



1 GENERAL INFORMATION

1.1 OVERVIEW

NRC Industries was first established in 1975. Located in St-Paul d'Abbotsford in the province of Quebec, Canada, it has remained a family owned business ever since. It is now known as a leading towing and recovery equipment manufacturer throughout the entire world.

1.2 THE NRC COMMITMENT

At NRC Industries, we work in the towing industry with the customer in mind. For more than 30 years, all our efforts are concentrated towards a single goal: simplify and protect the lives of Towing & Recovery operators.

This is why at NRC, the customer is not just a number. We provide solutions tailored to each customer's needs and expectations. Every piece of equipment, be it a heavy duty wrecker or a car carrier, is unique allowing you to realize your full capacity.

1.3 NRC HISTORY

Since 1975, NRC's history is one of innovations, technical progress and products that are ahead of their time.

Here are some facts about a company that succeeded the incredible challenge of combining craftsmanship with leading-edge technology:

1975 The first in North America to receive a patent on their hydraulic underlift

1984 The first to introduce an under reach on the heavy-duty wrecker

1991 The first to invent the slider system

1992 The first to propose the sliding rotator system



- 1996 The first to develop the Quickswap
- 1997 The first to invent the Tag Axle
- 2005 The first to introduce 2 auxiliary winches under the boom
- 2006 The first to use a complete composite body



Always imitated, but never equalled, NRC products are the choice of the best operators and are renowned throughout the world for their strength and their reliability for getting the toughest jobs done.



1.4 NRC DEALERSHIP

Back in the 80's, NRC was mostly selling its towing and recovery products in eastern Canada and New England. Three decades later, NRC now exports its towing and recovery equipment all over North America, Europe, South Africa, Asia and the Middle East, thanks to a continuously growing dealer's network.

USA

FERREIRA'S WRECKER SALES	Andy Ferreira	Chelmsford, MA
HINO OF WICHITA LLC	Jerry Mies	Wichita, Ks
FUTURE WRECKER SALES, INC.	Frank Yarasezski	Amsterdam, NY
KORTH INC.	Karl Korth	Greenville, WI
PARDO'S SALES & SERVICE	Paul Pardo	Richmond, IN
ROBERT YOUNG'S AUTO & TRUCK	Robert Young	Roanoke, VA
DALLAS FT. WORTH		
TRUCK & EQUIPMENT	Josh Whitesell	Dallas, TX
MATTHEW'S GARAGE INC.	Jeremy Matthew	Cartersville, GA
EPPLER TRUCK SALES	David Eppler	Firebaugh, CA
NULL'S SALES AND SERVICE, LLC	Latta Null	Cochranville, PA
BATTELINI TRANSPORTATION SERVICES	Anthony Battelini Jr.	Landisville, NJ
ROADREADY INC	Jim Wilson	Champaign, IL
FRANCO EMERGENCY SOLUTIONS	Brian Franz	Arnold, MO
	Brian and Michele	
M & W WRECKER REPAIR INC	Pannone	Bloomington, CA
PASO ROBLES TRUCK CENTER	Ryan Ormonde	Paso Robles, CA

CANADA

EAGLE TOWING EQUIPMENT	Victor Poladian	Cambridge, ON
TOW TECH EQUIPMENT	Bryan Feeney	Bath, NB
CAYTEC EQUIPMENT LTD.	Jason Obenauer	Calgary, AB
CAYTEC EQUIPMENT LTD.	Gary Nimis	Edmonton, AB
JAMES WESTERN STAR	Dwayne Renshaw	Prince George, BC
PM INDUSTRIES	Mike Shaw	Abbotsford, BC

OVERSEAS

D.E.D - Europe	Dominique Berthaut	Meaux, FR
ROGER DYSON GROUP	Roger Dyson	Worcestershire, UK
HETCO	Manaf El-Hoss	Ahmadi, KW
T.A.R.E.S	Rickus Raubenheimer	Johannesburg, SA



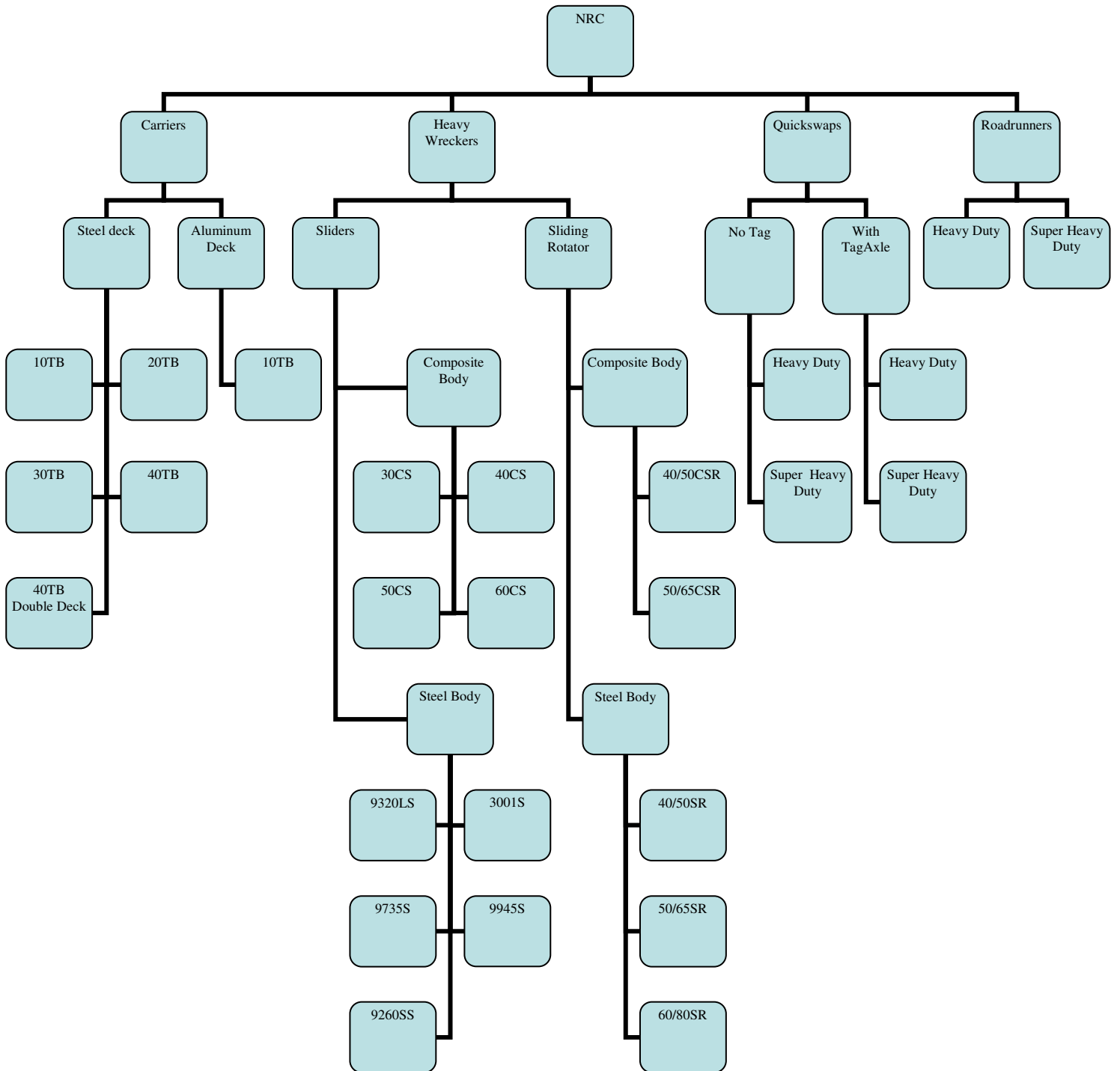
TRANSTECH VEHICULES LTD
TRUCKWORKS AUSTRALIA

Johnny Lee
Lyndon Reynolds

Yuen Long, HK
Adelaide, AU

1.5 NRC FULL LINE OF PRODUCTS

NRC has dedicated the last 35 years to the design and the manufacturing of a wide range of towing and recovery products. Either a light duty carrier, a super heavy duty rotator or a Quickswap, NRC has an answer to almost any need. (NRC is NOT a light duty wrecker manufacturer.)

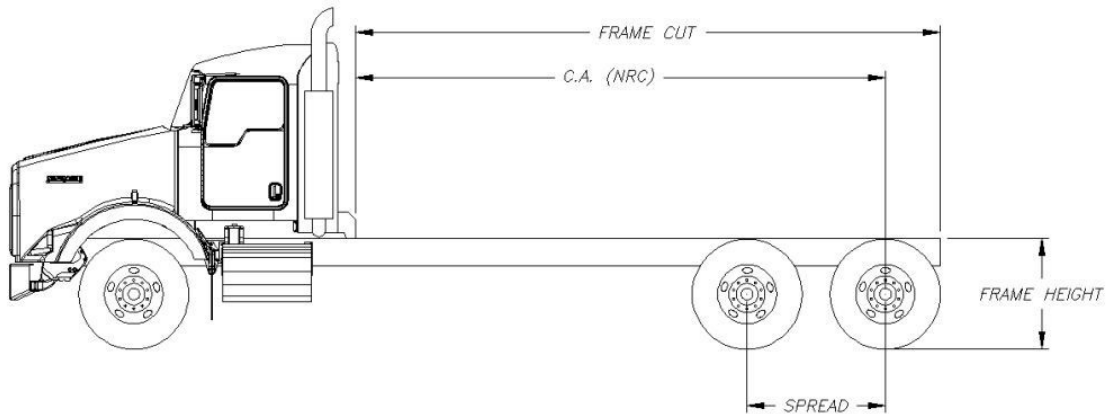




2 CHASSIS SELECTION GUIDELINES

2.1 CAB TO AXLE DIMENSION

All NRC products cab to axle (CA) requirement refers to the distance from the back of cab to the center of the rearmost axle, regardless the number of rear axles. It is not relative to the center of boggie (tandem or tri-axle). It must be clear of cab suspension and mounting brackets.



2.2 AXLE SPACING

Axle spacing must be measured from center to center of two consecutive axles. It is also call axle spread.



2.3 FRAME CUT AND CAB TO AXLE MEASUREMENTS

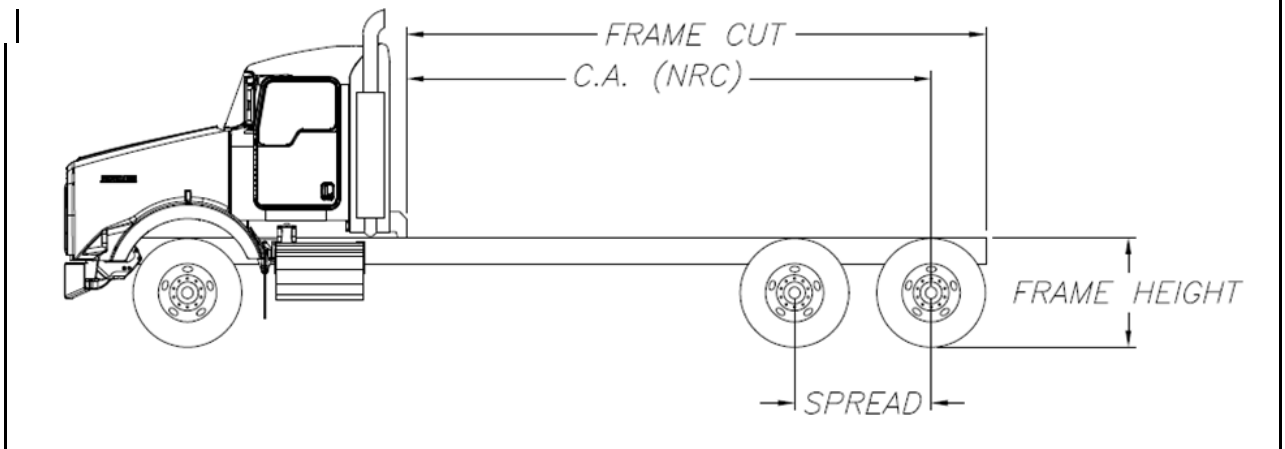
NRC Wrecker CA and Frame Cut chart			
Wrecker Model	CA (Cab to center of rearmost axle)	FC (Cab to end of frame)	Tunnel Box (4" step)
50/65CSR	246"	271"	40" to 72"
40/50CSR	190"	215"	28" to 72"
60CS	196"	232,5"	48" to 72"
50CS-3	196"	224,75"	28" to 72"
50CS	180"	208,75"	28" to 72"
40CS-3	196"	224,75"	28" to 72"
40CS	180"	208,75"	28" to 72"
30CS	142"	170,75"	28" to 72"
60/80SR	272"	297"	NA
50/65SR	241"	268"	48" to 72"
40/50SR	168"	193"	24" to 72"
C60	242"	278,5"	48" to 72"
C45	168"	204,5"	24" to 72"
C35	168"	204,5"	24" to 72"
C30	142"	178,5"	24" to 72"
C20	110"	147,5"	24" to 72"
F15	102"	138,5"	24" to 72"
RoadRunner	142"	173,25"	28" to 72"

Notes :

CA and Frame Cut value are for the wrecker body alone.

There is a 4" gap between the truck cab and the wrecker body for the given CA.

Tunnel box length must be added to the given CA and the resulting gap is down to 3,5".





2.4 AXLE RATINGS

Truck axle ratings should be selected so they are equal or greater to the highest number below:

NRC minimum axle capacity requirement

- Local authority minimum axle rating requirement
- Expected completed vehicle weight + Expected load on under reach + Weight Transfer from front to rear axle resulting from overhung load.

Contact NRC Technical Services if you need assistance to make proper load estimation.

2.5 FRAME RAILS SPECIFICATIONS

In order to ensure good performances, long term reliability and a safe operation of towing and recovery equipment, NRC sets minimal frame resistance requirements, expressed as a Resisting Bending Moment.

The Resisting Bending Moment is a product of frame material resistance (Yield Strength) and frame section modulus (frame cross section surface and shape). It is expressed in lbs-in (pounds-inches).



Table below shows minimal frame resistance requirements for most NRC equipment. Frame must feature these RBM requirements from back of cab to end of frame.

Model	Recommended RBM (In-lbs per rail)
30CS	2,750,000
40CS – 50CS	3,250,000
40/50CSR - 50/65CSR*	4,500,000
60/80CSR	5,750,000
10TB	1,000,000
20TB	1,500,000
40TB	2,750,000
QuickSwap	2,750,000

* 5,750,000in-lbs is highly recommended for 50/65CSR. Special mounting plates are required with 4,500,000in-lbs.

2.6 EXHAUST PIPES, DPF AND SCR SYSTEMS

In order to avoid interference with bodies, sub frames, toolboxes and other equipment components, a proper selection of exhaust pipes position is essential.

Whenever possible, DPF and SCR systems should be installed under cab and not behind the back of cab. If these systems are to be mounted behind the cab or sleeper, make sure they will not interfere with any of the following components (partial list):

- Rollback tilt cylinder cross-member;
- Wrecker tunnel toolbox;
- Rotator front outrigger.



If exhaust pipes are to be installed horizontally and under frame, make sure they won't interfere with the components listed above.

Most of post EPA 2010 engines exhaust pipes can't be easily modified and relocated. Therefore, it is important to properly select a configuration suitable for your application.

2.7 RECOMMENDED EXHAUST CONFIGURATION

Vertical exhaust on side of cab makes installation easier. It is the best configuration for a rollback, since there is no possible interference with the cross-member or toolboxes and does not increase the total length of the truck. If you need more fuel capacity, an additional fuel tank can be located aft of the cab.



Figure 1 - Under cab DPF/SCR - Iso¹

¹ Source: Kenworth T-440/T-470 2011 Emission Bodybuilder Manual

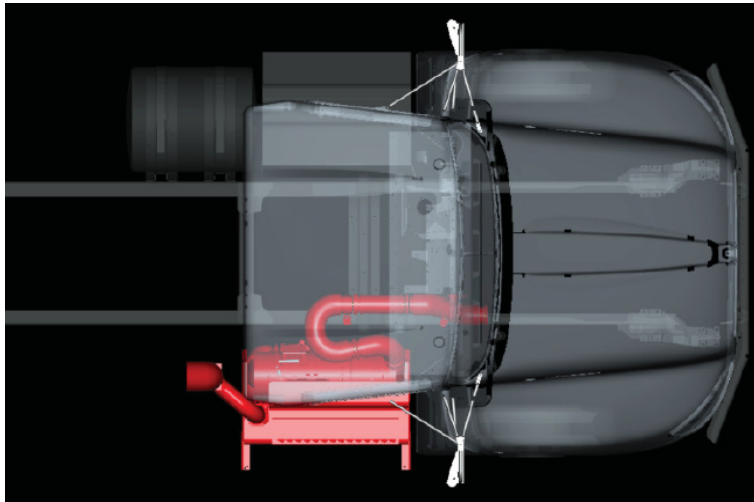


Figure 2 - Under cab DPF/SCR – Top²

If exhaust and DPF/SCR systems must be located behind the cab to get sufficient fuel capacity, cab to rearmost axle distance should be measured from the rearmost part of this system.

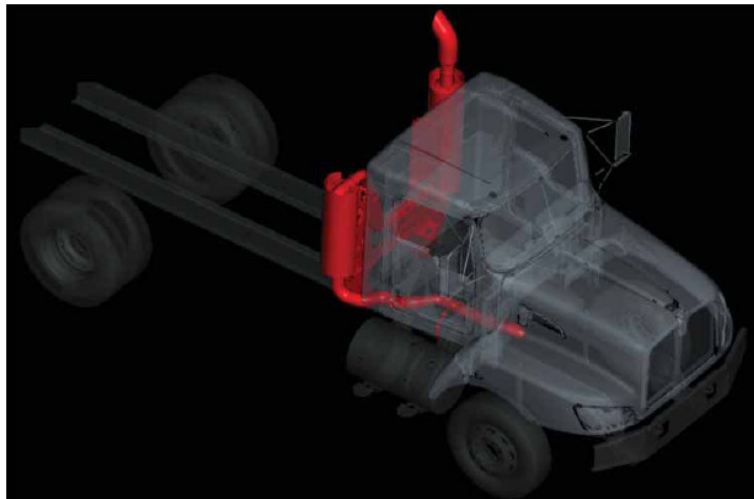


Figure 3 - Back of cab DPF/SCR - Iso

² Source: Kenworth T-440/T-470 2011 Emission Bodybuilder Manual

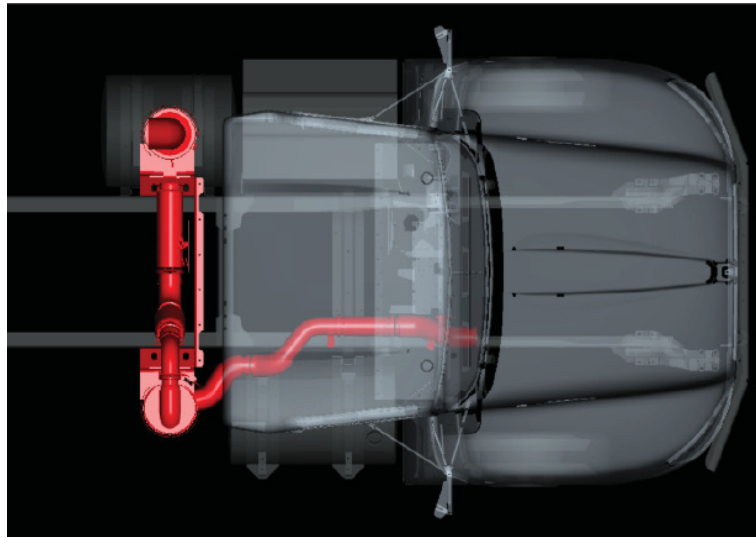


Figure 4 - Back of cab DPF/SCR - Top³

2.8 FUEL AND DEF TANKS

DEF tanks should always be installed ahead of the back of cab or sleeper. Fuel tanks can be integrated in tunnel toolbox, as long as they don't exceed 22" in diameter. Larger 24" diameter tanks cannot be hidden behind toolbox doors.

2.9 CROSS-MEMBER LOCATION

While cross-member position is usually not a problem for wrecker installation, it might cause an issue for rollback installation as it might interfere with the tilt cylinders. See the technical reference document section for the cross-member location table.

2.10 CAB AND CHASSIS SPECIFICATIONS SHEET.

NRC now requires that the customer of the NRC dealer fills a truck specifications sheet prior to processing the order through engineering department and start building the equipment.

³ Source: Kenworth T-440/T-470 2011 Emission Bodybuilder Manual



TECHNICAL INFORMATION		
Publication #	8927509.DOC	Rev #
		0
Description	Customer design specifications form	
Availability Date	November 16, 2011	
<u>Truck Identification</u>		
Make:	_____	
Model:	_____	
Year:	_____	
Frame serial #:	_____	
<u>Diesel Particulate Filter Section (If Back Of Cab)</u>		
Orientation (Horizontal / Vertical)	_____	
Distance Back Of Cab @ Rear of Diesel Particulate Filter:	_____	
<u>Diesel Exhaust Fluid Section (If Back Of Cab)</u>		
Distance Back Of Cab @ Rear Of Diesel Exhaust Fluid:	_____	
<u>Battery Section (If Back Of Cab)</u>		
Orientation (Left / Right):	_____	
Distance Back Of Cab @ Rear of Battery:	_____	
<u>Fuel Tank Section (If Back Of Cab)</u>		
Orientation (Left / Right):	_____	
Distance Back Of Cab @ Rear of Fuel Tank:	_____	
Form filled by:	_____	



3 PRICING STRUCTURE AND WARRANTY

3.1 PRICE LIST

Authorized NRC Distributors will periodically receive a revised price list.

3.2 EXTRANET

NRC is proud to give its authorized distributor access to a dedicated website: <http://services.nrc-industries.com>. Through this secured site, an NRC dealer, which is given a username and password, can order spare or replacement parts and access technical data:

- Shop and order parts
- Shop and order accessories
- Access maintenance manuals
- Access technical bulletins and repair procedures
- Access technical drawings

3.3 DISCOUNTS ON EQUIPMENT

Authorized NRC dealers are granted a discount over list price on all wrecker bodies, rollbacks and other NRC towing and recovery equipment (Quickswap, RoadRunner, Axle-lift, Tag axle, etc.) Actual discounts are stated in the Discount Structure document.

3.4 DISCOUNTS ON SPARE PARTS

Authorized NRC dealers are also granted a discount over list price on replacement parts and accessories, including towing attachments, chains, etc.



3.5 NON DISCOUNTABLE ITEMS

Paint (labor and material), lightbars and equipment installation are non discountable items.

3.6 LABOUR RATE

NRC labour rate for a repair done at the factory (not covered by the warranty), a special project, an overhaul, an upgrade, etc. is non discountable.

3.7 COMPUTING NET DEALER PRICE

First, compute net dealer discount:

$$[(Total\ list\ price) - (non\ discountable\ items)] \times (discount\ rate) = Net\ dealer\ discount$$

Then, compute net dealer cost:

$$(Total\ list\ price) - (Net\ dealer\ discount) = Net\ dealer\ price.$$



See table below for an example of how to compute the discount.

Description	Qty	Unit price	Total
3/16" CHECKER PLATE DECK (STANDARD)	1	0.00\$	0.00\$
20,000-TB-21	1	21365.00\$	21365.00\$
LIGHT PYLON NRC MODEL C # 5 (CAB BETWEEN 66"-71")	1	0.00\$	0.00\$
4 CHAIN SLOTS PER SIDE (16 TOTAL)	1	0.00\$	0.00\$
REMOVABLE RAILS	1	675.00\$	675.00\$
FLOOR 102" WIDE	1	0.00\$	0.00\$
12" CENTERS CROSS-MEMBERS	1	0.00\$	0.00\$
6" FLAT BAR T1 WELDED AT THE END OF THE DECK	1	300.00\$	300.00\$
5 MARKER LIGHTS PER SIDE	1	180.00\$	180.00\$
2 WORK LIGHTS ON TOP OF THE REAR BUMPER	1	200.00\$	200.00\$
RAMSEY 8,000 LBS PLANETARY WINCH	1	0.00\$	0.00\$
AIR CLUTCH RELEASE ON WINCH	1	375.00\$	375.00\$
SWIVEL HOOK	1	30.00\$	30.00\$
NO WHEEL-LIFT SYSTEM	1	750.00\$	750.00\$
TRAILER HITCH & PINTLE HOOK ADAPTOR	1	175.00\$	175.00\$
STABILIZER GRIP (20,000)	1	450.00\$	450.00\$
LARGE TOOL BOX 72" WITH DOUBLE DOORS	1	1175.00\$	1175.00\$
PRESSURE GAUGES ON ROLLBACK	1	100.00\$	100.00\$
AUTOMATIC TRANSMISSION	1	925.00\$	925.00\$
STAINLESS ON SIDE OF BED	1	275.00\$	275.00\$
STAINLESS ON REAR BUMPER	1	200.00\$	200.00\$
STAINLESS WITH NRC LOGO INSIDE CHAINRACK	1	225.00\$	225.00\$
STAINLESS ON LIGHT PYLON	1	200.00\$	200.00\$
STAINLESS ON TOOL BOX DOOR (44" - 72")	1	100.00\$	100.00\$
ROLLBACK TIE DOWN KIT	1	160.00\$	160.00\$
ROLLBACK BLACK FENDER FOR 19.5 TIRES	1	500.00\$	500.00\$
ONE COLOR PAINT TOOL BOX - COLOR SAME AS FLOOR	1	50.00\$	50.00\$
ONE COLOR PAINT - DUPONT	1	1750.00\$	1750.00\$
LIGHT BAR FEDERAL : SOLARIS 22 " LED (2 UNIT)	1	1350.00\$	1350.00\$
INSTALLATION (INCLUDES PTO)	1	4000.00\$	4000.00\$
		Basic price:	33 605.00\$

Ex:

Items in the gray area are non discountable items.

$$\text{Discount} = [33\ 605.00\$ - (50.00\$ + 1\ 750.00\$ + 1\ 350.00\$ + 4\ 000.00\$)] \times 25\% = 6\ 613.75\$$$

$$\text{Net dealer price} = 33\ 605.00\$ - 6\ 613.75\$ = 26\ 991.25\$$$



3.8 NRC WARRANTY COVERAGE

Unless otherwise noted, the NRC Warranty covers, over a 12 months period, issues or breakdowns resulting from a manufacturing fault or excessive wear of components. The coverage includes parts and labor and will be refurbished according to dealer parts cost and NRC labour rate. It does not cover any damage or unusual wear resulting from an abusive use of the product.

3.9 WARRANTY REGISTRATION

Every piece of equipment **MUST** be registered when delivered to end user. It must be signed down by end user and must include “in service” date, serial number and truck information. No warranty claim will be accepted unless a Warranty Registration Form as been filed.

3.10 CLAIMING PROCEDURE

All Warranty claims must be approved prior to any repair by NRC Technical Services Department. The dealer or third party performing the repair will then receive a work order from NRC covering an amount for parts and labor.



3.11 STANDARD TIMES AND ALLOWANCES

In order to issue work orders promptly and provide all dealers with the same fair allowance for warranty work, NRC now uses standardized rates, times and procedures.

Each work order is:

- issued in accordance with these standard times;
- provided with a standard procedure document;
- mandatory in order to claim warranty charges.

Example of NRC repair standard time list:

NRC REPAIR STANDARD TIME LIST					
		10000TB	20000TB	30000TB	40000TB
P U M P	Pressure Adjustment	.25	.25	.25	.25
	Rem. Off from pto & back on	0,5			
	shift fittings & hoses from old to new	1,3	1,3	1,3	1,3
P T O	TROUBLESHOOT	.5	.5	.5	.5
	Replace Hot Shift pto				
	Replace Air Shift pto				
	Rep. pressure switch	0,2			
	Replace Solenoid	0,5			
	Rep. Output shaft seal				
W I N C H	Troubleshoot	0,2	0,2		
	REMOVE & RE-INSTALL	1	1		
	REPLACE ROLLER FAIRLEAD	0,3	0,3		
	REPLACE TENSIONER	0,3	0,3		
	REPLACE MOTOR	0,6	0,6	0,6	
	Replace counterbalance valve	0,4	0,4	0,4	
	Rem. & inst. Cable	0,3	0,3	0,5	0,6



4 SLIDERS

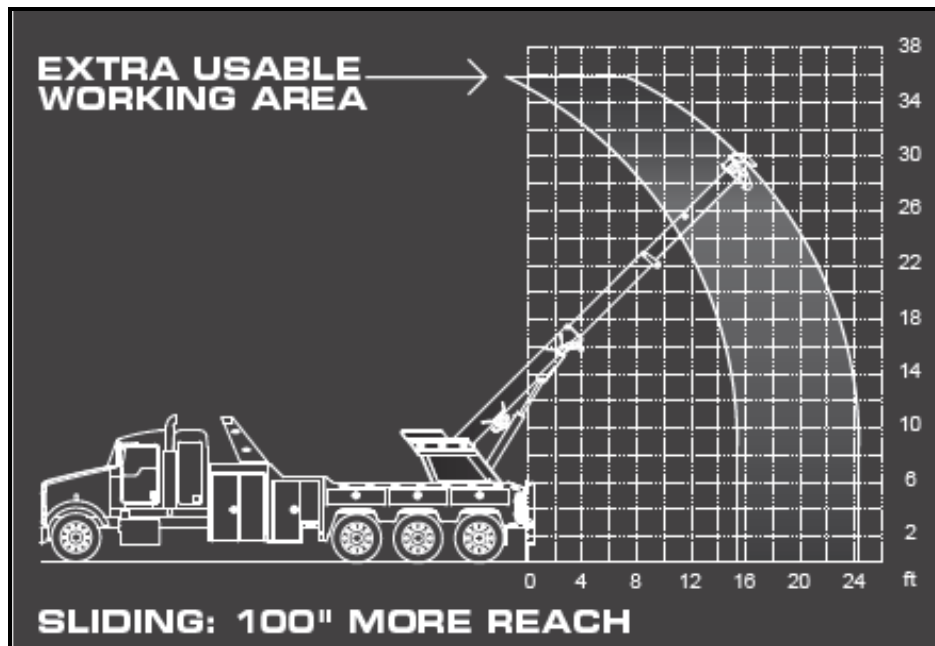
4.1 BASICS OF THE SLIDER SYSTEM

The sliding system is basically an additional axis the operator can use in order to do a job more efficiently or perform a task that would not be possible without this powerful feature.

In addition to boom lift axis and boom extension axis, the slider axis moves the entire mast fore and aft of the body, thus improving reach and lifting capacity.

4.2 INCREASED REACH

In addition to the standard 2 stage boom or the optional 3 stage boom extension, the slider allows for a greater reach.





The following table shows the amount of additional reach per model.

Model	Additional reach (slide)
30CS	80"
40CS	100"
50CS	100"
60CS	100"

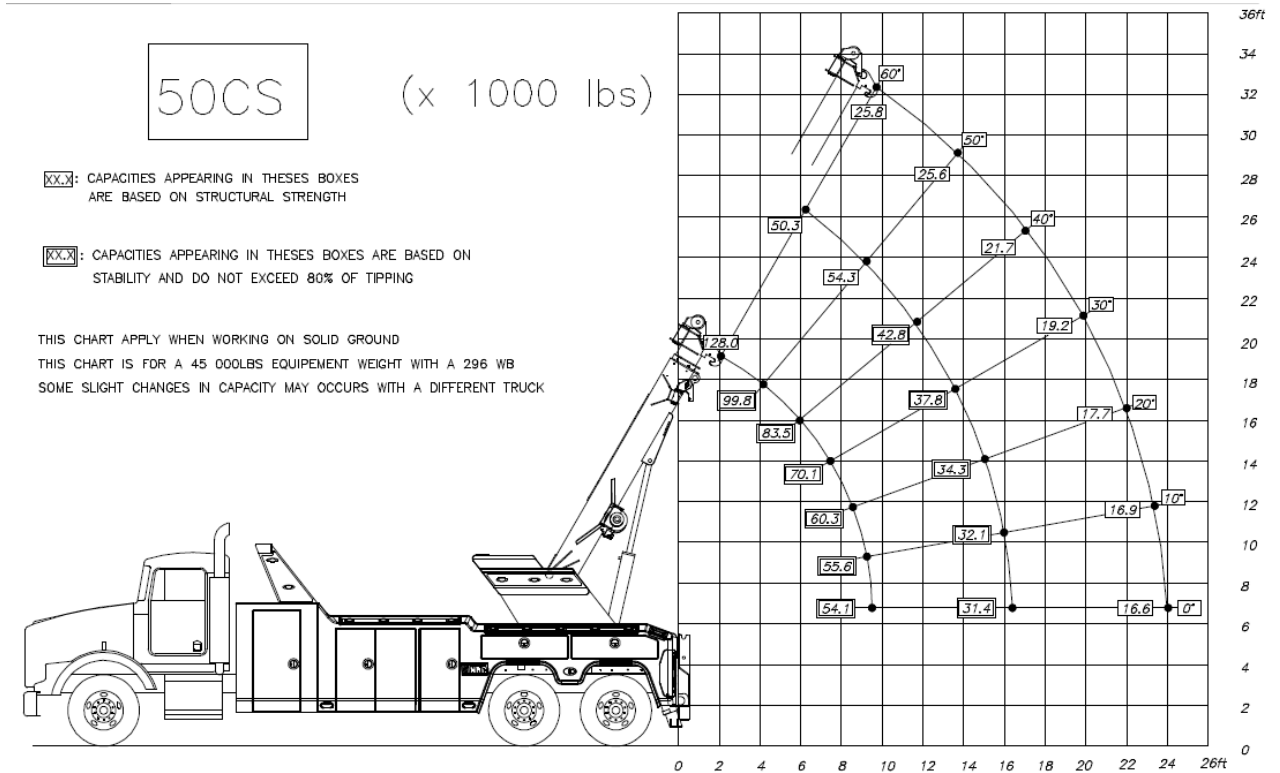
4.3 USABLE BOOM CAPACITY

Sliding the mast all the way aft of the wrecker body allows the operator to work with the boom fully retracted and perform heavy lifts without the need of an oversized, scale-busting wrecker unit. NRC wreckers are design so they can actually lift what they are rated for. The rating of an NRC wrecker is not just based on boom structural rating as it is usually the case in industry, but actual field tests.

CONVENTIONAL
NON SLIDING WRECKER
3 SECTIONS@ 30 DEGREES

NRC INDUSTRIES
SLIDER / SLIDING ROTATOR
2 SECTIONS@ 45 DEGREES

To learn more about NRC towing and recovery unit capacities, consult the lifting charts provided with every piece of equipment. For each slider units, there is one diagram that shows lifting capacity behind truck.



- Horizontal axis shows distance from the rear tailboard;
- Vertical axis shows vertical clearance under hook;
- Inner arc shows capacities with boom fully retracted;
- Intermediate arc shows capacities when second stage extended;
- Outer arc shows capacity for boom fully extended (2nd and 3rd stage out);
- Boxed capacities are based on structural limits;
- Double boxed capacities are tipping limits.



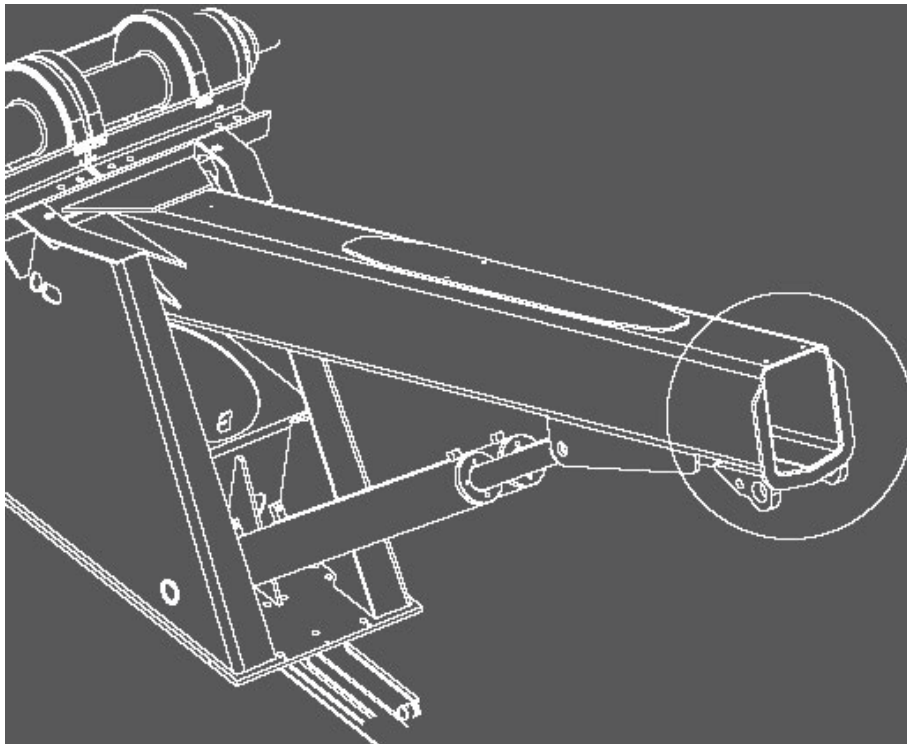
4.4 OPERATIONAL EFFICIENCY

The benefits of the sliding system are numerous and lead to incredible operational efficiency. Thanks to NRC's sliding technology, users:

- can perform heavier lifts with smaller trucks;
- work more smoothly and quickly, using the additional axis;
- tow more with less load on rear axle, because of a lighter body and a more forward center of gravity compared to a conventional wrecker.

4.5 V-BOOM

NRC booms are made from high tensile steel. The V shape provides better boom alignment and better stress distribution, reducing tendency to buckle and thus increasing strength.





4.6 FULLY PROPORTIONAL CONTROLS (OPTIONAL)

Fully proportional controls give the operator an extra edge when rolling, lifting and handling such heavy loads as a loaded truck. This option is a must for safe and smooth recovery operations.

All NRC Composite Sliders can be ordered with fully proportional electro-hydraulic panel mount joystick controls and a fully proportional Hetronic wireless remote control.

4.7 AUXILIARY WINCHES UNDER BOOM

Auxiliary winches can be used for many different purposes. It can be a mid-air roll, a super heavy rollover or it can just be used as a drag winch. There are many ways you can use them and we suggest you learn some rigging techniques.

The first to propose auxiliary winches to its customers, NRC chose the main stage as the perfect location for them. This way, changing the boom angle won't change the cable length and will simply rise or lower the load hung to the cables.

Auxiliary winches are available on 40CS, 50CS and 60CS.

4.8 COMPOSITE BODIES

The composite bodies are by far the best selling units since NRC introduced their first 40CS and 50CS. Starting from scratch in 2005, NRC has now acquired a strong knowledge of the composite design and manufacturing process and is now offering high end, durable equipment.



The Composite Sliders (30CS, 40CS, 50CS, 60CS) feature a strong steel center body caught between two composite side packs, one on each side. These side packs are 100% composite with aluminum reinforcement inserts and are bolted to a rigid steel center core.



4.9 ERGONOMIC AND USER FRIENDLY



Aside improving the look and the durability of the sliders, the composite bodies are designed so they are easier to use and more ergonomic:

- Hydraulic controls are coated in a single and ergonomic dashboard ;
- Work lights are controlled from the rear instead of from the cab;
- Wide opening doors for easy access ;
- Toolbox dome lights;
- Wear resistant toolbox coating;
- Adjustable aluminium shelving;



■

5 SLIDING ROTATORS

5.1 BASIC PRINCIPLES

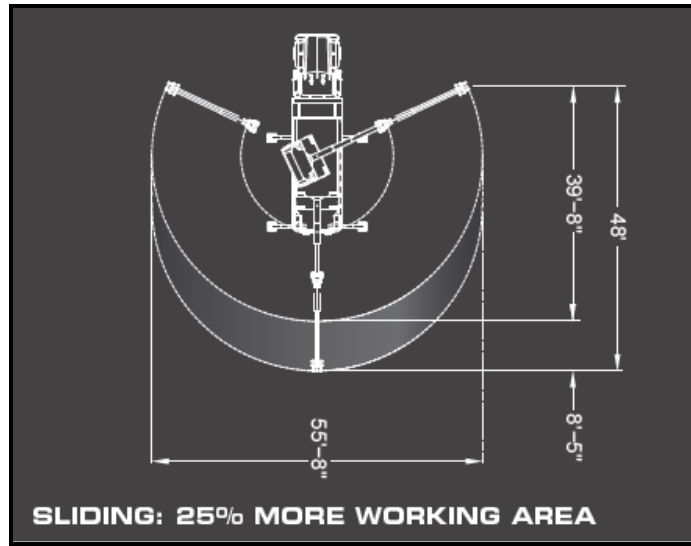
The same basic principles of the sliders series also apply to the sliding rotator series. It increases reach and allows for full usage of the boom capacity.

5.2 WORKING AREA

The advantage of having more reach is even more obvious with a rotator. Because of the ability to rotate, it turns out to increase the working area instead of just increase a linear movement. More than just a rotator, the NRC Sliding Rotator system gives the operator the opportunity to move the load in almost any direction and in a smooth and efficient way.

Model	Additional reach (slide)
40/50CSR	100"
50/65CSR	127"
60/80SR	180"

With NRC's Sliding Rotator technology and low profile outriggers, the operator can lift a load on the side, slide it backward, turn around the back end and lay it down on the other side without ever changing the hook height, boom angle or extension.



You can get sliding rotator lifting capacities from the lifting charts below, two for each model. One shows capacity behind the truck and the other shows capacity beside the truck.

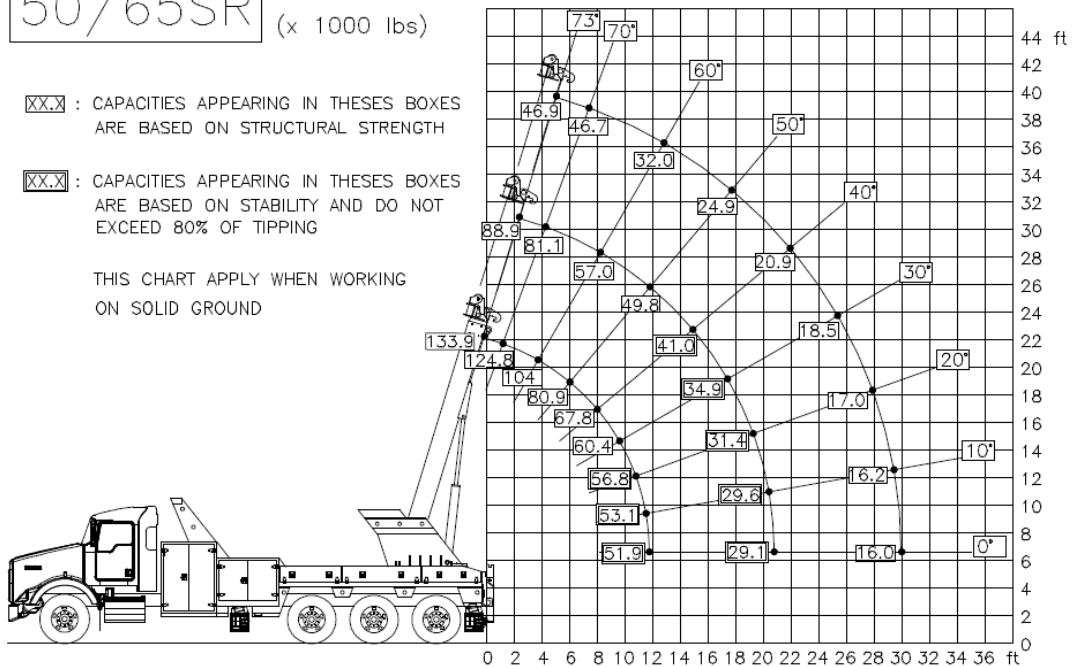
LIFTING CAPACITY BEHIND TRUCK

50/65SR (x 1000 lbs)

XX.X : CAPACITIES APPEARING IN THESE BOXES ARE BASED ON STRUCTURAL STRENGTH

XX.X : CAPACITIES APPEARING IN THESE BOXES ARE BASED ON STABILITY AND DO NOT EXCEED 80% OF TIPPING

THIS CHART APPLY WHEN WORKING ON SOLID GROUND





LIFTING CAPACITY BESIDE TRUCK Over front
 outrigger

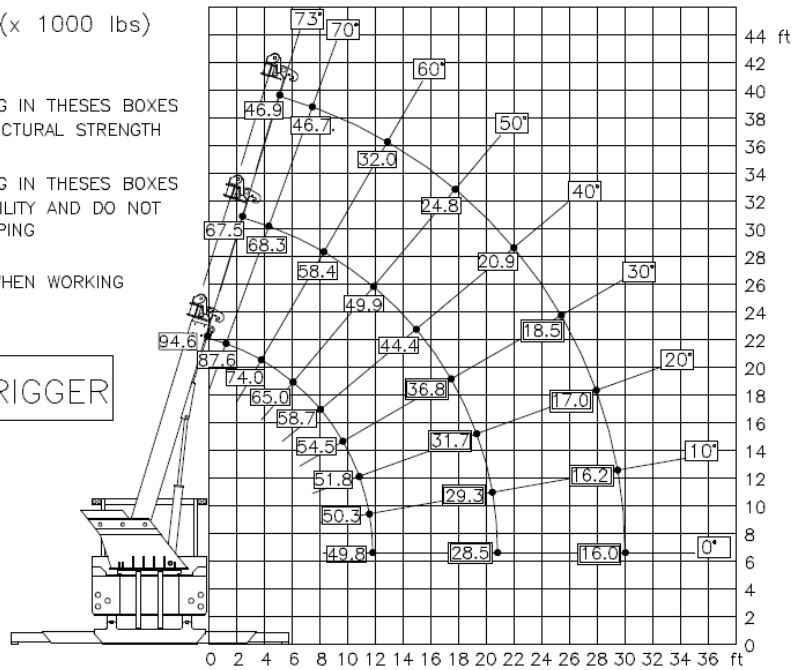
50/65SR (x 1000 lbs)

XX.X : CAPACITIES APPEARING IN THESE BOXES ARE BASED ON STRUCTURAL STRENGTH

XX.X : CAPACITIES APPEARING IN THESE BOXES ARE BASED ON STABILITY AND DO NOT EXCEED 80% OF TIPPING

THIS CHART APPLY WHEN WORKING ON SOLID GROUND

3 STAGE OUTRIGGER



5.3 DURABLE AND RUST FREE TECHNOLOGY

Based on our experience designing the Composite Slider and with the requirement of keeping all the strength and stiffness of the Sliding Rotator with the steel body, we designed a new generation of composite bodies.

The Composite Sliding Rotators (40/50CSR and 50/65CSR) feature composite panels bonded over the proven high tensile steel core that made the Sliding Rotators the best piece of equipment on the market. It was developed with Prevost Coaches (Div. of Volvo) expertise, experience and previous testing, using Loctite technology.



5.4 AUXILIARY WINCHES UNDER BOOM

Auxiliary winches can be used for many different purposes. It can be a mid-air roll, a super heavy rollover or it can just be used as a drag winch. There are many ways you can use them and we suggest you learn some rigging techniques.



The first to propose auxiliary winches to its customers, NRC chose the main stage of the boom as the perfect location for them. This way, changing the boom angle will not change the cable length and will simply rise or lower the load hanging off the cables.

5.5 FULLY PROPORTIONAL CONTROLS (OPTIONAL)

Fully proportional controls give the operator an extra edge when rolling, lifting and handling such heavy loads as a loaded truck. This option is a must for safe and smooth recovery operations.



All NRC Sliding Rotators and sliders can be ordered with:

- Fully proportional electro-hydraulic panel mount joystick controls;



- Proportional wireless remote control.



These optional features come together and allow for a smooth and precise operation.



5.6 LOW PROFILE OUTRIGGERS

NRC was so convinced that a rotator should feature low profile, bridge type outriggers that even the first NRC Sliding Rotator was design this way. Today, even if other manufacturers are now imitating this kind of cross-bar stabilizer, only NRC Sliding Rotators offer this as a standard.



The main advantages of the NRC outriggers are the following:

- The outrigger main (center) sections link the two sides of the wrecker body, distributing loads evenly and reducing torsion stress in the main body.
- Low profile (under frame) outriggers allow the operator to work closer to the wrecker side, thus increase lifting capabilities.
- They also lower the center of gravity of the wrecker, thus improving on-road stability.





5.7 AUTO LEVELLING TECHNOLOGY

All NRC Sliding Rotators are equipped a front and rear level sensor and an electronic control module. These systems are used to monitor and adjust the side-to-side level and to correct any torsion induced in the wrecker body. This is useful for initial truck setup.

5.8 RIGGING BOX

The New Rigging Box is designed for the 40/50SR, 40/50CSR, 50/65SR, 50/65CSR and now the 60/80SR.



This new generation of the rigging box features more room and improved versatility. It can be easily customised, thanks to modular dividers, supports and holders. A tarp fixed on a center bar and clipped on each side protects the contents from bad weather and provides easier access. The new box now has 4 lifting points instead of 2 and an integrated locking mechanism to ensure quick, easy and safe tie down on the sliding rails.



It now has a reinforced bottom, so that it has more space inside for storage. Extra space has also been provided to store the larger size snatch blocks.

On the outside there are two open slots (item #10) to hold the NRC spreader bars, and space has been provided for customers advertising/logos.





6 NRC UNDERLIFT

6.1 DETACHABLE UNDER REACH

The NRC detachable under reach was first introduced on the market in 1984. In fact, NRC was the first North American towing equipment manufacturer to design such a device, after Bro, a European manufacturer, first attempted to commercialize their system in America. NRC succeeded where Bro failed and many NRC detachable under reaches have been sold since then.

- The NRC detachable under reach is lighter than an independent under reach because it doesn't need additional lift and tilt cylinders.
- Detachable from the boom in seconds, it also allows for additional clearance under the boom head hooks.
- Moreover, with a detachable under reach, there is no dead weight hung off the boom while performing recoveries, unlike an integrated under reach.
- It can also be entirely removed from the wrecker body and put aside, allowing the operator to work closer to the tailboard and perform extreme recoveries.



6.2 UNDER REACH FIT GUIDE

NRC UNDERLIFT RATINGS AND REACH - ALL MODELS

Description		Light duty Carrier	Medium Duty Carrier	Heavy Duty Carrier	Medium Duty Axle-Lift	Super Medium Duty Axle-Lift	Heavy Duty Axle-lift	Super Heavy Duty Axle-lift	4 Stages Short Axle-lift	4 Stages Long Axle-lift
Tow Rating										
	lbs	9 000	15 000	50 000	50 000	80 000	80 000	90 000	80 000	80 000
Lift Rating										
extended	lbs	1 500	3 000	10 000	7 000	12 000	15 000	20 000	23 000	20 000
retracted	lbs	5 000	8 000	20 000	15 000	25 000	35 000	50 000	70 000	60 000
Reach										
extended	in	n/a	n/a	n/a	98	108	112	132	147	176
retracted	in	n/a	n/a	n/a	64	70	73	82	72	86
extension	in	54	54	54	34	38	39	50	75	108
Equipment										
10TB		X								
20TB			X							
40TB				X						
9515					X	X				
9620					X	X				
9025						X	X	X	X	X
9035							X	X	X	X
9320LS						X	X	X	X	X
3001S							X	X	X	X
9735S							X	X	X	X
9945S							X	X	X	X
9260SS							X	X	X	X
30CS							X	X	X	X
40CS							X	X	X	X
50CS							X	X	X	X
40/50SR-CSR							X	X	X	X
50/65SR-CSR							X	X	X	X
60/80SR							X	X	X	X
QSS							X	X	X	X
QSE							X	X	X	X
QSE							X	X	X	X



7 QUICKSWAP AND TAG AXLE

7.1 TAG AXLE

The tag axle is an additional lift axle you can add to any NRC wrecker body. It simply slides in the standard underlift rails and features another set of rails you can slide the underlift in. NRC tag axle has the following advantages:

- It features a set of brakes, providing additional braking power and improving braking force distribution;
- Its pneumatic suspension provides additional towing (lift) capacity and can be lifted off the ground to save tires and fuel, when not needed;
- It greatly reduces load overhang, improving drivability and steering capabilities.





7.2 TAG AXLE TECHNICAL DATA

Tag Axle Rating	17,000lbs
Tag Axle Weight	2,200lbs

7.3 TAG AXLE LOAD CHART

Tag axle load chart

Air pressure (psi)	Load (lbs)
5	2600
10	3400
15	4525
20	5800
25	7050
30	8200
35	9500
40	10700
45	11950
50	13250
55	14575
60	15950
65	17300
70	18650
75	20045
80	21250

This is a guideline only



7.4 ROADRUNNER

The NRC RoadRunner is especially designed to be affordable, profitable, efficient and trouble free. With its structural components based on the proven NRC QuickSwap series, the RoadRunner offers the same lift power, incredible tilt angle and an unbeatable tow bar height to make every job as easy as it should be.

Combined with optional 20 000 lb or 25 000 lb winch and hydraulic stiff legs, it becomes a versatile unit you can use as a support recovery vehicle.





8 ROLLBACKS

8.1 LINES OF PRODUCTS

8.1.1 10 TB

NRC offers a wide range of high end, top quality rollbacks, from 5 ton capacity up to 20 ton, with a choice of 26 lengths ranging from 18 feet to 30 feet by 6in. increments.



The **10TB** deck is 5 ton capacity (10,000lbs), can be ordered either aluminium or steel and in lengths from 18ft to 21ft by 6” increments. It is mainly designed for light duty towing and auto clubs. In general, it best matches trucks with GVWR under 26,000lbs.





8.1.2 20 TB

The **20TB** is the most versatile rollback in the NRC range and is designed to be as profitable doing towing and recovery work than transportation and delivery. With its 10 ton deck capacity, its 8,000lbs lbs wheel lift capacity and offered in lengths ranging from 18ft to 30ft, again by 6” increments, it is the most customizable rollback on the market. It mainly fits trucks with GVWR ranging from 26,000lbs to 35,000lbs.



8.1.3 30 TB

New for 2011, the **30TB** was developed in order to best match tandem axle trucks with GVWR ranging from 52,000lbs to 58,000lbs. It features a low profile design: top of deck rises only 8 ½” above truck frame, making this carrier one of the lowest on the market. It is available in lengths from 24ft to 28ft and has a medium duty under lift.



8.1.4 40 TB

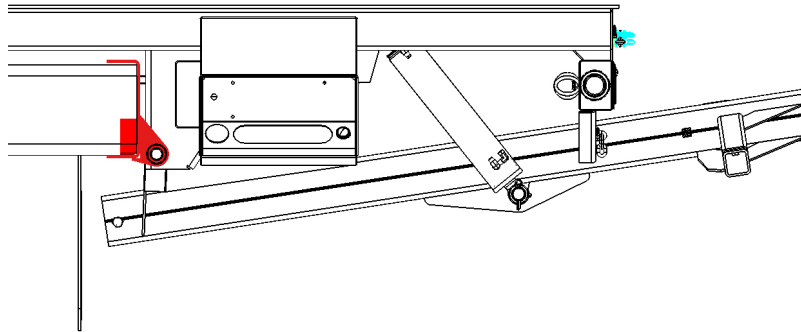
The **40TB** is the strongest rollback on the market and is best suited for transportation and machinery hauling. Its 20 ton deck capacity allows for a great payload and its 20,000lbs tow bar provides impressive towing capabilities. It can be ordered in lengths from 24ft to 30ft and can be customized to suit almost any customer needs. It is designed to match tandem axle trucks with GVWR from 54,000lbs to 66,000lbs as well as tri-axle trucks.





8.2 LOW PROFILE HINGE

NRC designs its products so they are the best on the market and provides customers with the best value, unmatched performances and long term reliability. The NRC hinge mechanism allows for a lower deck height, powerful deck inclination, good wear resistance, easy maintenance and unique side pulling capability off the rear.



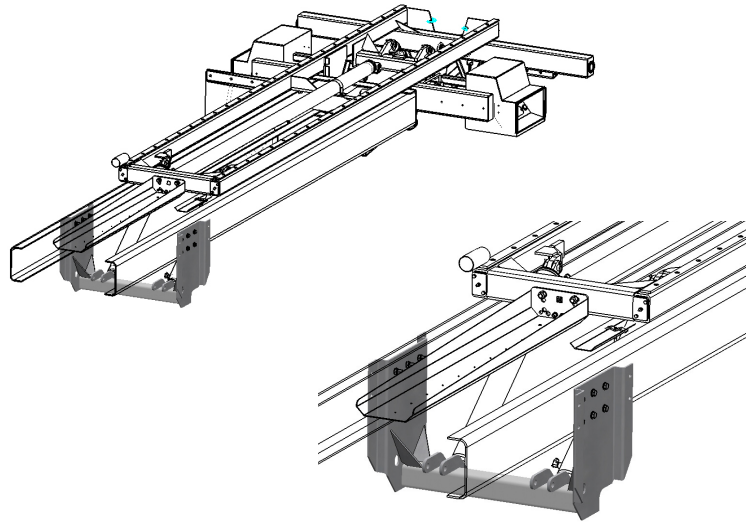
8.3 FRONT LOCK AND SUB FRAME GUIDES

NRC's sturdy front lock prevents the deck from moving upward or sideways when slid forward. When properly locked, the deck can bear incredible lateral forces. This, combined with a strong hinge, provides all of NRC's rollbacks with their legendary side pulling capabilities.



8.4 FRONT CROSS MEMBER

NRC rollbacks are stable and stiff, even when tilted down, thanks to a sturdy front cross member. Unlike other brands, NRC's tilt cylinders are set inside the truck frame and deck's sub-frame and are linked together, thus improving rigidity and lowering the center of gravity.



8.5 DECK TYPES

Steel decks can be ordered with either fixed side rails or removable rails:

- Fixed side rails provide a nice looking, sturdy and permanent fence that will help keep a damaged car from running out of the deck when it has been loaded on the carrier. It is also useful to prevent a pallet from skidding when loaded with a container. At time of order, customers must specify side rail height above the deck: Must be between $\frac{3}{4}$ " and 5".



-
- Removable rails are the best of both worlds. When the strong 2” rails are locked in place, they provide a sturdy fence to help load a car with locked up wheels or front end damage. When removed, they turn the carrier into a flat bed, easy to load with a forklift and perfect for transportation work.

8.6 CAB PROTECTOR

The NRC “C” type combined chain rack/light pylon is the most popular model and is designed to:

- Protect the driver in case of an accident, thanks to its strong 4” x 4” pillars;
- Provide more storage for chains and binders
- Support a wide range of light bars, up to 96” wide;
- Feature the best in class design and look.

The NRC “A” model light pylon is no longer available.

8.7 LIGHT DUTY WHEEL-LIFT SYSTEM

10TBs and 20TBs now offer an easier to use, lower profile wheel lift system. The pivot type arms are design so they are low enough to clear most today’s vehicles front bumper and wheel hulls. The optimized geometry of the wheel-lift system also provides more clearance under the towed vehicle, thus minimizing the risk of oil pan damage.

For ease of access, wheel attachments (also called “spoons” or “baskets”) are stored right on the wheel lift system, thus eliminating the need to carry them from the carrier.

8.8 MEDIUM DUTY TOW BAR (30TB)

30TB series carrier can be equipped with the Medium Duty 4” x 4” tow bar. It is designed to lift 6500lbs when fully retracted and has a tow rating of 35,000lbs.



8.9 HEAVY-DUTY TOW BAR (40TB)

NRC 40TB carriers are the only rollbacks on the market to offer a heavy duty tow bar. It comes standard and is designed to lift up to 20,000lbs retracted and 10,000lbs extended to 54", and has a tow rating of 50,000lbs. It features a 5" x 5" tow bar, using the same type of attachments used on heavy duty wreckers.

8.10 RECOVERY SPADES

Either standard, straight recovery spades or side winch spades can be installed on the tow bar to provide a strong grip to perform recoveries, either on asphalt, sand, gravel, mud, ice or snow. They can be easily turned upside down or completely removed so they do not cause any damage to driveways when loading a car on the rollback. Combined with the NRC roller guide, they are the most lightweight and cost effective recovery accessories for rollbacks.

8.11 ROLLBACK RATING SUMMARY

NRC carrier	Load Rating (kg)	Load Rating (kg)	Lift rating (extended) (kg)
	<i>Load Rating (lb)</i>	<i>Load Rating (lb)</i>	<i>Lift rating (extended) (lb)</i>
10 TB	4 500	4 100	800
	<i>10 000</i>	<i>9 000</i>	<i>1 800</i>
20 TB	9 100	6 800	1 400
	<i>20 000</i>	<i>15 000</i>	<i>3 000</i>
20 TB (2th deck)	2 300	NA	NA
	<i>5 000</i>	<i>NA</i>	<i>NA</i>
30 TB	13 600	15 900	2 900
	<i>30 000</i>	<i>35 000</i>	<i>6 500</i>
40 TB	18 100	22 700	4 500
	<i>40 000</i>	<i>50 000</i>	<i>10 000</i>

8.12 SIDE PULLING CAPABILITY

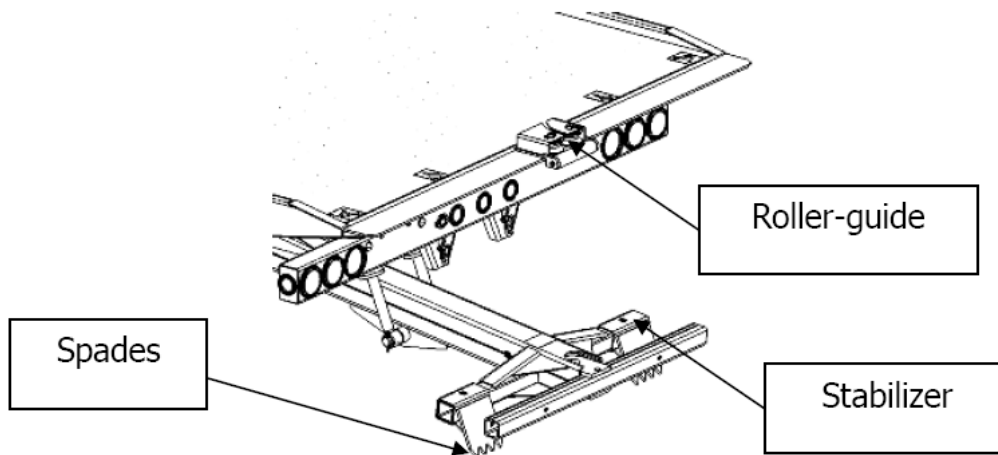


Besides being the strongest and most reliable rollbacks on the market, NRC carriers are the only ones to offer real side pulling capability without the addition of heavy and costly accessories and with no sacrifice.

The strong front lock and sturdy hinge design make the bed capable of withstanding the torsion stress of a side pull. The standard bed winch, a recovery roller guide and a set of recovery spades are the only things needed to perform many kinds of recoveries.

Main advantages of NRC side pulling system:

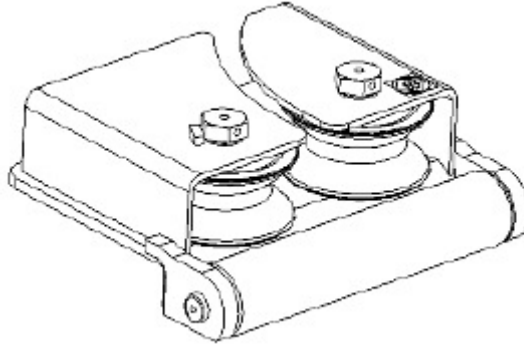
- Cost effective: Only need a recovery roller and recovery spades, not thousands of dollars worth of equipment.



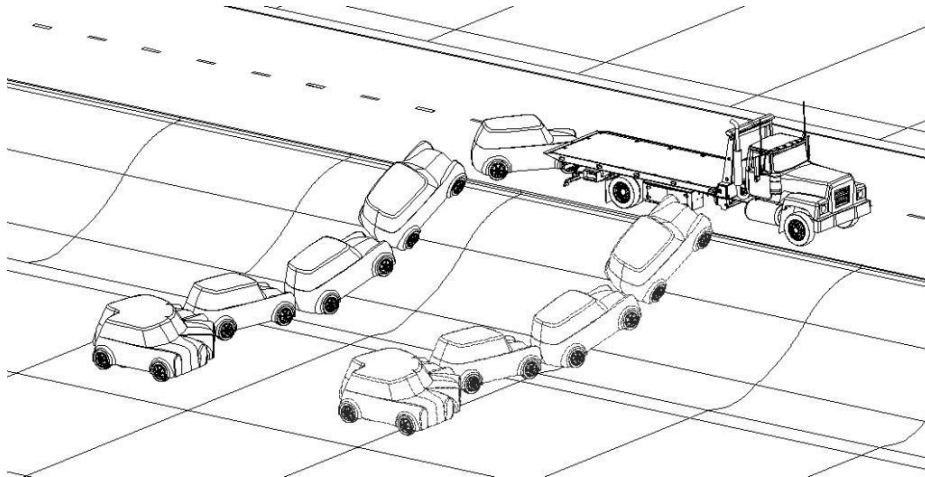
- Lightweight: No heavy structure that adds weight on the front axle and sacrifice payload (compared to competitor's Side Pullers)



- Compact: No sacrifice on truck length versus bed length. All you need fits in a toolbox.



- Efficient: Operator can pull the casualty at the rear of the carrier instead of on its side. It means you can pull the vehicle out off the ditch without having to block two lanes.





8.13 APITONG WOOD DECK

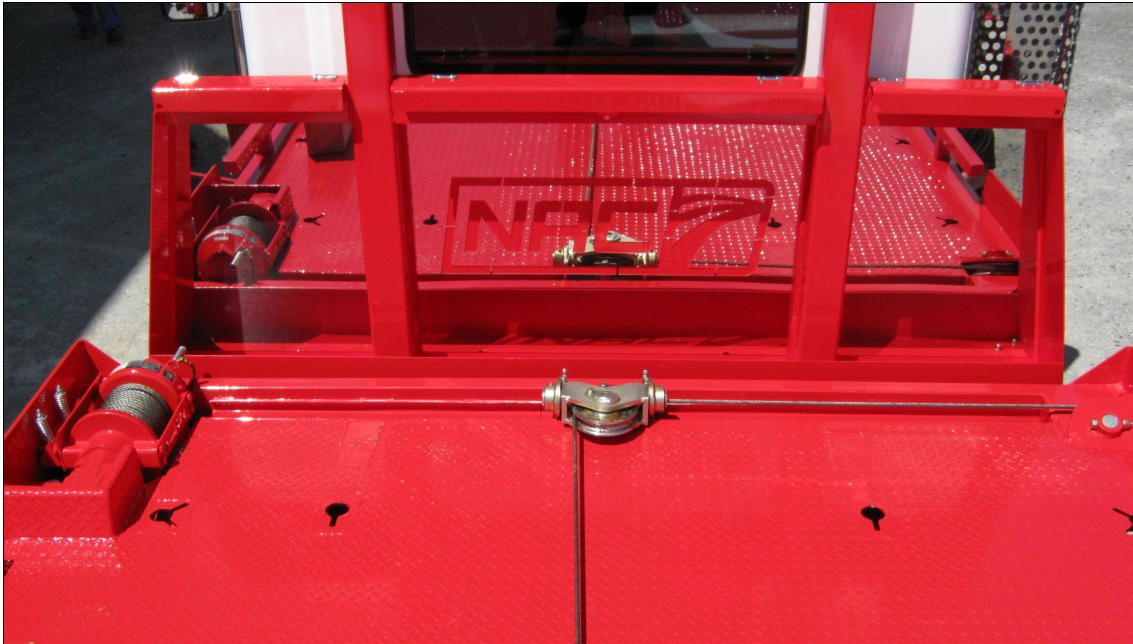
New for 2011-2012, NRC introduces redesigned wood deck flooring, available on 20TB and 40TB. The new design features two 26.5" wide stripes of 1 1/4" thick, grooved **apitong** wood. This new wood type, especially designed for transportation applications, has better moisture resistance and will not warp.

- Twice the strength of solid White Oak.
- Tongue and groove design to minimize twisting.
- Improved weather resistance.

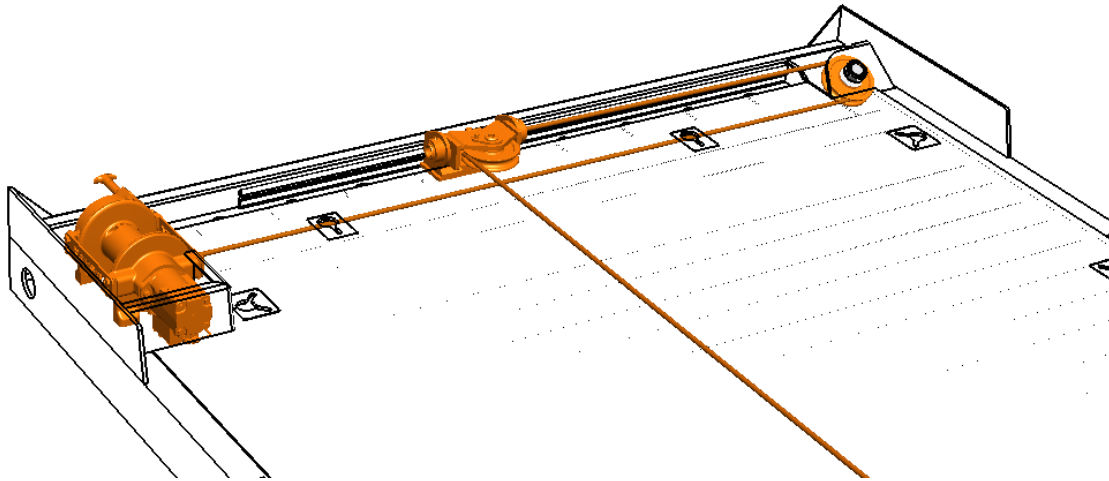




8.14 PULLEY GLIDE SYSTEM



First introduced on early summer 2011, 20TB and 30TB deck are now available with side mounted winch and sliding sheave head. The system is compact and designed to keep an even spool of the winch cable. The center pulley has a 5 1/2 foot side to side stroke which can be locked in 9 different positions using a spring loaded locking pin. This system is available with an 8000, 10000 or 12000 lbs side-mounted Ramsey winch and the winch is recessed to spool beneath the deck.



This new design provides the following advantages:

- Proper winding and lay-up of winch cable;
- Super low pull for vehicles with very little ground clearance;
- Nine (9) cable position (left-right) to compensate for offset winch hook-ups (eye bolts) and side-by-side loads.
- Simple, robust design and very easy to use.
- Recessed side-mounted winch clears up the front center of deck.

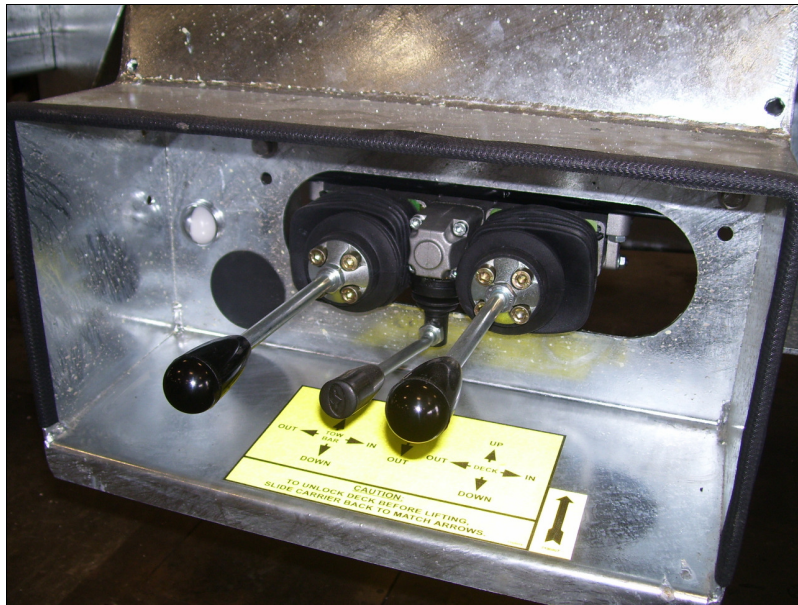
8.15 DUAL JOYSTICK CONTROLS

Now available as an option on ALL NRC rollback models, we expect the new joystick controls to be very popular. They will provide easier operation of the rollback deck and wheel lift by combining two movements on one lever.

- Deck tilt and slide are combined in one lever;
- Wheel lift up/down and extension in another lever;
- Winch control remains on a separate, simple lever.



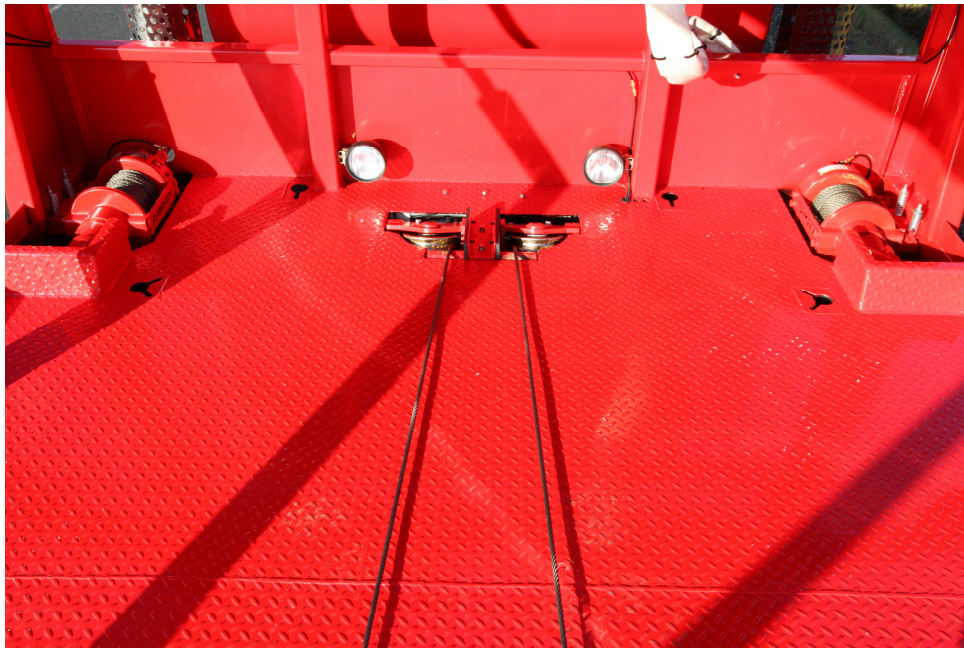
These new controls provide customers with a more natural experience and they are identical on both sides. Thus, operators can now work more efficiently from either side of the deck, increasing safety.





8.16 NEW DUAL WINCH SYSTEM

New Dual Winch System designed for winching 2 vehicles independently on longer model carriers. Both winches are recessed and mounted on either side of the deck. The winch cables run beneath the deck to an independent center pulley on a pivot.



This new dual winch setup provides customers with:

- The ability to winch 2 vehicles independently.
- An improved front center deck clearance.
- 2 center pulleys on separate pivots and rollers.



8.17 GALVANIZED SUB-FRAME

NRC carriers now come with a galvanized sub-frame for superior corrosion resistance. The sub-frames undergo a hot-dip galvanizing process which creates a metallurgical bond between steel and molten zinc. It brings the product to a higher level of durability and has the following advantages:

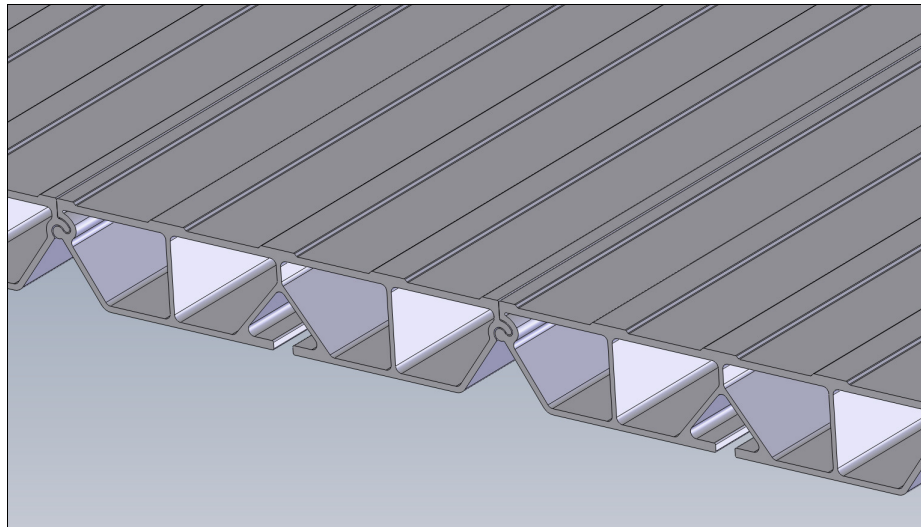
- Optimum corrosion resistance.
- Great impact and abrasion resistance.
- Galvanizing offers sacrificial protection: Should the hot-dip galvanized coating be damaged or scratched, the steel will find protection against corrosion thanks to the surrounding zinc that has higher electrochemical properties than those of steel.



8.18 NEW EXTRUDED ALUMINUM DECK

2012 will bring a new line of high end extruded 10TB aluminum decks. The deck extrusions interlock with each other thus transferring rigidity to one another and reducing the amount of welding required.

- Lighter weight than steel decks (over 1000 lbs depending on deck size).
- Fewer welds mean lower probability of cracking.
- Enclosed structure for optimum strength.
- 'T' slots built in the profile to anchor accessories underneath deck.
- Anti-slip pattern on top side of deck.





8.19 IMPROVED DOUBLE DECK CARRIER

The year 2011 also brings a new double-deck rollback design. This improved carrier features an open center concept with recessed wheel pockets to optimize overall load height. The winch is now positioned underneath the deck to allow more clearance with the vehicle on deck.



This new double deck carrier design provides customers with:

- Reduced overall load height;
- Open center for easy access to tie down vehicle.



9 TECHNICAL REFERENCES



10 CHARTS