



OWNER'S MANUAL

Motorized Trolley Operators Manual



Table of Contents

| | |
|---|----|
| 1.0 Safety..... | 3 |
| 2.0 Warnings..... | 3 |
| 3.0 Product Introduction..... | 4 |
| 4.0 Starke Motorized Trolley General Assembly Diagram..... | 5 |
| 5.0 Adjusting Starke Motorized Trolley Width for the Beam Flange Width..... | 6 |
| 6.0 Installing the Starke Motorized Trolley on the Beam..... | 7 |
| 7.0 Part Lists and Drawings..... | 8 |
| 7.1 Product Drawing..... | 8 |
| 7.2 Part List..... | 9 |
| 8.0 Flange Width Adders..... | 15 |
| 9.0 Electrical Data..... | 15 |
| 10.0 Wiring Diagrams..... | 16 |
| 10.1 Early Versions..... | 16 |
| 10.2 January 2024 & after..... | 17 |
| 10.3 Standard Pendant Single Speed..... | 18 |
| 10.4 Standard Pendant Single Speed Hoist 2-Speed Trolley..... | 19 |
| 10.5 Variable Speed Pendant 1 st Step- Low Speed 2 nd Step- Variable..... | 20 |
| 10.6 Variable Speed Pendant 1st Step- Low Speed 2nd Step-Variable Trolley..... | 21 |
| Starke Products Warranty..... | 22 |

▲IMPORTANT NOTE: Please read the below items before any operation of the unit is performed.

1.0 Safety

Because of heavy loads being moved or supported the operator and those around the area must be attentive to and aware of any risks involved with the operation of this unit. All Safety Rules must be followed, and the operator must pay attention to and abide by the warnings below and safety rules found throughout this manual.

2.0 Warnings

Before operation, the operator must have a clear and unobstructed view of the whole area.

Do not attach the electrical supply wires to this unit before the completion of installation!

Before operation, inspect the work area to make sure it is safe and clear of obstructions.

While operating the trolley the operator must be careful to prevent a situation where the reverse force of changing direction causes the load to swing causing an overload of the trolley or loss of the load.

3.0 Product Introduction

Thank you for purchasing a Starke SMT Motorized Trolley. It is our intention that this product manual will address any concerns you may have about the operation or installation of your new trolley. This trolley comes standard as a 460V 3ph unit. Please be aware that 230V 3 phase units are available also. Make sure that the power supply you intend to hook up to this new trolley matches the voltage of the trolley you have.

All models include VFD controls with adjustable parameters for specific required low and high speeds.

▲IMPORTANT NOTE: This Starke Motorized Trolley comes standard as a 2-Speed trolley

This Starke Motorized Trolley comes standard as a "Lug" mount to your Starke hoist to provide you with the best hoist hook height possible. If your hoist is another brand or has a top hook you may order your trolley as a "clevis" mount which will allow you to attach a hook to the suspension shaft of the trolley.

Flange width adder kits are available for the Starke SMT Motorized Trolleys. Please consult your dealer if your beam flange is larger than the ability of your trolley. Maximum flange widths for all units = 16"



3.1 Starke STK Electric Chain Hoist on a Starke SMT Motorized Trolley

4.0 Starke Motorized Trolley General Assembly Diagram

4.1 Insert the suspension shaft into the Side Plate G. Attach them together with the shaft dowel pin bolt and nut.

4.2 Install some of the suspension shaft inner adjusting spacers on the shaft.

4.3 Follow (Fig 4.6) step by step installing the suspension lug into the **hoist** body first then install the trolley suspension shaft, with adjusting spacers, into the trolley Side Plate S.

4.4 Install more adjusting spacers to take up slack on the suspension shaft outside Side Plate S, then install Spacer Pin and Split Pin in hole A, (Fig 4.6)

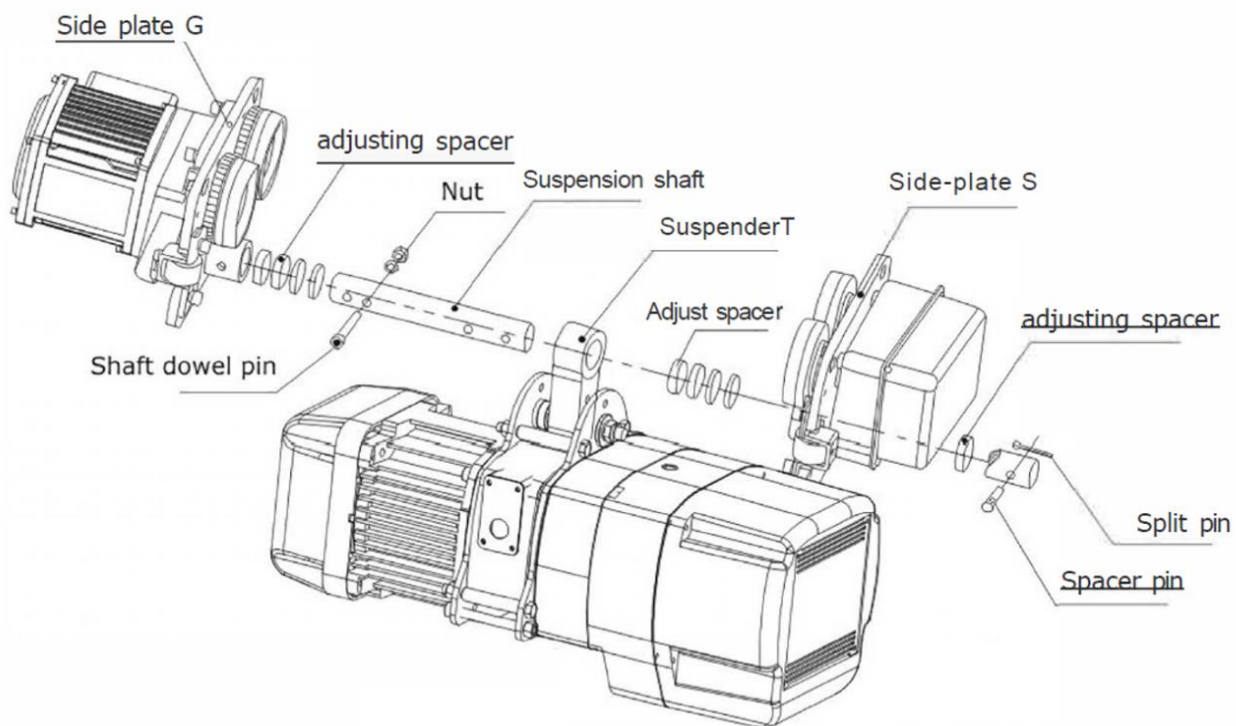


Fig 4.6

5.0 Adjusting Starke Motorized Trolley Width for the Beam Flange Width

5.1 Using Fig 4.7, allow 3/16" gap (as instructed below in Fig 4.7) between auxiliary side guide wheels and the beam flange so that trolley can roll freely on the beam but not be too tight or too loose.

▲IMPORTANT NOTE: Do this before attempting to install the trolley on the I-Beam. (Do not allow more than 3/16" gap between auxiliary side guide wheels).

5.2 To set the spacing between the trolley auxiliary side guide wheels 3/16" larger than the beam flange width, begin by installing some of the inner adjusting spacers, Fig 4.7, on the suspension shaft. (Paying attention to orientation of holes A & B as shown in Fig 4.8). Next, install the hoist lug centering the lug between the side plates G & S, Fig 4.6, as closely as possible to centerline of I-beam. Add additional inner spacers to make the 3/16" gap. (Beam flange width + 3/16" = distance between side guide wheels. Adjust with spacers accordingly and install as many of the outer spacers on the suspension shaft as possible and put the spacer pin and split pin in hole A, Fig 4.8).

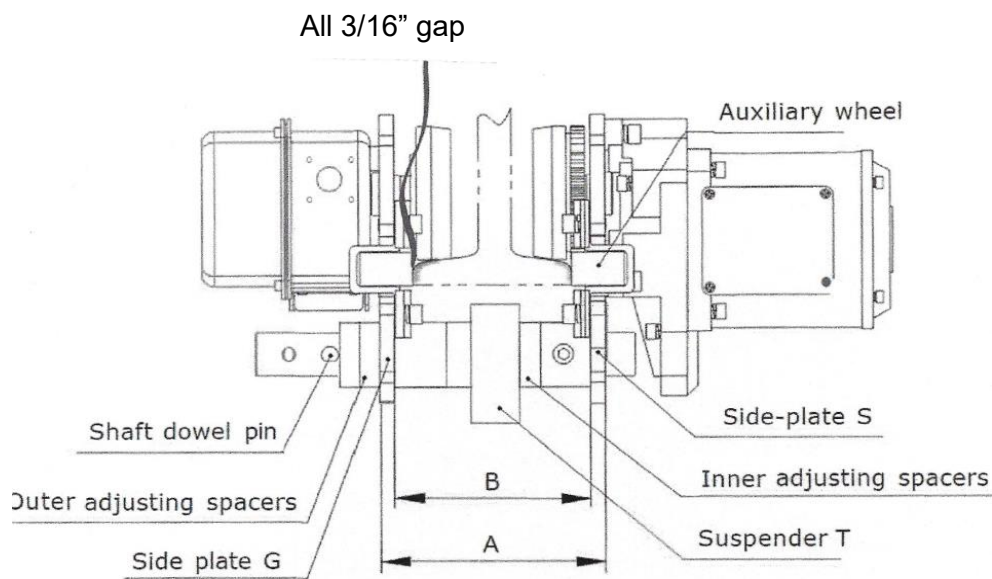


Fig 4.7

6.0 Installing the Starke Motorized Trolley on the Beam

(Fits Wide Flange and S Type Beams)

6.1 Installing trolley on the beam. If possible, the assembled trolley can be installed on the end of the beam without disassembly. If this is not possible proceed to the items below.

6.2 Installing trolley on the beam. Note Position of Hole B in Fig 4.8.

6.3 Remove the spacer pin and split pin from the suspension shaft and move it to hole B in Fig 4.8

6.4 Push apart the 2 sides of the trolley to make room to raise the trolley up and put it on the beam flange.

6.5 Raise trolley up into position and set geared trolley wheels (RH side in drawing), as shown in Fig 4.6, on beam flange.

6.6 Push trolley idler wheels (LH side in drawing) onto the beam flange, as shown in Fig 4.6.

6.7 Install outside spacer pin back into hole A as in Fig 6.8 being certain you have reinstalled and spread the split pin.

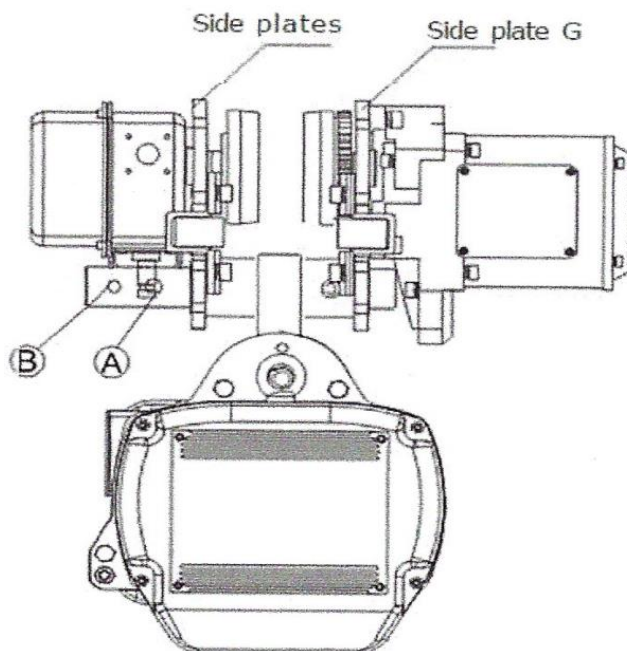
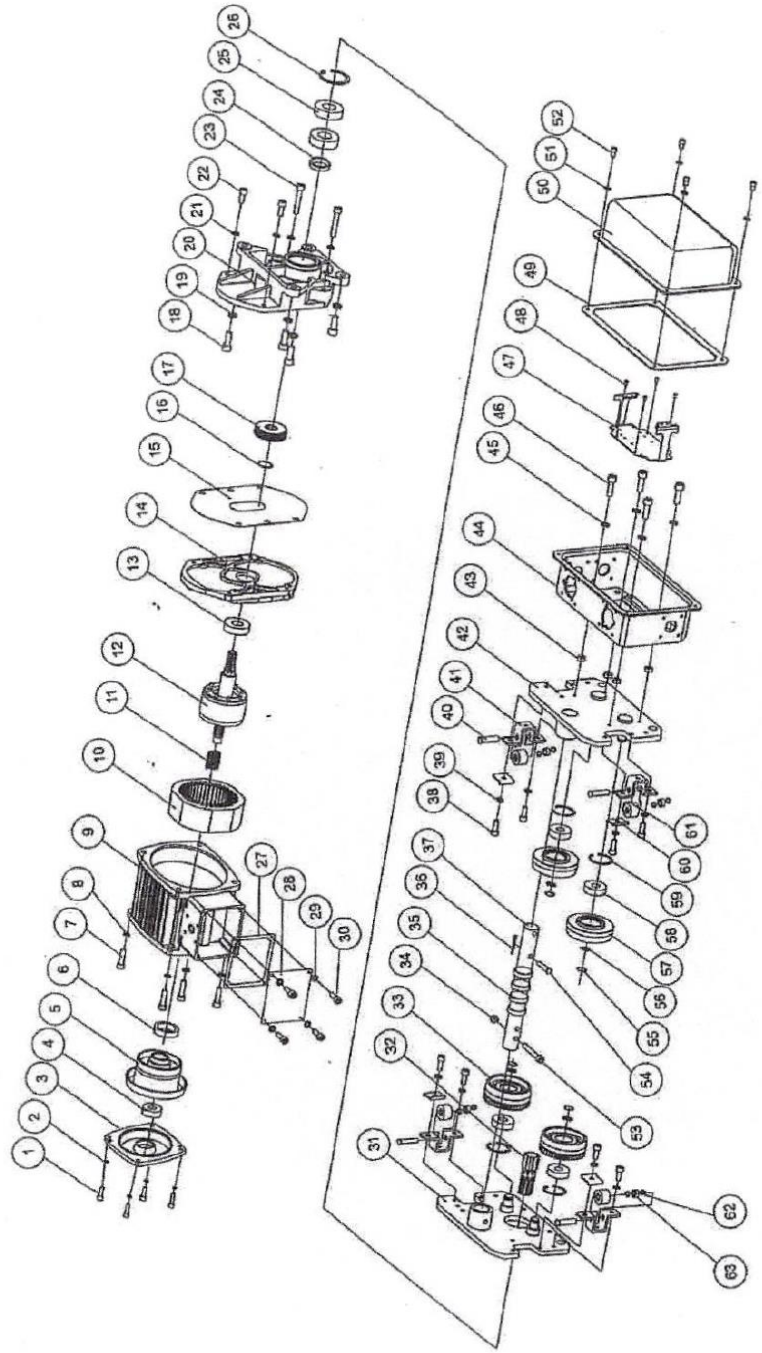


Fig 6.7

7.0 Part Lists and Drawings

7.1 Product Drawing



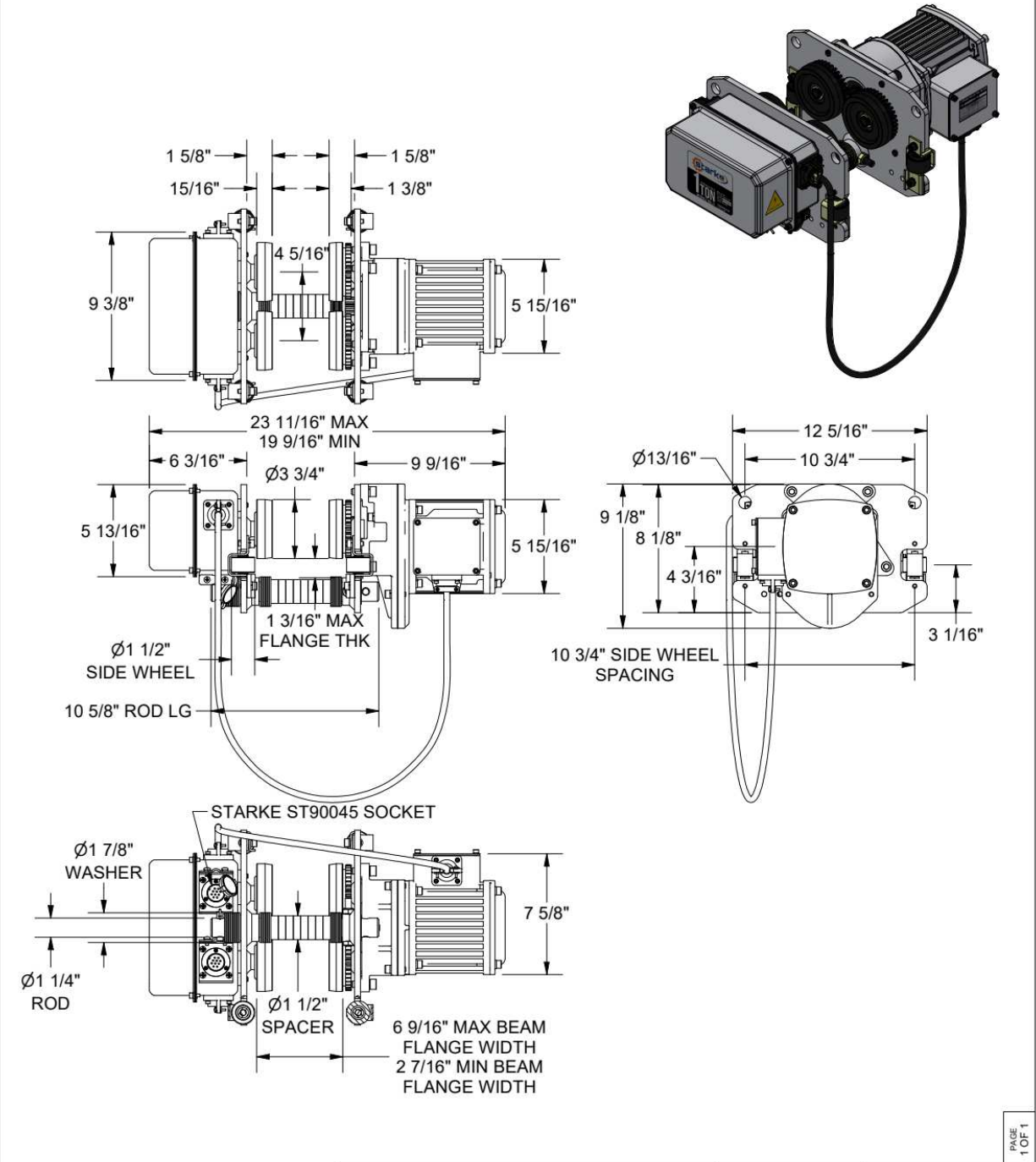
7.2 Part List

| Drawing No. | Part Description | Item Number | | | | Qty |
|-------------|--|-------------|-----------|-----------|-----------|-----|
| | | 1 Ton | 2 Ton | 3 Ton | 5 Ton | |
| 1 | Socket Head Cap Screw | | | | | 4 |
| 2 | Lock Washer M6 | | | | | 4 |
| 3 | Motor End Cover | | | | | 1 |
| 4 | Baall Bearing 6202 | | | | | 1 |
| 5 | Brake Assy | | | | | 1 |
| 6 | Circlip | | | | | 1 |
| 7 | Socket Head Cap Screw | | | | | 4 |
| 8 | Lock Washer | | | | | 4 |
| 9 | Motor Shell | | | | | 1 |
| 10 | Stator | | | | | 1 |
| 11 | Spring | | | | | 1 |
| 12 | Rotor Assy | | | | | 1 |
| 13 | Ball Bearing | | | | | 1 |
| 14 | Motor Bottom Plate | | | | | 1 |
| 15 | Gasket | | | | | 1 |
| 16 | Circlip | | | | | 1 |
| 17 | Gear | | | | | 1 |
| 18 | Socket Head Cap Screw | | | | | 4 |
| 19 | Spring Washer | | | | | 4 |
| 20 | Gearbox | | | | | 1 |
| 21 | Spring Washer | | | | | 4 |
| 22 | Socket Head Cap Screw | | | | | 2 |
| 23 | Socket Head Cap Screw | | | | | 1 |
| 24 | Seal | | | | | 1 |
| 25 | Bearing | | | | | 2 |
| 26 | Snap Ring | | | | | 1 |
| 27 | Gasket | | | | | 1 |
| 28 | Side Plate | | | | | 1 |
| 29 | Lock Washer | | | | | 4 |
| 30 | Socket Head Cap Screw | | | | | 4 |
| 31 | Side Plate Assy | 600-46051 | 600-46052 | 600-46053 | 600-46054 | 1 |
| 32 | Splined Gear Shaft | 600-46055 | 600-46056 | 600-46057 | 600-46058 | 1 |
| 33 | Geared Drive Wheel – Incl. 58-59 | 600-40108 | 600-40109 | 600-40110 | 600-40111 | 2 |
| 34 | Lock Nut | 600-46063 | 600-46063 | 600-46063 | 600-46063 | 1 |
| 35 | Spacer Kit (incl. 6 spacers, 4 washers) | 600-50169 | 600-50170 | 600-50171 | 600-50172 | 8 |
| 36 | Cotter Pin | 600-46064 | 600-46064 | 600-46064 | 600-46064 | 1 |
| | | | | | | |
| | | | | | | |

Complete Motor Assy Includes 1-30
 1 & 2 Ton Units – ½ HP = 600-46023
 3 & 5 Ton Units – 1 HP = 600-46024


7.2 Product Part List (Continued)

| Drawing No. | Part Description | Item Number | | | | Qty |
|-------------|----------------------------|-------------|-----------|-----------|-----------|-----|
| | | 1 Ton | 2 Ton | 3 Ton | 5 Ton | |
| 37 | Trolley Pin | 600-46120 | 600-46121 | 600-46122 | 600-46123 | 1 |
| 38 | Socket Head Cap Screw | 600-46111 | 600-46111 | 600-46111 | 600-46111 | 8 |
| 39 | Lock Washer | 600-46112 | 600-46112 | 600-46112 | 600-46112 | 8 |
| 40 | Auxilliary Wheel Shaft | 600-46118 | 600-46118 | 600-46118 | 600-46118 | 4 |
| 41 | Auxilliary Wheel Bracket | 600-46119 | 600-46119 | 600-46119 | 600-46119 | 4 |
| 42 | Plate | 600-46073 | 600-46074 | 600-46075 | 600-46076 | 1 |
| 43 | Gasket | 600-46077 | 600-46077 | 600-46077 | 600-46077 | 4 |
| 44 | Control Case | 600-46078 | 600-46078 | 600-46078 | 600-46078 | 1 |
| 45 | Lock Washer | 600-46079 | 600-46079 | 600-46079 | 600-46079 | 4 |
| 46 | Socket Head Cap Screw | 600-46105 | 600-46105 | 600-46105 | 600-46105 | 4 |
| 47 | Bracket | NSS | NSS | NSS | NSS | 1 |
| 48 | Screw | NSS | NSS | NSS | NSS | 4 |
| 49 | Gasket | 600-46106 | 600-46106 | 600-46106 | 600-46106 | 1 |
| 50 | Cover | 600-46107 | 600-46107 | 600-46107 | 600-46107 | 1 |
| 51 | Lock Washer | 600-46108 | 600-46108 | 600-46108 | 600-46108 | 4 |
| 52 | Socket Head Cap Screw | 600-46109 | 600-46109 | 600-46109 | 600-46109 | 4 |
| 53 | Socket Head Cap Screw | 600-46110 | 600-46110 | 600-46110 | 600-46110 | 1 |
| 54 | Pin | 600-46124 | 600-46125 | 600-46126 | 600-46127 | 1 |
| 55 | Circlip | 600-46128 | 600-46129 | 600-46130 | 600-46131 | 4 |
| 56 | Washer | 600-46132 | 600-46133 | 600-46134 | 600-46135 | 4 |
| 57 | Idler Wheel – Incl. 58-59 | 600-46114 | 600-46115 | 600-46116 | 600-46117 | 2 |
| 58 | Bearing | NSS | NSS | NSS | NSS | 4 |
| 59 | Circlip | NSS | NSS | NSS | NSS | 4 |
| 60 | Retainer Bracket | 600-46102 | 600-46102 | 600-46102 | 600-46102 | 4 |
| 61 | Auxilliary Wheel – Incl 63 | 600-46103 | 600-46103 | 600-46103 | 600-46103 | 4 |
| 62 | Washer | 600-46104 | 600-46104 | 600-46104 | 600-46104 | 8 |
| 63 | Bearing | NSS | NSS | NSS | NSS | 4 |

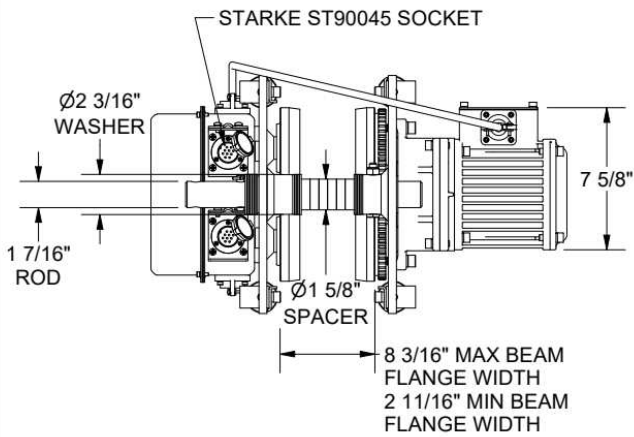
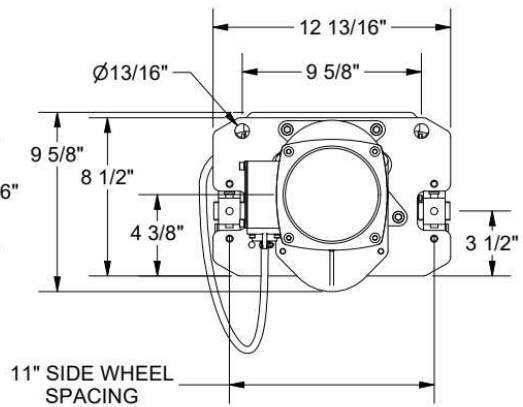
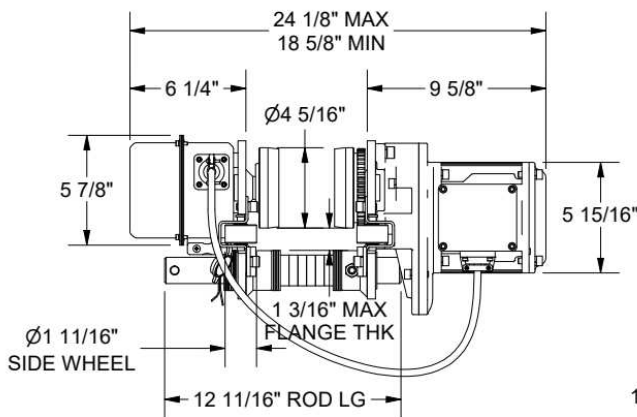
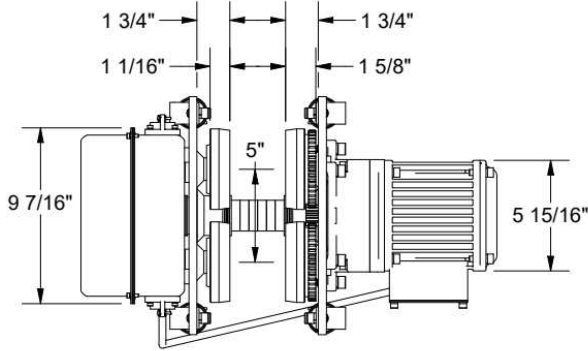


DRAWING:
**STARKE 1-TON VARIABLE SPEED
 MOTORIZED TROLLEY
 SMT10VS**

TOLERANCES (U.N.O.):
 DIMENSIONS: $\pm 1/16''$
 ANGLES: $\pm 0.2^\circ$
 MACHINING: $\pm 0.01''$

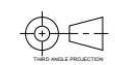
 THIRD ANGLE PROJECTION

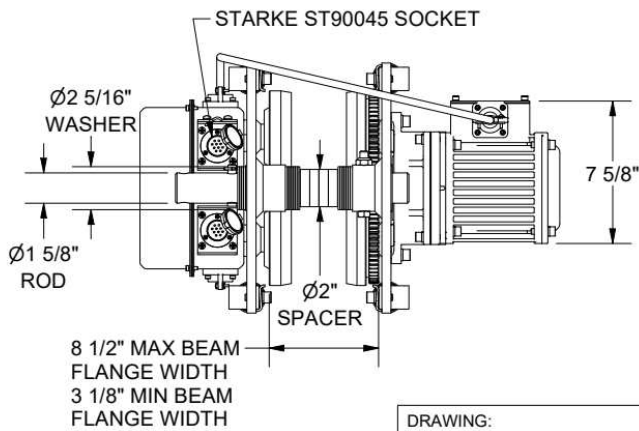
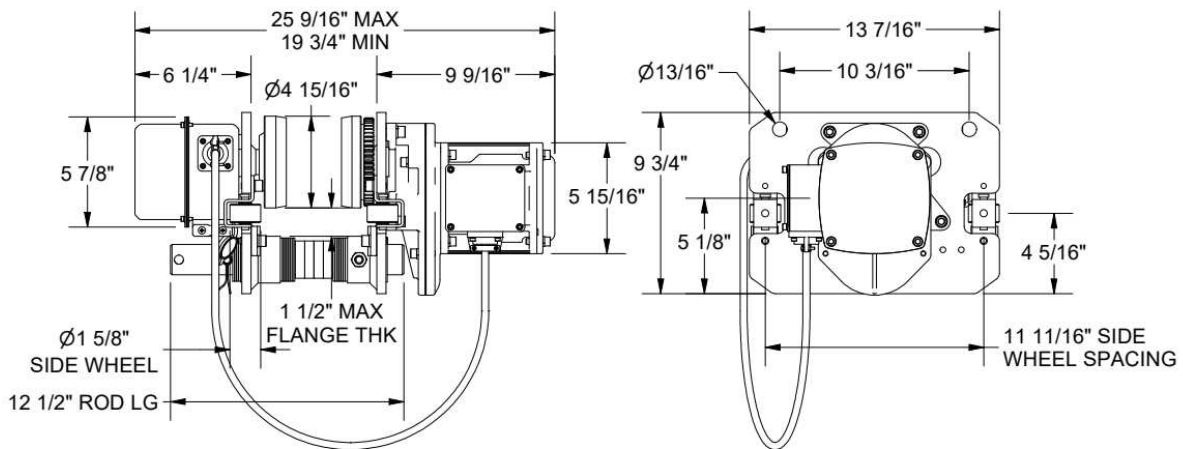
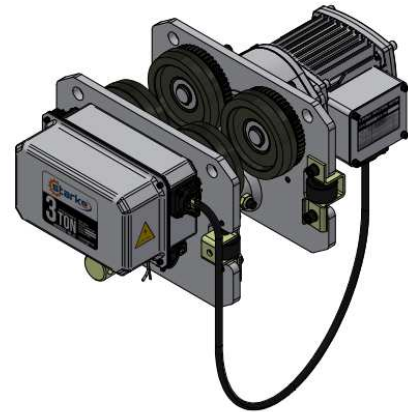
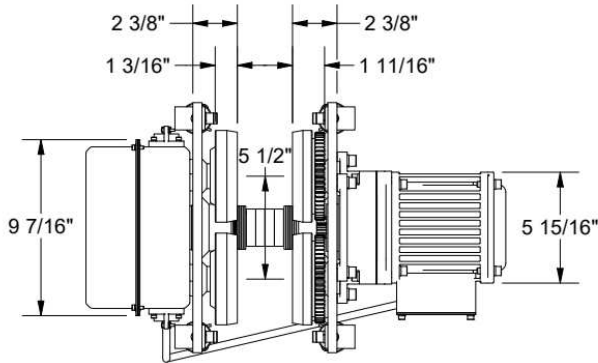




DRAWING:
**STARKE 2-TON VARIABLE SPEED
 MOTORIZED TROLLEY
 SMT20VS**

TOLERANCES (U.N.O.):
 DIMENSIONS: ±1/16"
 ANGLES: ± 0.2°
 MACHINING: ± 0.01"

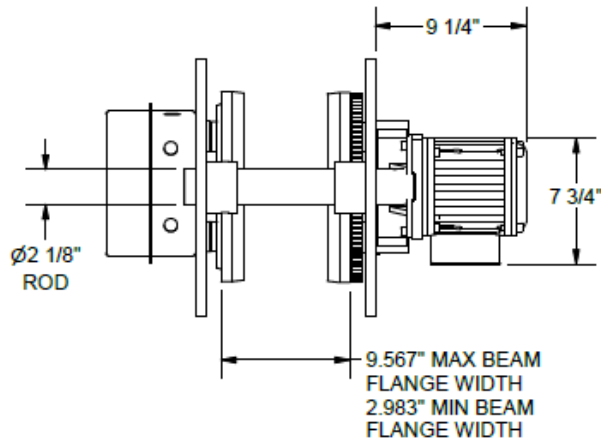
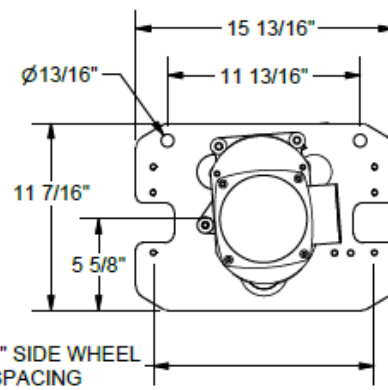
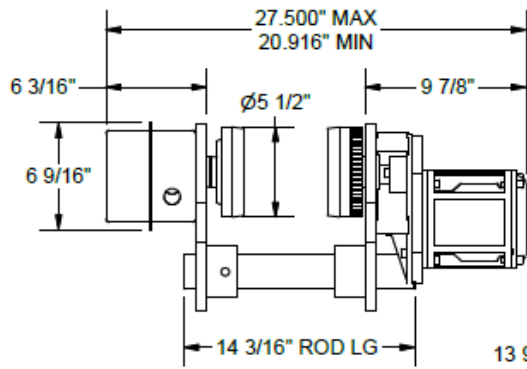
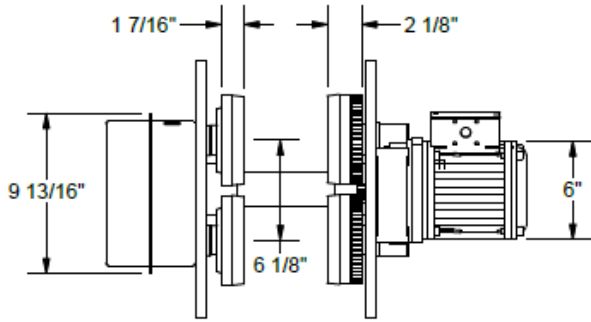
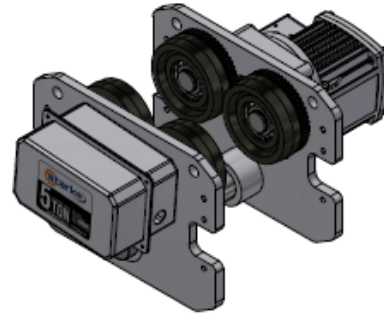




DRAWING:
**STARKE 3-TON VARIABLE SPEED
 MOTORIZED TROLLEY
 SMT30VS**

TOLERANCES (U.N.O.):
 DIMENSIONS: ±1/8"
 ANGLES: ± 0.2°
 MACHINING: ± 0.01"





PAGE 1 OF 1

DRAWING:
**STARKE 5-TON VARIABLE SPEED
 MOTORIZED TROLLEY
 SMT50VS**

TOLERANCES (U.N.O.):
 DIMENSIONS: ±1/10"
 ANGLES: ±0.2°
 MACHINING: ±0.01"



8.0 Flange Width Adders

| Part | Capacity | Flange Range |
|-----------|----------|--------------|
| SMT10FW12 | 1 Ton | 7.75" – 12" |
| SMT20FW12 | 2 Ton | 9.25" – 12" |
| SMT30FW12 | 3 Ton | 9.25" – 12" |
| SMT50FW12 | 5 Ton | 10.87" – 12" |
| SMT10FW16 | 1 Ton | 12" – 16" |
| SMT20FW16 | 2 Ton | 12" – 16" |
| SMT30FW16 | 3 Ton | 12" – 16" |
| SMT50FW16 | 5 Ton | 12" – 16" |

9.0 Electrical Data

| Electrical Data – Motor and VFD | | | | | | | | | |
|---------------------------------|------------------|---|----------|----------|-------------------|-----------------|-----------------------|-----------------------------|------------------------|
| Model # | Description | Standard Unit Nominal Voltage: 460/3/60 (Other Configurations Are Special Order) | | | | Control Voltage | Brake Resistor Values | Suggested Fuse Rating (Amp) | Nominal Operating Amps |
| | | Model Electrical Details (Danfoss VLT FC51 Equipped) | | | | | | | |
| | | Motor H.P. (Nominal) | Motor kW | VFD P/N | Rated H.P. / (kW) | | | | |
| SMT10VS | 1 Ton VS Trolley | 0.65 | 0.45 | 132F0020 | 2 / (1.5) | 24VDC | 270Ω 570w | 16 | 1.09 ~ 1.15 |
| SMT20VS | 2 Ton VS Trolley | 0.65 | 0.45 | 132F0020 | 2 / (1.5) | 24VDC | 270Ω 570w | 16 | 1.09 ~ 1.15 |
| SMT30VS | 3 Ton VS Trolley | 1 | 0.75 | 132F0020 | 2 / (1.5) | 24VDC | 270Ω 570w | 16 | 1.09 ~ 1.15 |
| SMT50VS | 5 Ton VS Trolley | 1 | 0.75 | 132F0020 | 2 / (1.5) | 24VDC | 270Ω 570w | 16 | 1.09 ~ 1.15 |

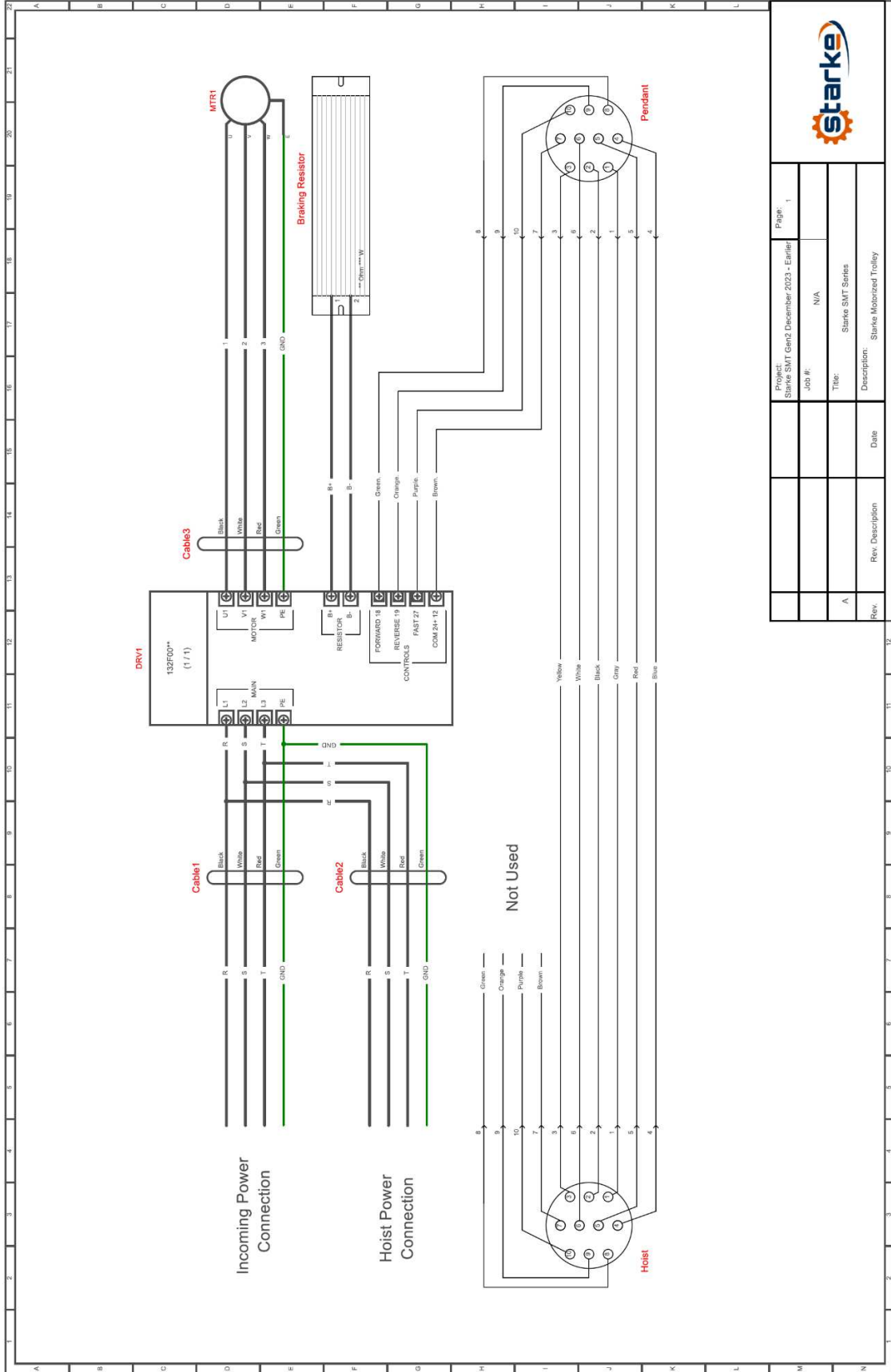
For more detailed information on VFD visit this link below:


https://files.danfoss.com/download/Drives/doc_MG02B622.pdf

▲IMPORTANT NOTE: Any alterations to VFD programming may adversely affect unit operational performance and potential safety issues. Before attempting any alterations, please contact your Starke representative.

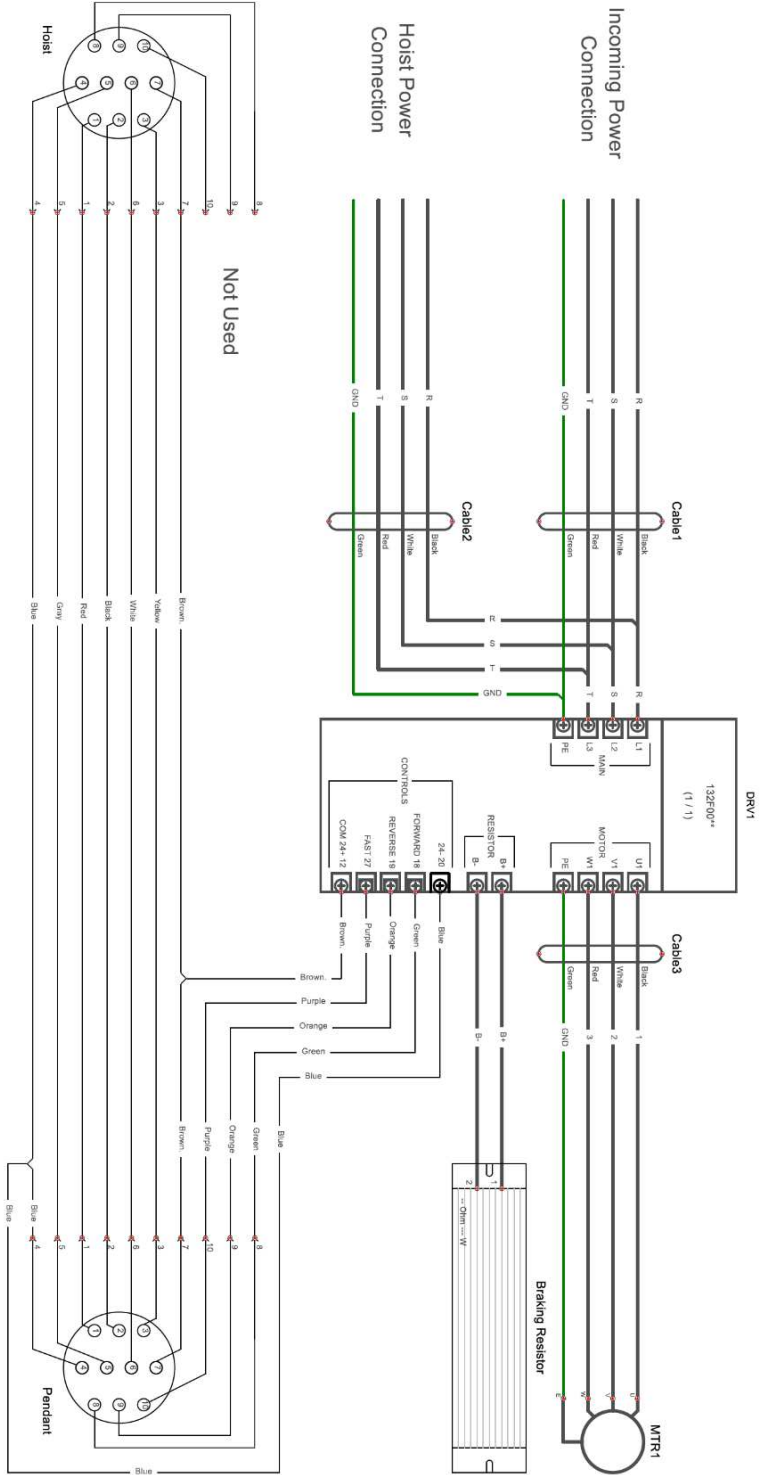
10.0 Wiring Diagrams

10.1 Early Versions



| | | | | | |
|---|--|------------------|--|-------|---|
|  | | Project: | Starke SMT Gen2 December 2023 - Emilex | Page: | 1 |
| | | Job #: | N/A | | |
| | | Title: | Starke SMT Series | | |
| | | Description: | Starke Motorized Trolley | | |
| Rev. | | Rev. Description | Date | | |
| A | | | | | |

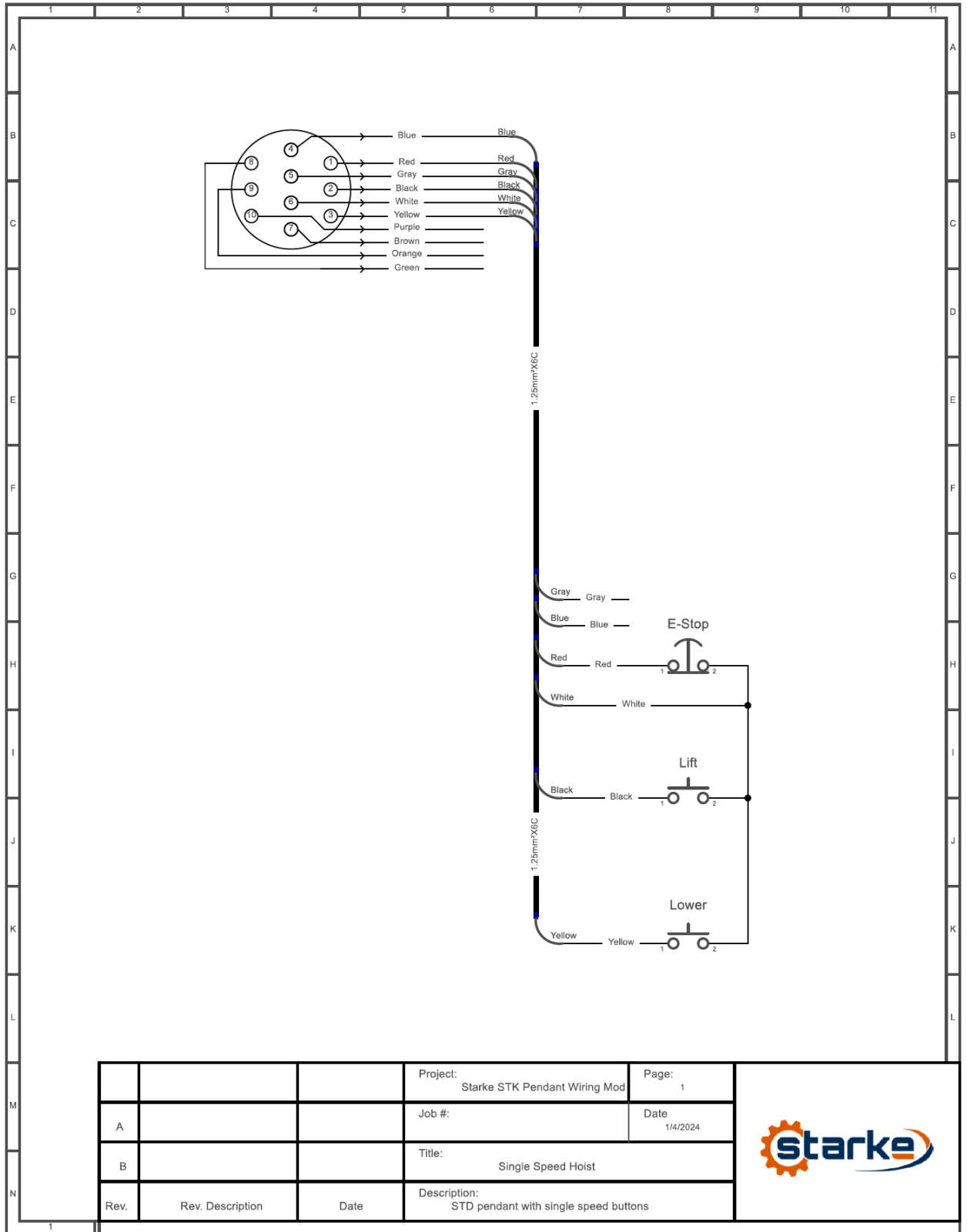
10.2 January 2024 &
after



| | | | | |
|----------|---|------------|-------------------|--------------------------|
| Rev: | Rev. Description | Date | Description | Starke Motorized Trolley |
| 1 | H/T Shared DC Power Supply | 12/22/2023 | Starke SMT Series | |
| Project: | Starke SMT Gen 2 January 2024 - Current | Page: 1 | | |
| Job #: | N/A | Date: | 6/2/2023 | |
| Title: | Starke SMT Series | | | |



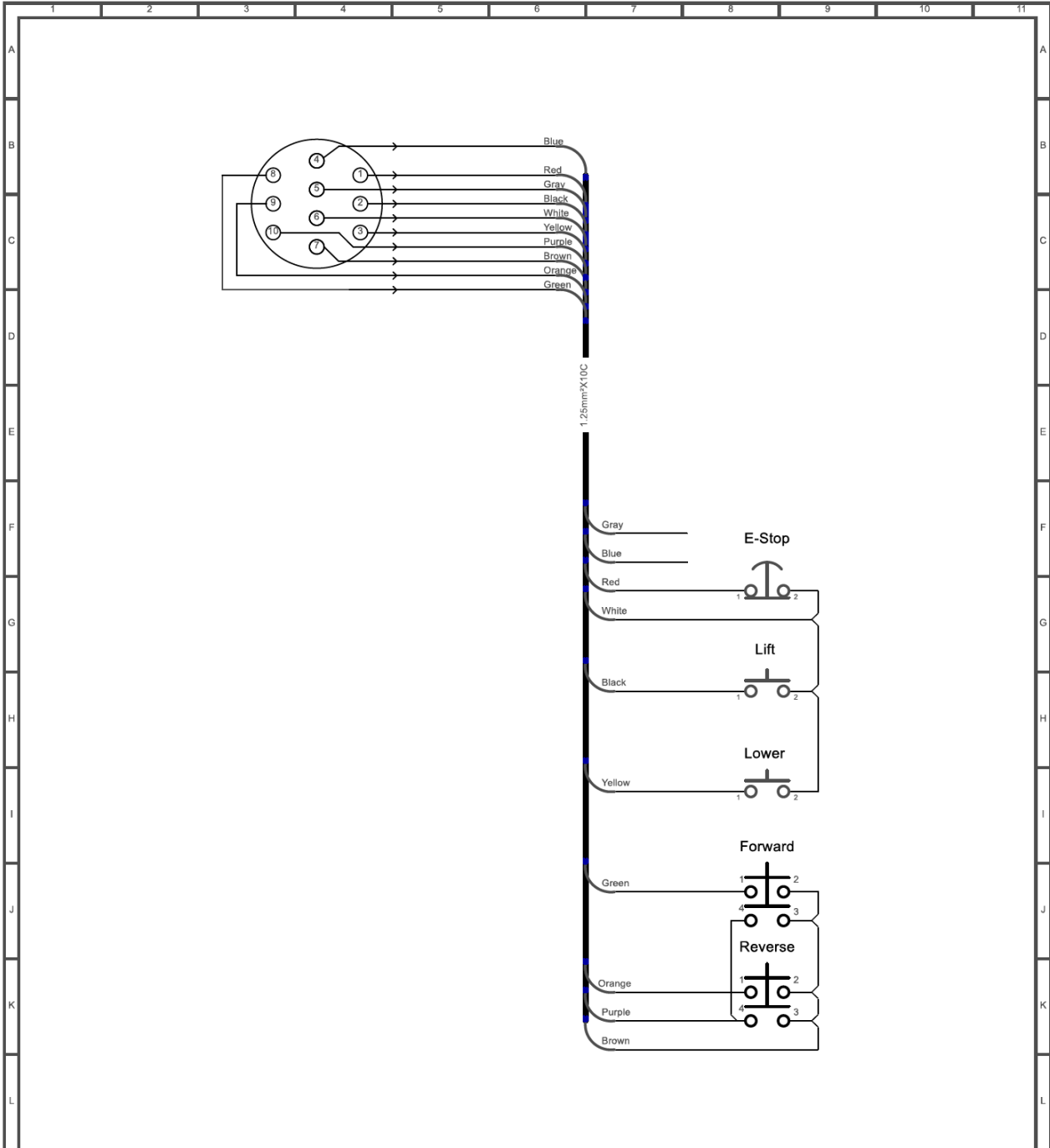
10.3 Standard Pendant Single Speed



| | | | | |
|------|------------------|------|---|------------------|
| | | | Project: Starke STK Pendant Wiring Mod | Page: 1 |
| A | | | Job #: | Date 1/4/2024 |
| B | | | Title: Single Speed Hoist | |
| Rev. | Rev. Description | Date | Description: STD pendant with single speed buttons | |



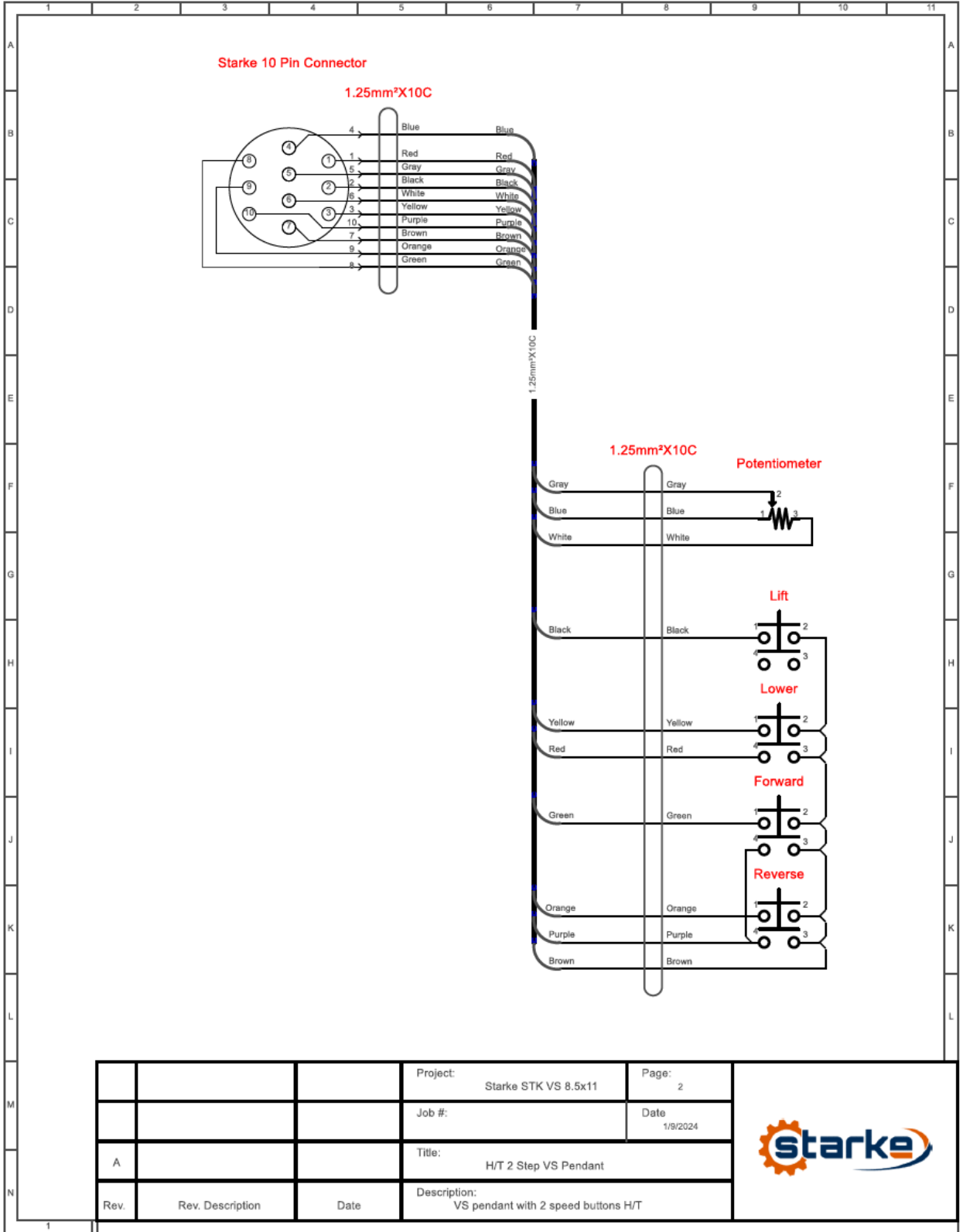
10.4 Standard Pendant Single Speed Hoist 2-Speed Trolley



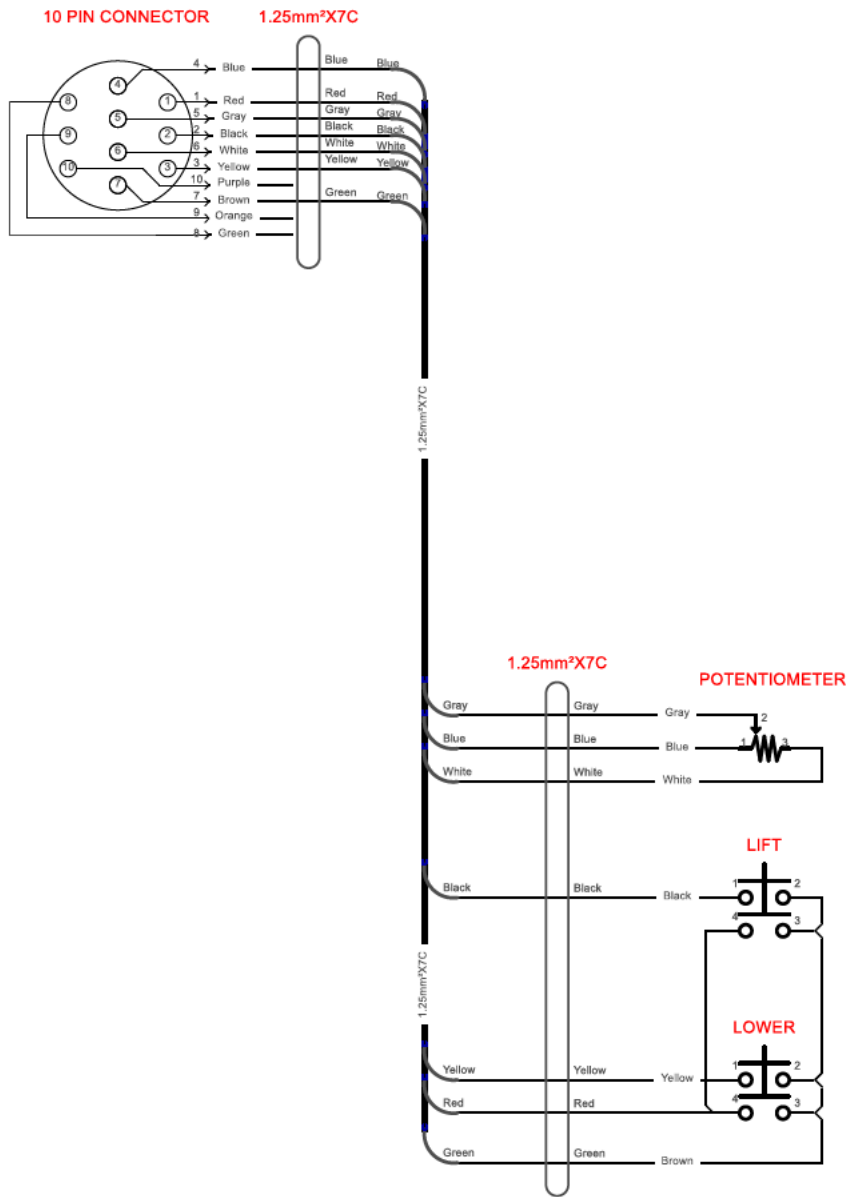
| | | | | |
|------|------------------|------|--|------------------|
| | | | Project: Starke STK Pendant Wiring Mod | Page: 2 |
| A | | | Job #: | Date 1/4/2024 |
| B | | | Title: Single Speed Hoist 2 Speed Trolley | |
| Rev. | Rev. Description | Date | Description: STD pendant with 2 speed buttons for Trolley | |



10.5 Variable Speed Pendant 1st Step- Low
Speed 2nd Step- Variable



10.6 Variable Speed Pendant 1st Step- Low
Speed 2nd Step-Variable Trolley



| | | | | |
|------|------------------|------|--|----------------|
| | | | Project: Starke STK VS 8.5x11 | Page: 1 |
| | | | Job #: | Date: 1/9/2024 |
| A | | | Title: 2 Step VS Pendant | |
| Rev. | Rev. Description | Date | Description: VS pendant with 2 speed buttons | |





Starke Products Warranty

1 Year (12 Month) Parts & Labor Warranty

Unless otherwise specified, Starke guarantees that our products are free from material defects in design and workmanship under normal use, proper maintenance, and service.

This warranty is strictly limited to 12 months for single shift operation or 2,000 hours after installation, or 14 months after shipment, whichever is shorter. Within ten days after defect is found, warrantee must deliver a written notice to Starke providing defect information. All requested warranty information must be received promptly by Starke in no more than 5 business days.

Customer is responsible for all shipping charges on returned/warrantable items. Starke will cover the repair (parts and labor) at no charge or provide a replacement item at Starke's discretion.

This warranty does not cover defects or damage caused by acts of God, unusual wear and tear, improper use, or improper maintenance by the user. No responsibility for consequential damage is expressed or implied, and the responsibility under this warranty/guaranty is limited to the repair or replacement of the defective materials. Repair or replacement of the item is fully at the discretion of Starke.

ALL OTHER REPRESENTATIONS, EXPRESS OR IMPLIED, WARRANTY, OR LIABILITY RELATING TO THE CONDITION OR USE OF THE PRODUCT ARE SPECIFICALLY DISAVOWED, AND IN NO EVENT SHALL STARKE BE LIABLE TO BUYER, OR ANY THIRD PARTY, FOR ANY DIRECT OR INDIRECT CONSEQUENTIAL OR INCIDENTAL DAMAGES

STARKE

Starkeamerica.com/contact-us/



Contact Your Starke Representative for More Information on Products to Help Maximize Your Workplace Efficiency



Hoists & Trolleys



Crane Components



Electrification



Crane Kits



Slings



Safety