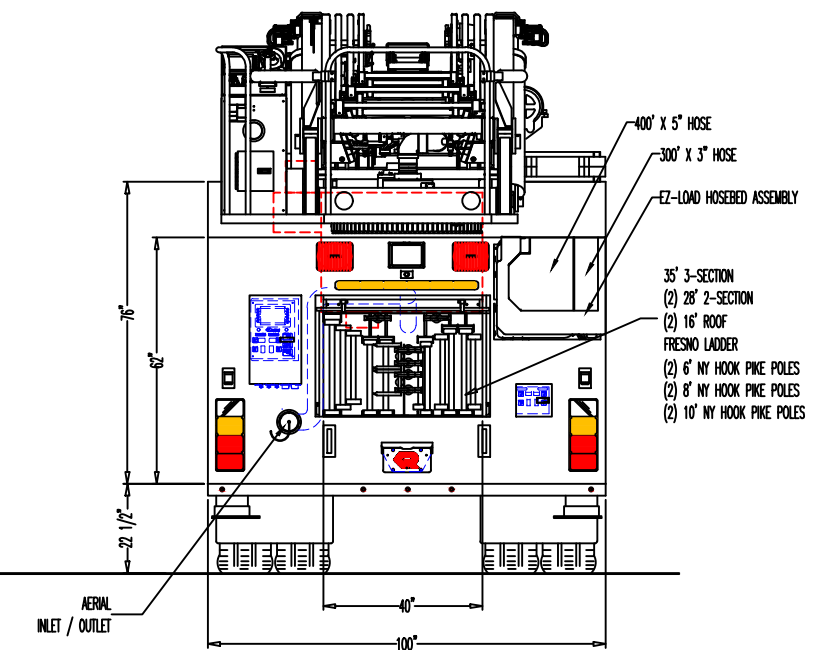
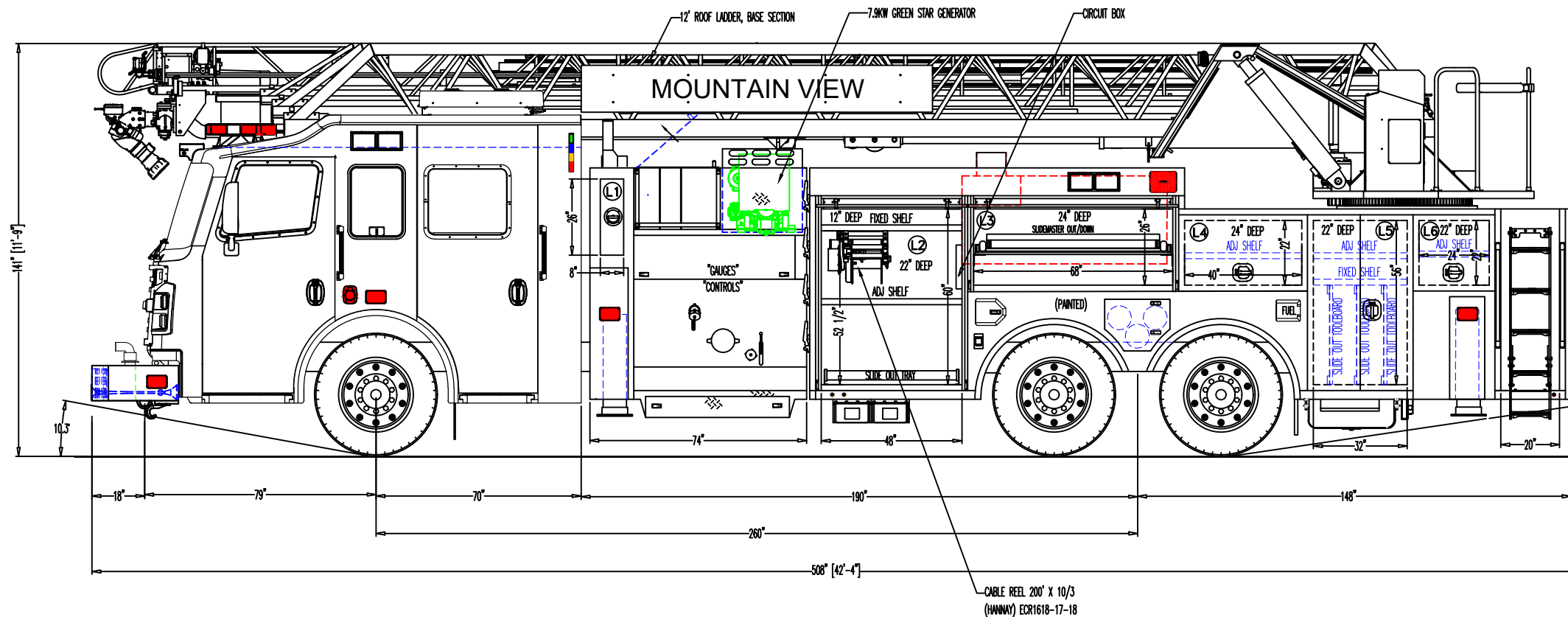
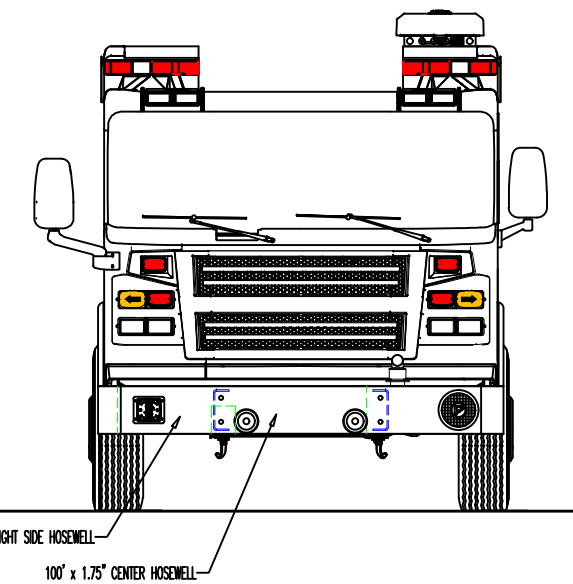
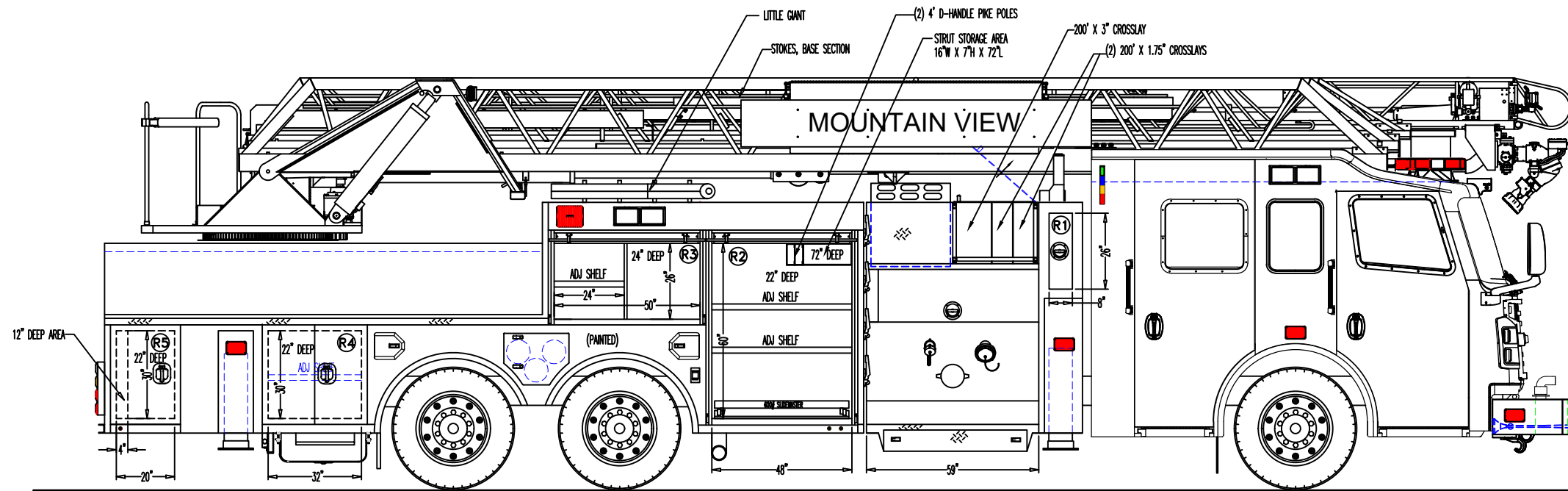


Turning Radius Summary Mountainview Viper M12532 SteerTek (Inches)

Truck Model	Front Axle	Rating Lbs.	Spring Type	Wheelbase Inches	Front Tire	Wheel Inset Inches	Inside Cramp Angle	Outside Cramp Angle	Average Cramp Angle	Turning Radius Inches	Curb to Curb Radius Inches	Wall to Wall Radius Inches
Commander	SteerTek	23K	Parabolic LP	260	425	4.68	43°	36.4°	39.7°	444.6	452.7	506.8

Turning Radius Summary Mountainview Viper M12532 SteerTek (Feet)

Truck Model	Front Axle	Rating Lbs.	Spring Type	Wheelbase Inches	Front Tire	Wheel Inset Inches	Inside Cramp Angle	Outside Cramp Angle	Average Cramp Angle	Turning Radius Feet	Curb to Curb Radius Feet	Wall to Wall Radius Feet
Commander	SteerTek	23K	Parabolic LP	260	425	4.68	43°	36.4°	39.7°	37.1	37.7	42.2



- NOTES:
- OVERALL HEIGHT IS IN LOADED CONDITION. UNLOADED HEIGHTS MAY BE 4" ABOVE HEIGHTS SHOWN.
 - DO NOT SCALE DRAWING.
 - ALL DIMENSIONS ARE APPROXIMATE AND SUBJECT TO ENGINEERING CHANGES.
 - DRAWING MAY OR MAY NOT SHOW ALL ITEMS AS DESCRIBED IN THE WRITTEN DETAIL SPECIFICATIONS.
 - INCLUSION OF AN ITEM ON THE DRAWING DOES NOT CONSTITUTE INCLUSION OF THAT ITEM WITH THE FINAL DELIVERED UNIT.

REVISED: CRL	DATE: 02-06-2020 (R-05)
REVISED: TAA	DATE: 06-13-2019 (R-04)
REVISED: CRL	DATE: 04-19-2019 (R-03)
DRAWN: CRL	DATE: 10-26-2018 (P6892-02)

PROPRIETARY AND CONFIDENTIAL
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 THE SOLE PROPERTY OF ROSENBAUER. ANY
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 THE WRITTEN PERMISSION OF ROSENBAUER IS
 PROHIBITED.

APPROVED BY:

MAXIMUM HEIGHT	11'10"
MAXIMUM LENGTH	43'6"
BODY WIDTH	100"

CHASSIS: ROSENBAUER R7011 LP
PUMP: HALE QMAX 1750 GPM
TANK: POLY 300
TYPE: AERIAL
AERIAL: 109' VIPER

MOUNTAIN VIEW



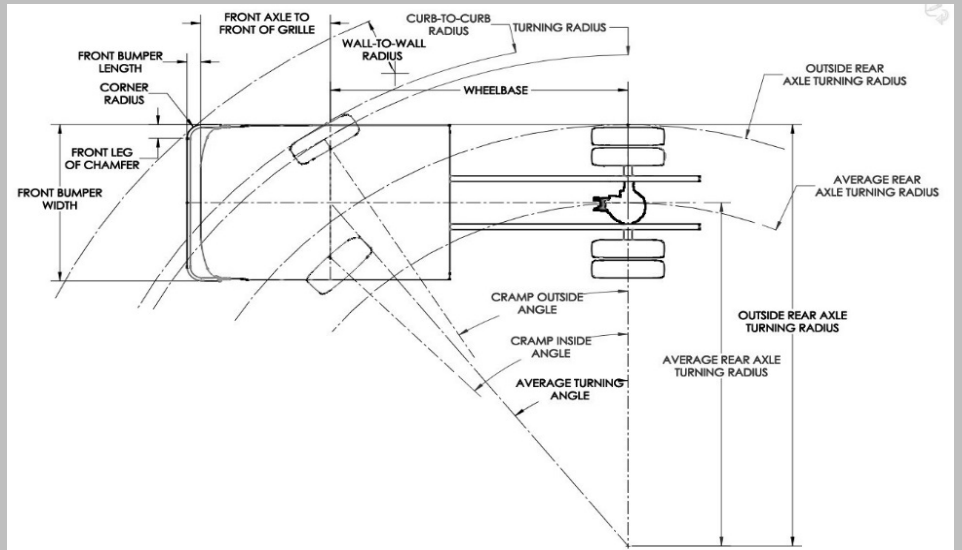
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TURNING RADIUS CALCULATIONS BASED ON AVERAGE OF INNER AND OUTER FRONT WHEEL CRAMP ANGLES

INPUT DESCRIPTION	INPUT VALUE	UNITS
VIN	Mountainview Viper M12532	
WHEELBASE	260	INCHES
FRONT AXLE	SteerTek 23K LP	
FRONT AXLE KPI	70.87	INCHES
FRONT AXLE TRACK	95.01	INCHES
FRONT TIRE	GY G296 WHA 425/65R22.5	
FRONT TIRE OVERALL WIDTH	16.3	INCHES
FRONT WHEEL	Alcoa 12.25 X 22.5 Al	
FRONT WHEEL INSET	4.68	INCHES
FRONT AXLE TO FRONT OF GRILL	79.37	INCHES
FRONT BUMPER LENGTH	18	INCHES
FRONT BUMPER WIDTH	102	INCHES
FRONT BUMPER CORNER RADIUS (R) OR CHAMFER (C)?	C	
FRONT BUMPER CORNER CHAMFER		
FRONT LEG	4.8125	INCHES
LEFT TURN CRAMP INSIDE ANGLE	43	DEGREES
LEFT TURN CRAMP OUTSIDE ANGLE	36.41	DEGREES
RIGHT TURN CRAMP INSIDE ANGLE	43	DEGREES
RIGHT TURN CRAMP OUTSIDE ANGLE	36.41	DEGREES

OUTPUT DESCRIPTION	OUTPUT VALUE	UNITS		UNITS
AVERAGE TIRE TURNING ANGLE LEFT	39.7	DEGREES		
AVERAGE TIRE TURNING ANGLE RIGHT	39.7	DEGREES		
AVERAGE REAR AXLE TURNING RADIUS LEFT	313.1	INCHES	26.1	FEET
AVERAGE REAR AXLE TURNING RADIUS RIGHT	313.1	INCHES	26.1	FEET
OUTSIDE REAR AXLE TURNING RADIUS LEFT	364.1	INCHES	30.3	FEET
OUTSIDE REAR AXLE TURNING RADIUS RIGHT	364.1	INCHES	30.3	FEET
INSIDE REAR AXLE TURNING RADIUS LEFT	262.1	INCHES	21.8	FEET
INSIDE REAR AXLE TURNING RADIUS RIGHT	262.1	INCHES	21.8	FEET



Rosenbauer Motors v. 10282015mjb

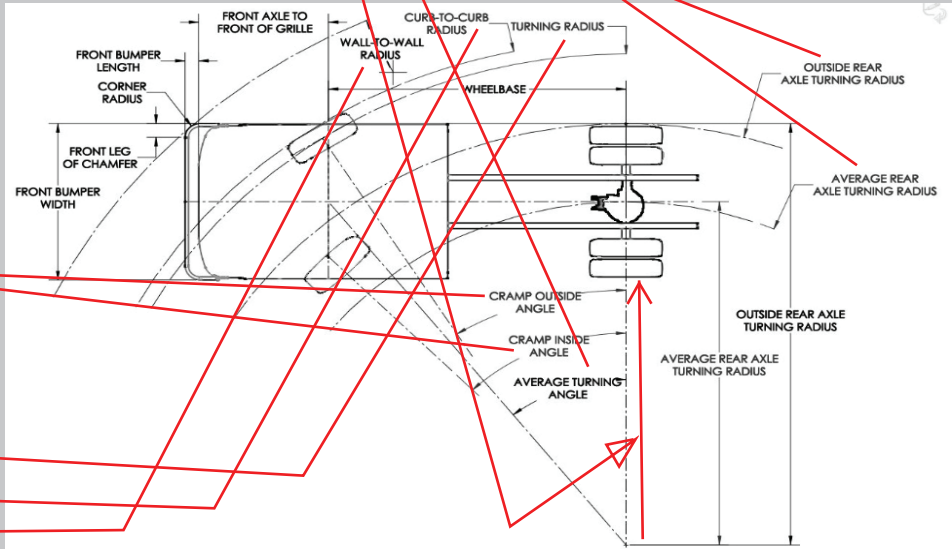
OUTPUT DESCRIPTION	OUTPUT VALUE	UNITS		UNITS
TURNING RADIUS LEFT	444.6	INCHES	37.0	FEET
TURNING RADIUS RIGHT	444.6	INCHES	37.0	FEET
CURB-TO-CURB RADIUS LEFT	452.7	INCHES	37.7	FEET
CURB-TO-CURB RADIUS RIGHT	452.7	INCHES	37.7	FEET
WALL-TO-WALL RADIUS LEFT	506.8	INCHES	42.2	FEET
WALL-TO-WALL RADIUS RIGHT	506.8	INCHES	42.2	FEET

DEFINITIONS

TURNING RADIUS CALCULATIONS BASED ON AVERAGE OF INNER AND OUTER FRONT WHEEL CRAMP ANGLES				
INPUT DESCRIPTION	INPUT VALUE	UNITS		
VIN	IFS 205 WB 48° Cramp			
WHEELBASE	205	INCHES		
FRONT AXLE	IFS20			
FRONT AXLE KPI	71.48	INCHES		
FRONT AXLE TRACK	95.38	INCHES		
FRONT TIRE	XZY3 425/65R22.5			
FRONT TIRE OVERALL WIDTH	16.6	INCHES		
FRONT WHEEL	Accuride 12.25 X 22.5 Al			
FRONT WHEEL INSET	4.75	INCHES		
FRONT AXLE TO FRONT OF GRILL	79.37	INCHES		
FRONT BUMPER LENGTH	18	INCHES		
FRONT BUMPER WIDTH	102	INCHES		
FRONT BUMPER CORNER RADIUS (R) OR CHAMFER (C)?	R			
FRONT BUMPER CORNER RADIUS	9	INCHES		
LEFT TURN CRAMP INSIDE ANGLE	48	DEGREES		
LEFT TURN CRAMP OUTSIDE ANGLE	38.9	DEGREES		
RIGHT TURN CRAMP INSIDE ANGLE	48	DEGREES		
RIGHT TURN CRAMP OUTSIDE ANGLE	38.9	DEGREES		

OUTPUT DESCRIPTION	OUTPUT VALUE	UNITS		
TURNING RADIUS LEFT	334.3	INCHES	27.9	FEET
TURNING RADIUS RIGHT	334.3	INCHES	27.9	FEET
CURB-TO-CURB RADIUS LEFT	342.6	INCHES	28.6	FEET
CURB-TO-CURB RADIUS RIGHT	342.6	INCHES	28.6	FEET
WALL-TO-WALL RADIUS LEFT	399.9	INCHES	33.3	FEET
WALL-TO-WALL RADIUS RIGHT	399.9	INCHES	33.3	FEET

OUTPUT DESCRIPTION	OUTPUT VALUE	UNITS		
AVERAGE TIRE TURNING ANGLE LEFT	43.5	DEGREES		
AVERAGE TIRE TURNING ANGLE RIGHT	43.5	DEGREES		
AVERAGE REAR AXLE TURNING RADIUS LEFT	216.4	INCHES	18.0	FEET
AVERAGE REAR AXLE TURNING RADIUS RIGHT	216.4	INCHES	18.0	FEET
OUTSIDE REAR AXLE TURNING RADIUS LEFT	267.4	INCHES	22.3	FEET
OUTSIDE REAR AXLE TURNING RADIUS RIGHT	267.4	INCHES	22.3	FEET
INSIDE REAR AXLE TURNING RADIUS LEFT	165.4	INCHES	13.8	FEET
INSIDE REAR AXLE TURNING RADIUS RIGHT	165.4	INCHES	13.8	FEET



Rosenbauer Motors v. 10282015mjb

DEFINITIONS

Wall-to-Wall: Half the minimum distance between two parallel walls that the truck can just make a full circle within. The outside corner of the bumper would just be grazing the walls. The front axle to grille, grille to front of bumper, width of bumper, radius or chamfer on bumper corners, and, of course wheelbase, cramp angle and track all influence this number.

Curb-to-Curb: Half the minimum distance between two parallel curbs that the truck can just make a full circle within. The outside of the outer front tire would just be grazing the curbs. The bumper would be overhanging beyond the curbs. Wheelbase, cramp angle and track all influence this number.

Turning Radius: The radius followed by the centerline of the outside tire.

Outside Rear Turning Radius: The radius of the curve formed by the outermost portion of the outside single or dual tire(s).

Inside Rear Turning Radius: The radius of the curve formed by the outermost portion of the inside single or dual tire(s). It represents the smallest radius island curb the rear tires just clear when turned all the way to the stop.

Cramp Angle: The number of degrees the front wheel end turns from straight ahead to either full left or full right before hitting the axle steering stop. Angle is as viewed from above.

Wheelbase: Dimension from the center of the front axle to the center of the rear axle or to the center of the rear tandem or tridem group.

Track (Track Width): Center of tire to center of tire left to right. For duals, the track is the dimension from the plane at the mounting surface between the two wheels on one side to the same on the other side.

Inset (front wheel or inner wheel of a dual assembly): The distance between the center of the tire/rim to the mounting face of the wheel (inner part of the wheel center).

Front Axle KPI: Kingpin Intersection—distance between the intersection of the kingpin axis and the wheel spindle axis from left to right. To get the track width, add the Front Axle KPI to the dimension between the KPI point and the mounting face of the hub for each wheel end minus the wheel inset for each wheel.

KPI: Kingpin Inclination. Angle of the steering pivot at the wheel end with a vertical plane parallel to the center of the chassis. Not used for the turning radius calculation.