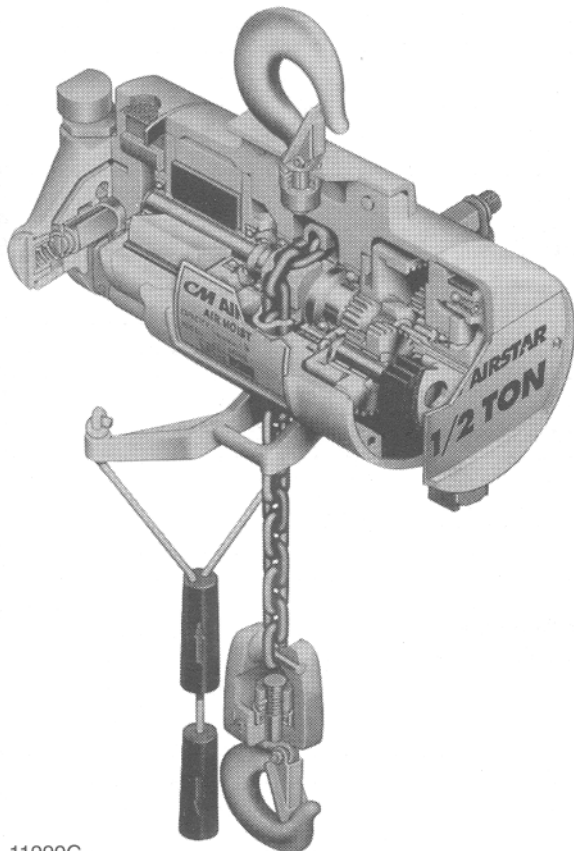


OPERATION, SERVICE & PARTS MANUAL

CM[®] AIRSTAR[™] **AIR HOISTS**



11999C

Rated Loads: 1/4
thru 1 ton/ 225
thru 900 kg.

Follow all instructions and warnings for inspecting, maintaining and operating this hoist. The use of any hoist presents some risk of personal injury or property damage. That risk is greatly increased if proper instructions and warnings are not followed. Before using this hoist, each operator should become thoroughly familiar with all warnings, instructions and recommendations in this manual.

Retain this manual for future reference and use.

Forward this manual to the operator. Failure to operate this equipment as directed in this manual may cause injury.

Before installing hoist, fill in the information below. Refer to the Hoist and Motor data plates.

Model No. _____

Serial No. _____

Purchase Date _____

Air Pressure _____

Rated Load _____

CM COLUMBUS McKINNON CORPORATION
INDUSTRIAL PRODUCTS DIVISION
140 JOHN JAMES AUDUBON PARKWAY
AMHERST, NEW YORK 14228-1197 U.S.A.

AIRSTAR

PRINTED IN U.S.A.

FOREWORD

This book contains important information to help you install, operate and maintain your new **CM AIRSTAR** Air Hoist. We recommend that you study its contents thoroughly before putting your hoist to use. Through proper installation, application of correct operating procedures, and by practicing the recommended maintenance suggestions you will be assured maximum service from your hoist.

Complete inspection, maintenance and overhaul service is available for **CM AIRSTAR** Air Hoists at recognized CM Repair Stations. Refer to your telephone directory yellow pages under "HOISTS." They are staffed by quali-

fied factory-trained service men and stock approved CM replacement parts.

Replacement parts information is also included in this book for your convenience. Since it will likely be a long time before parts information is needed, we suggest that, after you have become familiar with operation and preventive maintenance procedures, this book be carefully filed for future reference.

EQUIPMENT ILLUSTRATED AND DESCRIBED HEREIN IS NOT DESIGNED OR SUITABLE FOR LIFTING OR LOWERING PERSONS.

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NOTICE: Information contained in this book is subject to change without notice.

1-1. **GENERAL. CM AIRSTAR Air Hoists** are precision built chain type hoists which are built in three rated loads, 1/4, 1/2, and 1 ton. Each size is available in pull cord control and pendantthrottle control models. In addition, there are model variations with coil type or roller type load chains and hook or lug type suspensions. Coil chain hoists are also provided in spark resistant models. (Note: Spark resistant models have rated loads of 3/8 and 3/4 ton.)

1-2. **BASIC CONSTRUCTION.** All sizes and models are of the same basic design, having many common and interchangeable parts. They consist primarily of an aluminum alloy frame which houses a vane type air motor, chain sprocket wheel, and gearing. A shoe-type brake is mounted on one end of frame and is encased in an aluminum alloy end cover. A control head assembly with built-in muffler and air inlet swivel connection is mounted on opposite end of frame. An upper suspension hook or lug bracket is attached to the top of the frame. Either a special nickel steel roller type load chain or an alloy steel coil type load chain with spring-latch type lower block assembly is employed to raise and lower loads. A block and chain operated limit stop lever is mounted at bottom of frame and is pinned to throttle valve control shaft. Hoist operation is controlled by either pull cords or a pendant throttle control assembly.

1-3. **DIFFERENCES BETWEEN MODELS AND SIZES.** The main differences between hoist models are in the type of control, type load chain and type suspension employed. These are described in paragraphs (a.) through (c.) below. Differences between sizes are in reeving of the load chain. On 1/4 and 1/2 ton hoists, the load chain is single reeved (one part of chain); on 1 ton hoists, the chain is double

reeved (two parts of chain). Standard lift is 10' though increased lifts may be ordered.

a. Control differences are in methods employed for operating hoist. There are two types, pull cord control and pendant throttle control. These are further described in Section I I I, paragraphs 3-1 and 3-3.

b. Two types of load chains are used as the lifting medium, roller chain and coil chain. The roller type chain is a special precision manufactured nickel steel chain. The coil type chain is full-flexing, electric welded, link chain; carburized alloy steel on standard models and surface hardened chrome-nickel stainless steel on spark resistant models. Both types are especially designed for use in hoisting.

c. Suspension differences include a conventional hook type mounting and a lug type mounting. Hook suspension allows portability, permitting hoist to be easily moved from job to job. Lug suspension allows rigid trolley mounting of hoist on an overhead I-beam to permit traversing hoist and load. Rigid mounting of trolley on hoist affords maximum headroom advantage, saving up to 3-3/16" compared to a hoist hook-suspended on a trolley.

1-4. HOIST DATA.

*Rated Loads: 1/4, 1/2 and 1 ton Air Pressure (recommended): 90 psi Air

Consumption: 48 cfm at 90 psi Net Weight (basic hoist): 36 pounds

Suspension: Hook or lug Control: Pull Cord or Pendant Throttle

*For standard models. Spark resistant models are rated at 3/8 and 3/4 ton.

SECTION II – INSTALLATION

2-1. **GENERAL. CM AIRSTAR** Air Hoists are completely lubricated and load tested before being shipped from the factory. To place hoist in service, attach to a suitable overhead suspension (Paragraph 2-2) in area to be used; connect hoist to nearest air supply (paragraph 2-3); and check and adjust hoist speed (paragraph 2-4).

2-2. SUSPENDING HOIST.

a. On hook suspended hoists, select a suitable overhead support in area hoist is to be used (one capable of holding combined weight of hoist and its rated load) and hang hoist up. **Be certain that upper hook is firmly seated in center of hook saddle and that the spring safety latch is properly closed over hook opening.** In some cases, it may be necessary to first remove spring latch before hook will fit over a support. Reinstall latch after hook is engaged.

b. On lug suspended hoists, select a suitable overhead support in area hoist is to be used (one capable of holding combined weight of hoist and its rated load). Mount hoist using through bolts of appropriate size to fit mounting holes in suspension lug at top of hoist. Use only suspension bolts provided by CM. (See table below.)



The structure used to suspend hoist must be of sufficient strength to withstand reasonable forces

to which hoist and support may be subjected. Hoist must be aligned with load to avoid side pulls.

SUSPENSION LUG BOLT SIZE AND HOLE SPACING

Dimension	Hoist Rated Load (Ton)	
	1/4, 3/8, 1/2	3/4, 1
Bolt Size (ins.)	5/8	5/8
Center Distance Between Bolt Holes (ins.)	3-1/8	3-1/8
Suspension Lug Widths (ins.)	3-5/8	4

c. On rigid mount trolley suspended hoists, the trolley side plates must be properly spaced so trolley will fit (beam on which hoist will operate). Adjustment for various I-beam sizes is accomplished by rearrangement of spacer washers on through bolts which connect trolley side plates to hoist suspension lug. Refer to instruction sheet furnished with CM Rigid Mount Trolleys for complete instructions.



If trolley is mounted on an open-end beam, end stops must be installed to prevent trolley from running off the end of the beam resulting in injury to operator and others, and damages to load and other property.

d. If chain container is to be used on hoist, install it following instructions furnished with container.

2-3. CONNECTING HOIST TO AIR SERVICE.

a. Connect hoist to nearest filtered and lubricated air source using minimum 1/2" I.D. air hose assembly (see Figure 2-1). Avoid use of reducing bushing and nipple or hose assemblies of smaller diameters which may cause restrictions.

b. If hoist is suspended by trolley, provide sufficient hose to reach from air source to farthest point of trolley travel. CM Hose Trolleys are recommended to keep hose up out of the way (see Figure 2-2).

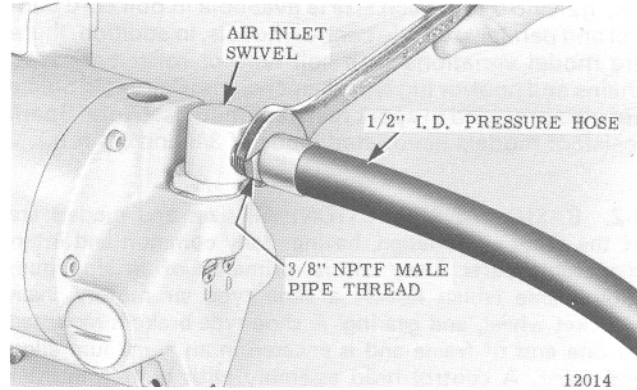


Figure 2-1. Connecting Air Hose to Hoist.

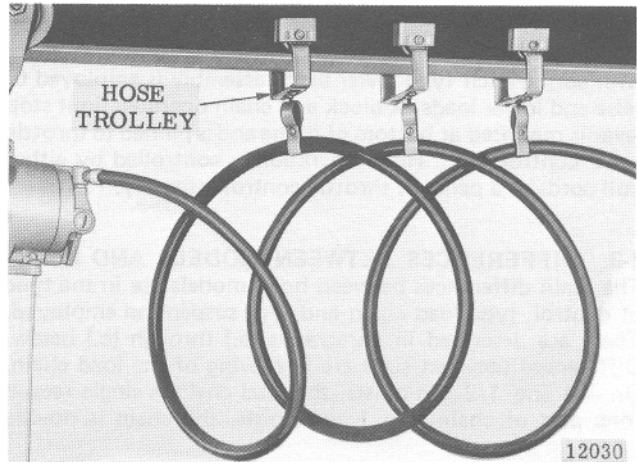


Figure 2-2. Air Hoist Supported by CM Hose Trolleys.

c. A filter and lubricator unit (Figure 2-3) must be installed between air source and air hose leading to hoist. These keep air flowing to hoist free of dirt and add lubricant to air so internal parts of motor are constantly lubricated. Use Air Hoist Motor Oil or good grade 10W machine oil (approximately viscosity 150 SSU at 100°F.). Multi-viscosity, detergent type engine oil is not recommended. Feed one drop of oil for every 50 to 75 cubic feet of air going through the air motor.

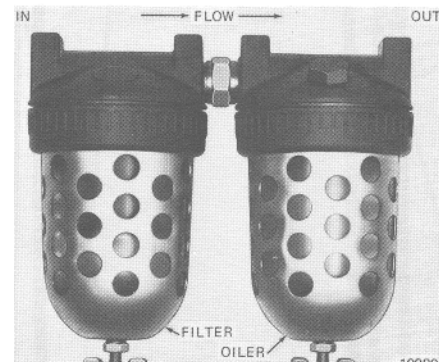


Figure 2-3. Air Filter and Lubricator Unit.

d. The recommended operating air pressure for all capacities of **CM AIRSTAR** Air Hoists is 90 psi. When line pressure exceeds 100 psi (while hoist is operating), it is recommended that a pressure regulator valve be provided in the air supply line to maintain proper pressure. However, there is a wide range of pressures within which the hoists will operate. Refer to "Performance Charts." See Figure 2-5.