



AIR SUSPENSION SOLUTIONS FOR ON AND ON/OFF HIGHWAY TRAILER APPLICATIONS



YOUR COMPLETE SOURCE FOR COMMERCIAL VEHICLE PRODUCT SOLUTIONS



In 2006, two industrial icons merged to form SAF-HOLLAND, a global leader in the design and manufacture of high-quality components and systems for the commercial vehicle industry. Today, SAF-HOLLAND represents a range of brands providing suspension/axle systems, fifth wheels, kingpins, coupling products, and landing gear solutions for truck, tractor, bus, and trailer applications.





- > FIFTH WHEELS
- ➤ LANDING GEAR
- ➤ KINGPINS
- ➤ COUPLINGS



- MECHANICAL SUSPENSION/ AXLE SYSTEMS
- ➤ TRAILER AXLES/BRAKES
- ➤ AIR-RIDE SUSPENSION/ AXLE SYSTEMS



- SEVERE-DUTY VOCATIONAL AIR-RIDE SUSPENSIONS
- ➤ BUS AIR-RIDE SUSPENSIONS
- STEER AIR-RIDE SUSPENSIONS



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Introduction

This guide provides you with recommendations for on/off road use and other information necessary for the selection of a trailer air suspension system.

For further recommendations for trailer applications not covered in this guide, contact SAF-HOLLAND Trailer Suspension Application Engineering.

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1. Short Haul Applications

Short haul applications such as city pick-up, delivery and milk run pick-up's (typically 30 miles (50km) or less) result in a particularly harsh environment for the operation of tractor trailers. As a result, even though the particular application may meet all of the criteria of a category (e.g. "Standard Duty"), the next higher category will be required (e.g. "Moderate Duty").

2. Inner City Fuel Hauling

Inner city fuel haul applications result in a particularly harsh environment for the operation of tractor trailers. As a result, even though the particular application may meet all of the criteria of a category (e.g. "Standard Duty"), the Severe Duty On-Road category must be used.

3. Dump Trailers

Axle Stops

Trailers used for dump applications with 3 or more axles must have axle stops installed on the rear axle. The load transfer to the rear axle during the loading operation will transfer enough weight to the rear axle to exceed its load rating and potentially damage its longevity. Axle stops are also recommended for tandems. (Axle stops are not provided by SAF-HOLLAND, but are to be incorporated into the trailer design.)

Dump Air

Before discharging a load, the pressure in the air suspension should be "dumped" to allow the load to be transferred to the axle stops. This will ensure trailer stability during the discharging of the load and enhance the life of the air springs and shocks.

4. Low Boy Equipment Trailers

Axle Stops

Trailers used for float/lowboy applications with 3 or more axles must have axle stops installed on the rear axle. The load transfer to the rear axle during the loading operation will transfer enough weight to the rear axle to exceed its load rating and potentially damage its longevity. (Axle stops are not provided by SAF-HOLLAND but are to be incorporated in the trailer design.)

Dump Air

Before loading or unloading, the pressure in the air suspension should be "dumped" to allow the load to be transferred to the axle stops. This will ensure trailer stability during the moving of the load and enhance the life of the air springs and shocks.

5. Severe Environments

Some areas of the country are particularly difficult on the operation of a trailer. This would include most logging roads, chip van environments, steep mountain or steep grades (e.g. 20% or greater) where the vehicle is subjected to extreme conditions. In these applications there are times where alternate components should be considered. Included in this list of alternative components would be shocks with heavy-duty valving and air springs with aluminum pedestals. Please contact your local SAF-HOLLAND representative for additional details.

6. Lift Axles

Raising the lift axle of a fully loaded trailer will result in a load transfer to the remaining axles. The resulting increase in the load carried by the primary suspension causes the air springs to compress and diminish the lift axle's tire clearance. If the load on the primary suspension exceeds the suspension's capacity, the primary air springs can compress fully causing the lift axle's tires to remain in contact with the ground.

Always consult your local SAF-HOLLAND representative when combining lift axles with primary suspensions in multi-axle combinations. Lift axle applications must have a minimum of 4" of up-travel.

NOTE:

SAF-HOLLAND does not recommend lifting an axle on a laden trailer. Most jurisdictions have limitations on the lifting of an axle.

7. SwingAlign™ Axle Alignment

SwingAlign™ is standard on all CBX Air Ride Suspensions for the industry's fastest and easiest axle alignment. With SwingAlign™axle re-alignment can be performed without the need to loosen the torque on the front pivot bolt. Axle alignment procedures are now faster than ever before, and without the need for any special tools or welding. SwingAlign™ is standard on the road-side of the suspension.

8. Mixing Suspensions - Full-Air Applications

SAF-HOLLAND recommends the same air suspension capacity be used on all trailer axles to ensure proper axle load equalization (i.e. if a CBX25 is used on the primary suspensions, a CBX25 or CBX25u should be used on the lift or steer axles).



SAF-HOLLAND offers a wide range of air suspension models to the industry today.

From the well known CBX40 slider suspension system to multiple CBX fixed frame models, you can be sure that SAF-HOLLAND has air suspension to meet your trailer application requirements.

The introduction of SAF axles and brakes, including the innovative INTEGRAL® disc brake technology, creates complete unitized suspension systems with our on and on/off highway models.

AIR SLIDER SUSPENSIONS

FEATURES

- Applications: Dry Van and Reefer
- 5-3/4" axle beam
- SwingAlign[™] for the industry's fastest and most convenient axle alignment
- Standard SAF drum brake tapered spindle axle or optional parallel spindle axle
- Available with optional SAF INTEGRAL® disc brake systems
- QWIK RELEASE® pin pull release handle for easy and efficient adjustment
- Optional air release pin pull release system
- PosiLok[™] feature eliminates dock walk and squat

CBX40 & CBX46

Slider Air Suspension/ Axle Systems

- Up to 46,000 lbs. Capacity



CBX40 & CBX46 with Auto Posi-Lift

Slider Air Suspension/ Axle Systems

- Up to 46,000 lbs. Capacity



LEARN MORE ABOUT AUTO-POSILIFT™

OPTION OP

CBX50

Slider Air Suspension/ Axle System

- Up to 50,000 lbs. Capacity



CBX69

Slider Air Suspension/ Axle System

- Up to 69,000 lbs. Capacity



BRAKE CONFIGURATIONS

Standard 16½″ x 7″ Drum Brakes Tapered Spindle Optional 16½″ x 8⅓″



Optional 16½″ x 7″ Drum Brakes Parallel Spindle Optional 16½″ x 8⅓″



Optional 12¼" x 7½" Drum Brakes (CB25u & CB25y)



LEARN MORE
ABOUT INTEGRAL®
DISC BRAKES

Optional SAF INTEGRAL® C88 Disc Brakes (CBX40)





LEARN MORE ABOUT THE P8

> Optional SAF INTEGRAL® P89 Disc Brakes





FIXED FRAME SUSPENSIONS



CBX23 317

CBX23 SERIES

Air Suspension/Axle Systems

- 245 (24.5" beam length) Model Applications: Rear Dump, Tanker, Specialty and Flatbed
- 317 (31.7" beam length) Model Applications: Livestock, Tanker, Grain and Dry Bulk Hauler
- Up to 23,000 lbs. capacity
- 5-3/4" axle beam
- SwingAlign[™] for the industry's fastest and most convenient axle alignment
- Standard SAF drum brake tapered spindle axle or optional parallel spindle axle
- Available with optional SAF INTEGRAL® disc brakes
- Enhanced lightweight cast beam and trailing arm







CBX25 SERIES

Air Suspension/Axle System

- 245 (24.5" beam length)
 - Model Applications: Rear Dump, Tanker, Flatbed and other Specialty
- 338 (33.8" beam length)
 - Model Applications: Flatbed, Logger, Bulk Hauler and other Specialty
- Up to 25,000 lbs. capacity
- 5-3/4" axle beam
- SwingAlign[™] for the industry's fastest and most convenient axle alignment
- Standard SAF drum brake tapered spindle axle or optional parallel spindle axle
- Available with optional SAF INTEGRAL® disc brakes





CBX25/30 SERIES

Air Suspension/Axle Systems

- Applications: Container Chassis, Rear Dump, Flatbed and other Specialty
- Up to 25,000 lbs. capacity
- Up to 30,000 lbs. of load carrying capacity at creep speed—defined as 5 mph or less
- 5-3/4" axle beam
- SwingAlign[™] for the industry's fastest and most convenient axle alignment
- Standard SAF drum brake tapered spindle axle or optional parallel spindle axle
- Available with optional SAF INTEGRAL® disc brakes



FIXED FRAME SUSPENSIONS









CBXu SERIES

Air Suspension/Underslung Axle System

CBX23u, CBX25u & CBX25/30u*

- * Rated for 30,000 lbs. of load carrying at creep speed
- Applications: Drop Deck, Auto Hauler, Livestock, Grain and Dry Bulk
- Up to 25,000 lbs. capacity
- 5-3/4" axle beam
- SwingAlign[™] for the industry's fastest and most convenient axle alignment
- Standard SAF drum brake tapered spindle axle or optional parallel spindle axle
- Available with optional SAF INTEGRAL® brakes

ALSO AVAILABLE:

CB23u & CB25u SERIES for applications that require 17.5" and 19.5" wheel sizes.

CBXy SERIES

Yoke Mount Air Suspension/Axle System

CBX25y & CBX25/30y*

- * Rated for 30,000 lbs. of load carrying at creep speed
- Applications: Drop Deck, Auto Hauler, Livestock, Grain and Dry Bulk
- Up to 25,000 lbs. capacity
- 5-3/4" axle beam
- SwingAlign™ for the industry's fastest and most convenient axle alignment
- Standard SAF drum brake tapered spindle axle or optional parallel spindle axle
- Available with optional SAF INTEGRAL® brakes

ALSO AVAILABLE:

CB25y SERIES for applications that require 17.5" and 19.5" wheel sizes.

CBX SSA SERIES SELF STEERING AXLE

Air Suspension/Axle System

CBX23, CBX25, CBX25/30, CBX23U, CBX25u & CBX25/30u

- **Applications:** Waste Hauling, Scrap, Aggregates, Forestry and Multi-Axle Trailer
- Up to 25,000 lbs. capacity
- SwingAlign™ for the industry's fastest and most convenient axle alignment
- Available in 20° wheel cut as well as 25-30° (adjustable) wheel cut.
- Available with SAF INTEGRAL® disc brakes or SAF drum brakes
 Note: Please contact Trailer Suspension Application Engineering for more information concerning application approvals.

AVAILABLE with optional PosiLift or Center Bag Lift (CBL) feature

RL-300 SERIES

Air Suspension/Axle System

- Applications: Platform, Reefer, Logging, Grain, Bottom Dump, Dump, Livestock, Tanker, Wide Spread and Specialty Trailer
- Up to 30,000 lbs. capacity



Standard Duty

Weight (GCW): Less than 95,000 lbs. (43,000 kg.)

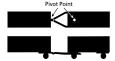
Gross Combination Weight (GCW)

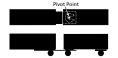
Road Type: 100% On-Road (maintained concrete or asphalt roads)

Trailer Type and Axle Limitation:

Single Trailer Tandem axle only "A" Train—Maximum of 3 axles (Trailer and dolly converter)

"B" Train—Maximum of 3 axles (Lead and "pup" trailer)





Note:

Any trailer used for "short haul" (e.g. city pickup and delivery) is to be considered "Moderate Duty"

Moderate Duty

Weight (GCW): Less than 118,000 lbs. (53,500 kg.)

Gross Combination Weight (GCW)

Road Type:..... Less than 10% Off-Road (gravel or crushed rock roads) with balance On-Road

(maintained concrete or asphalt roads)

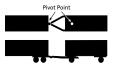
Trailer Type and Axle Limitation:

Single Trailer
Tandem and Tri-axle only

"A" Train—Maximum of 4 axles (Trailer and dolly converter)

B" Train—Maximum of 4 axles" (Lead and "pup" trailer)







Note:

Any trailer used for "short haul" (e.g. city pickup and delivery) is to be considered "Moderate Duty"

Severe Duty - On-Road

Road Type:.....Less than 10% Off-Road (gravel, crushed rock, hard packed dirt, or

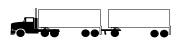
unimproved / unmaintained roads)

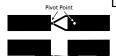
Trailer Type and Axle Limitation:.....

Single Trailer—No Axle Limitations

"A" Train—No Axle Limitations
Limitations

"B" Train—No Axle







Severe Duty - Off-Road

Road Type:...... More than 10% Off-Road (gravel, crushed rock, hard packed dirt, or

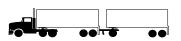
unimproved / unmaintained roads)

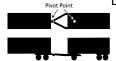
Trailer Type and Axle Limitation (2):.....

Single Trailer—No Axle Limitations

"A" Train—No Axle Limitations
Limitations

"B" Train—No Axle









Van Trailers & Reefers

Standard Duty





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD	SLIDER SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000 lbs. Max. GCW Tandem Axle, General Freight, Line Haul,	CBX23 CBX23u	23,000 lbs. (10,433 kg.)	CBX40 Tandem ⁽²⁾	40,000 lbs. (18,144 kg.)
Reefer, Moving Van up to 2-Axle Train. Not for city pick-up and delivery (1)	CBX25 CBX25u	25,000 lbs. (11,340 kg.)	CBX46	46,000 lbs. (20865 kg.)

Moderate Duty







	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD	SLIDER SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW Tandem Axle, General Freight, Line Haul,	CBX23 CBX23u	23,000 lbs. (10,433 kg.)	CBX40 Tandem ⁽²⁾	40,000 lbs. (18,144 kg.)
Reefer, Moving Van up to 2-Axle Train, City Pick-up and Delivery, Tri-Axle Van and 4-Axle Delivery	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)	CBX69 Tridem ⁽²⁾	69,000 lbs. (31,300 kg.)

Severe Duty - On-Road





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD	SLIDER SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Tandem Axle, General Freight, Line Haul,	CBX23 CBX23u	23,000 lbs. (10,433 kg.)	CBX46	46,000 lbs. (20,865 kg.)
Reefer, Moving Van up to 2-Axle Train, City Pick-up and Delivery, Tri-Axle Van, 4-Axle Delivery, more than Tri-Axle and 5 or more Axle B-Trains On-Road	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)	CBX50	50,000 lbs. (22,680 kg.)

Severe Duty - Off-Road





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD	SLIDER SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Tandem Axle, General Freight, Line Haul, Reefer, Moving Van up to 2-Axle Train, City	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)	CBX50	50,000 lbs. (22,680 kg.)
Pick-up and Delivery, Tri-Axle Van, 4-Axle Delivery, more than Tri-Axle and 5 or more Axle B-Trains Off-Road	RL-300	30,000 lbs. (13,608 kg.)		

- (1) Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.
- (2) Approved only for the United States and Canada.
- (3) Up to 30,000 lbs. at creep speed defined as 5 mph or less.

Note: For A-Train applications see Suspensions for Converter Dollies on Page 16.

Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.



Liquid and Dry Bulk Tankers

Standard Duty





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000 lbs. Max. GCW	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
Single and Tandem Axle Liquid and Dry Bulk Tanker. Not for city pick-up and delivery ⁽²⁾	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Moderate Duty





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
Single, Tandem and Tri-Axle Liquid and Dry Bulk Tanker up to 4-Axle Trains. Not for city pick-up and delivery	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Severe Duty - On-Road





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
More than 118,000 lbs. GCW Single and Tandem Axle Liquid and Dry Bulk Tanker, Oil Field Tanker, more than Tri-Axle, 5 or more Axle Trains On Road.	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Liquid and Dry Bulk Tanker, Oil Field Tanker, more than	CBX25 CBXu25 CBX25/30 ⁽³⁾ CBXu25/30 ⁽³⁾	25,000 lbs. (11,340 kg.)
Tri-Axle, 5 or more Axle Trains Off Road ⁽⁴⁾ .	RL-300	30,000 lbs. (13,608 kg.)

- (1) For axle spacing over 49", greater travel (approximately 4" minimum) is required contact SAF-HOLLAND Trailer Suspension Application Engineering.
- (2) Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.
- (3) Up to 30,000 lbs. at creep speed defined as 5 mph or less.
- (4) HOLLAND Kompensator® Fifth Wheel recommended.

Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.

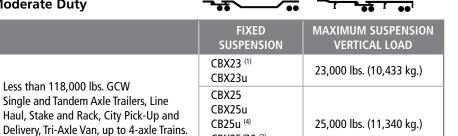


Flat Deck, Drop Deck, Stretch and Pole Trailers

Standard Duty

	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000 lbs. Max. GCW	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
Single and Tandem Axle Trailers, Line Haul, Stake and Rack. Not for city pick-up and delivery (2).	CBX25 CBX25u CB25u ⁽⁴⁾ CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Moderate Duty

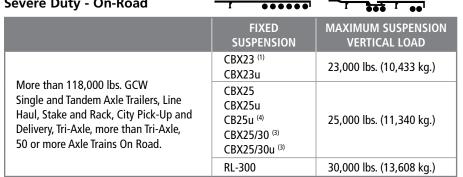


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Severe Duty - On-Road

Less than 118,000 lbs. GCW



CBX25/30 (3) CBX25/30u (3)

Severe Duty - Off-Road

	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, Line Haul, Stake and Rack, City Pick-Up and Delivery, Tri-Axle, more than Tri-Axle,	CBX25 CBX25u CB25u ⁽⁴⁾ CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
50 or more Axle Trains Off Road.	RL-300	30,000 lbs. (13,608 kg.)

- (1) For axle spacing over 49", greater travel (approximately 4" minimum) is required contact SAF-HOLLAND Trailer Suspension Application Engineering.
- (2) Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.
- (3) Up to 30,000 lbs. at creep speed defined as 5 mph or less.
- (4) For low profile trailer applications that require 17.5" and 19.5" wheel sizes.



Logging Trailers

Standard Duty

	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000 lbs. Max. GCW Single and Tandem Axle Trailers, up to 3-Axle Train. Not for city pick-up and	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
delivery ⁽¹⁾ .	RL-300	30,000 lbs. (13,608 kg.)

Moderate Duty



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW Single and Tandem Axle Trailers, up to 3-Axle Train, City Pick-Up and Delivery,	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
Tri-Axle, up to 4-Axle Trains.	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - On-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Liquid and Dry Bulk Tanker, Oil Field Tanker, more than Tri-Axle, 5 or more Axle Trains On Road.	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Liquid and Dry Bulk Tanker, Oil Field Tanker, more than Tri-Axle, 5 or more Axle Trains Off Road.	RL-300	30,000 lbs. (13,608 kg.)

⁽¹⁾ Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.

Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.

⁽³⁾ Up to 30,000 lbs. at creep speed – defined as 5 mph or less.



Dump (Framed) Trailers

Standard Duty



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000 lbs. Max. GCW	CBX23 CBX23u	23,000 lbs. (10,433 kg.)
Single and Tandem Axle Trailers, up to 3-Axle Trains. Not for city pick-up and	CBX25 CBX25u	25,000 lbs. (11,340 kg.)
delivery ⁽¹⁾ .	RL-300	30,000 lbs. (13,608 kg.)

Moderate Duty



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW Single and Tandem Axle Trailers, City Pick-Up and Delivery, Tri-Axle Trailers, up	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
to 4-Axle Trains.	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - On-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, City Pick-Up and Delivery, Tri-Axle Trailers, more than Tri-Axle, 5 or more Axle Trains On Road	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, City Pick-Up and Delivery, Tri-Axle Trailers, more than Tri-Axle, 5 or more Axle Trains Off Road	RL-300	30,000 lbs. (13,608 kg.)

- (1) Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.
- (3) Up to 30,000 lbs. at creep speed defined as 5 mph or less.

Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.

 $\textbf{Note:} \quad \text{Suspension air must be fully exhausted before discharging load}.$

Note: Axle stops recommended on rearmost axle, refer to Page 3 for Axle Stop information.



Dump (Frameless) Trailers

Standard Duty



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
	CBX23 CBX23u	23,000 lbs. (10,433 kg.)
95,000 lbs. Max. GCW Single and Tandem Axle Trailers, up to 3-Axle Trains. Not for city pick-up and delivery (1).	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Moderate Duty



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW Single and Tandem Axle Trailers, City Pick-Up and Delivery, Tri-Axle Trailers, up to 4-Axle Trains.	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - On-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, City Pick-Up and Delivery, Tri-Axle Trailers, more than Tri-Axle, 5 or more Axle Trains On Road	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, City Pick-Up and Delivery, Tri-Axle Trailers, more than Tri-Axle, 5 or more Axle Trains Off Road	RL-300	30,000 lbs. (13,608 kg.)

- (1) Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.
- (3) Up to 30,000 lbs. at creep speed defined as 5 mph or less.

Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.

Note: Suspension air must be fully exhausted before discharging load.

Note: Axle stops recommended on rearmost axle and required for trailers with more than 2 axles, refer to Page 3 for Axle Stop information.

Note: Refer to Page 6 for application limitations.

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Bottom Dump (Grain and Gravel) Trailers

Standard Duty

	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000 lbs. Max. GCW	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
Single and Tandem Axle Bottom Dumps, up to 3-Axle Trains. Not for city pick-up and delivery ⁽²⁾ .	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Moderate Duty

	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW Single and Tandem Axle Bottom Dumps,	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
up to 3-Axle Trains, City Pick-Up and Delivery, Tri-Axle Bottom Dumps, up to 4-Axle Trains.	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Severe Duty - On-Road

	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
Single and Tandem Axle Bottom Dumps, up to 3-Axle Trains, City Pick-Up and Delivery, Tri-Axle Bottom Dumps, more than Tri-Axle, 5 or more Axle Trains On Road.	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
Off Road.	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Bottom Dumps, up to 3-Axle Trains, City Pick-Up and Delivery, Tri-Axle Bottom Dumps, more	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
than Tri-Axle, 5 or more Axle Trains Off Road.	RL-300	30,000 lbs. (13,608 kg.)

- (1) Minimum up-travel of 4" should be included in bottom dump applications contact SAF-HOLLAND Trailer Suspension Application Engineering.
- (2) Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.
- (3) Up to 30,000 lbs. at creep speed defined as 5 mph or less.

Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.



Rear Discharge (Wood Chip and Refuse) Trailers

Standard Duty FIXED MAXIMUM SUSPENSION VERTICAL LOAD SUSPENSION CBX25 CBX25u 95,000 lbs. Max. GCW 25,000 lbs. (11,340 kg.) CBX25/30 (3) Single and Tandem Axle Bottom Dumps, CBX25/30u (3) up to 3-Axle Trains. Not for city pick-up and delivery (1). 30,000 lbs. (13,608 kg.) RL-300

Moderate Duty		· I • · • • · • • ·
	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW Single and Tandem Axle Bottom Dumps, up to 3-Axle Trains, City Pick-Up and Delivery, Tri-Axle Bottom Dumps, up to 4-Axle Trains.	CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - On-Road		
	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Bottom Dumps, up to 3-Axle Trains, City Pick-Up and De- livery, Tri-Axle Bottom Dumps, more than Tri-Axle, 5 or more Axle Trains On Road.	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road	• • •	
	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Bottom Dumps, up to 3-Axle Trains, City Pick-Up and	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
Delivery, Tri-Axle Bottom Dumps, more than Tri-Axle, 5 or more Axle Trains Off Road.	RL-300	30,000 lbs. (13,608 kg.)

⁽¹⁾ Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.

Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.

Note: Refer to Page 6 for application limitations.

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⁽³⁾ Up to 30,000 lbs. at creep speed – defined as 5 mph or less.



Lowboy Trailers

Standard Duty

	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
95,000 lbs. Max. GCW Single and Tandem Axle Trailers, Equipment Hauler Float. Not for city pick-up and delivery ⁽²⁾ .	CBX25 CBX25u CB25u (4) CBX25y CBX25/30 (3) CBX25/30u (3) CB25y (4) CBX25/30y	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Moderate Duty



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
Less than 118,000 lbs. GCW Single and Tandem Axle Trailers, Equipment Hauler Float, City Pick-Up and Delivery, Tri-Axle Trailers, up to 4-Axle Trains	CBX25 CBX25u (4) CBX25y CBX25y CBX25/30 (3) CBX25/30u (3) CB25y (4) CBX25/30y	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - On-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, Equipment Hauler Float, City Pick-Up and Delivery, Tri-Axle Trailers, more than Tri-Axle, 5 or more Axle Trains On Road	CBX25 CBX25u CB25u ⁽⁴⁾ CBX25y CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾ CB25y ⁽⁴⁾ CBX25/30y	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, Equipment Hauler Float, City Pick-Up and Delivery, Tri-Axle Trailers, more than Tri-Axle, 5 or more Axle Trains Off Road	CBX25 CBX25u CB25u ⁽⁴⁾ CBX25y CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾ CB25y ⁽⁴⁾ CBX25/30y	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

- (1) For axle spacing over 49", greater travel (approximately 4" minimum) is required contact SAF-HOLLAND Trailer Suspension Application Engineering.
- (2) Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.
- (3) Up to 30,000 lbs. at creep speed defined as 5 mph or less.
- (4) For low profile trailer applications that require 17.5" and 19.5" wheel sizes.

Note: Axle stops recommended on rearmost axle, refer to Page 3 for Axle Stop information.

Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.



Converter Dollies

Standard Duty	1	
	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000 lbs. Max. GCW All Pup Trailers. Not for city pick-up and delivery (1).	CBX23 ⁽²⁾ CBX23u	23,000 lbs. (10,433 kg.)

Moderate Duty	100	1000
	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW	CBX23 ⁽²⁾ CBX23u	23,000 lbs. (10,433 kg.)
All Pup Trailers.	CBX25 ⁽²⁾ CBX25u	25,000 lbs. (11,340 kg.)

Severe Duty - On-Road		000
	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW All Pup Trailers On-Road	CBX23 ⁽²⁾ CBX23u	23,000 lbs. (10,433 kg.)
	CBX25 CBX25u	25,000 lbs. (11,340 kg.)
	RL-300 ⁽²⁾	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road	100	▼
	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW	CBX25 ⁽²⁾ CBX25u	25,000 lbs. (11,340 kg.)
All Pup Trailers Off-Road	RL-300 (2)	30,000 lbs. (13,608 kg.)

⁽¹⁾ Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.

⁽²⁾ For single axle applications, contact SAF-HOLLAND Trailer Suspension Application Engineering.



Livestock and Drop Deck Livestock Trailers

Standard Duty





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000 lbs. Max. GCW	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
Single and Tandem Axle Trailers, Line Haul, Stake and Rack. Not for city pick-up and delivery ⁽²⁾ .	CBX25 CBX25u CB25u ⁽⁴⁾ CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Moderate Duty





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
Single and Tandem Axle Trailers, Line Haul, Stake and Rack, City Pick-Up and Delivery, Tri-Axle Van, up to 4-axle Trains.	CBX25 CBX25u CB25u ⁽⁴⁾ CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Severe Duty - On-Road





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
	CBX23 ⁽¹⁾ CBX23u	23,000 lbs. (10,433 kg.)
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, Line Haul, Stake and Rack, City Pick-Up and Delivery, Tri-Axle, more than Tri-Axle, 50 or more Axle Trains On Road.	CBX25 CBX25u CB25u ⁽⁴⁾ CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Single and Tandem Axle Trailers, Line Haul, Stake and Rack, City Pick-Up and Delivery, Tri-Axle, more than Tri-Axle,	CBX25 CBX25u CB25u ⁽⁴⁾ CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
50 or more Axle Trains Off Road.	RL-300	30,000 lbs. (13,608 kg.)

- (1) For axle spacing over 49", greater travel (approximately 4" minimum) is required contact SAF-HOLLAND Trailer Suspension Application Engineering.
- (2) Applications in confined areas requiring sharp turns must move up to the next capacity suspension, e.g. city pick-up and delivery.
- (3) Up to 30,000 lbs. at creep speed defined as 5 mph or less.
- (4) For low profile trailer applications that require 17.5" and 19.5" wheel sizes.



Roll-On/Roll-Off

Standard Duty



		FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
95,000	lbs. Max. GCW	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Moderate Duty





	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
Less than 118,000 lbs. GCW	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)

Severe Duty - On-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Wood Chips On-Road.	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

Severe Duty - Off-Road



	FIXED SUSPENSION	MAXIMUM SUSPENSION VERTICAL LOAD
More than 118,000 lbs. GCW Wood Chips Off-Road.	CBX25 CBX25u CBX25/30 ⁽³⁾ CBX25/30u ⁽³⁾	25,000 lbs. (11,340 kg.)
	RL-300	30,000 lbs. (13,608 kg.)

(3) Up to 30,000 lbs. at creep speed - defined as 5 mph or less.

Note: Minimum up-travel of 4" should be included in pony trailer applications - contact SAF-HOLLAND Trailer Suspension Application Engineering.

Note: Suspension air must be fully exhausted before discharging load.

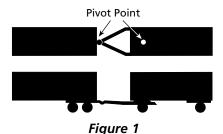
Note: For any lift or steering axle application, contact SAF-HOLLAND Trailer Suspension Application Engineering.

Note: Axle stops recommended on rearmost axle, refer to Page 3 for Axle Stop information.



A-Train

A combination of two or more trailers in which the dolly (converter or turntable) is connected by a single pintle hook or coupler, and the drawbar connection is at the center between each vehicle. The resulting connection has two pivot points (Figure 1).

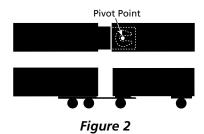


Axles, Numbering

When used in this guide to select a suspension, the number of axles (for example, "Up to 4-axle trains") refers to the total number of axles on the "towed vehicle(s)" or trailer(s). It does not include the axles on the towing vehicle.

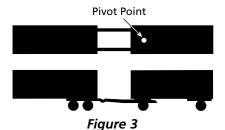
B-Train

A combination of two or more trailers in which the rear semi-trailer(s) is connected with a single pivot point, commonly a fifth wheel, mounted on an extension of the frame of the lead trailer (*Figure 2*).



C-Train

A combination of two or more trailers in which the dolly (converter or turntable) is connected to the trailer by means of two pintle hook or coupler-drawbar connections. The resulting connection has one pivot point (Figure 3).



Center-of-Gravity (c.g.)

That point in a vehicle or body where the total weight or mass could be considered to be concentrated. Used in conjunction with vehicle stability and weight distribution on its axles.

Converter Dolly

An axle, frame, drawbar and fifth wheel arrangement that converts a semi-trailer into a full trailer.

Full Trailer

A trailer which does not transfer load to the towing vehicle. It employs a towbar coupled to a swiveling or steerable running gear assembly at the front of the trailer.

KOMPENSATOR® Mounting Base

A mounting base designed to relieve some of the torque and twist that is generated by some trailer designs, thereby reducing or eliminating trailer frame cracks. Tractor tandem tire life is also greatly increased due to improved traction. The primary application for a HOLLAND KOMPENSATOR® mounted fifth wheel is for tankers in which the c.g. does not exceed 44 inches above the top surface of the fifth wheel.

Maximum Gross Combination Weight

The maximum recommended capacity of a tractor/trailer combination, which is a sum of the weight of the towing vehicle, any towed vehicle(s) (empty weight) and the payload.

Off-Road

Refers to the terrain on which a tractor-trailer will operate which is unpaved and rough, or ungraded. Any terrain not considered part of the public highway system falls under this heading.

On-Road

Refers to the terrain on which a tractor-trailer will operate which is paved or a smooth graded surface, generally considered to be part of the public highway system.

Rated Capacity

The maximum, recommended safe load that can be sustained by a component or assembly without permanent damage.

Glossary



Roll Center

The instant (always changing) center about which the vehicle sprung mass rotates when lateral (rollover) forces are applied. Generally this is located at the fore/aft center of the suspension at a height where the springs attach to the frame links.

Semi-Trailer

A load carrying vehicle equipped with one or more axles and constructed so that its front end is supported on the fifth wheel of the truck tractor which pulls it.

Stability

A relative measure of the handling characteristics which provide the desired and safe operation of the vehicle during various maneuvers.

TVW (Towed Vehicle Weight)

Total weight of towed vehicles.

Torsional Rigidity

A component's ability to remain rigid when subjected to twisting forces.

Vertical Load Capacity

The maximum, recommended vertical force (down) than can be safely applied to a coupling device.

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