HMI CONSENSUS

NATIONAL ELECTRICAL CODE – 1999

HMI’s GOAL IN DEVELOPING THIS CONSENSUS

The 1999 National Electrical Code has a number of paragraphs in it affecting electric chain and wire rope hoists. Some of these paragraphs are subject to varying interpretations. Therefore, acting through the electrical engineering subcommittee of the HMI engineering committee, and with the approval of the HMI Board of Directors, the Hoist Manufacturers Institute has developed and authorized the publication of the consensus contained within this pamphlet. It is hoped that this HMI Consensus will be mutually helpful to users, manufacturers and sellers of electric chain and wire rope hoists. For specific commentary with respect to individual brand hoists, it is suggested that users and sellers contact the manufacturer(s) of their electric chain and wire rope hoist(s).

WHAT IS H.M.I.

Hoist Manufacturers Institute is a trade association of manufacturers of overhead handling hoists. Included among its member company products are hand chain hoists, ratchet lever hoists, trolleys, air chain and air wire rope hoists and electric chain and electric wire rope hoists.

HMI is a non-profit corporation organized under the laws of the Commonwealth of Pennsylvania. Its many activities include a very strong and active engineering committee. It operates through committees with programs and policies reviewed and adopted by a Board of Directors with representation on the Board from each member company.

HMI is represented on a number of standards committees of the American National Standards Institute, Inc., and actively supports the development of safety standards by the consensus method of ANSI.
GENERAL

Article 100
Definitions

BRANCH CIRCUIT – The circuit conductors between the final overcurrent device protecting the circuit and the outlet(s).

FEEDER – All circuit conductors between the service equipment, the source of a separately derived system, or other power supply source and the final branch-circuit overcurrent device.

READILY ACCESSIBLE – Capable of being reached quickly for operation, renewal, or inspections, without requiring those to whom ready access is requisite to climb over or remove obstacles or resort to portable ladders, etc.

Article 240
Overcurrent Protection

SECTION 240-1 – Fine Print Note. Overcurrent protection for conductors and equipment is provided to open the circuit if the current reaches a value that will cause an excessive or dangerous temperature in conductors or conductor insulation.

Article 430
Motor and Branch-Circuit Overload Protection

SECTION 430-31. The provision of overload devices intended to protect motors, motor-control apparatus, and motor branch-circuit conductors against excessive heating due to motor overloads and failure to start.

NOTE: For the means of protecting against overload, see Sections 430-32, 430-33, 430-72 and 610-43.

Motor Branch-Circuit Short-Circuit And Ground Fault Protection

SECTION 430-51. The provision of devices intended to protect the motor branch-circuit conductors, the motor control apparatus and the motors against overcurrent due to short circuits or grounds.

Article 610
Monorail Hoist

SECTION 610-1. Any hoist with a push, hand geared or motorized trolley traveling on a single overhead beam.

Within View Of

SECTION 610-31. The equipment shall be visible from a specified location, but without a distance limitation.

CIRCUITS REQUIRED

1. A single hoist either lug, hook or base mounted in a fixed location, i.e., not part of an overhead crane or other traveling member. Refer to circuit A on page 4.
   A. Branch Circuit Disconnecting Means (B.C.D.M.)
   B. Branch Circuit Overcurrent Protection (B.C.O.P.)
   C. Motor Overload Protection (M.O.L.P.) Optional. See Notes 1 & 2.

2. Two or more individual hoists either lug, hook or base mounted in a fixed location as in 1 above. Circuit B is acceptable in all situations and preferred over Circuit C, which may be used if the requirements of 430-53 are met.
   2.1 Preferable for all conditions. Refer to circuit B on page 4.
      A. Branch Circuit Disconnecting Means (B.C.D.M.)
      B. Branch Circuit Overcurrent Protection (B.C.O.P.)
      C. Motor Overload Protection (M.O.L.P.) Optional.
   2.2 Refer to circuit C on page 4.
      A. Branch Circuit Disconnecting Means (B.C.D.M.)
      B. Branch Circuit Overcurrent Protection (B.C.O.P.)
      C. Motor Overload protection (M.O.L.P.) Optional.

3. A single monorail hoist with plain, hand geared or motorized trolley. If only a plain or hand geared trolley is used omit those items feeding only the trolley motor. Refer to Circuit D on page 4.
   A. Runway Conductor Disconnecting Means (R.C.D.M.)
   B. Runway Conductor Overcurrent Protection (R.C.O.P.)
   C. Branch Circuit Disconnecting Means (B.C.D.M.)
   D. Branch Circuit Overcurrent Protection (B.C.O.P.)
   E. Motor Overload Protection (M.O.L.P.) Optional See Note 4.

4. Two or more plain, hand geared or motorized trolley mounted hoists on same runway. If a plain or hand geared trolley is used omit those items feeding only the trolley motor. Refer to Circuit E. on page 4.
   A. Runway Conductor Disconnecting Means (R.C.D.M.)
   B. Runway Conductor Overcurrent Protection (R.C.O.P.)
   C. Branch Circuit Disconnecting Means (B.C.D.M.)
   D. Branch Circuit Overcurrent Protection (B.C.O.P.)
   E. Motor Overload Protection (M.O.L.P.) Optional See Note 4.

5. Overhead cranes, single or two motor hoists for use on any bridge crane with bridge either hand propelled or motorized. Refer to Circuit F page 4.
   See CMAA Consensus.
### HMI CONSENSUS
NATIONAL ELECTRICAL CODE - 1999

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<th>1. CIRCUIT A</th>
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<td>Single Motor Stationary Hoist</td>
<td>Two or More Stationary Hoists</td>
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<td>Single Monorail Hoist, Plain, Hand Geared or Motorized Trolley</td>
<td>Two or More Monorail Hoists with Plain, Hand Geared or Motorized Trolley</td>
<td>Bridge Cranes</td>
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1. A disconnect switch at the hoist is not required provided the branch circuit disconnecting means meets the requirements of Section 430, Part H. (See Section 430-102 and the definition "in sight from". (Section 430-4)
2. Optional. See Section 610-43(1)
3. A single disconnect for two or more motors may be used, as permitted in 430-112 exception ©. See Note 1 above
4. Either motor running overcurrent protection, or individual motor branch-circuit protection (but not both) is required. See Section 610-42 exception (2) and 610-43. Particularly note exception 3 which reads as follows: Hoists and monorail hoists and their trolleys which are not used as a part of an overhead traveling crane do not require individual motor running overcurrent protection provided the largest motor does not exceed 7½ horsepower and all motors are under manual control of the operator.
5. A single disconnect on each monorail hoist unless the installation complies with the exception in 610-32. Note that the working "in view of" does not limit the distance to 50 feet. Part (b) of the exception applies to monorail hoists.

### NOTES:
- **430-Part A**
- **430-Part C** As Amended By 610-Part E
- **610-41**
- **610-42**
- **610-43**
- **610-44**
- **610-51**
- **610-55**
- **610-57**
### Members of the Hoist Manufacturers Institute, Inc.

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<th>Company Name</th>
<th>Member Date</th>
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<tr>
<td><strong>Acco Chain &amp; Lifting Products</strong></td>
<td><strong>Member Date 1966</strong></td>
<td>P.O. Box 792, 76 Acco Drive, York, PA 17405-0792, (800) 967-7333, <a href="http://www.accolifting.com">www.accolifting.com</a></td>
</tr>
<tr>
<td><strong>Ace World Companies Inc.</strong></td>
<td><strong>Member Date 1993</strong></td>
<td>10200 Jacksboro Highway, Fort Worth, TX 76135, (817) 237-7700, <a href="http://www.aceworldcompanies.com">www.aceworldcompanies.com</a></td>
</tr>
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<td><strong>Chester Hoist</strong></td>
<td><strong>Member Date 1970</strong></td>
<td>P.O. Box 449, 7573 State Route 45, North Lisbon, OH 44432, (330) 424-7248, <a href="http://www.cmworks.com">www.cmworks.com</a></td>
</tr>
<tr>
<td><strong>Coffing Hoists</strong></td>
<td><strong>Member Date 1957</strong></td>
<td>P.O. Box 411245, Charlotte, NC 28241-7010, (704) 583-0095, <a href="http://www.cmworks.com">www.cmworks.com</a></td>
</tr>
<tr>
<td><strong>Columbus McKinnon Corporation</strong></td>
<td><strong>Member Date 1968</strong></td>
<td>140 John James Audubon Parkway, Amherst, NY 14228-1197, (716) 689-5400, <a href="http://www.cmworks.com">www.cmworks.com</a></td>
</tr>
<tr>
<td><strong>Demag Cranes &amp; Components Corp.</strong></td>
<td><strong>Member Date 1985</strong></td>
<td>29201 Aurora Road, Solon, OH 44139-1895, (440) 248-2400, <a href="http://www.demag-us.com">www.demag-us.com</a></td>
</tr>
<tr>
<td><strong>Electrolift, Inc.</strong></td>
<td><strong>Member Date 1984</strong></td>
<td>204 Sargeant Avenue, Clifton, NJ 07013, (973) 471-0204, <a href="http://www.electrolift.com">www.electrolift.com</a></td>
</tr>
<tr>
<td><strong>Harrington Hoists Inc.</strong></td>
<td><strong>Member Date 1976</strong></td>
<td>401 West End Avenue, Manheim, PA 17545, (800) 233-3010, <a href="http://www.harringtonhoists.com">www.harringtonhoists.com</a></td>
</tr>
<tr>
<td><strong>Ingersoll-Rand Company</strong></td>
<td><strong>Member Date 1968</strong></td>
<td>P.O. Box 970, Annandale, NJ 08801, (908) 238-7000, <a href="http://www.irco.com">www.irco.com</a></td>
</tr>
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<td><strong>J.D. Neuhaus L.P.</strong></td>
<td><strong>Member Date 2003</strong></td>
<td>9 Loveton Circle, Sparks, MD 21152, (410) 472-0500, <a href="http://www.jdneuaus.com">www.jdneuaus.com</a></td>
</tr>
<tr>
<td><strong>Morris Material Handling, LLC</strong></td>
<td><strong>Member Date 1970</strong></td>
<td>315 West Forest Hill Avenue, Oak Creek, WI 53154, (414) 764-6200, <a href="http://www.morriscranes.com">www.morriscranes.com</a></td>
</tr>
<tr>
<td><strong>R&amp;M Materials Handling, Inc.</strong></td>
<td><strong>Member Date 1947</strong></td>
<td>4501 Gateway Boulevard, Springfield, OH 45502-9339, (937) 328-5100, <a href="http://www.rmhoist.com">www.rmhoist.com</a></td>
</tr>
<tr>
<td><strong>Ratcliff Hoist Company</strong></td>
<td><strong>Member Date 1973</strong></td>
<td>1655 Old County Road, San Carlos, CA 94070, (650) 595-3840, <a href="http://www.beratcliff@yahoo.com">www.beratcliff@yahoo.com</a></td>
</tr>
<tr>
<td><strong>STAHL CraneSystems, Inc.</strong></td>
<td><strong>Member Date 2003</strong></td>
<td>6420 Dorchester Road, Charleston, SC 29418, (843) 767-1951, <a href="http://www.stahlus.com">www.stahlus.com</a></td>
</tr>
<tr>
<td><strong>Yale Lift-Tech</strong></td>
<td><strong>Member Date 1970</strong></td>
<td>P.O. Box 769, Muskegon, MI 49443-0769, (231) 733-0821, <a href="http://www.cmworks.com">www.cmworks.com</a></td>
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