



Vehicle Tow Weight Distribution System with Sway Control

User Manual

[Revision 2.0 June 2019]

READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description and packaging.

Safety

Safety messages are designed to alert you to possible dangers or hazards that could cause death, injury or equipment or property damage if not understood or followed. Safety messages have the following symbols:

 <p>You WILL be KILLED or SERIOUSLY INJURED if you do not follow instructions.</p>	 <p>You CAN be KILLED or SERIOUSLY INJURED if you do not follow instructions.</p>	 <p>You CAN be INJURED if you do not follow instructions or equipment damage may occur.</p>
<p>It is vital that you read and understand this user manual before using the product, including safety warnings, and any assembly and operating instructions. Keep the manual for future reference.</p> <p>Safety precautions and recommendations detailed here must be fully understood and followed to reduce the risk of injury, fire, explosion, electrical hazard, and/or property damage.</p>	<p>General Personal Safety</p> <ul style="list-style-type: none"> Wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect from eye and ear injury, poisoning, burns, cutting and crush injuries. Protective equipment such as safety goggles, respirators, non-slip safety footwear, hard hat, hearing protection etc should be used for appropriate equipment / conditions. Other people nearby should also wear appropriate personal protective equipment. Do not wear loose clothing or jewellery, which can be caught in moving parts. Keep hair and clothing away from the equipment. Stay alert and use common sense when operating the equipment. Do not over-reach. Always maintain secure footing and balance. Do not use the equipment if tired or under the influence of drugs, alcohol or medication. This equipment is not intended for use by persons with reduced physical, sensory or mental capabilities. 	<p>General Equipment Use and Care</p> <ul style="list-style-type: none"> The equipment is designed for domestic use only. Handle the equipment safely and carefully. Before use, inspect the equipment for misalignment or binding of moving parts, loose components, damage or any other condition that may affect its operation. If damaged, have the equipment repaired by an authorised service centre or technician before use. Prevent unintentional starting of the equipment - ensure equipment and power switches are in the OFF position before connecting or moving equipment. Do not carry equipment with hands or fingers touching any controls. Remove any tools or other items that are not a part of the equipment from it before starting or switching on. Do not force the equipment. Use the correct equipment for your application. Equipment will perform better and be safer when used within its design and usage parameters. Use the equipment and accessories etc. in accordance with these instructions, considering working conditions and the work to be performed. Using the equipment for operations different from those intended could result in hazardous situations. Always keep equipment components (engines, hoses, handles, controls, frames, housings, guards etc) and accessories (cutting tools, nozzles, bits etc) properly maintained. Keep the equipment clean and, where applicable, properly lubricated. Store the equipment out of reach of children or untrained persons. To avoid burns or fire hazards, let the equipment cool completely before transporting or storing. Never place or store the equipment near flammable materials, combustible gases or liquids etc.
<p>Safety information presented here is generic in nature – some advice may not be applicable to every product. The term "equipment" refers to the product, be it electrical mains powered, battery powered or combustion engine powered.</p>	<p>General Fuel Safety</p> <ul style="list-style-type: none"> Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources. Do not spill fuel. If you spill fuel, wipe it off the equipment immediately – if fuel gets on your clothing, change clothing. Do NOT smoke near fuel or when refuelling. Always shut off the engine before refuelling. Do NOT refuel a hot engine. Open the fuel cap carefully to allow any pressure build-up in the tank to release slowly. Always refuel in well ventilated areas. Always check for fuel leakage. If fuel leakage is found, do not start or run the engine until all leaks are fixed. 	<p>General Work Area Safety</p> <ul style="list-style-type: none"> Work areas should be clean and well lit. Do not operate the equipment if bystanders, animals etc are within operating range of the equipment or the general work area. If devices are provided for connecting dust extraction / collection facilities, ensure these are connected and used properly. Dust collection can reduce dust-related hazards.
<p>General Carbon-Monoxide Safety</p> <ul style="list-style-type: none"> Using a combustion engine indoors CAN KILL IN MINUTES. Engine exhaust contains carbon-monoxide – a poison you cannot smell or see. Use combustion engines OUTSIDE only, and far away from windows, doors and vents. 	<p>General Carbon-Monoxide Safety</p> <ul style="list-style-type: none"> Using a combustion engine indoors CAN KILL IN MINUTES. Engine exhaust contains carbon-monoxide – a poison you cannot smell or see. Use combustion engines OUTSIDE only, and far away from windows, doors and vents. 	<p>General Carbon-Monoxide Safety</p> <ul style="list-style-type: none"> The equipment is not weather-proof, and should not be stored in direct sunlight, at high ambient temperatures or locations that are damp or humid. Do not clean equipment with solvents, flammable liquids or harsh abrasives. For specific equipment safety use and care, see Equipment Safety.

General Electrical Safety	General Electrical Safety	General Service Information
<ul style="list-style-type: none"> Inspect electrical equipment, extension cords, power bars, and electrical fittings for damage or wear before each use. Repair or replace damaged equipment immediately. Ensure all power sources conform to equipment voltage requirements and are disconnected before connecting or disconnecting equipment. When wiring electrically powered equipment, follow all electrical and safety codes. Wherever possible, use a residual current device (RCD). High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal. 	<ul style="list-style-type: none"> Electrically grounded equipment must have an approved cord and plug and be connected to a grounded electrical outlet. Do NOT bypass the ON/OFF switch and operate equipment by connecting and disconnecting the electrical cord. Do NOT use equipment that has exposed wiring, damaged switches, covers or guards. Do NOT use electrical equipment in wet conditions or in damp locations. Do NOT use electrical cords to lift, move or carry equipment. Do NOT coil or knot electrical cords, and ensure electrical cords are not trip hazards. 	<ul style="list-style-type: none"> The equipment must be serviced or repaired at authorised service centres by qualified personnel only. Replacement parts must be original equipment manufacturer (OEM) to ensure equipment safety is maintained. Do NOT attempt any maintenance or repair work not described in this manual. After use, the equipment and components may still be hot – allow the equipment to cool and disconnect spark plugs and/or electrical power sources and/or batteries from it before adjusting, changing accessories or performing repair or maintenance. Do NOT adjust while the equipment is running. Perform service-related activities in suitable conditions, such as a workshop. Replace worn, damaged or missing warning/safety labels immediately.

Other Safety Reminders

SURGE BRAKES usually require a small amount of fore-aft movement for their actuating mechanisms to function. To avoid restricting movement, it may be necessary to increase the number of chain links between the Quick Hook-Ups and the Spring Bars.

TIGHTEN BALL MOUNT BOLTS AND NUTS

- Tighten Bolts and Nuts to 260 lb/ft.
- Tighten Angle Set Bolt to 50 lb/ft.

CHECK ALL CONNECTIONS BEFORE TOWING

- Check the following: Hitch Pin and Spring Clip securing Shank to receiver, Ball Mount to shank fastener Bolts and Nuts, ball nut, coupler latch, Quick Hook-Up Set Screws, safety chains, lights and turn signals, and braking system, including breakaway switch.

LUBRICATION

- HITCH BALL AND SPRING BARS SHOULD BE LUBRICATED EACH TOWING DAY. FAILURE TO DO SO WILL RESULT IN EXCESSIVE POCKET AND SPRING BAR WEAR.** Use a heavy oil or grease.
- Excessive oil, dirt, and grit should be wiped out of pockets whenever trailer is uncoupled.
- Clean hitch ball and coupler socket. Coat ball lightly with grease.

WARNING!

FAILURE TO HEED INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH, VEHICULAR ACCIDENTS, AND / OR PROPERTY DAMAGE.

COUPLED BALL HEIGHT SHOULD NEVER BE GREATER THAN UNCOUPLED BALL HEIGHT.

Front wheel overload and loss of rear wheel traction can result. This can lead to unstable handling, reduced braking ability, and a tendency to "jack-knife" when turning.

USE EXTREME CAUTION WHEN BACKING UP AND TURNING. DO NOT ALLOW TOW VEHICLE AND TRAILER TO MANEUVER INTO A "JACKKNIFE" POSITION.

Components of the hitch and sway control, if applicable, may be forced into damaging contact. If a "jack-knife" manoeuvre has occurred, examine all towing system components for damage or loosening immediately. Repair or replace any damaged components before resuming towing.

DO NOT TOW MULTIPLE TRAILERS.

Towing multiple trailers may cause severe instability, loss of control and structural failure.

DO NOT ATTEMPT TO HOOK-UP OR TOW WITH A FRONT WHEEL DRIVE VEHICLE WITH THE REAR WHEELS REMOVED.

This will cause severe instability, loss of control and structural failure.

Towing Tips

DRIVING

- Good habits for normal driving need extra emphasis when towing. The additional weight affects acceleration and braking, and extra time should be allowed for passing, stopping and changing lanes. Signal well before a manoeuvre to let other drivers know your intentions. Severe bumps and badly undulating road can damage your towing vehicle, hitch, and trailer, and should be negotiated at a slow, steady speed.

IF ANY PART OF YOUR TOWING SYSTEM "BOTTOMS OUT", OR IF YOU SUSPECT DAMAGE MAY HAVE OCCURRED IN ANY OTHER WAY, PULL OVER AND MAKE A THOROUGH INSPECTION. CORRECT ANY PROBLEMS BEFORE RESUMING TRAVEL.

CHECK YOUR EQUIPMENT

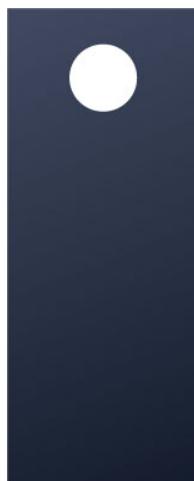
- Periodically check the condition of all your towing equipment and keep it in top condition.

TRAILER LOADING

- Proper trailer loading is important. Heavy items should be placed close to the floor near the trailer axle. The load should be balanced side-to-side and firmly secured to prevent shifting. Tongue weight should be about 10 - 15 percent of the gross trailer weight for most trailers. Too low a percentage of tongue weight often produces a tendency to sway.

SWAY CONTROLS

- A sway control can help minimize the effects of sudden manoeuvres, wind gusts and buffeting caused by other vehicles. Use of a sway control is recommended for trailers with large surface areas, such as travel trailers, and for trailers with low tongue weight percentage. Use the Sway Control Ball plate as needed (appearance is shown below).



Sway Control Ball plate

TYRE INFLATION

- Unless specified otherwise by the towing vehicle or trailer manufacturer, tires should be inflated to their maximum recommended pressure.

TOWING VEHICLE AND TRAILER MANUFACTURERS' RECOMMENDATIONS

- Review the owner's manual for your towing vehicle and trailer for specific recommendations, capacities, and requirements.

PASSENGERS IN TRAILERS

- Trailers should NOT be occupied while being towed, under any circumstances.

TRAILER LIGHT, TURN SIGNALS AND ELECTRIC BRAKES

- Always hook up trailer lights, turn signals, electric brakes and break-away switch connection (if equipped). Even for short trips.

REMOVE BALL MOUNT AND SHANK WHEN NOT TOWING

- Remove Ball Mount and Shank from towing vehicle receiver when not towing. This will prevent contamination of Ball Mount Spring Bar pockets, reduce chance of striking Ball Mount on driveway ramps or other objects, and minimize damage in event of a rear-end collision.

Safety Symbols

The product may have safety warning labels attached to it, explained below. Understand the symbols on your product and their meanings. If any stickers become unreadable, unattached etc., replace them.

 <p>Flammable Material Hazard Flammable liquids, gases or substances etc may present. Avoid ignition sources and open flames. Danger of fire.</p>	 <p>Read User Manual Read and fully understand product safety warnings, operation, procedures etc before using the product.</p>	 <p>Use Hand Protection Wear appropriate hand protection and take due care as the product or use of the product may present hand hazards.</p>	 <p>WARNING EXHAUST FUMES Carbon-Monoxide Hazard Do not use the product in confined areas or without adequate ventilation. Carbon-monoxide poisoning can be fatal.</p>
 <p>Electrocution / Electrical Shock Hazard High voltage or high current electricity may be present or required by the product. Take due care when handling electrical products, cables, plugs and leads. Electrical shock can be fatal.</p>	 <p>Toxic Fumes / Dust Hazard Using the product or by-products from use may produce fumes, smoke or particles that could be harmful if inhaled. Wear appropriate breathing protection and have adequate ventilation.</p>	 <p>Explosive Material Hazard Combustible liquids, gases or substances etc may be present. Avoid ignition sources and open flames. Danger of explosion.</p>	 <p>Cutting / Amputation Hazard The product may have blades, edges or mechanical devices that can cause severe cut injury to fingers, limbs etc. Take due care when handling and using the product.</p>
 <p>Crush Hazard The product may have blades, edges or mechanical devices that can cause severe crush injury to fingers, limbs etc. Take due care when handling and using the product.</p>	 <p>Single Operator Only The product must be operated by a single person only. More than one person operating the product may introduce additional hazards.</p>	 <p>Use Face Protection Wear appropriate full-face protection and take due care as the product or use of the product may present face and eye hazards.</p>	 <p>Use Foot Protection Wear appropriate foot protection and take due care as the product or use of the product may present foot hazards.</p>
 <p>Use Eye / Ear / Head Protection Wear appropriate eye and / or ear and / or head protection and take due care as the product or use of the product may present eye, hearing and head hazards.</p>	 <p>Running Hazard Do not run on or near the product as doing so may present a fall hazard.</p>	 <p>Diving Hazard Do not dive into the product as doing so may present a neck / head injury hazard.</p>	 <p>Adult Supervision Required Always supervise children and other users of a product to prevent drowning or injury.</p>
 <p>Skin Penetration / Puncture Hazard The product may produce pressure, emit liquids or objects that can cause severe injury to fingers, limbs, blood etc. Take due care when handling and using the product.</p>	 <p>Hot Surface Hazard Be aware that the product may produce high temperatures and hot surfaces that can cause burn injuries.</p>	 <p>Flying Debris Hazard Be aware that the product or use of the product may present hazards produced by flying debris. Wear appropriate clothing and protective devices.</p>	 <p>Moving Parts Hazard Be aware that the product contains or uses mechanical devices that move or rotate. Always wait for moving parts to stop fully before handling the product, adjusting, maintenance etc.</p>

 <p>Carbon-Monoxide Hazard Do not use the product in confined areas or without adequate ventilation. Carbon-monoxide poisoning can be fatal.</p>	 <p>Pull Hazard Be aware that the product contains or uses mechanical devices that can pull in objects and can cause severe injury to fingers, limbs etc. Take due care when handling and using the product.</p>	 <p>Slope / Fall Injury Hazard Be aware that using the product on sloping surfaces or in slippery conditions may present additional dangers from falls and contact with blades, moving parts, hot surfaces etc.</p>	 <p>"Slam Dunk" Warning Do NOT attempt "slam dunk" manoeuvres as this may result in severe injury due to falling, product breakage or collapse etc.</p>
 <p>Electrocution / Electrical Shock Hazard - Outdoor High voltage or high current electricity may be present or required by the product. Do NOT use in rain, damp or wet conditions. Electrical shock can be fatal.</p>	 <p>Electrocution / Electrical Shock Hazard - Disconnect High voltage or high current electricity may be present or required by the product. Always disconnect the product from the electrical supply before handling the product, adjusting, maintenance etc.</p>	 <p>Power Line Electrocution Hazard High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal.</p>	 <p>"Kick-Back" Hazard High level of "kick-back" hazard that can cause the machine to suddenly rotate towards operator. Kick-back injury can be fatal.</p>
 <p>Winch Operator Position Hazard Do NOT stand between winch and load. Do NOT use winch to move people.</p>	 <p>Winch Lift Hazard Do NOT LIFT load vertically. Use machine to PULL only.</p>	 <p>Cable Hazard Ensure that load bearing cable is not kinked or knotted.</p>	 <p>Winch Cable Hazard Ensure that there is a minimum number of cable coils on winching mechanism.</p>
 <p>Winch Hook Hazard Carry hook to load – do NOT throw or run.</p>	 <p>Flash / Blinding Hazard Wear appropriate eye protection for welding. Direct exposure to weld arcs may cause permanent eye injury.</p>	 <p>Laser Hazard Laser may be in use – do NOT look directly at laser or allow others to.</p>	

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Assembly and Set-Up



Select hitch ball to match trailer coupler socket, having 1" or 1 $\frac{1}{4}$ " threaded shank and capacity equal to or exceeding the gross trailer weight. When using a ball with a 1" shank, Bushing (Part 11) must be used.

Step 1

Line up both tow vehicle and trailer on smooth, level pavement in a straight position, uncoupled. Unless otherwise specified, level the vehicle with the vehicle loaded as it will be when towing ("F" approximate "R," see Figure 1. Write down these heights).

Step 2

Determine the required ball height. To this measurement, add approximately 1/8" for each 100lbs. tongue weight for tow cars without overload springs. For cars with overload springs or trucks, add approximately 1/8" for each 200 lbs. tongue weight. This will compensate for vehicle "squat".

EXAMPLE: Trailer hitch weight (weight coupler would impose on ball, downward) is 600 lbs. Coupler Height "H" is 17". Therefore, Required Ball Height "B" is:

- $600 / 100 \times 1/8" + 17" = 17 - 3/4" \text{ (Without overload cars)}$
- $600 / 200 \times 1/8" + 17" = 17 - 3/8" \text{ (With overload cars)}$

See Figure 2.

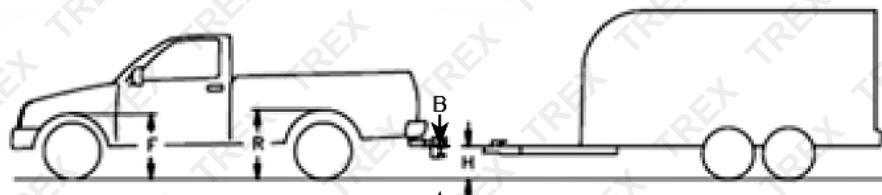


Figure 1.

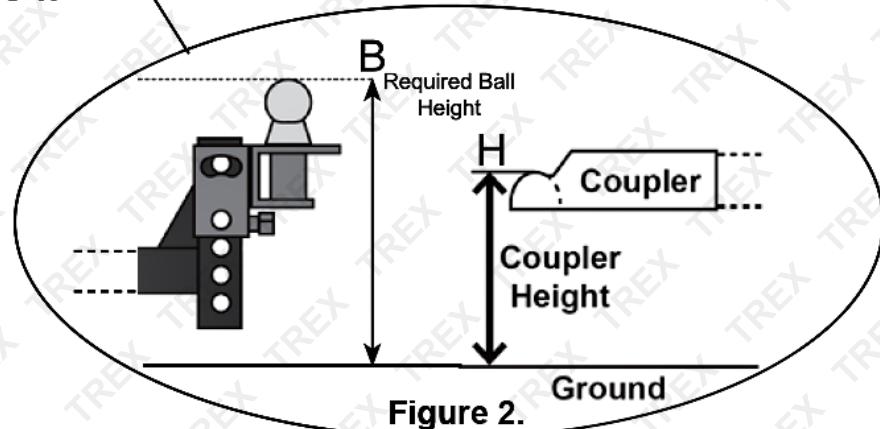


Figure 2.

Step 3

Install the shank into the sleeve receiver. With the ball attached to the Weight Distributing Head, slide the Weight Distributing Head up or down the shank until the nearest dimension is obtained and holes line up with the shank. Insert a bolt in the bottom hole first (recommended), rest hitch head.

Continue adjusting the head angle by adding or reducing 7pcs of Spacing Washers. This step is intended to adjust the spring bars hang down angle on 10° to 13° when the ball mount head has been tilted back at 6° to 8° angle. (See Figure 3 and Figure 6a.)

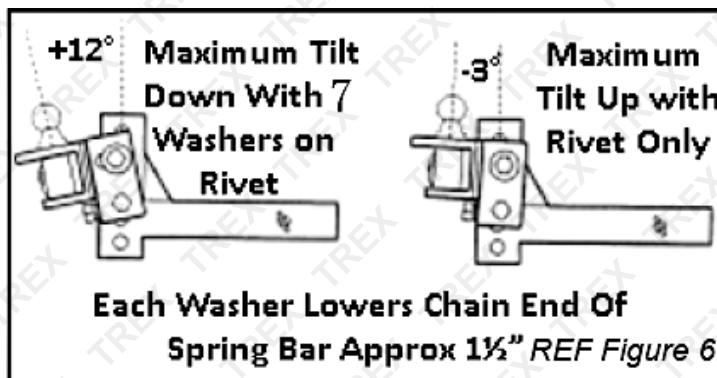


Figure 3.

Step 4

Install the spring bar (note that there is no "left" or "right" bar) to the Weight Distributing Head. Then, lower the trailer coupler onto the hitch ball and close the coupler latch.

Install the Connection bracket. To find the correct location on the trailer frame for the Connection bracket, hold the chain straight up and down and free of any coils and kinks. Position the Connection bracket centrally on the frame and tighten with a Set Screw, $\frac{1}{4}$ turn only. **DO NOT OVER TIGHTEN** (See Figure 4).

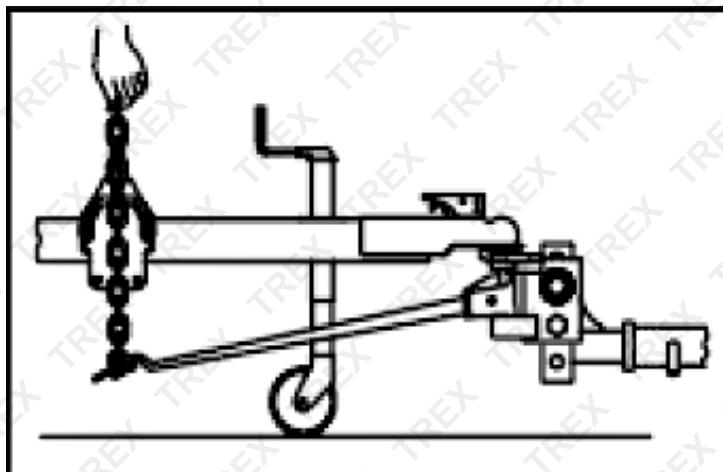


Figure 4.

Step 5

Before hooking up, raise the front of the trailer and the back of the towing vehicle above level with the trailer tongue jack (approx. 3") to make hooking up easier and safer. This removes some of the tension by reducing the distance between the spring bar and the hook-up arm.

Put tension on the spring bars. Release the Trailer Tongue Jack. By adjusting the chain links up or down, the desired levelness of the car and trailer will be gained.

Ensure that the spring bar should be parallel with the trailer frame (See Figure 6b.) Ensure that there is at least 5 links between the Connection bracket and the Spring Bar (See Figure 5), this is necessary for proper operation of the spring bars during turns. If there are less than 5 links, the angle of the Weight Distribution Head must be increased See Step 3.

INSERT THE SPRING CLIP TO LOCK UP (See Figure 5a). Re-measure front and back of the towing vehicle ("F" "R") and have both settle the same amount or up to an inch lower in the back by adjusting the chain on the spring bars.

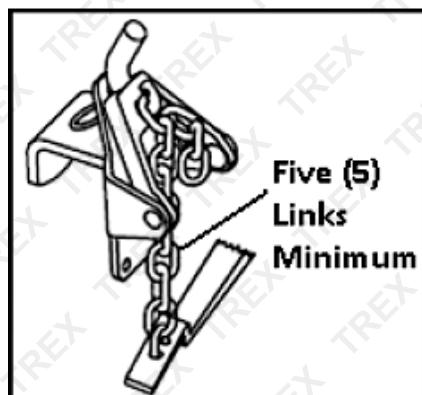


Figure 5

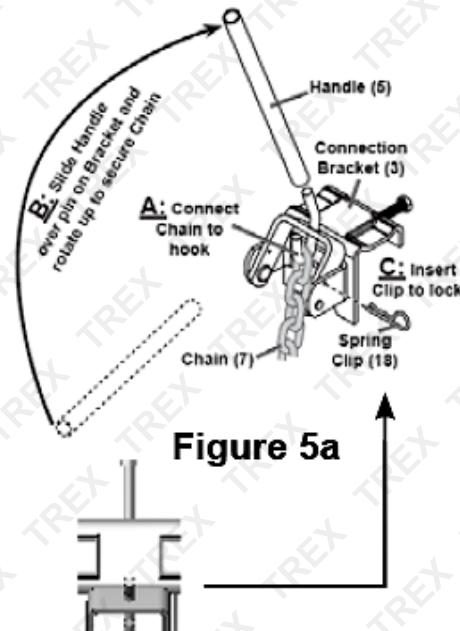
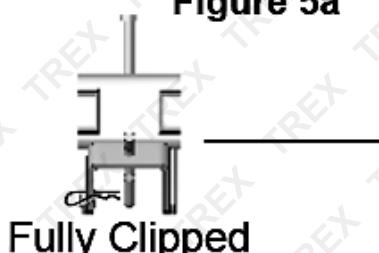


Figure 5a



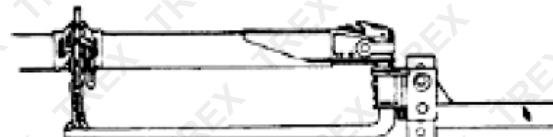
To release tension on spring bars, raise the front of the trailer and the back of the towing vehicle above level (approx.3") with the trailer tongue jack. Remove the spring clip from the Connection bracket. Carefully lower the arm with the handle. It will require effort to bring the arm towards the centre and then to resist the chain tension as the arm rotates downward.



BEFORE HOOKING UP

Spring bars should hang down on a 10° to 13° angle when ball mount has been tilted back at 6° to 8° angle.

Figure 6a.



AFTER HOOKING UP

Spring bar should be parallel with trailer frame, or a slight angle up or down.

Figure 6b.



WRONG

Readjust degree of tilt on ball mount, if you have more than five (5) links of chain hanging free. The number of links should be the same on both bars.

Figure 6c.

Specifications

Ball Weight	1,000lbs
Maximum Gross Towing Weight	10,000lbs
Maximum Rise	7"
Maximum Drop	2 - 0.5"
Ball Size	50mm
Hitch Bar	50mm
Application	2" x 2" tow bar receiver

Note: Assembly required



Some experts believe that the incorrect or prolonged use of almost any product may cause serious injury or death. To help reduce your risk of serious injury or death, refer to the information below. For more information, see www.datastreamserver.com/safety

- Consult all documentation, packaging and product labelling before use. Note that some products feature documentation available online. It is recommended to print and retain the documentation.
- Before each use, check the product for loose/broken/damaged/missing parts, wear or leaks (if applicable). Never use a product with loose/broken/damaged/missing parts, wear or leaks.
- Products must be inspected and serviced (if applicable) by a qualified technician every 6 months. This is based on average residential use by persons of average size and strength, and on a property of average metropolitan size. Use beyond these recommendations may require more frequent inspections/servicing.
- Ensure that all users of the product have completed a suitable industry recognised training course before being allowed access to the product.
- The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or description of application. Be sure to attain third-party approval from a qualified specialist for your application before use, regardless of any assurances from the retailer or its representatives.
- This product is not intended for use where fail-safe operation is required. As with any product (for example, automobile, computer, toaster), there is the possibility of technical issues that may require the repair or replacement of parts, or the product itself. If the possibility of such failure and the associated time it may take to rectify could in any way inconvenience the user, business or employee, or financially affect the user, business or employee, then the product is not suitable for your requirements. This product is not intended for use where incorrect operation or a failure of any kind, including but not limited to, a condition requiring product return, replacement, parts replacement or service by a technician may cause financial loss, loss of employee time or an inconvenience requiring compensation.
- If this product has been purchased in error when considering the information presented here, contact the retailer directly for details of their returns policy, if required.

