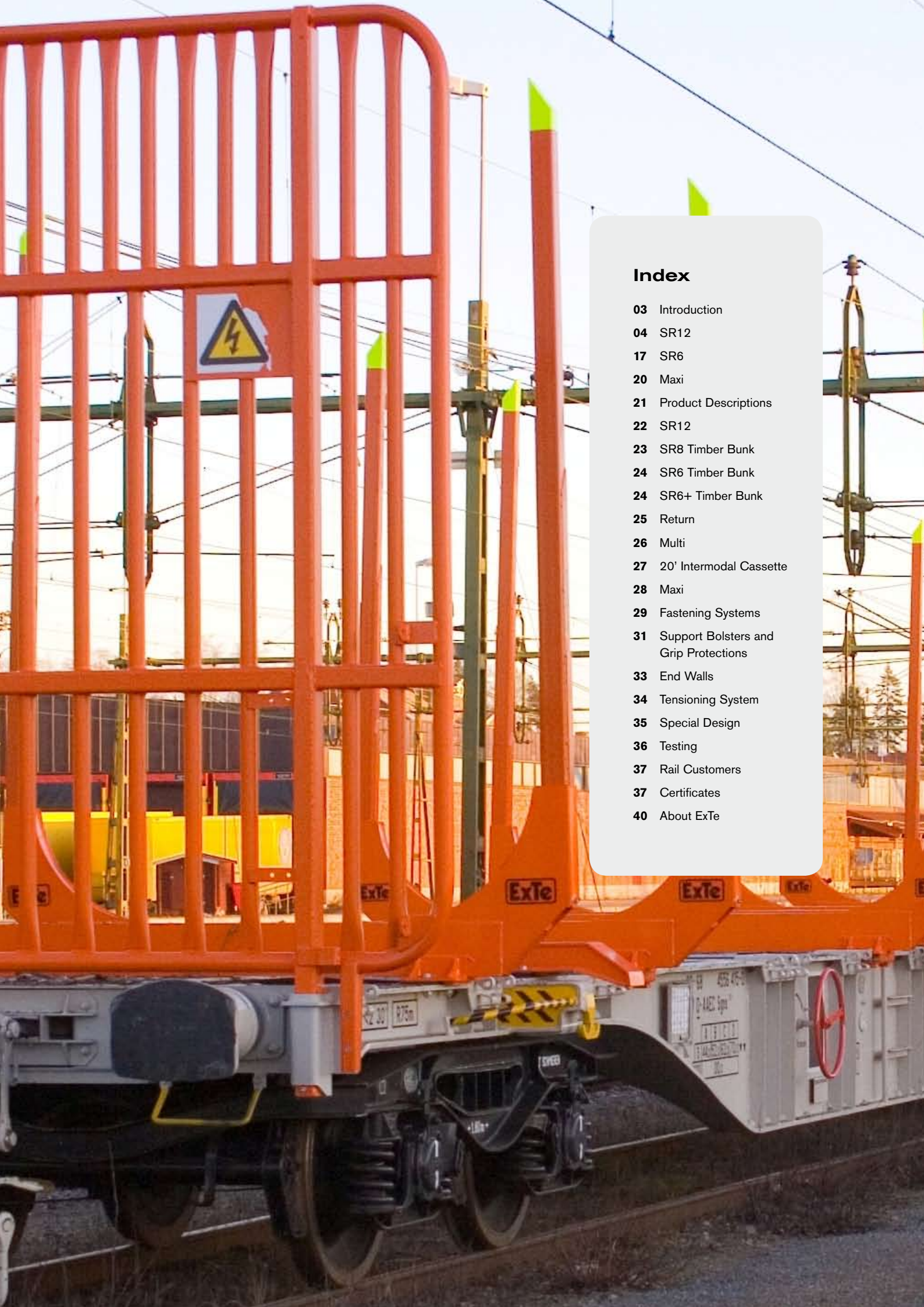
ExTe

Rail Products and References

Securing Cargo. We invented the concept.



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ExTe

Introduction

If you have any interest in the sector of rail transportation of forest products, you will find this brochure informative and interesting.

If you also would happen to have interest for the sector of highway transportation of forest products, you will not be disappointed by visiting www.exte.se

Welcome to the world of ExTe's rail products. Our aim is to secure cargo as safe as possible at lowest possible LCC.

In the first half of this brochure, you'll find a listing of our main rail customers so far, and in the latter half a little bit more detailed descriptions of our most common rail products.

As a hint to better understand the following pages, SR 12 stands for a high strength steel timber bunk that is guaranteed to hold a static and dynamic load of 12 ton per bunk. One can then only guess what SR 8 and SR 6 stands for. The term "timber bunk" means a bolster with two stanchions (hence, it takes two timber bunks to carry one pile/bundle of logs).

Please do not hesitate to contact us, if you have any questions.

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ExTe

SR12

Rail Freight Company: GC (Green Cargo AB, former Swedish State Railway, SJ)

Technical Details:

Wagon type: Lnps. 22.5 ton axle load.
Approval authorities: Swedish track and safety authorities, Norwegian track and safety authorities
Year of delivery: 1989-1991
Number of wagons: 1,020 two-axle wagons
Number of timber bunks: 5,400
Number of support bolsters: NA
Number of end walls: NA

The SR 12 timber bunk was designed and developed for this operators need in the latter half of the 1980-ties. After some 20 years with around 300 load trips per year in an operational environment considered being one of the roughest in Europe (both regarding terminal handling and climate), the original equipment is still going strong.

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SR12

Rail Freight Company: GC (Green Cargo AB, former Swedish State Railway, SJ)

Technical Details:

Wagon type: Lnps. 22.5 ton axle load
Approval authorities: Swedish track and safety authorities, Norwegian track and safety authorities
Year of delivery: 2005
Number of wagons: 135 two axle wagons
Number of timber bunks: 810
Number of support bolsters: 270
Number of end walls: 270

ExTe

SR12

Rail Freight Company: GC (Green Cargo AB, former Swedish State Railway, SJ)

Technical Details:

Wagon type: Laaps. 25 ton axle load
Approval authorities: Swedish track and safety authorities
Year of delivery: 2004
Number of wagons: 186 twin platform wagons with two axles per platform
Number of timber bunks: 2,232
Number of support bolsters: 744
Number of end walls: NA

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SR12

Rail Freight Company: TÅGAB (Tågåkeriet i Bergslagen AB)

Technical Details:

Wagon type: Sgnss / Sns-x. 22.5 ton axle load and Rps 20 ton axle load
Approval authorities: Swedish track and safety authorities, Norwegian track and safety authorities
Year of delivery: 2005-2011
Number of wagons: 81 bogie wagons
Number of timber bunks: 694
Number of support bolsters: 310
Number of grip protections: 103
Number of end walls: 70

ExTe

SR12

Rail Freight Company: Svea Skog (Swedish State Forestry)

Technical Details:

Wagon type: Sgnss 22.5 ton axle load
Approval authorities: Swedish track and safety authorities, Norwegian track and safety authorities
Year of delivery: 2010
Number of wagons: 18 bogie wagons
Number of timber bunks: 180
Number of support bolsters: 126
Number of end walls: 0

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SR12

Rail Freight Company: Peterson Rail AB

Technical Details:

Wagon type: Sgnss. 22.5 ton axle load and Rps 20 ton axle load
Approval authorities: Swedish track and safety authorities, Norwegian track and safety authorities
Year of delivery: 2005 - 2010
Number of wagons: 60 bogie wagons
Number of timber bunks: 548
Number of support bolsters: 368
Number of end walls: 94

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SR12

Rail Freight Company: TX (TX Logistik AB/AG)

Technical Details:

Wagon type: Sgnss. 22.5 ton axle load
Approval authorities: Swedish track and safety authorities, Norwegian track and safety authorities
Year of delivery: 2007-2009
Number of wagons: 75 bogie wagons
Number of timber bunks: 690
Number of support bolsters: 348
Number of end walls: 26

ExTe

SR12

Rail Freight Company: Hector (Hector Rail AB)

Technical Details:

Wagon type: Sgnss. 22.5 ton axle load
Approval authorities: Swedish track and safety authorities, Norwegian track and safety authorities
Year of delivery: 2006-2011
Number of wagons: 167 bogie wagons
Number of timber bunks: 1,167
Number of support bolsters: 556
Number of end walls: 170

ExTe

SR12

Rail Freight Company: CargoLink AS

Technical Details:

Wagon type: Sgnss. 22.5 ton axle load
Approval authorities: Norwegian track and safety authorities, Swedish track and safety authorities.
Year of delivery: 2009 - 2010
Number of wagons: 41 bogie wagons
Number of timber bunks: 282
Number of support bolsters: 159
Number of end walls: 82

ExTe

SR12

Rail Freight Company: Three T

Technical Details:

Wagon type: Srrs. 22.5 ton axle load
Approval authorities: Swedish track and safety authorities
Year of delivery: 2007
Number of wagons: 20 twin platform bogie wagons
Number of timber bunks: 160
Number of support bolsters: 80
Number of end walls: 40

ExTe

SR12

Rail Freight Company: Three T

Technical Details:

Wagon type: Sps/Rs. 20 ton axle load and Rps 20 ton axle load
Approval authorities: Swedish track and safety authorities
Year of delivery: 2008
Number of wagons: 37 bogie wagons
Number of timber bunks: 222
Number of support bolsters: 111
Number of end walls: NA

ExTe

SR12

Rail Freight Company: Kiwi Rail, New Zeeland

Technical Details:

Wagon type: UK. 14 ton axle load
Approval: Kiwi Rail
Year of delivery: 2011
Number of wagons: 100 bogie wagons
Number of timber bunks: 600
Number of support bolsters: NA
Number of end walls: NA

ExTe

SR12

Rail Freight Company: NACCO S.A.S.

Technical Details:

Wagon type: Roos. 20 ton axle load
Approval authorities: Slovak Republic and Austrian track and safety authorities
Year of delivery: 2009
Number of wagons: 1 bogie wagon (test wagon)
Number of timber bunks: 16
Number of support bolsters: 15
Number of end walls: NA

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SR6

Rail Freight Company: Vida Timber AB

Technical Details:

Wagon type: Kbps. 20 ton axle load
Approval authorities: Swedish track and safety authorities
Year of delivery: 2006 - 2010
Number of wagons: 60 two axle wagons
Number of timber bunks: 360
Number of support bolsters: NA
Number of end walls: NA

ExTe

SR6

Rail Freight Company: TWA (TRANSWAGGON)

Technical Details:

Wagon type: Laaps. 20 ton axle load
Approval authorities: German track and safety authorities, DB and EBA.
Year of delivery: 2002-2011
Number of wagons: 455 twin platform wagons with two axles per platform
Number of timber bunks: 5,340
Number of support bolsters: NA
Number of end walls: NA

ExTe

SR6

Rail Freight Company: FEVE, Spain

Technical Details:

Wagon type: SSgs. 15 ton axle load
Approval body: FEVE
Year of delivery: 2011
Number of wagons: 1 bogie wagon (test wagon)
Number of timber bunks: 8
Number of grip protections: 4
Number of end walls: 2

ExTe

Maxi

Rail Freight Company: DB (Schenker), EWS, GC, NSB, NACCO, IBAB

Technical Details:

Wagon type: Roos, Rs, Kbps, Os and Laaps. 20 – 22.5 ton axle load
Approval bodies: German, English, Norwegian and Swedish track and safety authorities.
Year of delivery: 1996-2011
Number of wagons: 4,500 two axle and bogie wagons
Number of timber bunks: NA
Number of stakes: 108,520
Number of sockets: 50,200
Number of support bolsters: NA
Number of end walls: NA

ExTe

Product Descriptions

In the following, ExTe's most common rail products are rudimentary described. It is important to note that the weights indicated can vary pending on the desired loading gauge (height and width) and on what type of fastening system that will be used.

All of ExTe's timber bunks, stakes and support bolsters are manufactured using high strength steel with a tensile between 650 and 1,400.

ExTe Timber Bunks and ExTe Systems

ExTe has three base models of rail timber bunks with different characteristics. Height, width and fastening system can vary pending on customer request and wagon type in question. The different systems comprise of the Return, Multi, Cassette and the Maxi.

ExTe

SR12 Timber Bunk

The SR 12 timber bunk is very common in Scandinavia. Since 1989, around 14,000 bunks of this type have been delivered and attached to a great variety of different wagon types.

Facts:

ExTe SR 12 timber bunk can carry a load of 12 ton each and can be attached to most flat wagons / container wagons. This even if the wagon type only has two outer frame sills (like most Sgnss designs). The weight is approximately 200-280 kg per bunk pending loading gauge and fastening system.

ExTe

SR8 Timber Bunk

The SR 8 timber bunk is newly developed and is currently undergoing operative testing. Photo showing the bunk with Scandinavian loading width.

Facts:

ExTe SR 8 timber bunk can carry a load of 8 ton each and can be attached to most flat wagons / container wagons. This even if the wagon type only has two outer frame-sills (like most Sgnss designs). The weight is around 160-190 kg pending loading gauge and fastening system.

The SR 8 timber bunk (and the SR 6 timber bunk described on the following page), is well suited for the more restrictive continental European loading gauge. The bolster design of the SR 8 bunk also makes the bunk suitable for only two sill wagons and for the transport of sawed lumber packages, pressed boards, etc besides timber. The bunk is suitable for the use in traffic to and from sawmills (timber inbound and finished products outbound).

ExTe

SR6/6+ Timber Bunk

Since the mid 1990-ties, close to 6,000 timber bunks of the SR 6 design have been delivered to various European customers.

Facts:

ExTe SR 6 Timber Bunk can carry a load of 6 ton each and can be attached only to flat wagons / container wagons with a floor or with four or more longitudinal beams on the wagon (like Rgns, Roos, Sps, Rs, but not for wagons with only two longitudinal beams, like most Sgnss designs). The weight of this bunk is around 130-140 kg pending upon desired loading gauge.

ExTe SR 6+ Timber Bunk can carry a load of 6 ton each and can be attached to most flat wagons / container wagons. This even if the wagon type only has two longitudinal beams (like most Sgnss designs). The weight of this bunk is around 150-160 kg pending on loading gauge.

ExTe

Return

The bunks are transported with the stanchions down on top of revenue cargo in one direction. In the “timber direction”, the pair of bunks are placed on the ground and stanchions raised, loaded with timber, strapped with one belt per bunk and finally lifted onto a freight vehicle. The spacing between two bunks is freely adjusted on the ground pending log lengths. The concept is also suitable for the transport of steel or plastic pipes, etc. The empty bunks can be handled either by fork lifts or forest cranes.

Facts:

ExTe Return is designed for the use in covered or open lorries or rail wagons. This 8 ton design is very suitable in freight corridors where i.e. lumber (sawed boards), pressed boards and palleted cargo is transported in one direction, and timber/pulp wood in the opposite direction. The stanchions are of fold down type.

The weight of this bunk is around 180 kg pending upon desired height and width. A pair of bunks can handle a log pile weighting 16 ton. The handling concept is as smart as it’s simple.

ExTe
Multi

The weight of one system / wagon comprising of 10 timber bunks, 7 heavy-duty support bolsters and 12 ExTended container spigots (the equipment pictured above) is around 3.7 ton.

Facts:

ExTe Multi is a flexible solution for the efficient transport of containers, timber and sawed lumber. ExTe has developed this system, based on the SR 8 timber bunk design, in order to make the transport of timber, containers and lumber possible on the same wagon without the need for any alterations to the wagon. Due to loading gauge reasons, this design is especially suitable for the use within Sweden and it meets the most common rail transport needs within the Scandinavian forest industry. With this equipment, a wagon can in a very flexible manner alter between the transport of timber, containers and lumber. Handling of containers can be done either by forklifts or reach-stackers.

ExTe

20’ Intermodal Cassette

Technical data for one ExTe 20’ Cassette:

Tare per Cassette: 2 ton
Net loading: 18 ton if lifted, or 32 ton if not lifted
Gross: 20 ton if lifted
Timber bunks: 4 pcs. of ExTe SR 8 timber bunks
Pile capacity per Cassette: Two piles of 2-3 meter logs or one pile of 4-6 meter logs
Protective flooring: Yes
Tie down winches: Yes (three system 602 winches per cassette)

The 20’ intermodal cassette fits any 20’ ISO spigot positions on any road or rail vehicle worldwide.

Facts:

ExTe 20’ Cassette, the true intermodal solution for the efficient transport of timber (road-rail-road). ExTe has developed this concept in order to offer the forest industry new possibilities to make their logistical flows of raw material (round wood and cut lumber) more efficient. The timber bunks are of the SR 8 design.

The 20’ Cassette facilitates the following possibilities:

- Fast turnaround times of wagon-sets at rail terminals (or receiving industry)
- Lorries feeding rail terminals can be any container trailer or flat bed container lorry
- Reduced risk for damages to equipment (rail or road) due to fewer “crane” handlings
- High flexibility. A container rail car or lorry can be a timber transporting unit one day, and its original the next (without a shop visit or costly assembly / disassembly work).

ExTe

Maxi

More than 100,000 Maxi Stakes have been delivered since 1996.

The Maxi Socket provides for a secure inter-fit between the Maxi Stake and the wagon.

Facts:

This system comprise of the Maxi Stake and the Maxi Socket. The weight of the stake is 23 kg and the weight of the socket is 11 kg. One stake can hold a load of up to 2.3 ton.

ExTe

Fastening Systems

Bolted fastening with or without rubber pucks or fastening plates. At this time, around 8,000 bunks with this fastening system have been delivered.

Yoke fastening with bolts with or without rubber pucks. Close to 3,000 bunks have been delivered with this fastening system up till today.

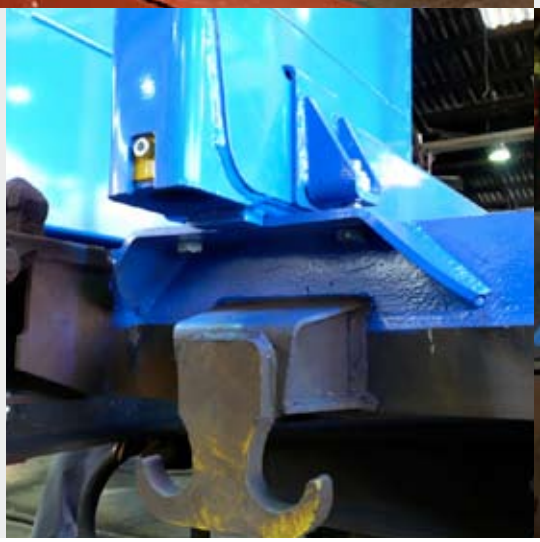
Clamp fastening is a system used on around 3,000 timber bunks so far. This fastening type is also commonly used on ExTe's highway products (exceeding 250,000 bunks world wide).

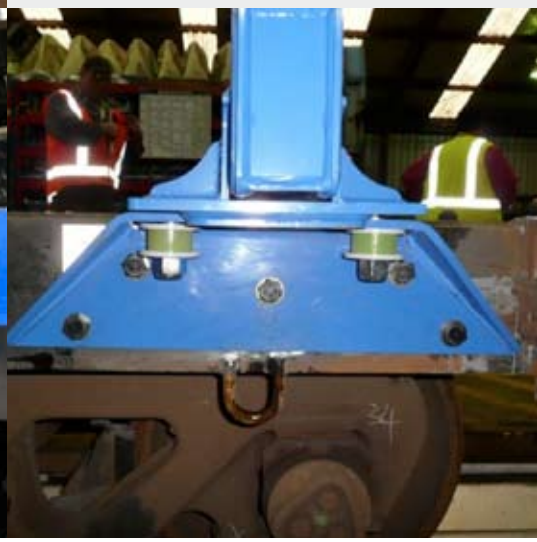
ExTe

Fastening Systems

Frame welded fastening is the means of attachment for close to 6,000 SR 6 bunks up to date.

ExTe's wagon fastening plate manufactured in HSS can be bolted or welded onto the wagon frame. Timber bunk fastenings of most types can then be attached to this plate (expect the welded timber bunk fastening (SR 6 above).





Facts:

The SR 12, SR 8 and SR 6+ timber bunk designs can be used on most, if not all, types of flat wagons and container wagons. The attachments of the timber bunks onto wagons are done by the use of either clamp fastenings, bolt fastenings or yokes with bolts. Sometimes attached to a fastening plates bolted or welded to the wagon sills.

For wagons with floors, or with four or more longitudinal wagon beams, the SR 6 timber bunk is attractive. The attachment of the SR 6 is by the means of welding (”wings” welded to the outer wagon sills).

ExTe

Support Bolsters and Grip Protections

1.
Close to 3,000 pcs of this heavy duty support bolster have been delivered since 2005. The top plate of the bolster is manufactured in the extremely durable Hardox steel quality.

2.
This lighter support bolster is designed for wagons with structural support in the middle.

Facts:

ExTe's support bolsters and Grip Protections protect wagon frames from the forces of unloading machines and also makes faster unloading possible.

1. In tests, ExTe's heavy-duty bolster withstood vertical loads of 27 ton in the middle (when mounted on a Sgnss alike frame structure with only two outer frame sills). The weight of this support bolster is between 130-170 kg pending fastening system and width. The support bolster is attached to the wagon by clamp fastenings or bolt fastenings.

2. ExTe's support bolster for wagons with floors or many longitudinal beams is lighter with a weight of just around 60-70 kg. Hardox steel is used here as well.

ExTe

Support Bolsters and Grip Protections

3.
This design is currently undergoing revenue field tests with around 100 pcs in operation.

Facts:

3. ExTe's grip protection for wagons with floors or many longitudinal beams is an economic wagon saver when unloading is done with big machinery. This especially when the outer wagon beams comprises of H-beams. The weight is around 70 kg and it is manufactured in HSS. Normally, the attachment is done by welding.

ExTe

End Walls

The piping design.

The flat wall design.

Facts:

ExTe's has two basic designs of end walls. One design is using piping for the grid and high strength steel for the pillar stanchions and sockets. This is in order to reduce weight and to some extent air resistance. These factors are of importance especially in regions where the loading gauge allows the loading area to be around 9 m^2 and speeds often are over 90 km/h and empty haul at 120 km/h.

The second design is entirely manufactured in HSS and is very suitable within regions with more restricted loading gauges and speeds.

ExTe

Tensioning System

This tensioning system is very popular among European rail operators. The braking point for the winch itself is at over 17 ton torch

Facts:

The 602 Tensioning System is commonly used by European rail operators. The system includes a ten meter 6 ton belt, a hook and a triangle. The weight is in total just over 9 kg. Throughout the past ten years, more that 20,000 systems of this design have been delivered to the rail industry.

ExTe

Special Designs


1

2


3

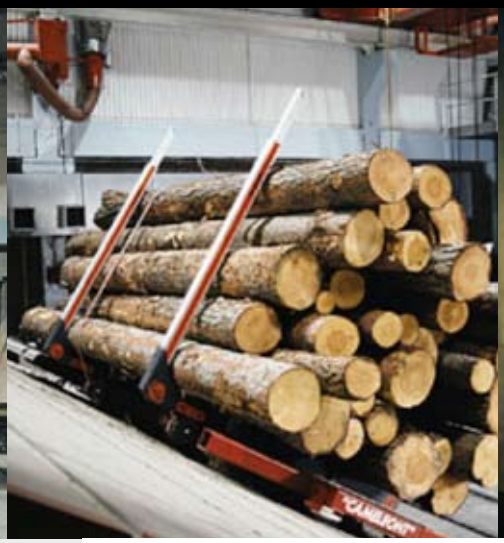
Facts:

Beside our mainstream timber securing products, ExTe can also offer none forest related products based on specific customer requests. Example of such products are bunks for steel pipes and rods (picture 1), stakes for the transport needs of track authorities / track maintenance companies (picture 2) and container spigot beams for flat wagons modified to container wagons (picture 3).

As the role, these products are manufactured using high strength steel. For ExTe, the costumer is always king, and we are listening. If a customers desire is technically and economically feasible, ExTe will design, test and manufacture accordingly.

ExTe

Testing



Tests are important.

The best test laboratory is sometimes the reality. ExTe continuously collects information and experience from mishaps. At this at speed derailment (due to track failure) of a loaded (ExTe) timber train, remarkably few of ExTe's components had to be replaced. The fastening type was in this case of clamp type. The photo to the right probably shows the Worlds largest rake, raking deep for 200 meters without a broken stanchion.

Facts:

Normally, a new design is borne after customer dialog and his approval of final drawings. After that, a FEM-analyzes is carried out. New products are than always prototyped and tested in ExTe's laboratory in order to measure structural behavior and braking points. After that, the products are tested in field conditions as test units. This always takes place ahead of any market introduction. Normally, ExTe's rail products are approved by rail authorities as integrated parts of a wagon approval (new wagon designs or after major modifications).

All of ExTe's stanchion and bunk designs fulfill TSI requirements regarding high strength stanchions and side mounted stanchions. This usually with factor two or three.

ExTe

Rail Customers

- DB / Railion / DB Schenker, SJ / GC, NSB / CargoNet
- Nordwaggon / TWA
- Exte Vertriebs GmbH
- KiwiRail, EWS, FEVE, Hector Rail, Tågab, TXL, Peterson Rail, RailCare
- CargoLink, Vida, IGAB, OBAS, Sveaskog, Midwaggon, Banverket
- Greenbriar, Gniewczyna, Ovako, Swemaint
- AAE, NACCO, ERR, OnRail, NetRail

ExTe

Certificates


TÜV NORD

CERTIFICATE

The TÜV CERT-Certification Body for Pressure Equipment of TÜV NORD Systems GmbH & Co. KG

ExTe Fabriks AB
SE-820 41 Färila
Sweden

Welded equipment for logging operation (trucks and full trailors / railway vehicles)

EN ISO 3834-2

Certificate-no.: 07-202-1101 EN 0832 08

Report-no.: 1101 EN 0113 8

11 / 2011


CERTIFICATE TÜV NORD

SS EN ISO 9001 : 2008

ExTe
ExTe Fabriks AB
Gamlbergsvägen 6
SE-820 41 Färila

Development, manufacturing and marketing for load lashing


Anerkannte Stelle

TÜV NORD

Zertifikat

Schweißen von Schienenfahrzeugen und -fahrzeugteilen nach DIN EN 15085-2

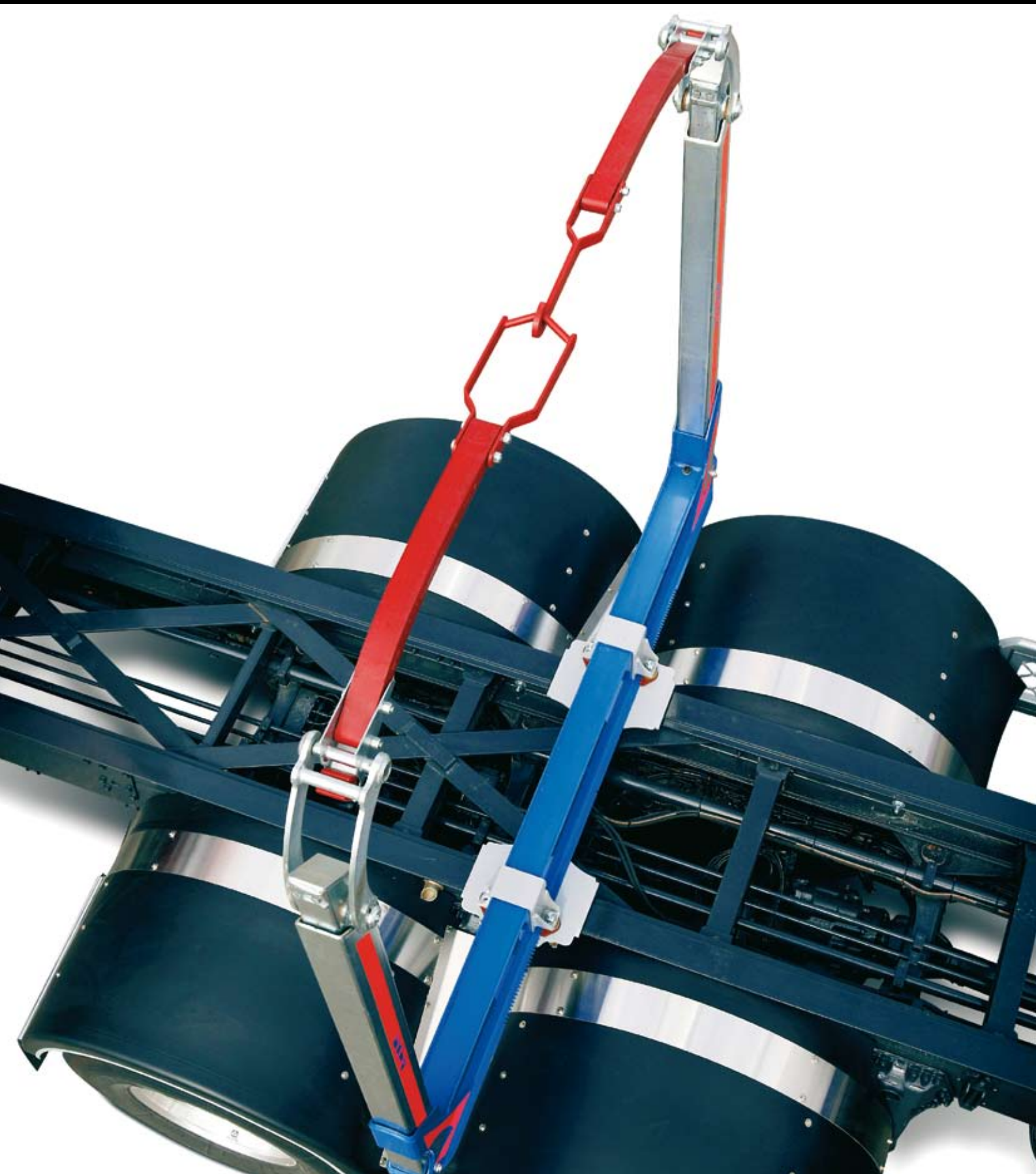
ExTe Fabriks AB
Typkennzeichen
SE-82041 Färila

Zertifizierungsstufe CL 2 nach DIN EN 15085-2

ExTe is the world's leading manufacturer and supplier of timber bunks and automatic tensioning devices for safe and rational transport of timber by road and rail.

Throughout the years, ExTe has globally delivered more than 250,000 timber bunks for highway. ExTe's road products are manufactured in aluminum and / or high strength steel

ExTe's innovative Com-90, a fully automated tie down system, is becoming more and more popular. This especially amongst truckers operating shorter distances with many round-trips per shift



More ExTe,
Both on the Web and in Print.

ExTe has the widest product line in the market to meet every need. Product development that never compromises on safety is your best guarantee.

For more information about ExTe products, you are invited to visit us at www.exte.se.

ExTe

Securing cargo. We invented the concept.

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