



KNIGHT GLOBAL



Torque Tubes

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Knight Global | Warranty Information

Knight warrants that its products and parts shall meet all applicable specifications, performance requirements, and be free from defects in material and workmanship for one year, (Servo Systems for two years, Pneumatic Lift Tables for 5 years), from the date of invoice, unless otherwise noted. One exclusion would include any purchased components not manufactured by Knight and their specific individual warranties. Paint defects, scratches and marring from shipping are also excluded.

This warranty shall not cover the failure or defective operation caused by inadequate training provided by customer regarding the operation and / or maintenance of the tool, misuse, negligence, misadjustment, or any alteration not approved by Knight. Knight's obligation is limited to the replacement or repair of Knight's products at a location designated by Knight. Buyer is responsible for all associated internal removal and reinstallation costs as well as freight charges to and from Knight Industries. Knight's maximum liability shall not in any case exceed the contract price for the products claimed to be defective.

Any field modification made to Knight Products or Systems without the written authorization by Knight Global shall void Knight's warranty obligation.

Knight warrants the Servo Hoist, Arms, and Tractors to be free from defects in material or workmanship for a period of two years or 6000 hours use from the date of shipment.

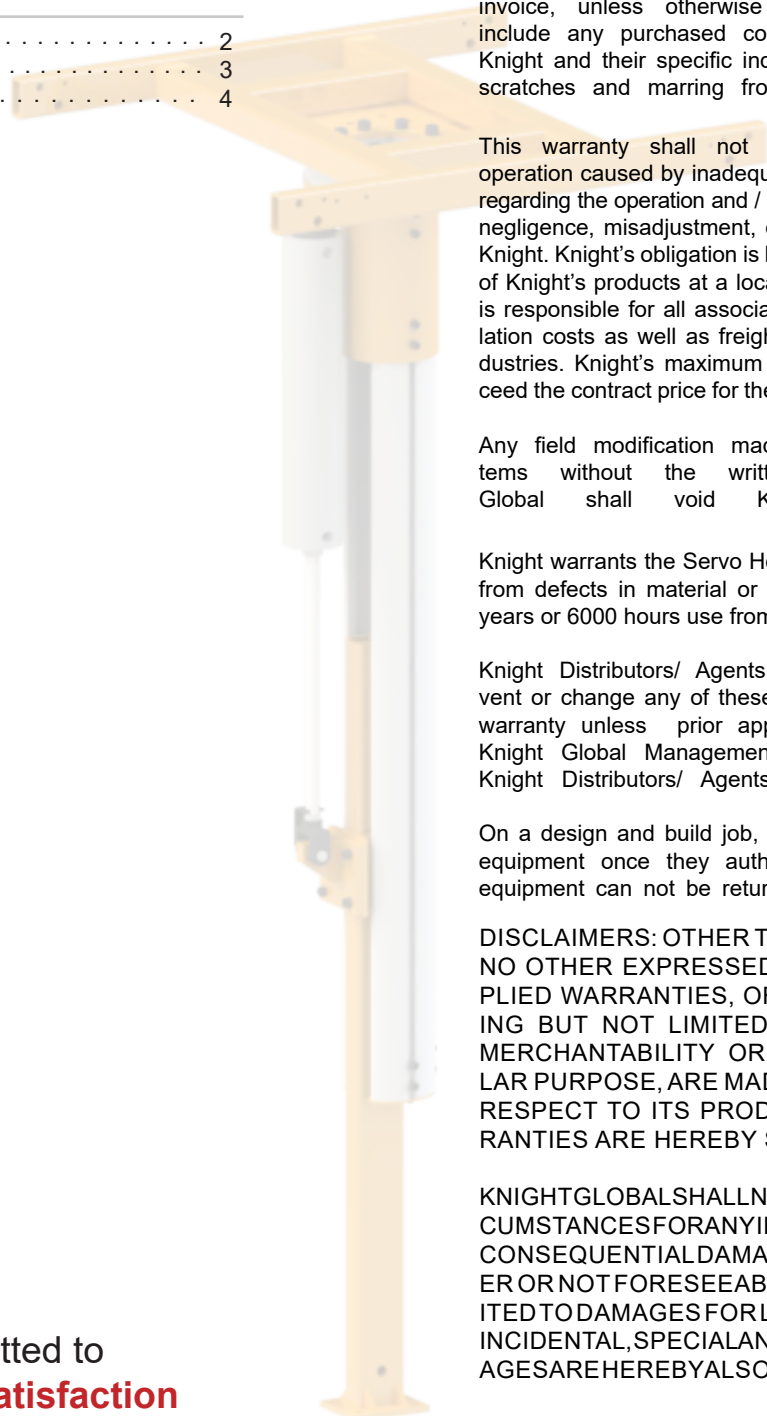
Knight Distributors/ Agents are not authorized to circumvent or change any of these terms and or conditions of this warranty unless prior approval is received in writing by Knight Global Management. Verbal statements made by Knight Distributors/ Agents do not constitute warranties.

On a design and build job, the customer is the owner of the equipment once they authorize shipment. The purchased equipment can not be returned for reimbursement or credit.

DISCLAIMERS: OTHER THAN AS SET FORTH HEREIN, NO OTHER EXPRESSED WARRANTIES, AND NO IMPLIED WARRANTIES, ORAL AND WRITTEN, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE BY KNIGHT GLOBAL WITH RESPECT TO ITS PRODUCTS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

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KNIGHT GLOBAL WILL NOT BE LIABLE FOR ANY LOSS, INJURY OR DAMAGE TO PERSONS OR PROPERTY, NOR FOR DAMAGES OF ANY KIND RESULTING FROM FAILURE OR DEFECTIVE OPERATION OF ANY MATERIALS OR EQUIPMENT FURNISHED HEREUNDER.



We are committed to
Total Customer Satisfaction
through
QUALITY, RELIABILITY and
EMPLOYEE INVOLVEMENT.

Overview

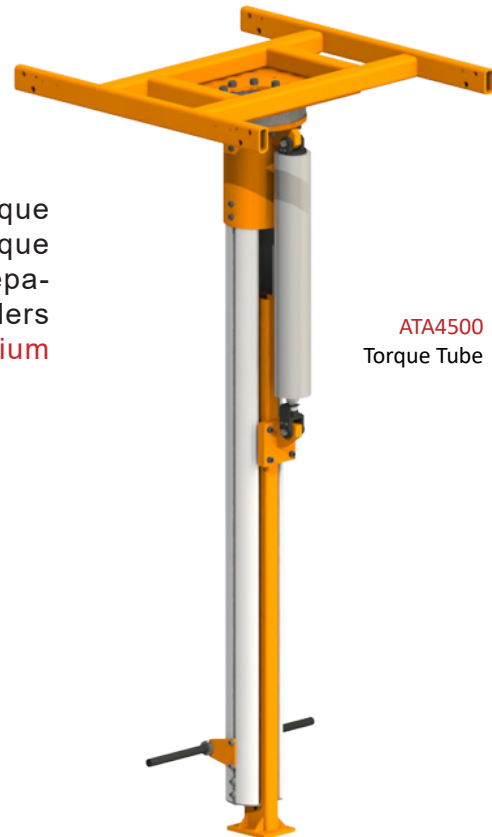
Knight Torque Tubes

Knight Global Torque Tubes are designed to absorb torque reaction from fastening devices and balance the tool. Torque Tubes can include a standard fixed tool holder (priced separately). Custom travel distances, heights and tool holders are available. Torque Tubes are available in **light, medium and heavy duty pneumatic and spring balancer styles.**

Features and Benefits

- Absorbs Torque Reaction.
- Movement is Straight Up/ Down.
- Various Control Configurations.
- Swivel or Fixed Configurations.
- Reduces Operator Fatigue.
- Smooth Operation
- Robust and precise
- Max. Travel: **Varies with Model.**
- Max. Balancing Capacity:
Up to **500 lbs. [227kg]** at 100 psi.

Torque Tubes are most commonly used as a Tool Holder by incorporating Knight's **ASA9519** 360 degree Rotating Tool Clamp or Knight's **ASA9523** and **ASA9524** Adjustable Fixed Tool Clamps.



ATA4500
Torque Tube

STYLES

Light Duty



Medium Duty



Heavy Duty



Spring Balancer



Note: Cylinder torque tubes are ideal in conditions where there is a need for the tool to remain in the same position after fastening. In other words, it remains balanced at any position in the vertical travel. Spring Balancer torque tubes are ideal in conditions where there is a need for the tool to return to the full UP position after fastening. Torque Tube safety cables (#RWA4133) are sold separately.

Torque Tube Series

Light / Medium / Heavy Duty Torque Tubes

Torque Tubes are ideal for small hand tools, pneumatic nutrunners and torque tools. They are designed to reduce operator fatigue by absorbing torque reaction produced by assembly tools while balancing the tool weight. They feature a linear bearing spline for effortless travel with zero rotational movement. The maximum capacity is up to **135 lbs. [61.2kg], 300 ft/lb. [406nm] at 60 psi [6.8bar]**. Each pneumatic cylinder is supplied with single balance control. Available strokes are **12 in. [304.8mm] - 36 in. [506.5mm]**.

Heavy Duty Torque Tubes are more commonly used for high torque producing tools and applications with custom designed tooling. They have a maximum capacity of up to **500 lbs. [227kg] and 853 ft/lb. [1,156nm] at 100 psi [6.8bar]**.

Cylinder torque tubes are ideal in conditions where there is a need for the tool to remain in the same position after fastening. In other words, it remains balanced at any position in the vertical travel.



ATA2800AR
Torque Tube



ATA2900AR



ATA4500

Features and Benefits

- Absorbs Torque Reaction.
- Movement is Straight Up/ Down.
- Various Control Configurations.
- Swivel or Fixed Configurations.
- Reduces Operator Fatigue.
- Smoother Operation.
- Robust and precise.
- Modular design allows mounting of accessories to body.
- Adjustable travel stops.
- Max. Travel: **Varies with Model.**
- Max. Balancing Capacity:
Up to **500 lbs. [227kg]** at 100 psi.

Configurations

Model	Type	Max Capacity*
ATA2800AR	Light Duty	35 lbs. [15 kg]
ATA2900AR	Medium Duty	135 lbs. [61.2 kg]
ATA4500	Heavy Duty	500 lbs. [227 kg]

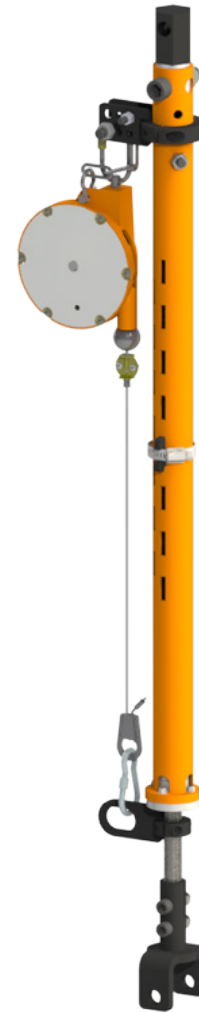
Note: Must have air supply to operate torque arm. *Capacities include the weight of the tool holder and cables.

Spring Balancer Series

Spring Balancer Torque Tubes

Knight Spring Balancers Torque Tubes can be used in various applications due to air not being a requirement for operation or in locations directly above the assembly line. Spring Balancer Torque Tubes are available in a light and medium duty configuration with a maximum capacity of up to **35 lbs. [15.8kg]** and Torque of **300 ft/lb. [406nm]**.

They are designed to absorb torque reaction from fastening devices and balance the tool. Spring Balancer torque tubes are ideal in conditions where there is a need for the tool to return to the full UP position after fastening.



ATA2800SB
Spring Balancer
Torque Tube



ATA2900SB

Features and Benefits

- Absorbs Torque Reaction.
- Movement is Straight Up/ Down.
- Various Control Configurations.
- Swivel or Fixed Configurations.
- Reduces Operator Fatigue.
- Modular design allows mounting of accessories to body.
- Adjustable travel stops.
- Available strokes:
12 in. [304.8mm] - 36 in. [506.5mm].
- Standard Max. Travel: **24 in. [609.6mm].**
- Max. Balancing Capacity:
Up to **35 lbs. [15.8kg]** at 60 psi.






Configurations

Model	Type	Max Capacity
ATA2800SB	Light Duty	12 lbs. [5.4kg]
ATA2900SB	Medium Duty	35 lbs. [15.8kg]





Note: Custom options are available. Please call a Knight Representative for further information.

Accessories

ASA9519 360° Rotating Tool Clamp	ASA9523 Small Adjustable Tool Clamp	ASA9524 Large Adjustable Tool Clamp	ATA2601 Fixed Extension	ATA2602 360° Rotational Extension
 <ul style="list-style-type: none"> • Adjusts 360° to accommodate tools. • Adjustable for vertical or horizontal tool orientations. 	 <ul style="list-style-type: none"> • Allows the user to resize the torque tube to accommodate a wide variety of tools. • Adjusts in 30° increments. • Adjustable for vertical or horizontal tool orientations. 	 <ul style="list-style-type: none"> • Allows the user to resize the torque tube to accommodate a wide variety of tools. • Adjusts in 18° increments. • Adjustable for vertical or horizontal tool orientations. 	 <ul style="list-style-type: none"> • Provides an extended reach for Knight's ATA2600 Torque Tubes. • Available in various lengths. 	 <ul style="list-style-type: none"> • Provides an extended reach for Knight's ATA2600 Torque Tubes and allows for 360° rotational movement. • Available in various lengths.

ATA2701 Fixed Extension	ATA2702 360° Rotational Extension	RWA4133 Safety Cable Kit	NICORWA4133 Safety Cable Kit w/ Oval Sleeves	FDA4133 Eye Bolt Safety Cable Kit
 <ul style="list-style-type: none"> • Provides an extended reach for Knight's ATA2700 Torque Tubes. • Available in various lengths. 	 <ul style="list-style-type: none"> • Provides an extended reach for Knight's ATA2700 Torque Tubes and allows for 360° rotational movement. • Available in various lengths. 	 <ul style="list-style-type: none"> • Carbon Steel "Galvanized Wire Rope" GWC. • Cable Thickness: 0.25 in. [6mm]. • Crosby Saddle Clamps. • Standard lengths: 6 ft. [1.8m]. • Multiple rail systems will receive coiled cable vs pre-cut. (5 ft. Coiled Lengths) 	 <ul style="list-style-type: none"> • Carbon Steel "Galvanized Wire Rope" GWC. • Cable Thickness: 0.25 in. [6mm]. • (2) Copper Oval Sleeves. • (2) Cable Thimbles. • Standard lengths: 10 ft. [3m]. 	 <ul style="list-style-type: none"> • Carbon Steel "Galvanized Wire Rope" GWC. • Cable Thickness: 0.25 in. [6mm]. • Crosby Saddle Clamps. • Eye Bolt Connection. • Standard lengths: 6 ft. [1.8m].


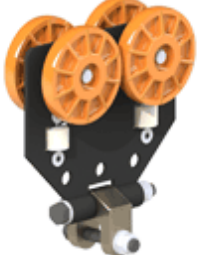
LOAD TROLLEYS

ATA2603 Flat I-Beam Load Trolley	ATA2604 S-Beam Load Trolley	MRTA4003 RAD4110 Load Trolley	MRTA6102 RAD6110 Load Trolley
 <ul style="list-style-type: none"> • Transfers and suspends ATA2600 or ATA2700 Torque tubes along a horizontal axis. • Travels along a 3.25 in. [82.55mm] or 3.33 in. [84.58mm] I-Beam. 	 <ul style="list-style-type: none"> • Transfers and suspends ATA2600 or ATA2700 Torque tubes along a horizontal axis. • Travels along a 2.66 in. [67.56mm] or 4 in. [101.6mm] S-Beam. 	 <ul style="list-style-type: none"> • Transfers loads along the horizontal axis and suspends Knight's ATA1500 and Spring Balancer Torque Tubes. • Max. Capacity: Up to 1,000 lbs. [499kg]. 	 <ul style="list-style-type: none"> • Transfers loads along the horizontal axis and suspends Knight's ATA1500 and Spring Balancer Torque Tubes. • Max. Capacity: Up to 1,600 lbs. [725kg].

Accessories

MRTA7002 RAD7510 Load Trolley	TRT2027 TR2000 Load Trolley	MRTA4027 RAD4110 Load Trolley
 <ul style="list-style-type: none"> •Transfers loads along the horizontal axis and suspends Knight's Spring Balancer Torque Tubes. • Max. Capacity: Up to 3,000 lbs. [725kg]. 	 <ul style="list-style-type: none"> •Transfers loads along the horizontal axis and suspends Knight's ATA2600 Torque Tube. • Max. Capacity: Up to 550 lbs. [250kg]. 	 <ul style="list-style-type: none"> •Transfers loads along the horizontal axis and suspends Knight's ATA2600 or ATA2700 Torque Tubes. • Max. Capacity: Up to 1,100 lbs. [499kg].

MRTA6126 RAD6110 Load Trolley	MRTA7726 RAD7510 Load Trolley	MRTA4009 RAD4110 Load Trolley
 <ul style="list-style-type: none"> •Transfers loads along the horizontal axis and suspends Knight's ATA2600 or ATA2700 Torque Tubes. • Max. Capacity: Up to 1,600 lbs. [725kg]. 	 <ul style="list-style-type: none"> •Transfers loads along the horizontal axis and suspends Knight's ATA2600 or ATA2700 Torque Tubes. • Max. Capacity: Up to 3,000 lbs. [1,360kg]. 	 <ul style="list-style-type: none"> •Transfers loads along the horizontal axis and suspends Knight's ATA4500 Torque Tube. • Max. Capacity: Up to 1,100 lbs. [499kg].

MRTA6123 RAD6110 Load Trolley	MRTA7723 RAD7510 Load Trolley
 <ul style="list-style-type: none"> •Transfers loads along the horizontal axis and suspends Knight's ATA4500 Torque Tube. • Max. Capacity: Up to 1,600 lbs. [725kg]. 	 <ul style="list-style-type: none"> •Transfers loads along the horizontal axis and suspends Knight's ATA4500 Torque Tube. • Max. Capacity: Up to 3,000 lbs. [1,360kg].