

**SPECIFICATIONS  
FLO 'N DUMP  
UNI-BODY**

**INTENT:**

It is the intent of these specifications to describe a multi-use heavy-duty steel dump body. This dump body shall have a telescopic hoist and an integral longitudinal conveyor built into the floor for conveying and/or spreading ice control materials, chips for seal coating, asphalt or shoulder material.

Since the body will be working in very demanding and adverse conditions, and to thus prevent obtaining an unproven proto type body of a similar design, the manufacturer shall have been in continual production of this specific type of body for a minimum of 10 years. The manufacturer shall also have built a minimum of 1,000 such units; and shall provide to the bidder a list of customers that includes names and phone numbers of a list of 50 different customers. These customers shall have working experience with the proposed model being bid, with a minimum operation time of at least 3 years. Product must be from original design manufacturer.

**BODY:**

The overall length of the dump body shall be \_\_\_\_ft. It shall have a struck capacity of \_\_\_\_cubic yards without sideboards.

The **straight vertical SIDES** of the body shall be made of 7 Ga. steel. The top of the sides shall be boxed with a "C" section closure and full welded. The boxed top rail shall be dirt shedding with a 45 degree slope at the top and shall be 5" deep and 6" high. The corner post shall be made from 7 Ga. steel and be 5 1/2" deep and 16" wide. It will run full depth from the top of the gate to the bottom of the longitudinal and be full welded. The sides are supported by vertical gussets that are 4-1/2" deep, 7 1/4" wide and full welded. The bottom of the sides will have a 45 degree sloped rub rail that is 5" wide.

The **TAILGATE** shall be constructed of 7 Ga. steel. There shall be two vertical interior gussets 5 1/2" wide, 3 1/2" deep and full welded and two vertical outside gussets 5 3/4" wide, 3 1/2" deep and full welded. There will be a dirt shedding boxed horizontal top rail running full width that is 6 1/2" x 4" and full welded. The upper tailgate hinge bracket shall be incorporated into the rear corner post to give the appearance of the tailgate and hinge assembly being the same height as the rear corner post. The bottom horizontal rail shall be full width and sloped 45 degrees.

The **flat horizontal FLOOR** shall be 84" wide and constructed of 1/4" AR 400 Steel. The floor shall be so designed and constructed that it will not have any underbody crossmember bracing. There shall be a double bar flight chain conveyor in the center of the floor running the entire length of the body. The floor shall be formed in the center to fully cover the chain links. The floor shall be supported by formed 1/4" thick steel trapezoidal longitudinals that span the entire length of the body. The inside wall of the trapezoidal longitudinals shall form the sides of the longitudinal conveyor.

**CONVEYOR HOOD:**

The conveyor hood is mounted in a rear opening of the tailgate of the dump truck body. It shall be capable of being shifted to a forward-extended position covering the rear end of the conveyor and to a rearward retracted position where a flat straight front face of the conveyor hood is flush with an inner face of the tailgate. A horizontally revolving feedgate is not acceptable.

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The **GATE LATCH** shall be made of 1/2" steel and have 1-1/4" pin. There will be threaded rod adjustments and have two yokes with 5/8" pins. The gate handle shall be supported by two angle irons 1/4" x 2" x 3" with a 1-1/4" rod. This handle will have a safety chain with a ring that will slide over the handle. All moving joints shall be equipped with accessible grease fittings.

**DOGHOUSE:**

To position more of the load toward the front of the truck and leave less open space between the cab and the body, the body shall have a 10" deep by 13 1/4" wide lift cylinder doghouse for single axle units and a 10" deep by 14 1/4" wide lift cylinder doghouse for tandem axle units. The body must be able to be mounted with no more than 5" between the cab and the front body panel.

**CONVEYOR:**

For ease of dumping operations, even tailgate spreading of aggregates, (i.e. spreader apron, side discharge, or stone spreader) - the conveyor shall end flush with the rear of the body and shall not extend past the tailgate of the unit.

When the conveyor chain is moving material toward the rear of the body, the material shall be fed through the doghouse opening in the tailgate. This movement of material through the tailgate shall be used for conveniently charging attachments such as paving hoppers and cross conveying shoulder machines. The rear of the floor and rear conveyor shall have no openings by which material shall pass through before it moves rearward through the doghouse in the tailgate. The rear of the floor and rear conveyor shall seal tight against the tailgate and doghouse in the tailgate when the coal door is closed. This tight seal shall eliminate any material leaking out of body.

The **CONVEYOR** shall feed material rearward through the coal door of the tailgate. For overall high strength and structural integrity of the unit, the 34" wide conveyor shall be an integral part of the body. The conveyor chain shall run on a 1/4" AR-235 steel conveyor bedplate. The inside face of the trapezoidal longitudinal shall be constructed of 1/4" steel and also be the side of the conveyor.

The dump body floor shall be so formed that it fully covers the pintle chain links, #D667XH. The bar flight shall be 1/2" x 1-1/2" and welded to every link.

The bedplate of the conveyor shall be made of 1/4" AR-235 steel.

The conveyor shall be powered by \_\_\_ 6:1 ratio spur gearboxes mounted to \_\_\_ side(s) of the 2" drive shaft. The gearbox(s) shall be powered by a hydraulic motor. There shall be one gearbox for the 10' Model and 2 gearboxes for the 13' and 14' Models.

**DRIVE ASSEMBLY COVER:**

Shall be bolted in position easily detached to allow for ease of maintenance of rear drive assembly.

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**SPINNER:**

The spinner disc shall be made of 10 Ga. steel and be 24" in diameter. It shall have 6 formed vanes. There shall be a moveable, 2 piece round spinner deflector that is hinged at a 180° radius to allow both halves of the deflector to be adjusted for spread pattern control. The disc shall be mounted to an "L" shaped arm. This arm shall be pin mounted in a tubing, which will be mounted to the chassis of the truck. This "L" arm shall have 2 positions, one under the conveyor to receive material, the other position will be stowed under the truck chassis.

**1/2 CAB SHIELD:**

There shall be a 1/2 cab shield supplied made of 10 Ga. steel. The 1/2 cab shield shall extend 22-1/2" from the front of the body.

**TELESCOPIC HOIST:**

The hoist shall be of telescopic design, double acting and have a trunion mounting. The trunion mount shall have a 1-7/8" pin. Capacity shall be \_\_\_\_ tons.

It shall be designed to operate up to 2500 PSI and shall be self-bleeding. It shall have 1/4" wall construction with bronze glands and pistons to assure a smooth and durable bearing surface. Each cylinder shall be internally sealed. The inside seals shall have a U-cup design made of nitril packing.

The piston rod shall be machined from ASI 4140 and nitrated using the QPQ method to establish the following mechanical properties:

Surface Hardness: Rockwell C60-C65

Surface Finish: RMS 20

(using ASTM B117 salt spray)

Approximately 7% surface area

corrosion in 88 hours (or 10 times

better than hard chrome plating)

Fatigue Strength: Approximately 80% to 100% increase

using QPQ as compared untreated

sample.

**HYDRAULIC CONTROL:**

To operate the unit as a spreader, there shall be two variable speed hydraulic cab controls mounted in the cab. One control knob will govern the conveyor speed and the other will govern the spinner or shoulder conveyor speed.

**OPTIONS:**

1) **COVER PLATE**

There shall be a cover plate over the conveyor made of 7GA. steel. This plate will slide into position over the conveyor and then be bolted in place at the rear of the body.

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**2) SCREENS**

Top screens will be provided that are one piece removable with a center lift point and made of 3/8" interwoven high tensile steel rod with 2 1/2" openings. There shall be at least 4 sections and be supported by at least (3) 4" I-Beam structural channel. Screen frames are constructed of 1/4" 2" X 2" angle. The top rail will be made of 4" I-Beam.

**3) AIRGATE**

There shall be an air latch tailgate in place of a manual latch, the handle operating the front pivot shaft will be replaced by an air cylinder operated front pivot shaft. The air cylinder shall be 3 1/2" in diameter with a 8" stroke. It shall have a 3/4" chromed rod.

**4) REAR CONVEYOR CONTROL**

There shall also be a rear conveyor control valve switch located at the rear of the truck to start and stop the conveyor at the rear for paving or shoulder work.

**5) FRONT SPREAD OPTION**

When the conveyor chain is moving material toward the front of the body, the material shall be fed through a front shield housing and then down a chute mounted between the chassis rails of the truck. There will be a material chute made of 10 ga. steel mounted at the front of the body to the center of the frame rails of the truck chassis directly below the hoist basket. There will be internal baffles mounted inside the chute controlled by a rack and pin assembly easily adjustable without tools. There will be a center internal baffle that will deflect material right or left onto the spinner disc. There will also be a left side and a right side external deflector for precise spreading control. These will be controlled by a sliding flat bar assembly easily adjustable without tools. The spinner disc shall be made of 10 ga. steel and be 24" in diameter. It shall have 6 formed vanes and will be powered by a hydraulic motor mounted underneath the spinner disc.

**6) COMBINATION DRIVE SYSTEM**

The conveyor shall be reversible. The conveyor chain shall be pulled to the front of the body by a gearbox drive assembly installed at the front of the conveyor and convey material to the front of the body through the front shield housing. The conveyor chain shall be reversed by a hydraulic reversing valve which shall enable the conveyor chain to be pulled to the rear of the body by a rear mounted gearbox drive assembly and convey material to the rear of the body through the coal door of the tailgate. At no time shall the conveyor chain be pushed toward the opposite end of the body that the gearbox drive assembly is mounted to.

**7) ADDITIONAL SPINNER ASSEMBLY (For Combination Drive System Option)**

The Body shall be supplied with two spinner assemblies. One spinner assembly shall be mounted at the front of the body between the chassis frame rails. The second spinner assembly shall be mounted at the rear of the body. This rear mounted spinner disc shall be mounted on an "L" shaped arm to enable the disc to be swung either under the conveyor for spreading or under the truck chassis for storage.