

# COLUMBIA

## WINCHES & HOISTS

*Manufactured by Allied Power Products, Inc.*

# Pallet Gantry Owner's Manual

## Installation and Operating Instructions

**Model:**

**Serial Number:**

**ALLIED POWER PRODUCTS, INC.**

**THE WINCH & HOIST SPECIALISTS**

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### **CAUTION**

The final determination as to the suitability of this product for any purpose is solely that of the user.  
Columbia products are not to be used to lift people or to lift anything over people.

# READ THIS FIRST.

The information in this manual is intended to help ensure your Columbia product is properly installed, operated and maintained.

Although every effort has been made to make this manual complete and understandable, it is not a definitive guide to every possible situation or circumstance.

The proper installation, operation and maintenance of this product is solely the responsibility of the owner.

Safe operation of this product is directly dependent on the operator's skill, knowledge and judgment before, during and after the use of the product.

To avoid hazardous situations, every operator must be knowledgeable about appropriate safety guidelines, codes and regulations related to rigging, wire rope, and winch / hoist usage. Remember that an uninformed or careless operator can make the operation of any equipment dangerous.

Ultimately, the owner / operator must make the final decision as to how this product will be used and whether that intended use is safe.

If, after reading this manual, you have any questions regarding the installation or use of this Columbia product, contact your dealer or the Customer Service Manager of Allied Power Products, Inc. for an answer to your question.

Replacement manuals are available free of charge by writing:

**Allied Power Products, Inc.**  
**6590 SW Fallbrook Place**  
**Beaverton, OR 97008**

**THIS MANUAL CONTAINS EXTREMELY IMPORTANT INFORMATION ABOUT THE INSTALLATION AND OPERATION OF YOUR COLUMBIA PRODUCT. FOR YOUR OWN SAFETY, READ THIS MANUAL COMPLETELY PRIOR TO PRODUCT INSTALLATION AND / OR OPERATION.**



**⚠ WARNING**

**COLUMBIA PRODUCTS ARE NOT TO BE USED FOR LIFTING PEOPLE OR THINGS OVER PEOPLE.**

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# Overview

The intention of this document is to provide a list of safety precautions and operating guidelines that will cover the majority of situations a user of this piece of equipment will encounter, since unforeseen circumstances and situations may be encountered when using this gantry, it is the responsibility of the operator to ensure their own safety, the safety of other persons in the affected area and of other property.

The following information has been compiled to act as a guide to ensure the operation of the gantry is as safe as possible. Since compliance with these and other industry acceptable guidelines and precautions is the ultimate responsibility of the operator, it is of the utmost importance that all operators are well trained, qualified, mentally/physically able, and authorized to use this piece of equipment.

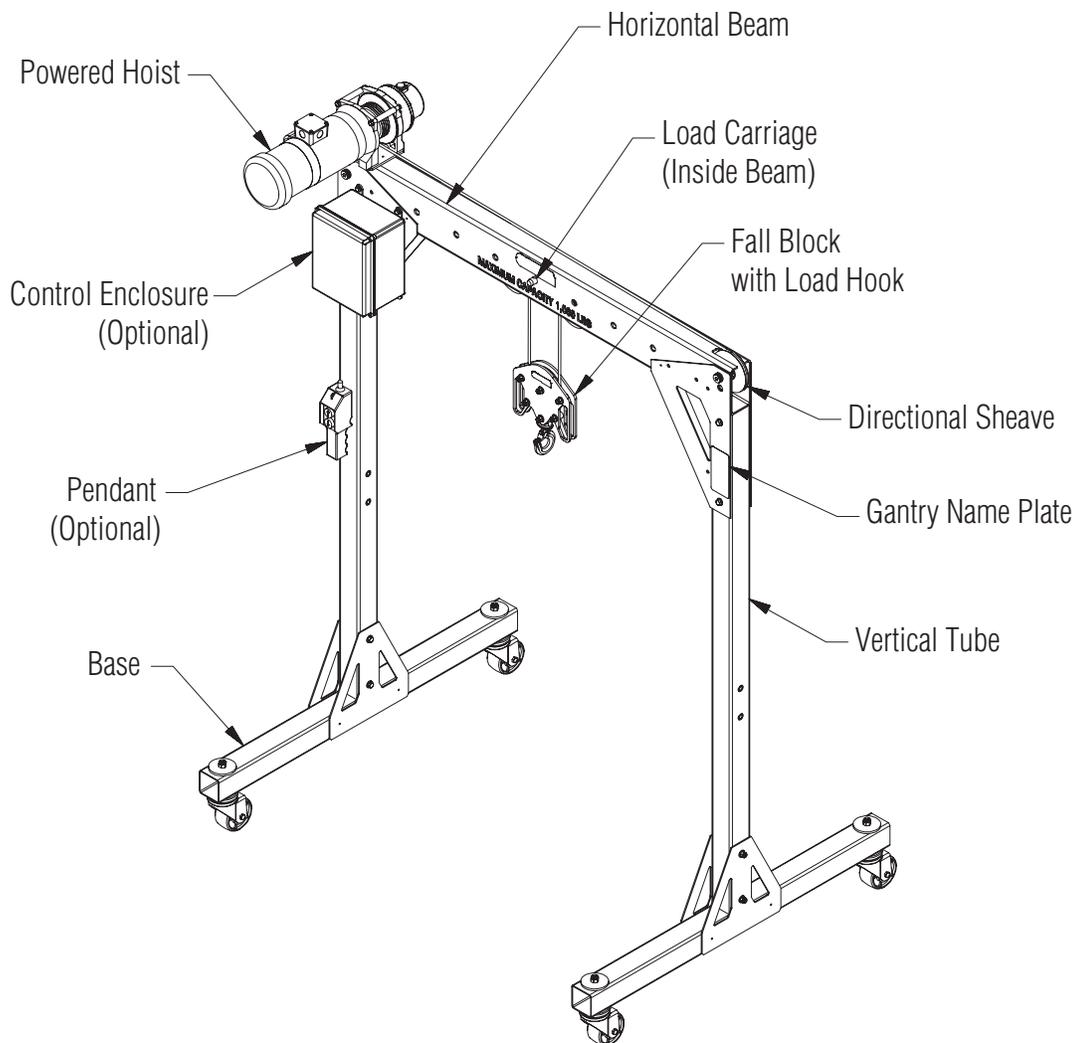
The safe operation of this product is directly dependent on the operator's skill, knowledge and judgment, therefore, any person who operates this gantry must understand that when they do so they are accepting full responsibility for conducting a safe hoisting operation.

# General Assembly

The APPI series of portable gantries, a bridge-like frame, are designed for general material handling purposes and to be able to lift and move a load over a workspace. As a standard, all APPI gantries have the ability to pair with electric, pneumatic, hydraulic, or manual hoists to provide a complete material handling solution. While individual load ratings and feature may vary from gantry model to gantry model, the major components are the same.

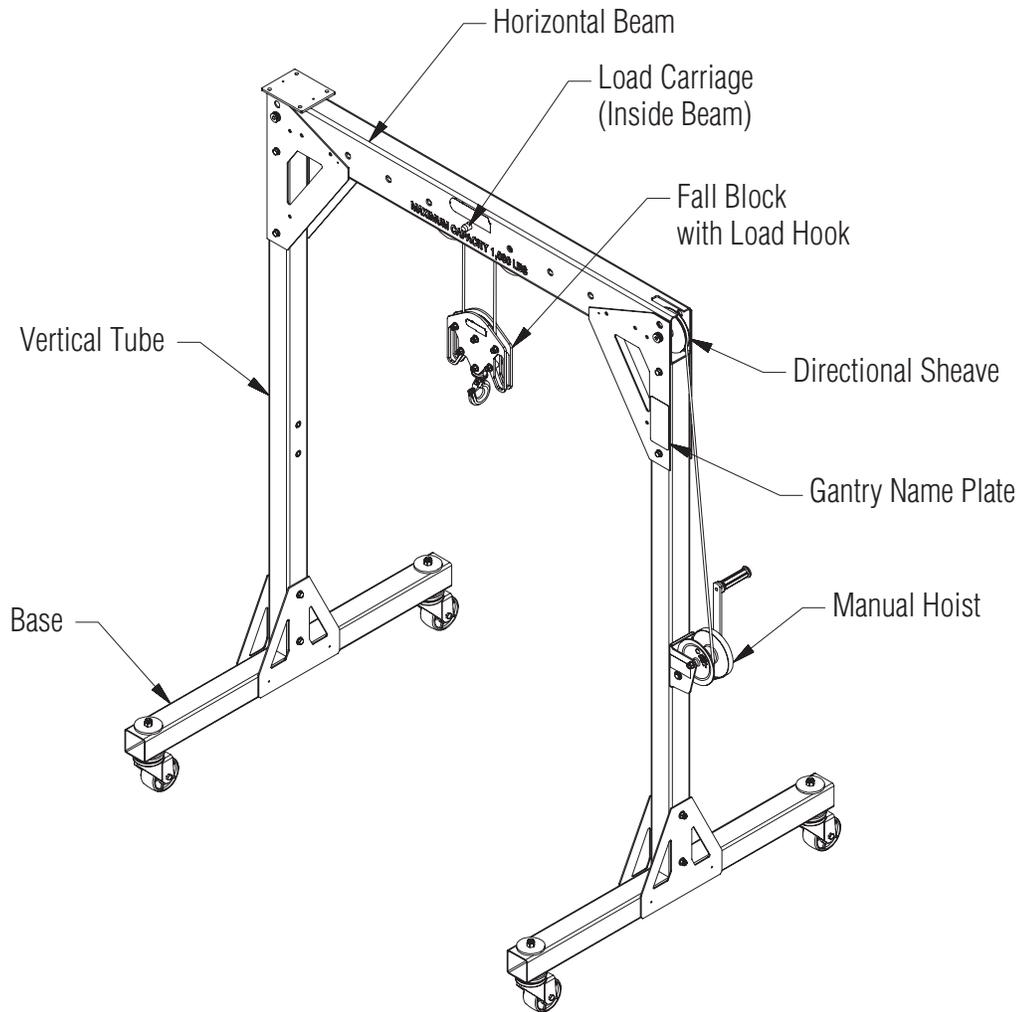
## Powered Hammerhead Configuration (PHH)

Diagram 1



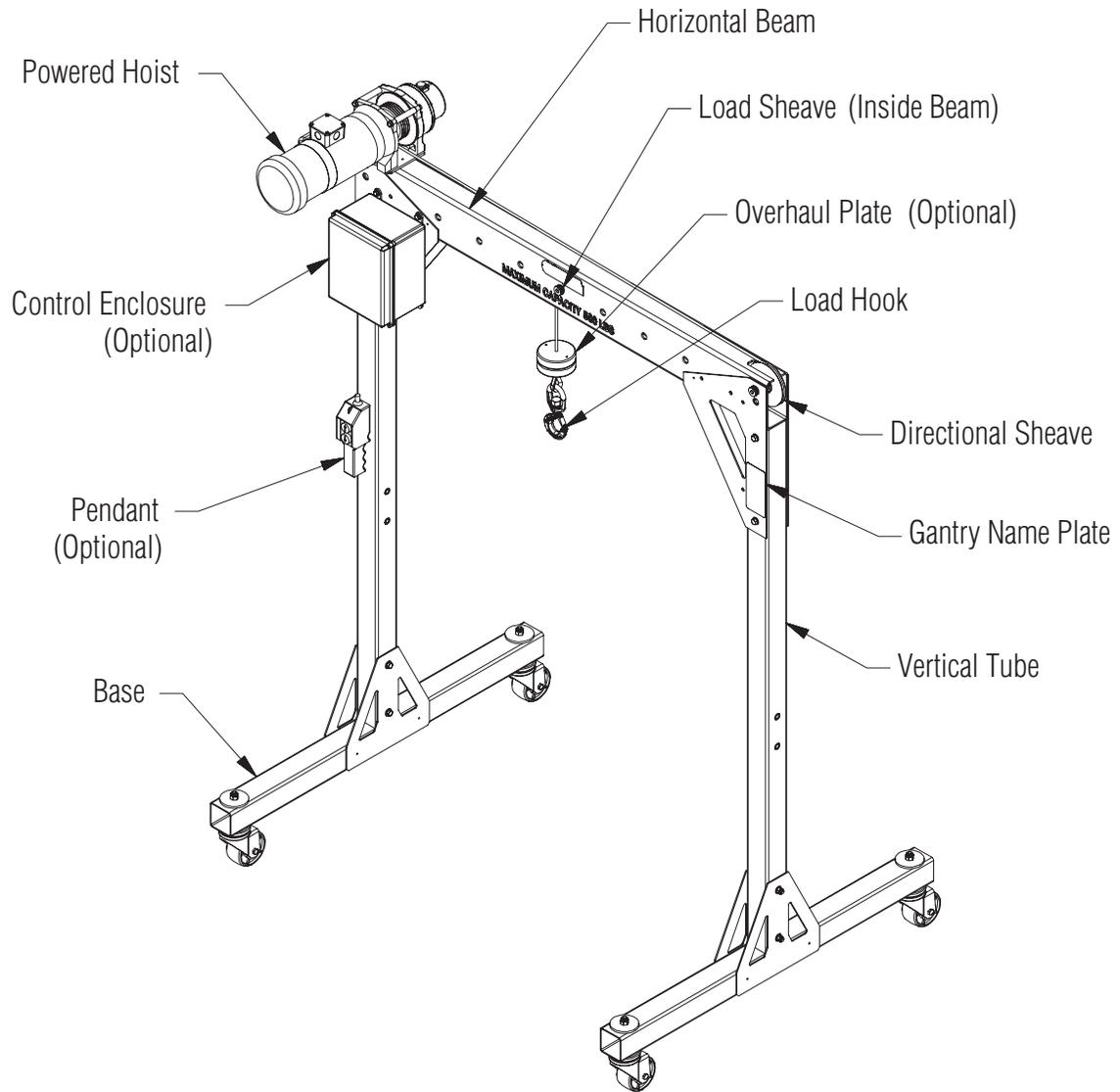
# Manual Hammerhead Configuration (MHH)

Diagram 2



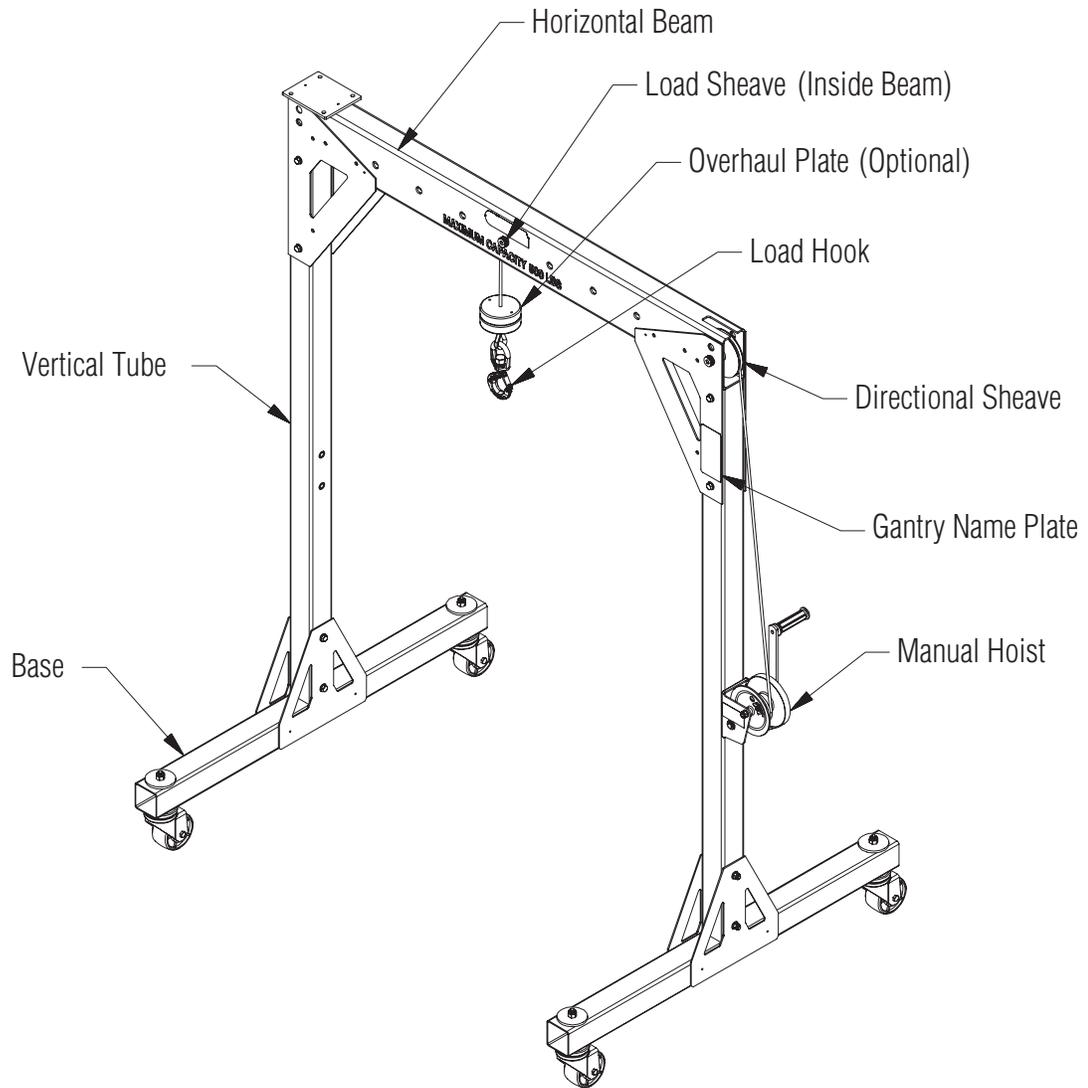
## Powered Fixed Configuration (PFH)

Diagram 3



# Manual Fixed Configuration (MFH)

Diagram 4



## Optional Equipment

In order to accommodate some of the more common customer needs, APPI provides several standard options that may be provided with a gantry, some examples are as follows:

### **Overhaul Plate**

For most applications an overhaul plate (headache ball) is recommended, especially when the gantry will be lowering an unloaded hook. The overhaul plate will keep a predetermined amount of tension on the hoist line and ensure that the line is always spooled under tension.

### **Pendant Controls**

The hand-held remote control is used to “power in” and “power out” the rope. Depressing the “UP” button will cause cable to wind on the drum and depressing the “DOWN” will cause cable to wind off the drum. Each button is spring-loaded and will automatically return to the “OFF” position when released. Do not attempt to push both buttons at the same time. When a pneumatic hoist is used with the gantry, the green button will raise the load and conversely the red button lowers the load.

## Gantry/Hoist Capacity Rating and Usage

This gantry was designed specifically for material handling on a leveled surface and is not to be used to lift people or loads over people. The gantry load rating represents the maximum load that can be placed on a new unit. The maximum capacity rating of this gantry varies by model and is clearly labeled on the beam and/or name plate. This maximum capacity includes the weight of any rigging required to secure a load. In some cases, the hoist and gantry may not have the same load ratings, while in most cases the gantry will have the lesser load rating, in some cases the hoist rating may be the limiting factor, so it is imperative that the operator be familiar with all facets of their lifting system.

Operators of the gantry must not attempt to lift loads greater than rated capacity. In all but a severely overloaded case, the gantry and accompanying hoist may be able to lift the load initially; however, undetectable damage may occur as the gantry/hoist is overloaded. Subsequent to this type of event, a failure of the gantry structure can occur at any time, even at a time when the hoist is used within its rated capacity.

The use of this gantry for any purpose, or in any manner, outside of the guidelines presented in this manual creates the potential for an unsafe situation in which life or property may be damaged, as such; liability for all malfeasant actions taken with this piece of equipment is solely the responsibility of the operating entity.

## Setup and Installation

Assembly of the gantry structure is done per the assembly drawings included with each unit. It is imperative that assembly is done per the drawing and the instructions are adhered to explicitly. All gantries are assembled and tested for functionality prior to shipment, as such will assemble without issue. Should problems arise during installation where the unit does not go together smoothly and without force cease assembly, confirm use of proper components at the appropriate location, inspect all components at the assembly location, if any damage is noticed, discontinue assembly of the gantry immediately and contact APPI to discuss the steps necessary to proceed.

Under no circumstances may the gantry to be modified without written permission of APPI. Any modification to the gantry, such the welding or drilling of new/existing holes will weaken the gantry and may result in the weakening of the structure and possibly structural failure.

## Securing and Rigging a Load

An instruction of proper rigging and securing a load is beyond the scope of this manual, it is assumed that the operator has knowledge of the best industry approved rigging practices, however, as a general guide:

- It is the responsibility of the operator to ensure that all loads to be lifted are properly secured and attached to the hook.
- The operator must inspect slings and rigging devices before use and ensure that defective, damaged or faulty rigging equipment is not used.
- Only slings or other rigging devices properly rated for the job are used and they must ensure they are used properly.
- The hoist cable must never wrap around a load.
- The gantry rope assembly must not come into contact with an electrical source during a lifting/lowering operation.

## Basic Guidelines for Operation

- It is the responsibility of the operator to determine if it is safe to conduct a lifting operation.
- The operator must stop the use of the gantry/hoist if weather or lighting conditions make it unsafe to use the gantry/hoist.
- The operator must keep themselves and all other personnel away from all moving parts on the gantry as all pinch points are impossible to eliminate due to the layout of the system.
- The operator must be positioned with a clear view of the load when the gantry is being used.
- The operator is responsible for properly securing the load and attaching it properly to the hook at the ground for loads being hoisted.
- The operator is responsible for properly securing the load and attaching it properly to the hook for loads being lowered.
- The operator must ensure there is nothing that will be lifted that is not properly secured to the load and/or the hook.
- The operator must ensure that the hoist line is vertical before starting a lift, as the gantry/hoist cannot be subjected to side loading.
- The operator must ensure the load does not make contact with any part of the structure while a load is being lifted or lowered.

- The operator must watch the load at all times. The lift operation must stop if the operator loses sight of the load.
- The gantry is not to be used to pull items as it is only rated to handle a freely suspended load.
- The gantry is not rated to lift people or loads over peoples, as such; the operator must never allow anyone to be lifted by the gantry or allow anyone to be under the hook/boom of the gantry with or without a load on it.
- When lowering the load, the operator must never allow the line on the hoist to spool out beyond 5 tailing (dead) wraps of rope on the hoist drum.
- The operator must ensure no one touches the line while it is moving.
- The operator must ensure no one pushes or pulls on the line to move or position a load.
- The operator must never leave the gantry unattended with a suspended load.
- The operator must immediately report any and all damage, defects and deficiencies to the appropriate manager/supervisor.

## Routine Service and Safety Checks

### Hoist Assembly

Gantries may be equipped with a variety of different hoists with various power options and line types, refer to the accompanying hoist manual provided with your particular system for the service and maintenance of the hoist unit.

### Basic Guidelines for Maintenance and Repairs

In the event that problems should arise with the operation of the gantry, the operator should immediately determine the cause of any change in performance or sound during operation and take proper corrective action prior to continuing use of the gantry. If a problem with the gantry system is identified that cannot be resolved by inspection or through the use of the troubleshooting section found at the end of this manual, contact APPI for further assistance. To expedite assistance please be prepared to provide the model and serial number of both the gantry and hoist.

### General Maintenance

This gantry is designed to be relatively maintenance free; however, the useful life of the system can be extended by adhering to a general regimen of inspections and routine care. Keep all components on the gantry, line, and remote control free from contaminants. Use a clean rag or towel to remove any dirt and/or debris. Unless authorized and approved by APPI, do not make any repairs, modifications alterations or changes to the gantry/hoist as doing so will invalidate all warranties.

### Daily Inspection

It is recommended to conduct the following inspection each day prior to the first use of the gantry/hoist.

- Inspect overall condition of gantry look for details such as loose/missing/modified hardware, damage to paint/surface which may indicate a collision or unapproved modification has taken place, etc.
- Examine the gantry beam, vertical tube and base assemblies including the sheaves to ensure there are no indications of damage or overloading such as cracks in welds or bent, deformed or worn components. Examine the entire gantry/hoist assembly for signs of corrosion or rust.
- Confirm the mounting hardware between the gantry/hoist is properly torqued.
- Confirm the operation of the hoist assembly and function of system braking.
- Inspect the rope for signs of wear or damage.
- Confirm all sheaves rotate freely and show no signs of wear.

### **Monthly Inspection**

It is recommended to conduct the following inspection on a monthly basis regardless of the number of times the gantry/hoist has been used.

- With a properly adjusted/calibrated torque wrench, confirm the hoist mounting bolts are torqued to specification.
- Confirm all the mounting hardware between the horizontal beam, vertical tubes, and bases is properly torqued.

### **Annual Inspection**

It is recommended the hoist be removed from service on an annual basis for a thorough motor/brake/gear train/structural inspection by a qualified person or agency.

## **Basic Guidelines for Wire Rope Inspection**

If the gantry is equipped with wire rope (as opposed to synthetic rope) the life of the wire rope is directly related to the use and care it receives. Wire rope must be replaced when it has one or more of the following defects as defined in the American National Standards Industry Handbook A10.5 or as defined by OSHA.

- Corrosion
- Frayed or broken wire
- Abrasions
- Kinks
- Heat damage
- An apparent reduction of wire rope diameter

***If any of these defects are found in the wire rope, the wire rope must be replaced prior to use of the gantry.***

The wire rope anchor, which attaches the wire rope to the drum, is not designed to hold rated loads by itself. Keep a minimum of five (5) wraps of wire rope on the drum at all times to achieve rated load.

Wire rope is to be installed under tension to ensure that the rope does not draw into the inner layers of the drum when loaded. The amount of tension used depends on a number of factors. As a general rule, the minimum load applied should be .2% to 1% of the breaking strength of the wire rope.

# Troubleshooting Guide

Symptom	Potential Problem	Proposed Solution List
Load carriage cannot be relocated freely.	1. Failed bearing.	Remove load carriage and inspect if all bearings rotate without much effort.
	2. Deformed or dirty beam.	Visually inspect beam for any signs of damage, foreign debris, or deformation.
	3. Deformed or dirty load carriage.	Clean wheels and track.
Hoist does not lift/lower load when commanded.	1. Faulty electrical or pneumatic connections.	Determine if all electrical/pneumatic connections (power to motor, power to motor brake (if equipped) control pendant connections) are intact, if necessary this troubleshooting may require the assistance of an electrician.
	2. Hoist motor has reached the end of its serviceable life or requires repair.	Have the motor inspected by someone qualified to assess its condition and serviceability.
	3. Other	See accompanying hoist manual or contact APPI for additional troubleshooting assistance.







# LIMITED WARRANTY

Allied Power Products, Inc. (APPI) warrants the products it manufactures to be free from defects in material and workmanship to the original buyer for a period of 24 MONTHS from the date of shipment from APPI. All warranties for products sold but not manufactured by APPI are solely that of the manufacturer.

This warranty and liability of APPI is limited to the replacement or repair of any product manufactured by APPI if the product is found – upon examination at our facility – defective due to materials or workmanship. All freight, removal and/or installation charges shall be borne by the Buyer.

This warranty does not cover failures or malfunctions found by APPI to result from:

- Improper installation, operation and/or maintenance of the product.
- Replacements, repairs and/or alterations made by or on behalf of the buyer without written approval from APPI.
- Use of accessories and/or other components in conjunction with the product without written approval from APPI.

APPI SHALL NOT IN ANY EVENT BE HELD LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGE OR FOR EXPENSES OR DELAY CAUSED BY DEFECTIVE MATERIAL OR WORKMANSHIP.

Except for the above warranty, APPI makes no other express or implied warranties and NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

This warranty shall be governed by and construed in accordance with the laws of the State of Oregon and enforced in Oregon courts. If any portion of this limited warranty and limitation on damages is determined to be invalid or unenforceable, the remainder of the warranty shall remain in full force and effect.

All warranty claims must be submitted to APPI in writing to:

**Allied Power Products, Inc.**  
**6590 SW Fallbrook Place**  
**Beaverton, OR 97008**



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