

Stock Plow Truck

The label shall state "VEHICLE MAXIMUM SEATING CAPCITY IS (NUMBER OF SEATS)

The label shall be visible from each seated position.

One (1) Seated and Belted Label Y__N__

There shall be a permanent plate or label installed stating "OCCUPANTS MUSTE BE SEATED AND BELTED WHEN TRUCK IS IN MOTION"

This label shall be visible from each seated position.

One (1) Truck Warranty Y__N__

Included with the bidding package shall be a complete copy of the warranty for all major components of the bid specifications, including but not limited to:

Chassis
Chassis Paint Warranty
Engine Warranty
Transmission Warranty
Body Warranty
Auxiliary pump(s) Warranty
Plows/accessories Warranty
Graphics Warranty
Material and Workmanship

One (1) Body And Equipment Warranty Information Y__N__

There shall be a 3 ring binder included with the completed truck with a complete list of all warranties of all components installed on the truck including but not limited to body, plow, spreader, lights, pto, hydraulics, generators, compressors or any other accessories added to the cab/chassis by the body upfitter.

One (1) Progress Pictures Y__N__

During the manufacturing time of this project, the successful builder shall forward, via e mail to the town, frequent weekly pictures of the progress of their truck.

This will allow the town to keep in constant contact with the building on the progress of their project and also address and questions or concerns they may have during the build process.

One (1) Monroe MP41R11-1SCT-MB1 11' X 41" PLOW Y__N__

08/09/18

Stock Plow Truck

The plow shall be a Monroe truck equipment model MP41R11-1SCT 11 foot long x 41 inch tall straight moldboard plow. The moldboard shall be 3/8 inch poly moldboard, 6 one piece 1/2 inch flamecut tapered ribs. Dual compression trip assemblies. 2 3x10 double acting cylinders with cushion valves. Built in level lift. It shall have stress proof machined & plated pins. 14 inch push height. All components and moldboard are 100 percent continuously welded.

Moldboard is shot blasted and powder coated orange. Push frame and components shot blasted and powder coated black.

The plow shall have a rubber snow deflector installed, 11 foot long by 12 inches. Top of plow has holes punched into it to accommodate the deflector installation.

There shall be a set of 36 inch fluorescent orange, flexible markers with brackets included with the plow. They shall be shipped loose. All mounting hardware shall be included.

Lift cylinder is 4 x 10 DA, Nitrate, husting 4x10" double acting lift cylinder.

The plow portion of the hitch shall be a loop style weld on field conversion channel plow portion QCP loop hitch,, welded on type, installed on the plow.

One (1) Monroe Truck Portion Pin & Loop Hitch MC 2075 flat fold

Y__N__

There shall be a Monroe MC2075 Hitch, truck part, flat fold lift arm with integral QCP receiver installed on the front of the chassis. This hitch shall include a 4 x 10 DA, Nitride Rod, .75 ORB lift, PRTS incline with pin 4" x 10" double acting lift cylinder.

One (1) Monroe tailgate spreader MS966-CD-DD

Y__N__

There shall be a Monroe truck equipment Under tailgate direct drive spreader installed on the truck. Model number MS966-CD-DD-AUS 2015. Spreader shall be constructed from Mild Stainless steel material.

The assembly is to be all 7 gauge 201 stainless steel with 1/4 inch one piece endplates, through is to be 96 inches in length. One piece combination cover and rear panel is removable and hinged so it can be raised for spreading and lay flat for dumping over the

08/09/18

Stock Plow Truck

spreader. Spreader shall have a hinged bottom that allows clogged material to drop out when it is opened for east cleanout. Through bottom has three solid 1/2 inch hinges.

All latches are to be captive, heavy duty steel rods. The auger shall have one way flighting, for left discharge of material auger is to be 7 feet in length, auger flighting is to be 6 inch in diameter, with a 4 inch pitch, 3/8 inch thick on the outer edge, and welded to a 2-7/8 inch O.D. schedule 40 pipe.

The auger shafts are 1-1/4 inch and are supported by heavy duty 1-1/4 inch sealed self aligning, relubeable, 2 bolt flange bearing. The auger shall be driven by a low speed, high torque motor.

Direct drive auger has a low speed high torque hydraulic motor directly coupled to the auger and is to utilize a non corrosive bushing for auger attachment. Quick disconnect mounting hardware is to be provided. Spreader to be left in bare stainless steel.

Spinner assembly, TGT, center assembly, center discharge, self leveling with the use of universal parallel arm support, 201SS frame with 18 inch poly spinner disc and spinner shield, includes seal saver kit.

One (1)

Hot Shift PTO Pump and Shutdown Electric System
HYDRAULIC PUMP AND PTO: (TXV92 & OMFB HOTSHIFT)

Y__N__

The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type. The pump shall have a displacement of 5.61 cubic inches per revolution at maximum stroke which will deliver 23.7 GPM @ 1000 engine RPM. The pump shall have a minimum 2" inch suction line and 1/2" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. The pump shall be rated for 5800 PSI maximum and 4800 PSI continuous. The pump shall have a Din type-mounting flange and a Din 5462 8-tooth shaft. The pump shall be **FORCE America TXV92** or prior approved equal. An **OMFB series hot shift PTO** that is mounted to the transmission shall drive the pump.

SHUTDOWN SYSTEM: (94150A001 W/ HOTSHIFT PTO)

The system shall be designed so that when the float contacts close, the PTO will disengage and stop pump flow. An enunciator in the cab that is on a control panel will alert the driver that the PTO has been disengaged. The control panel will also incorporate an override switch wired to de-energize the shutdown system to facilitate diagnostics and equipment storage. The override panel shall also contain warning lights for body up and filter bypass. There shall also be a switch on the circuit board that will allow shutdown on high temperature condition as well as low oil.

One (1)

Hydraulic Tank and Filters
RESERVOIR/ VALVE ENCLOSURE: (VT35G2-B-PP Gen II Option)

Y__N__

- The hydraulic reservoir will be of 35 gallons nominal capacity.

08/09/18

Stock Plow Truck

- The hydraulic reservoir will be constructed of 10-gauge steel and be internally baffled.
- The valve enclosure lid will protect from both road and pressure washer spray.
- For ease of removal by a single person, the valve enclosure lid shall weigh less than 22 lbs.
- The valve enclosure lid shall be black high density polyethylene with stainless steel reinforcements.
- The valve enclosure lid shall have molded integrated handle for ease of removal.
- The valve enclosure lid shall be attached to the reservoir via (4) rubber straps that can be removed without the use of any tools.
- Mounting bracket is to be designed and supplied by the reservoir supplier.
- Mounting system should allow for a 1" frame clearance for frame obstructions.
- Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank.
- The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.)
- The enclosure lid will be removable within seconds by one person without the use of tools.
- All valve fittings, hose ends, filter, filler breather, sending units and any electrical connections are to be protected by enclosure cover.
- The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter.
- The cover will protect from both road and pressure washer spray.
- The use of bulkhead fittings is not permitted.
- The directional control valve must be easily accessible from all (6) sides without the use of tools.
- Hose exit and entrance must allow for components to be mounted adjacent to the enclosure.
- A 2" full flow brass ball valve shall be plumbed at the suction port of the tank.
- A low oil/high temp sending unit shall be mounted in the reservoir.

The valve/tank assembly shall be a **FORCE America model "VT35G2-B-PP Valve/Tank Assembly"** or prior approved equal.

FILTER:

Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 16-micron absolute and rated for no less than 70 GPM. Filter shall be model **TS1600251S0/ZSRE40910** or prior approved equal and include visual and electrical bypass indicators. The filter cartridge shall be constructed of a synthetic media. The return port in the filter shall be SAE #20 or larger. A warning light shall be mounted in the cab and wired to the electrical filter bypass indicator. The system shall be delivered with one spare filter element.

One (1)

Master Haydraulic Valve
HYDRAULIC CONTROL VALVE: (ADD-A-FOLD 4020)

Y ___ N ___

08/09/18

Stock Plow Truck

The hydraulic valve shall be of modular manifold design. Each hydraulic function requires an individual manifold stacked together to form the manifold base. The manifold base shall consist of an inlet section with SAE #16 inlet porting, SAE #20 outlet porting, and SAE #4 load sense porting. There shall be a main system relief in the inlet section to protect the system from high pressure in case the pump compensators fail. The dump body manifold shall be stacked next to the inlet section, and capable of 40 GPM with SAE #12 porting. All valve manifolds shall be manufactured from 6061-T6 aluminum and be anodized to MIL-A-8625F specifications. The hydraulic control valves shall be pulse-width modulated, proportionally controlled. Each hydraulic valve segment shall be individually mounted to the manifold base assembly and be serviceable without removing any hydraulic hoses or any other hydraulic valve segments. Each hydraulic valve segment shall have individual pressure compensation to achieve independent simultaneous operations. All segments shall have heavy-duty continuous duty coils and connections shall be with Din connectors. All coils shall operate at 12 VDC and require a maximum of 1400 mille-amps. Each segment shall be equipped with a manual override except for the auger and spinner sections. The dump body segment shall be rated to 40 GPM, with all other segments rated to 20 GPM. If a double acting hoist is utilized, the dump body segment shall be equipped with a down side relief to protect the body down function. This relief shall be set to the hoist manufacturer's specifications. Valve segments shall be **FORCE America Add-A-Fold® 4020** model or prior approved equal.

The valve is to be arranged as follows:

Hoist	4-way with 500 PSI down side work port relief valve
Plow lift	4-way
Plow angle	4-way
Auger	2-way
Spinner	2-way

One (1)

Master Electronic Control Panel

SPREADER CONTROL CONSOLE:

(5150EX w/ joystick)

Y__N__

The electronic spreader control shall include proportional controls for Auger, Spinner, Prewet and Multi-lane Anti-ice spreader functions and shall be integrated into a small, rugged, plastic injection molded, control box. The controller shall also be capable of reversing auger and cross conveyor. The auger, prewet and anti-ice functions shall be operable in manual mode, open loop mode, and closed loop mode. Spread rates for granular, spinner, prewet and anti-ice shall have the ability to be adjustable inside of calibration. Materials shall be capable of being named. A security code shall be selectable in calibration to lock out undesired changes to the calibration settings. An optional supervisor USB key shall be available for quick access to the calibration menu.

Stock Plow Truck

While in multi-lane mode the left, center and right lane ball valve outputs shall be controlled by comfortable, backlit rocker switches molded into the controller above the display. When all of the lane valves are deactivated, the anti-ice shall enter standby mode automatically.

The controller shall be modular in design for ease of installation and service. The controller shall be capable of being mounted anywhere in the cab. A RAM mount shall be used to allow for easy installation and swivel capabilities. Wiring connectors shall be keyed with wiring labeled throughout. The spreader harness shall include DIN connectors that illuminate when the output is active. All components must be durable for long life and trouble free operation. Spinner and spreader control dials shall be on the right side of the controller to allow for a clear view of the display while being adjusted. The spinner and spreader control knobs shall be color coded and correlated with the granular and spinner settings on the screen. The enclosure shall provide a built in, protective surrounding around the spinner and spreader control knobs to prevent unintentional use and damage to the knobs.

The controller shall operate a straight blade plow and dump body. The outputs shall be controlled by comfortable, backlit rocker switches molded into the controller above the display. An interlock switch integrated into the back of the controller shall be required to operate the hoist function to comply with all OSHA related regulations. The controller shall be capable of moving the plow up, down, left, and right. There shall be a remote mounted joystick console that can be removed in the summer. The joystick console shall offer both plow and hoist control via a single joystick. The joystick shall be dual axis non-proportional with a pushbutton on top. In normal operation, the up/down and left/right axis shall control the front plow. While the pushbutton on top is depressed, the up/down axis shall now operate the dump body and the left right axis shall be dead. The joystick box shall also include three separate knobs to control the spreader rate, spinner speed and liquid prewet output rates. The knob shall be color coded to match those on the actual spreader console. There shall also be two rocker switches to operate manual mode on/off and prewet on/off. The joystick console shall wire to the main spreader control via a single cable only which can easily be disconnected from either the joystick console or spreader console. There shall also be a RAM mount ball on the back for ease of mounting.

The controller shall include off the shelf integration with PreCise brand GPS/AVL systems for advanced material logging and maintenance reporting. The controller shall also provide onboard current event and season totals for granular and prewet materials. An integrated USB port shall be used for data retrieval, firmware upgrades, and for loading and saving of calibration settings.

The controller shall include a 3.5" high brightness, color, touch screen LCD with adjustable backlighting. The touchscreen shall be used for calibration only and shall not be needed during normal spreading operation. The touch screen shall allow for easy navigation of calibration menus and data viewing menus. The screen shall display warnings for oil level, oil temp, filter bypass, low granular material, low liquid material, granular and prewet feedback errors, and granular and feedback range errors. Optional audible warnings shall coincide with each visual warning and shall be individually

Stock Plow Truck

adjustable. There shall also be a dedicated red LED on the face of the controller for an additional body up indicator. This LED shall not rely on software of the controller to operate.

The spreader control shall be tested by a SAE certified testing laboratory. The spreader control shall meet all of the following electrical, RF and environmental testing standards within the specified ranges:

Electrical & RF testing:

- **SAE J1113/4:** BCI - Sweep Range 1-400MHz, Test at 100mA Levels, CW & 1kHz AM 80% Modulations, 15/45/75cm Injection Distances
- **SAE J1113/11:** Load Dump Test - Test Pulse 5A, 24V System, 150V Peak, Applied 5 times, 10s between pulses
- **SAE J1113/13:** Operating - Operating at 4 & 8kV Direct, 4/8kV Air Discharge, 330pF/2kohms, 3 each +/-
- **SAE J1113/21:** Absorber-lined Shielded Enclosure Radiated Immunity - Sweep Range 20-1000MHz, Levels to 100V/m, Use CW, AM, and Pulse (800-1000MHz only) Horiz & Vert Antenna Polarities, 1 DUT Orientation
- **CISPR 25:** RF Radiated Emissions - Sweep Range 150kHz-2.5GHz, 1 DUT Orientation, Horiz & Vert Ant Polarities
- Pass CISPR Class 3 through entire test range
- Pass CISPR Class 4 from 30MHz-2.5GHz

Environmental Testing:

- **SAE J1455 - Sine Vibration - Section 4.10.4.1,** 2G Test Level, 10-1000Hz Swept Rate TBD, Run for 3 hours per axis
- **SAE J1455 - Random Vibration - Section 4.10.4.2 (Figures 6 through 8)** 5-500Hz, 3 hours per axis
- **SAE J1455 - Operational Shock - Section 4.11,** 20g's, 11ms, 1/2 Sine Pulse, Apply 3 Shocks each direction each axis [18 Shocks Total]

The electronic spreader control shall be a **FORCE America 5150EX-9F** with a **5150EX-REMOTE** joystick console or prior approved equal.

One (1)

Auger Feedback Sensor

FB-128 AUGER FEEDBACK SENSOR KIT:

Y__N__

Closed loop operation will require a feedback sensor coupled to the auger/conveyor motor via a mechanical coupler. The mechanical coupler shall adapt to either a 1" or 1.25" round shaft. The coupler shall be constructed of stainless steel and house a sealed bearing. The feedback sensor shall give 128 pulses per revolution without the use of a multiplier and be equipped with an IP-68 rated M12 connection. The sensor housing shall be a corrosion-proof delron material and the entire sensor assembly shall be potted encapsulated. Sensor shall be successfully tested for shock and vibration to MIL-

Stock Plow Truck

STD-202. It shall be of hall-effect, bearing-less design, with a shaft-mounted magnet on the mechanical coupler and auger shaft. There shall be a M12 feed-through bulkhead fitting to provide an easy disconnect point at the back of the truck chassis, and included in the kit shall be M12 cordsets and dust plugs for removal of the spreader from the chassis. The feedback sensor and coupler shall be covered by a 3-year warranty. The auger feedback sensor shall be a **FORCE America FB-128** or prior approved equal.

One (1) **AIR FLOW 10 FOOT STAINLESS DUMP BODY ODOT** Y__N__

The dump body shall be a Air Flo brand all Stainless Steel construction dump body, Pro Max series.
Style PMX-10-OH-SS.

The body shall be constructed of 201 Stainless Steel, #4 Polish finish. A Stainless Steel cabshield shall be included and installed.

A underbody subframe and hoist shall be included and installed. Style PMX-60.

The body shall have an air operated tailgate, and a coal door installed in the tailgate.

Side walls on the body shall be 32 inches high along with the tailgate.

One (1) **7 Prong Electric/Light plug at rear of Truck** Y__N__

There shall be a 7 prong power plug installed at the rear of the truck at the Pintle Plate. The plug shall have a protective cover on it. the plug shall be wired to the trucks driving, turn and brake light system.

One (1) **Pintle Hitch Plate** Y__N__

There shall be a 5/8 inch x 24 inch x properly sized Pintle Hitch plate mounted at the rear of the chassis frame rails. This plate shall be capable of supporting a minimum of a 20 ton Pintle Hook. Safety chain loops shall be included with the Pintle Plate.

One (1) **25 on Pintle Hook** Y__N__

There shall be a 25 ton Pintle Hitch mounted on the Pintle plate at the rear of the chassis frame.

One (1) **Black Poly Fenders** Y__N__

08/09/18

Stock Plow Truck

There shall be a Fender installed over each rear dual wheel on the truck. Each fender shall be constructed of a heavy duty black poly material and be supported with steel brackets mounted from the frame of the truck.

One (1) Mud Flap Brackets Y__N__

There shall be a pair of Mud Flap Brackets installed at the rear of the chassis frame, one each side.

One (1) Rear Mud Flaps Y__N__

There shall be a pair of black heavy duty rubber mud flaps installed behind the rear tires of the truck. Mud flaps to be mounted on angle material.

Eight (8) TOMAR RECT 16 AMBER/GREEN WARNING LIGHTS Y__N__

There shall be mounted, as described below Tomar Electronics RECT 16 AMBER/GREEN LED warning lights on the truck. They shall be controlled by a switch on the chassis dash, and they shall have a momentary switch to activate low power mode.

Lights shall be mounted as follows:

Two forward facing front of cab protector
Two side facing, one each side of cab protector
Two rear facing, one each side of cab protector
Two side facing, one each side of plow hoist mounting brackets at front of truck

One (1) Pair of Hood Mounted Plow Lights Y__N__

There shall be a pair of plow lights mounted, one each side of the hood. Each light shall be mounted on a stainless steel mounting bracket with stainless hardware. The lights shall be LED and shall be controlled in the chassis cab.

One (1) Wiring Harness/Adapter for Plow Lights/International Y__N__

There shall be a Wiring harness included for installation of the hood mounted plow lights.

One (1) Clear Rear Spreader Light Y__N__

There shall be a clear Tomar Electronics RECT16LS light mounted at the left rear side low of the truck to allow for night operation of the salt spreader. The light shall point to

08/09/18

Stock Plow Truck

the ground area behind the truck. The light shall be activated by a switch in the chassis cab.

One (1) Reflective Side Stripe Truck Body Y__N__

There shall be reflective stripe installed down each side of the truck body. The stripe shall be a minimum of 2 inches in height, shall be of two colors alternating, colors shall be as listed below:

One (1) Rear Body Chevron Y__N__

The rear of the truck body shall be covered in high vis full color safety reflective chevron material.

The Chevron shall slant from out at top to inward at the center. Color to be as listed below.

Colors shall be alternating, and each stripe shall be a minimum of 6 inches in width.

One (1) Body "UP" warning light Y__N__

There shall be a "Body UP" warning light installed in the chassis cab in full clear view of the driver of the truck that illuminates any time the dump body is lifted out of its cradle. This light will flash bright red in color, have a label stating "BODY UP" and will not deactivate until the body is returned to its cradled position.

One (1) Rear License Plate bracket/light Y__N__

There shall be a rear license plate bracket and clear light with shield installed on the truck at the Pintle plate to meet local and State requirements. The light shall be illuminated when the chassis running lights are activated.

One (1) Powerr Distribution Panel Y__N__

There shall be a master Power Distribution panel installed in the chassis cab to connect the body builders electrical components to the chassis electrical system via breakers and other disconnecting devices as seem fit the the builder. This panel shall allow for total disconnection of the 12 volt power added to the chassis by the body builder.

The panel shall have a clear plexiglass cover to protect all connections from damage. All components shall be clearly marked as to their operation.

08/09/18