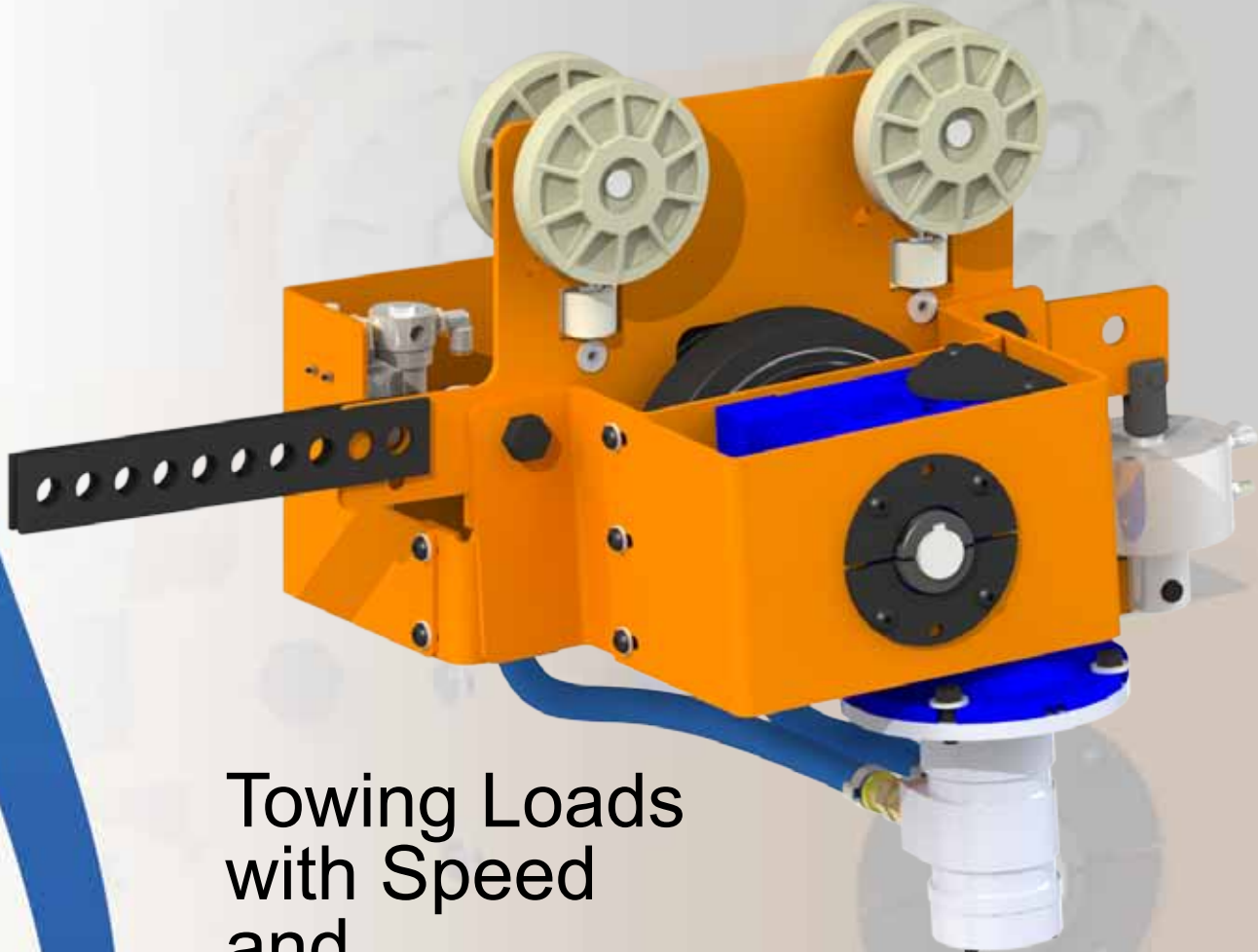




KNIGHT GLOBAL
CREATING A NEW STANDARD



Towing Loads
with Speed
and
Precision

**Pneumatic/Electric
Servo Tractors**

Knight Air Tractors provide mobility by towing bridges, fixtures and heavier loads. Air Tractors typically are used to assist an operator to push, pull, or position loads. Knight Tractor Series can be integrated with an pneumatic fixture to allow for multiple configurations. Knight's Lube-Free Air Tractor Series is equipped with all the same benefits as the TRA Mini and TRA Series but with the benefit of running a Lube-Free Motor. The Lube-Free motor requires less maintenance and has a longer expected service life cycle.

When integrated with a fixture, pneumatic tractors can have multiple control configurations such as: automatic return home, conveying of a load to the next position, starting and stopping limits with the use of air logic, etc. Pneumatic Tractors have towing capacities of up to 2,000 lbs [908kg].

Pneumatic Features

- Tows fixtures, bridges and loads.
- Assists operator in pushing, pulling and positioning loads.
- Integrated Load Trolleys.
- Integrating tractor allows for multiple control configurations such as: automatic return home, conveying of a load to the next position, and starting and stop limits, etc.
- Max.Air Consumption: Up to 75 cfm.
- Max.Towing Capacity: Up to 2,000 lbs. [908kg].

TRA Mini Series

Max. Tow Capacity(lbs)	Max. Tow Speed(fps)
up to 300 lbs	up to 3.5 fps

TRA Series

Max. Tow Capacity(lbs)	Max. Tow Speed(fps)
up to 2,000 lbs	up to 1.9 fps



TRA5500

TRA1500



Lube-Free Tractors

Lube-Free Pneumatic Tractors require less maintenance and have a longer expected service life. Available on Knight's TRA5500 Series. (shown)

Knight Electric Tractors

Knight's VFD (Variable Frequency Drive) Electric Tractors provide the operator with complete control. Different models are available depending on the type of Knight rail you are using. The VFD Electric Tractor can also be configured to run on different manufactures workstation rail systems.

The Knight VFD Electric Tractor has a modular assembly design for easy installation and set-up. They are equipped with Knight's proven pneumatic tractor mechanics using a worm gear reducer that is reliable and maintenance free. Maximum towing capacity up to 3,000 lbs [1,360kg].

Electric Features

- Single speed pendant
- 1/3 HP 230VAC Inverter Motor
- 230 VAC, Single Phase
- Programmable direct drive
- Hand clamp to engage/ lock tractor into position w/ tension adjustments.
- Integrated trolley
- Dual rubber drive wheels-rides on bottom of rail.
- Programmable accel and decel speeds.

KET Series

Max. Tow Capacity(lbs)	Max. Tow Speed(fpm)
up to 3,000 lbs	up to 180 fpm

* Listed capacities and speeds vary by configuration. For more detailed information, please contact a Knight representative.



Knight's Servo Hoist Tractors are Intelligent Assist Devices (IAD) developed and manufactured to make lifting and the moving of product easier and smarter. Traditional hoists and tractors have operators pushing buttons to actuate movement. Knight's Servo Hoist Tractors enable an operator to simply grasp the handle to lift and move the load; no pushing of buttons is required. Servo Tractors can also be operated wireless by remote. This is all accomplished through a load sensing motion that is virtually invisible to the operator. The benefit of this Servo Technology is to increase productivity and ergonomics by eliminating wasted motions and lagging reaction time.

The Servo Tractor offers a continuous contact non-slip rack and pinion design that moves the runway (X Axis) or bridge (Y Axis) in either direction. This continuous contact non-slip design allows for more accurate positioning of a load.

Servo Tractors are programmed to automatically or manually move and stop the runway (X Axis) or bridge (Y Axis) at the intended locations; which will eliminate unnecessary motion. The Servo Tractor will maintain the programmed positioning of the load. The need to return to home position is not required after cycling power.

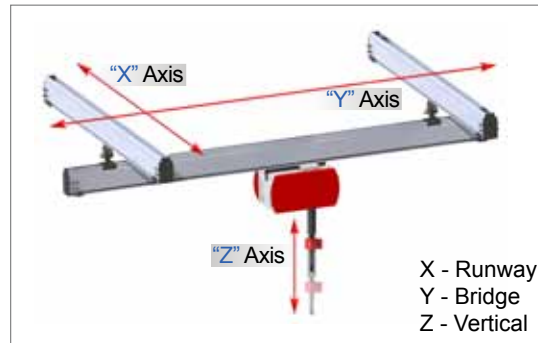
Input sensors have an electrical signal that interprets the different weights or forces applied to it from an operator; which controls the movement of the Servo Tractor in the X (runway), Y (bridge) or Z (vertical) axis. Input sensors also coordinate the motion on the system by the movement of the hoist chain.



Rack-n-Pinion



Tractor Hoist



Servo Tractor Features

- Standard 24 VDC, 2.5 AMPS
- H5 Rated (Continuous Duty Cycle)
- 240 VAC, Single Phase 50/60 Hz
- Illuminated Run/Stop Button
- Programmable Overload Capability
- Fail Safe Braking
- Load Sensing
- Standard Float Mode
- Chain Driven
- Virtual Limits
- Worm Style Gearbox
- Programming/ Diagnostic Communication Ports
- I/O Capabilities
- LED Status Indicators
- LED Fault Diagnostics
- Virtual Travel Limits
- Speed Reduction Zones
- Various Chain Lengths
- Active Dampening
- Impact Limiting

KSHYZ Series (Two Axis, One Tractor Combo)

Model	Max Tractor Capacity(lbs)	Max Tractor Hoist Capacity(lbs)	Max Tractor Speed(fpm)	Max Hoist Lift Speed(fpm)	Axis(X/Y/Z)
KSHYZ250	4,000 lbs	250 lbs	174.53 fpm	196.85 fpm	Y / Z
KSHYZ350	4,000 lbs	350 lbs	174.53 fpm	241.00 fpm	Y / Z
KSHYZ750	4,000 lbs	750 lbs	174.53 fpm	123.03 fpm	Y / Z
KSHYZ1000	4,000 lbs	1,000 lbs	174.53 fpm	82.02 fpm	Y / Z

KSHXYZ Series (Three Axis, Two Tractor Combo)

KSHXYZ250	4,000 lbs	250 lbs	174.53 fpm	196.85 fpm	X / Y / Z
KSHXYZ350	4,000 lbs	350 lbs	174.53 fpm	241.00 fpm	X / Y / Z
KSHXYZ750	4,000 lbs	750 lbs	174.53 fpm	123.03 fpm	X / Y / Z
KSHXYZ1000	4,000 lbs	1,000 lbs	174.53 fpm	82.02 fpm	X / Y / Z

KSHXXYZ Series (Three Axis, Three Tractor Combo)

KSHXXYZ250	4,000 lbs	250 lbs	174.53 fpm	196.85 fpm	X / X / Y / Z
KSHXXYZ350	4,000 lbs	350 lbs	174.53 fpm	241.00 fpm	X / X / Y / Z
KSHXXYZ750	4,000 lbs	750 lbs	174.53 fpm	123.03 fpm	X / X / Y / Z
KSHXXYZ1000	4,000 lbs	1,000 lbs	174.53 fpm	82.02 fpm	X / X / Y / Z

* Listed Servo Tractor Series specifications and configurations are considered standard systems. For more detailed information please contact a Knight representative.

Servo Tractors are used when Precision Matters

Our Knight Global Servo design team will analyze your system requirements in detail and custom design a servo tractor system that fits your application needs.

For more detailed information on Knight Global Servo System features and options, please contact a Knight representative.