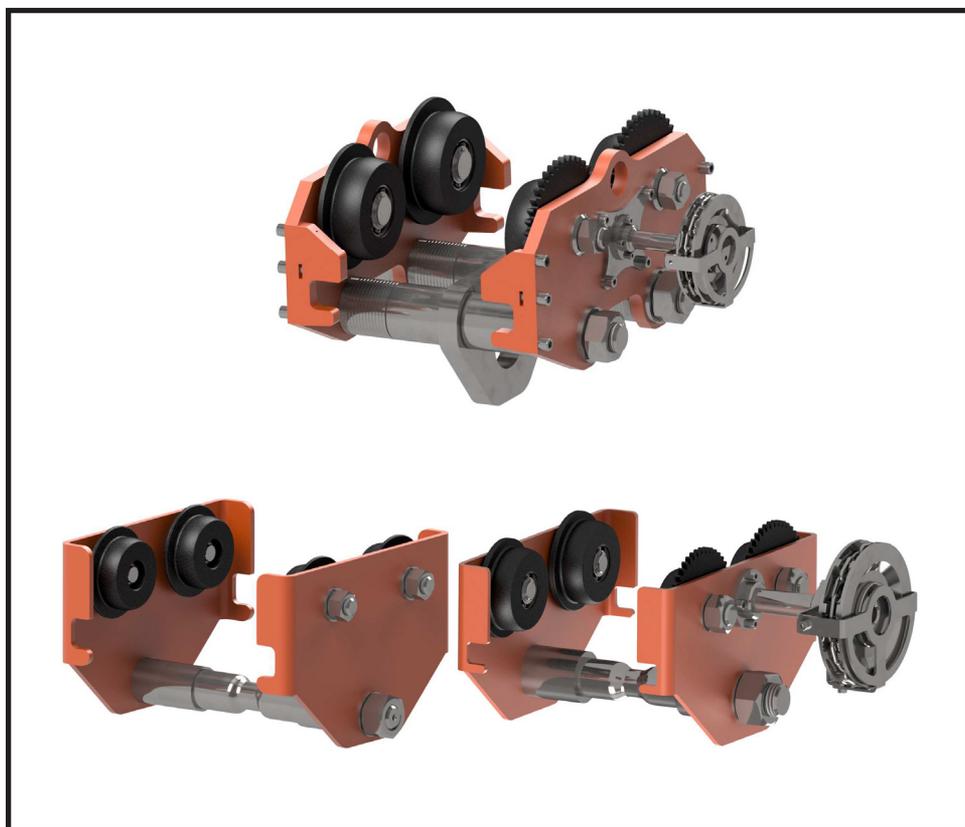




## PUSH & GEARED TROLLEY MANUAL



**ELEPHANT**  
LIFTING PRODUCTS™



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This operation manual edition 05/2017 covers Elephant Lifting Products Geared and Push Trolleys:

It must be read carefully and in its entirety before operating any trolley.

Serial No.

Please enter the Serial No. of your Elephant Lifting Products trolley here.

This operation manual covers the following Elephant Lifting Products Trolleys:

- Manual trolleys
- Geared trolleys

**THIS MANUAL MUST BE READ CAREFULLY BEFORE OPERATING OR REPAIRING THESE PRODUCTS.**

This manual contains important safety, operation, installation, inspection, maintenance and repair information of Elephant Lifting Products trolleys for proper and efficient operation. Make this manual available to all persons responsible for the operation, installation, inspection, maintenance and repair of these products. Even if you feel you are familiar with this or similar equipment, you should read this manual before operating the product.

- Do not use these trolleys for lifting, supporting, or transporting people and lifting or supporting loads over people.

Always operate, install, inspect, maintain, repair and use these trolleys in accordance with South African Bureau of Standards Specification number SANS1824:2003 for a geared or manually driven trolley.

Testing of trolleys must only be carried out by the competent personnel contemplated in SANS1824:2003 and American Society of Mechanical Engineers (ASME) standard B30.17-2015.

For Trolleys used outside of South Africa:

It is the responsibility of the owner/user to construct, operate, install, inspect, test, maintain, repair and use the trolleys in accordance with ASME B30.17-2015, "Safety Standard for Cranes and Monorails (with Underhung Trolleys)" and as well as with Occupational Safety and Health Administration (OSHA) Regulations.

If the trolley is installed as part of a total lifting system, such as an overhead crane or monorail, it is also the responsibility of the owner/user to comply with the applicable ASME B30 Volume that addresses that type of equipment.

It is the responsibility of the owner/user to have all personnel that will construct, operate, install, inspect, test, maintain, repair and use the trolleys to read the contents of this manual and applicable portions of ASME B30.17-2015, "Safety Standard for Cranes and Monorails (with underhung Trolleys)" and as well as being familiar with OSHA Regulations.

If the trolley owner/user requires additional information, or if any information in this manual is not clear, contact **Elephant Lifting Products** or the distributor of the trolley(s). Do not construct, operate, install, inspect, test, maintain and repair these trolleys unless this information is fully understood.

A regular schedule of inspection of the trolley(s) in accordance with the requirements of ASME B30.17-2015, should be established and records maintained.

The ASME B30 Standard is intended to:

- (a) Prevent or minimize injury to workers and protects property by prescribing safety requirements.
- (b) Guide governments and other regulatory bodies in the development, promulgation and enforcement of appropriate safety directives.

## **1 Personnel Competence**

According to ASME B30 Standard, persons performing construction, operation, installation, inspection, testing, maintenance, repairing and using Elephant Lifting Products trolleys shall through education, training, experience, skills and physical fitness, as necessary, be capable of performing the functions as determined by the employer or employer's representative.

## **2 Preface**

Elephant Lifting Products warrants to the user its trolleys, and other products to be free from defects in material and workmanship for a period of one year from the date of purchase.

Elephant Lifting Products will at its discretion repair without cost (including parts and labour charges) to the user for any product found to be defective. Elephant Lifting Products will replace such product(s) and refund the purchase price less a reasonable allowance for handling in exchange for the defective product(s). All repaired and replaced product(s) are warranted for the remainder of the original warranty period.

If any product proves defective within its original one year warranty period, it must be returned to Elephant Lifting Products with proof of purchase and the original test certificate. This warranty does not apply to products which Elephant Lifting Products has determined to have been misused, abused and improperly maintained by the user or where the malfunction or defect was attributed by the use of non-genuine Elephant Lifting Products parts.

Elephant Lifting Products makes no other warranty and its maximum liability is limited to the purchase price of the product and in no event, will Elephant Lifting Products be liable for any consequential, indirect, incidental or special damages of any nature arising from the use of the product whether based on contract or otherwise.

It is Elephant Lifting Products policy to promote safety of all persons and equipment in the workplace. All equipment manufactured is thoroughly checked, packed and inspected before dispatch. Any loss or damage which

occurs during shipment while en-route must be reported to Elephant Lifting Products immediately. Should any item be delivered to you in apparent good condition, but upon opening the container, loss or damage has taken place while in transit; notify Elephant Lifting Products immediately.

Should any items be delivered back to Elephant Lifting Products all transport costs will be on the account of the user.

These instructions were prepared by Elephant Lifting Products to provide agents, fitters, and company personnel with information required for the purpose of construction, operation, installation, inspection, maintenance, repair and the use of its trolleys.

No responsibility for failure of equipment due to manufacturing procedure will be assumed if these instructions are not carried out. Only original Elephant Lifting Products supplied spares are to be used in all repairs.

### **3 Safety Information**

This manual will refer to existing legal requirements and engineering practices as known when this document was written. Should any such legislation or practices change or be "enlarged" upon then due consideration must be taken. Various standards have been used to assist in compiling this document and will be listed where applicable.

According to ASME B30 Standard the use of trolleys is subject to hazards that cannot be overcome by mechanical means but only by the exercise of intelligence, care and common sense.

It is therefore essential that personnel involved in the construction, operation, installation, inspection, testing, maintenance, repairing and using Elephant Lifting Products trolleys must be careful, competent, trained, physically and mentally qualified in the safe operation of this equipment and handling of loads.

Serious hazards include but not limited to, overloading, improper or inadequate maintenance, dropping or slipping of the load caused by improper hitching or slinging, obstructing the free passage of the load and using equipment for a purpose for which it was not intended or designed.

The above can lead to fatal consequences. Operators of Elephant Lifting Products trolleys are also under obligation to ensure safe and hazard-free operation. This can be achieved through the following measures:

- Keep the operation manuals available at the trolley operating site,
- Performing regular training,
- Performing regular inspections (at least once annually),
- Implement an inspection log and make regular entries,

- And regularly check personnel for safety and hazard awareness during work.

Elephant Lifting Products fully realizes the importance of proper design factors, minimum and maximum sizes and other limiting dimensions of the trolley and its fastenings, chains, sprockets and similar parts all of which are designed with safety in mind.

The various conditions of the equipment or material can vary depending on the environment they are used in which may cause corrosion or wear and any other variables that may arise in each individual application. It is in the light of this that the trolley(s) must be maintained and repaired under the supervision of a competent person:

- (a) Who is qualified by virtue of his knowledge, training, skills and experience to organize the work and its performance;
- (b) Who is familiar with the legal requirements which apply to the work to be performed;
- (c) Who has been trained to recognize any potential or actual danger to health and safety in the performance of the work.

The instructions given in this manual must be interpreted accordingly and sound judgment used in determining their application. It is intended to help the operator to become familiar with Elephant Lifting Products trolleys and how to use them properly. Observance of the manual helps to avoid hazardous situations, to reduce repair costs and downtimes and to ensure the specified service life of the Elephant Lifting Products trolleys.

- Always keep this manual readily available at the location where the Elephant Lifting Products trolley(s) is or are being used.
- All persons charged with constructing, testing, operating, installing, inspecting, maintaining, repairing and using Elephant Lifting Products trolleys must read and follow all the instructions in this manual.

### 3.1 Danger, Warning, Caution and Notice

Throughout this manual there are steps and procedures which, if not followed, may result in an injury. The following signal words are used to identify the level of potential hazard.

#### DANGER

Danger is used to indicate the presence of hazard which will cause **severe** injury, death or substantial property damage if the warning is ignored.

#### WARNING

Warning is used to indicate the presence of a hazard which **can** cause **severe** injury, death, or substantial property damage if the warning is ignored.

#### CAUTION

Caution is used to indicate the presence of a hazard which **will** or **can** cause minor injury or property damage if the warning is ignored.

#### NOTICE

Notice is used to notify people performing operation, installation, inspection and maintenance information which are important but not hazard-related.

### 3.2 Safety Summary

#### WARNING

- 1 Do not use these trolleys or any equipment attached to it for lifting, supporting or transporting people and lifting or supporting loads over people.
- Elephant Lifting Products trolleys are designed to provide a MINIMUM of 5 to 1 safety factor. It is the responsibility of the customer to ensure that the structure to which a trolley is attached and any load attaching device(s) used in conjunction with a trolley(s) can handle the static and dynamic load(s) when the trolley is lifting

and lowering the rated load. If in doubt, consult a registered professional structural engineer.

- **If a hoist is to be used in conjunction with the trolley, ensure that a hoist having a rated capacity equal to or less than the capacity of the trolley is specified.**

#### NOTICE

- 2 Lifting equipment is subject to different regulations in each country. These regulations may not be specified in this manual. Whenever a conflict arises between the contents of this manual and any other applicable legislation, standard or procedure, the more stringent of the two must be applied.

The Occupational Health and Safety Act and Mine Health and Safety Act and other recognized safety sources make a common point: Employees who work near cranes or assist in hooking on and arranging a load(s) should be instructed to keep out from under the load.

From a safety standpoint, one factor is paramount, conduct all lifting operations in such a manner that if there were an equipment failure, no personnel would be injured. This means keep out from under a raised load and keep out of the intended path of any load.

Elephant Lifting Products Trolleys are manufactured in accordance with the latest ISO9001 standards. The Occupational Safety and Health Act of 1993, section 10 states:

1. Any person who designs, manufactures, imports, sells or supplies any article for use at work shall ensure, as far as is reasonably practicable, that the article is safe and without risks to health when properly used. It must comply with all prescribed requirements.
2. Any person who erects or installs any article for use at work on or in any premises shall ensure, as far as is reasonably practicable, that nothing about the way it is erected or installed makes it unsafe or creates a risk to health when properly used.
3. Any person who manufactures, imports, sells or supplies any substance for use at work shall:
  - (a) Ensure, as far as is reasonably practicable, that the substance is safe and without risks to health when properly used; and
  - (b) Take necessary steps to ensure that information is available about the use of the substance, the associated risks to health and safety and the procedures to be followed in the case of an accident involving such substance.
4. Where a person designs, manufactures, imports, sells, or supplies an article or substance for or to another person, and that other person, and that other person undertakes in writing to take specified steps

sufficient to ensure, as far as is reasonable practicable, that the article or substance will comply with all prescribed requirements and will be safe and without risks to health when properly used. The undertaking shall have the effect of relieving the first mentioned person from the duty imposed upon him by this section to such an extent as may be reasonable having regard to the terms of the undertaking.

It is the owner's and user's responsibility to determine the suitability of a product for any particular use. It is recommended that all applicable industry, trade association and legislation are checked. Read all operation instructions and warnings before operation.

It is extremely important that fitters and operators are familiar with the servicing procedures of these products, or similar products and are physically capable of conducting the procedures. These personnel shall have a general working knowledge that includes:

- (a) Safe use and application of fitter's common hand tools as well as special or recommended tools.
- (b) Safety procedures, precautions and work habits established by accepted industry standards.

**Elephant Lifting Products cannot** know of, nor provide all the procedures by which product operations or repairs may be conducted and the hazards and/or results of each method. If operation or maintenance procedures not specifically recommended by the manufacturer are conducted, it must be ensured that product safety is not endangered by the actions taken. If unsure of an operation or maintenance procedure, personnel should place the product in a safe condition and contact supervisors and/or the factory for technical assistance.

#### **4 Identification**

The nameplate mounted on the side plate identifies the type of Elephant Lifting Products trolley, rated load, manufacturer's name (Elephant Lifting Products) and the model or serial number.

If you have any questions concerning the operation of Elephant Lifting Products trolleys which are not addressed in this operation manual, please contact us at the following address:

Elephant Lifting Products  
38381 N Robert Wilson Rd  
Gonzales, Louisiana, 70737  
Phone (888) 844-6113  
Fax (225) 644-6695  
e-mail: [sales@elephantlifting.com](mailto:sales@elephantlifting.com)

#### **5 Main Components**

Elephant Lifting Products trolleys consist of the following main components:

- 1 Side plates
- 2 Rolling wheels
- 3 Distance spacers
- 4 Crosshead
- 5 Reel chain drive (for running geared wheels)

Exception: no drive with push trolleys.

#### **6 Intended Use**

Elephant Lifting Products trolleys are intended to be used exclusively for lifting, lowering loads and for their horizontal movement of the load above floor. Elephant Lifting Products air hoists can be suspended or built into trolleys.

Any other use outside these stipulations is deemed to be impermissible. For applications requiring this type of use please consider the Elephant Lifting Products range of winches and the Elephant Lifting Products range of hoists. Elephant Lifting Products cannot be held liable for any damage resulting from incorrect usage. The entire risk is borne by the operator.

The following situations, among others, are regarded as improper use:

- Exceeding the permitted load-carrying capacity
- Oblique pulling of loads
- Sliding loading
- Dropping a trolley
- Detaching, dragging or pulling of loads
- Catching of falling loads
- Carrying people
- Switching to the opposite direction with load in motion
- Operation reaching of the end stop

Intended use also includes observance of the operation manual and compliance with the inspection and maintenance conditions according to ASME B30 Standards.

## 7 Safe Operating Instructions

1. Before each use or shift, the operator should inspect the trolley for distortion, wear and damage.
2. If inspection indicates that a trolley is damaged, it should never be used. Replace any item indicating damage, distortion and/or excessive wear.
3. To avoid an unbalanced load which may damage the trolley, operate the trolley when the load or hoist (if a hoist is used in conjunction with the trolley) is centered under the trolley. Position the hanger shaft at the centerline of the trolley and beam using properly installed spacer washers. Do not "side pull".
4. If a hoist is to be used in conjunction with the trolley, ensure that a hoist having a rated capacity equal or less than the capacity of the trolley is specified.
5. Do not use these trolleys for lifting, transporting people or supporting loads over people. Make sure people or any obstruction are clear of the load path before traversing the load and trolley.
6. If multiple trolleys are used together at the same time, avoid collision or bumping of trolleys and do not ram trolleys into the end stops. Improper and careless operation can result in a hazardous condition for operator and load.
7. Ensure stops are securely installed at both ends of the beam prior to using trolley.

### DANGER

8. Ensure that stops are installed to prevent the trolley from running off either of the open ends of the beam track when the trolley is being installed over the open end of the beam.
9. On a hand-operated trolley, the stops should engage parts of the trolley other than a wheel. If a stop engages the tread of the wheel, its height shall be no less than the radius of the wheel.
10. Do not join a hand chain by inserting a bolt between links as this may cause jamming of a hand chain with the hand wheel sprocket.
11. Do not swing a suspended load.
12. Ensure that trolley wheels' ride on the top surface of the lower flange of the beam.
13. Install manual chain hoists so that hoist hand chain is on opposite side of trolley hand chain.
14. When operating the trolley, keep the load as close to the floor as practical to make people aware and keep clear of any load the trolley is supporting.

## 8 Installation

The installation of the Elephant Lifting Products trolleys shall be in accordance with the qualified persons recommendations described above "Personnel Competence" on page 2.

Adjust trolley width before installation. Refer to Figure 1 below along with instructions to position spacer washers for measured beam flange width (W).

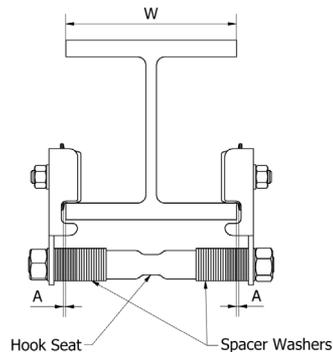


Figure 1: Push Trolley

### Instructions:

1. Measure the beam width (W) and add 2-4mm to this amount for clearance between the wheel flanges to allow 1 to 2 mm of clearance per side ("A" in the figure);
2. Remove the locknuts from the crosshead and adjust the width of the trolley by shifting the spacers accordingly. There are two different thicknesses of spacers that allow for adjustment in 1mm increments. Ensure that the amount of spacers on either side of the crosshead are the same. Spacers not used between the side plates should be fitted to the shaft between the side plate and the lock nut. Ensure that the suspension plate (if fitted) or the groove in the crosshead is central to the side plates;
3. Fully tighten the locknuts and re-check the clearance between the wheel flange and the beam.

Upon completion of installation, perform initial operating checks, Section 10.1 and ensure familiarity with "Safe Operating Instructions", Section 7.

**NOTE: Rounded wheel tread is suitable for taper and parallel flanged beams.**

## 9 Clearances

Under all operating conditions, clearances between beams, trolleys operating at various levels and potential obstructions, shall be maintained.

**DANGER**

**Where passageways or walkways are provided on the structure supporting the trolleys, obstructions shall not be placed so that personnel will be jeopardized by movements of the trolleys.**

Clearances shall be provided at the curves of the beam to allow for the swing of the load when the trolley is negotiating the curve. The amount of clearance shall be determined by considering the size, weight and speed of the trolley and track curve radius.

## 10 Operating Conditions

The **four most important** aspects of trolley operation are:

1. Follow all safety instructions when operating the trolley.
2. Ensure that only people instructed in safety and operation of these products operate the trolley.
3. Inspect each trolley on a regular basis and scheduled a maintenance program.
4. Always ensure that the weight of the load and rated capacity of a hoist (if it is to be used in conjunction with the trolley) are equal or less than the capacity of the trolley assembly. Do not overload.

### 10.1 Initial Operating Checks

1. Upon completion of trolley installation, ensure the side plates are parallel to the beam.
2. If a hoist is used in conjunction with the trolley ensure that the hoist and load are centered below the trolley and beam.
3. Lift a load equal to or less than the rated capacities of either the trolley or hoist a few centimeters or inches off the floor. This is to ensure that all parts of the trolley are in working order. If parts of the trolley are dropped, they can cause severe injury or damage.
4. Ensure that the rail stops are securely installed.
5. Operate the trolley along the entire length of the beam.
6. Inspect trolley performance when raising, moving and lowering test load(s). Trolley must operate smoothly prior to being placed in service.

## 11 Lubrication

Trolley wheels are equipped with sealed bearing which require no lubrication.

### 11.1 Geared Trolley Wheels

Trolleys shall be stationary while lubricants are being applied. Lubricate exposed trolley drive pinion and wheels teeth with grease as often as necessary to keep the teeth liberally covered.

If the grease becomes contaminated with dirt or other abrasive material, clean off old grease and apply new grease. For temperature -29° to 10° C (-20° to 50° F) use M2 EP 1 grease or equivalent grease. For temperature -1° to 49° C (-30° to 120° F) use M2 EP 2 grease or equivalent grease.

**CAUTION**

- **When greasing pinion and geared wheels make sure excess grease is removed from trolley wheels riding surface and track of the beam.**
- **Failure to keep beam track and wheel contact surface clean affect the safe operation of the trolley.**

## 12 Safe Transportation

If you wish to transport your Elephant Lifting Products trolleys to another site or for inspection, please observe the following points:

1. Dismounting:
  - a) Make sure there is no load attached to the trolley;
  - b) Attach the trolley load hook or suspension plate to the chain hoist or other means of lifting;
  - c) Remove beam or rail stops and slide the trolley over the edge of the beam;
  - d) Set the entire trolley down carefully, do not allow it to drop.
2. Disassembly:
  - a) Remove the crosshead from the side plates;  
Note: Only necessary for geared trolleys.
  - b) Remove the chain from the hand wheel;
  - c) Remove the hand wheel assembly from the geared side plate assembly.

**WARNING**

Disassembling a trolley from the beam by separating the side plate is extremely dangerous and this operation should be carried out by the trained or competent personnel contemplated in SANS1824:2003 and American Society of Mechanical Engineers (ASME) standard B30.17-2015.

**13 Storage**

Store the trolley in a clean, dry place indoors. If lengthy storage is required, lubricate wheels and place entire unit in a suitable storage container. Store the product away from heat and steam. Never allow it to rest for lengthy periods of time on concrete or ash floors as the lime sulfur and ash can cause corrosion.

**14 Inspection**

All inspections shall be performed by designated personnel in accordance with the Elephant Lifting Products recommendations and with the requirements of ASME B30 Volume.

Any deficiency revealed through inspection must be reported to an appointed or qualified person. A determination must be made as to whether a more detailed inspection is required or a deficiency constitutes a safety hazard to continued operation. Such deficiency shall be corrected before resuming operation of the trolley. The results of the inspection must be recorded in the inspection log.

Careful inspection on a regular basis will reveal potentially dangerous conditions or evidence of malfunction while still in the preliminary stages, allowing corrective actions to be taken before the condition becomes dangerous.

Elephant Lifting Products recommends two types of inspection:

- a) The frequent inspection performed by the operator as pre-work inspection.
- b) The periodic inspections performed by personnel trained in the operation and repair of these trolleys.

**14.1 Frequent Inspection**

Trolleys that are in continuous service, inspection should be made at the beginning of each shift or before the trolley is first used during each shift.

Elephant Lifting Products trolleys shall be inspected at intervals depending on severity of usage, as follows:

|         |                   |                 |
|---------|-------------------|-----------------|
| NORMAL  | HEAVY             | SEVERE          |
| Monthly | Weakly to Monthly | Daily to Weekly |

The following items shall be inspected:

- 1. Operating mechanisms of the trolley and hand chain drive wheel for proper operation and adjustment. Operate the trolley so that it travels 1 metre (3 feet)

along the beam. Inspect for visual signs or abnormal noises such as but not limited to, squeaking, grinding and grating which could indicate a problem. Do not operate the trolley until all problems have been fixed.

- 2. Inspect trolley load hooks if used in accordance with ASME B30.10 - 2015 Standard.

Trolleys that have been idle for a period of 1 month or more but less than 1 year shall be inspected in accordance with frequent inspection before being placed into service.

**14.2 Periodic Inspection**

Frequency of periodic inspection depends on the severity of trolley usage, as follows:

|        |            |           |
|--------|------------|-----------|
| NORMAL | HEAVY      | SEVERE    |
| Yearly | Biannually | Quarterly |

**NOTICE**

- Please note the requirements of the Occupational Health and Safety Act of South Africa (Act 85 of 1993), Driven Machinery (Regulation 18), Lifting Machines and Lifting Tackle regarding the examination and testing of lifting machines and lifting tackle.

Disassembly may be required for HEAVY or SEVERE usage. Keep accumulative written test records of dated and signed periodic inspections to provide a basis for continuing evaluation. Records should be kept available. Inspection of all the items in "Frequent Inspection" must be conducted and also the following items shall be inspected:

1. Fasteners

Check cap screws, retainer rings, pins and nuts. Replace if missing or damaged and tighten if loose.

2. All Components

Inspect for wear, damage, distortion, deformation and cleanliness.

If external evidence indicates the need, disassemble. Check gears, shafts, bearings, wheels, load sheaves and side plates. Replace worn or damaged parts. Clean, lubricate and reassemble.

3. Drive Chain Hand Wheel

Check for damage or excessive wear of chain drive sprockets and excessive chain stretch or distortion. Replace if necessary. Observe the action of the hand chain feeding through the hand chain drive.

Do not operate a trolley unless the hand chain feeds through the hand chain drive smoothly and without

irregular sounds or other evidence of jamming, wedging or malfunctioning.

#### 4. Supporting Structure.

Check the supporting structure for distortion, excessive wear and continued ability to support the load.

#### 5. Trolley

Check that the trolley wheels run and track the beam properly and that the clearance between the beam and trolley wheel flanges is 1 to 2 mm maximum per side. Check that wheels, bearings shafts, gears or rollers are not excessively worn, cracked or distorted and inspect the side plates for opening due to bending. Do not operate the trolley until any problems have been identified and fixed.

#### 6. Nameplate.

Check for presence and legibility. Replace if necessary.

Trolleys that has been idle for a period of 1 year or more shall be inspected in accordance with periodic inspection before being placed into service.

### 14.3 Records and Reports

An inspection record should be maintained for each trolley, listing all points requiring periodic inspection. A written report should be made monthly on the condition of the critical parts (e.g. wheels, bearings, side plates and hanger shaft) of each trolley. These reports should be dated, signed by each person who performed the inspection, and kept on file where they are readily available to the authorized personnel.

## 15 Troubleshooting

This section provides the information necessary for troubleshooting the Elephant Lifting Products Trolleys. The troubleshooting guide provides a general outline of problems which could be experienced with normal use of the trolley. Table 1 lists the symptom, the possible cause, and the possible remedy for the trouble being experienced.

| SYMPTOM   | CAUSE  | REMEDY  |
|---|--|---|
| Geared Trolley cannot be moved                  | Hand chain drive is stuck or pinion is stuck | Repair the chain drive or renew grease lubrication  |
| Trolley can only be moved slowly or not at all  | Track of trolley too narrow                  | Adjust the clearance between the wheel flange and the outside edge of the bottom flange of the trolley beam |
| Trolley is repeatedly blocked at the same place | Tracks are uneven or rail joint displaced    | Rectify track faults  |

Table 1: Troubleshooting

## 16 Maintenance

General maintenance should be performed in accordance with the requirements of ASME B30 Volume and the conditions and practices of a particular workplace.

Elephant Lifting Products trolleys are extremely robust and require little maintenance. They are suitable for use in explosion-hazardous areas as well as in areas with increased concentrations of soot and dust, high humidity and at ambient temperatures of  $-20^{\circ}\text{C}$  up to approx.  $+70^{\circ}\text{C}$  if they are not heated above this level due to external influences. The thermal endurance of chains and hooks is up to  $+150^{\circ}\text{C}$ .

In order for the trolleys to operate safely and reliably over a period of many years, compliance with maintenance and inspection intervals is of immense importance. If the trolley is being operated in a harsh environment that leads to accelerated wear, then the maintenance intervals should be reduced.

### WARNING

- Never perform maintenance on the trolley while it is supporting a load.
- After performing any maintenance on the trolley, test trolley as described in the "Safe Operating Instructions", Section 7, before returning trolley to service.

## CAUTION

- Maintenance work on Elephant Lifting Products trolleys must only be performed by trained and qualified personnel.
- In the case of maintenance work exceeding normal service and maintenance, please contact Elephant Lifting Products.
- For stationary outdoor operation, trolleys must be protected against weathering and the maintenance intervals must be shortened.

### 16.1 Cleaning and Care

If your Elephant Lifting Products trolley has to work in dirty surroundings, remove coarse dirt from the trolley.

Trolley wheel bearings are sealed and require no lubrication. If trolley wheel rotation is rough or noisy, replace trolley wheel bearing.

Threaded components of Elephant Lifting Products Trolleys are metric. Verify and match thread sizes before assembly.

### 16.2 Spare Parts

If during repair work, the replacement of components is necessary, only original Elephant Lifting Products spare parts may be installed.

## 17 Hand Chain Adjustment or Replacement

### CAUTION

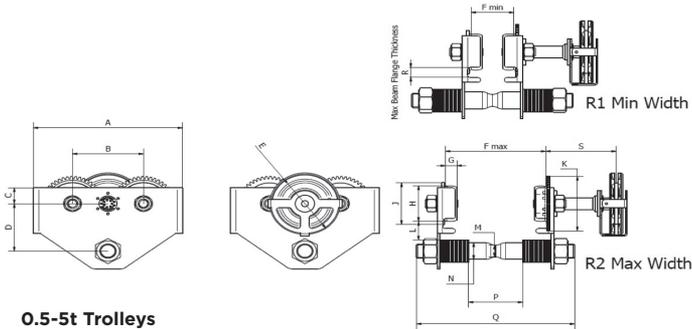
- **When cutting the weld side of a hand chain link, do not cut or nick the opposite side. A damaged link must be replaced to prevent premature failure. A falling hand chain can injure personnel.**
- Proper use, inspections and maintenance will increase the life and usefulness of your Elephant Lifting Products equipment. During assembly lubricate gears, threaded areas of nuts, bolts, caps crew and all machined threads with applicable thread lubricants or antiseize compound to prevent corrosion and allows for ease of disassembly of components.

### 17.1 To Replace Hand Chain

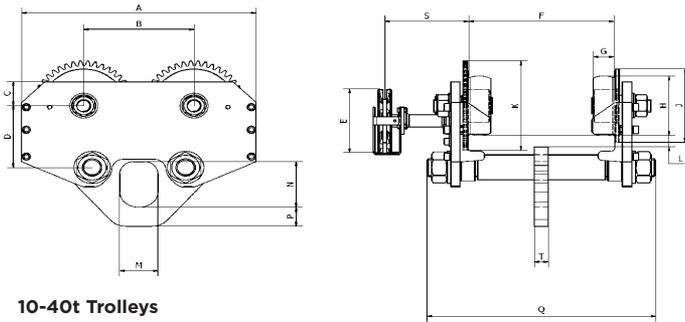
1. Cut a length of chain twice the required hand chain drop plus 30 cm (1 foot)
2. Run the new hand chain around the hand wheel, making sure that it is seated correctly in the hand wheel sprockets.
3. To create a "C" link, cut the welded side of the chain link and bend it open to grip the exposed part of the link.
4. Connect the hand chain ends with the "C" link(s), make the total number of links even and bend the "C" link(s) shut.
5. If replacing the hand chain, disconnect it at the "C" link and carefully remove the hand chain.
6. Make sure the hand chain is not twisted. To untwist a hand chain, open a "C" link and remove one chain link.

### 17.2 To Adjust Chain Length

Add or remove a length of chain twice the desired amount of chain adjustment.



**0.5-5t Trolleys**



**10-40t Trolleys**

Note: 40t trolley is a tandem design, request drawing from factory

**SPECIFICATIONS & DIMENSIONS - GRIPPA BEAM CRAWLS**

| Model | Headroom (in) | A    | B    | C   | D    | E   | Beam Width Range (F) | G   | H   | J   | K    | L   | M   | N   | P   | Q    | R   | S   | T   | Min Beam Radius (in) | Unit Weight, Push (lbs) | Unit Weight, Geared (lbs) |
|-------|---------------|------|------|-----|------|-----|----------------------|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|----------------------|-------------------------|---------------------------|
| 0.5t  | 1.73          | 7.4  | 3.7  | 1.1 | 3.3  | N/A | 1.9 - 5.6            | 0.6 | 2.2 | 3.0 | NA   | 1.6 | 1.0 | 1.2 | 2.9 | 9.1  | 0.8 | N/A | N/A | 29.5                 | 12.1                    | N/A                       |
| 1t    | 2.5           | 9.6  | 4.5  | 1.4 | 4.3  | 6.1 | 2.9 - 8.3            | 0.7 | 2.6 | 3.3 | 3.8  | 2.2 | 1.0 | 1.4 | 4.3 | 11.8 | 1.0 | 6.2 | N/A | 35.4                 | 22.25                   | 30                        |
| 2t    | 1.8           | 13.0 | 6.2  | 1.6 | 4.7  | 6.1 | 3.5 - 8.6            | 1.0 | 3.5 | 4.2 | 5.4  | 1.9 | 1.2 | 1.6 | 4.7 | 13.8 | 1.0 | 6.2 | N/A | 43.3                 | 42                      | 50                        |
| 3t    | 2.1           | 13.0 | 6.2  | 1.6 | 5.3  | 6.1 | 3.9 - 8.2            | 1.0 | 3.5 | 4.2 | 5.4  | 2.4 | 1.4 | 1.9 | 4.9 | 12.8 | 1.1 | 6.2 | N/A | 43.3                 | 53                      | 62                        |
| 5t    | 3             | 14.4 | 6.9  | 1.6 | 6.5  | 6.1 | 4.4 - 8.3            | 1.4 | 4.3 | 5.5 | 5.9  | 2.9 | 1.6 | 2.4 | 5.9 | 14.6 | 1.4 | 6.6 | N/A | 59                   | 92                      | 101                       |
| 10t   | 6.85          | 19.8 | 9.3  | 2.3 | 5.9  | 6.1 | 6.8 - 12.0           | 1.7 | 5.7 | 7.0 | 8.5  | 1.1 | 3.2 | 4.3 | 1.8 | 19.3 | 1.1 | 7.1 | 1.2 | 82.6                 | 232                     | 250                       |
| 20t   | 10.25         | 24.0 | 11.4 | 4.7 | 10.4 | 8.1 | 6.8 - 12.0           | 2.6 | 7.9 | 9.6 | 10.8 | 3.3 | 4.3 | 5.9 | 2.8 | 21.7 | 1.6 | 8.6 | 1.6 | 137                  | 618                     | 630                       |
| 40t   | 11.61         | 52.0 | *    | 5.3 | 9.3  | 7.9 | 6.8 - 12.0           | 2.5 | 7.9 | 9.6 | 10.8 | 3.3 | 4.9 | 5.9 | 3.3 | 23.6 | 2.0 | 8.2 | 2.4 | NA                   | 1510                    | 1542                      |

Due to continued innovation and improvement of our products, specifications and dimensions are subject to change without notice. Please consult Elephant Lifting with any questions.







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