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STRONG. STABLE. COMMITTED.

Product Review - Pierce Ascendant 100’ Mid-Mount Aerial Platform

10/30/2018

What Is It?

- A tandem axle 100’ mid-mounted steel aerial platform
- Unveiled at FDIC in April 2018

What Are They Claiming?

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"…market disrupting maneuverability, drivability, operability, and serviceability." **piercemfg.com**

"The 100' #AscendantTower has a significantly smaller footprint than any other mid-mount or rear-mount tower on the market, making it much more maneuverable. The lower center of gravity makes the vehicle feel more stable and easier to drive." **Pierce Mfg. Facebook**

"Everything you want in an aerial, but didn't think possible."

Ten-8 Fire Equipment

Ascendant 100’ Mid-Mount

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	Pierce 100’ Mid-Mount	Sutphen SPH100 Mid-Mount
Overall Height	10’-8”	11’-6”
Overall Length	41’-2.75”	45’-7”
Front Axle	22,800 lbs.	23,000 lbs.
Rear Axle	48,000 lbs.	52,000 lbs.
Total GVWR	70,800 lbs.	75,000 lbs.
Outrigger/Jack Qty & Location	(2) Downriggers in Front Bumper (2) Out-and-Down Mid-Body (2) Downriggers at Rear	(2) Front Suspension Jacks (2) Out-and-Down Mid-Body (2) Downriggers at Rear
Outrigger Spread	18’ (13’ Short-Jacked)	21’ (15’-3” Short-Jacked)
Stabilizer Set-Up Time	26 Seconds	35 Seconds (Starting in Cab)
Max Grade (Side-To-Side)	5°	5°
Max Grade (Front-To-Rear)	9°	5°
Minimum Wheelbase	252”	230”

Ascendant 100’ Mid-Mount

	Pierce 100’ Mid-Mount	Sutphen SPH100 Mid-Mount
Rear Overhang	160”	194” (Body)/241” (Bucket)
Tail Swing	2’-0”	5’-7” (Bucket)
Water Tank Capacity	**Up To** 300 Gallons	Up to 500 Gallons
Compartment Space	**Up To** 230 Cubic Feet	Up to 500 Cubic Feet
Equipment Allowance	2,500 lbs.	Not Specified
Body Material	Formed 1/8” Aluminum (Welded)	14-Gauge 304 Stainless Steel (Bolted)
Hose Bed Capacity	800’ of 5”	900’ of 5”
Crosslays	(2) X 200’ of 1.75” (Enclosed w/Lift-Out Trays)	(2) X 200’ of 1.75”, (1) X 200’ of 2.5”
Std. Ground Ladder Storage	170’ Min.	115’
Ladder Material	100,000 psi Welded Steel (5-Section)	Aluminum Huck-Fastened (5-Section)
Vertical Reach	100’	101’
Horizontal Reach	93’	89’-4”

Ascendant 100’ Mid-Mount

	Pierce 100’ Mid-Mount	Sutphen SPH100 Mid-Mount
Operational Envelope	-20° to +77°	-7° to +80°
“Dead Zones”	Yes (Envelope Controls)	No
Tip Load (Dry)	1,000 lbs.	1,000 lbs.
Tip Load (Wet)	500 lbs.	500 lbs.
Equipment Allowance at Tip	150 lbs.	Not Published
Bucket Area	14.3 Sq. Ft.	19.26 Sq. Ft.
Aerial Device Structural Safety Factor (NFPA Min = 2:1)	2:1 (Assumed)	3:1
Wind Rating	35 MPH	35 MPH
Flow Rating	**0-1500 GPM:** 90° Side-To-Side/ 45° Above Horizontal **1501-2000 GPM:** 45° Side-To-Side/ 30° Above Horizontal	2000 GPM - No Restrictions

Ascendant 100’ Mid-Mount

	Pierce 100’ Mid-Mount	Sutphen SPH100 Mid-Mount
Aerial Setback	20’	25’-8.5”
Below Grade Scrub Angle	50°	70°
Platform Height (Full Retraction)	20”	54”
Waterway Location	Side (Exposed)	Internal (Protected)
Structural Warranty	20 Years	30 Years

Available Chassis

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Arrow XT™

Dash® CF

Enforcer™

Impel®

Quantum®

Saber®

Velocity®

Engine Offerings

Both the Detroit DD13 525HP and the Cummins X15 600HP have been advertised as being available engine offerings. Currently there is no data on the availability of the X12.

Rear Axle

The Ascendant Mid-Mount Platform is equipped with a 48,000 lb. rear axle/suspension. This rating only provides the minimum 2,500 lbs. of payload required by NFPA.

The SPH100 is equipped with a 52,000 lb. rear axle/suspension. However, typical in-service weights range between 46,000 lbs. and 48,750 lbs. depending on the body/water tank/ladder configuration. This provides 3,250 to 6,000 lbs. of additional payload beyond the 2,500 lb. NFPA requirement.

Front Downriggers in Bumper

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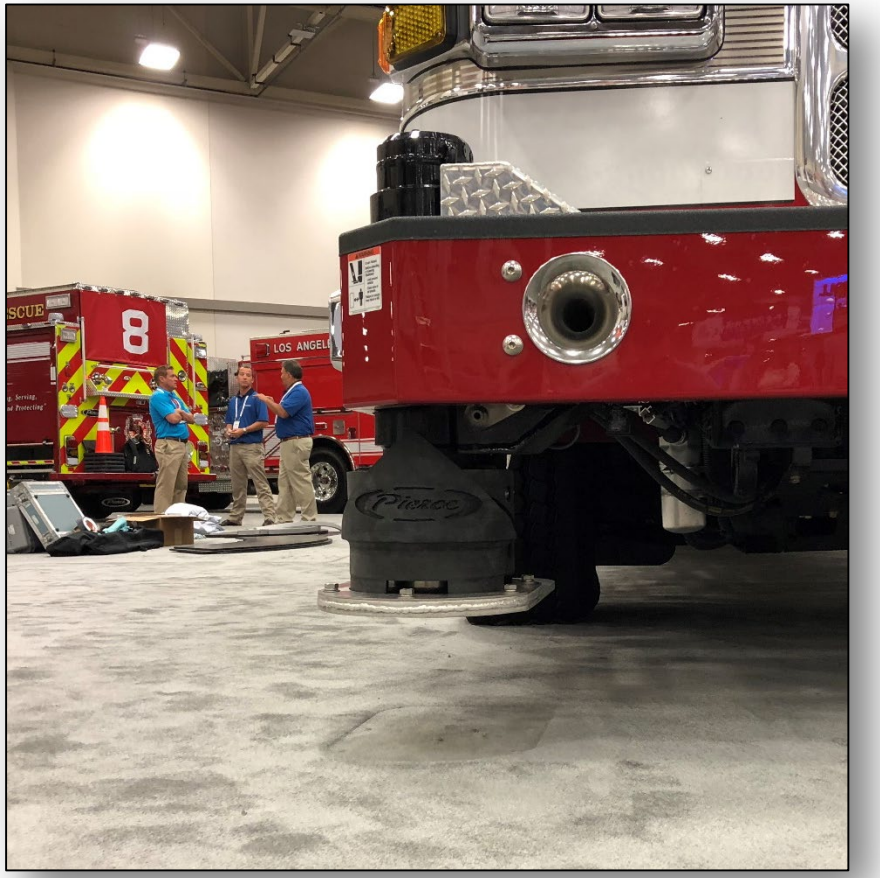
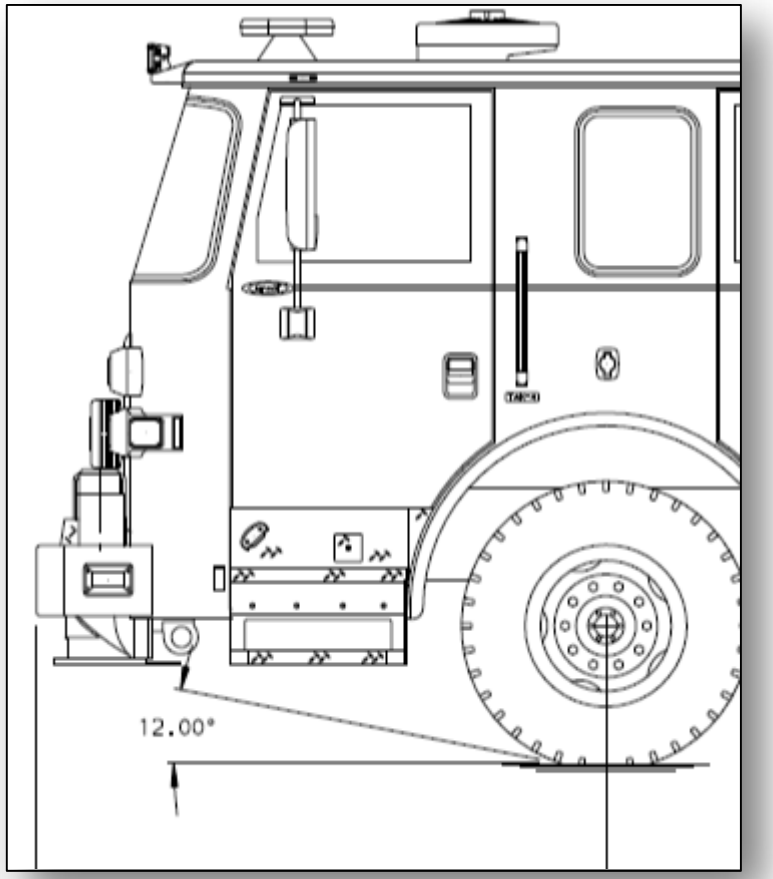
There are (2) downriggers in the 13” front bumper extension, (1) each side. Original drawings (see below right) show the outriggers positioned much higher up in the bumper. Design on demo at FRI only provided 9” of ground clearance in the stowed position.



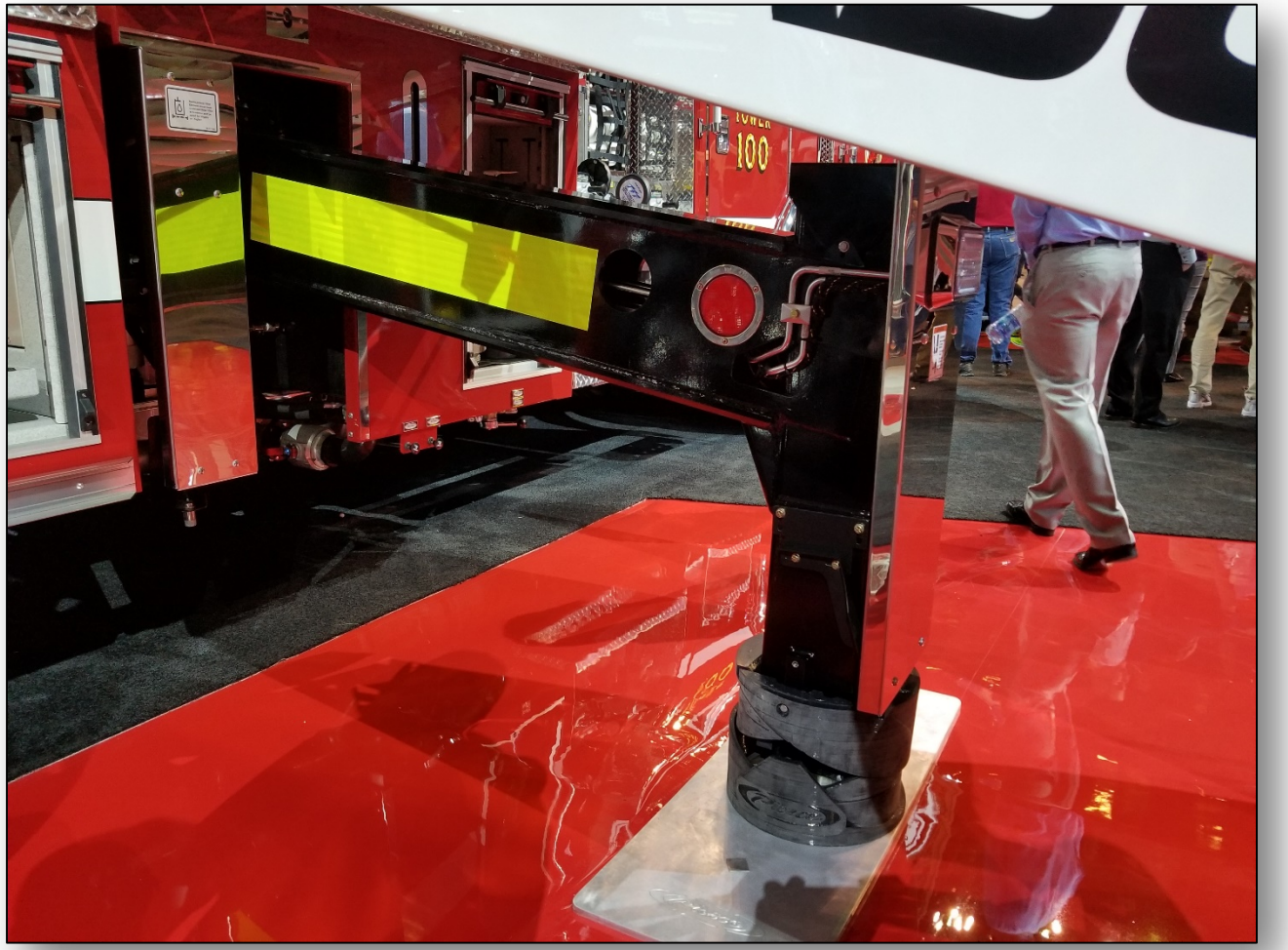


Front Downriggers in Bumper

Most recent configuration on Florida demo:

Outriggers

There are (2) outriggers, (1) each side below the turntable. They are angled to help them achieve their 20-degree below grade operation. Jack spread is 18’.



Rear Downriggers

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There are (2) downriggers, (1) each side at the rear of the apparatus.

Downrigger/Outrigger Pads

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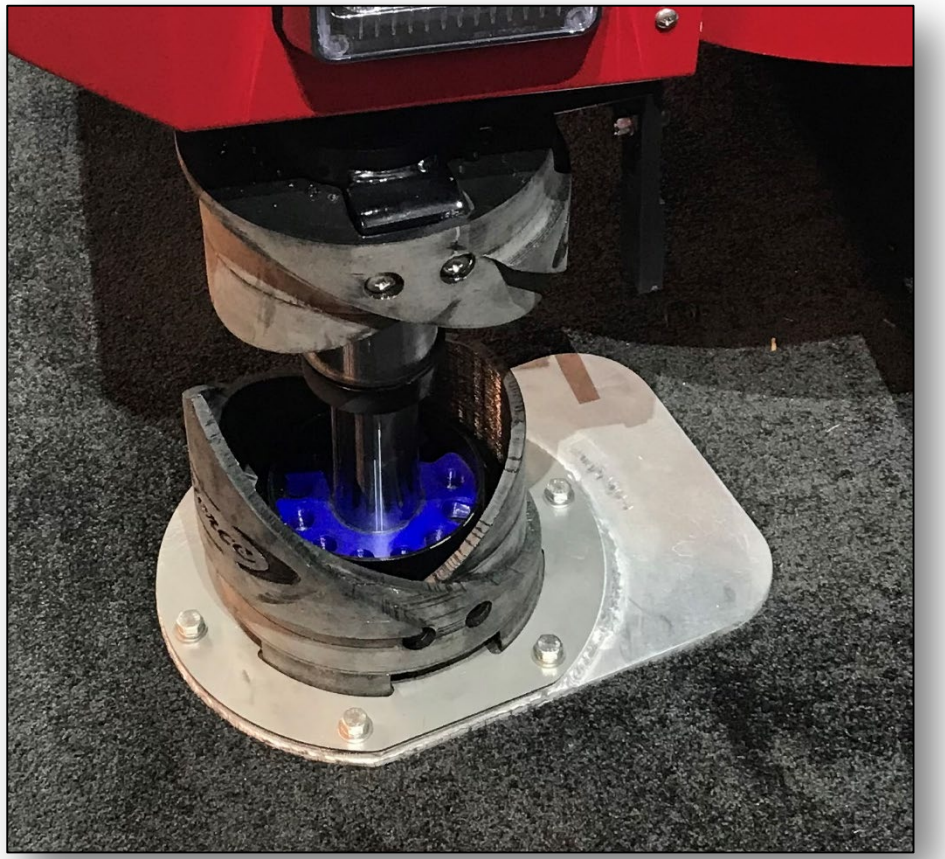
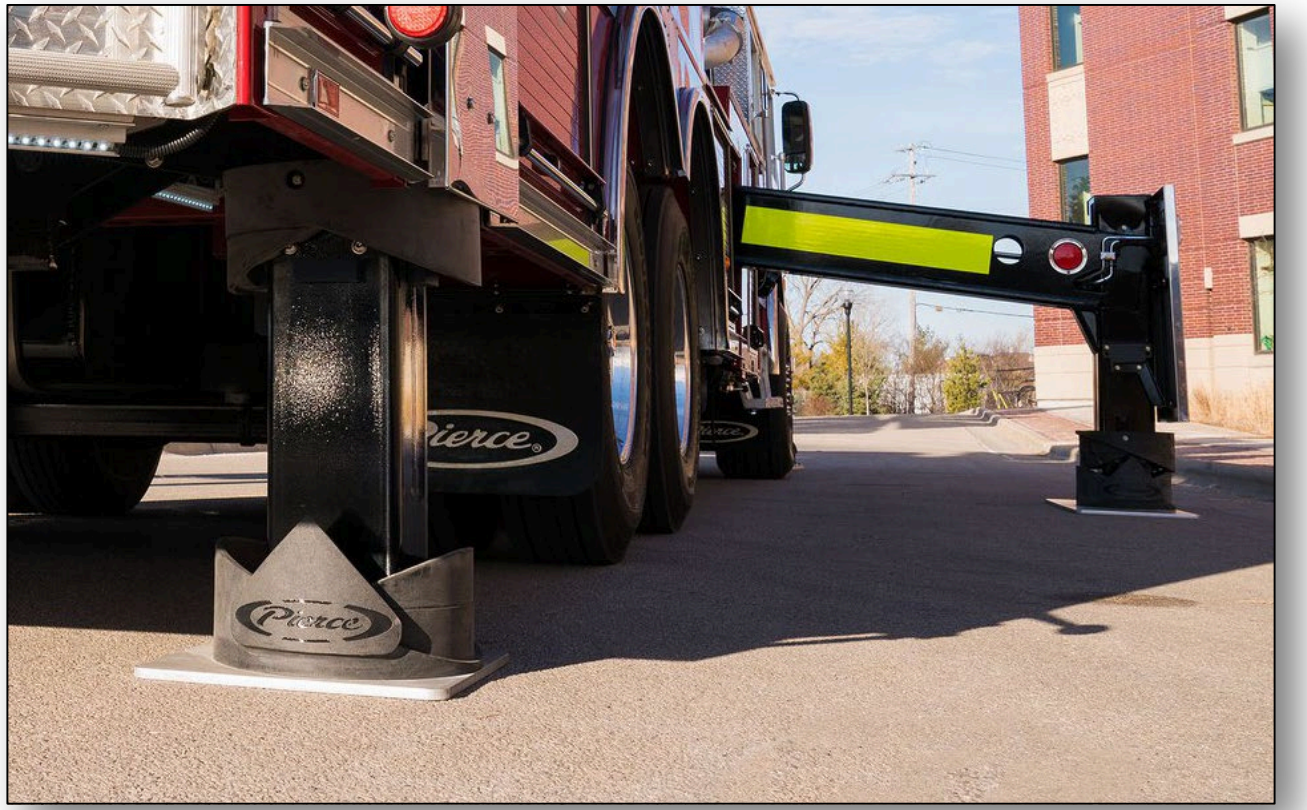
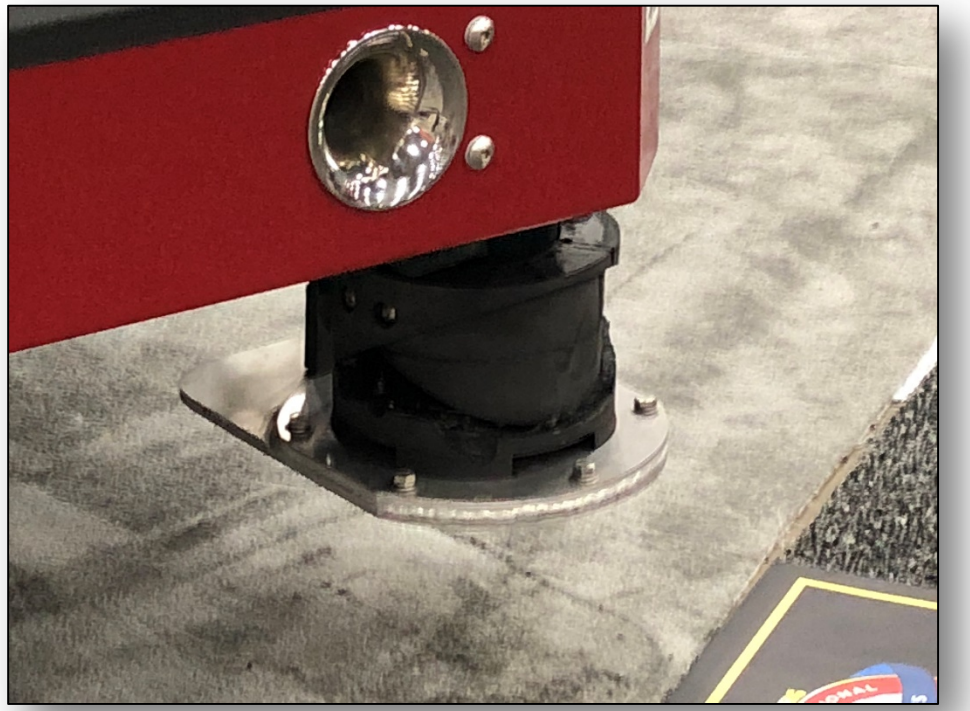
All (6) downriggers/outriggers have aluminum jack pads integrated into the bottom of each jack foot.





Downrigger/Outrigger Jack Feet

The downrigger/outrigger jack feet are still in the prototype stage. The demo unit has 3D printed jack feet, which are all busted up.



Set-Up/Set-Up Time

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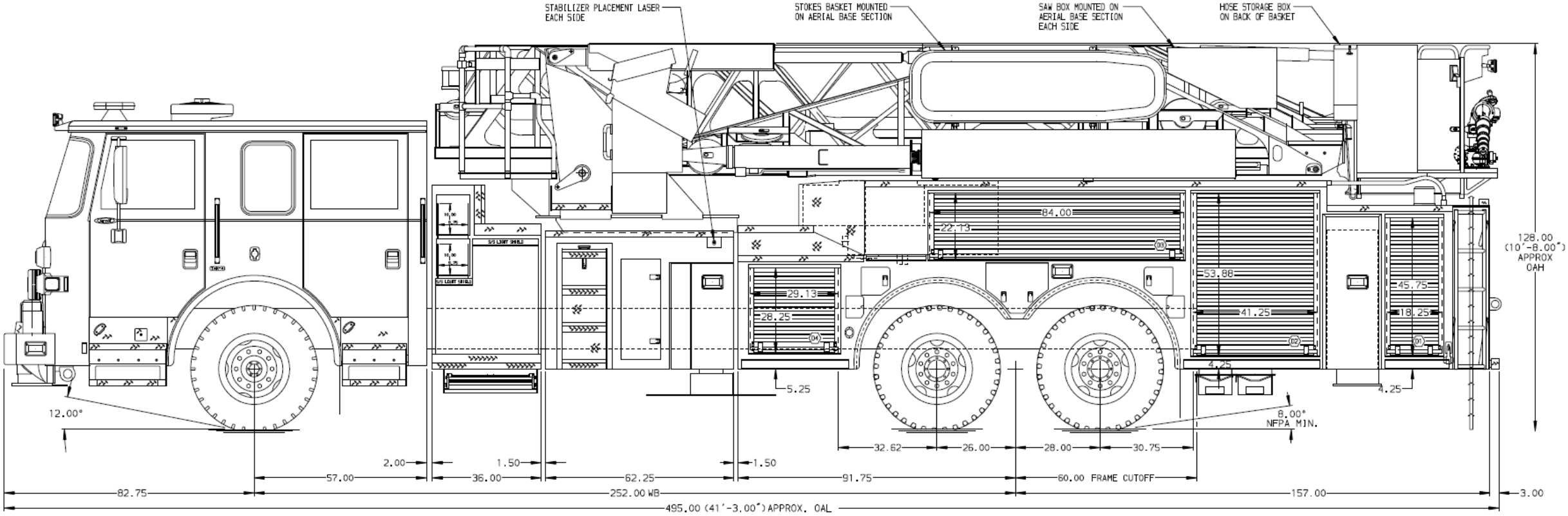
They claim a 26-second outrigger set up time utilizing their tethered remote. This is accomplished using their “level assist” feature. The rear downriggers will then automatically deploy once the side outriggers are set up. They also allow the operator to set the truck up angled to one side for better below-grade operation. This is done with one “tilt” button on the remote. The remote also features an “auto stow” button.

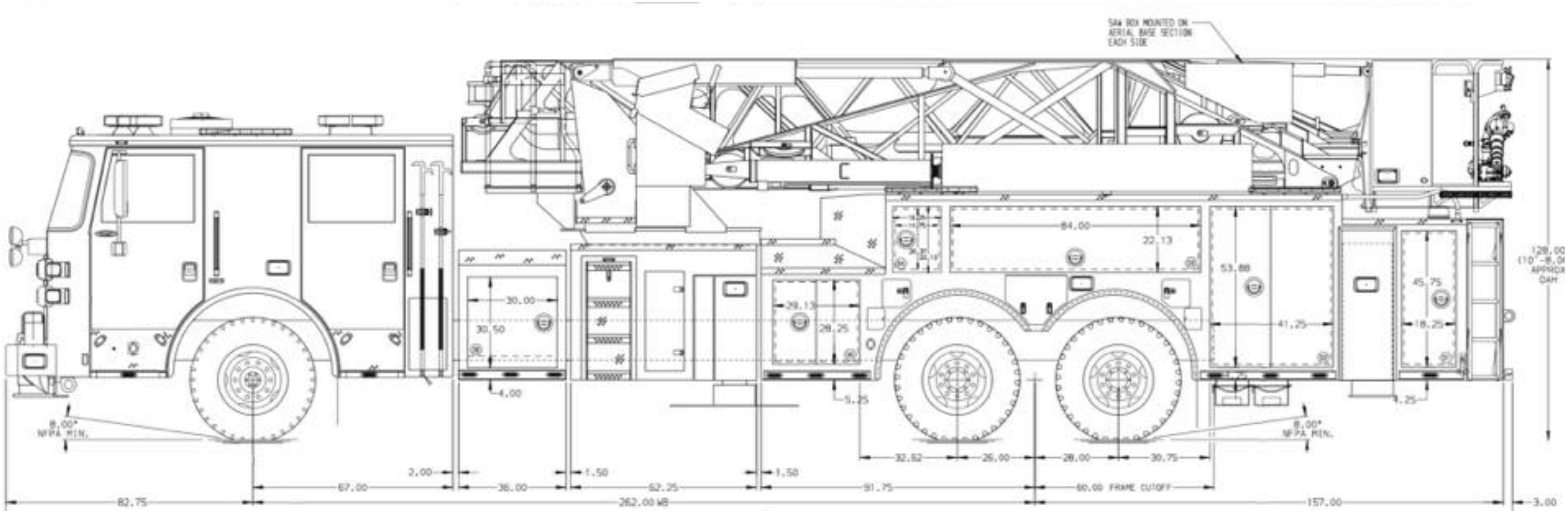
Wheelbase – 252”

While their rear overhang is only 160” (including the bumper), they accomplished this by increasing the wheelbase. The minimum wheelbase is 252” with their smaller 57” cab.



Wheelbase – 262”

This no tank/no pump rig was ordered by Portsmouth, VA with a 67” long cab and a 262” wheelbase.



Turning Radius

The 35’ turning radius they advertise is with their rear steer option. The turning radius is 39’ without it. However, they don’t seem to ever define “TURNING RADIUS”. Is that curb-to-curb or wall-to-wall???

The SPH100 curb-to-curb with 56” cab/230” wheelbase is 34’-7”.

Turning Radius: Ascendant® 100’ Heavy-Duty Aerial Tower

Like Comme

Pierce Mfg

595

54K Views · about a week ago ·

Lighter. Smaller. Shorter than anything in its class. The 100’ #AscendantTower provides an eye-popping 35’ turning radius with rear steer, and 39’ without. #TowerTuesday

Pump Panel (Inlets/Discharges)

36” wide pump house with only (2) 2.5” discharges and (1) 2.5” gated inlet on the driver’s side. Both 6” inlets are on the officer’s side panel. Inlets on the officer’s side panel are up high and discharges are down low.

Crosslays

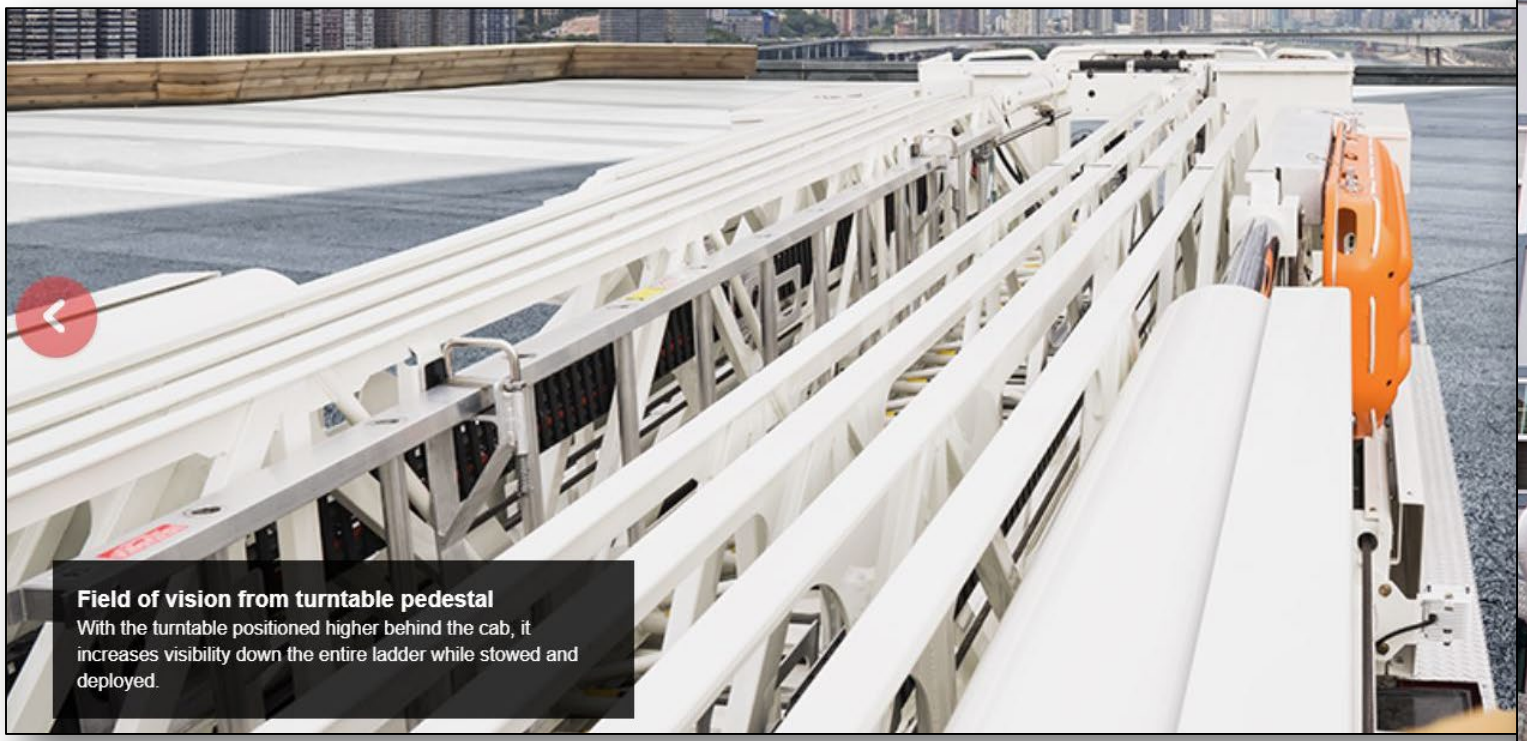
Only (2) 1.75” crosslays are available. They are in an enclosed speedlay configuration directly behind the cab, stacked one on top of the other. Each has a lift-out tray. It appears that no 2.5” crosslay is available.

Turntable

The operator's platform on the turntable is very cramped. The pedestal controls must be moved out of the way to enter or exit the area.

Turntable

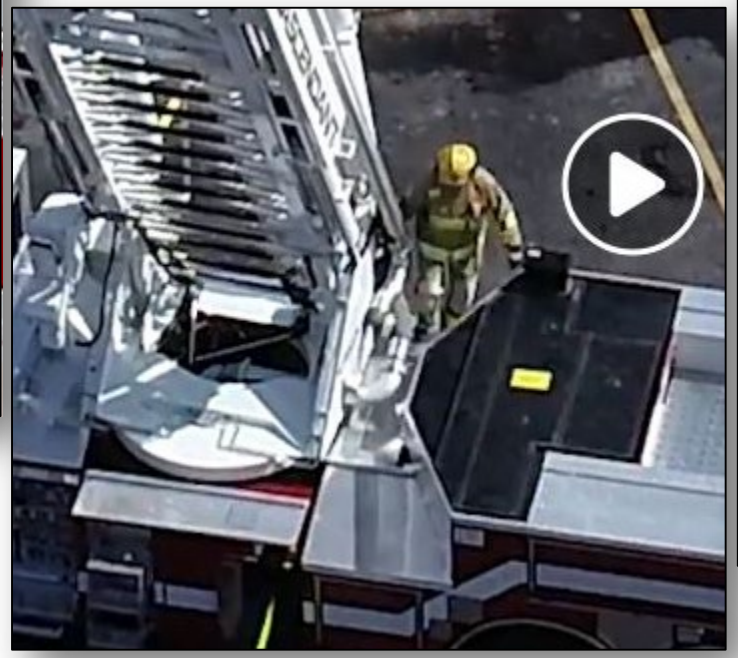
Pierce markets this operator's platform as providing enhanced viewing area for the operator. However, the only reason it is elevated is so it will clear the top of the crosslays and the front of the body when rotated.

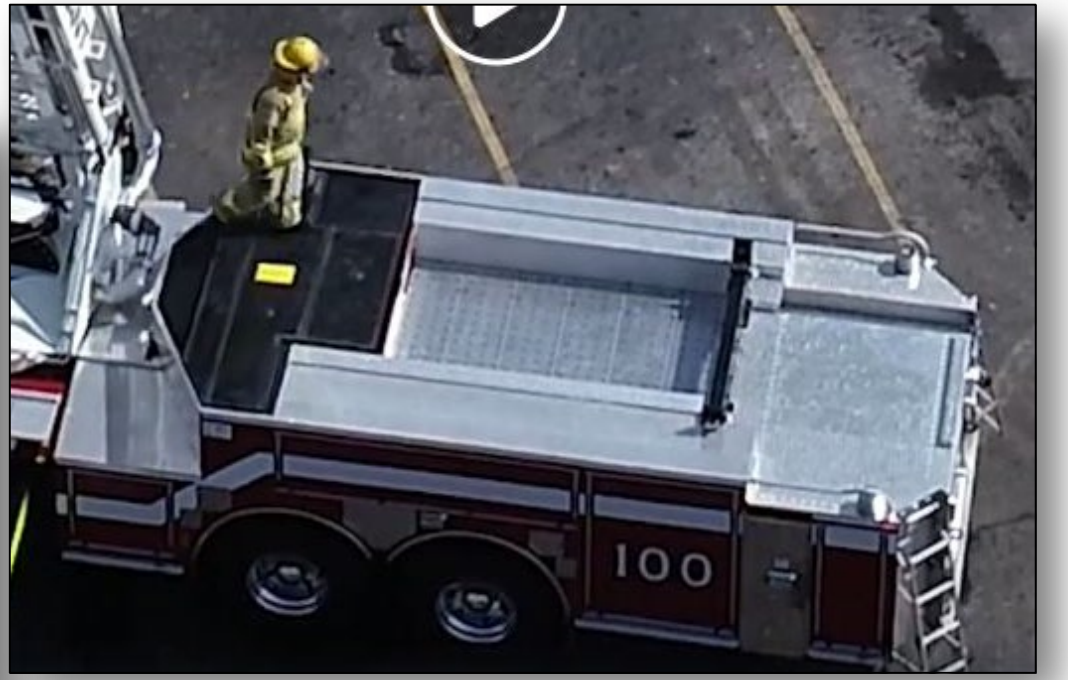


Turntable Access/Egress

If the boom is rotated at certain angles off to the side, the egress from the base of the ladder forces you to step onto the sloped portion of the front of the body.

If the aerial is rotated over the driver's side, it forces you to walk on top of the water tank and across the top of the body. Last I checked, the top of the poly water tank wasn't a non-slip stepping surface.





Platform Access/Egress

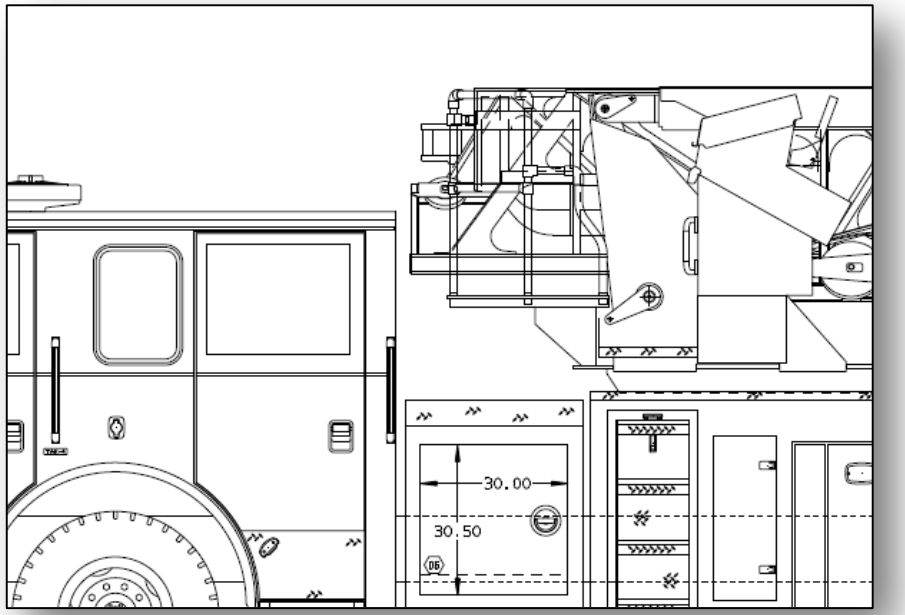
Access to the platform when bedded is via (2) fold-out ladders mounted at the mitered rear corners of the body. The monitors in the stowed position impede into the doorways of the platform. It appears that the grab handle placement for the transition from the ladder to the top of the body would make that tricky.

Saw Boxes on Ladder

Pierce offers boxes on each side of the base section of the aerial to store saws. They cannot be reached from the platform and you have to reach over all 5 sections of the aerial, including the platform leveling cylinders.

Extending Ladder to Raise

In order to reduce their overall length and set-back distance, the ladder extends past the turntable in the bedded position. This puts it so close to the back of the cab that it has to be extended before it can be completely raised out of the bed.



Generator

None of the drawings indicate any place for a permanently mounted hydraulic generator. It appears that a portable Honda in the officer's side front compartment that plugs into the truck is the only generator option.

Compartment Space

Compartment space is one of their biggest weaknesses, due to their shorter overall length. Pierce advertises UP TO 230 cubic feet of compartment space, which must be for their no-pump/no-tank configuration. They advertise “SMART Compartmentation”, which sounds like a fancy way of describing how you cram this stuff into really small spaces. What they show below really isn’t that much equipment.

Compartment Space

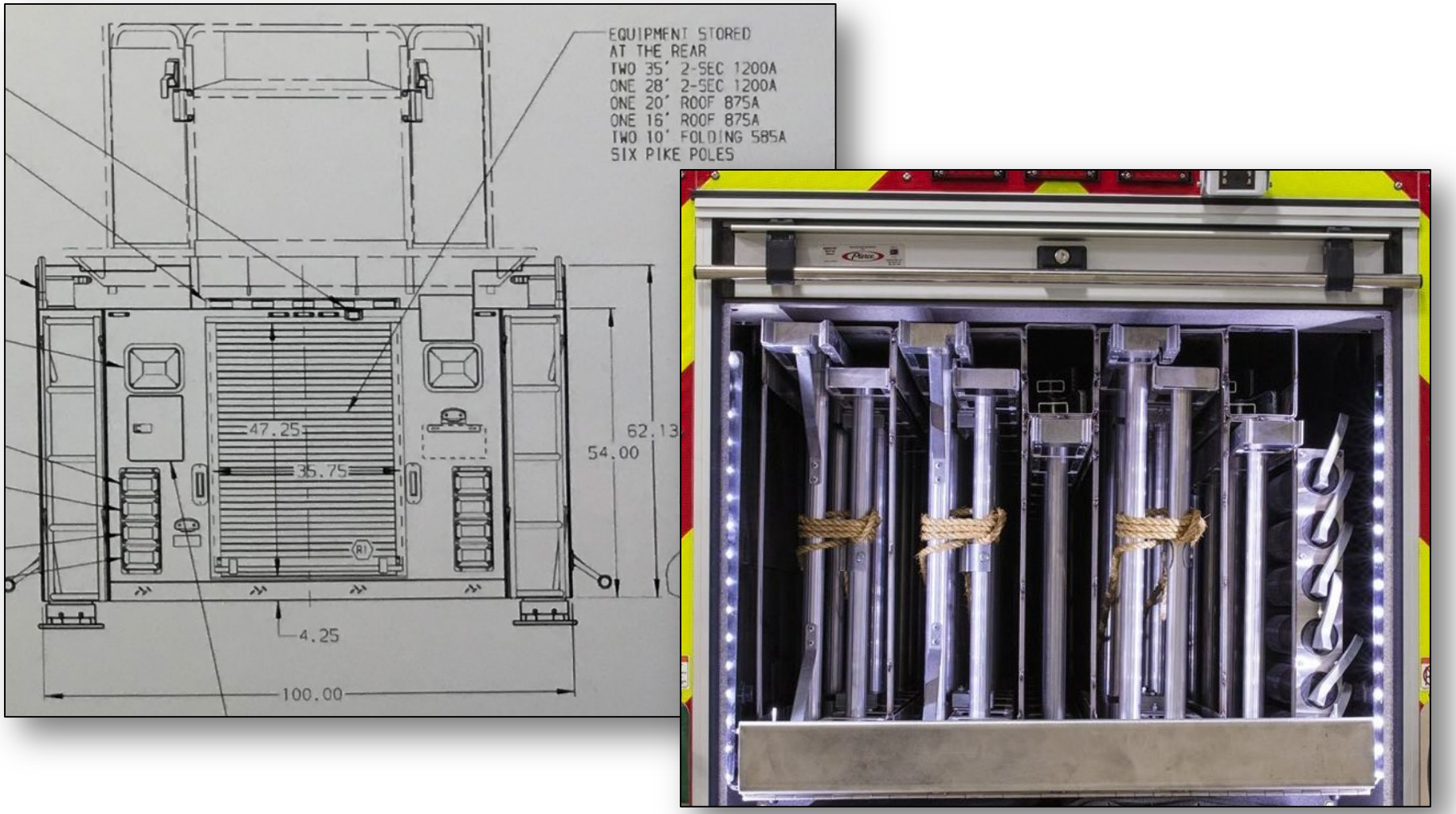
No data is available regarding compartment depths, but at BEST, using 27” deep compartments, there’s only 170 cubic feet of compartment space. A typical Sutphen single axle aerial has almost 200 cubic feet.

Compt	Width	Height	Depth	Cubic Ft
L1	29.13	28.25	27	12.86
L2	84	22.13	27	29.05
L3	41.25	53.88	27	34.73
L4	18.25	45.75	27	13.05
R1	29.13	28.25	27	12.86
R2	59	22.13	27	20.40
R3	41.25	53.88	27	34.73
R4	18.25	45.75	27	13.05
			TOTAL	**170.71**

Ladder Storage

They advertise a MINIMUM of 170’ of ground ladders. What if you only want 115’? Their standard ladder banking includes:

- (2) 35’ 2-sec
- (1) 28’ 2-sec
- (1) 20’ roof
- (1) 16’ roof
- (2) 10’ folding
- (6) pike poles

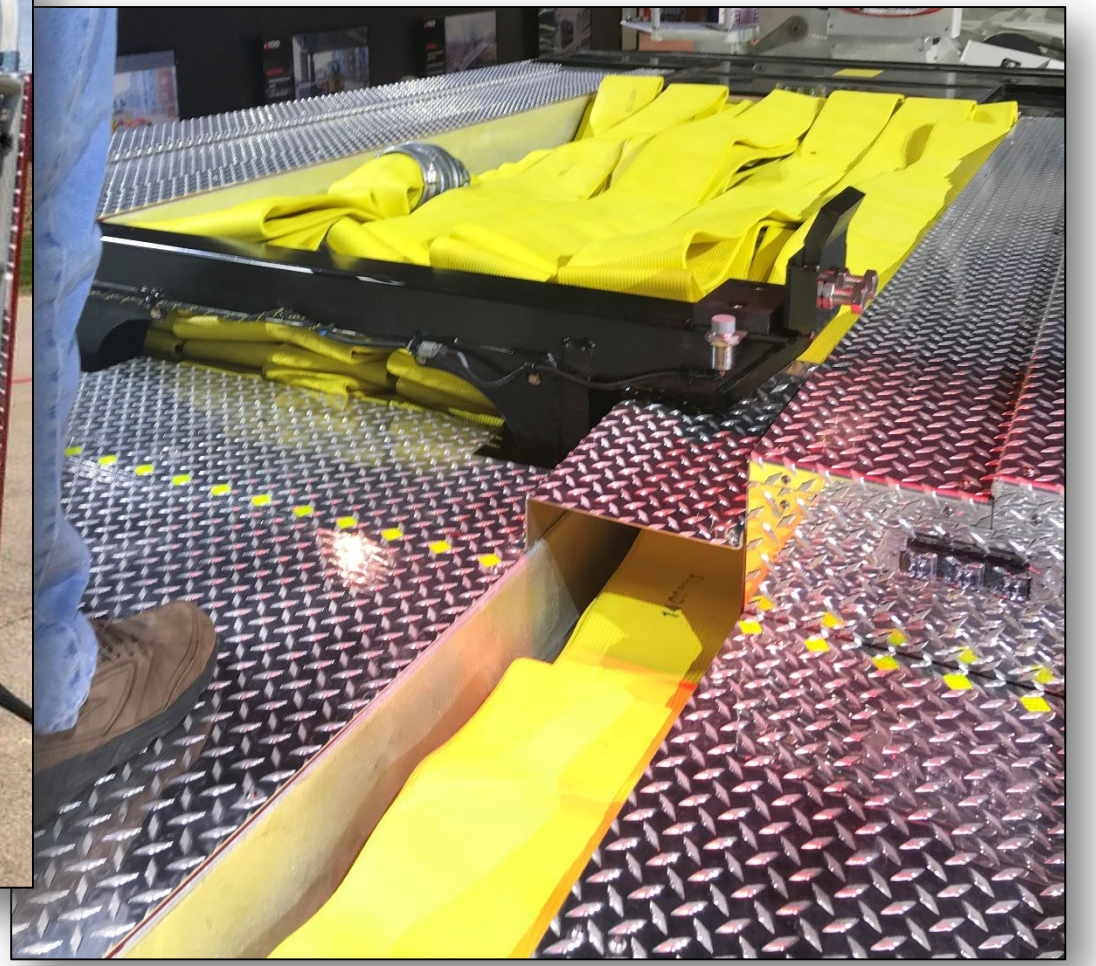


Ladder Storage

It doesn't appear they can mount any ladders on the side of the boom, mainly due to how short the base section is as well as cylinder and waterway arrangement. They will mount a roof ladder inside the fly section of the ladder.

Hose Bed

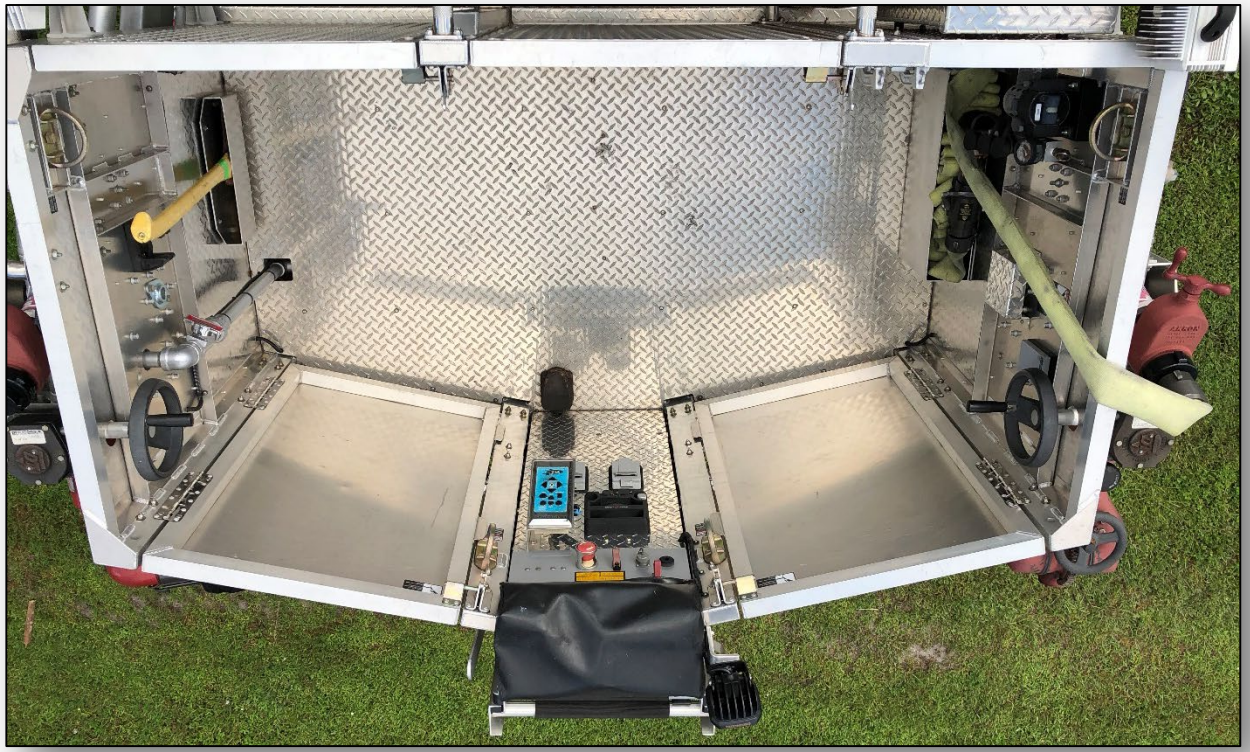
Hose bed capacity is 800’ of 5”, but there is only a small “chute” at the rear for the hose to pay out of. Notice how high it is from the ground, just like it is on the single axle 107’ ladder.



Platform Size

Pierce advertises this as a 4-person bucket, but it's only 14.3 square feet.

The SPH100 platform is 19.26 square feet.



Platform Monitors

With the monitors being mounted out front and down so low, how do you control them? You'd have to reach way over the front or get down on your knees to reach them.

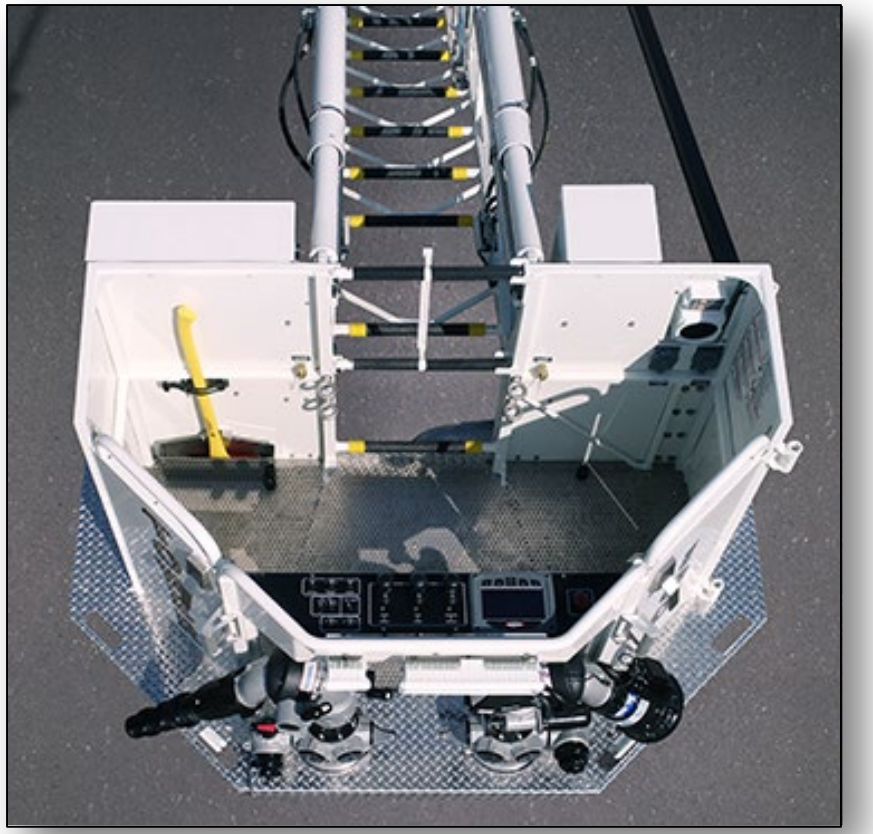
How do you connect a handline to the valves under the monitors???

Platform Monitors

In the stowed outward-facing position, the nozzles/stacked tips block your access to the platform doors and your working area.

Platform Workability

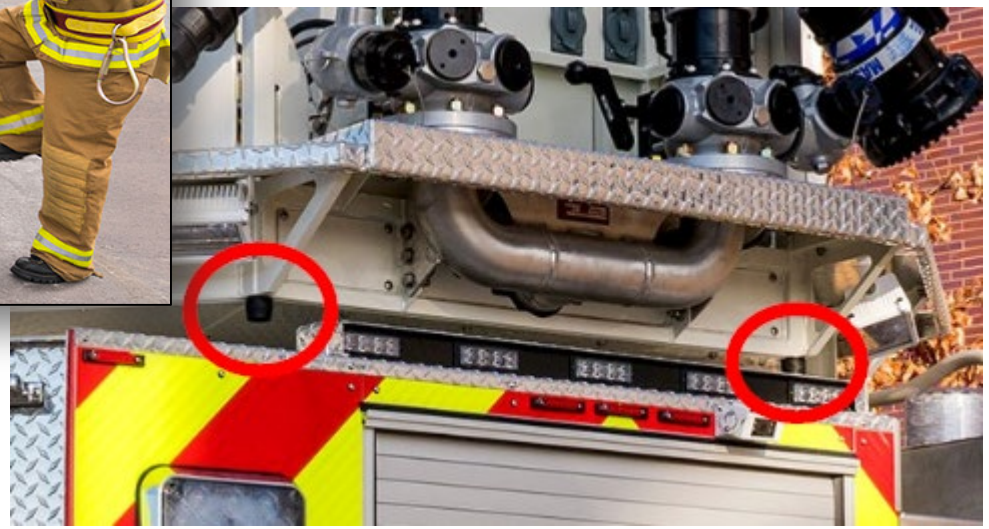
This placement of the monitors on the front of the platform also affects your workability off the front. You must set up to the structure at a 45-degree angle due to the monitor and door placement.



Platform Access from Ground

Pierce advertises being able to access the platform from the ground (20” step height) when the aerial is retracted.

There are only 4 small bumpers on the bottom of the platform. Can it even be set down on the ground?

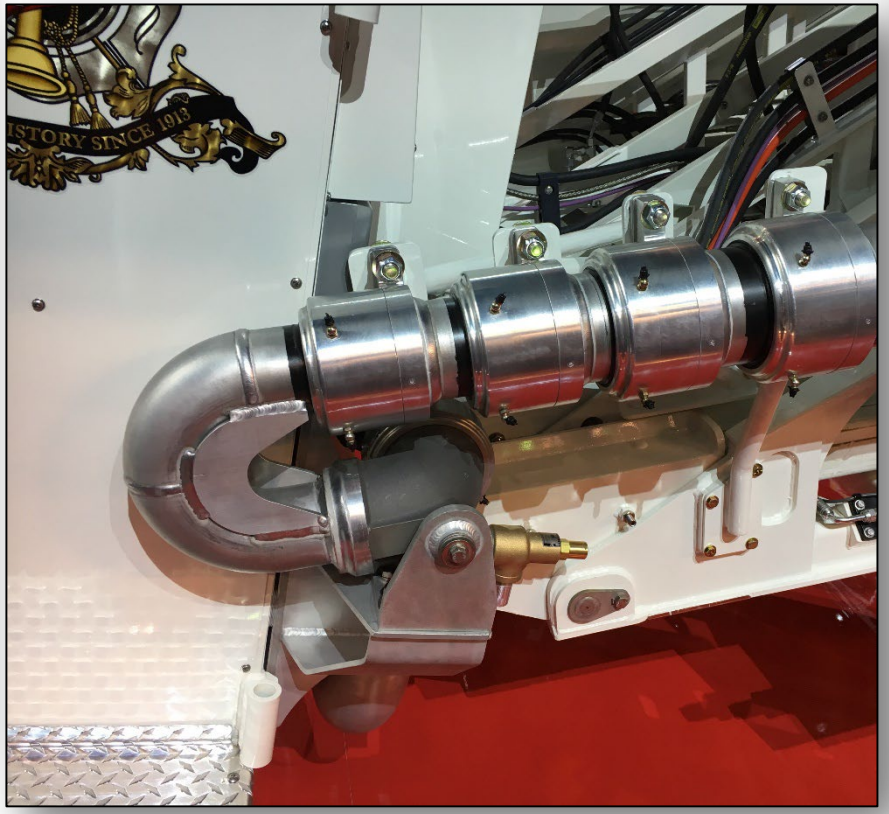


Waterway (Side Mounted)

Notice how far off the side of the boom the waterway is up near the platform.

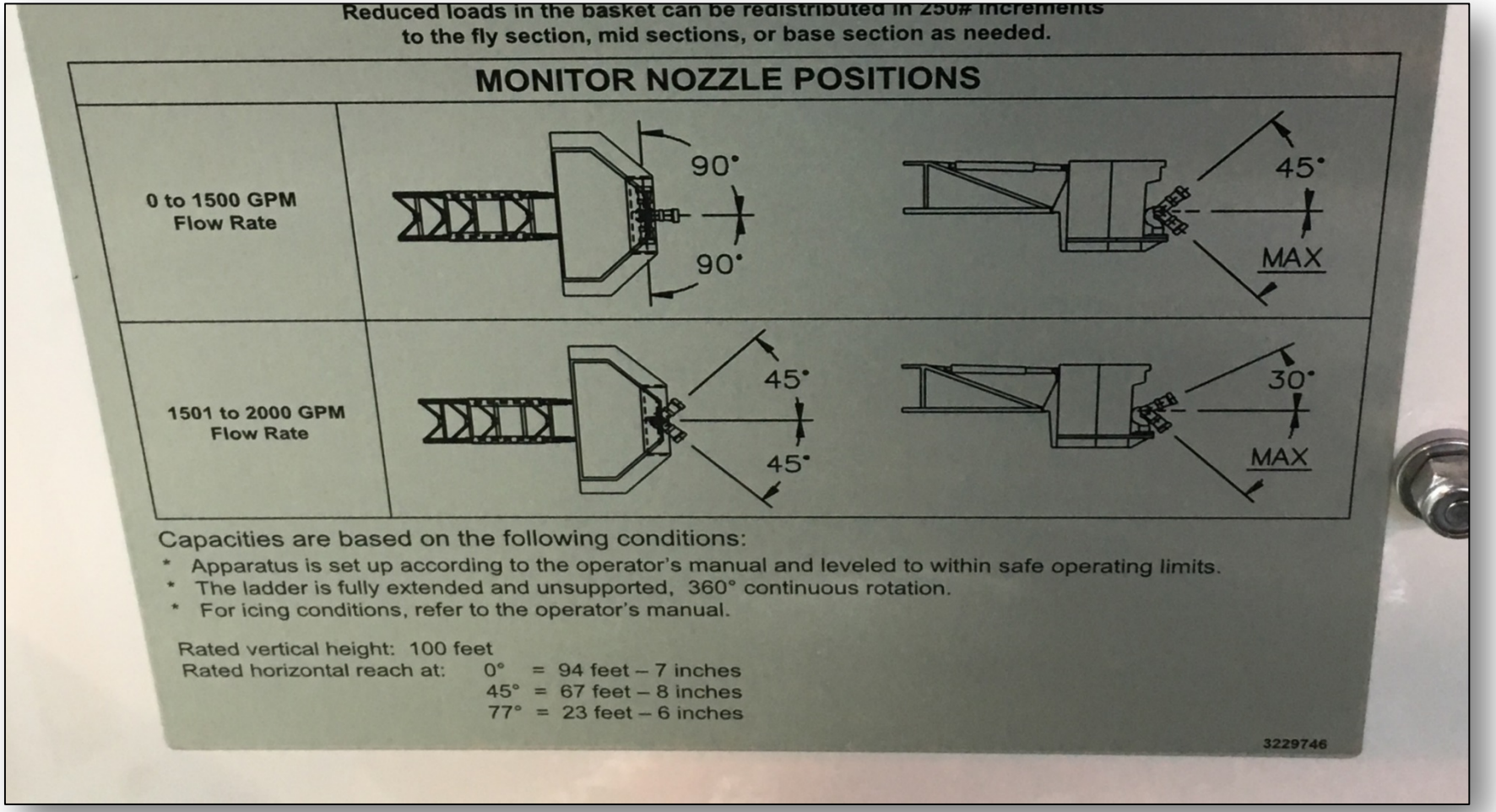
Waterway Restrictions

How many elbows do you see?!?!?!? I count 11 visible 90's just to get from the turntable swivel to the monitor "T". That doesn't include any from the pump to the bottom of the turntable swivel.



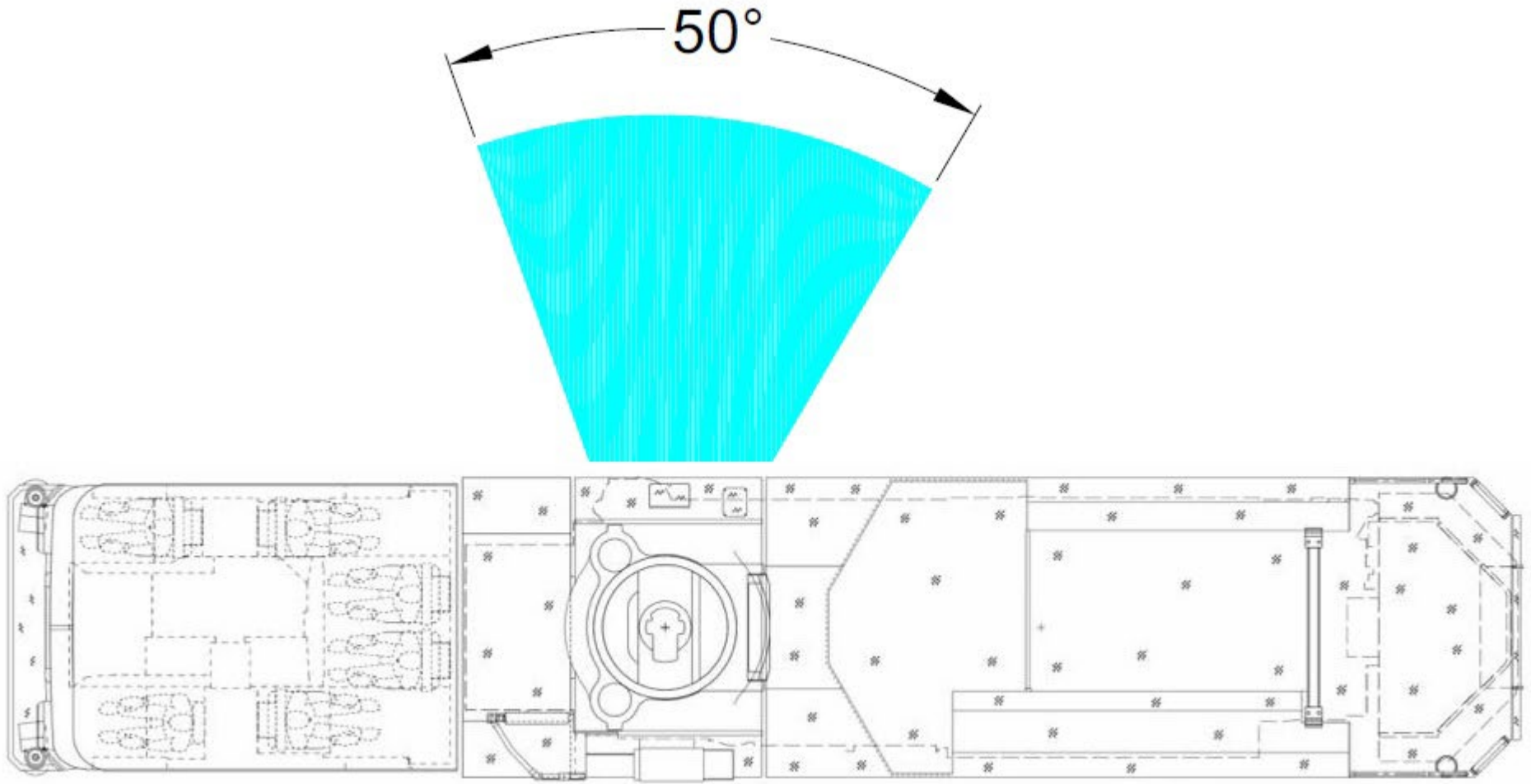
Monitor/Nozzle Restrictions

When flowing over 1500gpm, the monitor/nozzle position is reduced to 45 degrees side-to-side and 30 degrees above horizontal.



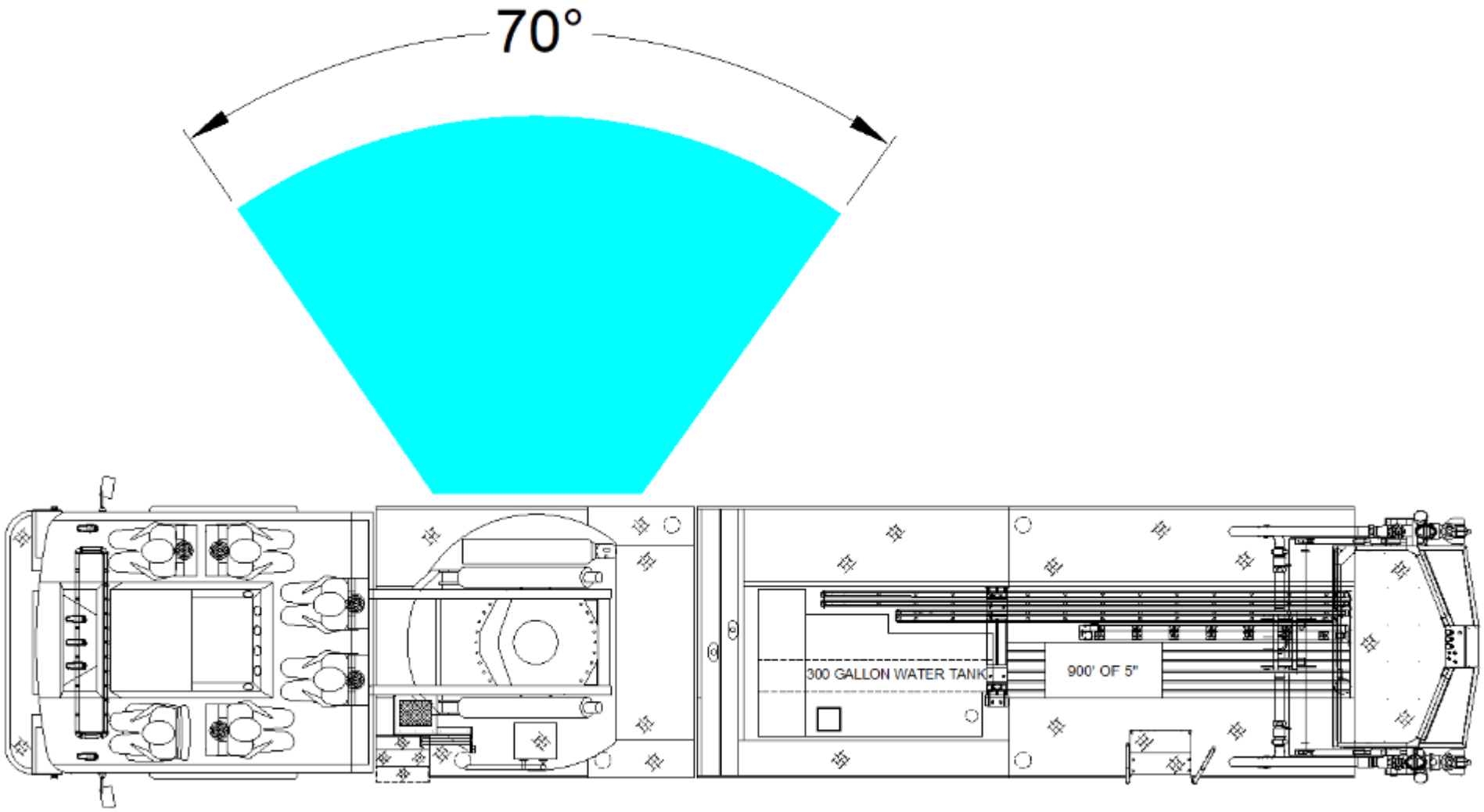
Scrub Angle – Below Grade

While the Ascendant can get up to 20-degrees below grade, their scrub angle is 50-degrees.



Scrub Angle – Below Grade

The SPH100 has a 70-degree scrub angle, 7-degrees below grade.



Additional Talking Points

- Family Owned vs. Large Corporation
- Customers are Family/Can Speak with Ownership/Management
- Longevity of Customers (Orlando 50 Years of Sutphen Aerials)
- Voice of Customer - Many of Sutphen's Standard Features/Options/Designs from Customers' Input

- Stainless Steel Bolted Body
- No Torque Box on SPH100 (Truss Bar System)
- Dual Side-Mounted Monitors on Platform
- Aluminum Huck Fastened Nonpainted Box Boom Ladder & Platform
- Sutphen – No Structural Aerial Failures in Company History
- Aerial Harvest Program
- Available Customization of SPH100 (More Options Tailored to Depts Needs)

- Ascendant Mid-Mount is a Truck of Compromises (They Advertise their Shortcomings as Positives)
- Proprietary Parts (Lead Times & Cost)
- Prototype Parts ("Still Tweaking It")

Don’t Drink the Kool-Aid…

SUTPHEN

QUESTIONS OR COMMENTS???