-
1-1/8"	Dry	7/12	0.763	0.856	350	400	790	890	1290	1440	288	290
	Lubricated				270	300	590	670	970	1080	-	-
1-1/4"	Dry	7/12	0.989	1.073	500	550	1120	1240	1820	2010	289	291
	Lubricated				380	420	840	930	1360	1510	-	-
1-1/2"	Dry	6/12	1.405	1.581	870	960	1950	2200	3160	3560	-	-
	Lubricated				650	730	1460	1640	2370	2670	-	-

Note

Torque values in table are valid unless otherwise specified.
 Only lubricate bolts or cap screws as directed.
 If using locking hardware, increase final torque values by 5%.

9.2. Set Screw Torque

Imperial Grade 5 (lb·ft)	
4	1
5	1
6	1
8	2
10	3
1/4	8
5/16	15
3/8	26
7/16	42
1/2	63
5/8	122
3/4	210
7/8	479
1	667

9.3. Position Sensor Nut Torque

<u>5/8"-18 UNF</u>	
lb·ft	Nm
14-22	20-30

10. AGI Warranty

Ag Growth International Inc. warrants that the goods and/or services being supplied (the “Goods”) will be free from defects in materials and workmanship under normal conditions, use, service, and maintenance, for a period of twelve (12) months from the date of first operation of the Goods, but in no event more than eighteen (18) months from the date of delivery of the Goods to the end-user (the “Warranty Term”). If the Goods are being used for rental purposes, the Warranty Term for the subject Goods shall be limited to 90 days.

Subject to AGI’s sole discretion, if the Goods, or a component thereof, are found to have a default in materials and/or workmanship within the Warranty Term, AGI will, at its own option and expense, repair or replace the subject Goods or refund the purchase price for the applicable Goods. Any warranty related expenses incurred on behalf of or by the end-user without the prior written consent of AGI shall be the sole responsibility of the end-user. Expenses relating to travel, customs or import duties and tariffs, equipment rental, and any costs associated with accessing the Goods are the sole responsibility of the customer. Warranty shall be void in the event that the Goods are returned or disposed of without the written consent of AGI.

The customer shall not assert a claim that the Goods are defective unless the customer gives written notice to AGI of such defect within forty-eight (48) hours of discovering such defect. In the event of a warranty claim, the customer must complete any and all information required by AGI in order to properly assess or investigate the claim. AGI shall be given a reasonable opportunity to inspect and test the Goods in question. Failure by the customer to notify AGI of such claim within 48 hours shall operate as a waiver of any and all such claims by the customer.

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Please include the part number listed on the cover page in your message.