The “Rack & Pinion Control Device” was designed to aid in the opening and closing of the bin well control gates. The controller is set up for operating up to three sets of bin wells. Each outside control sleeve will operate up to three intermediate wells. The center controller sleeve is used for operating the center well gate and will also be used for applications using 5 and 6 intermediate wells.

The Rack & Pinion controller will be installed after the control pipes have been inserted through the bin wall and positioned with their respective bin wells. Some control pipe kits use 1/2” SCH 40 pipe (7/8” o.d.) and some use 1” SCH 40 pipe (1 5/16” o.d.) for intermediate well operation. Kits using the 1” SCH 40 pipe include two 18” long 1/2” SCH 40 extensions for connection to the controller sleeves. The Rack & Pinion controller can be used with any of these control pipe kits. The following instructions include installation for each control pipe kit.

Refer to the instructions supplied with the control pipe kits for proper installation of the control pipes and their attachment to the bin well gates.

IMPORTANT! Close all Bin Well Control Gates before filling grain bin. Start unloading auger before opening gates. Close gates and allow unload auger to clean-out before stopping auger. Refer to the instructions included with the unload system for proper operating procedures.

• Always have the center bin well open when using the intermediate wells. Open the intermediate well(s) nearest the center well first, then work towards the bin wall opening the next set of wells in succession and so on.

• To open the center well only, remove the pins (or bolts) that attach the intermediate well control pipes to the controller sleeves leaving only the center well pipe connected (for 5 & 6 well applications using 1 5/16” dia. pipes, also remove the pin that attaches the intermediate well control pipe to the center well control pipe). Turn the Rack & Pinion handle to open center gate.

• To open the intermediate well gates, start with the inner well(s) closest to the center well. Remove the pin (or bolt) attaching the control pipe to the outer bin well controller sleeve. Open the inner intermediate well(s) and center well together.

• Close well gates and allow unload auger to clean itself out. Reinsert the pin to attach the outer control pipe to the controller sleeve and open all well gates together.
INSTALL RACK & PINION CONTROLLER
CONTROL PIPE KITS USING
1/2" SCH 40 CONTROLPIPES

**WARNING!** To help prevent serious personal injury, always wear the proper protective gear. Gloves, hearing protection, safety glasses and face shield should be worn when working with metal materials.

The illustration below shows a typical layout for control pipe operation using 6 intermediate wells. Refer to the instructions furnished with the control pipe kits for all other intermediate well layout options.

NOTE: Control pipe guides are available. These are required when the recommended number of wells are not used, or when there is a large span between bin wells (this is to prevent the control pipes from sagging which otherwise can cause misalignment and binding of the pipes).

1. Position the Rack & Pinion controller onto the unload tube as close to the unload tube flange as possible and loosely secure the controller in place using the half-bands and 5/16” x 1 1/2” bolts and non-lock nuts (the controller sleeves need to face the bin).

Be sure to allow access to the flange bolts if the power head is to be installed and removed frequently.

2. Determine the length of the center well control pipe from center well to middle sleeve on the controller. Crank controller handle so sleeves are fully extended towards the bin.

With center well gate in the closed position, measure the distance from where the clamp on the gate will be located, to the hole in the middle controller sleeve (add an additional 1 1/4” to the measurement to allow for hole locations that will be drilled). Cut control pipe to length.

3. Drill a 3/8” diameter hole 5/8” from the end of the control pipe for attaching to the controller sleeve (See Fig. 2).

Fasten the control pipe to the center well gate as outlined in the instructions included with the control pipe kits.

4. Retract the controller sleeves and insert center well control pipe into the middle sleeve (it may be necessary to reposition the Rack & Pinion controller). Secure control pipe to sleeve using a snap pin or a 5/16” x 1 3/4” bolt and nut.

With the controller sleeves in the full forward position (towards bin), verify the center well gate is closed, reposition Rack & Pinion controller if necessary, to ensure center well gate is closed and tighten the half-bands securing controller to the unload tube.
5. Position controller handle so center well gate is closed and slide all intermediate well gates closed. The control pipes should be positioned in their respective set of intermediate wells as outlined in the instructions provided with the control pipe kits. Determine the lengths of the intermediate control pipes in the same manner as the measurement for the center well control pipe (from where clamp on gate will be located to hole in controller sleeve). After measurements have been taken, add an additional 1 1/4” to the overall length and cut pipes to appropriate lengths.

6. Drill a 3/8” dia. hole 5/8” from the end of the control pipe. Attach control pipes to well gates as outlined in instructions provided with the control pipe kits. Secure control pipes to controller sleeves using snap pin or a 5/16” x 1 3/4” bolt and nut.

7. Verify all well gates close when controller handle is cranked moving the controller sleeves towards the bin (make any necessary adjustments).

To operate center well only, remove the pins (or bolts) that attach the intermediate well control pipes to the controller sleeves. Crank controller handle and open center well gate.

To operate intermediate wells, remove the pin (or bolt) opposite the side you want to open (begin with wells nearest the center well first and work towards the bin wall). Turn controller handle to open desired intermediate wells and center well (always open the center well gate with the intermediate well gates). Refer to the instructions provided with the unload system and control pipe kits for safety precautions and proper procedures for operating well gates and other bin unloading information.

Fig. 2

Fig. 3

Fig. 4
INSTALL RACK & PINION CONTROLLER
CONTROL PIPE KITS USING
1" SCH 40 CONTROL PIPES

WARNING! To help prevent serious personal injury, always wear the proper protective gear. Gloves, hearing protection, safety glasses and face shield should be worn when working with metal materials.

The illustration below shows a typical layout for control pipe operation using 6 intermediate wells. Refer to the instructions furnished with the control pipe kits for all other intermediate well layout options.

NOTE: Control pipe guides are available. These are required when the recommended number of wells are not used, or when there is a large span between bin wells (this is to prevent the control pipes from sagging which otherwise can cause misalignment and binding of the pipes).
If using the band-on control pipe guides, make sure to position the guide(s) so they do not interfere with the movement of the coupler used on the 1 5/16" dia. pipes (See Fig. 5).

1. Crank the Rack & Pinion controller handle so the sleeves on the controller are retracted inward towards the controller housing.
Mount controller onto the unload tube as close to the unload tube flange as possible and loosely secure the controller in place using the half-bands and 5/16" x 1 1/2" bolts and non-lock nuts (the controller sleeves need to face the bin).
Be sure to allow access to the flange bolts if the power head is to be installed and removed frequently.

2. Slide the 18" pipe extensions into the two outside controller sleeves as shown in Fig. 6 (the holes in the end of the extensions will face the controller sleeves). Align the holes in the extensions with the holes in the controller sleeves and secure using a snap pin or a 5/16" x 1 3/4" bolt and nut.

3. With all bin well gates closed, turn the controller handle to extend the sleeves to the full forward position (towards bin). Slide the controller towards the bin while inserting the center well control pipe into the middle sleeve and the 18" extensions into the intermediate well control pipes. Secure the center well control pipe to the sleeve using a snap pin or a 5/16" x 1 3/4" bolt and nut.

The control pipes should already be attached to their respective well gates. Refer to the instructions supplied with the control pipe kits to ensure the gates are properly installed.
4. With the controller sleeves in the full forward position, verify the center well gate is completely closed. Reposition the controller if necessary to ensure the gate is closed and tighten the half-bands to secure controller to unload tube.

5. Check that all intermediate well gates are in the closed position. With center well gate still closed (controller sleeves full forward) use the holes in the ends of the intermediate control pipes as a template and drill a 3/8" dia. hole through the 18" extensions that were previously inserted into the control pipes (See Fig. 7).

For 5 & 6 well applications, also drill a 3/8" dia. hole through the center well control pipe.

6. Use a snap pin or a 5/16" x 1 3/4" bolt and nut to secure the control pipes to the extensions (and if applicable, to the center well control pipe).

7. Operate the Rack & Pinion controller handle and verify all slide gates function properly. Make any necessary adjustments.

To operate only center well, remove pins that attach the 18" extensions to the controller sleeves (See Fig. 8). On 5 & 6 well applications, also remove the pin from the intermediate/center well control pipe connection.
**PARTS LIST**

**RACK & PINION CONTROLLER w/ 18" TRAVEL**

Models: BJ0806W - 8”
BJ1006W - 10”
BJ1206W - 12”

The complete Rack & Pinion Assembly can be obtained.
Order Part No. 1025309 - 8”, 1024200 - 10”, 1025312 - 12”

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Description</th>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1025309</td>
<td>Housing, Rack &amp; Pinion (f/ 8”)</td>
<td>(8)</td>
<td>5271A1</td>
<td>Half-Band, 4” wide f/ 12”</td>
</tr>
<tr>
<td>1</td>
<td>1024200</td>
<td>Housing, Rack &amp; Pinion (f/ 10”)</td>
<td>9</td>
<td>61687</td>
<td>Handle, Rack &amp; Pinion</td>
</tr>
<tr>
<td>1</td>
<td>1025311</td>
<td>Housing, Rack &amp; Pinion (f/ 12”)</td>
<td>10</td>
<td>1018576</td>
<td>Chain, RC50 66 pitch w/ link</td>
</tr>
<tr>
<td>2</td>
<td>61703</td>
<td>Control Tube Weldment</td>
<td>11</td>
<td>40023</td>
<td>Connecting Link, RC 50-2 chain</td>
</tr>
<tr>
<td>3</td>
<td>52327</td>
<td>Idler Sprocket Bracket (left)</td>
<td>12</td>
<td>4020A1</td>
<td>Key, 1/4” sq. x 1” long</td>
</tr>
<tr>
<td>4</td>
<td>52326</td>
<td>Idler Sprocket Bracket (right)</td>
<td>13</td>
<td>1002305</td>
<td>Decal, Danger</td>
</tr>
<tr>
<td>5</td>
<td>6821P</td>
<td>Idler Sprocket, #50 13 tooth w/ brng.</td>
<td>14</td>
<td>33244</td>
<td>Bolt, 5/8-11 x 2” Gr5</td>
</tr>
<tr>
<td>6</td>
<td>5204H</td>
<td>Sprocket, #50 13 tooth w/ 1” bore</td>
<td>15</td>
<td>1005111</td>
<td>Locknut, 5/8-11, side depress</td>
</tr>
<tr>
<td>7</td>
<td>3324A1</td>
<td>Lock Collar, 1” bore</td>
<td>16</td>
<td>33026</td>
<td>Flat Washer, 5/8” PLT</td>
</tr>
<tr>
<td>8</td>
<td>5042A1</td>
<td>Half-Band, 4” wide f/ 8”</td>
<td>17</td>
<td>1001631</td>
<td>Carriage Bolt, 3/8-16 x 1” Gr5</td>
</tr>
<tr>
<td>(8)</td>
<td>5044A1</td>
<td>Half-Band, 4” wide f/ 10”</td>
<td>18</td>
<td>1006947</td>
<td>Decal, Instruction</td>
</tr>
</tbody>
</table>

3/11 34235-6