MATERIAL STANDARD

FOR

WORKSHOP AND WALL SUPPORTED JIB CRANES

AND

CHAIN HOISTS

ORIGINAL EDITION

JULY 1997

This standard specification is reviewed and updated by the relevant technical committee on Sep. 2003(1) and Jun. 2014(2). The approved modifications are included in the present issue of IPS.

FOREWORD

The Iranian Petroleum Standards (IPS) reflect the views of the Iranian Ministry of Petroleum and are intended for use in the oil and gas production facilities, oil refineries, chemical and petrochemical plants, gas handling and processing installations and other such facilities.

IPS is based on internationally acceptable standards and includes selections from the items stipulated in the referenced standards. They are also supplemented by additional requirements and/or modifications based on the experience acquired by the Iranian Petroleum Industry and the local market availability. The options which are not specified in the text of the standards are itemized in data sheet/s, so that, the user can select his appropriate preferences therein

The IPS standards are therefore expected to be sufficiently flexible so that the users can adapt these standards to their requirements. However, they may not cover every requirement of each project. For such cases, an addendum to IPS Standard shall be prepared by the user which elaborates the particular requirements of the user. This addendum together with the relevant IPS shall form the job specification for the specific project or work.

The IPS is reviewed and up-dated approximately every five years. Each standards are subject to amendment or withdrawal, if required, thus the latest edition of IPS shall be applicable

The users of IPS are therefore requested to send their views and comments, including any addendum prepared for particular cases to the following address. These comments and recommendations will be reviewed by the relevant technical committee and in case of approval will be incorporated in the next revision of the standard.

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GENERAL DEFINITIONS:

Throughout this Standard the following definitions shall apply.

COMPANY:

Refers to one of the related and/or affiliated companies of the Iranian Ministry of Petroleum such as National Iranian Oil Company, National Iranian Gas Company, National Petrochemical Company and National Iranian Oil Refinery And Distribution Company.

PURCHASER:

Means the “Company” where this standard is a part of direct purchaser order by the “Company”, and the “Contractor” where this Standard is a part of contract documents.

VENDOR AND SUPPLIER:

Refers to firm or person who will supply and/or fabricate the equipment or material.

CONTRACTOR:

Refers to the persons, firm or company whose tender has been accepted by the company.

EXECUTOR:

Executor is the party which carries out all or part of construction and/or commissioning for the project.

INSPECTOR:

The Inspector referred to in this Standard is a person/persons or a body appointed in writing by the company for the inspection of fabrication and installation work.

SHALL:

Is used where a provision is mandatory.

SHOULD:

Is used where a provision is advisory only.

WILL:

Is normally used in connection with the action by the “Company” rather than by a contractor, supplier or vendor.

MAY:

Is used where a provision is completely discretionary.

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0. INTRODUCTION

This Standard gives the amendment and supplement to ASME B30.16-2012 overhead hoists (underhung). It shall be used in conjunction with data sheets. For ease of reference, the clause (or paragraph) numbering of ASME B 30.16 has been used throughout of this Standard. Clauses in ASME B 30.16 not mentioned remain unaltered. For the purpose of this Specification the following definitions shall hold:

Sub. The ASME Std., clause is deleted and replaced by a new clause.

Del. The ASME Std., clause is deleted without any replacement.

Add. A new clause with a new number is added.

Mod. Part of the ASME Std., clause is modified and/or a new statement or comment is added to that clause.

CHAPTER 16-0

SECTION 16-0.1 SCOPE

This Standard covers general requirements for wall supported jib crane (Fig. 16-0.1-6), hand chain manually operated chain hoists, electric and/or air chain or rope hoists, for use in refinery services, chemical plants, gas plants, petrochemical plants and where applicable in exploration, production and new ventures.

Compliance by the hoist manufacturer with the provisions of this standard does not relieve him of responsibility of furnishing hoist and accessories of proper design, mechanically suited to meet guarantees at specified service conditions.

No deviations or exceptions from this standard shall be permitted without the written prior approval of the purchaser.

Intended deviations shall be separately listed by the vendor and supported by reasons there of for purchaser's consideration. **(Mod.)**

Note 1:

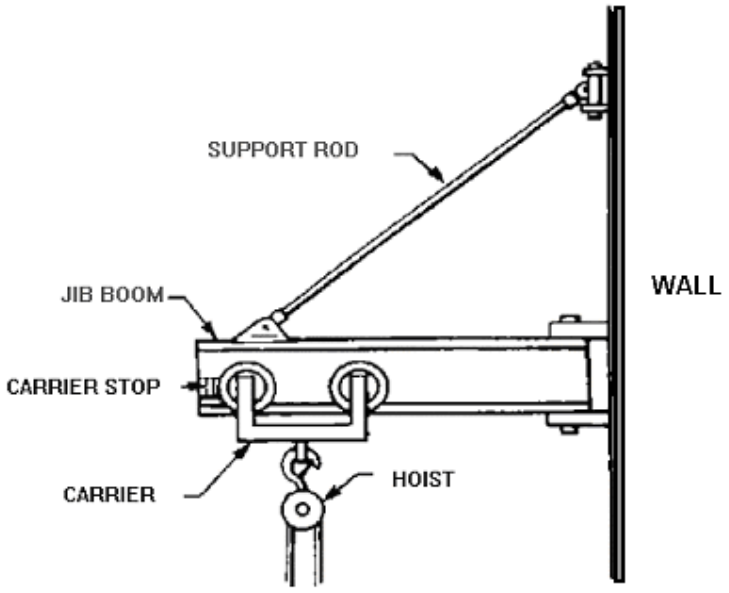
This standard specification is reviewed and updated by the relevant technical committee on Sep. 2003. The approved modifications by T.C. were sent to IPS users as amendment No. 1 by circular No 198 on Sep. 2003. These modifications are included in the present issue of IPS.

Note 2:

This standard specification is reviewed and updated by the relevant technical committee on Jun. 2014. The approved modifications by T.C. were sent to IPS users as amendment No. 2 by circular No 423 on Jun. 2014. These modifications are included in the present issue of IPS.

16-0.1.1 Alternative designs

Equivalent SI unit systems, dimensions and ratings shall be used, unless otherwise specified. **(Add.)**



WALL SUPPORTED JIB CRANE

Fig. 16-0.1-6

16-0.1.2 Conflicting requirements

In the case of conflict between documents relating to the inquiry or order, the following priority of documents shall apply:

- **First Priority:** Purchase order and variations there to
- **Second Priority:** Data sheets and drawings
- **Third Priority:** This Standard specification

All conflicting requirements shall be referred to the purchaser in writing. The purchaser will issue confirmation document if needed for clarification. **(Add.)**

SECTION 16-0.2 DEFINITIONS

Beam

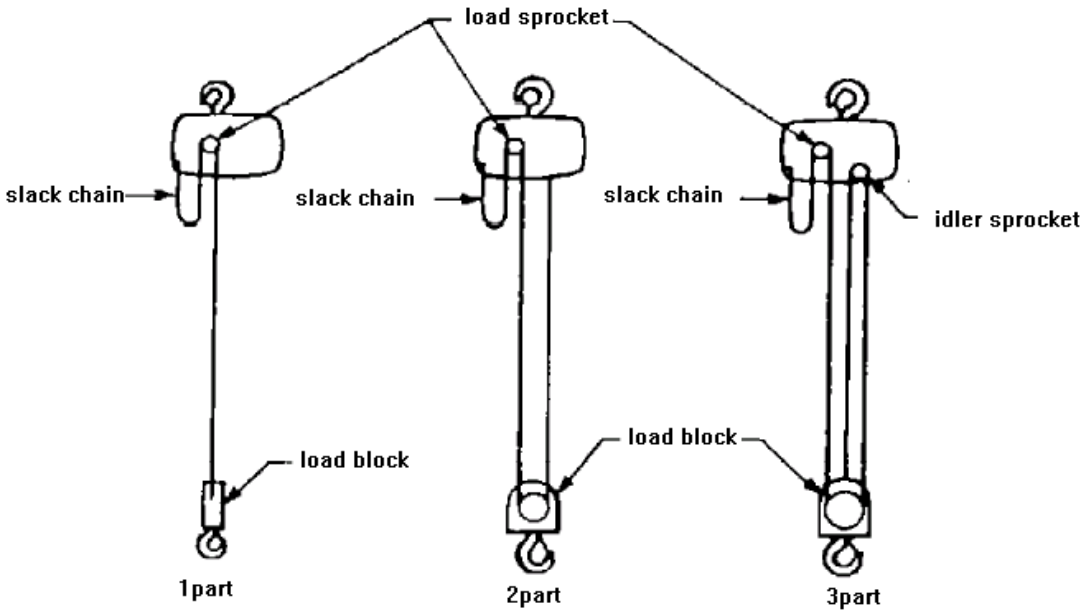
An overhead standard structural shape or specially fabricated shape on which a trolley operates. **(Add.)**

Reach

Distance which trolley can travel on beam. **(Add.)**

Reeving

(See Fig. 16-0.2-1) **(Mod.)**



REEVING

Fig. 16-0.2-1

16-1.2.2 Electrical design (electric-powered hoists only) (Mod.)

e) Motors shall be reversible, with torque characteristics suitable for hoist or trolley service and capable of operation at rated loads and speeds in accordance with class of service specified.

f) Temperature rise of motors shall be in accordance with IPS-M-EL-131 for the class of insulation and enclosure used. The hoist manufacturer will assume 45°C ambient temperature unless otherwise specified by the purchaser.

g) All motors at rated frequency shall be capable of operation at ±10% of rated motor voltage, but not necessarily at rated voltage performance.

h) Typical rated motor voltage shall be in accordance with Table 16-1.2.2-1.

i) For nominal system voltages other than shown in Table 16-1.2.2-1, the rated motor voltage should not be less than 95% and shall not exceed the nominal system voltage.

TABLE 16-1.2.2-1 - TYPICAL RATED MOTOR VOLTAGES

POWER SUPPLY	NOMINAL SYSTEM	RATED MOTOR VOLTAGES	PERMISSIBLE MOTOR OPERATING RANGE
AC Single phase, 50 H_z	230	220	198 to 242
AC Polyphase 50 H_z	400	380	342 to 418

16-1.2.3 Controls (electric or air-powered hoists only) (Mod.)

e) The pendant control station shall be clearly marked to indicate the function of each actuator.

f) Unless otherwise specified, and as applicable, the order of control functions shall be, from top to bottom, HOIST, TROLLEY, and other functions.

g) STOP-START (OFF-ON, POWER OFF-POWER ON) control, if supplied, should be located at the top, above the hoist control function. The stop (OFF, POWER OFF) control shall be red.

h) Unless otherwise specified the standard pendant control shall have a cord length which will locate the pendant approximately 0.9 m to 1.2 m above the lower limit of lift.

i) Pull cord control, when furnished, shall consist of a self-centering, return-to-neutral, controller or master switch for the motion of hoist or trolley. Two nonconducting pull cords with suitable handles, clearly marked for direction, shall be provided for operation of each controller or master switch. Unless otherwise specified, the standard pull cord control shall have a cord length which will locate the control handles approximately 1.2 m to 1.5 m above the lower limit of lift.

16-1.2.18 Overload limiting device (Add.)

An overload limiting device, when furnished, shall be designed to permit operation of the hoist within its rated load and to limit the amount of overload that can be lifted by a properly maintained hoist, under normal operating conditions.

The overload limiting device may allow the lifting of an overload, but shall be designed to prevent the lifting of an overload that could cause damage to the hoist.

This does not imply that any overload is to be intentionally applied to the hoist.

The overload limiting device is an emergency device and shall not be used to measure the maximum load to be lifted, and shall not be used to sense the overload imposed by a constrained load.

16-1.2.19 Trolley (Add.)

When a trolley hoist is required or a trolley is required for use with a hoist, the type and size of support beam and minimum radius of beam, where applicable, shall be specified by the purchaser to insure that the trolley is suitable for operation on the beam.

SECTION 16-5 PREPARATION FOR SHIPMENT (Add.)

16-5.1 Preparation for shipment shall be in accordance with Vendor's standards and as noted herein. The Vendor shall be solely responsible for the adequacy of the "preparation for shipment" provision employed with respect to materials and application, to provide materials to their destination in "ex-works" condition.

16-5.2 Vendor shall provide for the following minimum preparation for shipment and packing features for all equipment:

all equipment shall be packed, securely anchored (skid mounted when required) and weather protected for export overseas shipment. Separate, loose and spare parts shall be completely boxed.

16-5.3 Adequate protection shall be provided against mechanical damage and atmospheric corrosion in transit and for at least eighteen (18) months outdoor storage at jobsite prior to installation.

16-5.4 Exposed finish and machined surfaces, including bolting, shall be given a heavy coating of rust inhibiting compound.

16-5.5 Bearings and seal assemblies shall be fully protected from rusting, entry of moisture and dirt.

16-5.6 Impression stamped metal tags shall be wired to each item indicating Equipment Item No. and purchase order No. All pieces of equipment and spare parts shall be identified by item number and service, and marked on-both in-side and outside of each individual package or container.

16-5.7 Unless approved otherwise by Company, separate shipment of equipment and materials is not allowed.

SECTION 16-6 GUARANTEE AND WARRANTY (Add.)

Vendor shall guarantee that the equipment supplied shall be of sound, high grade material, built in a workmanlike manner and perform as described in this specification and attachments. Any material proving defective within one (1) year after start of operation or twenty-four (24) months after shipment, whichever comes first shall be replaced free of charge, F.O.B. Vendor's plant.

SECTION 16-7 VENDOR'S DATA (Add)

16-7.1 Vendor shall supply all drawings and data necessary to install the crane.

16-7.2 Vendor shall provide information covering the following:

a) Lifting speed.

b) Material specifications.

c) Type and rating of prime mover.

d) Specification and lengths for rope and/or chain supplied.

e) List of all tools and accessories supplied with the crane, indicating those which are "special" tools.

f) Any unusual maintenance or servicing procedure unique to the crane.

APPENDICES (Add)

APPENDIX A
TYPICAL HAND CHAIN MANUALLY OPERATED HOIST DATA SHEET

Job No. ..... Rev. .....

Item No. ..... Data .....

Inq. / P.O. No. .....

Page of .....

For : **Site :**	**Quantity of hoist required .....**
HOIST Load capacity .....Tons (.....kg) Rated capacity ..... Tons (.....kg) Lift .....m Reach ....m Headroom .....mm TYPE OF SUSPENSION: ☐ Hook ☐ Clevis ☐ Trolley TROLLEY (separate) Quantity of trolleys required ..... Rated capacity ..... Tons (.....kg) Type : ☐ Plain ☐ Hand chain operated Hand chain drop .....m TROLLEY (Integral) Type: ☐ Plain ☐ Hand chain operated Headroom (including hoist) .....mm Hand chain drop ....m	BEAM DATA (Trolley suspended hoist only) Type and size of beam..... Width of running flange .....mm Minimum radius of beam curves .....m ENVIRONMENTAL CONDITIONS: Location : ☐ Indoor ☐ Outdoor ☐ Both Temperature : ☐ Max. ..... °C : ☐ Min. .....°C Hazardous area : ☐ Yes ☐ No, If yes, specify Class ..... Div. ..... Group ..... UNUSUAL CONDITIONS: Long exposure to weather : ☐ Yes ☐ No Dust laden or moisture laden atmospheres, ☐ Yes ☐ No If yes, Furnish complete information ....
Remarks	

APPENDIX B
TYPICAL ELECTRIC AND AIR OPERATED HOIST DATA SHEET

Job No. ..... Rev. .....

Item No. ..... Data .....

Inq. / P.O. No. .....

Page of .....

For : **Site :**	**Quantity of hoist required .....**
HOIST Load capacity .....Tons (.....kg) Rated capacity ..... Tons (.....kg) Lift .....m Reach .....m Headroom .....mm Distance from operating floor to under side of beam or to point of support .... Hoisting speed .....m/min Type of control : ☐ Single speed ☐ Two speed ☐ Other ..... Control voltage ☐ 24 ☐115 ☐ Other ..... POWER SUPPLY: Voltage / Phase / Hertz ..... / ..... / ..... Air: pressure ..... barg Temperature .....°C Flow rate ..... m³/hr	TYPE OF SUSPENSION: ☐ Lug ☐Hook ☐ Clevis ☐ Plain trolley ☐ Hand chain operated trolley ☐ Motor operated trolley ☐ Other..... TROLLEY Travel speed ..... m/min ☐ Trolley brake required Type of control: ☐ Single speed ☐ Two speed ☐ Cushioned start ☐ Other..... Type and size of beam..... Width of running flange ..... mm Minimum radius of beam curves ..... m CURRENT CONDUCTOR SYSTEM: ☐ Flexible cable or ☐ Festooned cable ☐ Cable reel ☐Rigid conductor ☐ Coil cord ☐ Other ..... Type of conductors ....
ENVIRONMENTAL CONDITIONS Location: ☐ Indoor ☐ Outdoor ☐ Both Temperature ☐Max. .....°C ☐Min. .....°C Hazardous Location: ☐Yes ☐No, If yes specify Class ..... Div. ..... Group ..... UNUSUAL CONDITIONS: Long exposure to weather : ☐Yes ☐No Corrosive fumes : ☐Yes ☐No Dust laden of moisture laden atmospheres, ☐Yes ☐No If yes, Furnish complete information	
Remarks …… …… …… ……	