



OVERHEAD CRANE TRAINING

12th & 13th OCTOBER 2023

Organized By:



ALPHA INDUSTRIES SDN BHD

Conducted By:



Objectives Of Training

1

Demonstrate the principles and procedures for safe, proper crane operation.

2

Calculate the mass load that need to be handled.

3

Maintain and inspect the lifting gears.

4

Handle the loads with safest movements.

Course Content

Day 1

- Types of Overhead Crane
- Features of Overhead Crane
- Controls, Hoist Limit Switches and Brakes
- Safe Operation
- Maintenance Safety Procedure
- Slings and Safe Working Loads
- Weight of the Load
- Rules to Follow when Slings and Handling a Load
- Stacking
- PPE

Day 2

- Flexible Steel Wire Rope
- Chain
- Flat Webbing and Round Webbing Synthetic Slings
- Fiber Rope
- Accessories
- Evaluation and Closing



LEARNING GALLERY

LEGISLATION



Perundangan

OSHA 1994: Tanggungjawab Majikan dan Pekerja

Sec	Description
	Bekerjasama dengan majikan dan orang lain
	Menyediakan cara selamat untuk mengendalikan bahan
	Memakai PPE
	Penalty: RM50 000 or 2 Years Jail or Both
	Menyediakan penyelenggaraan tempat kerja
	Menjaga KKP dirinya dan orang lain
	Penalty: RM1 000 or 3 Months Jail or Both
	Menyediakan sistem kerja selamat
	Mematuhi arahan KKP
	Menyediakan arahan, pendidikan dan prosedur
	Mengadakan akses yang selamat

LOAD



BEBAN



Mengira Kapasiti



C.O.G ialah:

Sumber maklumat berat beban:

Eng. Drawing

DO

Label

Timbang

WLL atau SWL ialah:

SLING LOADING SINGLE LEG

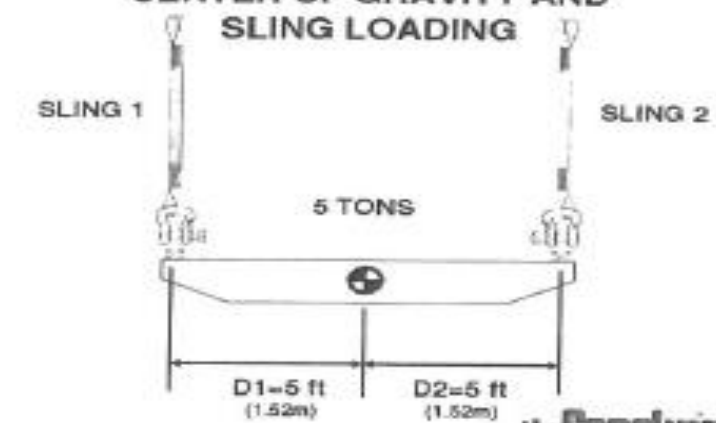


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PROHIBIT

CENTER OF GRAVITY AND SLING LOADING

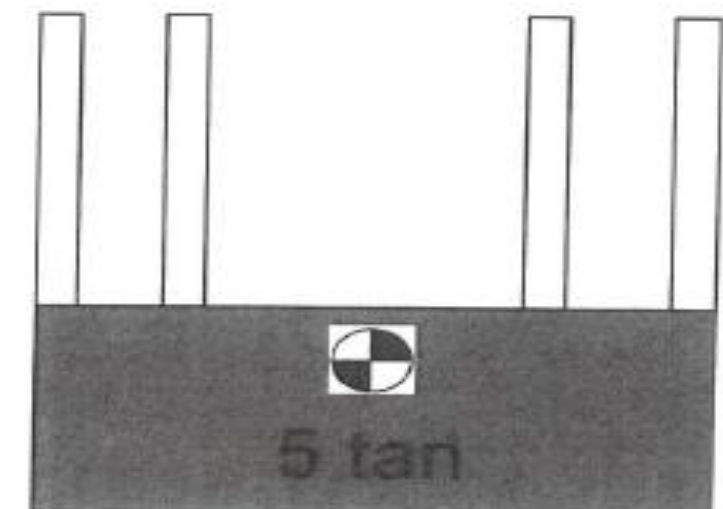


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REFER TO SECTION 6, PAGE 8

Formula mencari Tekanan Asas [TA]:

$$\frac{\text{Beban}}{\text{Jumlah lifting point}}$$

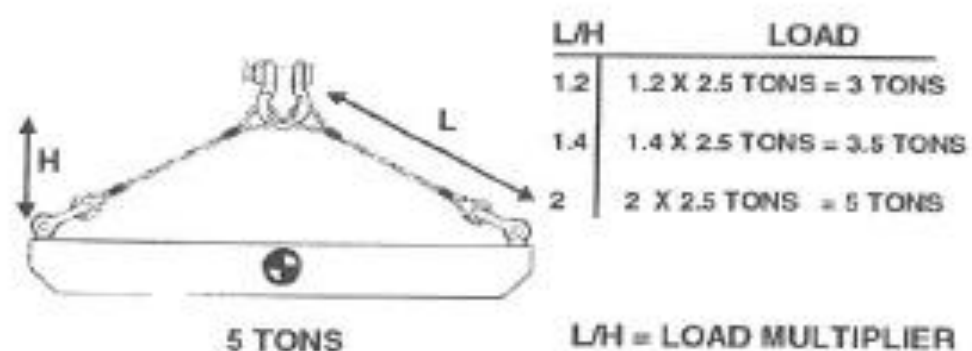


LOAD



Mengira Kapasiti

CALCULATE THE LOAD IN EACH SLING LEG BY USE OF L/H



(P0H5375)

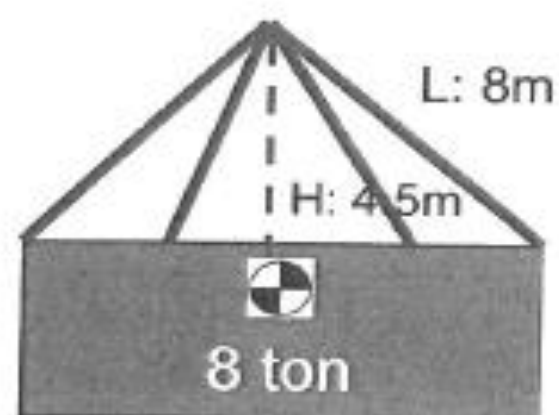
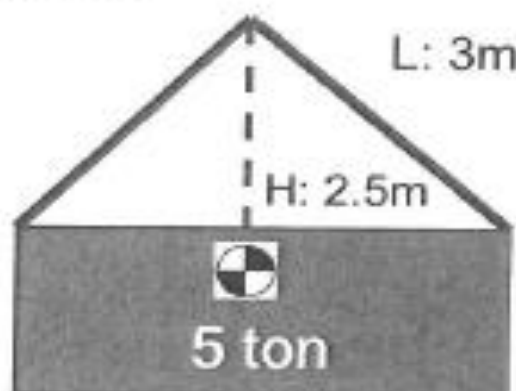
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Formula Faktor Tegangan (FT):

Jarak hook ke lifting point (L) bahagi dengan jarak dari hook ke COG (H)

Latihan

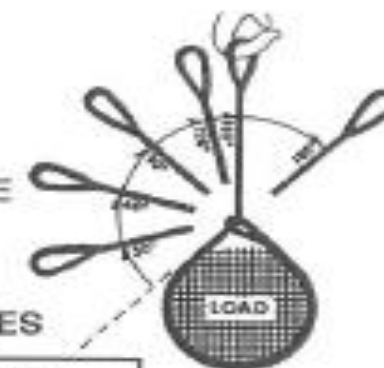


Mengira Kapasiti

SYNTHETIC WEB AND ROUND SLINGS

CHOKER HITCH CAPACITY IS 80% OF THE SINGLE LEG CAPACITY

CHOKER HITCH CAPACITY MUST BE REDUCED WHEN ANGLE OF CHOKE LESS THAN 120 DEGREES

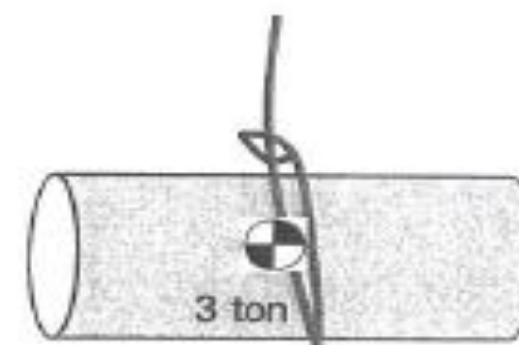


ANGLE OF CHOKE	CAPACITY % OF CHOKER (ASME B30.9)	CAPACITY % OF VERTICAL (ESTIMATED)
120° - 180°	100%	80%
90° - 120°	87%	70%
60° - 89°	74%	59%
30° - 59°	62%	49%
0° - 29°	49%	40%

ASME B30.9
(P0H5185B)

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Beban 3 tan, COG ditengah, choke hitch, sudut choke 120°
Formula: choke hitch angle @120° = 80% kapasiti

Bolehkah sling 3 tan digunakan untuk angkat beban?
Min kapasiti diperlukan: _____

INSPECTION AND USE OF SLINGS & LIFTING EQUIPMENT



PEMERIKSAAN DAN PENGGUNAAN SLING & PERALATAN MENGANGKAT

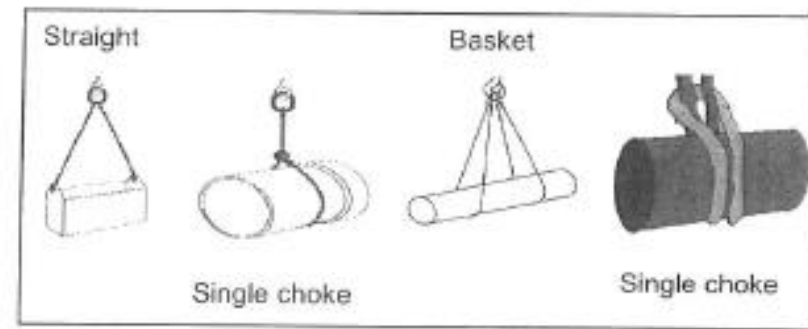


Pemeriksaan Dan Penggunaan Sling & Peralatan Mengangkat

Sling Lembut / Synthetic / Soft Sling:

1. Mempunyai tag- SWL
2. Keadaan baik tanpa: kesan keratan, pendedahan bahan kimia, tersimpul etc.

Teknik penggunaan (Hitching):



Hazard Teknik Single Choke: Choke boleh beralih / menggolongsor semasa mengangkat dan mengakibatkan beban jatuh. Untuk elakkan kemalangan berlaku, buat double wrap sebelum choke.

04 Pemeriksaan Peralatan Mengangkat Synthetic Slings



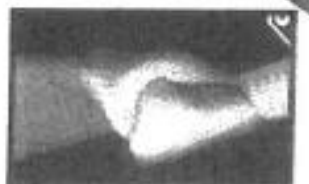
- Maklumat Wajib:**
- Nombor ID pengilang
 - WLL/ SWL



Bebas dari potongan atau bahan kimia



Tidak disimpul mati

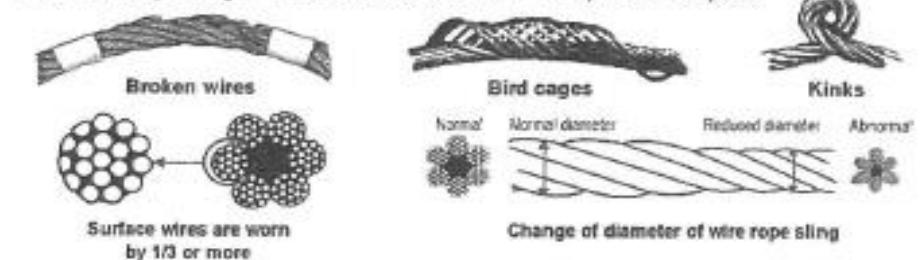


Pemeriksaan Dan Penggunaan Sling & Peralatan Mengangkat

Sling Besi/ Metal Sling:

Inspection points:

- The wire rope sling shall not be used and shall be disposed if they are:



The cable clip shall be properly installed according to the following points:

- The wire rope sling is equipped with thimble.
- There is a minimum of 3 cable clips.
- The direction of installation shall be correct.
- The distance between the cable clips shall be the same.



Pemeriksaan Chain Sling



- Wajib mempunyai tag besi**
- Tarikh Pemeriksaan
 - Nombor ID
 - WLL/ SWL
 - Panjang



Keadaan Hook



Keadaan Chain Link

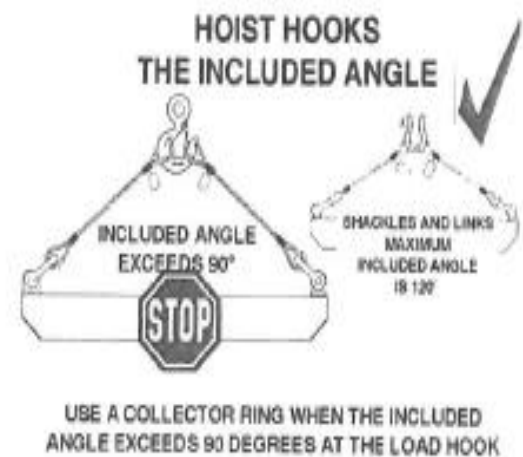
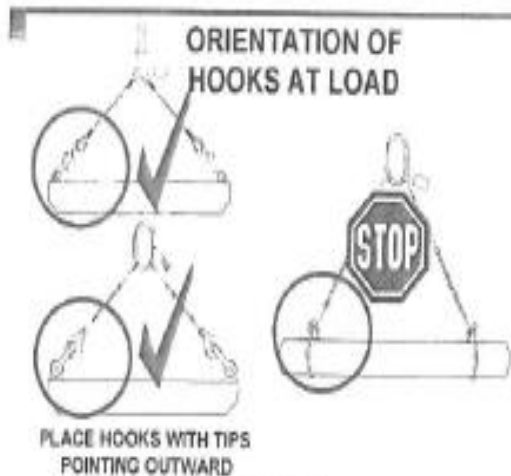


INSPECTION AND USE OF SLINGS & LIFTING EQUIPMENT



Pemeriksaan Dan Penggunaan Sling & Peralatan Mengangkat

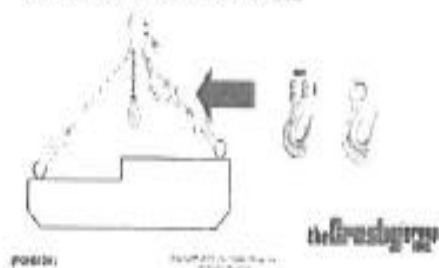
Sling Besi/ Metal Sling:



Penggunaan Chain Sling Shortener

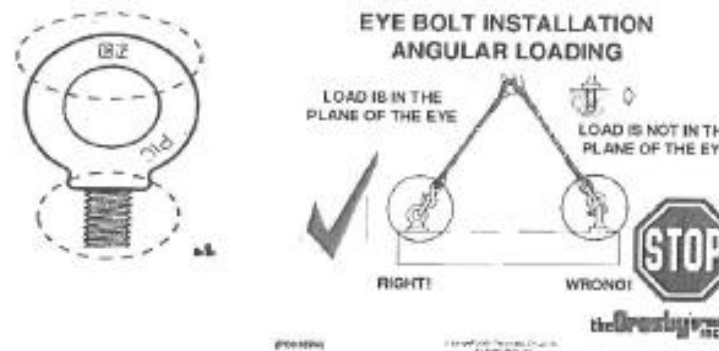
CHAIN SLINGS ADJUSTABLE

THE CAPACITY OF THE LEG CONNECTED WITH A STANDARD GRAB HOOK IN-LINE WILL HAVE A REDUCTION IN THE CAPACITY OF 20%.

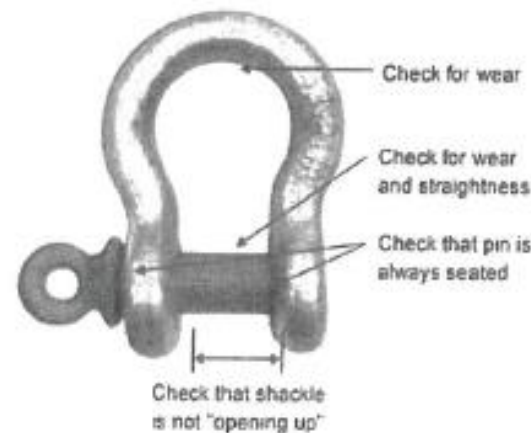
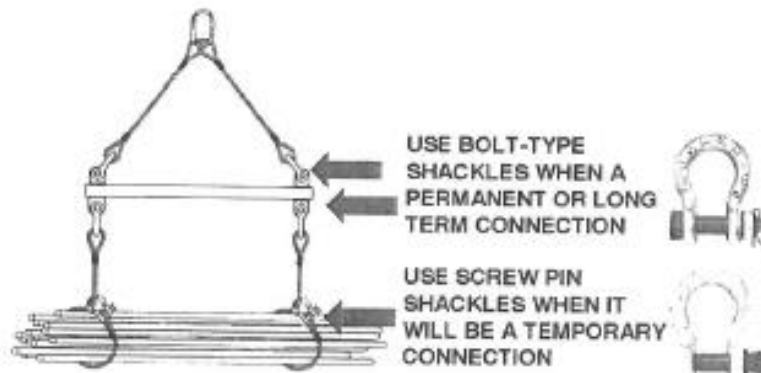


Pemeriksaan Dan Penggunaan Sling & Peralatan Mengangkat

Eye Bolt

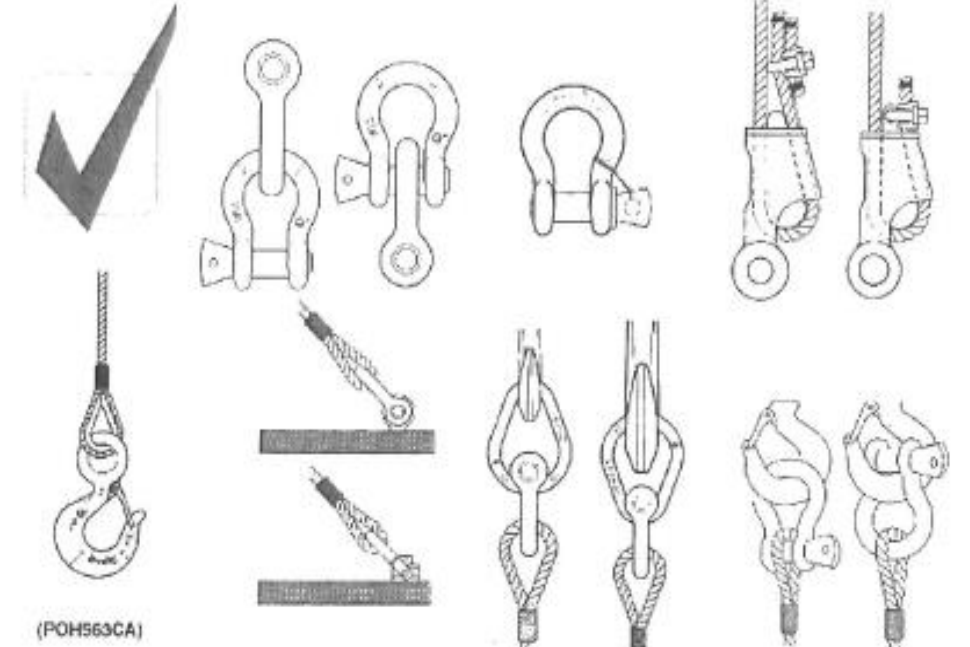


Shackles

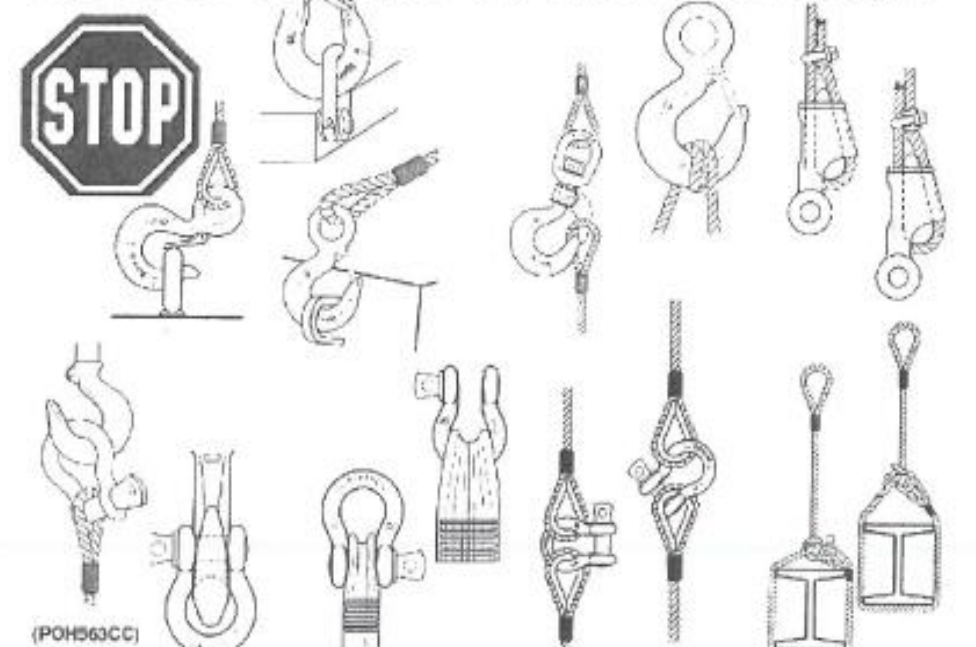


Pemeriksaan Dan Penggunaan Sling & Peralatan Mengangkat

DISCUSS THE USE OF THE HARDWARE



DISCUSS THE USE OF THE HARDWARE

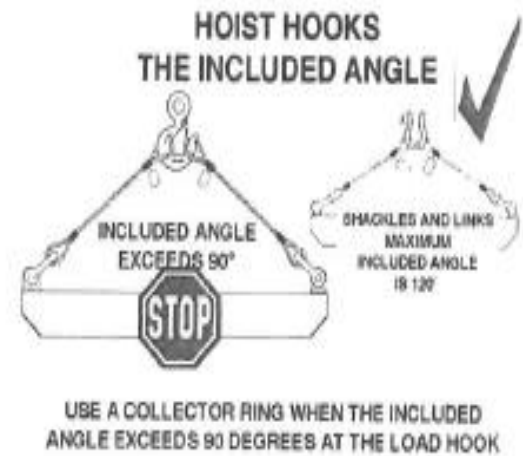
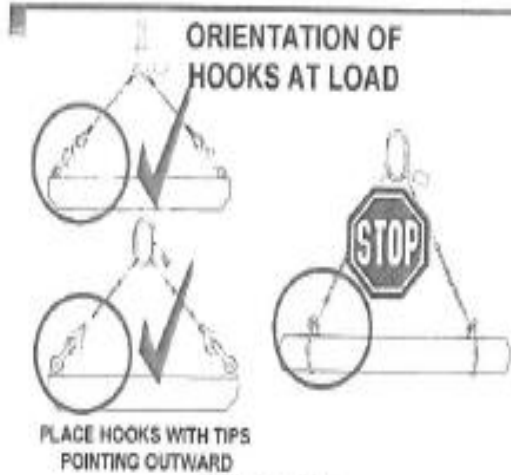


INSPECTION AND USE OF SLINGS & LIFTING EQUIPMENT



Pemeriksaan Dan Penggunaan Sling & Peralatan Mengangkat

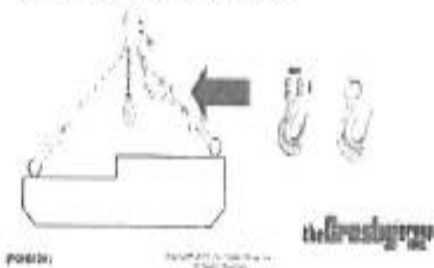
Sling Besi/ Metal Sling:



Penggunaan Chain Sling Shortener

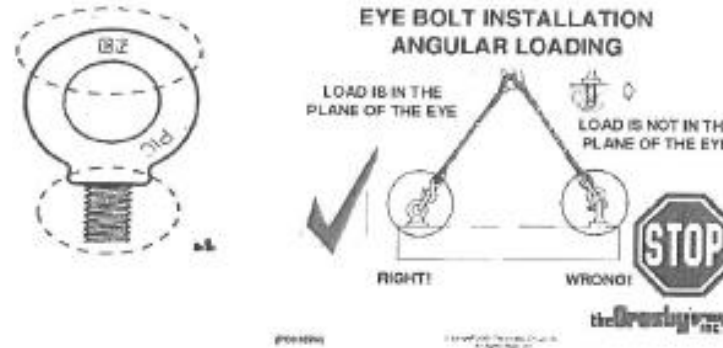
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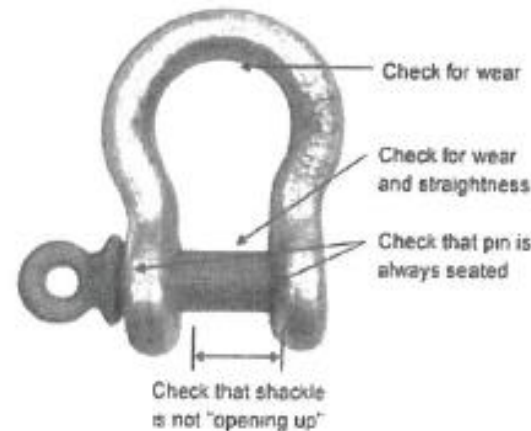
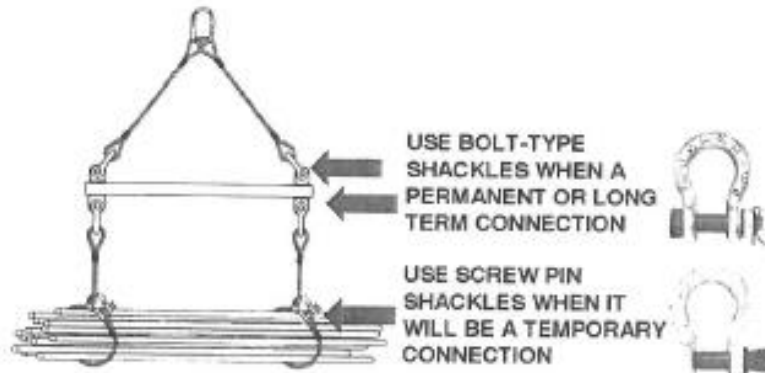


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Eye Bolt

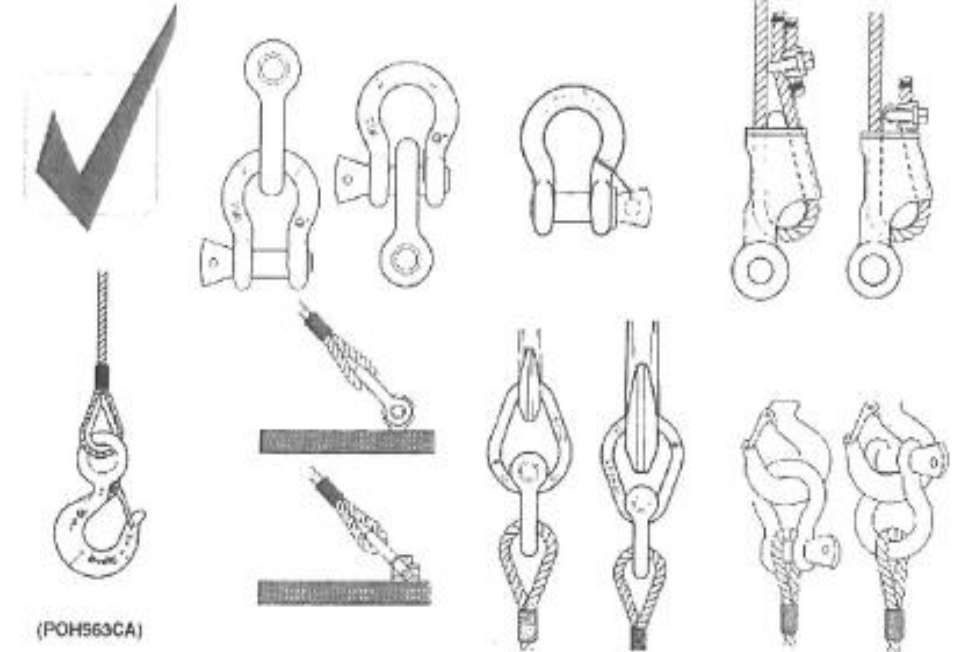


Shackles

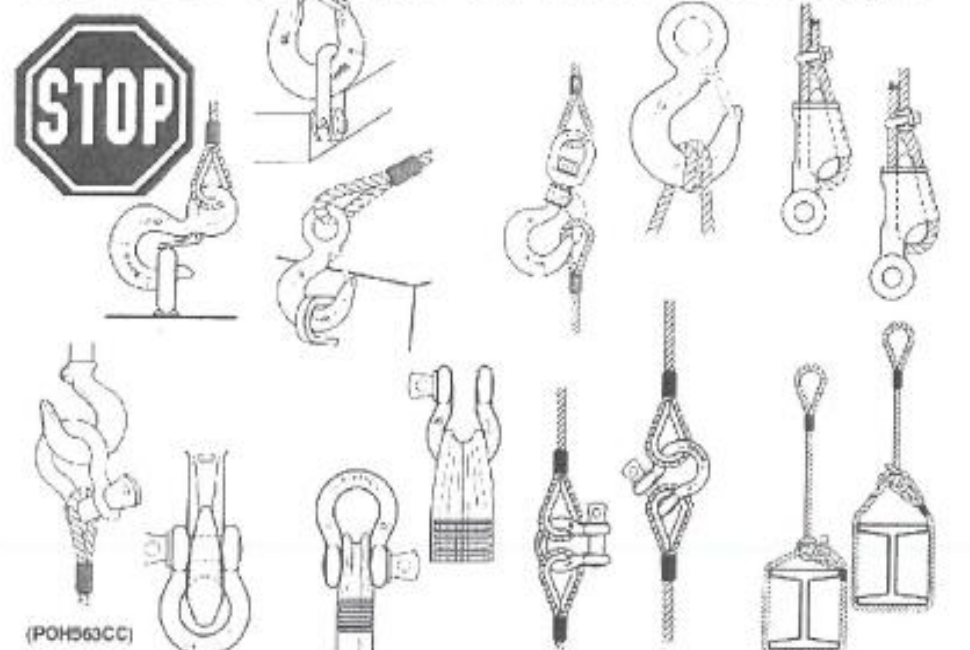


Pemeriksaan Dan Penggunaan Sling & Peralatan Mengangkat

DISCUSS THE USE OF THE HARDWARE



DISCUSS THE USE OF THE HARDWARE



CRANE

PEMERIKSAAN KRITIKAL VISUAL DAN FUNGSI

Label di control jelas	Periksa Hook (kerosakan struktur, cracks, safety latch, bucu tajam)
Butang Control tidak melekat bila dipicit (Up, Down, East, West, North, South)	Periksa Peranti Keselamatan (siren and lampu)
Periksa fungsi brek semasa travelling dan traversing. (Kren mestilah berhenti serta merta bila butang kecemasan dipicit)	Periksa wire rope atau rantai (periksa kehausan, potongan, kinked, crushed, spooling or bird caging, dents)
Fungsi Butang Kecemasan (Kren tidak berfungsi bila butang control lain dipicit)	Periksa fungsi sensor (anti pelanggaran, upper limit, lower limit)



Operasi Selamat Kren

Peraturan Operasi Selamat Kren Saya:

1. Sentiasa mematuhi had SWL
2. Berat beban wajib diketahui
3. Operasi kren dijalankan dengan lancar dan perlahan
4. Angkat beban tidak terlalu tinggi dari lantai
5. Sentiasa elakkan dari menghenjut beban
6. Pastikan laluan beban lancar
7. Elakkan letakkan bahagian badan di bawah beban yang diangkat
8. Posisikan diri disebelah beban, bukannya di laluan beban
9. Gunakan tag line atau kayu untuk mengawal beban
10. Pakai PPE yang betul



PHOTO GALLERY

Day 1



Day 1



Day 2





THANK YOU