



# KNIGHT

GLOBAL



## Servo Systems

### Intelligent Assist Devices (IAD)

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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 Servo Systems

Knight Servo Systems are Intelligent Assist Devices (IAD) that provide controlled transfers of workloads with speed, precision, quality and unmatched reliability. Its scalable programmability allows for many application solutions.

Traditional hoists and tractors require the operator to push buttons in order to initiate natural ergonomic motion. Knight Servo Systems enable an operator to simply grasp a handle to move the load.

As an extension of an operator's natural movement, this technology greatly improves accuracy, responsiveness and repeatability. This increases safety, productivity and quality by eliminating wasted motions, reducing reaction times, and by mitigating inertia on heavy loads.

## Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- 4.0 Industry Compliant.
- Load Capacity: Up to **2,000 lbs. [907kg]**.
- Variable speeds: Up to **241 f/min. [74m/min]**.
- 240 VAC / Single Phase. 50/60 Hz.
- H5 Rated (continuous duty cycle).
- Knight's Unique "Float" Mode.
- Illuminated Run/ Stop Button.
- Fail-Safe Brake.
- Load Sensing.
- Chain Driven.
- I/O Capabilities.
- Virtual Travel Limits.
- LED Status / Fault Indicators.
- Enhanced User Interface (UI).



## Servo Hoist Configurations

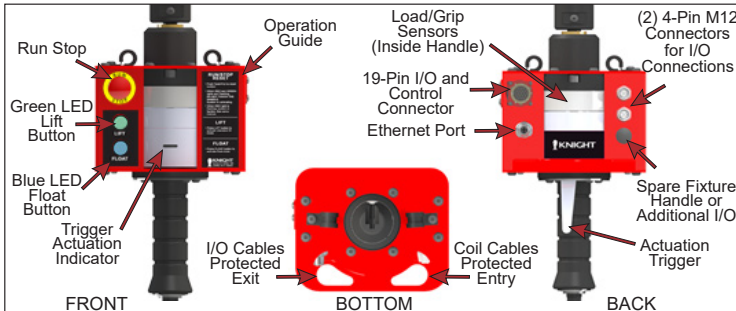
Model	Style	Max. Capacity
KSHS	Safety Drop Stop	1,000 lbs. [453kg]
KSHSS	Speed Hoist w/ SDS	1,000 lbs. [453kg]
KSHLS	Speed Hoist w/ Single Chain	100 lbs. [45kg]
KSHDS	D-Series w/ SDS	1,000 lbs. [453kg]
KSHTC	Twin Chain w/ Safety Drop Stop	700 lbs. [317.5kg]
KSHTCDM	Twin Chain Dual Motor w/ SDS	2,000 lbs. [907kg]
KSHCA	Overhead Articulating Arm	1,500 lbs. [680kg]
KSHFA	Floor-Mounted Articulating Arm	1,500 lbs. [680kg]
KSHEA	Overhead Extension Arm	750 lbs. [340kg]
KSHAEA	Floor-Mounted Articulating Extension Arm	500 lbs. [226kg]
KSHEB	Overhead Extension Boom Arm	1,000 lbs. [453kg]
KSHAEB	Floor-Mounted Articulating Extension Boom Arm	1,000 lbs. [453kg]
KSHVA	Overhead Vertical Arm	1,000 lbs. [453kg]
KSHVAA	Floor-Mounted Vertical Articulating Arm	1,000 lbs. [453kg]
KSHVAR	Overhead Vertical Articulating Roller Arm	1,000 lbs. [453kg]
KSHVAAR	Floor Mounted Vertical Articulating Roller Arm	1,000 lbs. [453kg]
KST	Rack and Pinion Servo Tractor	4,000 lbs. [1,814kg] (Towing)
KSHXZ	"X" Tractor with "Z" Control	1,000 lbs. [453kg]
KSHXY	"X/Y" Tractor	1,000 lbs. [453kg]
KSHXYZ	"X/Y" Tractor with "Z" Control	1,000 lbs. [453kg]
KSHXXYZ	"XX/Y" Tractor with "Z" Control	1,000 lbs. [453kg]

# Servo System Features

## SERVO HOIST AND TRACTOR HOIST

### LED Status Indicators

The LED Status lights will indicate the state the system is in, i.e. "Lift Mode" (Green LED) or "Float Mode" (Blue LED). The LED status lights may also be programmed to indicate actions such as: "Clamps Closed", "Vacuum On", etc.



Inline Trigger Handle : KLCA1000



### Knight's Unique Float Mode

Knight's Unique "Float" Mode allows the operator to balance a load in a weightless condition and then manipulate it into position without using an UP/DOWN pendant or handle. It can be enabled or disabled depending on the application and is standard on most systems.

### Speed Reduction Points

Programmable points in which the hoist will automatically reduce speed to allow precise placement.

### Virtual Limits

Programmable virtual limits prevent load movement beyond user-defined limitations. Limit settings improve productivity by restricting the UP/DOWN movement of the operator. Pre-set (coded) or manual options available.

### LED Fault Indicators

Optionally: Fault recognition is displayed by a LED fault code diagnostic located on the drive unit. This feature improves maintenance response time by providing illuminated signals that correspond with a diagnostic chart, i.e. "Bus Fault", "Low Voltage", etc.

### Industry 4.0 Compliant

Knight's Servo Hoists are capable of being completely integrated with the production floor of a facility. This allows for hoists to be monitored remotely and increases productivity with the ability to predict general maintenance needs.

### Programming and Diagnostic Ports

Ports allow for easy set-up, configuration, programming of system, and viewing fault tables (to rapidly identify problems). These ports eliminate overhead connections to the system. Changes and repairs can be made at floor level.

### I/O Capabilities

Ability to attach accessories such as: clamps, pumps, limit switches, proximity switches, lights, etc. (excludes D-Series and Speed Hoist)

### Travel Distance

Unlimited, (Travel distance of 12-18ft. is standard)

### Exclusive Software Features

- Impact Limiting: For controlled load lifts.
  - Prevents operator from snagging the load on a surface.
- Active Dampening: Enhances precise positioning.
  - Adapts to unknown system installs, i.e. Rail Vibration, etc.
- Integral Tool Controls: Allows for multiple tool configurations.
- Knight's Unique "Float" mode.
- Optional PM Alert System: Notifies user when scheduled maintenance is ready to be performed.

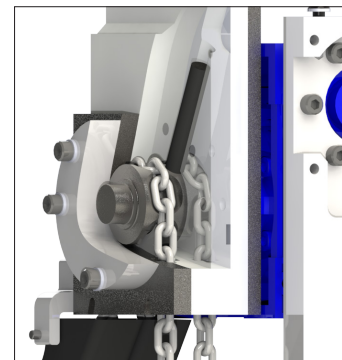
### Chain

Patented robust Electro Galvanized chain provides added durability and improves wear characteristics.

- 4mm and 5mm sizes available.

### Gearbox

The gearbox is a worm gear style for reliable, sealed maintenance-free operation.



### Graphite Lube Stick

Inside of the gear tower is a drop-in graphite stick that ensures the lubrication of the two chains. Additional sticks can be purchased separately.



# KSHS Series

## Safety Drop Stop Servo Hoist

Knight Global's "Next Generation Servo Hoist" includes the patented "Safety Drop Stop" or "SDS" feature, which makes it the safest and most intelligent hoist in the world. This new revelation will change the entire hoist industry with Knight Global in the forefront. The "SDS" feature introduces redundant chains -- one carrying the load, and the second chain travels along for safety.

Knight Global's KSHS "Next Generation Servo Hoist" Series has added features to its Intelligent Assist Device (IAD). These features improve an operator's ability to precisely locate or float a load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHS Servo series allows for many application solutions due to its various programmable features, and unlimited I/O. Also, while traditional hoists require the operator to push buttons in order to initiate natural ergonomic motion, the KSHS Series enables an operator to simply grasp a handle to move the load.

## Mechanical Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **241 ft. per min. [73.5mpm]**.
- Maximum Lifting Capacity:  
Up to **1,000 lbs. [453kg]**.
- Safety Rating of 125%.
- Fail Safe Brake.
- Knight's Patented Chains, for longer life.
- Knight's redundant chain guides.
- Two buckets to keep chains separated.
- Chain Length, Unlimited  
(12 - 18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).
- **In-Line** or **Fixture Handle**

## Software Features

- STO - Safe Torque Off.
- Enhanced User Interface (UI).
- Ethernet Connection.
- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Standard Float Mode.
- Programmable Overload Capability.

## Electrical Features

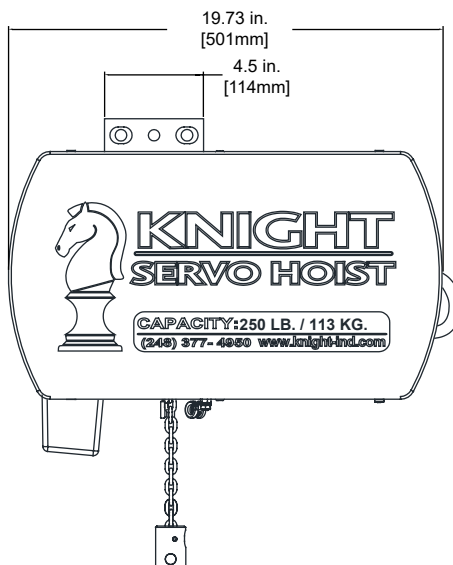
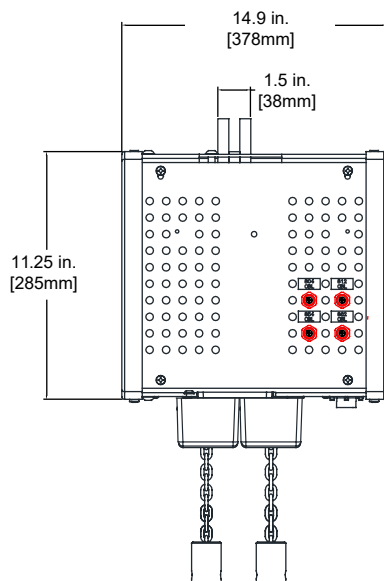
- 4.0 Industry Compliant.
- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.



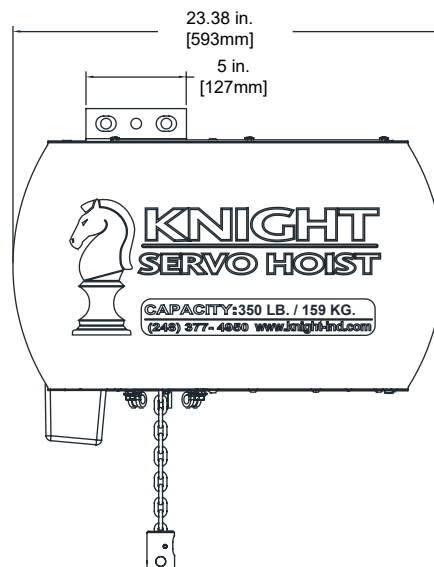
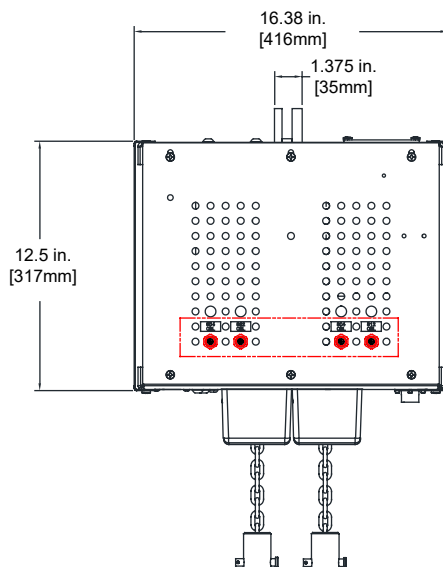
# KSHS Series

## KSHS Series Safety Drop Stop “SDS” Servo Hoist Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min [m/min]	Voltage / Phase
KSH250S-2401	250 lbs. [113kg]	197 ft/min. [60 m/min]	240 / 1 Phase
KSH350S-2401	350 lbs. [317kg]	241 ft/min. [74 m/min]	240 / 1 Phase
KSH500S-2401	500 lbs. [266kg]	98 ft/min. [30 m/min]	240 / 1 Phase
KSH750S-2401	750 lbs. [340kg]	123 ft/min. [38 m/min]	240 / 1 Phase
KSH1000S-2401	1,000 lbs. [453kg]	82 ft/min. [25 m/min]	240/ 1 Phase



KSH250S-2401  
KSH500S-2401



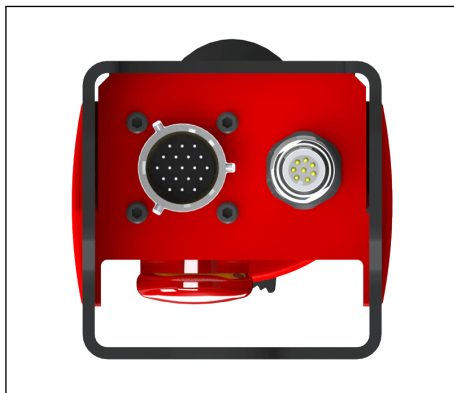
KSH350S-2401  
KSH750S-2401  
KSH1000S-2401

# SDS Speed Hoist

## Speed Hoist (SDS)

Knight's new SDS SPEED HOIST is an electric hoist containing many of the same features as the D-Series Servo Hoist including the patented "safety drop stop" dual chain system.

Additionally, it utilizes a simple analog handle with an UP/DOWN toggle switch, ensuring that the hoist can be operated with minimal training. The handle provides the user with the ability to control graduated movement as well as acceleration and deceleration of the hoist.



An ethernet port on the top of the handle allows for the use of the Knight Servo Studio software. With this, many user parameters can be setup for easy customization of height, slow down zones, and speed control of the hoist.

## Controls Options



\* Standard Speed Hoist handle

## SDS Speed Hoist Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min [m/min]	Voltage / Phase
KSH200SS-2401	200 lbs. [90kg]	241 ft/min. [73.5 m/min]	240 / 1 Phase
KSH400SS-2401	400 lbs. [181kg]	120 ft/min. [35.5 m/min]	240 / 1 Phase
KSH750SS-2401	750 lbs. [340kg]	150 ft/min. [45.7 m/min]	240 / 1 Phase
KSH1000SS-2401	1,000 lbs. [453kg]	105 ft/min. [32 m/min]	240 / 1 Phase

# 100 LBS Speed Hoist

## 100 LBS Capacity Speed Hoist

Knight's 100 LBS Speed Hoist is a smaller and more cost effective version of the SDS Speed Hoist. It uses the same control handle equipped with an ethernet port to set custom parameters. The hoist has a 100 LBS max capacity and a 2-year warranty.

## Mechanical Features

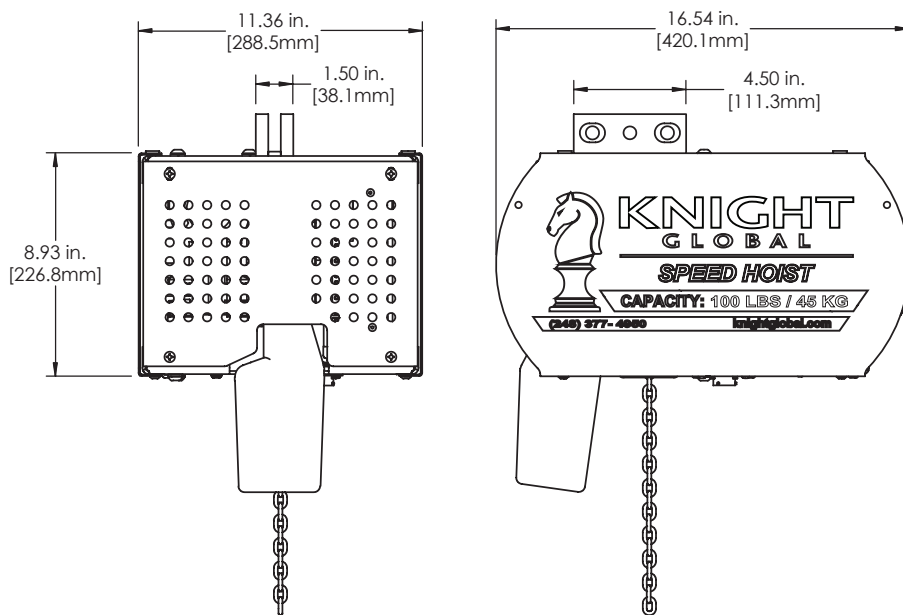
- Single Chain design, patented chain.
- Speeds: Up to **23 in. / sec.**
- Maximum Lifting Capacity:  
Up to **100 lbs. [45kg]**.
- Chain Length - 12 ft. (Standard).
- Lube Stick.

## Software Features

- Ethernet Connection.
- Knight Servo Studio software provides user optimization of hoist parameters.
- Custom virtual limits and speed control.
- Analog switch provides graduated movement and acceleration / deceleration.
- Full analog speed control.
- Multi-step digital control.

## Electrical Features

- Analog UP/DOWN thumb switch
- LED Fault indicators: Run-Stop Button, Twist to Release functionality.
- **120VAC, 15amp, 120V dedicated circuit.**



## 100 LBS Speed Hoist Specifications

Part Number	Capacity lbs [kg]	Maximum Speed	Voltage / Phase
KSH100LS-1201	100 lbs. [45kg]	23 in. / sec	120VAC



# D-Series Servo Hoist



## D-Series Servo Hoist (SDS)

Knight Global's D-Series Servo Hoist comes with all the features of the patented **Safety Drop Stop Servo Hoist**, minus the I/O for a significantly reduced cost.

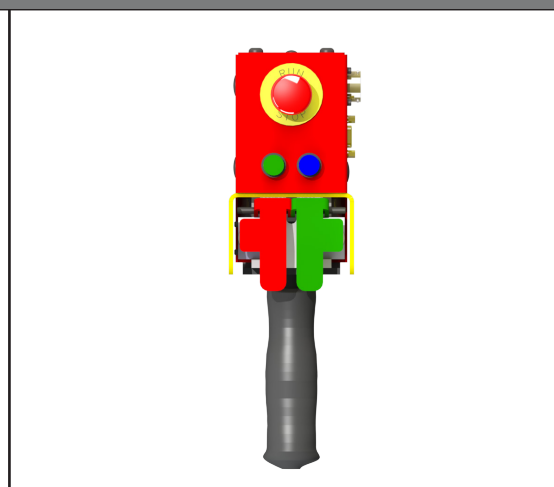
Introducing a dynamic, lower-cost servo hoist solution that allows Knight to be more competitive with the lower end IAD's in the industry without sacrificing safety or intelligent features.

## Controls Options *NEW!*

KLCA1030 Inline Control Handle with Trigger  
(Standard D-Series Handle)



KCA1033 2-Speed Control Handle  
with OCI



## D-Series Servo Hoist Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min [m/min]	Voltage / Phase
KSH200DS-2401	200 lbs. [90kg]	241 ft/min. [73.5 m/min]	240 / 1 Phase
KSH400DS-2401	400 lbs. [181kg]	120 ft/min. [35.5 m/min]	240 / 1 Phase
KSH750DS-2401	750 lbs. [340kg]	150 ft/min. [45.7 m/min]	240 / 1 Phase
KSH1000DS-2401	1,000 lbs. [453kg]	105 ft/min. [32 m/min]	240 / 1 Phase



# KSHTC Series

## Twin Chain Safety Drop Stop Servo Hoist Series

Knight Global's KSHTC Twin Chain Safety Drop Stop Servo Hoist Series enables an operator to precisely locate or float a load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. Knight's Twin Chain design helps to control and balance parts or fixtures that are long or unwieldy. The (2) two Twin Chains are mechanically linked together so they operate as one unit. The KSHTC allows for many application solutions due to its various programmability features. Equipped with the SDS Safety Chain feature.



### Mechanical Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **196 ft/min. [60 m/min]**.
- Maximum Lifting Capacity: Up to **500 lbs. [227kg]**.
- Standard Chain Center Point Distances: **24 in. [610 mm] - 36 in. [914 mm]**.
  - (Widths over 36 in. are custom).
- Safety Rating of 125%.
- Fail-Safe Brake.
- Knight's Patented Chains, for longer life.
- Knight's redundant chain guides.
- Two buckets to keep chains separated.
- Chain Length, Unlimited (12 - 18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- STO - Safe Torque Off.
- Enhanced User Interface (UI).
- Ethernet Connection.
- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as: Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

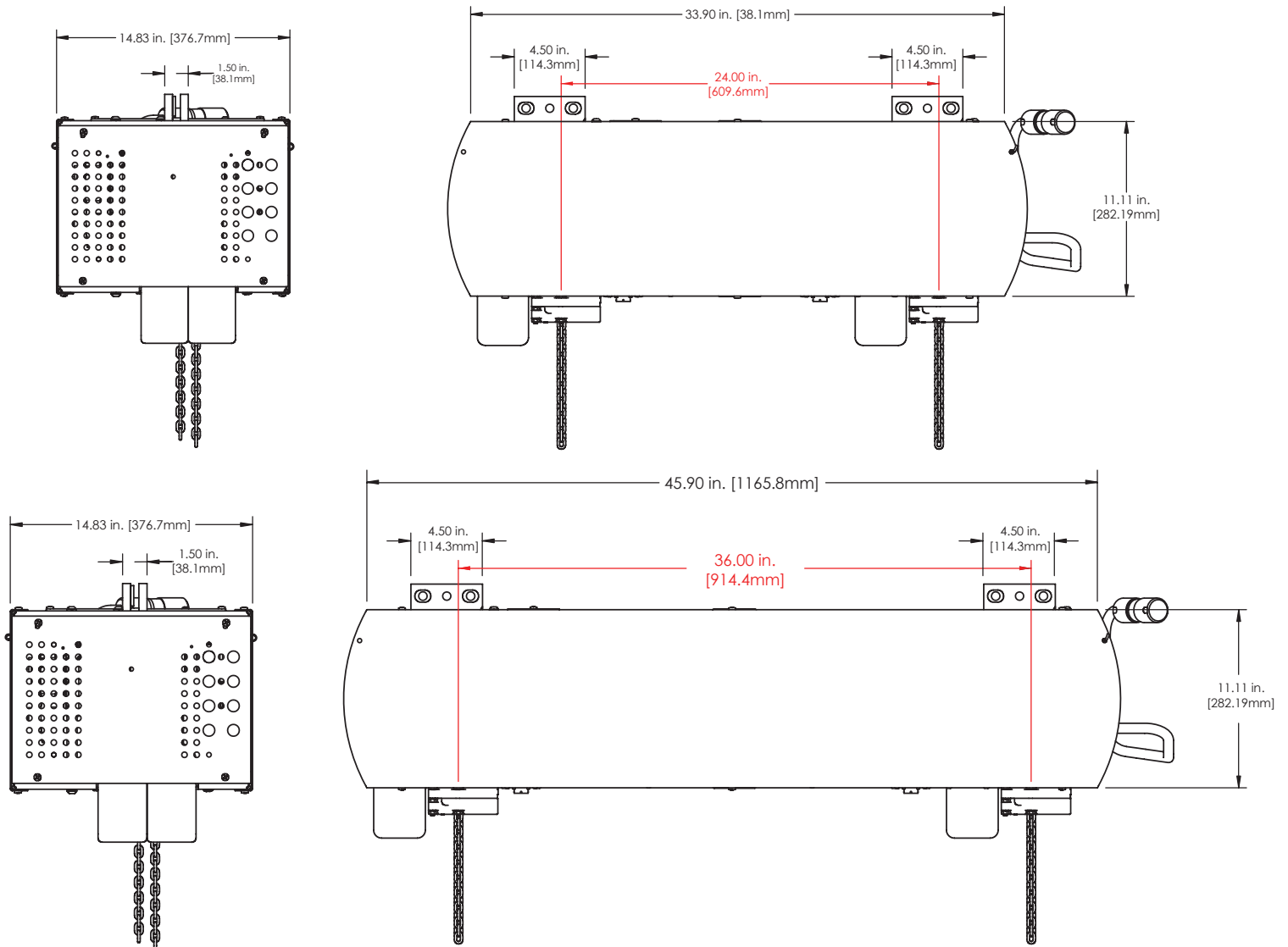


KSHTC - Squaring Fixture

# KSHTC Series

## KSHTC Series Twin Chain Servo Hoist Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min [m/min]	Voltage / Phase
KSHTC250S-2401	250 lbs. [113kg]	197 ft/min. [60 m/min]	240 / 1 Phase
KSHTC500S-2401	500 lbs. [226kg]	123 ft/min. [38 m/min]	240 / 1 Phase



**Note:** Chain center point widths (marked red) are available in larger distances, but are considered custom. Contact a Knight representative for more detailed information.



# KSHTCDM Series

## Twin Chain Dual Motor Safety Drop Stop Servo Hoist Series

Knight Global's KSHTCDM Twin Chain Safety Drop Stop Servo Hoist Series enables an operator to precisely locate or float a load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. Knight's Twin Chain design helps to control and balance parts or fixtures that are long or unwieldy. The (2) two Twin Chains are independently controlled by separate motors to provide unmatched control. The KSHTCDM allows for many application solutions due to its various programmability features. Equipped with the SDS Safety Chain feature.



### Mechanical Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **123 ft/min. [38 m/min]**.
- Maximum Lifting Capacity: Up to **2,000 lbs. [907kg]**.
- Standard Chain Center Point Distances: **24 in. [610 mm] - 36 in. [914 mm]**.
  - (Widths over 36 in. are custom).
- Safety Rating of 125%.
- Fail-Safe Brake.
- Knight's Patented Chains, for longer life.
- Knight's redundant chain guides.
- Two buckets to keep chains separated.
- Chain Length, Unlimited (12 - 18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- STO - Safe Torque Off.
- Enhanced User Interface (UI).
- Ethernet Connection.
- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

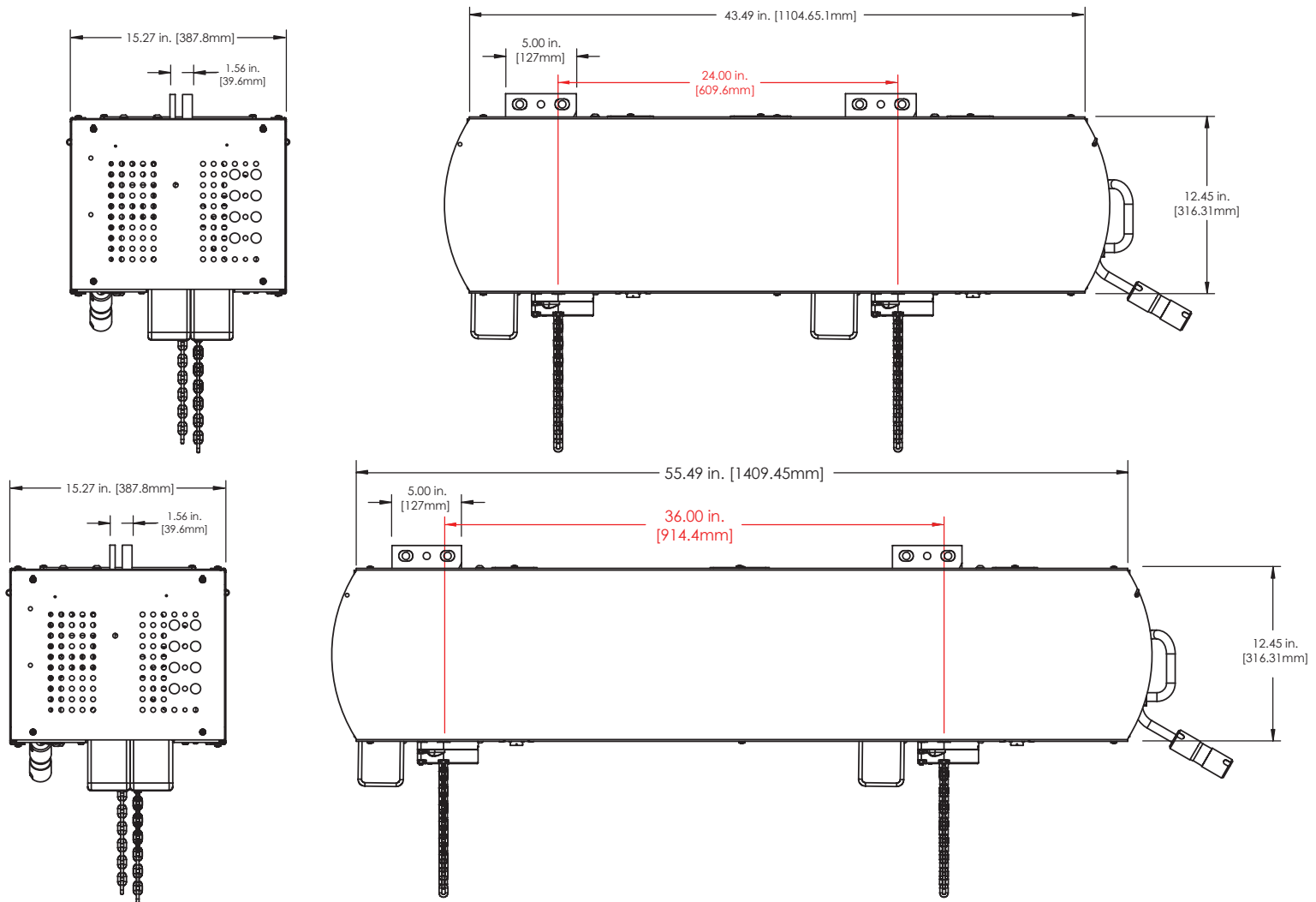
- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:
  - Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 480 VAC, 3 Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.



# KSHTCDM Series

## KSHTCDM Series Twin Chain Dual Motor Servo Hoist Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min [m/min]	Voltage / Phase
KSHTCDM700S-4803	700 lbs. [317kg]	82 ft/min. [25 m/min]	480 / 3 Phase
KSHTCDM1500S-4803	1,500 lbs. [680kg]	123 ft/min. [38 m/min]	480 / 3 Phase
KSHTCDM2000S-4803	2,000 lbs. [907kg]	39 ft/min. [12 m/min]	480 / 3 Phase



**Note:** Chain center point widths (marked red) are available in larger distances, but are considered custom. Contact a Knight representative for more detailed information.



## KSHCA Overhead Carriage Mounted Articulating Servo Hoist Arm

Knight Global's KSHCA Series Overhead Carriage-Mounted Servo Hoist Arm provides an operator with the capabilities to reach outside the area directly below a rail system and to precisely locate or float a load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHCA Series Servo Arm allows for overhead reach that varies depending on the design of the work cell or station.

### Mechanical Features

- Speeds: Up to **98 ft/min. [30 m/min]**.
- Maximum Lifting Capacity:  
Up to **1,500 lbs. [680kg]**.
- Maximum Reach of Extension:  
Up to **48 in. [1,219 mm]**.  
(Boom / End Effector length not included)
- Safety Rating of 125%.
- Fail-Safe Brake.
- Overhead Mounted Carriage.
- Chain Lengths  
(12 - 20 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

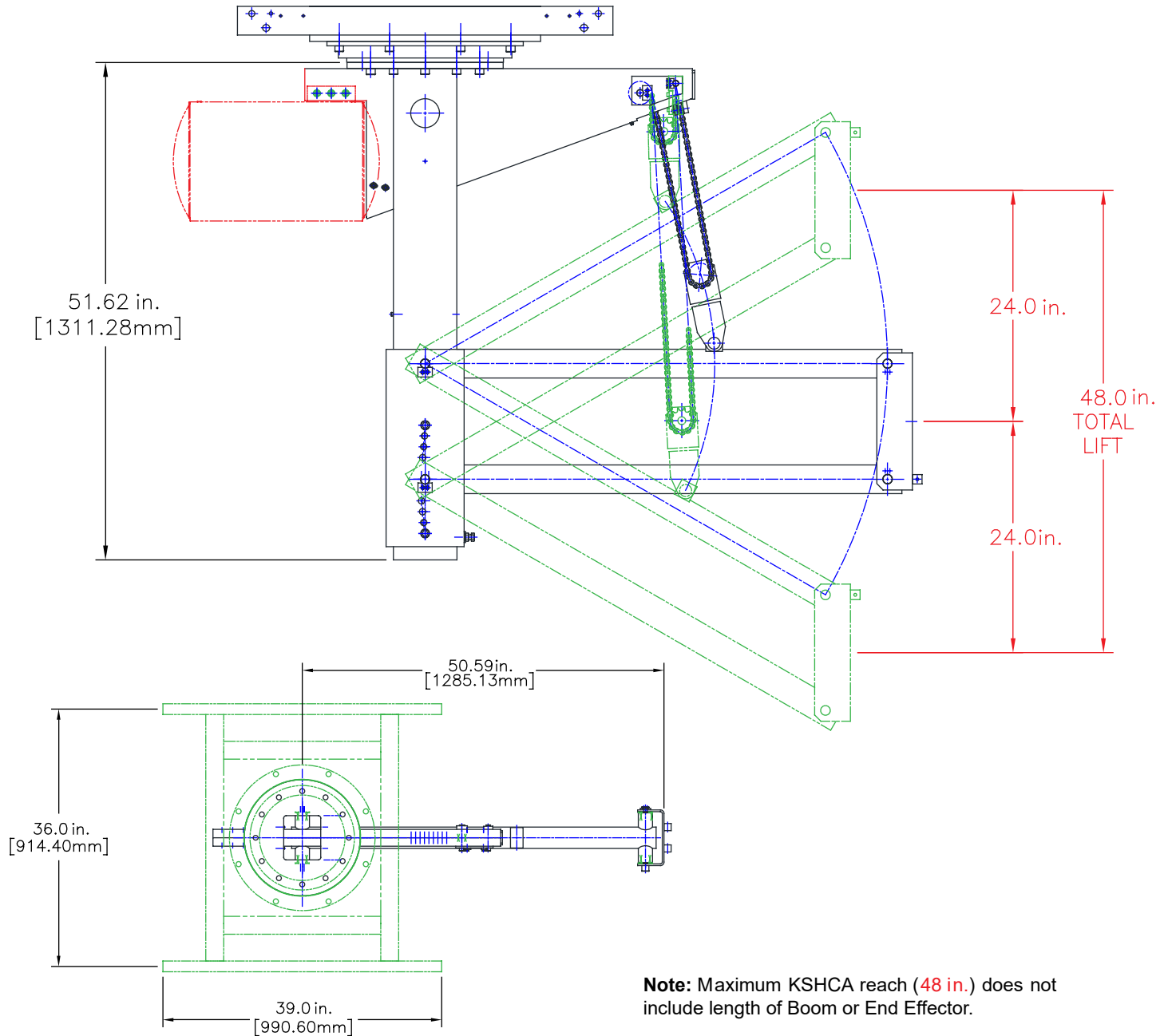


**KSHCA - Body Side Lift Assist**

# KSHCA Series

## KSHCA Series Overhead Carriage Mounted Servo Hoist Arm Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min. [m/min]	Voltage / Phase
KSHCA500-2401	500 lbs. [227kg]	98 ft/min. [30 m/min]	240 / 1 Phase
KSHCA1000-2401	1000 lbs. [454kg]	82 ft/min. [25 m/min]	240 / 1 Phase
KSHCA1500-2401	1,500 lbs. [680kg]	66 ft/min. [20 m/min]	240 / 1 Phase





# KSHFA Series

## KSHFA Floor Mounted Articulating Servo Hoist Arm

Knight Global's KSHFA Series Floor-Mounted Servo Hoist Arm enables an operator to precisely locate or float a load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHFA Series Servo Arm allows for overhead reach that varies depending on the design of the work cell or station. Knight's Floor-Mounted KSHFA Series is most commonly used when overhead clearances or support structures will not accommodate an overhead rail system.



### Mechanical Features

- Speeds: Up to **98 ft/min. [30 m/min]**.
- Maximum Lifting Capacity:  
Up to **1,500 lbs. [680kg]**.
- Maximum Reach:  
Up to **48 in. [1,219 mm]**.  
(Boom / End Effector length not included)
- Safety Rating of 125%.
- Fail-Safe Brake.
- Floor-Mounted Pedestal Heights:  
8 ft. [2.4 m] - 10 ft. [3.0 m].
- Heavy Duty Roller Chain.
- Chain Lengths  
(12 - 20 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

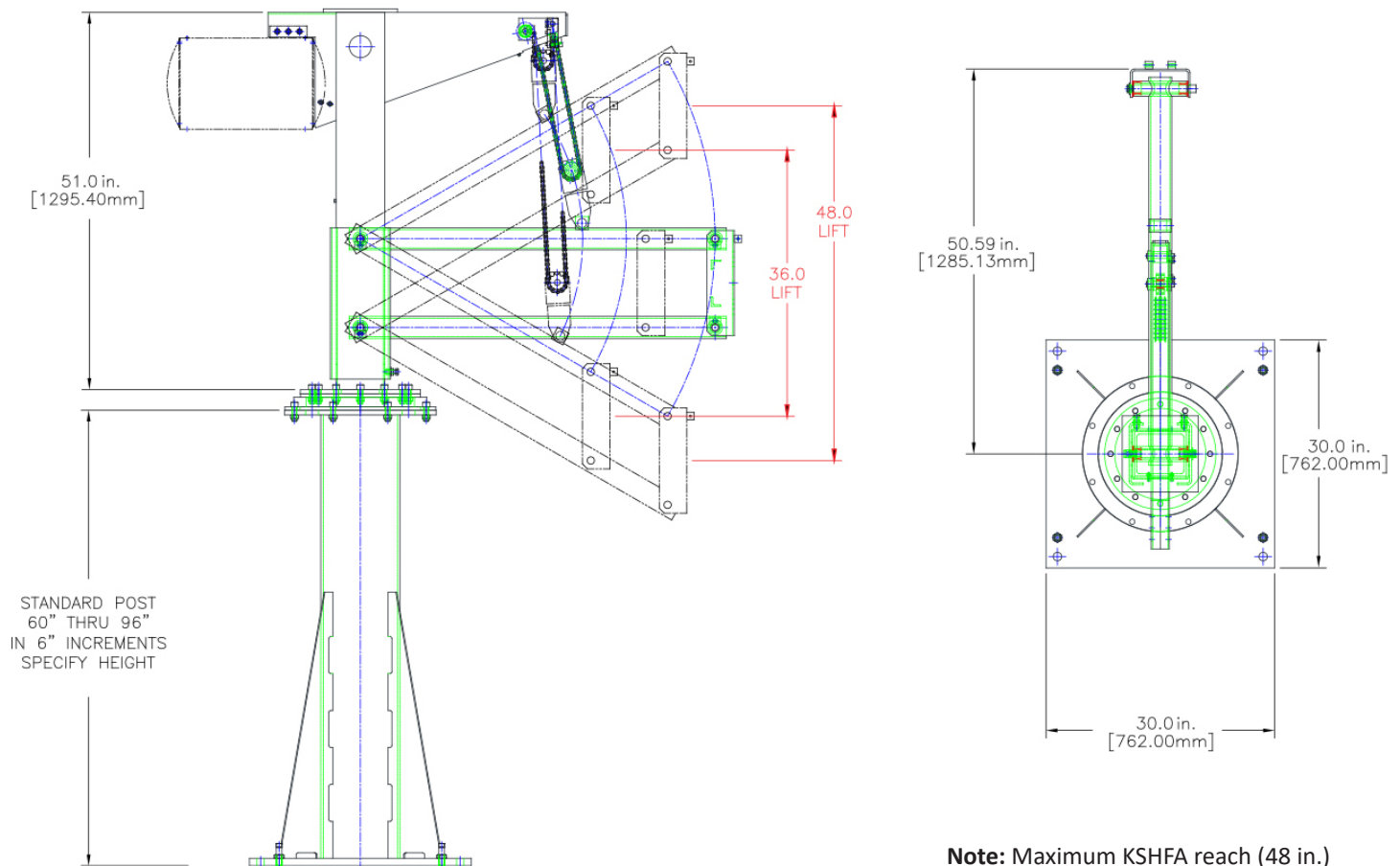


**KSHFA - Rear Frame Lift Assist**

# KSHFA Series

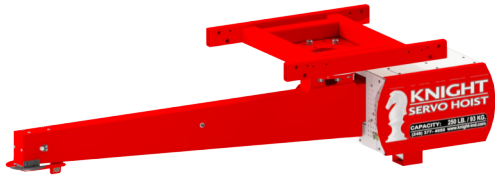
**KSHFA Series Floor Mounted Servo Hoist Arm Specifications**

Part Number	Capacity lbs [kg]	Maximum Speed ft/min [m/min]	Voltage / Phase
KSHFA500-2401	500 lbs. [227kg]	98 ft/min. [30 m/min]	240 / 1 Phase
KSHFA1000-2401	1000 lbs. [454kg]	82 ft/min. [25 m/min]	240 / 1 Phase
KSHFA1500-2401	1,500 lbs. [680kg]	66 ft/min. [20 m/min]	240 / 1 Phase



**Note:** Maximum KSHFA reach (48 in.) does not include length of Boom or End Effector)

## KSHEA Overhead Carriage Mounted Articulating Extension Servo Hoist Arm



Knight Global's KSHEA Series Overhead Carriage-Mounted Extension Servo Hoist Arm provides an operator with the capabilities to reach outside the area directly below a rail system. As with all of Knight's servo hoists, this arm allows an operator to precisely locate or float loads in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHEA Series Servo Arm enables the operator to reach beyond the working limits of an overhead rail system within a workstation. Equipped with the SDS Safety Chain feature.

### Mechanical Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **241 ft/min. [74 m/min]**.
- Maximum Lifting Capacity:  
Up to **750 lbs. [340 kg]**.
- Safety Rating of 125%.
- Overhead Carriage-Mounted.
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Lengths, Unlimited (18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

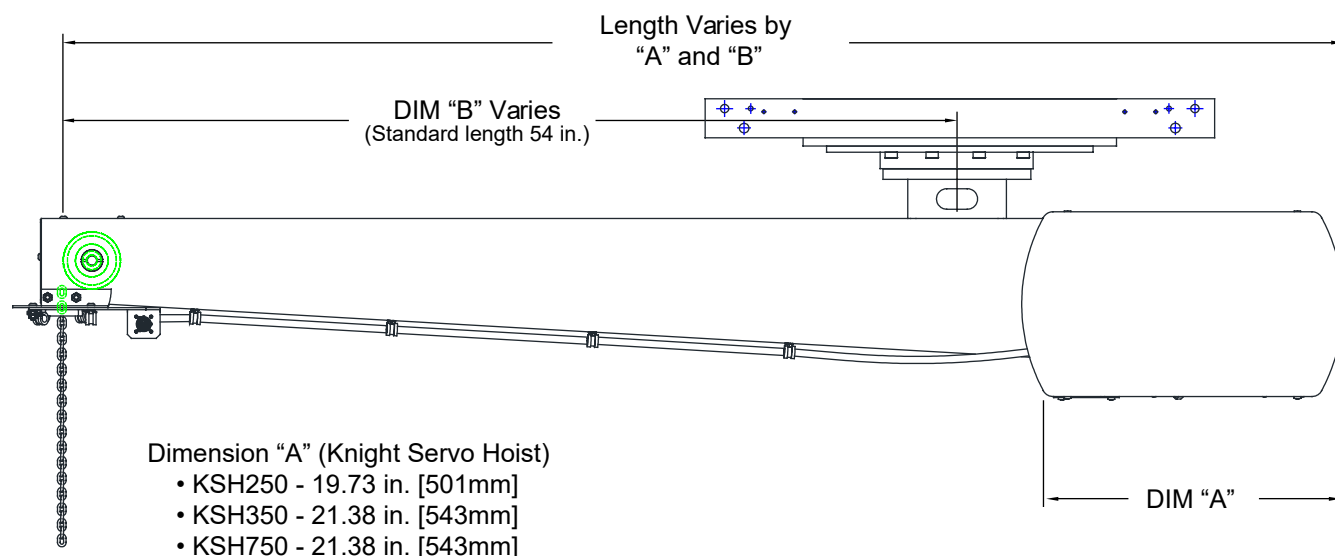
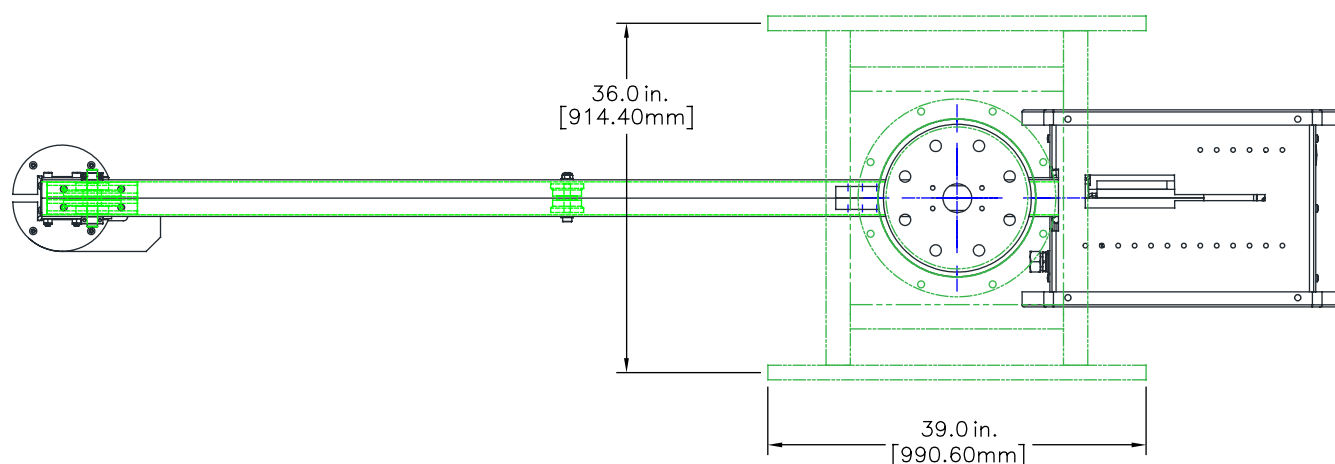
- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

# KSHEA Series

## KSHEA Series Overhead Carriage Mounted Servo Hoist Arm Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min. [m/min]	Voltage / Phase
KSHEA250S-2401	250 lbs. [113kg]	197 ft/min. [60 m/min]	240 / 1 Phase
KSHEA350S-2401	350 lbs. [159kg]	241 ft/min. [74 m/min]	240 / 1 Phase
KSHEA500S-2401	500 lbs. [227kg]	98 ft/min. [30 m/min]	240 / 1 Phase
KSHEA750S-2401	750 lbs. [340kg]	123 ft/min. [38 m/min]	240 / 1 Phase

**Note:** Knight's 350 lb. and 750 lb. KSHEA Series arms are considered special ordered items. Contact a Knight representative for more information.

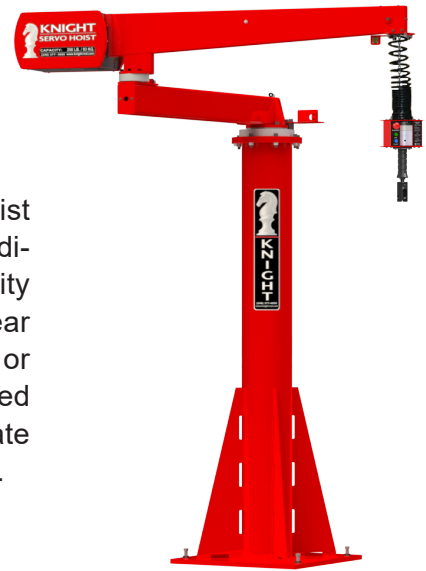


- Dimension "B" (Extension Boom)
- Standard length is 54 in. [1371mm].
  - Smaller lengths are available and considered custom.



## KSHAEA Floor Mounted Articulating Extension Servo Hoist Arm

Knight Global's KSHAEA Series Floor-Mounted Extension Servo Hoist Arm enables an operator to precisely locate or float a load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHAEA Series Servo Arm allows for non-linear overhead reach that varies depending on the design of the work cell or station. Knight's Floor-Mounted KSHAEA Series is most commonly used when overhead clearances or support structures will not accommodate an overhead rail system. Equipped with the SDS Safety Chain feature.



### Mechanical Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **241 ft/min. [74 m/min]**.
- Maximum Lifting Capacity:  
Up to **500 lbs. [226kg]**.
- Safety Rating of 125%.
- Floor Mounted Pedestal Heights:  
8 ft. [2.4m] - 10 ft. [3.0m].
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Length, Unlimited (18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

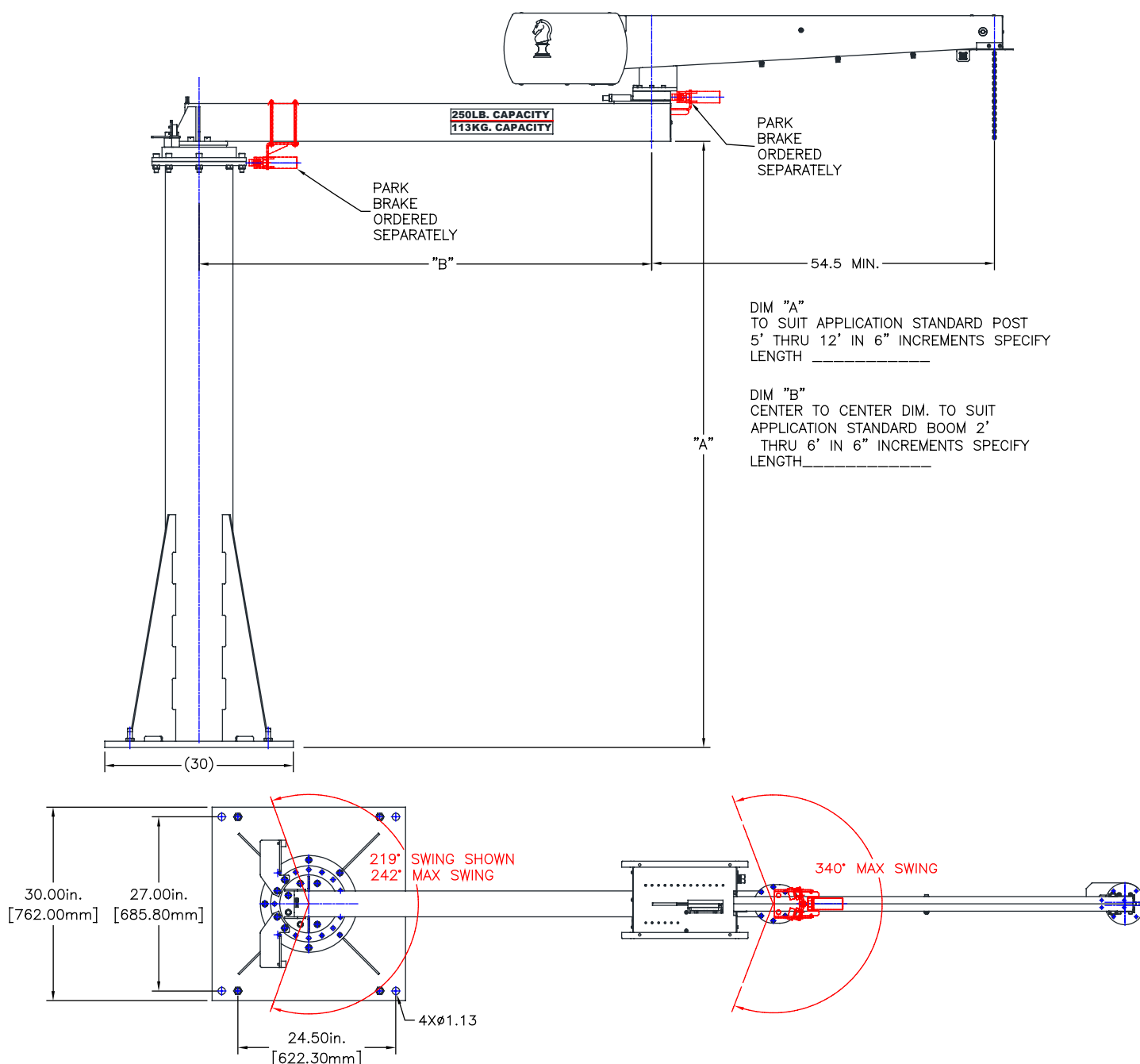
- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

# KSHAEA Series

## KSHAEA Series Overhead Carriage Mounted Servo Hoist Arm Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min [m/min]	Voltage / Phase
KSHAEA250S-2401	250 lbs. [113kg]	197 ft/min. [60 m/min]	240 / 1 Phase
KSHAEA350S-2401	350 lbs. [159kg]	241 ft/min. [74 m/min]	240 / 1 Phase
KSHAEA500S-2401	500 lbs. [227kg]	98 ft/min. [30 m/min]	240 / 1 Phase

**Note:** Knight's 350 lb. and 500 lb. KSHAEA Series arms are considered special ordered items. Contact a Knight representative for more information.



# KSHEB Series



## KSHEB Overhead Carriage Mounted Articulating Extension Boom Servo Hoist Arm

Knight Global's KSHEB Series Overhead Carriage-Mounted Extension Boom Servo Hoist Arm provides an operator with the capabilities to reach outside the area directly below a rail system and to precisely locate or float loads in the

"Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHEB Series Servo Arm allows for overhead reach that varies depending on the design of the work cell or station. Equipped with the SDS Safety Chain feature.

### Mechanical Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **241 ft/min. [74 m/min]**.
- Maximum Lifting Capacity: Up to **1000 lbs. [454kg]**.
- Safety Rating of 125%.
- Overhead Carriage Mounted
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Length, Unlimited (18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

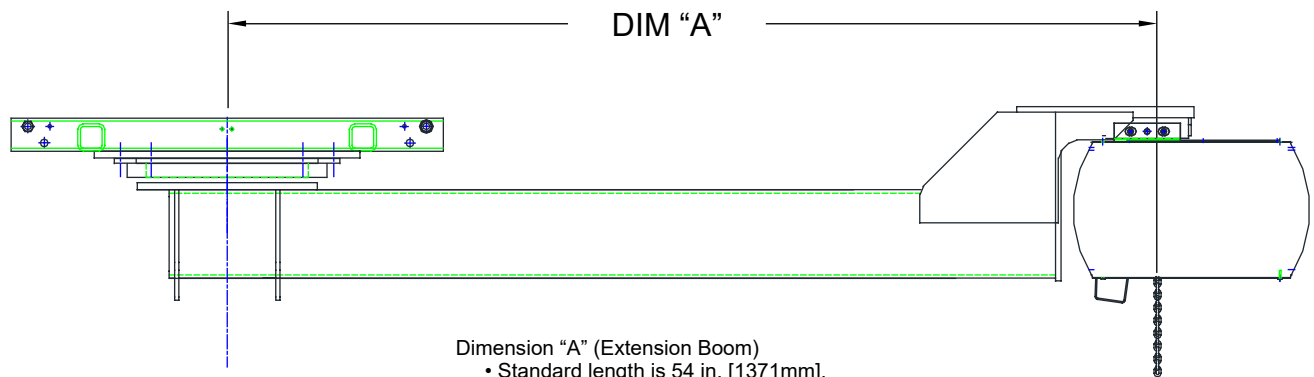
- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as: Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - **(4)** Analog Inputs and **(4)** Analog Outputs
  - **(24)** Inputs or Outputs, configurable
  - **(8)** Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

# KSHEB Series

## KSHEB Series Overhead Carriage Mounted Servo Hoist Arm Specifications

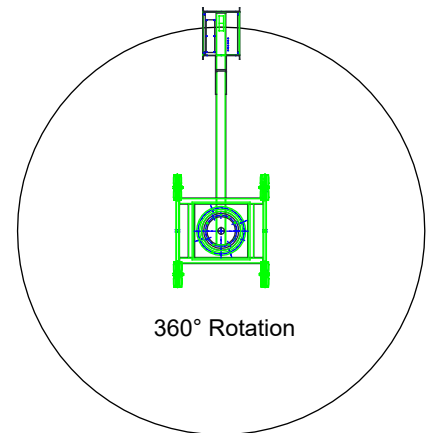
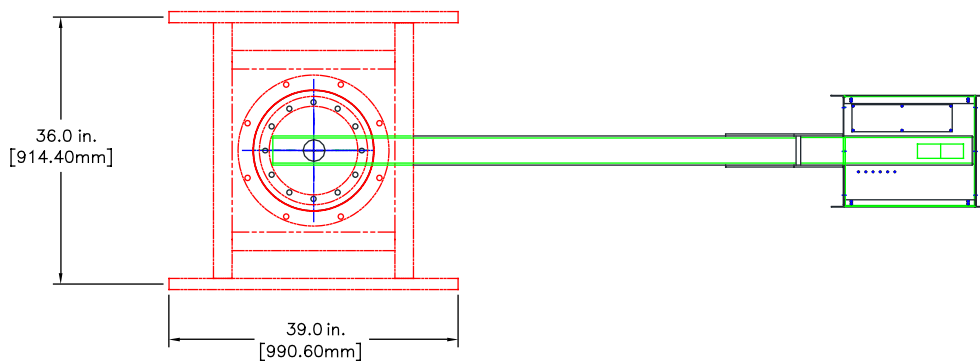
Part Number	Capacity lbs [kg]	Maximum Speed ft/min [m/min]	Voltage / Phase
KSHEB250S-2401	250 lbs. [113kg]	197 ft/min. [60 m/min]	240 / 1 Phase
KSHEB350S-2401	350 lbs. [159kg]	241 ft/min. [74 m/min]	240 / 1 Phase
KSHEB500S-2401	500 lbs. [227kg]	98 ft/min. [30 m/min]	240 / 1 Phase
KSHEB750S-2401	750 lbs. [340kg]	123 ft/min. [38 m/min]	240 / 1 Phase
KSHEB1000S-2401	1000 lbs. [454kg]	82 ft/min. [25 m/min]	240 / 1 Phase

**Note:** Knight's 350 lb., 750 lb. and 1,000 lb. KSHEB Series arms are considered special ordered items. Contact a Knight representative for more information.



Dimension "A" (Extension Boom)

- Standard length is 54 in. [1371mm].
- Smaller lengths are available and considered custom.



## KSHAEB Floor Mounted Articulating Extension Boom Servo Hoist Arm

Knight Global's KSHAEB Series Floor-Mounted Extension Boom Servo Hoist Arm enables an operator to precisely locate or float a load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHAEB Series Servo Arm allows for non-linear overhead reach that varies depending on the design of the work cell or station. Knight's Floor-Mounted KSHAEB Series is most commonly used when overhead clearances or support structures will not accommodate an overhead rail system. Equipped with the SDS Safety Chain feature.



### Mechanical Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **241 ft/min. [60 m/min]**.
- Maximum Lifting Capacity: Up to **1,000 lbs. [453kg]**.
- Safety Rating of 125%.
- Floor Mounted.
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Length, Unlimited (18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:
  - Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

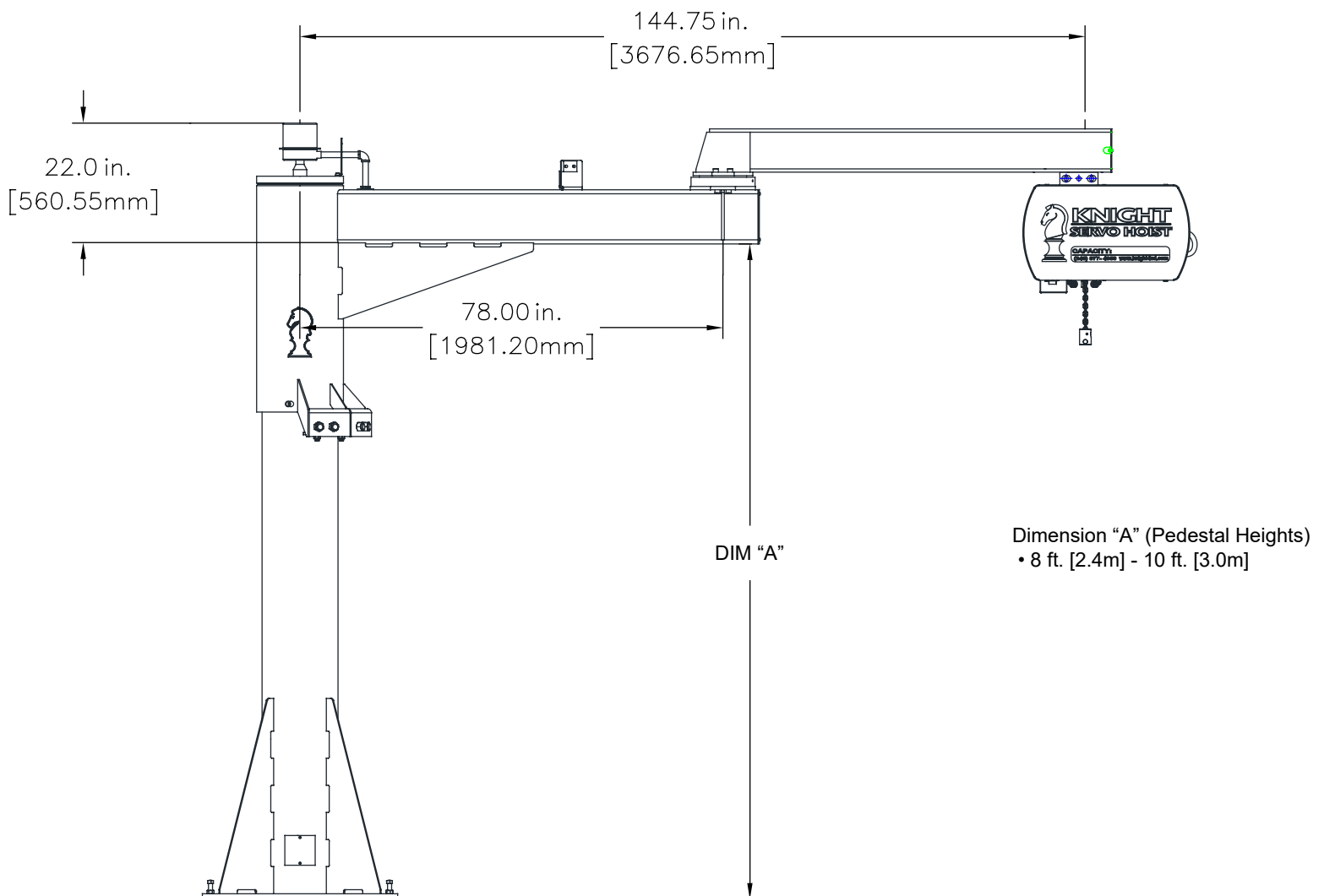


# KSHAEB Series

## KSHAEB Series Overhead Carriage Mounted Servo Hoist Arm Specifications

Part Number	Capacity lbs [kg]	Maximum Speed [fpm/mpm]	Voltage / Phase
KSHAEB250S-2401	250 lbs. [113kg]	197 ft/min. [60 m/min]	240 / 1 Phase
KSHAEB350S-2401	350 lbs. [159kg]	241 ft/min. [74 m/min]	240 / 1 Phase
KSHAEB500S-2401	500 lbs. [227kg]	98 ft/min. [30 m/min]	240 / 1 Phase
KSHAEB750S-2401	750 lbs. [340kg]	123 ft/min. [38 m/min]	240 / 1 Phase
KSHAEB1000S-2401	1000 lbs. [454kg]	82 ft/min. [25 m/min]	240 / 1 Phase

**Note:** Knight's 350 lb., 750 lb. and 1,000 lb. KSHEB Series arms are considered special ordered items. Contact a Knight representative for more information.





## KSHVA Overhead Carriage Mounted Vertical Articulating Servo Hoist Arm

Knight Global's KSHVA Series Overhead Carriage-Mounted Vertical Servo Hoist Arm enables an operator to reach low and overhead work areas to manipulate heavy loads in a confined work cell. Also, the system can precisely locate or float that load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHVA Series Servo Arm creates a stable lifting platform, eliminating the yarding and swinging of the free hanging chain or cable of other systems. Equipped with the SDS Safety Chain feature.

### Mechanical Features

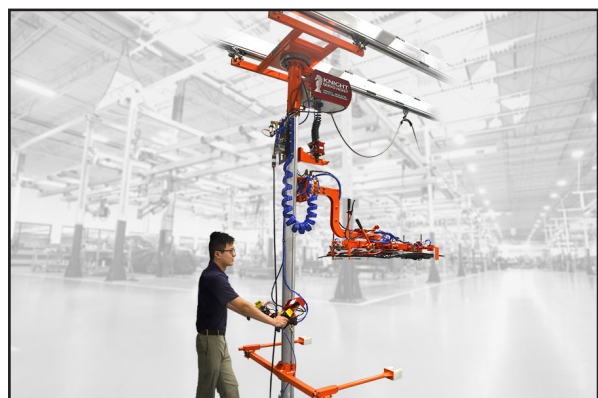
- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **241 ft/min. [74m/min]**.
- Maximum Lifting Capacity:  
Up to **1,000 lbs. [454kg]**.
- Safety Rating of 125%.
- Overhead Carriage Mounted.
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Length, Unlimited (18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.



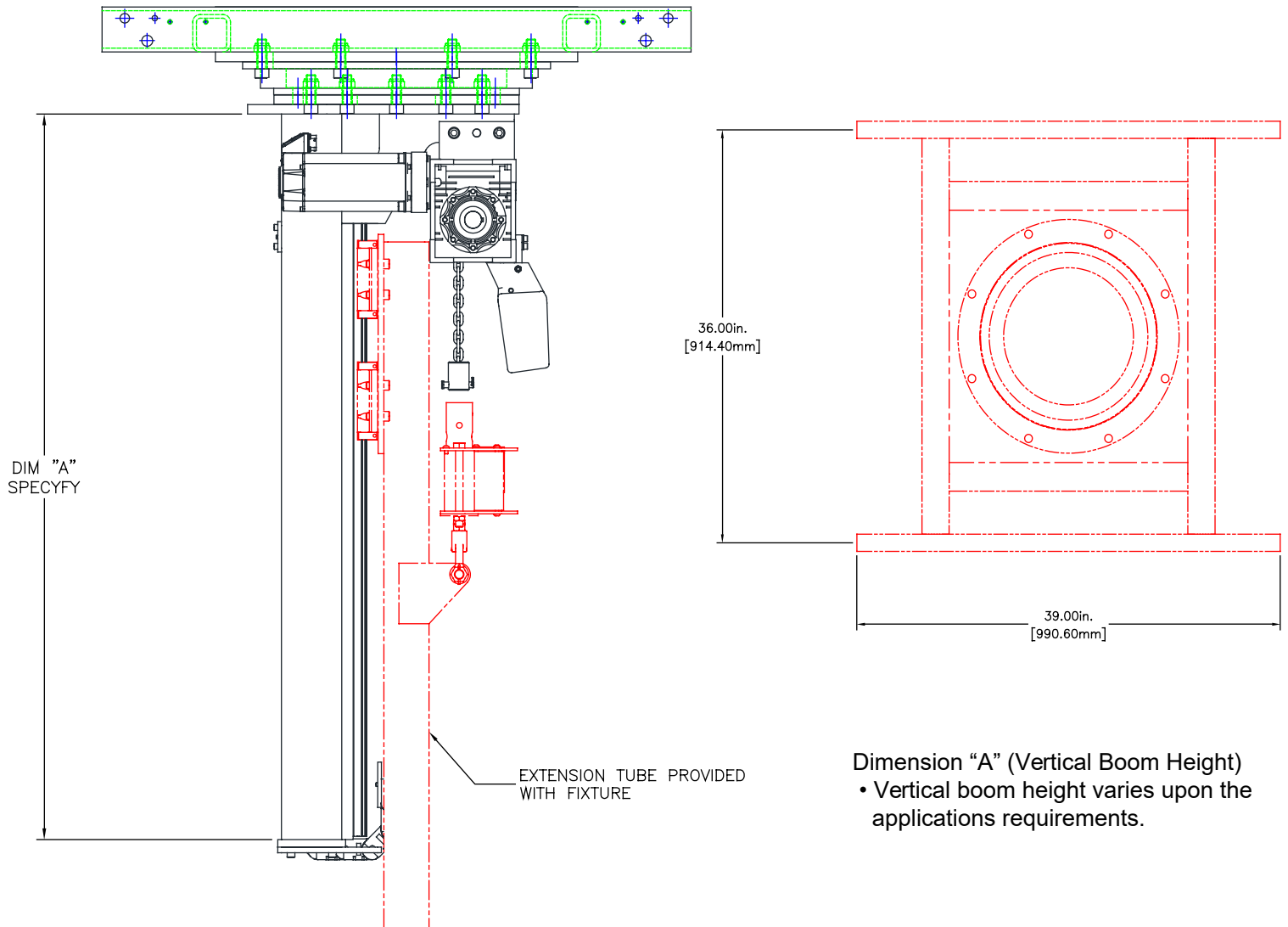
**KSHVA - Sunroof Lift Assist**

# KSHVA Series

## KSHVA Series Overhead Carriage Mounted Servo Hoist Arm Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min. [m/min]	Voltage / Phase
KSHVA250S-2401	250 lbs. [113kg]	197 ft/min. [60 m/min]	240 / 1 Phase
KSHVA350S-2401	350 lbs. [159kg]	241 ft/min. [74 m/min]	240 / 1 Phase
KSHVA750S-2401	750 lbs. [340kg]	123 ft/min. [38 m/min]	240 / 1 Phase
KSHVA1000S-2401	1000 lbs. [454kg]	82 ft/min. [25 m/min]	240 / 1 Phase

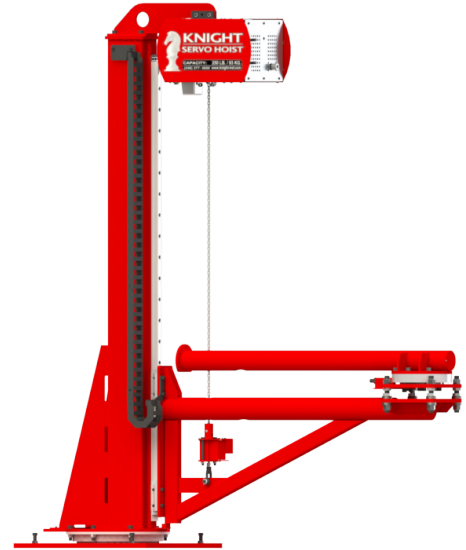
**Note:** All capacities exclude the weight of the jib and the boom. Knight's 350 lb., 750 lb. and 1,000 lb. KSHVA Series arms are considered special ordered items. Contact a Knight representative for more information.



# KSHVAA Series

## Knight KSHVAA Floor-Mounted Articulating Servo Hoist Arm

Knight Global's KSHVAA Series Floor-Mounted Vertical Servo Hoist Arm enables an operator to reach low and overhead work areas to manipulate heavy loads in a confined work cell. Also, the system can precisely locate or float that load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHVAA Series Servo Arm creates a stable lifting platform, eliminating the yarding and swinging of the free hanging chain or cable of other systems. Equipped with SDS Safety Chain feature.



### Mechanical Features

- Redundant chain design for safe operation:
  - Load Chain: Supports the load.
  - Safety Chain: Travels with the load chain for safety and redundancy.
- Speeds: Up to **241 ft/min. [74m/min]**.
- Maximum Lifting Capacity:  
Up to **1,000 lbs. [453kg]**.
- Safety Rating of 125%.
- Floor-Mounted.
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Length, Unlimited (18 ft. Standard).
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

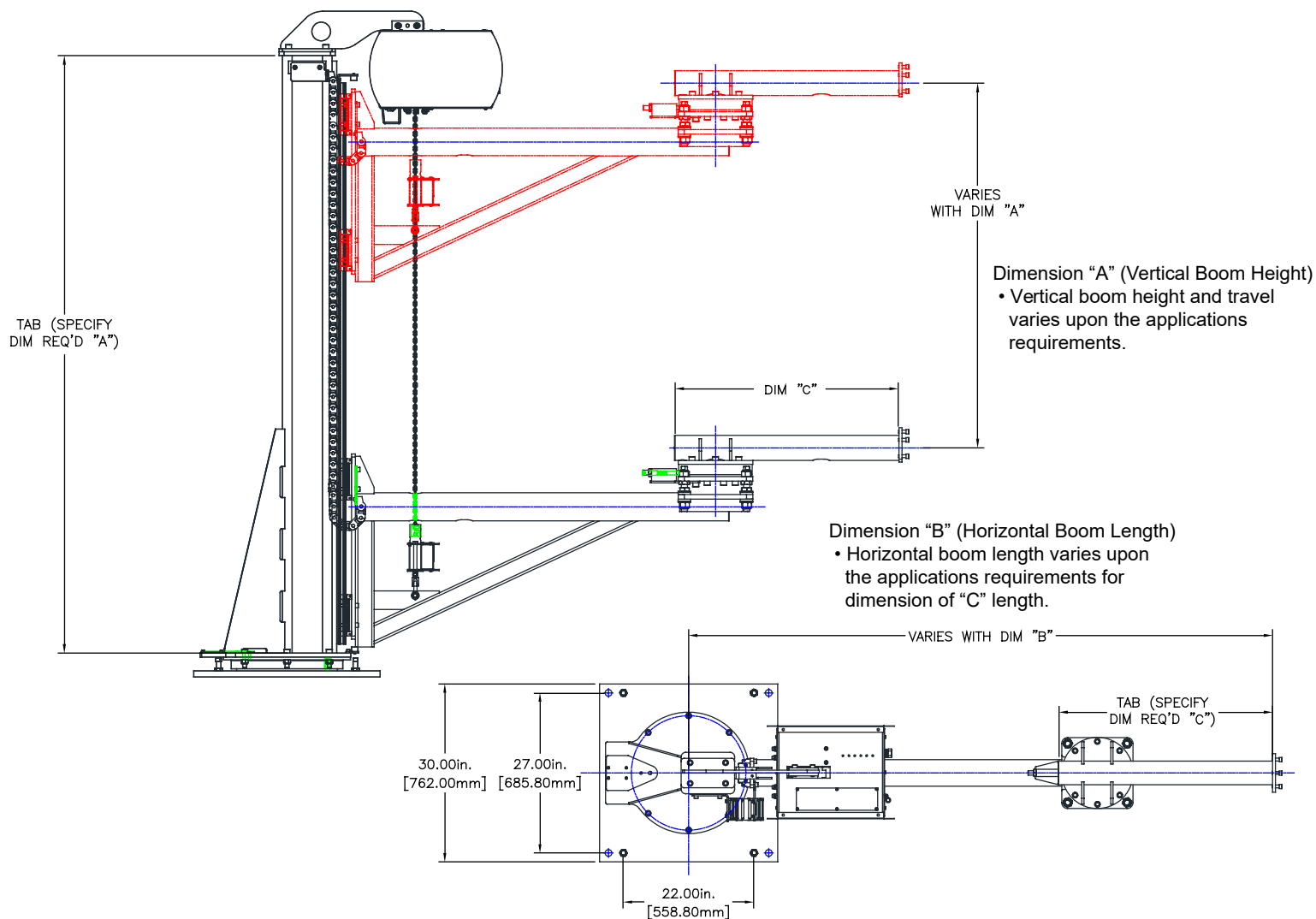
- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

# KSHVAA Series

## KSHVAA Series Overhead Carriage Mounted Servo Hoist Arm Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min. [m/min]	Voltage / Phase
KSHVAAS-250-2401	250 lbs. [113kg]	197 ft/min. [60 m/min]	240 / 1 Phase
KSHVAAS-350-2401	350 lbs. [159kg]	241 ft/min. [74 m/min]	240 / 1 Phase
KSHVAAS-750-2401	750 lbs. [340kg]	123 ft/min. [38 m/min]	240 / 1 Phase
KSHVAAS-1000-2401	1000 lbs. [453kg]	82.02 ft/min. [25 m/min]	240 / 1 Phase

**Note:** All capacities exclude the weight of the jib and the boom. Knight's 350 lb., 750 lb. and 1,000 lb. KSHVAA Series arms are considered special ordered items. Contact a Knight representative for more information.





# KSHVAR Series

## KSHVAR Overhead Carriage-Mounted Vertical Articulating Servo Hoist Roller Arm

Knight Global's KSHVAR Series Overhead Carriage-Mounted Vertical Servo Hoist Roller Arm enables an operator to reach low and overhead work areas to manipulate heavy loads in a confined work cell. Also, the system can precisely locate or float that load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHVAR Series Servo Roller Arm creates a stable lifting platform, eliminating the yarding and swinging of the free hanging chain or cable of other systems.

The KSHVAR roller chain series allows for more stroke of the arm, versus the standard chain because the servo is offset to the backside of the arm. The roller chain is a more robust option compared to the link chain and provides a smoother transition across the sprocket. These systems are used very successfully to load instrument panels (IP's) in vehicles through the driver's side door and to load large batteries into recessed vehicle compartments.



**Note:** Product does not come as shown. Overhead carriage sold separately. Contact a Knight representative for more information.

### Mechanical Features

- Speeds: Up to **131 ft/min. [40 m/min]**.
- Maximum Lifting Capacity:  
Up to **1,500 lbs. [680kg]**.
- Safety Rating of 125%.
- Overhead Carriage-Mounted.
- Fail-Safe Brake.
- Heavy Duty Roller Chain.
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

### Electrical Features

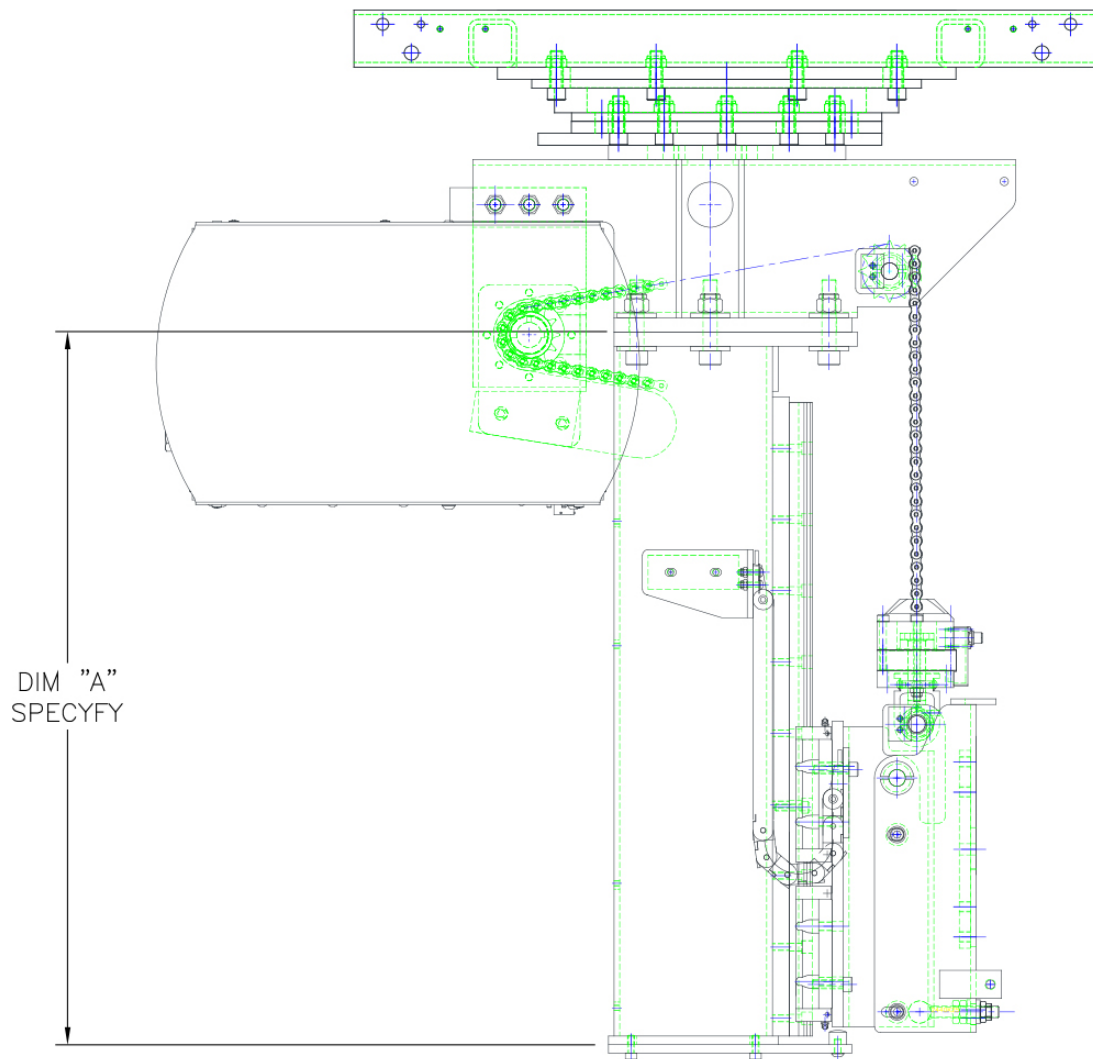
- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.



# KSHVAR Series

## KSHVAR Overhead Carriage Mounted Vertical Articulating Roller Arm Specifications

Part Number	Capacity lbs [kg]	Maximum Speed ft/min. [m/min]	Voltage / Phase
KSHVAR-750-2401	750 lbs. [340kg]	131 ft/min. [40 m/min]	240 / 1 Phase
KSHVAR-1000-2401	1000 lbs. [453kg]	66 ft/min. [20 m/min]	240 / 1 Phase



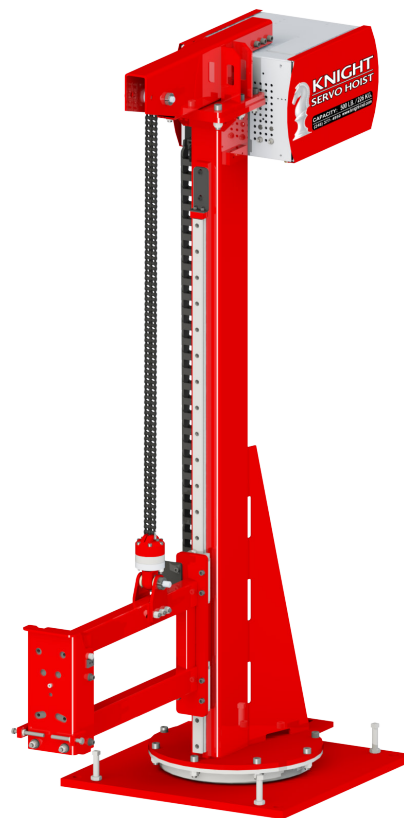
Dimension "A" (Vertical Boom Height)  
• Vertical boom height varies upon the applications requirements.

# KSHVAAR Series

## KSHVAAR Floor-Mounted Vertical Articulating Servo Hoist Roller Arm

Knight Global's KSHVAAR Series Floor-Mounted Vertical Servo Hoist Roller Arm enables an operator to reach low and overhead work areas to manipulate heavy loads in a confined work cell. Also, the system can precisely locate or float that load in the "Z" direction (vertical axis) with speed, precision, quality, unmatched reliability and repeatability. The KSHVAAR Series Servo Roller Arm creates a stable lifting platform, eliminating the yarding and swinging of the free hanging chain or cable of other systems.

The KSHVAAR roller chain series allows for more stroke of the arm, versus the standard chain because the servo is offset to the backside of the arm. The roller chain is a more robust option compared to the link chain and provides a smoother transition across the sprocket.



### Mechanical Features

- Speeds: Up to **131 ft/min. [40 m/min]**.
- Maximum Lifting Capacity:  
Up to **1,000 lbs. [453kg]**.
- Safety Rating of 125%.
- Floor-Mounted.
- Fail-Safe Brake.
- Heavy Duty Roller Chain.
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

### Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique "Float" Mode.
- Programmable Overload Capability.

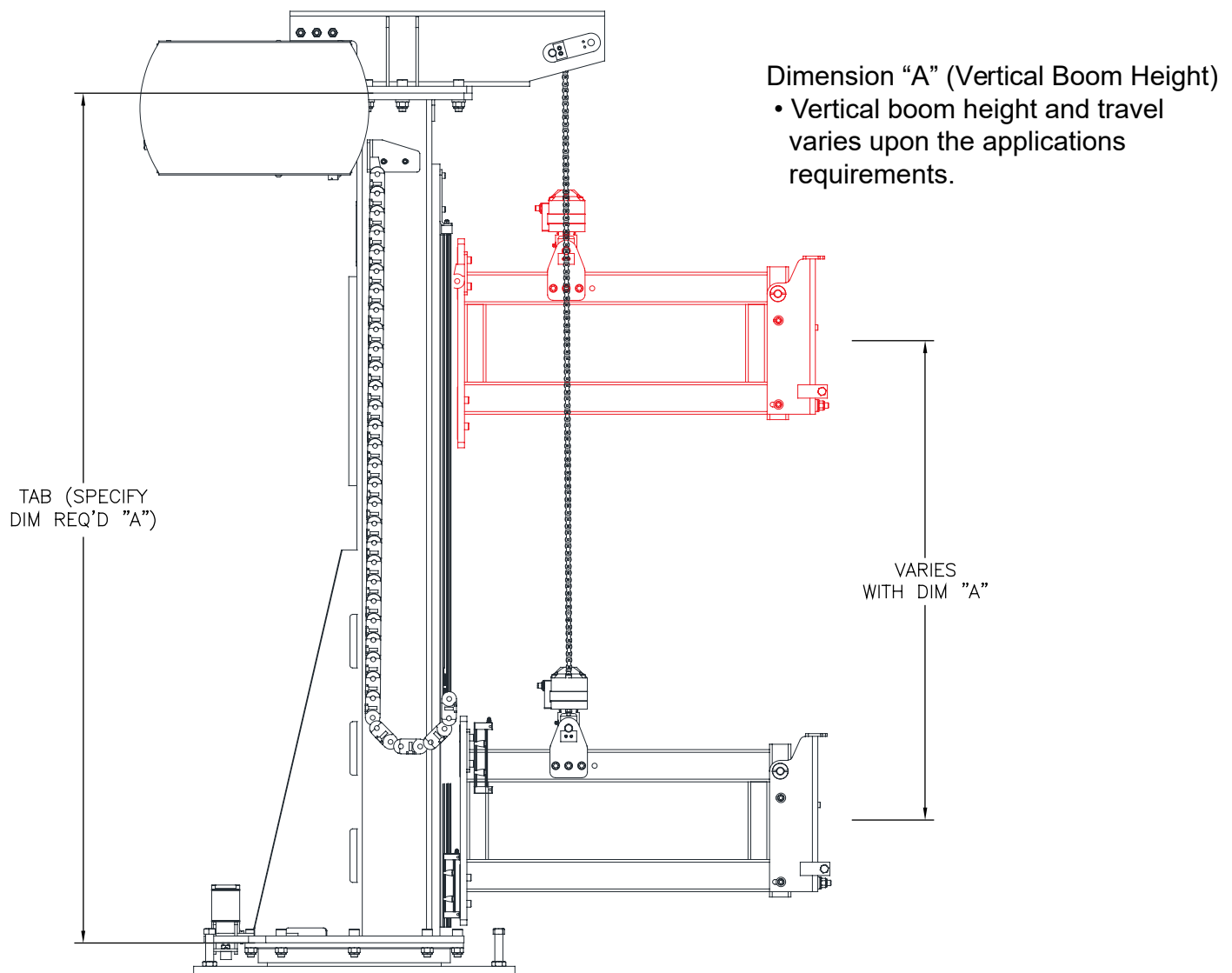
### Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:  
Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

# KSHVAAR Series

**KSHVAAR Floor Mounted Vertical Articulating Roller Arm Specifications**

Part Number	Capacity lbs [kg]	Maximum Speed [fpm/mpm]	Voltage / Phase
KSHVAAR-750-2401	750 lbs. [340kg]	131 ft/min. [40 m/min]	240 / 1 Phase
KSHVAAR-1000-2401	1000 lbs. [453kg]	66 ft/min. [20 m/min]	240 / 1 Phase



# Servo Tractor Series



## KST Servo Rack & Pinion Tractor

Knight Global's KST Series Rack and Pinion Servo Tractor is a stand-alone tractor that is designed to push, tow and position loads that are suspended from a trolley on an overhead rail system.

Knight's KST Series Servo Tractors have Knight's Intelligent Assist Device (IAD) Servo Technology incorporated into their design allowing them to provide controlled transfers of workloads with speed and precision. Rack and Pinion Tractors can be programmed to automatically or manually move the runway (X Axis) or bridge (Y Axis) to intended locations with repeatable accuracy. Also, the Knight Servo Tractors can also be programmed for line speed synchronization.

The KST Servo Tractor offers a continuous contact non-slip rack and pinion design. This continuous non-slip design allows for a more accurate positioning of the load. The Servo Tractor can either be manually controlled by the operator or programmed for automatic movement.

## Mechanical Features

- Maximum Travel Speed:
  - Up to **259 ft/min. [79 m/min]**.
- Maximum Towing Capacity:
  - Up to **4,000 lbs. [1,814 kg]**.
- Non-Slip Rack and Pinion Drive System.
- Clutch (**24 VDC**).
- Absolute Positioning and Line Tracking.

## Electrical Features

- Industry Standard **24 VDC, 2 AMP** power is available for custom tooling such as: Limit Switches, etc.
- H5 Rated (Continuous Duty Cycle).
- **240VAC**, Single Phase, **50/60 Hz**.
- I/O Capabilities.

## Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.

## KST SERIES SPECIFICATIONS

Model	Towing Capacity lbs. [kg]	Travel Speed fpm. [mpm]	Voltage/Phase
KST	4,000 lbs. [1,814 kg]	259 ft/min. [79 m/min]	240 / 1 Phase
KST	4,000 lbs. [1,814 kg]	174 ft/min. [53 m/min]	240 / 1 Phase



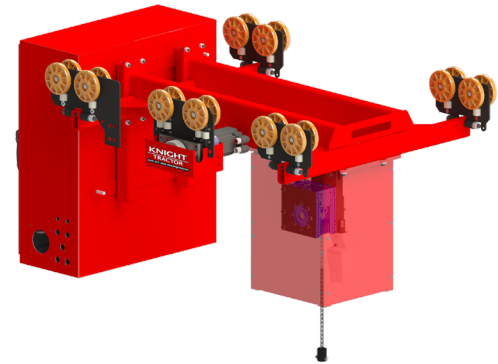
# Servo Tractor/Hoist System

## KSHXZ Servo “X” Tractor with “Z” Hoist Control Series

Knight Global's KSHXZ Servo “X” Tractor with a “Z” Lift Hoist is designed to accurately locate, push, tow, lift and position loads from an overhead rail system. The KSHXZ Series facilitates a (2) two axis combo configuration which includes (1) one lift hoist. Knight's KSHXZ Series Servo Tractors have Knight's Intelligent Assist Device (IAD) Servo Technology incorporated into their design allowing them to provide controlled transfers of workloads with speed and precision.

Knight Global's Servo “X” control tractor with “Z” lift assist servo can be programmed to automatically or manually move and stop on the runway (X Axis) at intended locations with repeatable accuracy while lifting loads (Z Axis) at the same time, thus eliminating unnecessary operator motions. Also, Knight Servo Tractors can be programmed for assembly line speed synchronization.

The KSHXZ Servo Tractor offers a continuous contact non-slip rack and pinion design. This continuous non-slip design allows for a more accurate positioning of the load. The Servo Tractor can either be manually controlled by the operator or programmed for automatic movement.



## Mechanical Features

- Axis Direction: “X” and “Z”.
- Maximum Tractor Travel Speed:
  - Up to **174 ft/min. [53 m/min]**.
- Maximum Towing Capacity:
  - Up to **4,000 lbs. [1,814 kg]**.
- Maximum Lifting Capacity:
  - Up to **1,000 lbs. [454 kg]**.
- Non-Slip Rack and Pinion Drive System.
- Clutch (**24 VDC**).
- Absolute Positioning and Line Tracking.
- Safety Rating of **125%**.
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Lengths, Unlimited (**18 ft.** Standard).
- Sealed Worm Style Gearbox.
- **H5** Rated (Continuous Duty Cycle).

## Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:
  - Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (**4**) Analog Inputs and (**4**) Analog Outputs
  - (**24**) Inputs or Outputs, configurable
  - (**8**) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

## Software Features

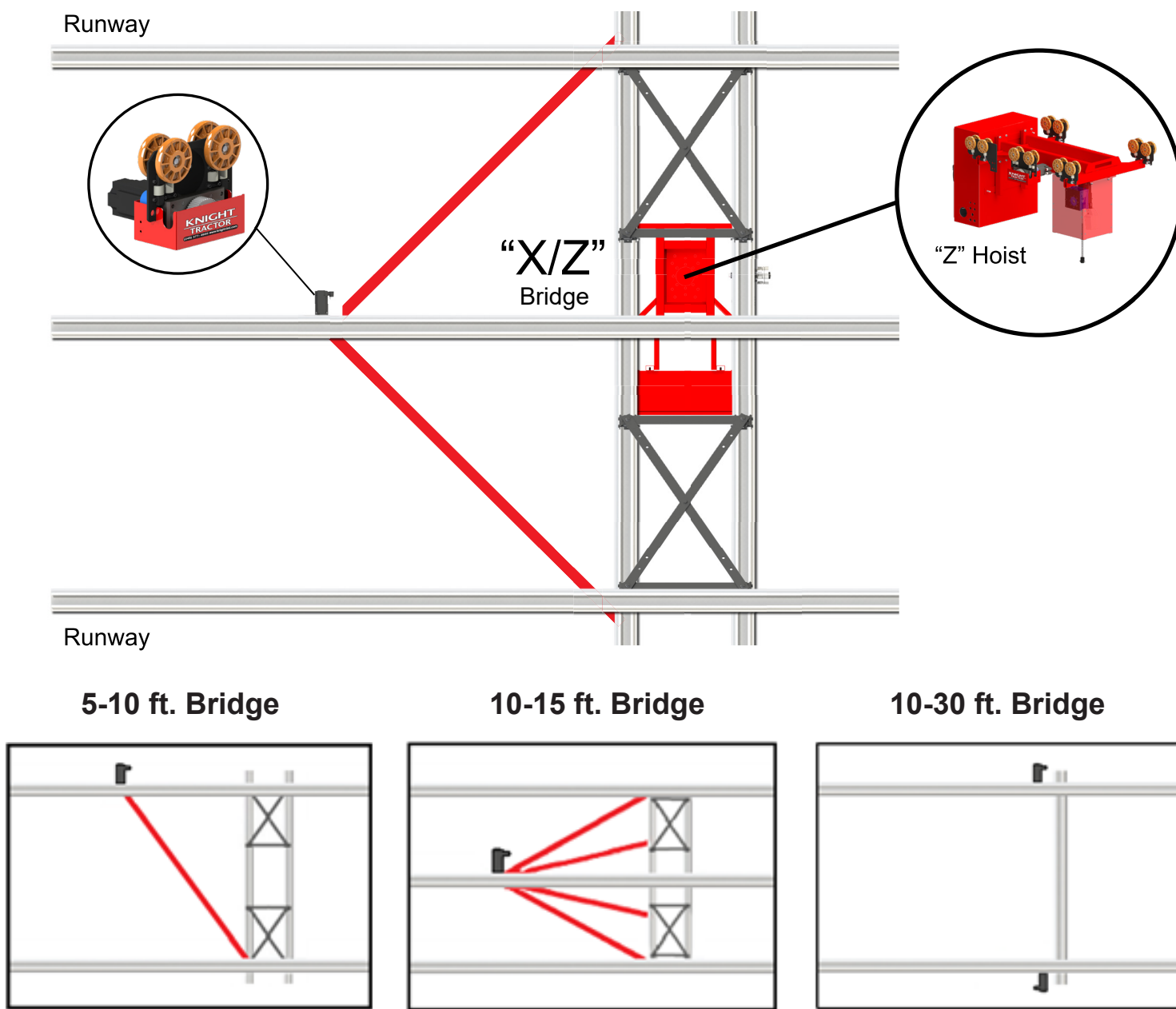
- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique “Float” Mode.
- Programmable Overload Capability.
- Programmable Operator Path.

# Servo Tractor/Hoist System

## KSHXZ SERIES SPECIFICATIONS

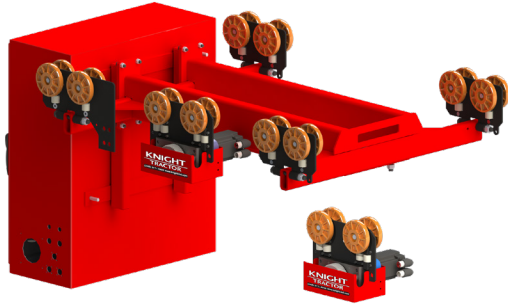
Model	Hoist Capacity lbs. [kg]	Towing Capacity lbs. [kg]	Hoist Lift Speed ft./min. [m/min]	Tractor Travel Speed ft./min. [m/min]	Voltage/Phase
KSHXZ250S-2401	250 lbs. [113 kg]	4,000 lbs. [1,814 kg]	197 ft/min. [60 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase
KSHXZ350S-2401	350 lbs. [159 kg]	4,000 lbs. [1,814 kg]	241 ft/min. [74 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase
KSHXZ500S-2401	500 lbs. [227 kg]	4,000 lbs. [1,814 kg]	98 ft/min. [30 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase
KSHXZ750S-2401	750 lbs. [340 kg]	4,000 lbs. [1,814 kg]	123 ft/min. [38 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase
KSHXZ1000S-2401	1,000 lbs. [454 kg]	4,000 lbs. [1,814 kg]	82 ft/min. [25 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase

### KSHXZ Bridge Configurations



**NOTE:** All Knight Global Tractor configurations are dependant on the total weight of the systems.  
All Tractor systems require the use of Rigid End Trucks.

# Servo Tractor System



## KSHXY Servo “X/Y” Tractor

Knight Global’s KSHXY Servo “X/Y” Tractors are designed to accurately locate, push, tow, lift and position loads from an overhead rail system. The KSHXY Series facilitates a (2) two axis combo configuration. Knight’s KSHXY Series Servo Tractors have Knight’s Intelligent Assist Device (IAD) Servo Technology incorporated into their design allowing them to provide controlled transfers of workloads with speed and precision.

Knight Global’s Servo “X/Y” Tractors can be programmed to automatically or manually move and stop the bridge (Y Axis) or runway (X Axis) at intended locations with repeatable accuracy, thus eliminating unnecessary operator motions. Also, Knight Servo Tractors can be programmed for assembly line speed synchronization.

The KSHXY Servo Tractor offers a continuous contact non-slip rack and pinion design. This continuous non-slip design allows for a more accurate positioning of the load. The Servo Tractor can either be manually controlled by the operator or programmed for automatic movement.

## Mechanical Features

- Axis Direction: “X” and “Y”.
- Maximum Tractor Travel Speed:
  - Up to 174 ft/min. [53 m/min].
- Maximum Towing Capacity:
  - Up to 4,000 lbs. [1,814 kg].
- Non-Slip Rack and Pinion Drive System.
- Clutch (24 VDC).
- Absolute Positioning and Line Tracking.
- Sealed Worm Style Gearbox.
- H5 Rated (Continuous Duty Cycle).

## Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:
  - Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (4) Analog Inputs and (4) Analog Outputs
  - (24) Inputs or Outputs, configurable
  - (8) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: Remote Pendant or Wireless Remote Control.

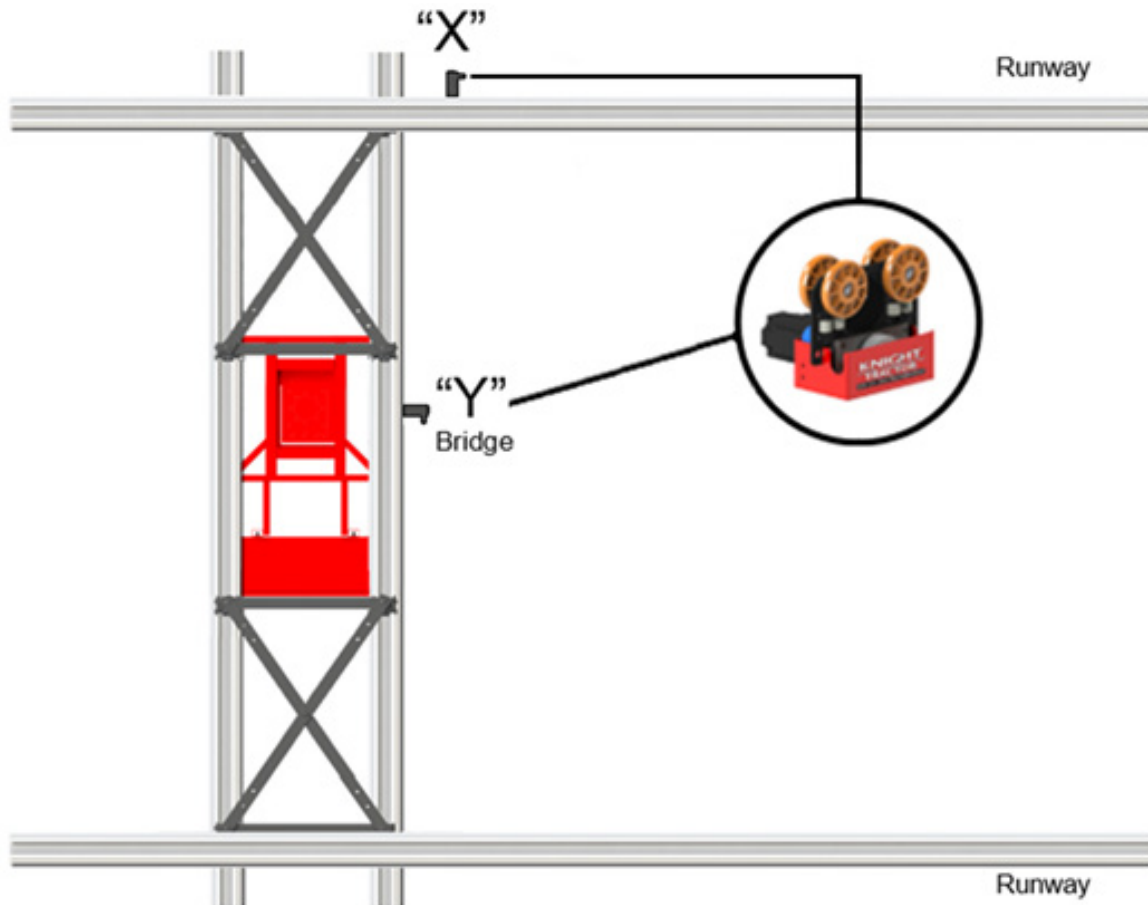
## Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Programmable Operator Path.

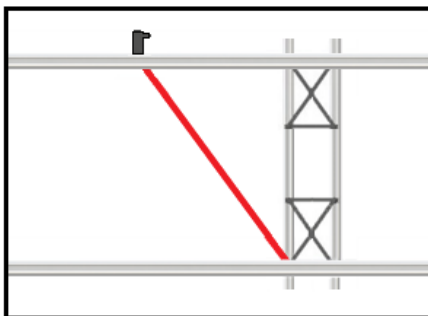
# Servo Tractor System

## KSHXY SERIES SPECIFICATIONS

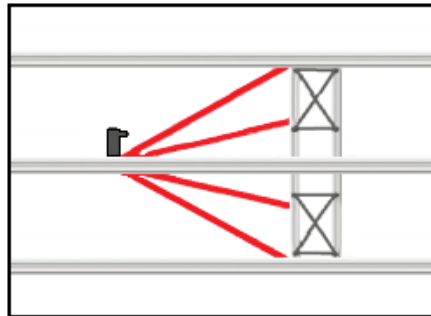
Model	Towing Capacity lbs. [kg]	Tractor Travel Speed ft/min. [m/min]	Voltage/Phase
KSHXY-2401	4,000 lbs. [1,814 kg]	174 ft/min. [53 m/min]	240 / 1 Phase



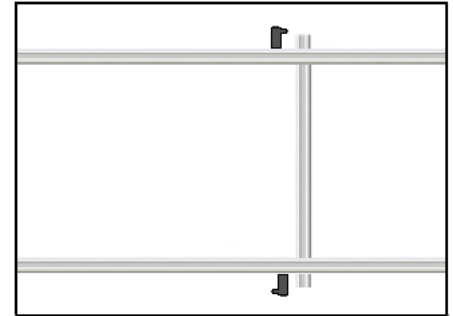
5-10 ft. Bridge



10-15 ft. Bridge



10-15 ft. Bridge



**NOTE:** All Knight Global Tractor configurations are dependant on the total weight of the systems.  
All Tractor systems require the use of Rigid End Trucks.

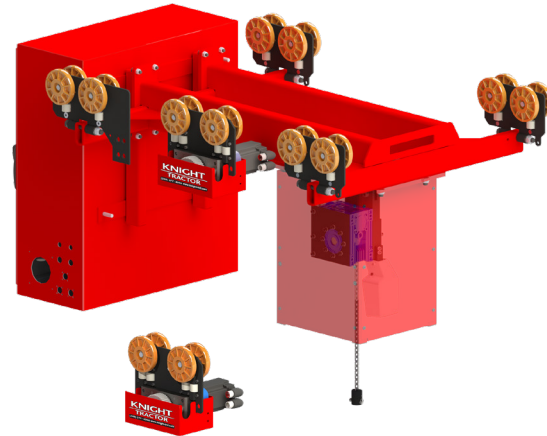
# Servo Tractor/Hoist System

## KSHXYZ Servo “X/Y” Tractors with “Z” Hoist Control Series

Knight Global's KSHXYZ Servo “X” and “Y” Tractors in conjunction with a “Z” Lift Hoist is designed to accurately locate, push, tow, lift and position loads from an overhead rail system. The KSHXYZ Series facilitates a (3) three axis combo configuration which includes (1) one lift hoist. Knight's KSHXZ Series Servo Tractors have Knight's Intelligent Assist Device (IAD) Servo Technology incorporated into their design allowing them to provide controlled transfers of workloads with speed and precision.

Knight Global's Servo “X” and “Y” Tractors in conjunction with “Z” Lift Hoists can be programmed to automatically or manually move and stop the runway (X Axis) or bridge (Y Axis) at intended locations with repeatable accuracy while lifting loads (Z Axis) at the same time, thus eliminating unnecessary operator motions. Also, Knight Servo Tractors can be programmed for assembly line speed synchronization.

The KSHXYZ Servo Tractor offers a continuous contact non-slip rack and pinion design. This continuous non-slip design allows for a more accurate positioning of the load. The Servo Tractor can either be manually controlled by the operator or programmed for automatic movement.



## Mechanical Features

- Axis Direction: “X”, “Y”, and “Z”.
- Maximum Tractor Travel Speed:
  - Up to **174 ft/min. [53 m/min]**.
- Maximum Towing Capacity:
  - Up to **4,000 lbs. [1,814 kg]**.
- Maximum Lifting Capacity:
  - Up to **1,000 lbs. [454 kg]**.
- Non-Slip Rack and Pinion Drive System.
- Clutch (**24 VDC**).
- Absolute Positioning and Line Tracking.
- Safety Rating of **125%**.
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Lengths, Unlimited (**18 ft.** Standard).
- Sealed Worm Style Gearbox.
- **H5** Rated (Continuous Duty Cycle).

## Electrical Features

- Industry Standard 24 VDC, 2 AMP power is available for custom tooling such as:
  - Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- 240 VAC, Single Phase 50/60 Hz.
- Load Sensing, Part Weight and Handle Force.
- I/O Capabilities:
  - (**4**) Analog Inputs and (**4**) Analog Outputs
  - (**24**) Inputs or Outputs, configurable
  - (**8**) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicator: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

## Software Features

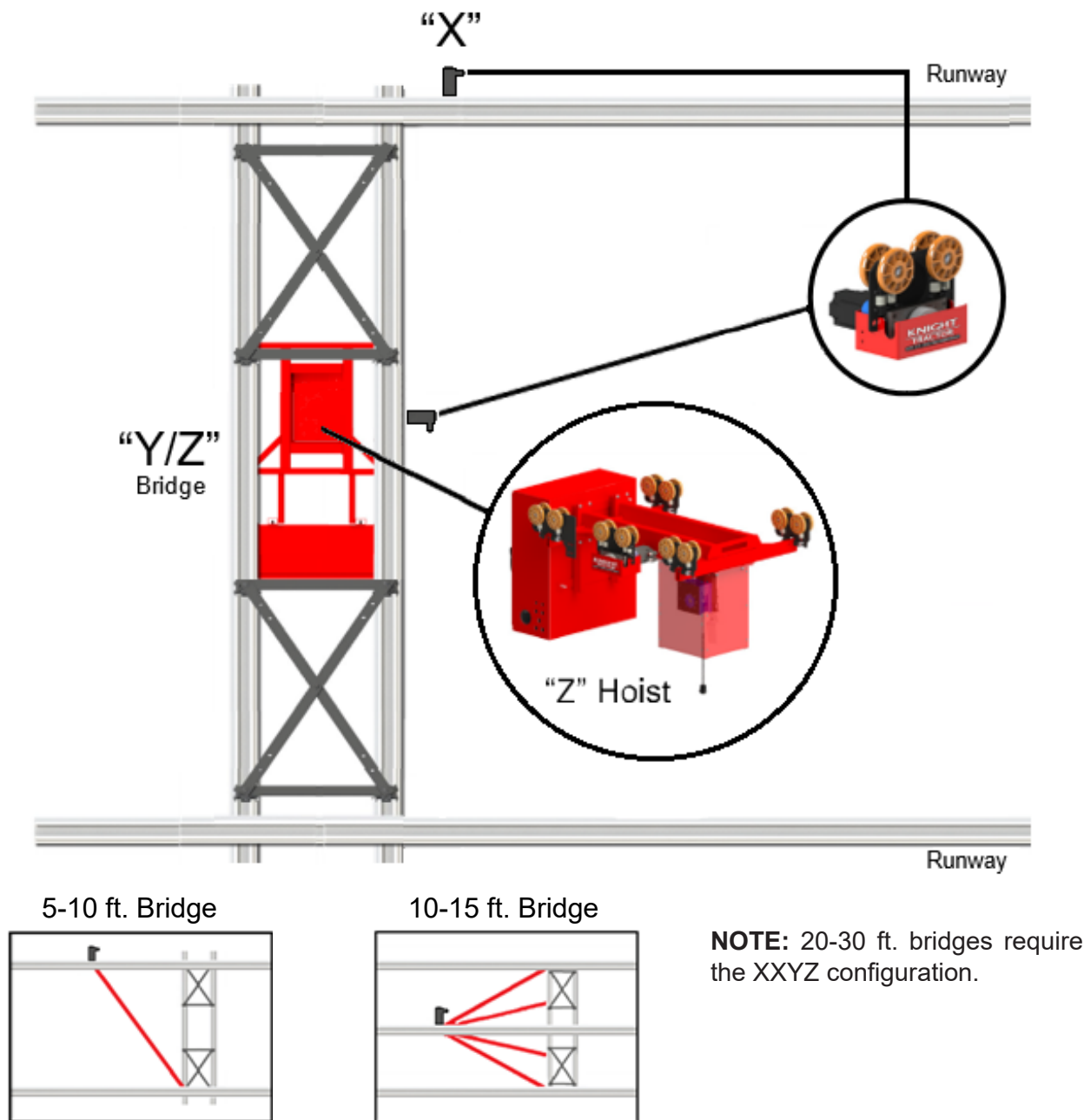
- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique “Float” Mode.
- Programmable Overload Capability.
- Programmable Operator Path.



# Servo Tractor/Hoist System

## KSHXYZ SERIES SPECIFICATIONS

Model	Hoist Capacity lbs. [kg]	Towing Capacity lbs. [kg]	Hoist Lift Speed ft/m. [m/min]	Tractor Travel Speed ft/m. [m/min]	Voltage/Phase
KSHXYZ250S-2401	250 lbs. [113 kg]	4,000 lbs. [1,814 kg]	197 ft/min. [60 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase
KSHXYZ350S-2401	350 lbs. [159 kg]	4,000 lbs. [1,814 kg]	241 ft/min. [74 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase
KSHXYZ500S-2401	500 lbs. [227 kg]	4,000 lbs. [1,814 kg]	98 ft/min. [30 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase
KSHXYZ750S-2401	750 lbs. [340 kg]	4,000 lbs. [1,814 kg]	123 ft/min. [38 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase
KSHXYZ1000S-2401	1,000 lbs. [454 kg]	4,000 lbs. [1,814 kg]	82 ft/min. [25 m/min]	174 ft/min. [53 m/min]	240 / 1 Phase



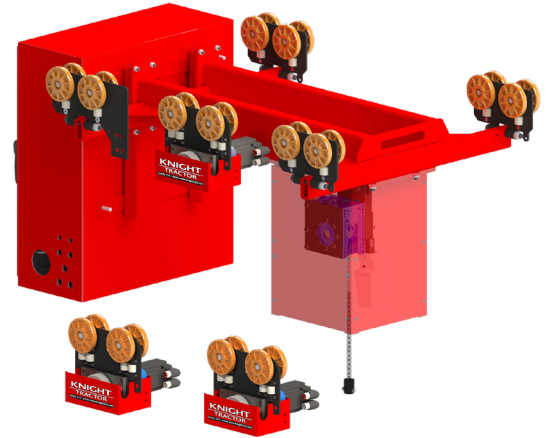
# Servo Tractor/Hoist Series

## KSHXXYZ Servo “XX/Y” Tractor with “Z” Hoist Control Series

Knight Global's KSHXXYZ Servo “XX/Y” Tractors in conjunction with a “Z” Lift Hoist is designed to accurately locate, push, tow, lift and position loads from an overhead rail system. The KSHXXYZ Series facilitates a (3) three axis combo configuration which includes (1) one lift hoist. Knight's KSHXXYZ Series Servo Tractors have Knight's Intelligent Assist Device (IAD) Servo Technology incorporated into their design allowing them to provide controlled transfers of workloads with speed and precision.

Knight's Global's Servo “XX/Y” Tractors with a “Z” Lift Hoist can be programmed to automatically or manually move and stop a dual runway (X Axis) or bridge (Y Axis) at intended locations with repeatable accuracy while lifting loads (Z Axis) at the same time, thus eliminating unnecessary operator motions. Also, Knight Servo Tractors can be programmed for assembly line speed synchronization.

The KSHXXYZ Servo Tractor offers a continuous contact non-slip rack and pinion design. This continuous non-slip design allows for a more accurate positioning of the load. The Servo Tractor can either be manually controlled by the operator or programmed for automatic movement.



## Mechanical Features

- Axis Direction: “X”, “Y” and “Z”.
- Maximum Travel Speed:
  - Up to **174 ft/min.** [**53 m/min.**].
- Maximum Towing Capacity:
  - Up to **4,000 lbs.** [**1,814kg**].
- Maximum Lifting Capacity:
  - Up to **1,000 lbs.** [**454kg**].
- Non-Slip Rack and Pinion Drive System.
- Clutch (**24 VDC**).
- Absolute Positioning and Line Tracking.
- Safety Rating of **125%**.
- Fail-Safe Brake.
- Knight's Patented Chain, for longer life.
- Chain Lengths, Unlimited (**18 ft.** Standard).
- Sealed Worm Style Gearbox.
- **H5** Rated (Continuous Duty Cycle).

## Electrical Features

- Industry Standard **24 VDC, 2 AMP power** is available for custom tooling such as:
  - Clamps, Vacuum Cups, Switches, Proximity Limits, Lights, etc.
- Enable trigger, for quicker response.
- **240 VAC**, Single Phase, **50/60 Hz**.
- Load Sensing:
  - Part Weight and Handle Force.
- I/O Capabilities:
  - (**4**) Analog Inputs and (**4**) Analog Outputs.
  - (**24**) Inputs or Outputs, configurable.
  - (**8**) Dedicated Inputs.
  - Expansion I/O: Ethernet, Unlimited.
- LED Status Indicators: Green and Blue Lighted Push Buttons.
- LED Fault Indicators: Illuminated Red Run-Stop Button, Twist to Release.
- Optional: **Remote Pendant** or **Wireless Remote Control**.

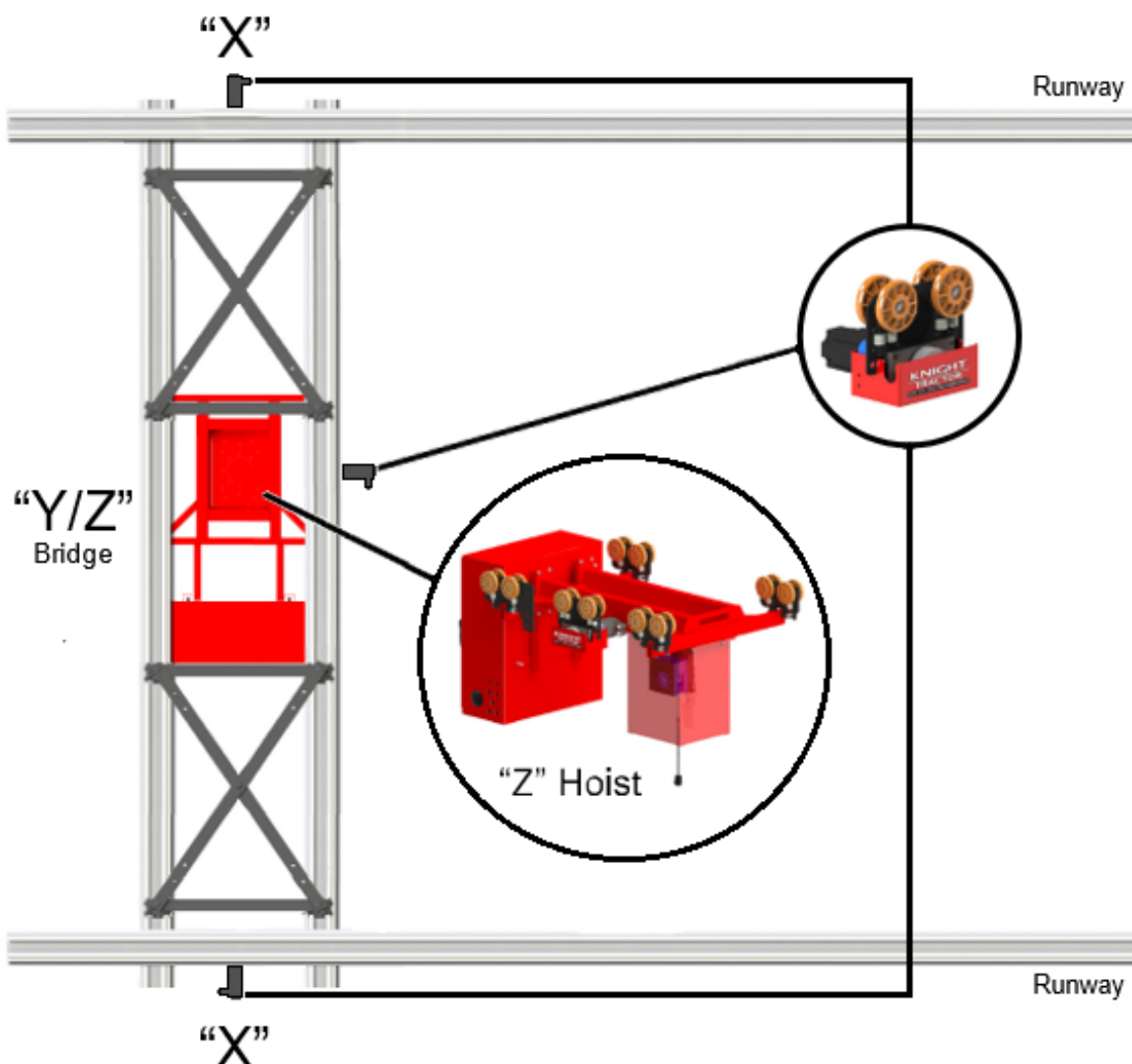
## Software Features

- Programming and Diagnostic Communication Ports.
- Virtual Travel Limits.
- Speed Reduction Zones.
- Impact Limiting.
- Active Dampening.
- Knight's Unique “Float” Mode.
- Programmable Overload Capability.
- Programmable Operator Path.

# Servo Tractor/Hoist Series

## KSHXXYZ SERIES SPECIFICATIONS






Model	Hoist Capacity lbs. [kg]	Towing Capacity lbs. [kg]	Hoist Lift Speed ft/min. [m/min.]	Tractor Travel Speed ft/min. [m/min.]	Voltage/Phase
KSHXXYZ250S-2401	250 lbs. [113 kg]	4,000 lbs. [1,814 kg]	197 ft/min. [60 m/min.]	174 ft/min. [53 m/min.]	240 / 1 Phase
KSHXXYZ350S-2401	350 lbs. [159 kg]	4,000 lbs. [1,814 kg]	241 ft/min. [74 m/min.]	174 ft/min. [53 m/min.]	240 / 1 Phase
KSHXXYZ500S-2401	500 lbs. [227 kg]	4,000 lbs. [1,814 kg]	98 ft/min. [30 m/min.]	174 ft/min. [53 m/min.]	240 / 1 Phase
KSHXXYZ750S-2401	750 lbs. [340 kg]	4,000 lbs. [1,814 kg]	123 ft/min. [38 m/min.]	174 ft/min. [53 m/min.]	240 / 1 Phase
KSHXXYZ1000S-2401	1,000 lbs. [454 kg]	4,000 lbs. [1,814 kg]	82 ft/min. [25 m/min.]	174 ft/min. [53 m/min.]	240 / 1 Phase


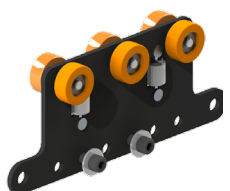

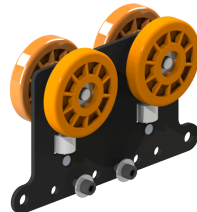
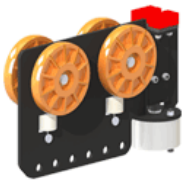


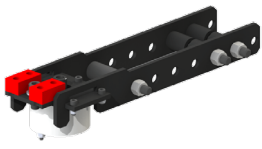




**NOTE:** 20-30 ft. bridges require the XYZ configuration.

# Servo Accessories

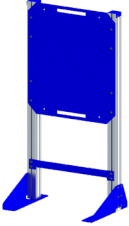






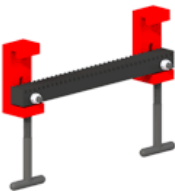


Knight Global Servo Hoist Accessories contain a wide variety of accessories that include; Trolleys for Rail Systems, Air Balancer Pulleys, Hooks and Safety Cable Kits.

KDSA1010 / KDSA1011 SDS Servo Hoist Chain Replacement Kit	EBD1547 Servo Hoist Roller Chain	KSAD1022 Swivel Hook with Eye	KSAA1001 & KSAA1002 Quick Connect / Disconnect	KSAA1004 Shackle
 <ul style="list-style-type: none"> <li>• Developed in conjunction with Pewag to ensure optimal strength and wear.</li> <li>• Ideal for high-wear applications and high dynamic chain loads.</li> <li>• 4mm or 5mm chain.</li> </ul>	 <ul style="list-style-type: none"> <li>• Standard Series Double Strand ANSI 50-2 Rolle Chain.</li> <li>• Avg. Tensile Strength: 12,200 lbs [5,534kg].</li> <li>• Maximum Working Load: 2,000 lbs [907kg].</li> </ul>	 <ul style="list-style-type: none"> <li>• Max. Capacity: Up to 3,200 lbs. [1,451kg].</li> <li>• Positive Lock Latch is Self-Locking when hook is loaded.</li> <li>• Rated for both Wire Rope and use with Grade 80/100 Chain.</li> </ul>	 <ul style="list-style-type: none"> <li>• Max. Load Capacity: Up to 2,000 lbs. [907kg].</li> <li>• KSAA1001- 16mm to 7/8 in. adapter.</li> <li>• KSAA1002- 20mm to 1.25 in. adapter.</li> </ul>	 <ul style="list-style-type: none"> <li>• Secures fixtures or loads in-line with chain.</li> <li>• Maximum Capacity: Up to 1,000 lbs [453kg].</li> </ul>

KSAA1007 Swivel Hook Shackle	KSAA1048 Load Trolley	KSAA1059 Load Trolley	KSAA1050 Load Trolley	EBA1293 RAD7510 Servo Load Trolley w/ Brake
 <ul style="list-style-type: none"> <li>• Max. Capacity: Up to 1,000 lbs. [454kg].</li> <li>• Larger Connection Opening.</li> <li>• Includes: KSAD1022 Swivel Hook with Eye.</li> </ul>	 <ul style="list-style-type: none"> <li>• Transfers Loads along the horizontal axis and suspends Servo Hoists from RAD4110 rail.</li> <li>• Max. Capacity: Up to 900 lbs. [408kg].</li> </ul>	 <ul style="list-style-type: none"> <li>• Transfers Loads along the horizontal axis and suspends Servo Hoists from RAD6110 rail.</li> <li>• Max. Capacity: Up to 1,600 lbs. [725kg].</li> </ul>	 <ul style="list-style-type: none"> <li>• Transfers Loads along the horizontal axis and suspend Servo Hoists from RAD7510 rail.</li> <li>• Max. Capacity: Up to 2,500 lbs. [1,134kg].</li> </ul>	 <ul style="list-style-type: none"> <li>• Typically used when an operator needs to lock or park a servo hoist on a bridge or runway.</li> <li>• Max. Capacity: Up to 3,000 lbs. [1,360kg].</li> </ul>

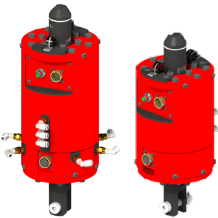
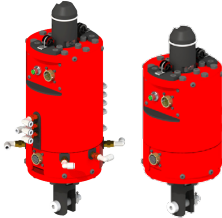
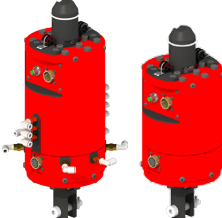
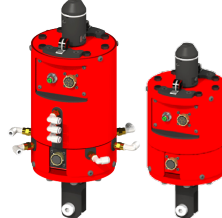
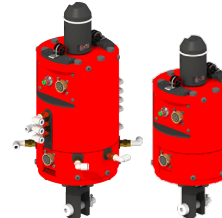
KSAA1001 KSHS Series Servo Hoist Rail Brake	KCA1040 Series Electrical Coiled Cable	KCA1041 Series Electrical Straight Cable	4-Pin Micro Switch Cable	8-Pin Micro Switch Cable
 <ul style="list-style-type: none"> <li>• Pneumatic Brake.</li> <li>• Attaches to the servo hoist's load trolley.</li> <li>• Allows the operator to accurately park the servo.</li> <li>• Also a drag brake when regulator is attached.</li> </ul>	 <ul style="list-style-type: none"> <li>• Connects a Servo Hoist to a load monitoring module by wrapping itself around the Servo Chain.</li> <li>• 90 Degree Male to Female Connectors.</li> </ul>	 <ul style="list-style-type: none"> <li>• Connects a separate control handle pendant to Servo Hoists.</li> <li>• 90 Degree Male to Female Connectors.</li> </ul>	 <ul style="list-style-type: none"> <li>• 4-Pin Micro DC Single Key.</li> <li>• Available with Straight or Right Angle Connector Ends.</li> </ul>	 <ul style="list-style-type: none"> <li>• 8-Pin Micro DC Single Key.</li> <li>• Available with Straight or Right Angle Connector Ends.</li> </ul>

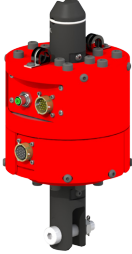




# Servo Accessories (Cont.)





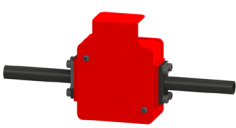
<b>KCA1001 Electrical Disconnect Enclosure Stand</b>  <ul style="list-style-type: none"> <li>• Mounts enclosures at an ergonomically correct height.</li> <li>• Provides mounting surface for enclosures in open workstation environments.</li> </ul>	<b>KCA1100 I-Beam Column Mount Kit for Disconnect Boxes</b>  <ul style="list-style-type: none"> <li>• Mounts directly to an I-Beam post in multiple orientations.</li> <li>• No drilling into I-Beam required.</li> <li>• Used for the KCA1018, KCA1019 &amp; KCA1056 Electrical Disconnect Enclosures.</li> <li>• Purchased separately.</li> </ul>	<b>KCA1018 3KVA Electrical Disconnect Enclosure</b>  <ul style="list-style-type: none"> <li>• Used with: KSH250S, 350S, 500S, 750S and 1000S Servo Hoists.</li> <li>• Step down from 480VAC to 240VAC Flange disconnect.</li> </ul>	<b>KCA1055 5KVA Electrical Disconnect Enclosure</b>  <ul style="list-style-type: none"> <li>• Used with: KSHXY, KSHXZ, KSHTC and KSHXYZ Servo Tractors and Hoists.</li> <li>• Step down from 480VAC to 240VAC Flange disconnect.</li> </ul>	<b>KCA1056 Dual 5KVA Elec. Disconnect Enclosure</b>  <ul style="list-style-type: none"> <li>• Used with: KSHXY, KSHXZ, KSHTC and KSHXYZ Servo Tractors and Hoists.</li> <li>• Step down from 480VAC to 240VAC Flange disconnect.</li> <li>• Provides disconnection point for two Knight Global systems.</li> </ul>
<b>EBA1289 7.5 KVA Electrical Disconnect Enclosure</b>  <ul style="list-style-type: none"> <li>• Used with: KSHXXYZ and KSHXYZ Servo Tractor Systems.</li> <li>• (2) Flange disconnect</li> </ul>	<b>KSAA1063 Precision Roller Chain Wear Gauge</b>  <ul style="list-style-type: none"> <li>• Used to measure the wear on Servo Arm roller chains.</li> </ul>	<b>ETA1045 Gear Rack Installation Clamp</b>  <ul style="list-style-type: none"> <li>• Assists in the installation of the linear gear rack by holding the rack in position, tight to the rail.</li> <li>• Can be used as a gauge, to splice two pieces of rack together.</li> </ul>	<b>KSAA1003 Precision Chain Wear Gauge</b>  <ul style="list-style-type: none"> <li>• Used to measure the wear on Servo Hoists and Pneumatic Air Balancers 4mm/5mm galvanized chain.</li> </ul>	<b>KSAA1073 / KSAA1075 Rotary Union Adapter Retrofit Kit</b>  <ul style="list-style-type: none"> <li>• Adapter used with existing Servo Hoists or D-Series Hoists that already have an LMM.</li> <li>• Comes with all necessary hardware to retrofit</li> <li>• <b>KSAA1073 is for 4mm chain hoists - 500 lbs capacity.</b></li> <li>• <b>KSAA1075 is for 5mm chain hoists - 1000 lbs capacity.</b></li> </ul>



# Servo Controls






KLCA1058 / KLCA1061 Rotary Unions - Electropneumatic	KLCA1059 / KLCA1062 Rotary Unions - Electropneumatic	KLCA1060 / KLCA1063 Rotary Union - Electropneumatic	KSAA1068 / KSAA1069 Rotary Union for Speed Hoist	KSAA1070 / KSAA1071 Rotary Union for Speed Hoist
 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, chains from winding up.</li> <li>• Includes patented load cells (LMM) w/ integral amplifier</li> <li>• <b>500 lbs. max capacity</b></li> <li>• (7) or (1) pneumatic ports for function commands</li> <li>• 19- Pin M/F Receptacles</li> <li>• Used in conjunction with 2-Speed Control Handle w/ OCI</li> </ul>	 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, chains from winding up.</li> <li>• Includes patented load cells (LMM) w/ integral amplifier</li> <li>• <b>1000 lbs. max capacity</b></li> <li>• (7) or (1) pneumatic ports for function commands</li> <li>• 19- Pin M/F Receptacles</li> <li>• Used in conjunction with 2-Speed Control Handle w/ OCI</li> </ul>	 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, chains from winding up.</li> <li>• Includes patented load cells (LMM) w/ integral amplifier</li> <li>• <b>350 lbs. max capacity</b></li> <li>• (7) or (1) pneumatic ports for function commands</li> <li>• 19- Pin M/F Receptacles</li> <li>• Used in conjunction with 2-Speed Control Handle w/ OCI</li> </ul>	 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, SDS chains from winding up.</li> <li>• Voltage: 24VDC up to 2 amps.</li> <li>• <b>200-400 lbs capacity for SDS Speed Hoists.</b></li> <li>• (7) or (1) pneumatic ports for function commands.</li> <li>• 12-Pin M/F Receptacles</li> <li>• Used in conjunction with the Variable Speed Pendants.</li> </ul>	 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, SDS chains from winding up.</li> <li>• Voltage: 24VDC up to 2 amps.</li> <li>• <b>750-1000 lbs capacity for SDS Speed Hoists.</b></li> <li>• (7) or (1) pneumatic ports for function commands.</li> <li>• 12-Pin M/F Receptacles</li> <li>• Used in conjunction with the Variable Speed Pendants.</li> </ul>

KLCA1064 Rotary Union - Electric Only	KLCA1065 Rotary Union - Electric Only	KLCA1066 Rotary Union - Electric Only	KSAA1078 Rotary Union - Electric (For Speed Hoist)	KSAA1079 Rotary Union - Electric (For Speed Hoist)
 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, chains from winding up.</li> <li>• Includes patented load cells (LMM) w/ integral amplifier</li> <li>• <b>500 lbs. max capacity</b></li> <li>• 19- Pin M/F Receptacles</li> <li>• Used in conjunction with 2-Speed Control Handle w/ OCI</li> </ul>	 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, chains from winding up.</li> <li>• Includes patented load cells (LMM) w/ integral amplifier</li> <li>• <b>1000 lbs. max capacity</b></li> <li>• 19- Pin M/F Receptacles</li> <li>• Used in conjunction with 2-Speed Control Handle w/ OCI</li> </ul>	 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, chains from winding up.</li> <li>• Includes patented load cells (LMM) w/ integral amplifier</li> <li>• <b>350 lbs. max capacity</b></li> <li>• 19- Pin M/F Receptacles</li> <li>• Used in conjunction with 2-Speed Control Handle w/ OCI</li> </ul>	 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, SDS chains from winding up.</li> <li>• Voltage: 24VDC up to 2 amps.</li> <li>• <b>200-400 lbs capacity for SDS Speed Hoists.</b></li> <li>• 12-Pin M/F Receptacles</li> <li>• Used in conjunction with the Variable Speed Pendants.</li> </ul>	 <ul style="list-style-type: none"> <li>• Can prevent electrical lines, SDS chains from winding up.</li> <li>• Voltage: 24VDC up to 2 amps.</li> <li>• <b>750-1000 lbs capacity for SDS Speed Hoists.</b></li> <li>• 12-Pin M/F Receptacles</li> <li>• Used in conjunction with the Variable Speed Pendants.</li> </ul>

KCA1002 Load Monitoring Module w/ O.C.I.	KCA1004 Load Monitoring Module w/ Pass Through	KCA1004 / KCA1005 / KCA1006 Wireless Remote	KLCA1000 Inline Control Handle w/ Trigger	KCA1071 Load Cell Fixture Handle
 <ul style="list-style-type: none"> <li>• Used in conjunction with the Dual Speed Remote Pendant or Fixture Handle.</li> <li>• (1) 6-Pin M12 Receptacle for Fixture Handle.</li> <li>• Ethernet Programming Port.</li> </ul>	 <ul style="list-style-type: none"> <li>• Used in conjunction with the Dual Speed Remote Pendant, Fixture Handle or remote OCI module.</li> <li>• (2) 4-Pin receptacles for inputs.</li> <li>• Ethernet Programming Port.</li> </ul>	 <ul style="list-style-type: none"> <li>• Wireless Signal: Up to 900 ft. [300m].</li> <li>• Ultra-Durable Nylon and Fiberglass Composite Enclosures.</li> <li>• Available in (4) button, (6) button, or (8) button configurations.</li> </ul>	 <ul style="list-style-type: none"> <li>• (LMM) Load Monitoring Module.</li> <li>• Illuminated Blue Float and Green Lift Push Buttons.</li> <li>• Illuminated Red Run-Stop Button.</li> <li>• Ethernet Programming Port.</li> </ul>	 <ul style="list-style-type: none"> <li>• Attaches directly to fixture.</li> <li>• Load Responsive Handling.</li> <li>• Handle Force Response: Less than 1.5 lbs. [0.68kg].</li> </ul>



# Servo Controls (Cont.)

EPDA9600 Two-Speed Control Handle	EPDTA9600 Two-Speed Control Handle w/ Trigger	KCA1033 Two-Speed Control Handle w/ Operator Control Int.	KCA1110 Analog Remote Handle (Speed Hoist)	KCA1119 2-Button Style Analog Remote Handle (Speed Hoist)
 <ul style="list-style-type: none"> <li>• May be mounted remotely from the end effector.</li> <li>• Custom lever markings, specified when ordering.</li> <li>• Different Call-out Languages Available.</li> </ul>	 <ul style="list-style-type: none"> <li>• Various Mounting Options.</li> <li>• UL Listed, CE Approved.</li> <li>• Optional Color-Coded Thumb Levers.</li> </ul>	 <ul style="list-style-type: none"> <li>• Allows for 2-Speed Operation.</li> <li>• Operator Control Interface</li> <li>• Safety Run-Stop Button.</li> <li>• Illuminated Blue Float and Green Lift Push Buttons.</li> <li>• Ethernet Programming Port.</li> </ul>	 <ul style="list-style-type: none"> <li>• Allows for Variable Speed Operation.</li> <li>• Standard Speed Hoist Handle</li> <li>• Indicator Light</li> <li>• Safety Run-Stop Button.</li> <li>• Toggle-Style Up/Down Lever</li> <li>• Ethernet Programming Port.</li> </ul>	 <ul style="list-style-type: none"> <li>• Allows for Variable Speed Operation.</li> <li>• Indicator Light</li> <li>• Safety Run-Stop Button.</li> <li>• 2-Button Style Up/Down Levers</li> <li>• Ethernet Programming Port.</li> </ul>