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.

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GENERAL

Article 100
Definitions

BRANCH CIRCUIT – The circuit conductors between the final overcurrent device protecting
the circuit and the outlets(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 provisions 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 Disconnection Means (B.C.D.M.)
   B. Branch Circuit Overcurrent Protection (B.C.O.P.)
   C. Motor Overload protection (M.O.L.P.) Optional. Optional or mandatory - see Note 4. See Note 3 on use of Single Disconnect.

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.) See Note 5.
   D. Branch Circuit Overcurrent Protection (B.C.O.P.) See Note 4.
   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 Overcurrent Protection (B.C.O.P.) See Note 5.
   D. Branch Circuit Overcurrent Protection (B.C.O.P.) See Note 4.
   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.

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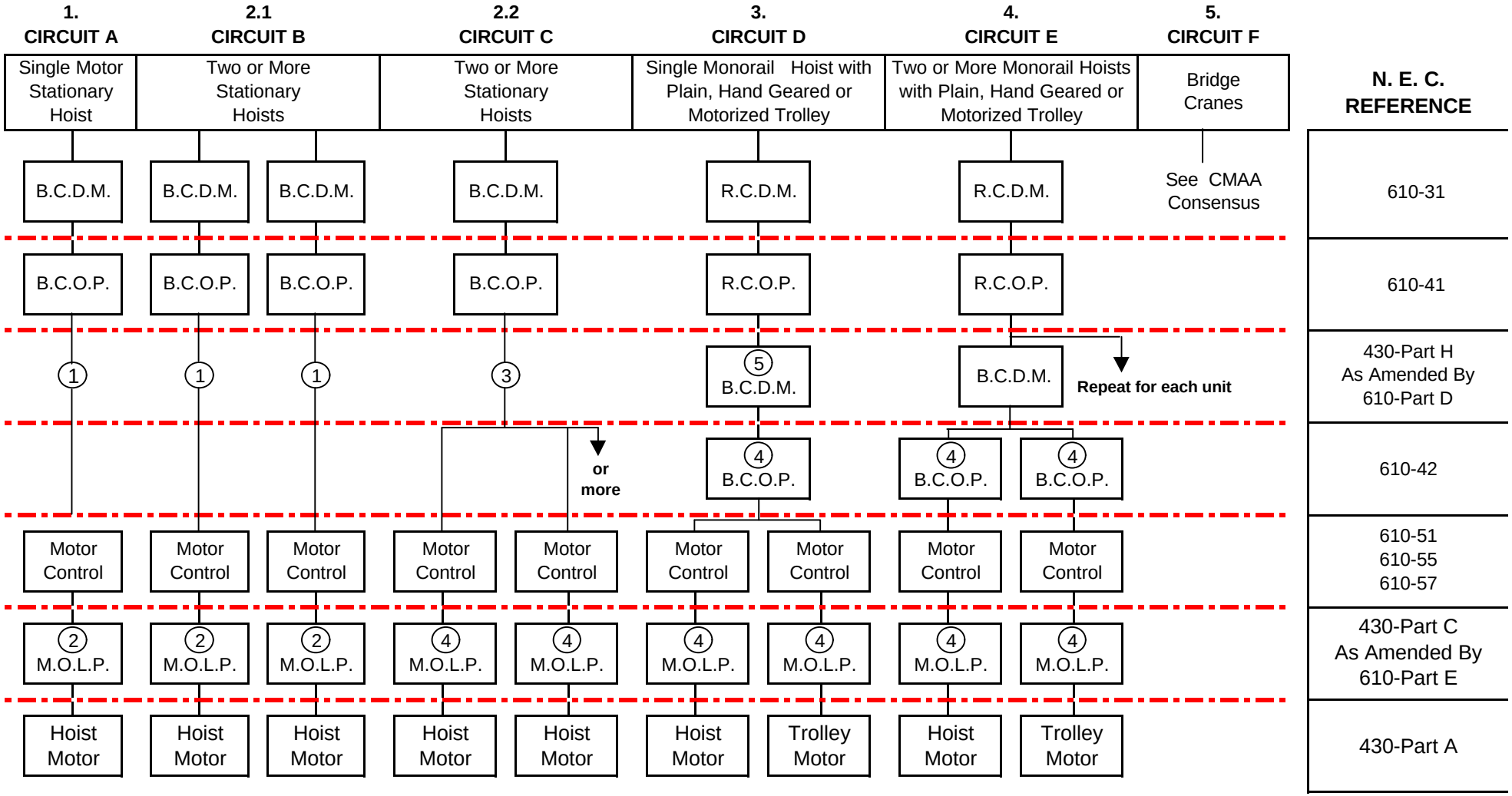

NOTES:

1. A disconnect switch at the hoist is not required provided the branch circuit disconnecting means meets the requirements of Section 430, Part H. Note 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.

HOIST MANUFACTURERS INSTITUTE

Members of the Hoist Manufacturers Institute, Inc.

Acco Chain & Lifting Products
Member Date 1966
P.O. Box 792
76 Acco Drive
York, PA 17405-0792
(800) 967-7333
www.accolifting.com

Ace World Companies Inc.
Member Date 1993
10200 Jacksboro Highway
Fort Worth, TX 76135
(817) 237-7700
www.aceworldcompanies.com

Chester Hoist
Member Date 1970
P.O. Box 449
7573 State Route 45, North
Lisbon, OH 44432
(330) 424-7248
www.cmworks.com

Coffing Hoists
Member Date 1957
P.O. Box 411245
Charlotte, NC 28241-7010
(704) 583-0095
www.cmworks.com

Columbus McKinnon Corporation
Member Date 1968
140 John James Audubon Parkway
Amherst, NY 14228-1197
(716) 689-5400
www.cmworks.com

Demag Cranes & Components Corp.
Member Date 1985
29201 Aurora Road
Solon, OH 44139-1895
(440) 248-2400
www.demag-us.com

Electrolift, Inc.
Member Date 1984
204 Sargeant Avenue
Clifton, NJ 07013
(973) 471-0204
www.electrolift.com

Harrington Hoists Inc.
Member Date 1976
401 West End Avenue
Manheim, PA 17545
(800) 233-3010
www.harringtonhoists.com

Ingersoll-Rand Company
Member Date 1968
P.O. Box 970
Annandale, NJ 08801
(908) 238-7000
www.irco.com

J.D. Neuhaus L.P.
Member Date 2003
9 Loveton Circle
Sparks, MD 21152
(410) 472-0500
www.jdneuhaus.com

Morris Material Handling, LLC
Member Date 1970
315 West Forest Hill Avenue
Oak Creek, WI 53154
(414) 764-6200
www.morriscranes.com

R&M Materials Handling, Inc.
Member Date 1947
4501 Gateway Boulevard
Springfield, OH 45502-9339
(937) 328-5100
www.rmhoist.com

Ratcliff Hoist Company
Member Date 1973
1655 Old County Road
San Carlos, CA 94070
(650) 595-3840
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STAHL CraneSystems, Inc.
Member Date 2003
6420 Dorchester Road
Charleston, SC 29418
(843) 767-1951
www.stahlus.com

Yale Lift-Tech
Member Date 1970
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