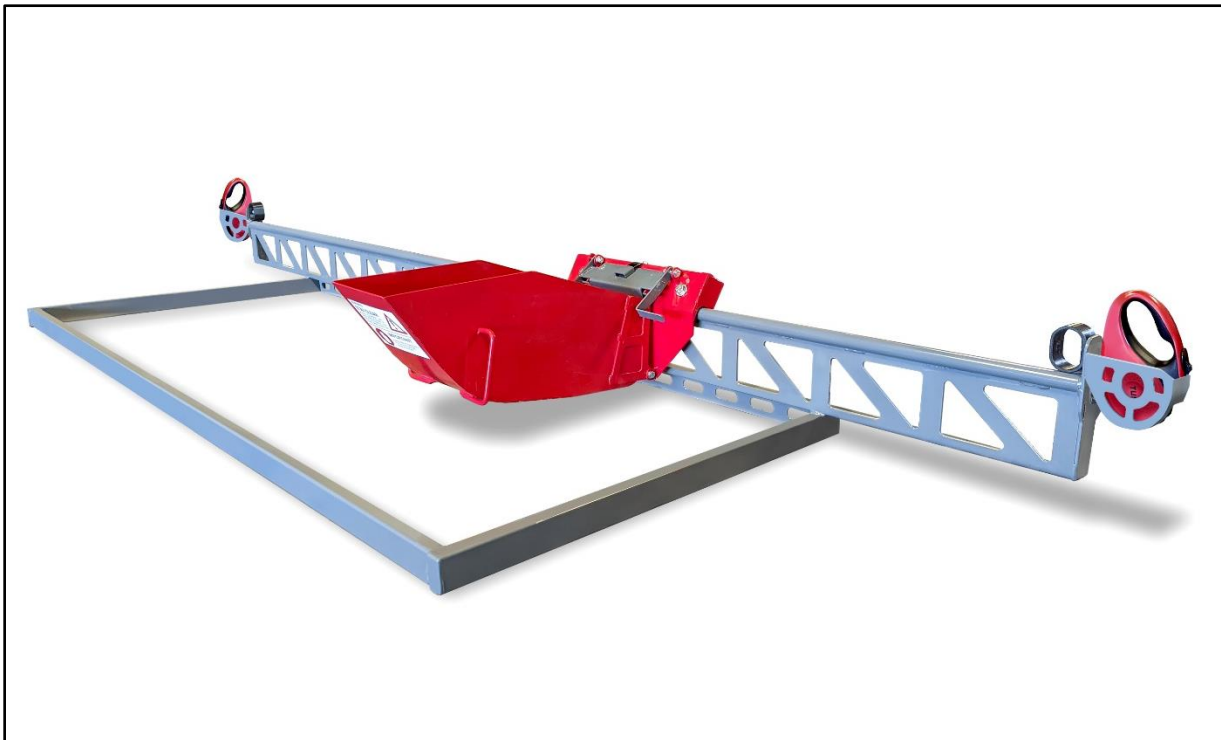


**RockPro Technologies**  
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## **Aggregate Sample Taker Model M-500**

### **Setup, Operating, and Safety Manual**



## **Setup of the M-500**

- The M-500 Sample Taker must be properly fastened to the conveyor it is sitting on. Multiple attachment methods can be utilized:
  1. Use the supplied U-bolts and attachment plates. See Figures 1-3 – the plates can be welded in place and then the U-bolts used to attach the M-500 to the conveyor.
  2. For a more flexible solution, 4 ratchet straps can be used (2 per side). See Figure 4. The length of the 4 straps can be adjusted to ensure the M-500 is centered above the conveyor belt it's placed above, and oriented so that the bucket captures the entire aggregate stream when operated. The straps can be attached to the 1" x 2" frame bar that extends out from the main rail.

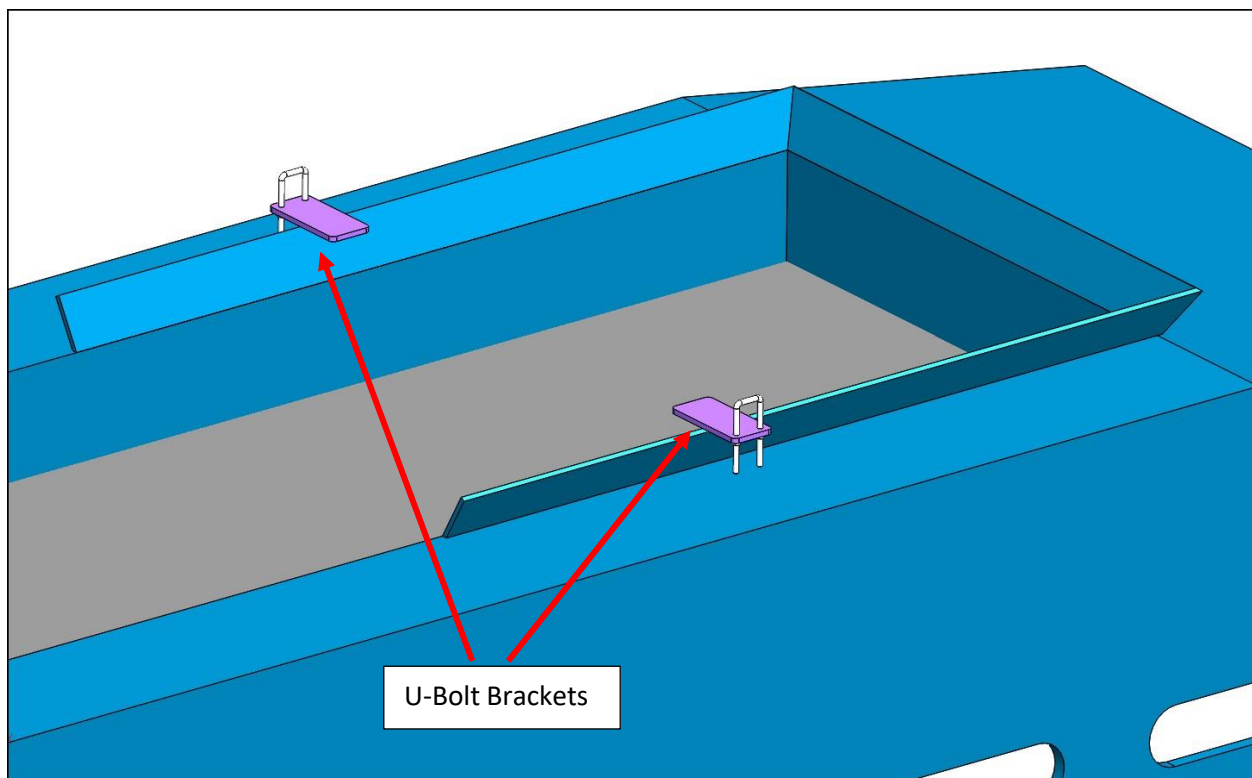


Figure 1 – Showing U-Bolt Brackets (Purple) Welded to the Conveyor Structure (Blue)

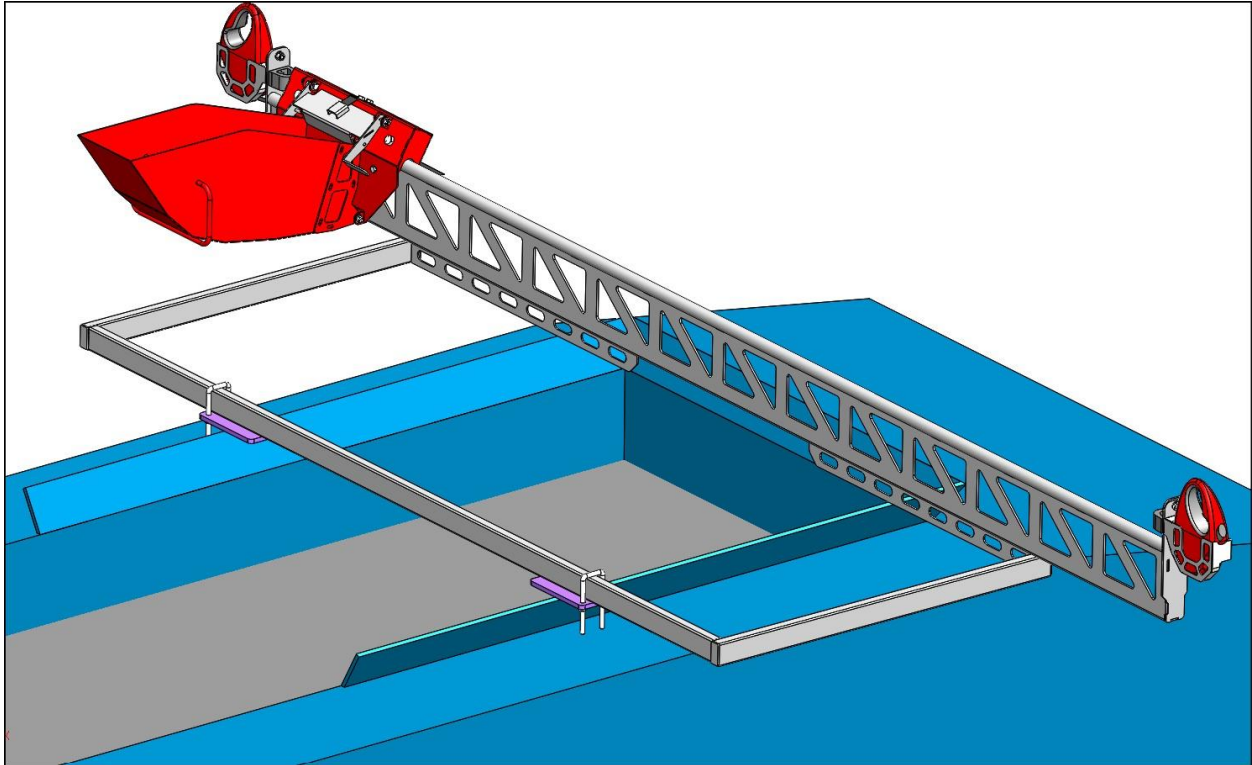


Figure 2 – Showing Sample Taker Attached to Conveyor (Blue) With U-Bolt Brackets. Shown With Downstream Bucket Arrangement.

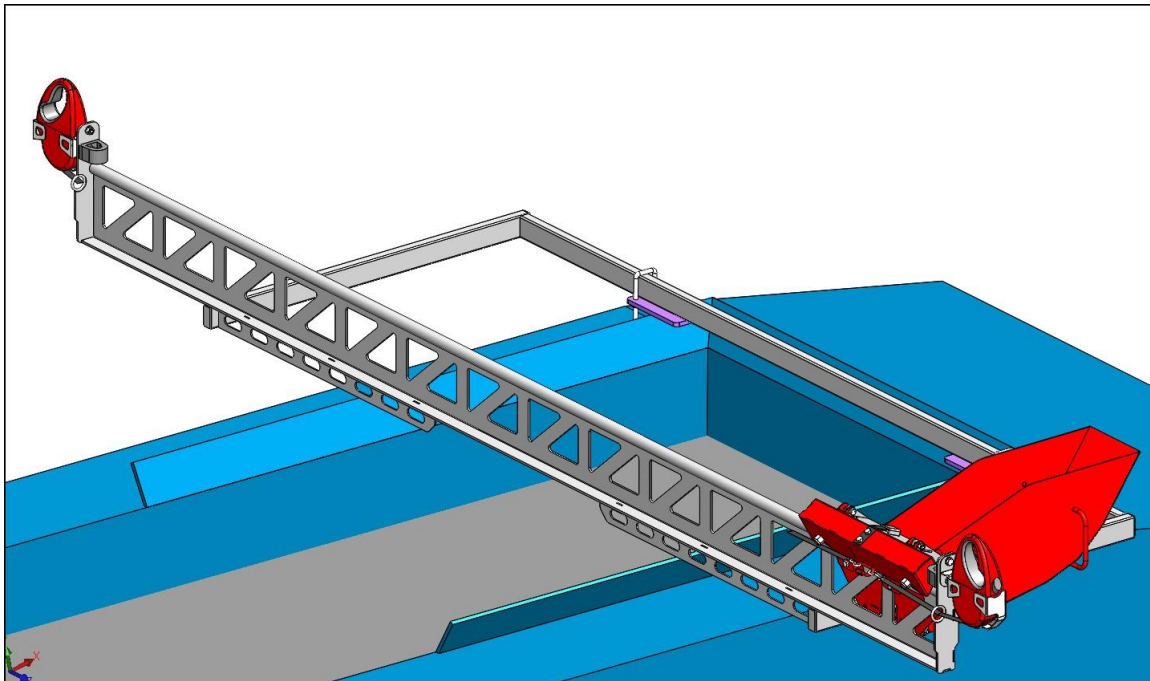


Figure 3 – Showing Sample Taker Attached to Conveyor (Blue) With U-Bolt Brackets. Shown With Upstream Bucket Arrangement.

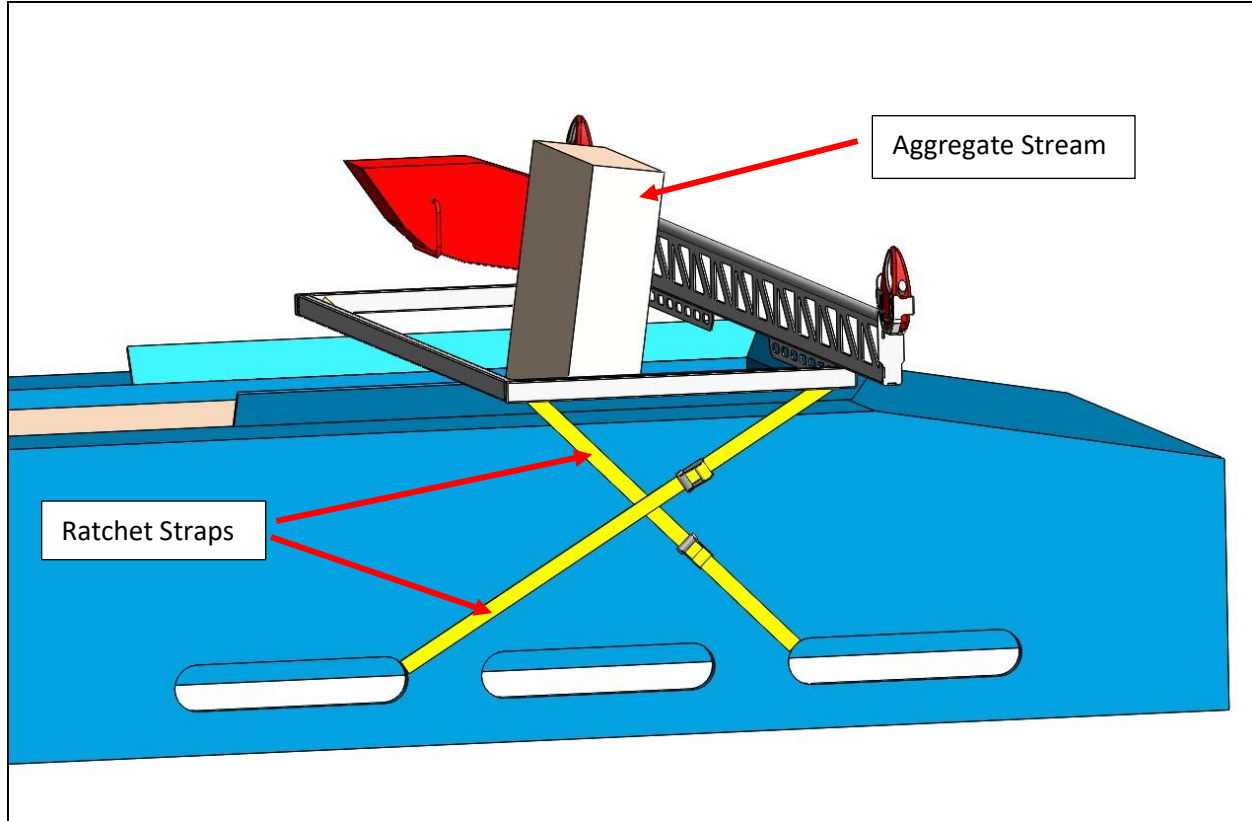


Figure 4 – Shown with Crossed Ratchet Strap Arrangement

- Care must be taken to center the M-500 from side to side in the stream from which it is sampling. Centering the M-500 over the center 48" area is important to collect a proper sample (including any material coming off a belt scraper if applicable). See Figures 5 and 6.

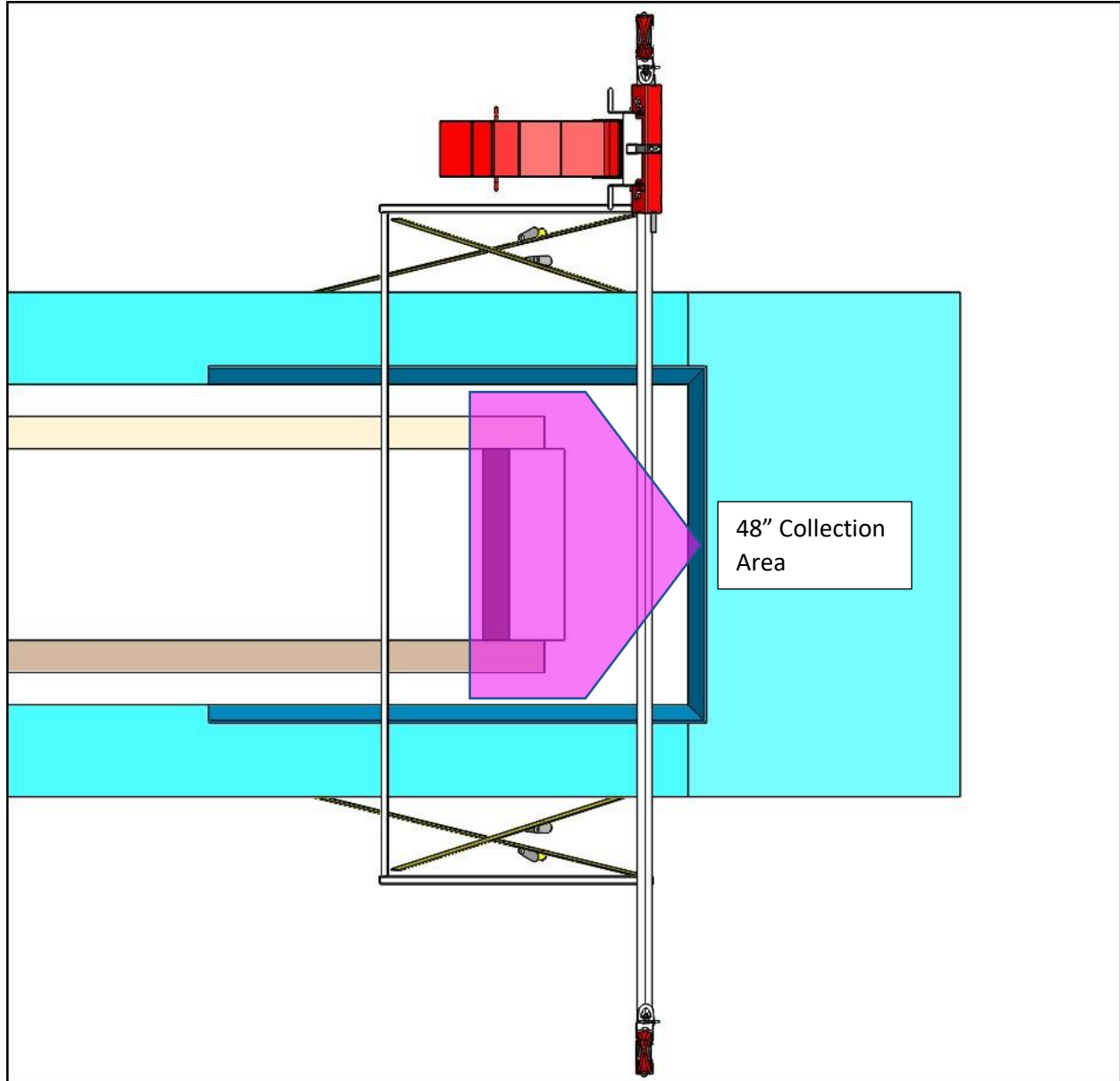


Figure 5 – Showing Collection Area (Pink)

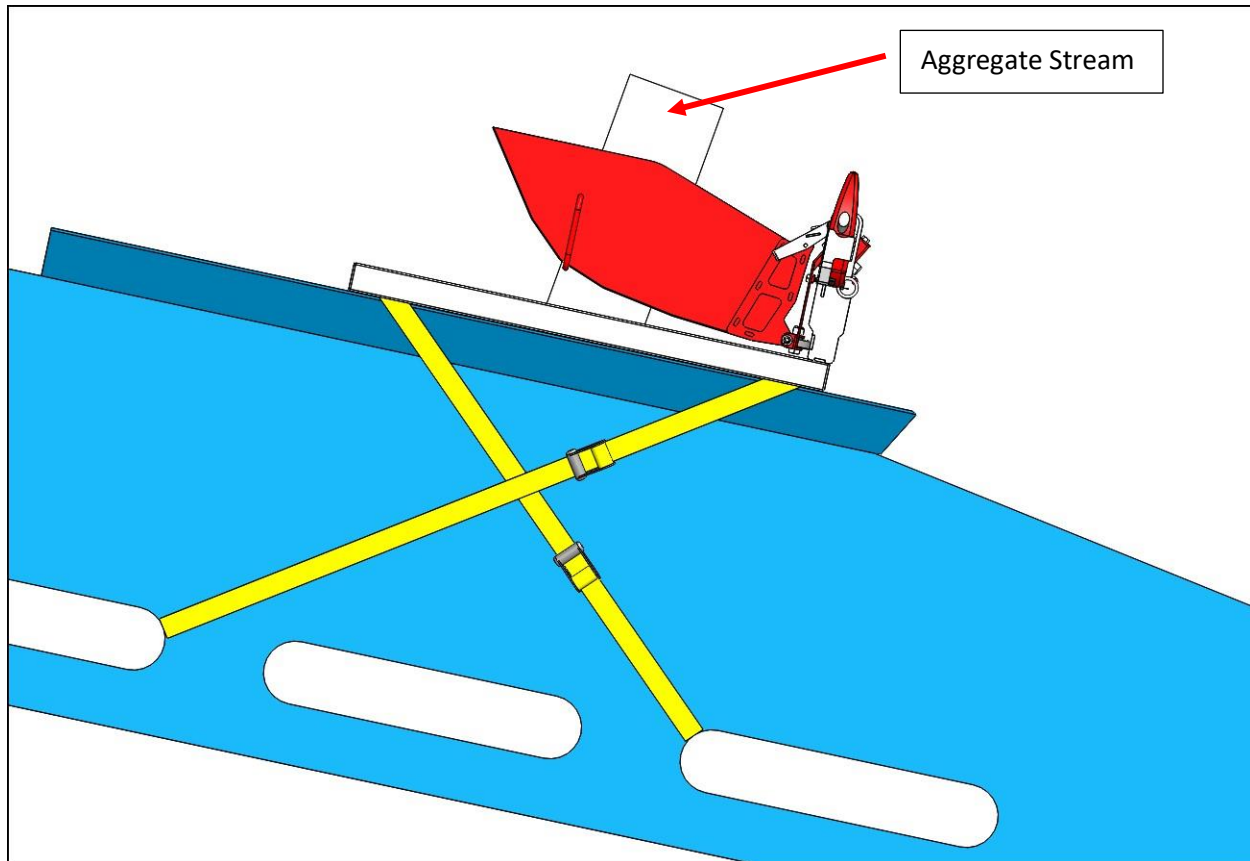


Figure 6 - M-500 Placed to Catch the Entirety of the Aggregate Stream in the Center of the Bucket

- The M-500 can be oriented with the rail on the upstream or downstream side of the conveyor stream, depending on the end user requirements - see Figures 2 and 3
- Care must be taken to ensure no large lumps (often occurring in frozen winter conditions) contact the sample taker, or damage may occur
- Persons operating the sampler taker must understand and follow this operation and safety manual and must be trained on all of the M-500's associated hazards prior to use. Failure to do so may result in serious injury.

### **Proper Sample Taking With the M-500**

- The M-500 sample taker is operated using manual effort, pulled across an aggregate stream in order to take a sample of the material at rates up to 500 tonnes/hr. An electric version of the sample taker, the A-1000, is also available for purchase from RockPro Technologies, which can be used for higher production rates (up to 1000 tonnes/hr), and to ensure a constant speed throughout the sample taking process.
- The sample taker is provided either with retractable pull devices (as shown in the images supplied in this document), or with a simple rope setup. With either arrangement, the goal when pulling the sampler across the aggregate stream is to pull it at a constant rate for the duration of its sample-taking travel, to ensure the highest-quality sample is taken.
- If the material stream is at a low production rate, say of 100 tonnes/hr, it may be easiest to pull the sample taker twice, once in each direction, in order to obtain an adequate sample.
- The bucket of the M-500 is design to capture approximately 3.5 gallons of material which should fill the bucket to around 2/3 full.
- If a sample is taken and any material has spilled out of the bucket or it is more than 2/3 full, the sample should be discarded and a new sample taken.
- The operator must ensure that there is no buildup of material on the top round tube where the sampler cart travels. This is especially important in freezing conditions, and buildup may cause the cart to derail during the taking of a sample.
- Prior to taking a sample, the conveyor structure should also be free of debris, especially in freezing conditions. The bucket could impact a buildup of material, causing damage to the sample taker and could cause an improper sample to be taken.
- Inspect the bucket prior to taking a sample and dump it out if any material is present. Also, ensure that the latch mechanism is properly seated so that the bucket does not come loose during the taking of a sample. See Figures 7 and 8.

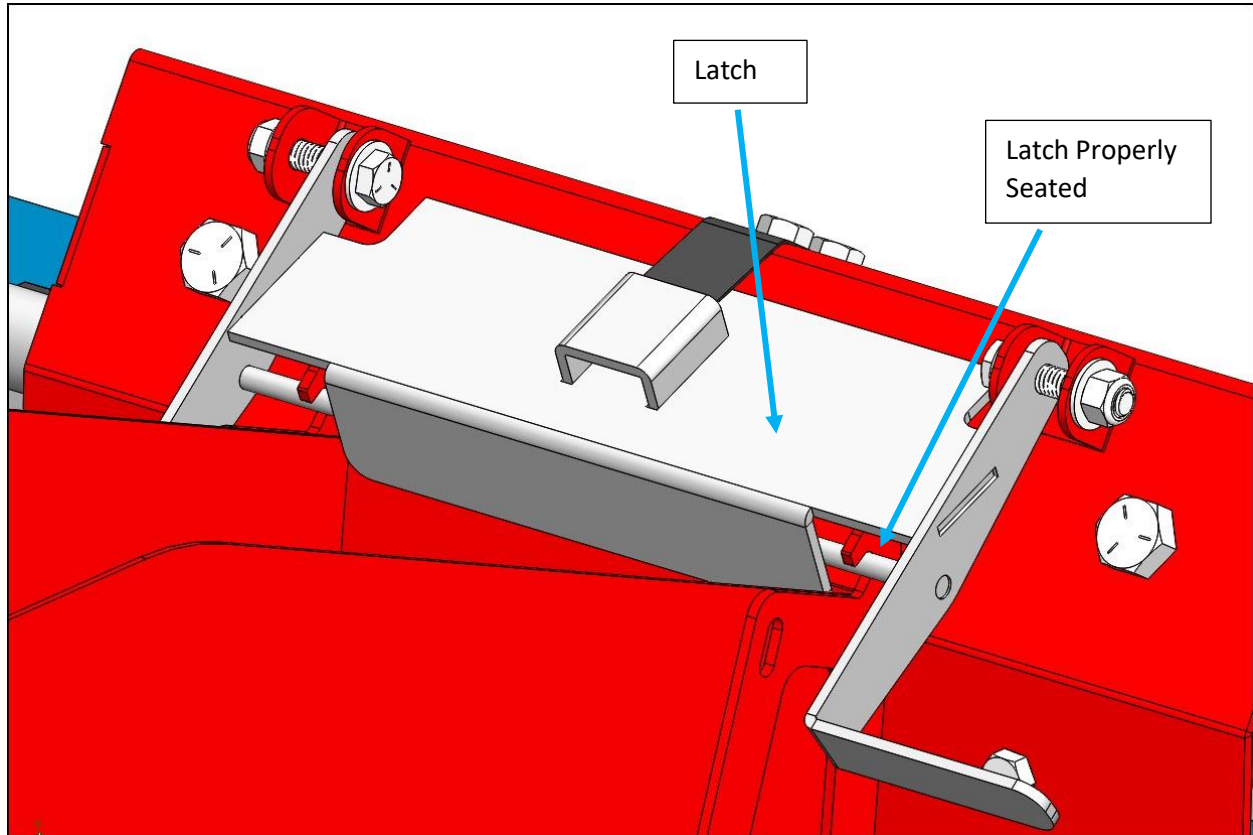


Figure 7 – Showing the Latch Properly Seated. Note That the Latch Bar is Fully Seated on the Bucket Hook.



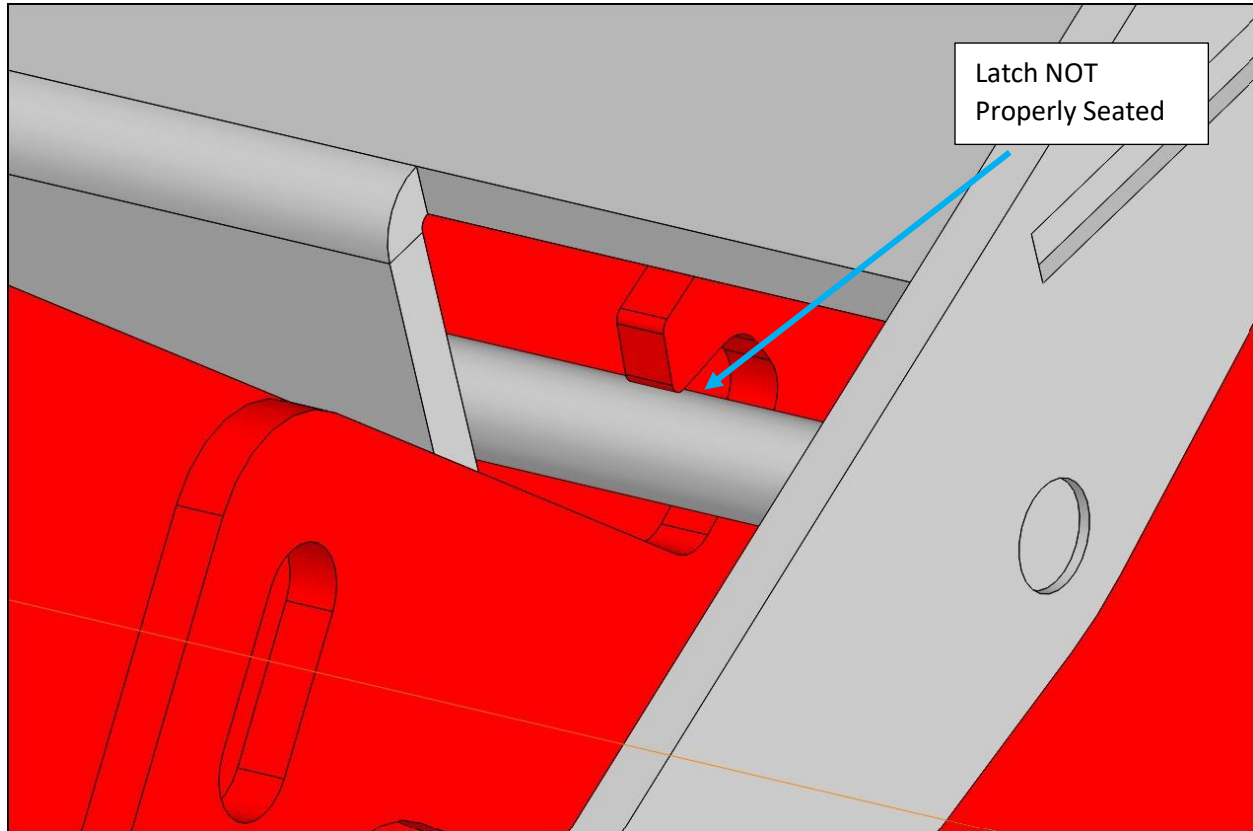
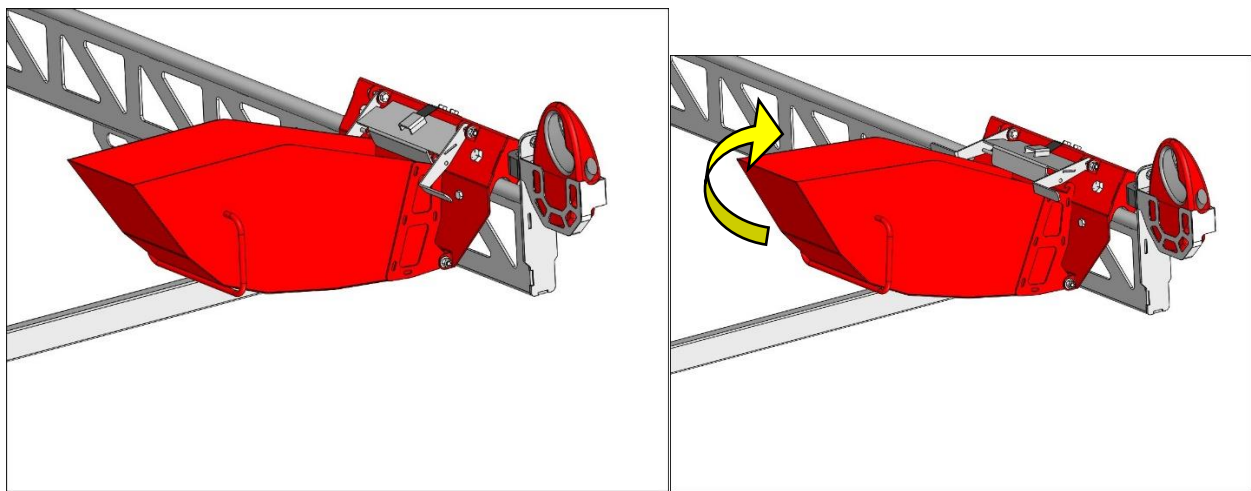
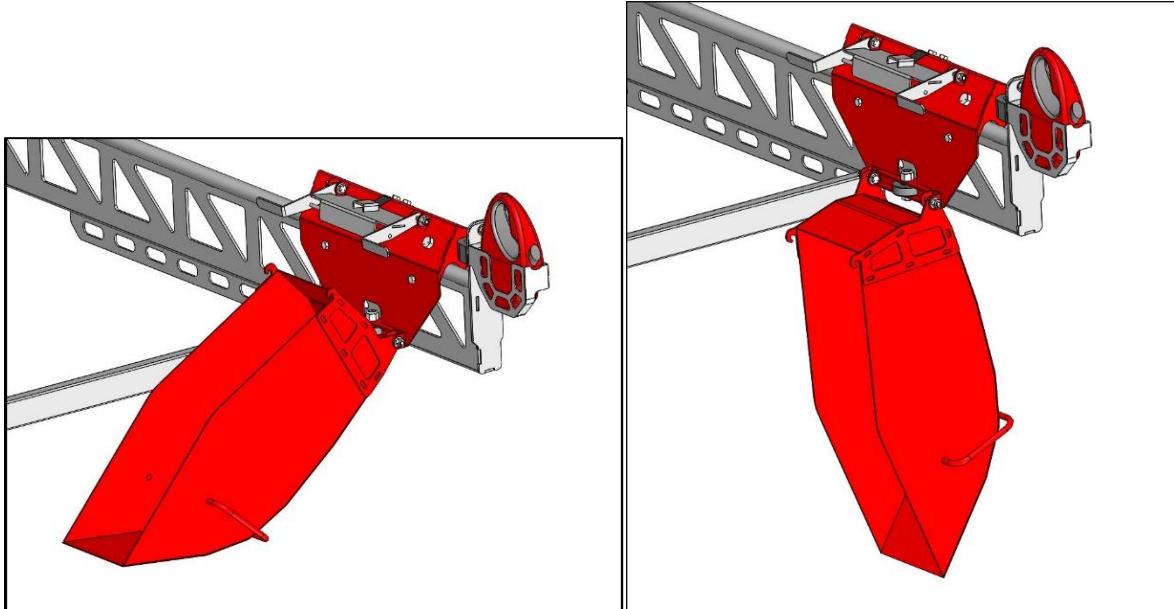


Figure 8 – Latch Shown Improperly Seated – Can Cause Unwanted Bucket Dumping

- Once a sample has been taken, the bucket can be dumped by first lifting up on it, which releases the latch automatically (Figures 9 and 10), then lowering it to dump into a pail or other receptacle (Figures 11 and 12)



Figures 9 and 10 – Showing the Bucket Being Lifted to Unlatch It



Figures 11 and 12 – Showing the Bucket Being Dumped

- After a sample is taken, be sure to stow the pulling device (the retractable version or the rope) in its provided hanger

#### **Safety Precautions for the M-500**

- Although the M-500 sample taker is operated using manual effort, it can reach significant speed by the end of its travel and, given the weight of the bucket and the sample material, can cause severe injury if impacted with a person's body. Caution should be taken to ensure no other persons are in the path of the bucket and cart before a sample is taken.
- Caution must always be used when working around the rotating components of conveyors. Rotating components should be guarded so that sample taker ropes/ retractable pullers, worker, and their clothing are not caught and damaged. Equipment damage, serious injury, and death can occur if these precautions are not followed. Always stow the sample taker ropes/ retractable pullers in their designated positions.
- There are numerous pinch points and moving components on the sample taker, so ensure that hands, clothing, and equipment remain clear of the cart and bucket while it is moving.
- Only a user properly trained on the safe operation, risks, and precautions should be allowed to operate it.