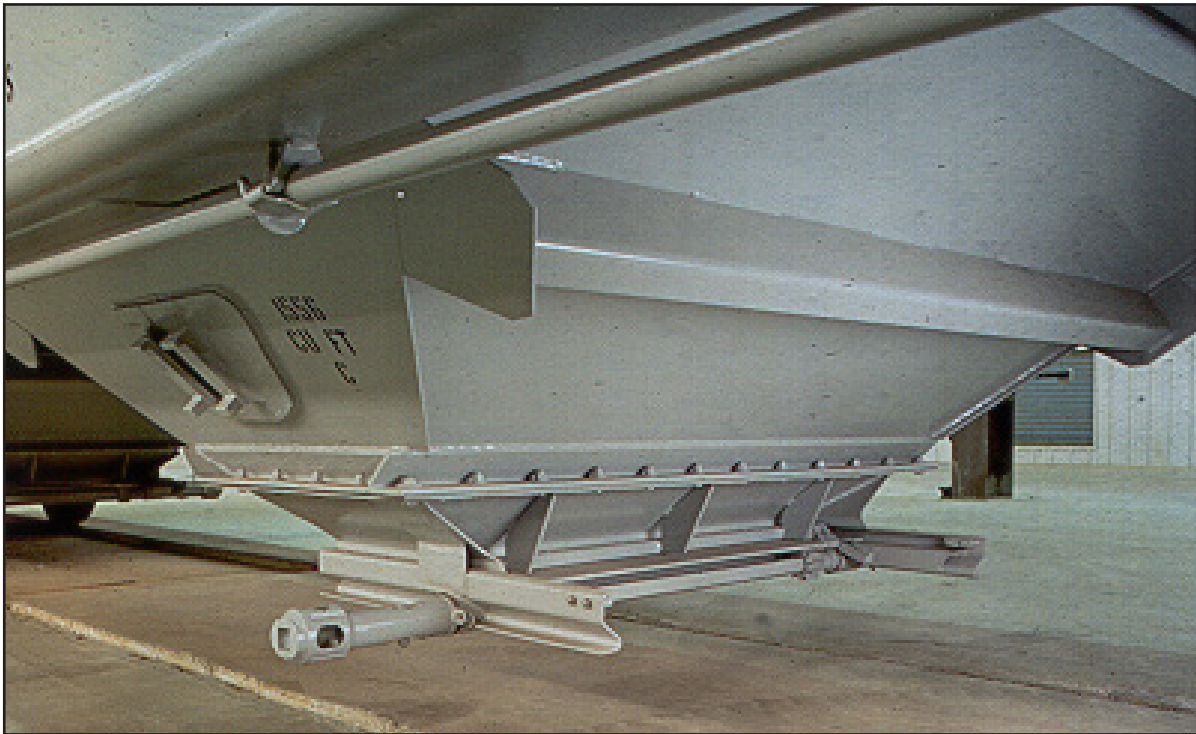


MODEL 5097 Gravity Outlet

SERVICE BULLETIN



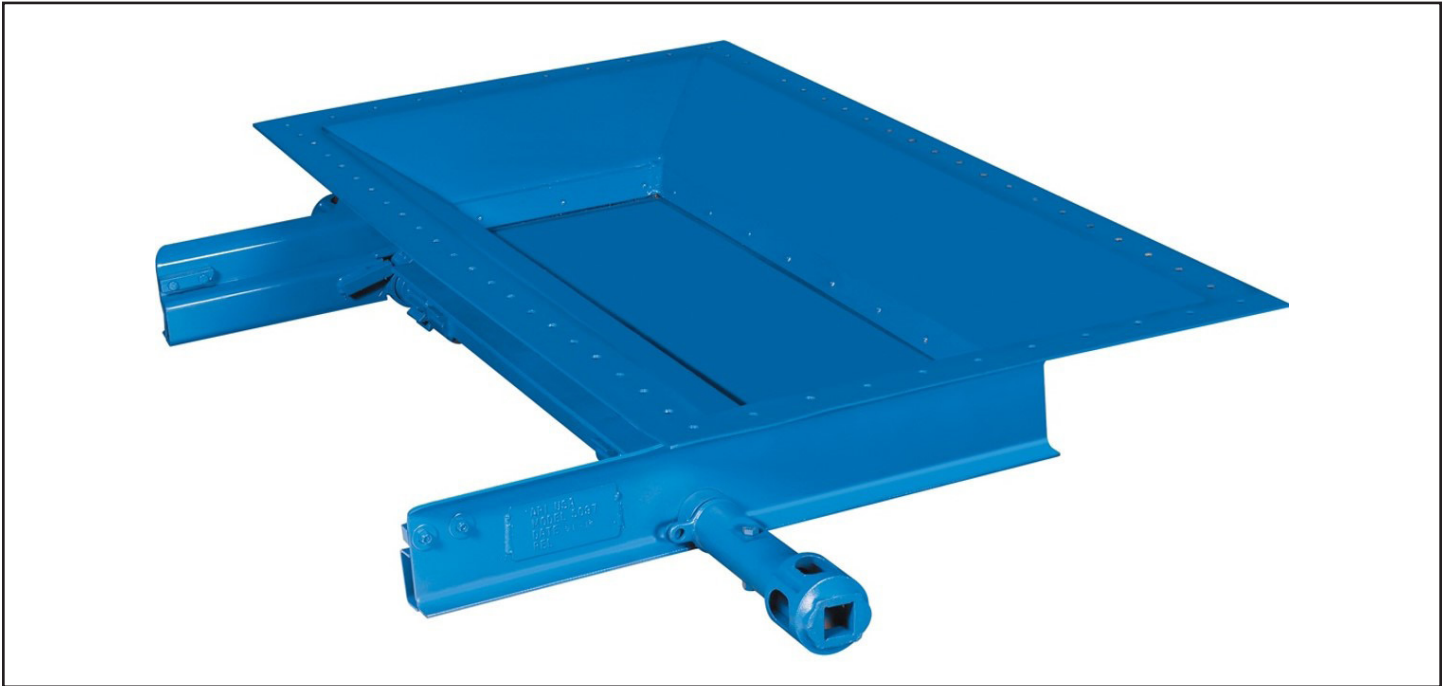
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The model 5097 gravity outlet gate is specifically designed for fast, efficient, controlled discharge of a wide variety of dry bulk materials. The model 5097 outlet meets or exceeds all requirements of AAR standard S-233-92.



Disassembly and Reassembly Instructions

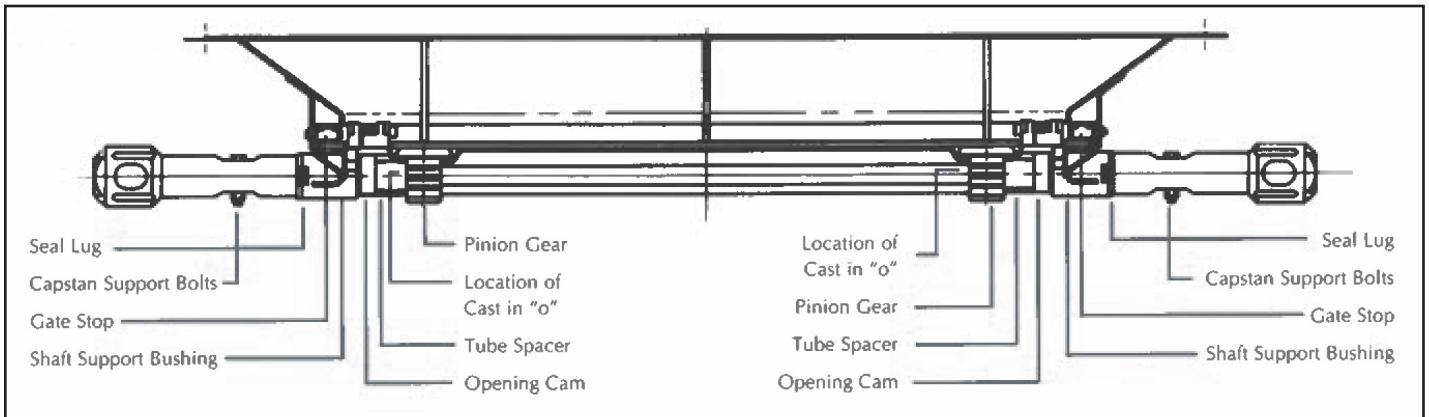


Figure 1

Disassembly

1. Operate the outlet to the fully closed position.
2. Remove one capstan support bolt, remove the capstan from the operating shaft.
3. Remove the remaining capstan and operating shaft by pulling the entire assembly through the shaft support bushing. When this is done, the pinion gears, opening cams, and tube spacers will come off the operating shaft.
4. If the slide gate is to be removed; remove the two (2) gate stops by unbolting them from the back of the gate slide assembly. Then remove the slide gate by sliding it out of the rear of the outlet.

Re-Assembly

1. If the slide gate was removed, reapply the gate by sliding it back in from the rear of the outlet. Reapply the gate stops to the rear of the gate slide assembly.
2. Push the gate forward to the fully closed position.
3. Insert the outlet shaft with one capstan attached into the shaft support bushing on one side of the outlet, keeping the seal lug on the capstan in alignment with the seal lug on the bushing.
4. While feeding the shaft through the bushing, install one opening cam on the shaft, with the cam opening lug pointing up and forward towards the outlet discharge opening, as shown in Figure 2.
5. Install one tube spacer on the shaft as shown in Figure 1.
6. Install one pinion gear on the shaft with the cast in "o" on the pinion in the vertical position, when viewed from the left side of the outlet, as shown in Figure 3.
7. Continue feeding the shaft through the bushing assembly. On the leading end of the shaft, install the remaining pinion gear, tube spacer and opening cam in the same manner as previously described. (Note: The "o" on both pinions must be in the vertical position shown in Figure 3, when viewed from the left side of the outlet.)
8. Feed the shaft through the second shaft support bushing.
9. Engage both pinions in their respective racks with the cast in "o" in the vertical position.
10. Reinstall the remaining capstan with the seal lugs on the capstan and bushing aligned. Next, bolt the capstan in place with the capstan support bolt.

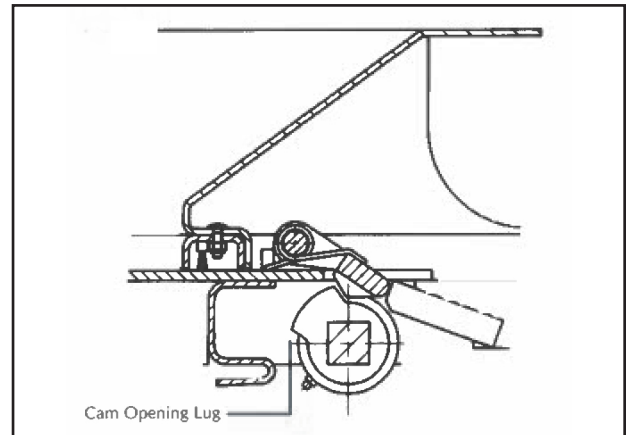


Figure 2

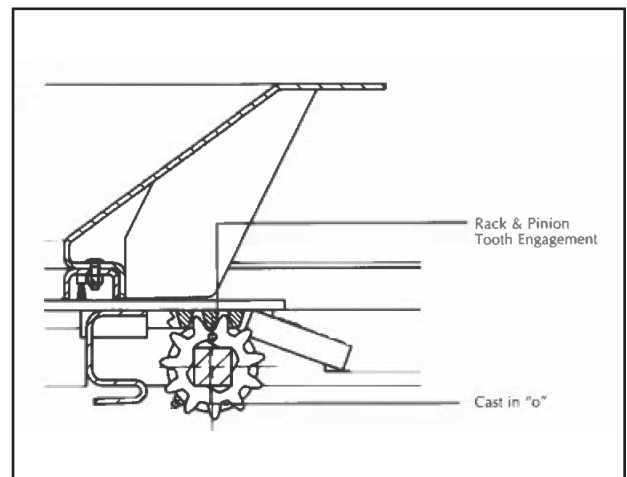
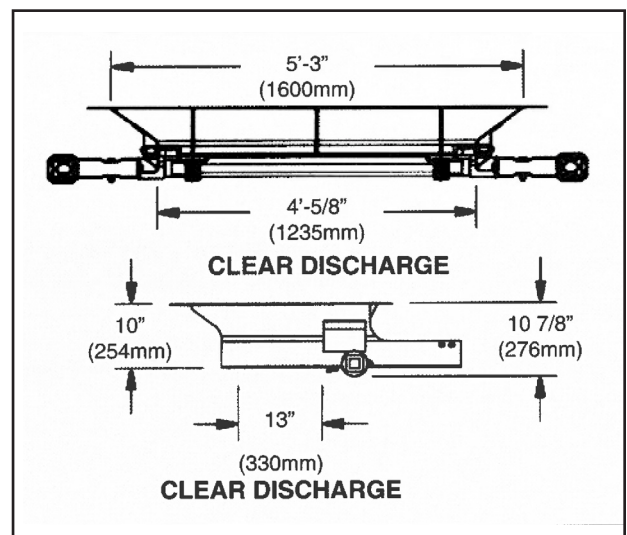


Figure 3

Operation

The model 5097 outlet has a fixed capstan. The capstan is equipped with a locking eye that aligns with a locking eye on the outlet frame. See cover photo. When the car is loaded, these locking eyes should line up **and** be secured with a cable seal. When it is time to unload, the cable seal is cut, then the capstan can be rotated to open the gate.

Open and close the outlet gate to ensure proper operation of the gate and locking mechanism. The locking mechanism should unlock and lock automatically when the capstan is rotated, opened and closed. If the gate will not unlock, the outlets timing is not correct; repeat the steps for disassembly and reassembly as instructed above.



Design Features

The 5097 gravity outlet utilizes an automated locking device; long lasting, replaceable gate seals; reliable fixed capstan design; and allows the use of both manual and automated gate opening devices.

Sizes

The 5097 gravity outlet may be configured to fit a standard 32 bolt or 64 bolt Center Flow™ mounting frame, and is designed to fit a 13" x 48" unloading boot or two (2) 13" x 24" unloading boots.

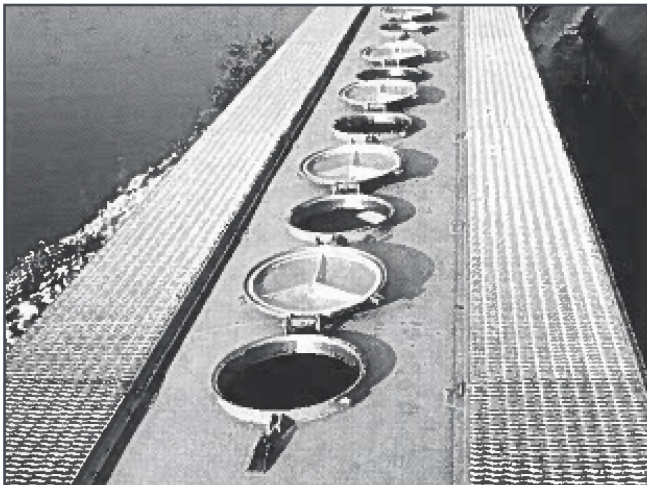
Regulatory Status

Meets or exceeds G.E.A.P.S./A.A.R specifications S-233-92, for application of gravity outlet gates to new or rebuilt covered hopper cars.

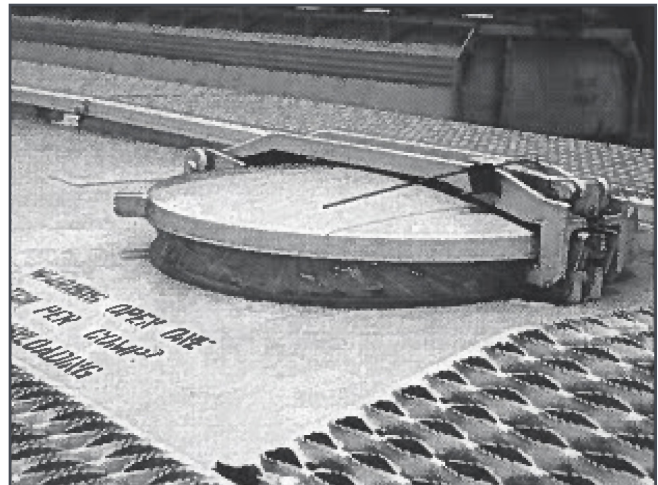
Pre-trip Inspection

Secure the Outlet Prior to Loading

Outlets should be inspected to verify that they are functional and clean. Outlet caps should be inspected for cleanliness, gasket integrity, and damage. Outlet caps must be securely locked and sealed prior to shipping the car.



Wipe hatch rings, covers, and gaskets clean to assure proper sealing of covers.



Properly applied seal through the hatch strap and over the cam lever. As can be readily seen, it would be impossible to open the hatch without breaking the seal.

Preparing an Empty Car

Replace and secure outlet caps on both sides of car.

The AAR requires that all outlets be closed and secured before an empty covered hopper car is routed back to a loading facility. This simple action will prevent damage and costly replacement or repairs to the outlets.