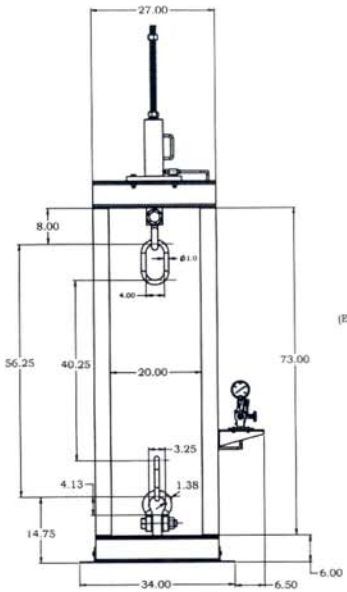
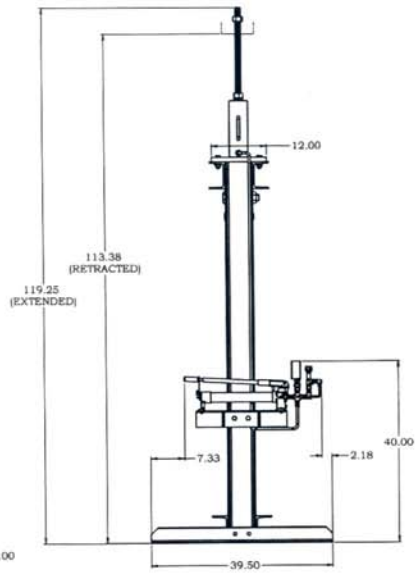
CM® MANUAL HOIST TEST STAND

MAXIMUM CAPACITY: 26,000 POUNDS



Front View



Side View

All Dimensions In Inches

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Description

The CM Hoist Test Stand can be used for the static or dynamic testing of hoists requiring test loads from as little as 0.3 tons (660 pounds) to 12 tons (26,000 pounds). It is a self-contained, hydraulic device with overall dimensions shown on the clearance diagram. The test stand weighs approximately 500 pounds plus the weight of the hoist being tested. No additional load is imposed on the floor during the testing of hoists.

For static testing, the load can be applied to the hoist by manually operating the pump or operating the hoist until the pressure is at the desired level. To dynamically test, the pump is manually operated to the desired pressure and by adjusting a relief valve, this pressure is maintained while the hoist is operated. A chart is provided to convert hydraulic pressure to pounds and tons.

According to ASME B30.16, "Overhead Hoists", and ASME B30.21, "Manually Operated Lever Hoists", hoists shall be periodically tested to insure their continued safe use; and hoists in which load sustaining parts have been altered, replaced or repaired shall be tested by or under the direction of an appointed person and a written report prepared and made available.

CM Repair/Replacement Policy

All Columbus McKinnon (CM) Hoist Test Stands are thoroughly inspected and performance tested prior to shipment. If any properly maintained Hoist Test Stand develops a performance problem due to a material or workmanship defect, as verified by CM, repair/replacement of the unit will be made to the original purchaser without charge. This repair/replacement policy only applies to CM Hoist Test Stands installed, maintained and operated as outlined in this manual, and specifically excludes parts subject to normal wear, abuse, improper installation, improper or inadequate maintenance, hostile environmental effects, and unauthorized repairs/modification. We reserve the right to change materials or design if, in our opinion, such changes will improve our product. Abuse, repair by an unauthorized person, or use of non-CM replacement parts voids the guarantee and could lead to dangerous operation.

For Full Term of Sale, see Sales Order Acknowledgement. Also, refer to page 8 for Limitations of Warranties, Remedies and Damages, and Indemnification and Safe Operation.

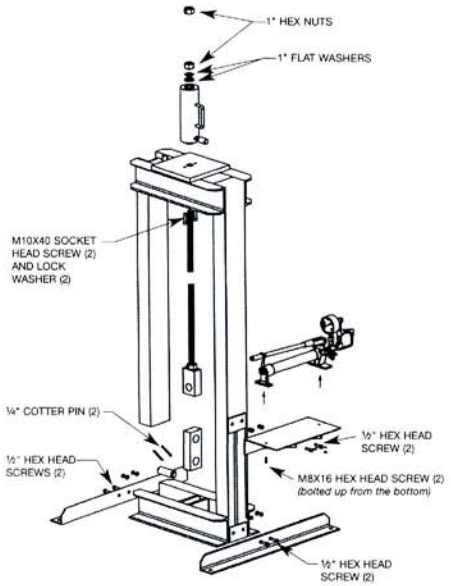
Safety Procedures

This test stand is designed for testing hoists and the testing is to be in compliance with ASME B30.16 and B30.21. Operators of the test stand must be trained and qualified prior to operating the unit and they must familiarize themselves with B30.16 and B30.21 and the contents of this instruction sheet. If not properly operated, the hoist being tested can be overloaded to the extent that damage to the hoist or to the operator and bystanders could result. The following are recommended safety procedures for operating the hoist test stand:

1. The repair, if required, and all adjustments to the hoist are to be accomplished by authorized personnel prior to placement of the hoist in the test stand.
2. All hooks shall be seated properly in the attachments prior to operation.
3. Check chain or rope of the hoist being tested for improper seating, kinking or twisting. Multiple reeved units must not have chains or rope twisted about each other.
4. Refer to the "Load Vs Gage Pressure" chart for controlling the load setting for each test.
5. Before operating the hoist or pump, make sure that the operators hands and all personnel are clear from all moving parts.
6. Before applying the test load, the hoist to be tested must be operated with no load on the lower hook to make sure it is functioning properly.
7. The operator must not leave the test hoist under load unattended.
8. When testing lever operated hoists, always release the lever gradually to avoid swinging or uncontrolled motion of the lever.
9. Load/Pressure settings **MUST NOT** exceed the maximum safe test load (full load plus overload capability) of the hoist being tested.
10. At the completion of each test, turn the pump hand wheel to its full counterclockwise position to remove the load.
11. The hoist must be directly over the lower hook attachment point. Avoid off center loading of any kind.

Unpacking

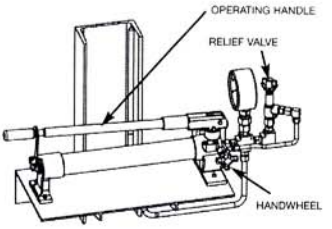
After unpacking, inspect all of the parts for damage that may have been caused during shipment. The test stand consists of a main frame, two stabilizer angles, hydraulic cylinder, hand hydraulic pump with pressure gage and relief valve, pump support, a length of hydraulic hose, two anchor shackles, two master links, a threaded rod with hoist support block, a bottom block, a bottom block pin and hardware kit. If any of these parts are damaged or missing, refer to the packing slip envelope for claims procedure.



Installation

The test stand should be installed on a level concrete floor with a minimum thickness of 4". Stand the main frame upright with the cylinder support on top. Attach the two stabilizer angles to the frame. Secure the test stand to the floor using anchor bolts (not provided with the test stand). Attach the hydraulic cylinder to its support on top of the main frame. Attach the pump support to the main frame. Mount the hydraulic pump on its support.

Connect the hydraulic hose to the side of the cylinder. Route the hose as shown and secure it to the frame using the clips. Pass the threaded rod through the cylinder and hold it in position using the nuts as indicated. Attach the bottom block to the frame using the pin and secure the pin with cotter pins. Assemble one master link to one anchor shackle and attach the shackle to the bottom block. Repeat this assembly with the remaining shackle and master link and connect the shackle to the hoist support block on the end of the threaded rod.



Operation

There are three ways to test the hoist:

1. Operate the hoist until the needle on the pressure gage is at the desired pressure. This applies a static load to the hoist.
2. Operate the pump until the needle on the pressure gage is at the desired pressure. This also applies a static load to the hoist.
3. Operate the pump until the needle on the pressure gage is at the desired pressure. Adjust the relief valve so that the needle on the pressure gage will not go beyond the desired pressure when the pump is operated. The hoist may now be operated in the lifting direction to retrack the cylinder. Note that the hoist can only be operated for approximately 6" in the lifting direction. Also, the cylinder does not retrack fast enough to keep the load applied while the hoist is operated in the lowering direction.

⚠ WARNING ⚠

Using either of the above can overload the hoist and may damage the hoist or injure the operator if some part of the hoist fails.

To Avoid Injury:

Never exceed the capacity of the hoist plus 50% when operating the hoist or pump.

Mount the hoist to be tested in the test stand by attaching the upper hook to the anchor shackle or master link. Operate the pump to fully extend the cylinder and the needle on the pressure gage just starts to move. Operate the hoist so that the lower hook can be attached to the lower master link or anchor shackle.

The master link should be used for testing hoists with capacities of 5 tons (11,000 pounds) or less. For testing hoists with a capacity of more than 5 tons (11,000 pounds), slide the master link to the side and attach the upper hoist hook to the anchor shackle.

Operate the hoist to slightly tension the load chain or wire rope.

A chart is attached to the frame just above the pump to provide the relationship between pressure and the load that will be applied to the hoist. Always use this chart when testing hoists. The chart is reproduced in this instruction sheet on page 6.

Test the hoist using one or more of the methods described on the previous page.

⚠ WARNING ⚠

Operating the hoist when the cylinder is fully retracted may overload the hoist and could cause injury if the hoist fails.

To Avoid Injury:
Only operate the hoist when the cylinder is partially or fully extended.

After the hoist has been tested, fill out the Hoist Test Report Form (see page 7). File the Report Form with the maintenance records or include it with the hoist that was tested when it is returned to the end user.

Maintenance

Every three months inspect all parts of the test stand for damage and excessive wear. Check the hoist support block, bottom block, threaded rod, bottom block pin, anchor shackles and master links for damage, cracks and wear. Damaged or cracked parts should be replaced. Bottom block pin, anchor shackles and master links should be replaced if the wear at the bearing surfaces has reduced the original diameter by more than 10%.

Every three months, check the oil level in the hydraulic pump and add oil if necessary. Use Texaco Rando HD32, or equal, hydraulic oil in the pump. Under dusty conditions, it will be necessary to shorten these intervals.

If at any time oil is leaking from connection points, tighten the fitting. If this does not stop the leak, disassemble the fitting and check for damaged parts. If there is no visible damage, apply two wraps of Teflon tape to the male thread, leaving the first two threads exposed. Reassemble the fitting and if the leak persists, parts that are damaged should be replaced.

Periodically apply a light coat of grease to the linkage at the head of the pump, to keep the handle operating smoothly.

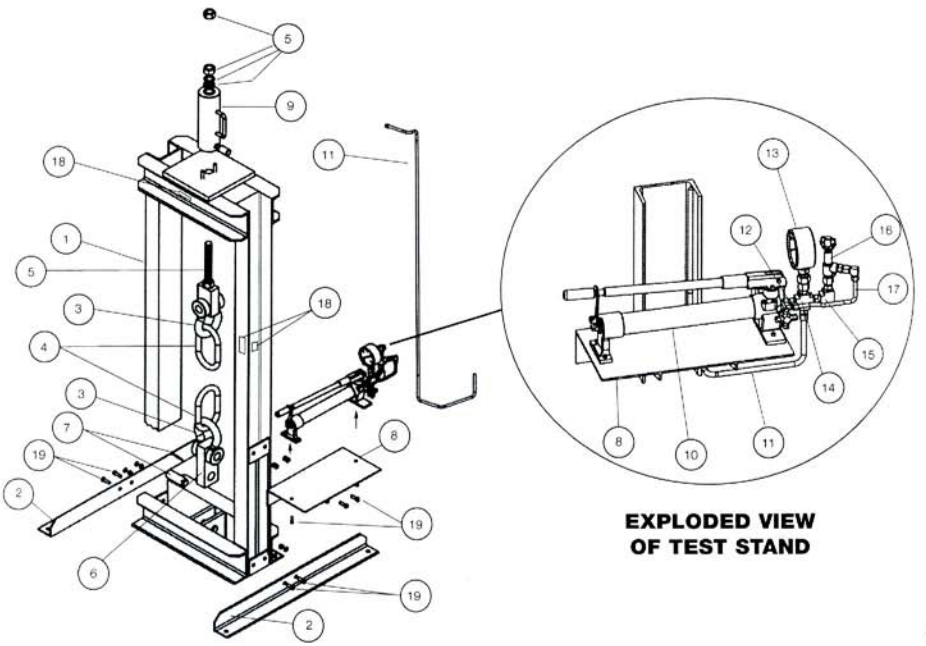
TROUBLE SHOOTING

Symptom	Possible Cause/Remedy
Pump does not build up pressure.	– Make sure the pump handwheel is closed by turning it fully clockwise. – Check oil level in pump and refill if necessary. – Dirt in the hydraulic system. Flush the oil from system and clean dirt from the various openings and valves. Reassemble and refill with clean hydraulic oil. Check seals in pump and cylinder and replace if damaged.
Pump builds pressure but cylinder does not extend.	– Check for leaks in hydraulic system and retighten fittings to stop leaks. – Dirt in the hydraulic system. Flush system and clean dirt from various openings and valves. Reassemble and refill with clean hydraulic oil. – Seals in cylinder damaged. Replace seals. – Nut on top of hoist support block is against the bottom of the cylinder support. Readjust hoist support block so that there is a minimum of 6½" between the top of the nut and the bottom of the cylinder support.
Hydraulic cylinder does not retract.	– Handwheel on pump not opened. Turn hand wheel to its full counterclockwise position.
System does not hold pressure.	– Handwheel on pump not fully closed. Turn handwheel to its full clockwise position. – Pump seals damaged or dirt in pump. Flush oil from pump, clean out dirt and replace seals if necessary.

CM® Manual Hoist Test Stand

Parts List

Key No.	Description	No. Req'd.	Part Number
1	Frame Assembly (includes cylinder support)	1	01244
2	Stabilizer Angle	2	01238
3	Anchor Shackle	2	M866A
4	Master Link	2	M100P
5	Threaded Rod with hoist support block, washers & three nuts	1	01245
6	Bottom Block	1	01241
7	Bottom Block Pin with 2 cotter pins	1	01246
8	Pump Support	1	01243
9	Hydraulic Cylinder	1	01247
10	Hydraulic Pump	1	01248
11	Hydraulic Hose with end fittings	1	01249
12	Pipe Nipple, 3/8 NPT	2	01250
13	Pressure Gage with fittings	1	01265
14	Pipe Cross, 3/8 NPT	1	01266
15	Elbow, 3/8 NPT	1	01267
16	Relief Valve with fittings	1	01268
17	Return Hose with fittings	1	01265
18	Label Set (all labels on test stand)	1	01272
19	Hardware Kit (all screws, nuts and lockwashers required for the test stand)	1	01273
20	Pump Seal Kit (not shown)	1	01274
21	Cylinder Seal Kit (not shown)	1	01276



EXPLODED VIEW OF TEST STAND

Ordering Instructions

The serial number of the test stand (stamped on the nameplate) must be referenced on all correspondence and repair parts orders.

When ordering replacement parts, consideration should be given to the need to replace other items (hardware, fittings, labels, etc.) that may be damaged or lost during disassembly or just unfit for future use because of deterioration from age or service.

Parts should be ordered from CM's Master Parts Depots conveniently located throughout the United States and Canada. To quickly obtain the name of the Master Parts Depot or Service Center located nearest you, call (800) 888-0985 or Fax (716) 689-5644.

When ordering parts, always specify:

1. Key number of part (from parts list).
2. Part name (from parts list).
3. Part Number (from parts list).
4. Quantity desired.

⚠ WARNING ⚠

Using "commercial" or other manufacturer's parts to repair the test stand may damage the unit or hoist being tested and may cause injury to the operator.

To Avoid Injury and Damage:

Order all replacement parts from CM. Some parts may look alike but often CM parts are made of specific materials or processed to achieve certain properties.

Chart for Load vs Gage Pressure

Rated Capacity (Tons)	Rated Capacity (Pounds)	Pressure (Bar)	Test Load (Pounds)	Test Load Pressure (Bar)
¼	550	10	688	10
½	1,100	15	1,375	20
¾	1,650	25	2,062	35
1	2,200	30	2,750	40
1½	3,300	50	4,125	65
2	4,400	65	5,500	80
3	6,600	95	8,250	125
4	8,800	130	11,000	165
5	11,000	165	13,750	200
6	13,200	195	16,500	245
7½	16,500	245	20,625	305
8	17,600	265	22,000	325
9	19,800	295	24,750	370
10	22,000	325	27,500	400

RECORD OF HOIST REPAIR AND TEST

OWNER OF HOIST: _____

HOIST MANUFACTURER: _____ MODEL: _____

HOIST SERIAL NUMBER: _____ CAPACITY: _____ TONS

TYPE OF HOIST:

_____ MANUAL _____ ELECTRIC _____ AIR

TYPE OF HOIST SUSPENSION:

_____ HOOK _____ TROLLEY

_____ OTHER

REPAIRS AND ADJUSTMENTS PERFORMED:

_____

_____

_____

_____

_____

_____

_____

TEST PERFORMED:

_____ OPERATIONAL

_____ STATIC LOAD OF 125% OF RATED CAPACITY

_____ DYNAMIC LOAD OF 125% OF RATED CAPACITY

_____ DYNAMIC LOAD OF 100% OF RATED CAPACITY

_____ TEST OF LOAD LIMITING DEVICE

CERTIFICATION:

I do hereby certify that the above repairs, adjustments and/or tests were performed on the hoist described above.

BY: _____ **SIGNATURE** _____ **DATE**

Note: When ordering parts, always furnish hoist test stand model, serial number and rated capacity of hoist test stand on which the parts are to be used.

For the location of the nearest CM Master Parts Depot, see page 5 of this instruction manual.

LIMITATION OF WARRANTIES, REMEDIES AND DAMAGES

THE WARRANTY STATED BELOW IS GIVEN IN PLACE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, NO PROMISE OR AFFIRMATION OF FACT MADE BY ANY AGENT OR REPRESENTATIVE OF SELLER SHALL CONSTITUTE A WARRANTY BY SELLER OR GIVE RISE TO ANY LIABILITY OR OBLIGATION.

Seller warrants that on the date of delivery to carrier the goods are free from defects in workmanship and materials.

SELLER'S SOLE OBLIGATION IN THE EVENT OF BREACH OF WARRANTY OR CONTRACT OR FOR NEGLIGENCE OR OTHERWISE WITH RESPECT TO GOODS SOLD SHALL BE EXCLUSIVELY LIMITED TO REPAIR OR REPLACEMENT, F.O.B. SELLER'S POINT OF SHIPMENT, OF ANY PARTS WHICH SELLER DETERMINES TO HAVE BEEN DEFECTIVE or if Seller determines that such repair or replacement is not feasible, to a refund of the purchase price upon return of the goods to Seller.

Any action against Seller for breach of warranty, negligence or otherwise, must be commenced within one year after such cause of action accrues.

NO CLAIM AGAINST SELLER FOR ANY DEFECT IN THE GOODS SHALL BE VALID OR ENFORCEABLE UNLESS BUYER'S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE YEAR FROM THE DATE OF SHIPMENT.

Seller shall not be liable for any damage, injury or loss arising out of the use of the goods if, prior to such damage, injury or loss, such goods are (1) damaged or misused following Seller's delivery to carrier; (2) not maintained, inspected, or used in compliance with applicable law and Seller's written instructions and recommendations; or (3) installed, repaired, altered or modified without compliance with such law, instructions or recommendations.

UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES AS THOSE TERMS ARE DEFINED IN SECTION 2-715 OF THE UNIFORM COMMERCIAL CODE.

INDEMNIFICATION AND SAFE OPERATION

Buyer shall comply with and require its employees to comply with directions set forth in instructions and manuals furnished by Seller and shall use and require its employees to follow such instructions and manuals and to use reasonable care in the use and maintenance of the goods. Buyer shall not remove or permit anyone to remove any warning or instruction signs on the goods. In the event of personal injury or damage to property or business arising from the use of the goods, Buyer shall within 48 hours thereafter give Seller written notice of such injury or damage. Buyer shall cooperate with Seller in investigating any such injury or damage and in the defense of any claims arising therefrom.

If Buyer fails to comply with this section or if any injury or damage is caused, in whole or in part, by Buyer's failure to comply with applicable federal or state safety requirements, Buyer shall indemnify and hold Seller harmless against any claims, loss or expense for injury or damage arising from the use of the goods.

⚠ WARNING ⚠

Alterations or modifications of equipment and use of non-factory repair parts can lead to dangerous operation and injury.

TO AVOID INJURY:

- Do not alter or modify equipment
- Do use only factory provided replacement parts.

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