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Pre-Installation Guide

A-dec 411 Dental Chair and Related Systems



A-dec 411 Chair with 333 Radius®-Style System, 551 Assistant's, 461 Cuspidor, and 482 Monitor Mount

This document contains technical specifications for installing the A-dec 411 chair and related systems.

Product Models and Versions Covered in this Document

Model	Versions	Description
411	B	Dental Chair
332/333	A	Delivery System
334/335	B	Delivery System
351/352/353	A	Assistant's Instrumentation
362/461	A	Support Center and Cuspidor
371L/372L/571L/572L	B	Dental Lights
381/382/482	A	Monitor Mount

86.0375.00 Rev C

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Structural Requirements

NOTE Job site construction should be completed before the dental equipment installation (including finished floors, ceiling, plumbing, lighting, paint, etc.).

Dental Patient Chair Interface Requirement

The dental chair requires a solid, level mounting surface that meets these minimum specifications:

- Weight of 1000 lb (4448 N) for the chair, dental light, delivery system, and patient.
- Capability to anchor the chair to the floor, with a minimum pullout load of 100 lb (445 N) for one anchor-bolt.

Utility Requirements

CAUTION Local regulation may require licensed plumbers and electricians to install the utilities. All plumbing and utilities must conform to prevailing local codes.

CAUTION The manner and method for accessing the utilities within the wall is the responsibility of the design team working on the project (dental dealer, architectural services, and contractors). Utilities must be accessible without the use of tools.

Air

- 1/2" (13 mm) nominal pipe compression fitting protruding 2" (51 mm) from the finished floor or wall, supplied by the contractor.
- Right angle manual shut-off valve supplied by the dental dealer and installed by the contractor.
- Air pressure and flow of 80-125 psi (550-860 kPa), 2.5 scfm. (71 sl/min) during normal use; 7.5 scfm (210 sl/min) peak intermittent flow.
- Air plumbing to be flushed clean before the final connection to the dental equipment.

Water

NOTE The delivery system comes with a self-contained water bottle. Municipal water is only required if the equipment configuration includes a cuspidor or if the facility has special requirements.

- 1/2" (13 mm) nominal pipe compression fitting protruding 2" (51 mm) from the finished floor or wall, supplied by the contractor.
- Right angle manual shut-off valve supplied by the dental dealer and installed by the contractor.
- Water pressure and flow of 60 ± 20 psi (410 ± 140 KPa), 1.5 gpm (5.7 L/min), not to exceed 104°F (40°C).
- Water plumbing to be flushed clean before the final connection to the dental equipment.

Electrical

- 1/2" (13 mm) conduit and box with a hospital-grade duplex receptacle supplied by the contractor.
- Wire box to conform to local codes.
- Top of duplex should not be higher than 4.25" (108 mm) above the finished floor to fit within the floor box.
- Voltage: 120 volts, 3 wire.
- 110-120 VAC, 50-60 Hz, 15 Amp mains breaker min.

NOTE The A-dec 411 chair is rated at 10 Amps max.

- The 10 Amp rating breaks down as follows for 120 VAC @ 60 Hz:
  - 3.5 Amps for the chair pump motor to move the chair base up.
  - 1.0 Amps for the chair back motor to move the chair back up or down.
  - 2.5 Amps for the 300-watt power supply (located in the utility area) to power the chair-mounted dental light and other ancillaries.
  - 3 Amps of additional current for mains voltage ancillary products, such as video monitors.

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Central Vacuum

- Plumbing up to the floor box utility center to be specified by the central vacuum supplier (terminates in the utility center).
- Plumbing to terminate with 1" PVC pipe (1.315" OD) protruding 2" (50 mm) perpendicular to the floor.
- Wet systems:
  - **Pressure/Vacuum**: 10 ± 2 inches of Hg (34 ± 7 kPa)
  - **Flow**: 9 scfm (255 SL/min) minimum
- Dry/semidry systems:
  - **Pressure/Vacuum**: 4.5 ± 1 inches of Hg (16 ± 3.5 kPa)
  - **Flow**:12 scfm (340 SL/min) minimum

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Head Loss With Respect to Flow

The following tables include information about high volume evacuator (HVE) and saliva ejector (SE) head loss with flow for an A-dec 352/353 assistant's instrumentation on a A-dec 362 support center.

Tubing and HVE/SE	90 NL/min (3.18 SCFM)	150 NL/min (5.30 SCFM)	200 NL/min (7.06 SCFM)	250 NL/min (8.83 SCFM)	300 NL/min (10.59 SCFM)	350 NL/min (12.36 SCFM)	400 NL/min (14.13 SCFM)
A-dec 15mm HVE (large bore) valve with 16mm Easy Flex Tubing & 15mm canister connection (PN: 11.1315.00)	0.05 in-Hg (0.17 kPa)	0.11 in-Hg (0.37 kPa)	0.23 in-Hg (0.78 kPa)	0.47 in-Hg (1.59 kPa)	0.96 in-Hg (3.25 kPa)	1.96 in-Hg (6.64 kPa)	3.99 in-Hg (13.51 kPa)
A-dec 11mm HVE (standard bore) valve with 16mm Easy Flex Tubing & 15mm canister connection (PN: 11.1305.01)	0.06 in-Hg (0.20 kPa)	0.13 in-Hg (0.44 kPa)	0.28 in-Hg (0.95 kPa)	0.57 in-Hg (1.93 kPa)	1.18 in-Hg (3.40 kPa)	2.43 in-Hg (8.23 kPa)	5.02 in-Hg (17.00 kPa)
A-dec 11mm HVE (standard bore) valve with 13mm Easy Flex Tubing & 15mm canister connection (PN: 11.1357.00)	0.09 in-Hg (0.30 kPa)	0.22 in-Hg (0.75 kPa)	0.49 in-Hg (1.66 kPa)	1.09 in-Hg (3.69 kPa)	2.41 in-Hg (8.16 kPa)	5.33 in-Hg (18.05 kPa)	11.80 in-Hg (39.96 kPa)
A-dec 11mm HVE (standard bore) valve with 13mm PVC Tubing & 15mm canister connection (PN: 11.1296.01)	0.10 in-Hg (0.34 kPa)	0.26 in-Hg (0.88 kPa)	0.56 in-Hg (1.90 kPa)	1.21 in-Hg (4.10 kPa)	2.60 in-Hg (8.80 kPa)	5.59 in-Hg (18.93 kPa)	12.01 in-Hg (40.67 kPa)
A-dec SE (standard bore) valve with 6mm PVC Tubing & 15mm canister connection (PN: 12.1235.01)	1.27 in-Hg (4.30 kPa)	6.39 in-Hg (21.64 kPa)	Exceeds 12 in-Hg (40.64 kPa) at flow rates above ~200 NL/min.				
A-dec SE (standard bore) valve with 10mm Easy Flex Tubing & 15mm canister connection (PN: 12.1228.01)	0.66 in-Hg (2.24 kPa)	2.72 in-Hg (9.21 kPa)	8.81 in-Hg (29.83 kPa)	Exceeds 12 in-Hg (40.64 kPa) at flow rates above ~250 NL/min.			

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Gravity Drain

NOTE Gravity drains are needed only on systems with a cuspidor.

- 1-1/2" (38 mm) nominal pipe protruding 1" (25 mm) from finished floor. Trap to be placed in line, conforming to local codes, contractor-supplied.
- Floor mount only. Not recommended for wall mount utilities.
- Waste water drain must have a minimum slope of 1/4" per foot (21 mm per meter) and accommodate a flow of 4.5 gpm (17 L/min) without overflow.

Shipping Weights

Product/Box	Est. Shipping Weight
A-dec 411 Chair	410 lb (186 kg)
A-dec 332/333 Delivery System	88 lb (40 kg)
A-dec 461 Cuspidor with Support Center	66 lb (30 kg)
A-dec 551 Assistant's Instrumentation *(assistant's arm only)*	20 lb (9.1 kg)
A-dec 572/572L Dental Light	47 lb (21 kg)
A-dec 372 Dental Light	47 lb (21 kg)
A-dec 482 Radius-Style Monitor Mount *(mount hardware only; without monitor)*	10 lb (4.5 kg)
Back Mount and Support Link *(required with 551 module)*	15 lb (6.8 kg)

Documentation References

Document Title	p/n
Installation Guides	
A-dec 411 Dental Chair with Radius-Style Delivery System and Dental Light	86.0378.00
A-dec 461 Support Center	86.0387.00
A-dec 551 Assistant's Instrumentation	86.0388.00
A-dec 482 Monitor Mount	86.0410.00
A-dec 382 Monitor Mount	86.0413.00
A-dec 572L Dental Light on an A-dec 411 or A-dec 511 Dental Chair	86.0333.00
Instructions for Use	
A-dec 411 Dental Chair	86.0374.00
A-dec 461 Cuspidor with Support Center	86.0375.00
A-dec 551 Assistant's Instrumentation	86.0603.00
A-dec Self-Contained Water System	86.0609.00
A-dec Monitor Mounts	86.0309.00
Service Information	
A-dec Dental Chairs Service Guide	86.0380.00
A-dec Dental Chairs Service Reference	86.0381.00
A-dec Delivery Systems Service Guide	86.0382.00
A-dec Delivery Systems Service Reference	86.0383.00
A-dec Dental Lights and Monitor Mounts Service Guide	86.0326.00
A-dec Dental Lights and Monitor Mounts Service Reference	86.0328.00
Templates	
A-dec 411 Chair Template	86.0386.00
A-dec 411 Related Modules Template	86.0385.00
A-dec 411 Chair Mini Template	86.0386.01
A-dec Floor Boxes	85.0472.00

NOTE Use only full-scale templates for locating the plumbing and electrical.

NOTE The floor box mounting hole placements appear on the floor box base that is being installed.

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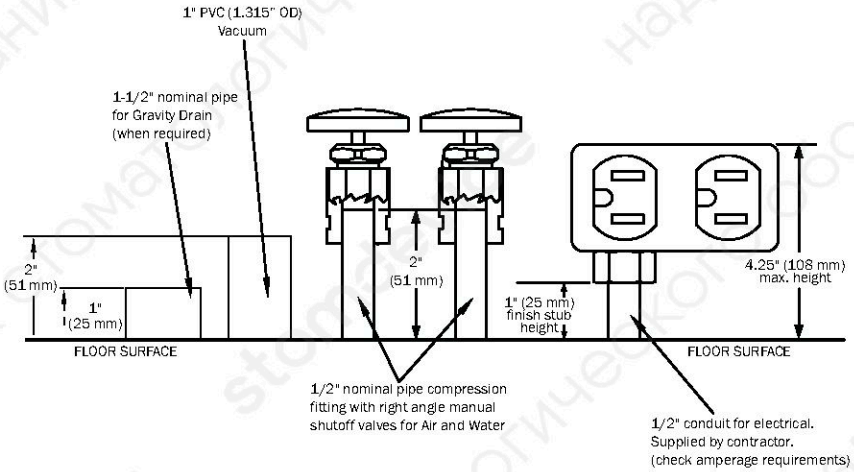
Views and Dimensions

NOTE The dimensional drawings in this section are not to scale and are for reference only. For complete accuracy, use the appropriate full-sized templates.

Utility Placement

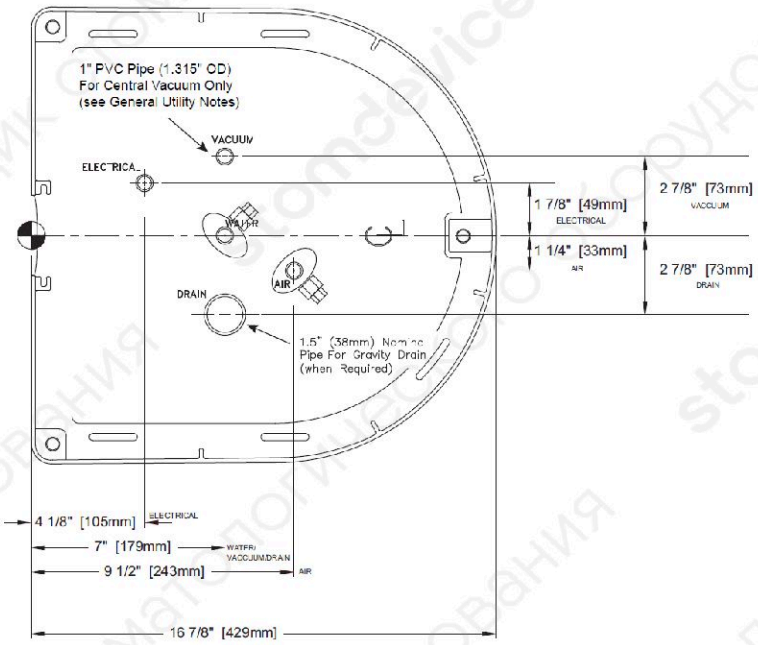
CAUTION Due to specific plumbing elevation restrictions, the height and placement of utilities in the floor box can affect the ability to use the floor box cover. Failure to provide adequate space will prevent installation and removal of the cover (see Figure 1). Please reference the appropriate full-size template which includes all of the necessary space constraints.

Figure 1. Plumbing Elevations



PLEASE NOTE: **This drawing is for reference purposes ONLY, it is NOT TO SCALE.**

Figure 2. Floor Box Utility Connections

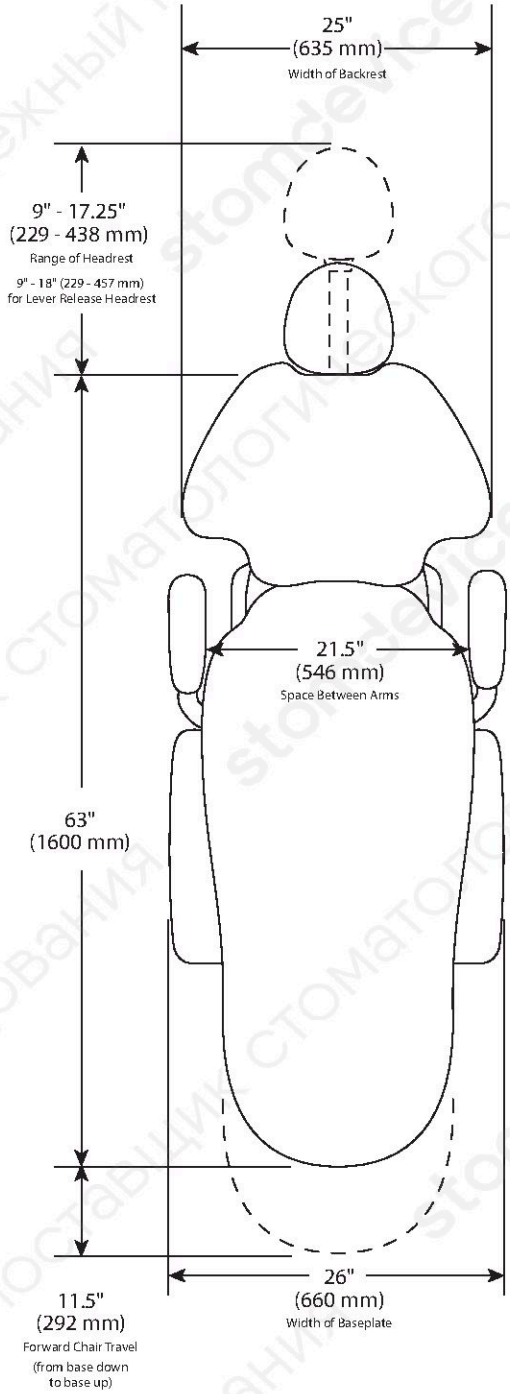


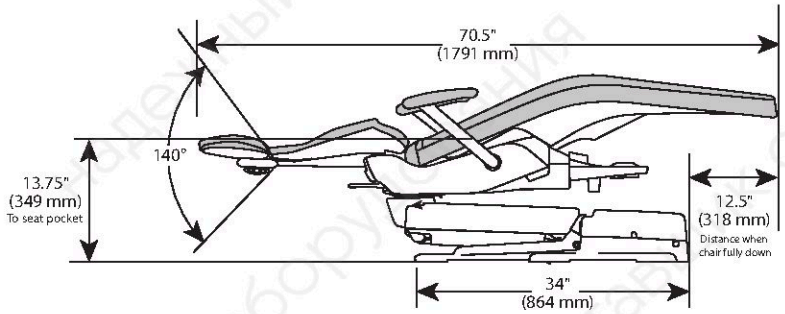
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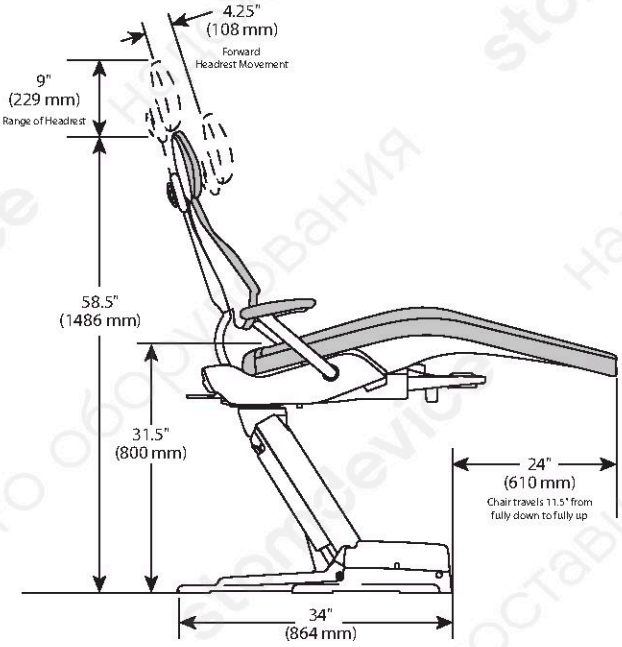
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A-dec 411 Chair

Plan View with Elevation





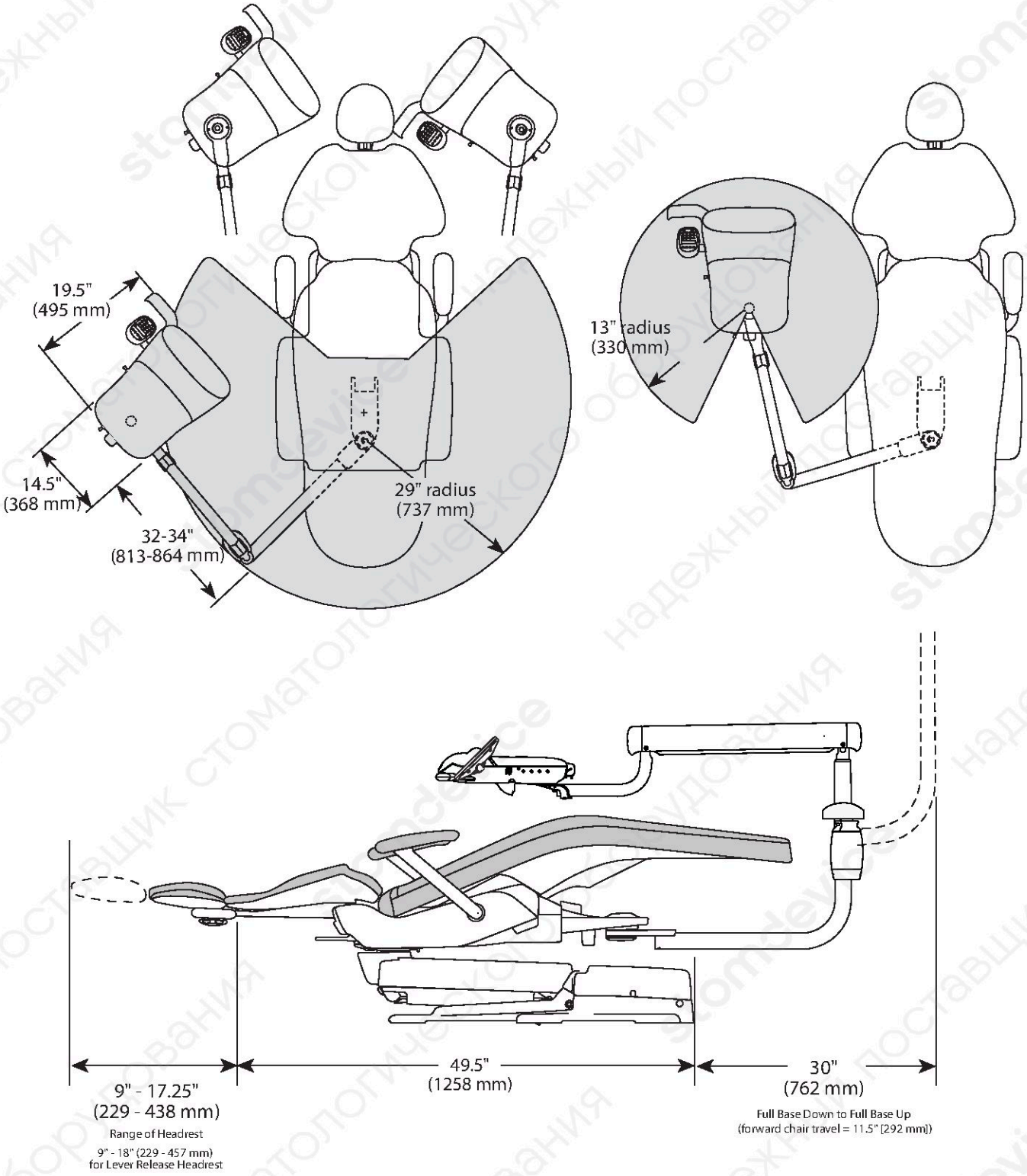


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A-dec 332/333 Radius-Style Delivery System
Plan View with Elevation

(shown with 333 system)

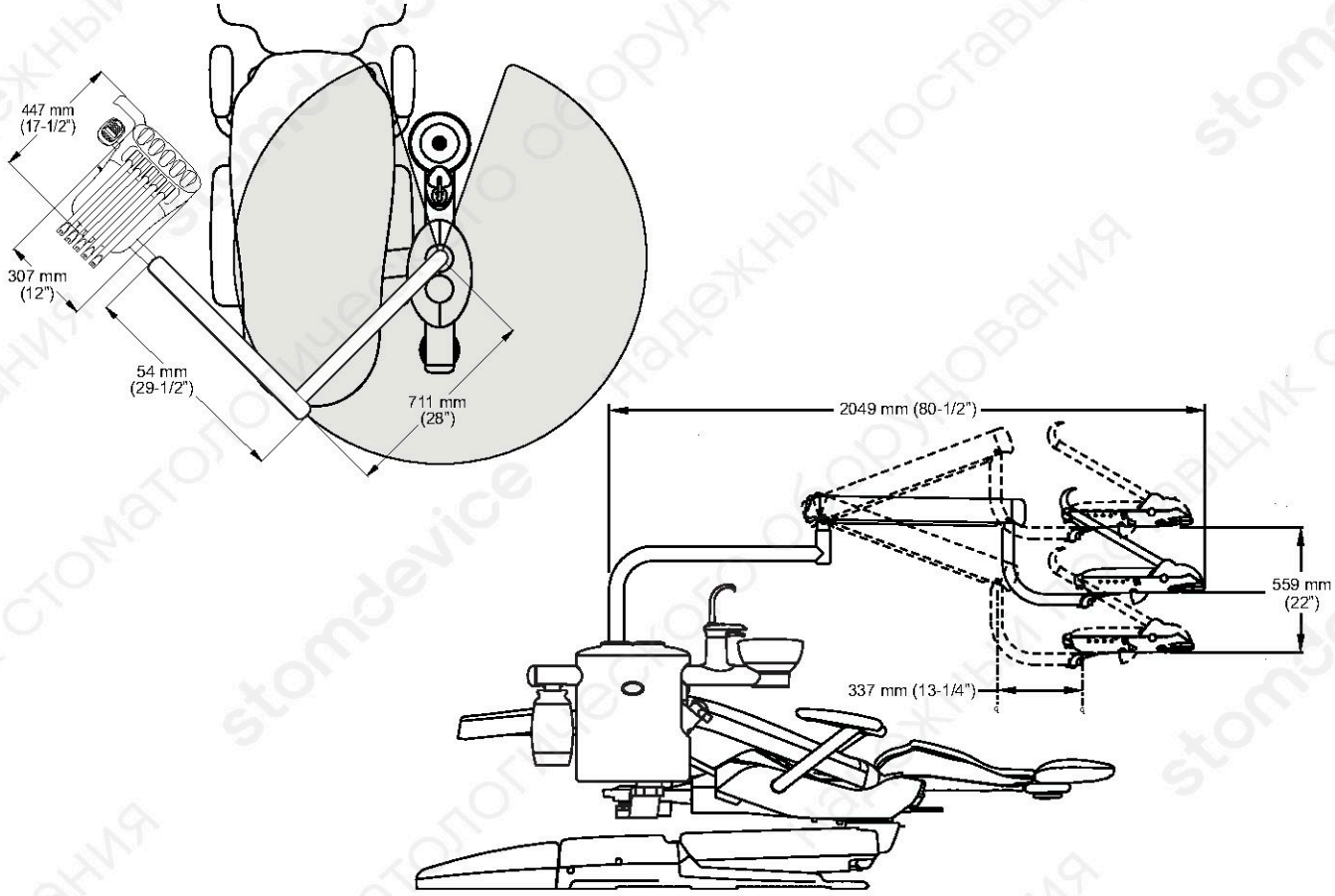


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A-dec 334/335 Delivery System
Plan View with Elevation

(A-dec 335 System Shown)

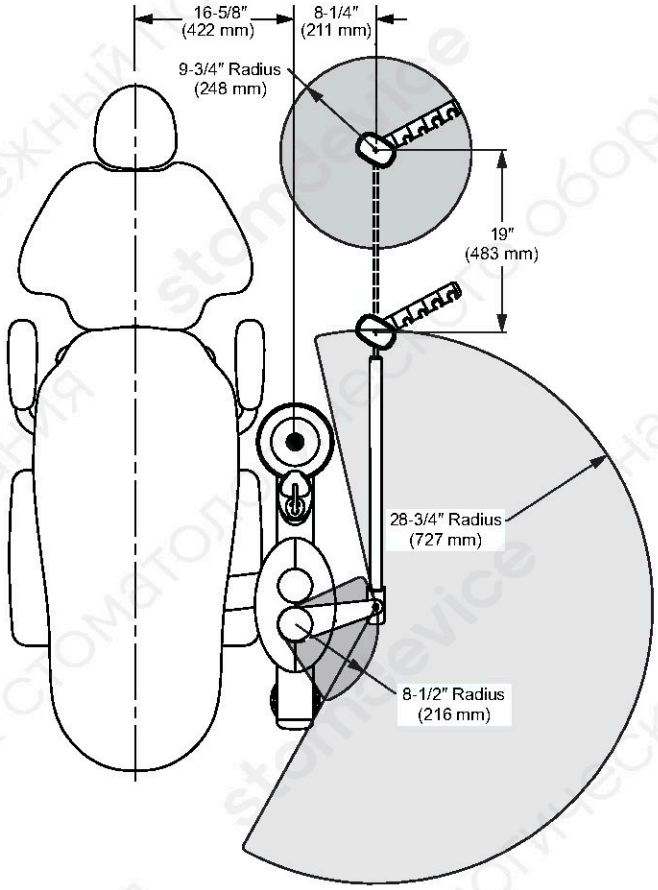


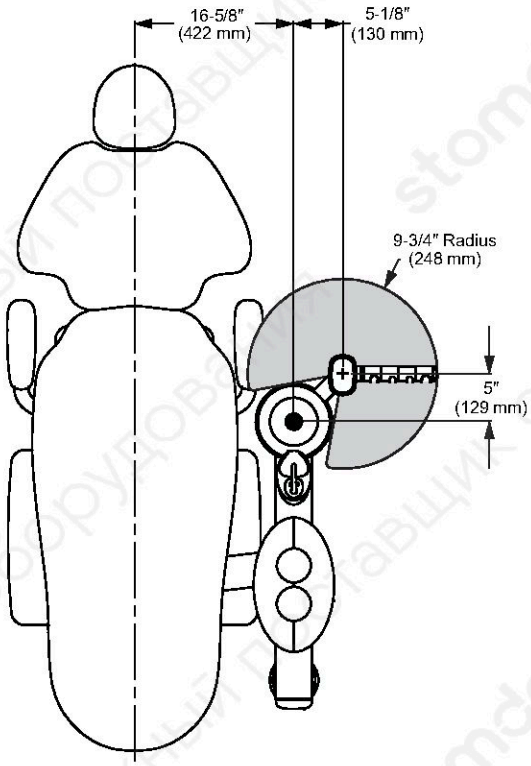
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A-dec 352/353 Assistant's Instrumentation

Plan View

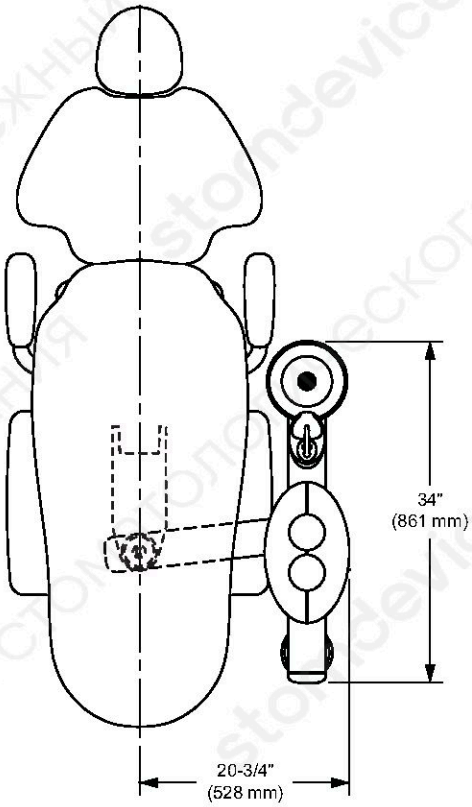


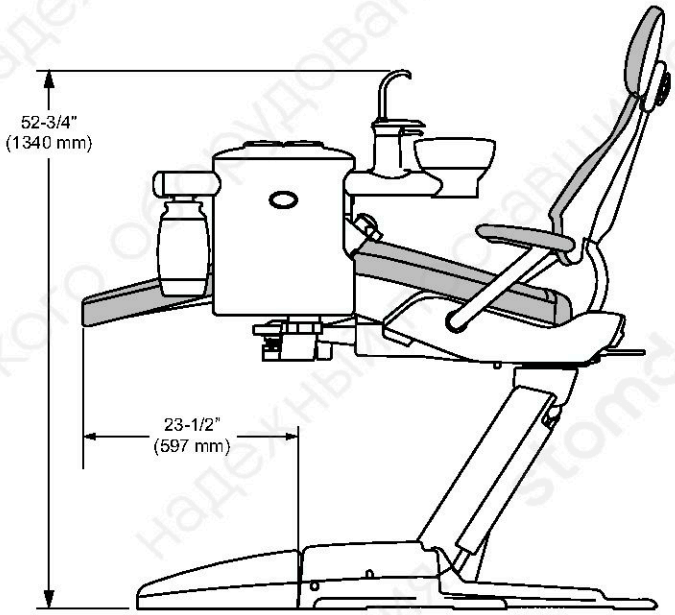


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A-dec 362 Cuspidor and Support Center
Plan View with Elevation





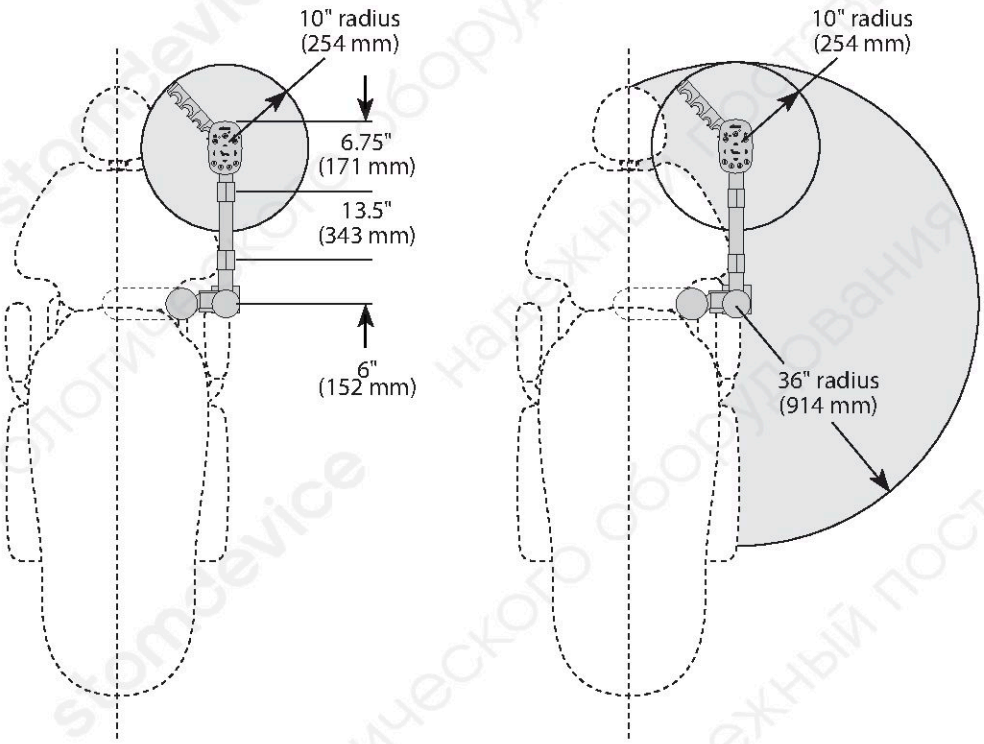
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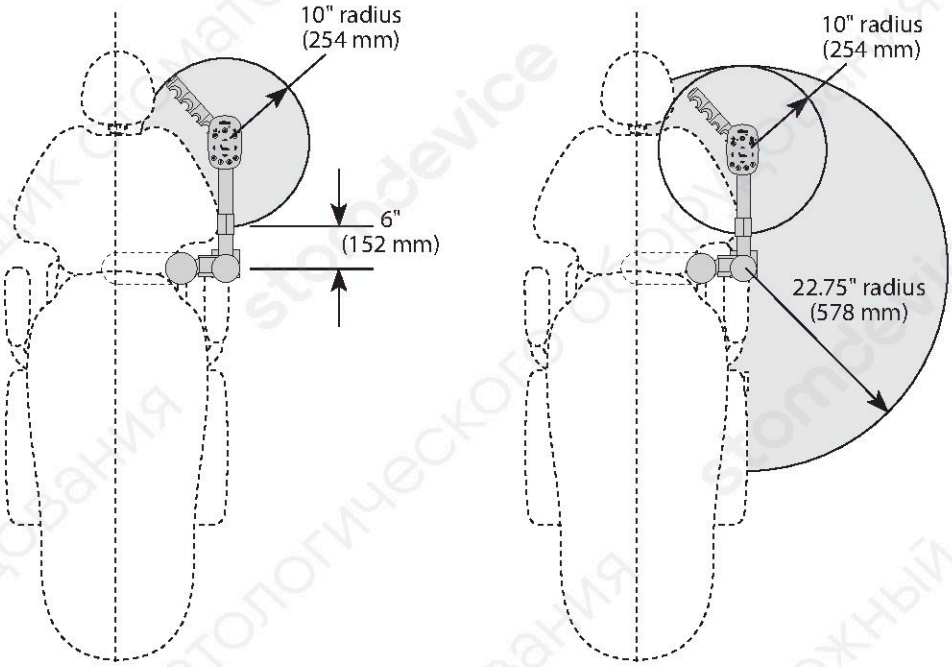
A-dec 551 Assistant's Instrumentation

Plan View

Long Arm



Short Arm

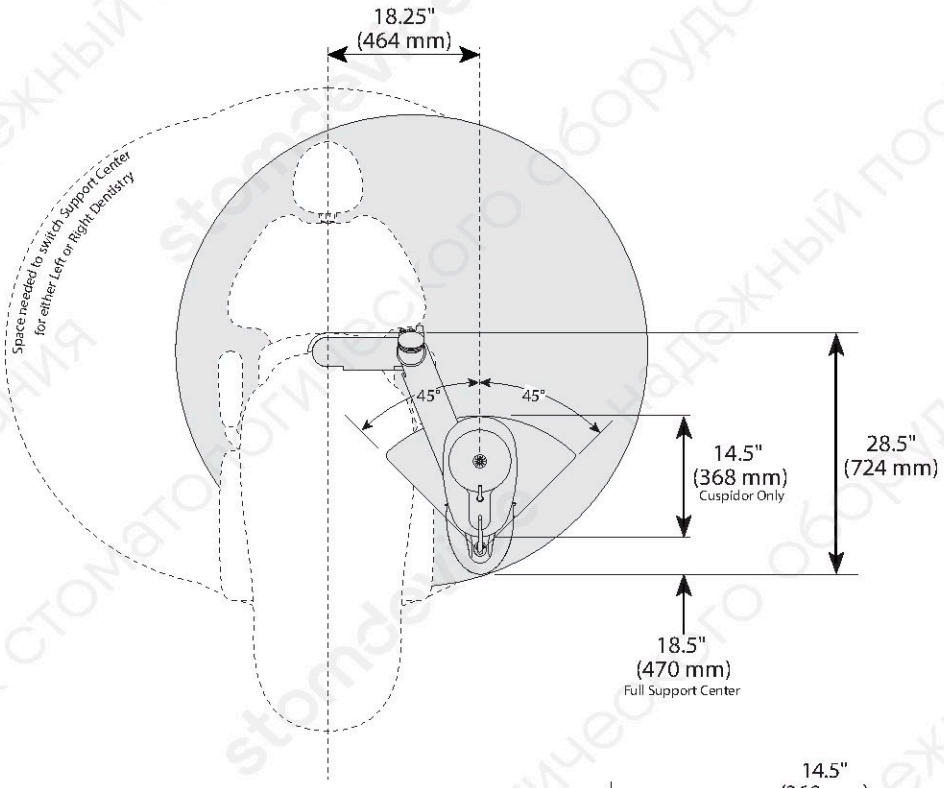


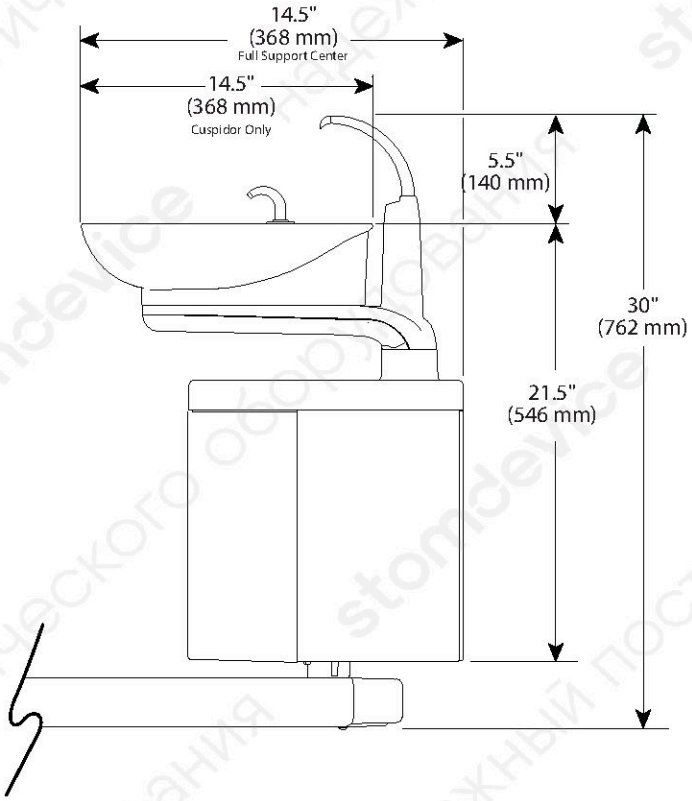
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A-dec 461 Cuspidor with Support Center

Plan View with Elevation



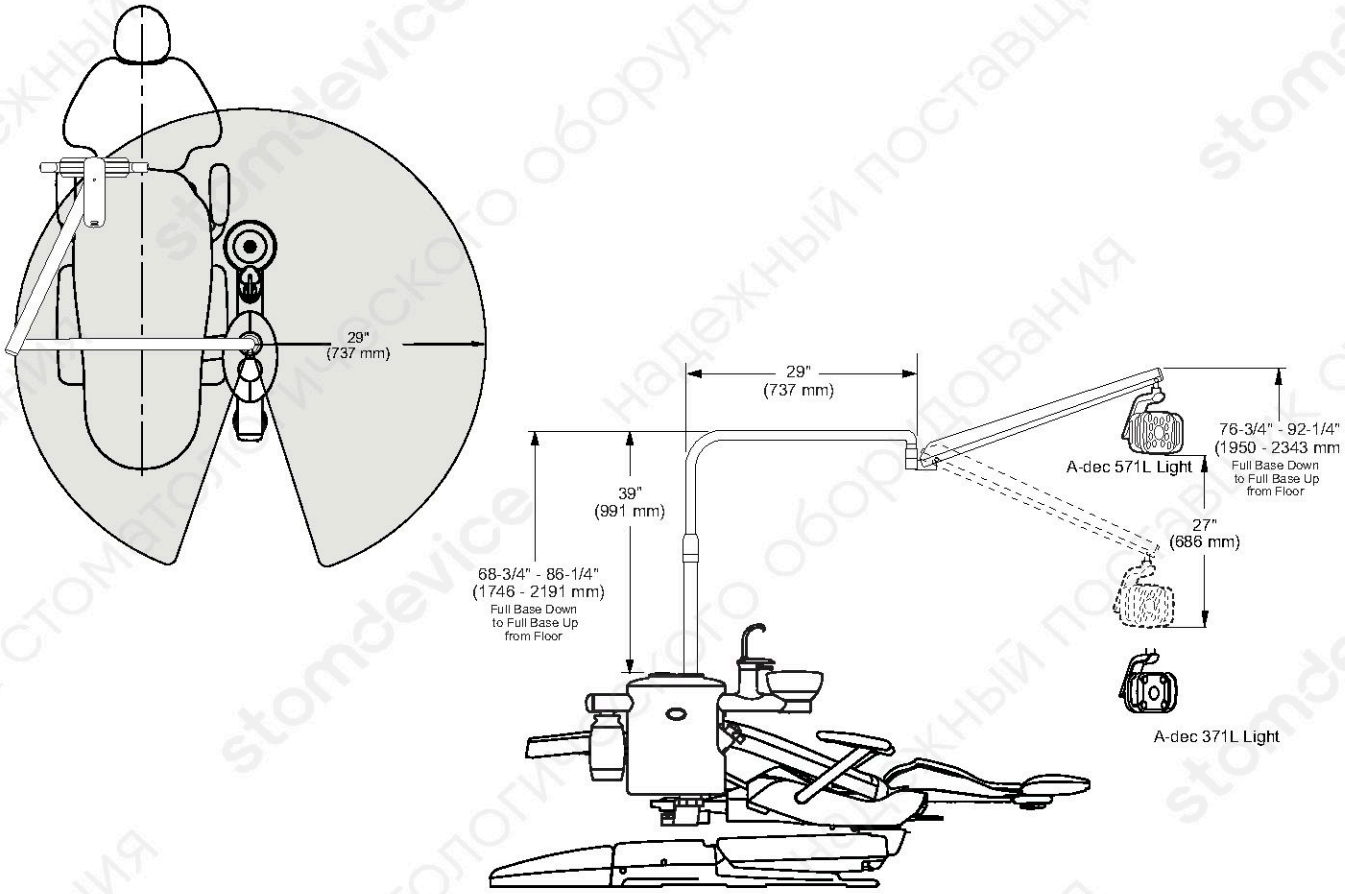


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A-dec 371L/571L Dental Light

Plan View with Elevation

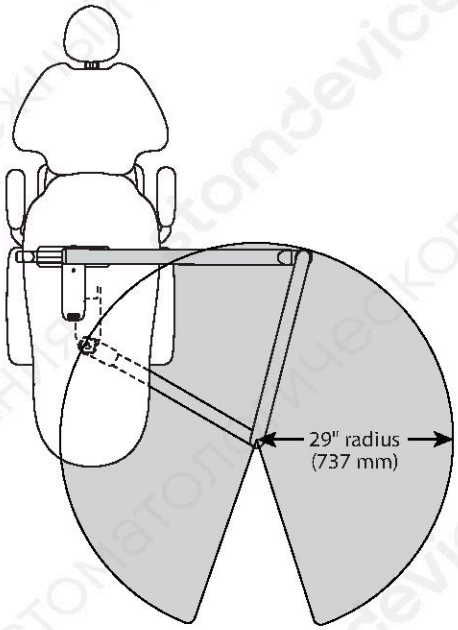


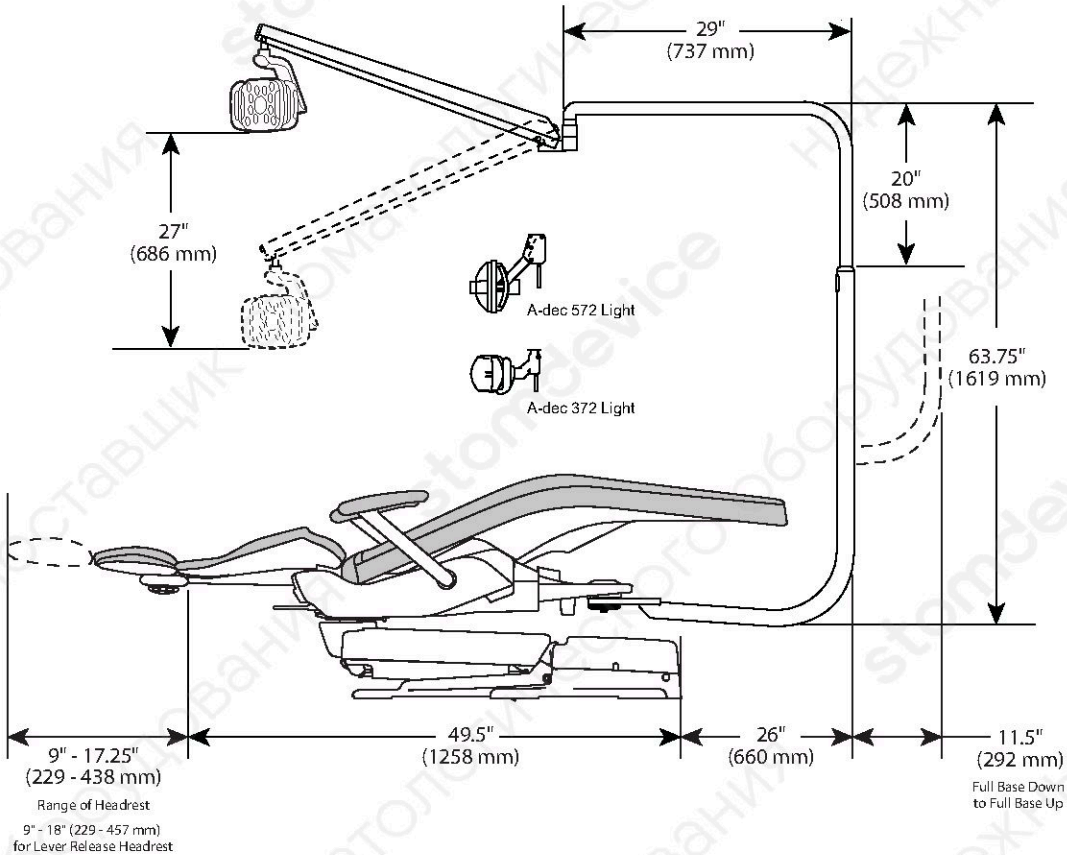
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A-dec 572, 572L, and 372 Dental Light
Plan View with Elevation

(shown with A-dec 572L LED Dental Light)



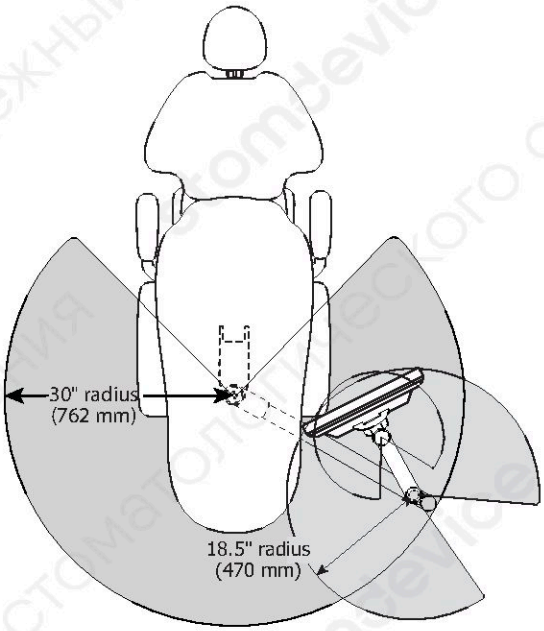


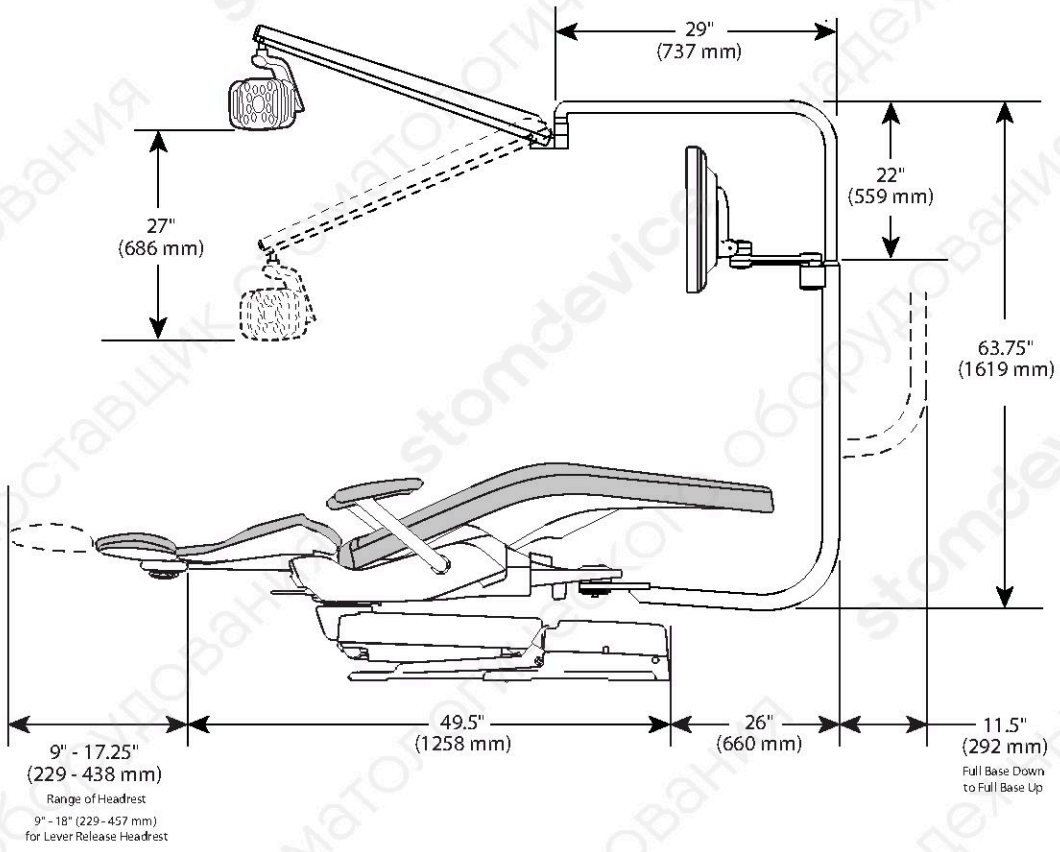
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A-dec 482 Monitor Mount with Dental Light

Plan View with Elevation

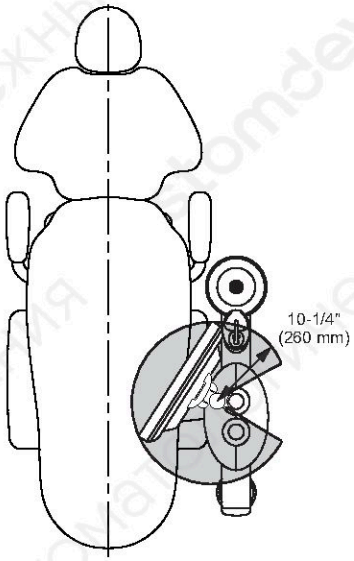


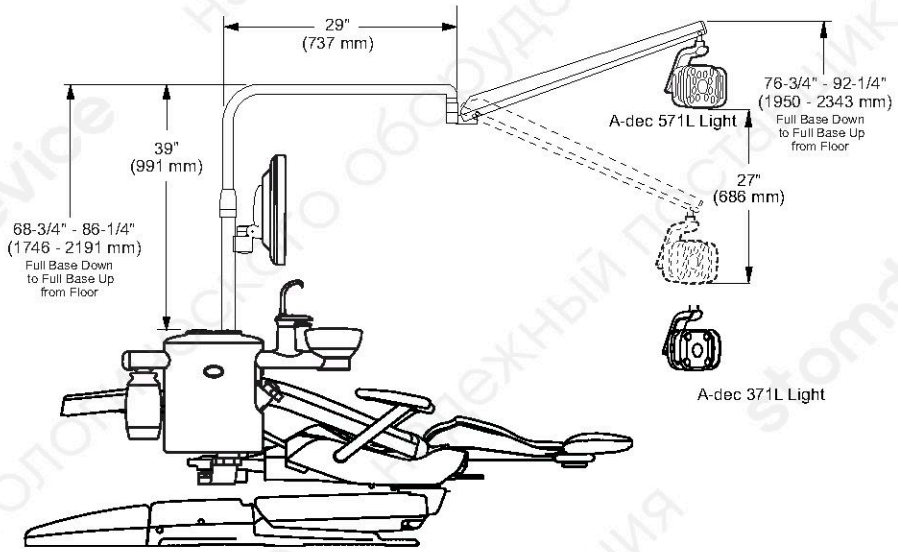


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A-dec 381 Monitor Mount with 362 Support
Center Mount Dental Light
Plan View with Elevation



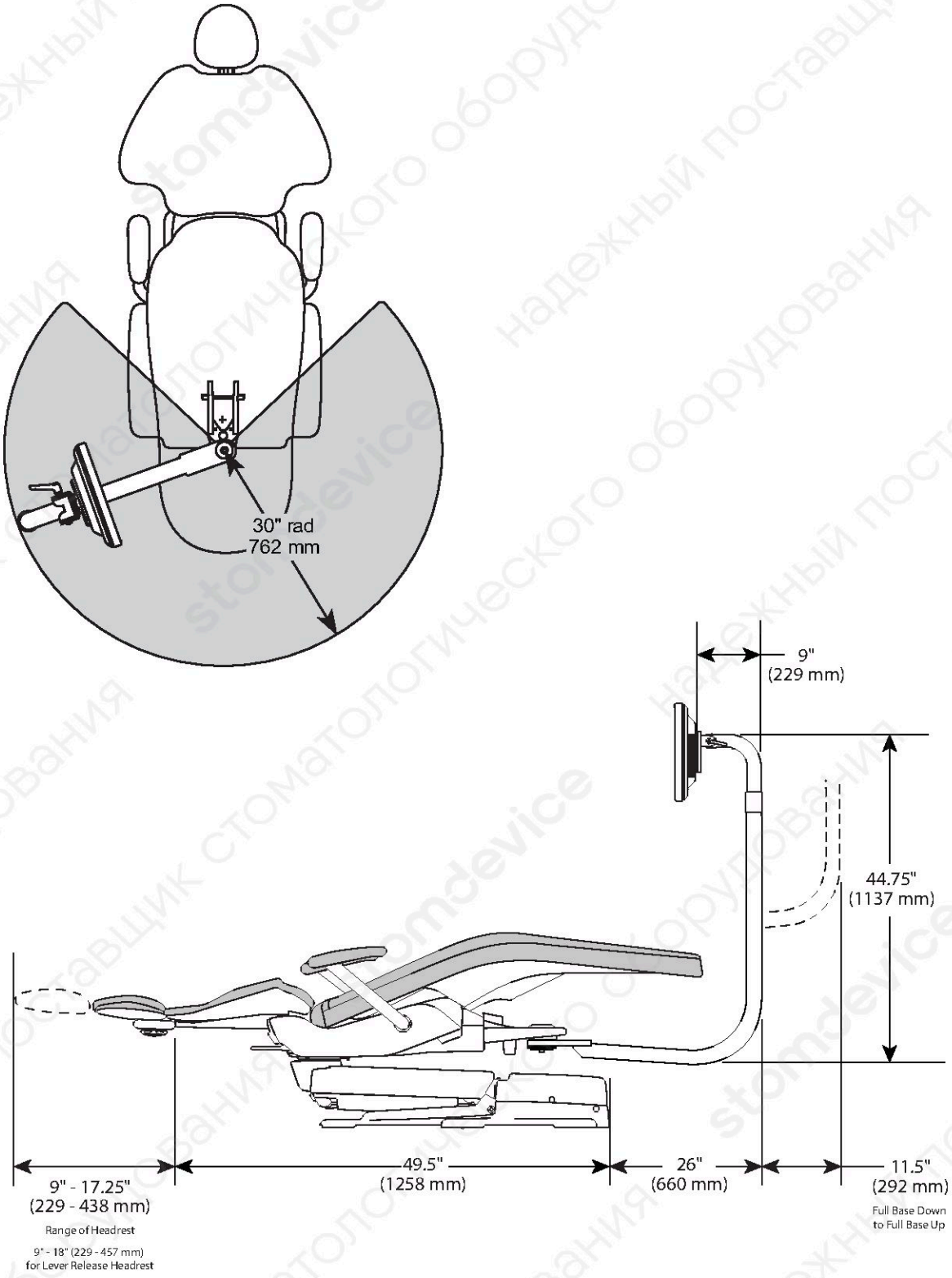


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A-dec 382 Radius-Style Monitor Mount

Plan View with Elevation



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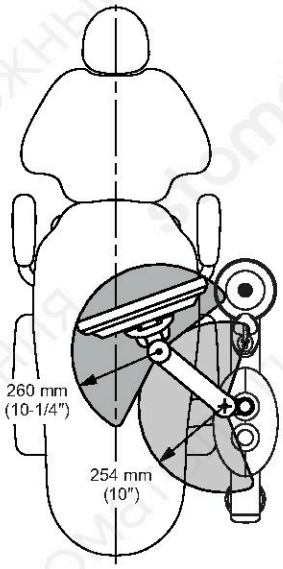
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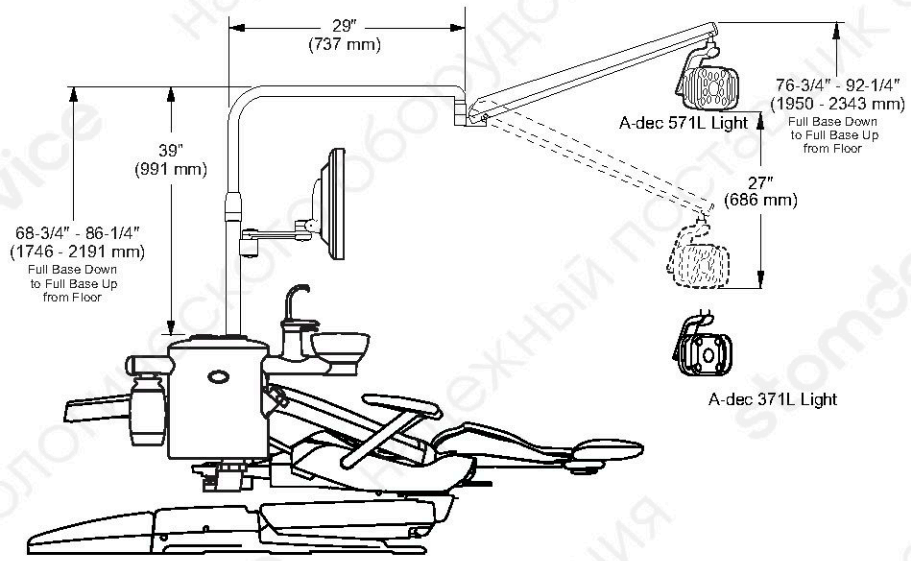
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A-dec 482 Monitor Mount with 362 Support Center Mount Dental Light

Plan View with Elevation





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Regulatory Information and Warranty

For required regulatory information and the A-dec warranty, see the *Regulatory Information, Specifications, and Warranty* document (p/n 86.0221.00) available in the Resource Center www.a-dec.com.

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