Clarifications to ITB 40100-11386 – Truck Mounted Paint Striping Unit

1. **Page 3&4; Platform & Railing:** A steel railing shall be installed around the platform where necessary, and bolted in place. The platform is specified as steel on the bottom of page 3, but then an “aluminum safety red surface” is requested in the last paragraph of this section on page 4. An all-aluminum construction canopy is specified on page 5.

   **Q:** Will a 3/16” diamond plate **aluminum** platform with welded on **aluminum** railings be acceptable or is the DOT expecting steel? We’d like to provide aluminum for overall weight reduction and to be consistent with and compatible with the **aluminum** canopy specified on page 5. We prefer to weld the railing and canopy posts to the platform for rigidity and stability. Also, is it the DOT’s intent for the vendor to paint the top surface of the platform “red” in color, or was this word intended to read “tread”?

   The structural channel of the platform should be steel with a 3/16” diamond plate aluminum canopy. The surface of the platform is to have a safety tread. *Red is a typo. Weld is acceptable.*

2. **Page 4:** The platform framing shall be constructed of 4” channel cross members and 6” structural longitudinal members to support all required equipment mounted on it. The spacing of the cross members shall not exceed 14”. Perimeter tubing shall be 2” x 4”.

   **Q:** Our standard platform construction and practice is to use 3” cross members and 4” structural channel longitudinal members. We press a 90-degree double bend in the 3/16” thick diamond plate edge inward to create a seamless 5” tall inverted C channel (.1875” thick) outside edge. 2” x 4” perimeter tubing would have exposed welds and a slight separation where the tread plate is welded to the tubing which can be an area of future build up and corrosion. Will our standard construction as suggested above be acceptable for performance reasons, and so as not to restrict us from using our standard production materials, processes, and procedures?

   3” cross members and 4” structural longitudinal members do not meet our minimum requirement.

3. **Page 5; Tool Boxes:** Two (2) weatherproof tool boxes of adequate size....

   **Q:** The words “of adequate size” is very subjective. Would the DOT consider stating a minimum dimension of 18” x 18” x 24” (as seen below) for each box to promote competitive bidding and enable the DOT to conduct an “apples to apples” comparison of bids?

   Tool box minimum dimensions should be 18” X 18” x 14”
4. **Page 6; Paint Loading Pumps:** The pumps shall be equipped with Santorini diaphragm and ball checks.
   
   **Q:** Our pump supplier (ARO) does not offer “Santorini” diaphragm and ball checks. Is this supposed to read Santoprene? **This is a typo and should be Santoprene.**

5. **Page 8; Process Paint Plumbing:** All plumbing shall be constructed of industrial style, stainless steel polished, process-clamp 2” tubing, fittings, and ball valves with at least one-bolt clamp on all fittings. All elbows shall be smooth 90° ling radius style. Use of pipe thread meetings shall be minimized.
   
   **Q:** Our standard low pressure plumbing is NPT thread 2” 304 SS rated at 150 psi and has a thicker wall. Process plumbing is not considered an industry standard and not typically used in this type of equipment. Will NPT stainless steel 2” plumbing with cam-lock style connectors be acceptable so as not to restrict us from using our standard production materials, processes, and procedures? **This would be acceptable as exceeding specifications.**

6. **Page 10; Bead guns:** air atomized glass guns, Kamber Model 90HO designed to remove bead pulsation by fluidizing bead flow out of the gun nozzle. The glass guns atomizing air by-pass (coupling tube assembly) must be constructed of brass (plastic will not be acceptable). This assembly must also house a filter screen to prevent glass beads from being trapped in the atomizing process.
   
   **Q:** The 90 degree angle of entry of the ½” diameter inlet specified is not recommended for performance reasons, as it does not allow for an efficient and surge free flow of beads by the nature of its design. The beads funnel into the side of the gun’s inside cylinder creating bounce back within the chamber. The air atomization to fluidize the beads is not necessary on the proposed (preferred for performance reasons) Graco 238338 glass bead gun “to remove bead pulsation” because of the larger ¾” NPT bead inlet and the more direct angle of entry to the outlet & the tear drop needle design:
Will the Graco 238338 bead gun shown above on the right (and attached 238338 bead gun.pdf) without the air injection atomization port be considered as an approved equal to the Kamber 90HO design specified for this truck? The Graco 23838 is acceptable if it meets specifications.

7. **Page 11; Spray Gun Carriage Assembly**: ........... a safety chain shall be provided to support it during transporting.
   
   Q: Our standard carriage design incorporates an auto-lock mechanical bracket that secures the carriage in place for transport without the operator having to leave the operator’s seat. Would the DOT consider removing this safety chain type storage, it is not recommended for safety reasons, the operator would have to physically walk out into traffic to hook it up for transport. The chain is a secondary support for use during transport and must be provided.

8. **Page 12; Spray Gun Carriage Assembly**: The slide mechanism shall consist of a rectangular tube within a rectangular tube telescoping design........
   
   Q: Our standard telescoping slide mechanism is constructed of square tube within a square tube, all other specifications being complied with. Is square also acceptable so as not to restrict us from using our standard materials, processes, and procedures, or is there a specific reason it needs to be rectangular in shape? The square design is acceptable.
9. **Page 12; Spray Gun Carriage Assembly**: The power steering control unit and hydraulic hoses shall be located under the equipment platform, out of the way of the operators.

**Q:** Our standardized method of mounting the hydraulic orbitals for steering of the carriages at each operator’s station is above deck with the hydraulic hoses routed along with the steering wheel arms mounted off of the platform perimeter railings on each side. Running the steering wheel shaft through the platform floor and then to the orbital under the deck will mean the space in front of the operator will not be open for operator leg room or for walking through to the main platform. Will our standard steering wheel mounting be acceptable so as not to restrict us from using our standard production materials, processes, and procedures? *The hoses should be under the platform as specified as a safety feature in the event of hose failure.*

10. **Page 13; Spray Gun Carriage Assembly**: Valves shall be equipped with balanced spool designed to minimize back pressure or restriction in exhaust. The valves shall be of a one-piece aluminum design body.

**Q:** Our standard Humphrey M420 solenoid valve is a poppet type design and uses a block style air manifold mounting. Advantages of the poppet style over a balanced spool type solenoid valve are:

- a) The larger internal surface area required by the poppet results in a higher flow rate due to the smaller internal surface area required by the spool.
- b) The closed crossover of the poppet seals the exhaust port before it opens to flow, eliminating the transitional state from one function to the next providing precise control between positions. With the open crossover of the balanced spool all ports are momentarily open to flow as the spool shifts during actuation making it less precise.
- c) Less wear on internal seals of the poppet design contributes to a longer product life. Seals mounted on the spool are exposed to wear when traveling through the bore of the valve, shortening product life.
- d) Upon actuation of the poppet, the port is immediately open to air flow providing faster response times

Will our standard Humphrey M420 solenoid valves be acceptable for performance reasons and so as not to restrict us from using our standard production materials, processes, and procedures? *The Humphrey M420 is acceptable.*
11. **Page 13; Spray Gun Carriage Assembly**: The following diagram lays out the gun configuration very well and makes it clear to vendors what is expected. However, it is not consistent with other references to the number of guns on each carriage elsewhere in the spec (page 1 refers to 2 lines left & 2 lines right; page 6 refers to 3 spray guns on the left and 1 spray gun on the right; page 12 refers in two separate locations on the same page to 2 paint and 1 bead gun on the right carriage). Will you make clear that this diagram supersedes the number of guns previously mentioned on pages 1, 6, & 12? Page 1 is referencing the ability to spray to lines on each side of the unit. The spec should be changed to three lines on the left side to match the drawing below. The second paragraph on page 6 should have an updated from 1 spray gun to 2 spray guns on the right. Page 12 should be updated for the right side from 1 glass gun and 2 glass guns. Also update the diagram from its current version to the one below in red.

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Change to the following:

- 3 air blower guns left carriage
- 2 air blower guns right carriage
- 3 paint guns left carriage
- 2 paint guns right carriage
- 3 glass guns left carriage
- 2 glass guns right carriage
### 12. Page 14; AIR COMPRESSOR

A heavy duty, high capacity filter/dryer Schmidt air dryer, capable of passing all air from the compressor, shall be installed in the air line.

**Q:** The “Schmidt” brand is listed, will a heavy duty, high capacity LaMan filter/dryer capable of passing all air from the compressor be acceptable as an equal?  

**Yes, the LaMan will be acceptable if it meets specifications.**

### 13. Page 15; Hydraulic supply

Hydraulic power for controlling the outrigger, pointer and paint agitators, shall be from a gear type hydraulic pump, direct driven by the air compressor engine (no belts allowed).

**Q:** A gear pump is not our preference when powering several functions from a single pump & open circuit. We normally would utilize a gear pump only to power 1 continuous flow function like a hydraulic powered air compressor motor. Our standard pressure compensator control variable displacement axial piston pump is designed to maintain a constant pressure in the hydraulic circuit as flow varies, provide a high pressure standby mode when flow is not needed, adjust system flow to meet system requirements, & provide a quick response to system flow and pressure requirements. What this would mean for you is better performance of the hydraulic powered gun carriage outriggers. Is a pressure compensated pump also acceptable so as not to restrict us from using our standard proven hydraulic system engineered and designed for this application?  

**This would exceed specifications and is acceptable.**

### 14. Page 17; Secondary: HYDRAULIC POINTER SYSTEM

The guide shall be constructed using a trailer ball and coupling type system. The pointer shall have a “main” pivot point located near the center of the bumper. To this pivot shall be fixed the “main guide arm”. The “main guide arm” will be able to swing out for either edge line or centerline control. A second pivot point located at both outer bumper point locations. This pivot will offer support for the “bracing arm”. The “bracing arm” shall swing out and support the “main guide arm” at approximately its mid-point.

**Q:** Our standardized line guide uses a grease-able hinged block type joint connection system for more vertical lift capability (high lift 80° angle for transport rather than the 45° trailer ball coupling type specified). Will this be considered an equal? The main pivot arm on our standard mechanical guidance system is hinged from the outside of the front bumper on each side so it does not need to be completely removed when stored out of the driver’s line of sight for transport. Is this acceptable? A pneumatic lift is recommended for safety purposes. The “pinch points” are not as destructive with pneumatics. Will a pneumatic lift cylinder be acceptable?  

**This will be acceptable and considered as exceeding specifications.**
15. **Page 18; The signboard:** ..... mounted so when in the raised position, the highest point is under 12 feet from the ground. For support, four mounting points shall be supplied, two (2) to the rear of the platform and two (2) on the bumper.

**Q:** Is this board to be pivoted from a horizontal storage position to a vertical position for operation, with a 90 degree power tilt, or can it be fixed mounted without an electric cylinder actuating it? **Must be pivoted from horizontal storage to vertical operating position**

16. **Page 18; CONTROL CENTER:** An all-aluminum control center shall be provided; heater thermostat control; All control center switches shall be lighted rocker or push button type.

**Q:** Will a powder coated steel control console also be acceptable? **Powder coat is not acceptable**.

Will it be acceptable to not provide space for heater thermostat control if a heat system is not required elsewhere by the specification? **Yes**.

Will toggle type switches be acceptable so as not to restrict us from using our standard production materials, processes, and procedures? **Toggle switch is not acceptable**.

17. **Page 19;** All electrical wiring shall be enclosed in conduit type protective case.

**Q:** We prefer not to use conduit casing in a mobile application. When water gets in, it has no way of draining back out. Standing water inside of this conduit can cause electrical wire corrosion and shorts. For performance and warranty reasons, will our standard method of protection, corrugated split loom covering (allows for water drainage) be acceptable? **Split loom is not acceptable**.

18. **Page 23;** Technical information: For the purpose of standardization of the unit, the availability of replacement parts, and whether or not components meet the specifications, the bidder will provide literature or system diagrams and details on the following component: F. Paint Heating System/Exchangers

**Q:** Was it the intent to include a paint heating system on this truck or is this section reference in error? There is a reference to heat exchangers on page 8, under the cleaner system, but a paint heating system is not specified elsewhere. Should the Paint Heating System/Exchangers references be removed under these sections? **Paint Heating System/Exchangers should be deleted**.

19. **Page 23 & 24; TECHNICAL SERVICES:** The last 3 lines of the spec under this section seems to be out of place, and seems to be describing electric paint gun actuators/gun raisers rather than technical services.

**Q:** Would you clarify if these are to be included, and if so, would you indicate how many actuators are required and for which guns on each carriage? **This is an error. The spec should end with ...on acceptance.** Starting with permit through the end of the paragraph should be deleted.
20. **Flashing warning/safety lights**: It is unusual to not see any type of lightbar or strobes specified, especially on a State DOT truck. Does the DOT intend to add their own safety lighting once the truck is delivered per this contract, or was this something that was overlooked when developing the specification?

**TDOT will install lights ourselves.**