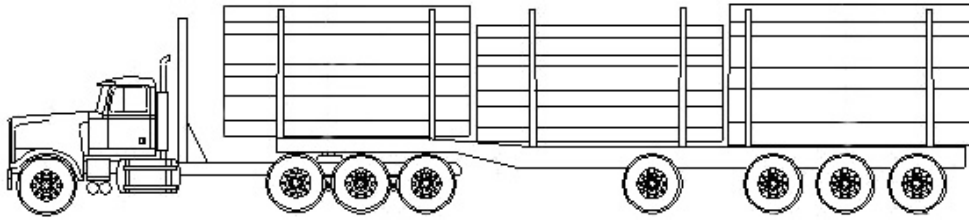


A quad axle logging truck is composed of a single steer tridem drive tractor and a semi-trailer (hay-rack) that has two axle groups; a single self-steer axle (in front) and a tridem axle group (in the rear).



A vehicle equipped with a tridem drive axle group is regulated by [Commercial Vehicle Dimension and Weight Regulation AR315/2002](#) Section 1(xx).

“**tridem axle group**” means an axle group, on a trailer, consisting of any 3 consecutive axles of a vehicle where the axles are evenly spaced over a distance of not less than 2.4 metres and not greater than 3.7 metres, but does not include a lift axle in the down position or a single steer axle;

“**lift axle**” means an axle of a vehicle that is constructed so that the operator of the vehicle may lift or otherwise remove the wheels located on that axle from contact with the highway without removing the wheel from the axle or the axle from the vehicle;
as defined in [Commercial Vehicle Dimension and Weight Regulation 315/2002](#), Section 1(aa).

A tridem axle is only allowed on a trailer so the tridem axle group on a truck or truck tractor would be considered a quantum axle group. Commercial Vehicle Dimension and Weight Regulation AR315/2002 Section 1(jj)

“**quantum axle group**” means an axle group other than a single, tandem or tridem axle or axle group;

Maximum weight without a permit for a quantum axle is

- (i) 9100 kilograms for a quantum axle group consisting of 2 axles;
- (ii) 17 000 kilograms for a quantum axle group consisting of 3 or more axles with 12 or more tires;
- (iii) 15 000 kilograms for a quantum axle group consisting of 3 or more axles with fewer than 12 tires;

Commercial Vehicle Dimension and Weight Regulation AR315/2002 Section 9(1)(g)

A tridem drive permit exempts the vehicle from sections of Commercial Vehicle Dimension and Weight Regulation AR315/2002 and provides allowances for dimensions and weight and regulates the use of a tridem drive axle.

Click on the link to view a copy of the [tridem drive permit conditions](#)

A vehicle equipped with a lift axle does not qualify for additional weight. Maximum regulated weight on the single axle and tridem semi-trailer (quantum axle) is 17,000 kg as per Commercial Vehicle Dimension and Weight Regulation ‘AR 315/2002’. Maximum Gross Vehicle Weight (GVW) is 39,500 kg. A semi-trailer as defined in Commercial Vehicle Dimension and Weight Regulation ‘AR 315/2002’ cannot have more than one axle group, Section 4(c)(vii).

An annual equipment exemption permit is available to qualifying carriers which allows a quad axle semi-trailer to maximize axle weights and operate at a GVW of 63,400 kg. This permit regulates the use of two axle groups on a semi-trailer and provides dimensions and weights “equivalent to regulated”

Prior to permit issuance, carriers require approval from Transport Engineering, Alberta Transportation. Contact the Forest Products Transportation Specialist at 403 340-4759 or the Central Permit Office at 1 800 662-7138 for further information.

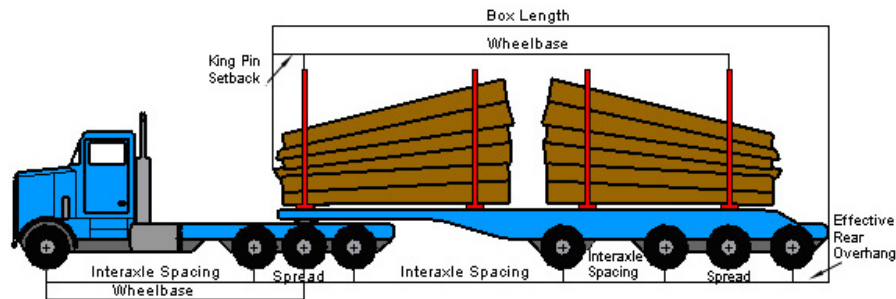
A copy of the application form is available for viewing at:

<http://www.transportation.alberta.ca/Content/docType276/Production/quadcarrierapp.pdf>

A copy of the attached conditions for this annual exemption permit is available for viewing at

<http://www.transportation.alberta.ca/Content/docType276/Production/quad.pdf>

Part 1 - Dimension Limits



DIMENSION	LIMIT
Overall Length	Maximum 23.0 metres If operating without valid tridem drive equipment exemption permit. Maximum 23.5 metres If operating with valid tridem drive equipment exemption permit.
Overall Width	Maximum 2.6 metres
Overall Height	Maximum 4.15 metres
Box Length	Maximum 20.0 metres
Tractor	
Wheelbase	Maximum 6.2 metres If operating without valid tridem drive equipment exemption permit. Minimum 6.6 metres / Maximum 6.8 metres If operating with valid tridem drive equipment exemption permit.
Tridem Drive Axle Spread	Maximum 2.8 metres
Quad Axle Semi-Trailer	
Length	Maximum 16.2 metres
King Pin Setback	Maximum 2.0 metres
Wheelbase	Minimum 6.25 metres / Maximum 12.5 metres
Tridem Axle Spread	Minimum 3.0 metres / Maximum 3.1 metres
Track Width	Minimum 2.5 metres / Maximum 2.6 metres If operating without valid quad axle semi-trailer equipment exemption permit. Minimum 2.5 metres / Maximum 3.05 metres If operating with valid quad axle semi-trailer equipment exemption permit.
Effective Rear Overhang	35% of trailer wheelbase
Interaxle Spacings	
Single Steer to Tridem Drive Axle	Minimum 3.0 metres
Tridem Drive Axle to Single Self Steer Trailer Axle	Minimum 5.0 metres
Single Self Steer Axle to Tridem Trailer Axle	Minimum 2.9 metres / Maximum 3.0 metres

The above dimensions are the “equivalent to regulated” dimensions as shown on the tridem drive equipment exemption permit and the quad axle – semi-trailer equipment exemption permits. If equipment exemption permits are not used then dimensions are as per Commercial Dimension and Weight Regulation ‘AR 315/2002’.

“**effective rear overhang**” means the longitudinal distance from the turn centre of the rear axle group of a commercial vehicle to the rearmost point of

- (i) the vehicle, or
- (ii) the load on the vehicle,

whichever is the greater distance;

as defined in [Commercial Vehicle Dimension and Weight Regulation 315/2002](#) Section 1(p)

“**kingpin setback**” means the longitudinal distance from the centre of the kingpin to the front of the semi-trailer or the load, whichever is further forward, excluding any auxiliary equipment attached to the front of the semitrailer that is not designed for the transportation of goods;

as defined in [Commercial Vehicle Dimension and Weight Regulation 315/2002](#), Section 1(z).

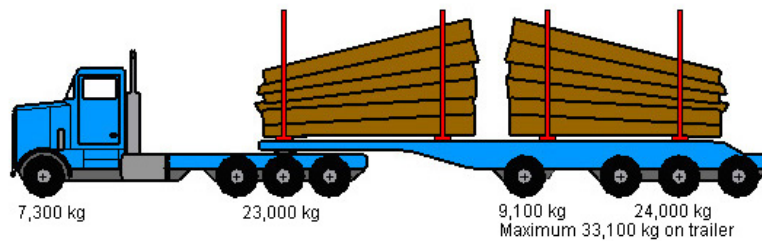
“**trailer wheelbase**” means the longitudinal distance from the centre of the kingpin on a semi-trailer, the centre of the turntable on a full trailer or the centre of the hitch device on a pony trailer, to the trailer turn centre;

as defined in [Commercial Vehicle Dimension and Weight Regulation 315/2002](#), Section 1(ww).

“**truck tractor wheelbase**” means the longitudinal distance from the centre of the steering axle or twin steer axle group located on a truck tractor to the turn centre of the drive axle group located on the truck tractor;

as defined in [Commercial Vehicle Dimension and Weight Regulation 315/2002](#), Section 1(aaa).

Part 2 - Weight Limits



WEIGHT	LIMIT
Steering Axle (minimum tire size 305 mm)	Maximum 7300 kg Steering axle must have a minimum weight of 27% of the drive axle weight at all times
Tridem Drive Axle – Dual tires (minimum tire size 255 mm)	Maximum 17,000 kg if operating without valid tridem drive permit Maximum 23,000 kg if operating with valid tridem drive permit
Quad Axle Semi-Trailer Axles	
Single Self Steer Axle	Maximum 9,100 kg if operating with valid quad axle exemption permit.
Single Self Steer Axle and Tridem Axle Group	Maximum 17,000 kg for the single steer axle and the three axles at the rear of the trailer if operating without valid quad axle semi-trailer equipment exemption permit.
Tridem - Dual tires with axle spread from 3.0 m to 3.1 metres	Maximum 24,000 kg if operating with a valid quad axle exemption permit.
Gross Vehicle Weight Limits	Maximum 63,400 kg subject to minimum interaxle spacing Carrier must have a valid tridem drive permit and valid quad axle equipment exemption permit.

The above weights are the “equivalent to regulated” weights as shown on the tridem drive equipment exemption and the quad axle – semi-trailer equipment exemption permits. If equipment exemption permits are not used then weights are per Commercial Dimension and Weight Regulation ‘AR 315/2002’.

Note: All axle weights are subject to minimum tire size. [See Steering Axle Tire Weight Chart page 4](#)

Maximum steering axle weight as per [Commercial Dimension and Weight Regulation AR 315/2002](#)

9(1) Subject to section 62 of the Act and section 12(1) of this Regulation, no person shall operate a commercial vehicle on a highway when

- (a) the gross weight on a tire exceeds the smallest of the following:
 - (i) 3650 kilograms;
 - (ii) the capacity determined by multiplying the cross section dimension of the tire in millimetres, as determined by the manufacturer’s width shown on the tire, by 10 kilograms;
- (b) the gross weight on
 - (i) a steering axle exceeds
 - (A) in the case of a truck tractor, 5500 kilograms;
 - (B) [in the case of a truck, bus, picker truck, bed, truck or winch truck, 7300 kilograms.](#)

*** STEERING AXLE Tire Weight Chart for Trucks**

ALLOWABLE STEERING AXLE WEIGHTS		ALLOWABLE STEERING AXLE WEIGHTS		PICKER STEERING WEIGHTS WITH ANNUAL PERMIT		
Tire Size (inches)	Single Steer Maximum Weight (kg)	Tire Size (mm)	Single Steer Maximum Weight (kg)	Tire Size (inches)	Tire Size (mm)	Single Steer Maximum Weight (kg)
210	5, 100	285	5, 700			
211	5, 600	305	6, 100			
212	6, 100	315	6, 300			
213	6, 600	335	6, 700			
214	7, 100	365	7, 300			
215	7, 300	385	7, 300	215	385	7,700
216	7, 300	425	7, 300	216	425	8,500
218	7, 300	445	7, 300	218	445	9,100

See [log picker specifications](#) for maximum GVW with configurations equipped with picker trucks.

- * See [picker specifications form](#) to apply for a permit allowing steer axle weight to exceed 7,300 kg.
- * For picker trucks which have a multi-trip permit for the steering axle weight to exceed 7,300 kg, the permitted steering axle weight indicated on the permit shall apply. See copy of [Attached Conditions](#).
- * The carrier must have a valid TAC permit and County/MD approval to travel on local roads. Otherwise, the regulated weight on local roads is limited to 17,000 kg for tridem axles and 53,500 kg GVW.

If approval has been granted and an annual exemption permit has been issued allowing the operation of a quad axle semi-trailer to maximize axle weights and increased GVW, the vehicle must meet the following specifications.

Specifications

1. Both trailer axle groups shall be on air suspensions, which are inter-connected to equalize weight distribution.
2. The single self-steer axle may be in the up position when the trailer is empty or when operating on a private road. The axle must be in the down position (deployed) when the trailer is carrying a load and is traveling on a public roadway, either a provincial highway or a municipal road.
3. The self-steer axle must be capable of turning at least 20 degrees in either direction.
4. The lifting mechanism on the self-steer axle must be capable of lifting the axle off the ground within one half (1/2) revolution of the axle when in reverse and dropping the axle back onto the ground within ten (10) revolutions when forward movement is resumed.

5. The single axle and tridem axle group shall be on a common air suspension that balances the axle weights at all times. If the suspensions require different air pressures, a variable regulator valve is required.
6. Adjustable valves on the self-steer axle are not to be used.
7. The controls to lift or deploy the self-steering axle of the semi-trailer may be located on either the tractor or the trailer.
8. To ensure that the lift axle is deployed and carrying weight when travel is on public roads (provincial highway and municipal roads); an approved on-board monitoring system must be used to track the status of the lift axle with respect to the location of the truck.
9. An indicator light is to be in the cab of the truck to show when the axle is lifted.