

X-904

OWNERS MANUAL

Excellence in offshore personnel safety



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Product Information X -904 Offshore Personnel Transfer Device

Thank you for choosing the Billy Pugh Company X-904 transfer device. The X-904 is the safest and most advanced transfer device on the market today. Three important features set the X-904 apart: man positioning, overhead protection, and side impact protection.

Offshore safety experts have always stressed the need for personnel to be able to quickly egress during offshore personnel transfer operations; especially in rough sea conditions. The X-904 meets this requirement with the unique Man Positioning System which provides the rider a sense of security while still affording them the ability to immediately depart from the device. As riders board the X-904, they fasten a quick release lanyard to their PFD. The lanyard does not provide fall protection, it stabilizes the rider in position should he become dizzy or disoriented during the transfer. During the transfer, the rider holds onto the inner grab lines while keeping one hand on the quick release lanyard. When the transfer is complete, a tug on the lanyard will allow him to step out and away from the basket.

Overhead Protection and Side Impact Protection are major concerns in the offshore industry and were taken into careful consideration in the development of the X-904. An expanded metal top is incorporated in the design to protect the rider from falling objects. Riders are on the inside of the device where they are protected by rope encapsulated stainless steel cables which form the outer rigging of the X-904. The rider is not exposed to injury should the device swing up against the boat or part of the rig itself.

How to Use:

Prior to each use, a visual inspection should be undertaken by a qualified person. Particular attention should be paid to load bearing lines, hardware, fall restraint lanyard, covers and flotation (See "Daily Inspection" included in this booklet).

Riding the X-904:

1. Approach the basket and place any hand luggage in the netted area provided. Grasp the outer grab lines and step in. Position feet as indicated on the floor mat, facing inward, and clip the quick release safety lanyard to the PFD.
2. During transfer, riders should keep their knees slightly bent, while holding on to the center grab lines of the X-904, keeping the lanyard on the quick release snap hook in the other hand.
3. At the end of the transfer, pull the lanyard on the quick release snap hook and step away from the device.

*The X-904 Personnel Transfer Device should only be used in conjunction with equipment which is adequate and suitable for the transfer of personnel. It is important that special attention is given to local conditions such as wind, visibility and sea state. All personnel transfers should be well planned and a risk assessment done if required.

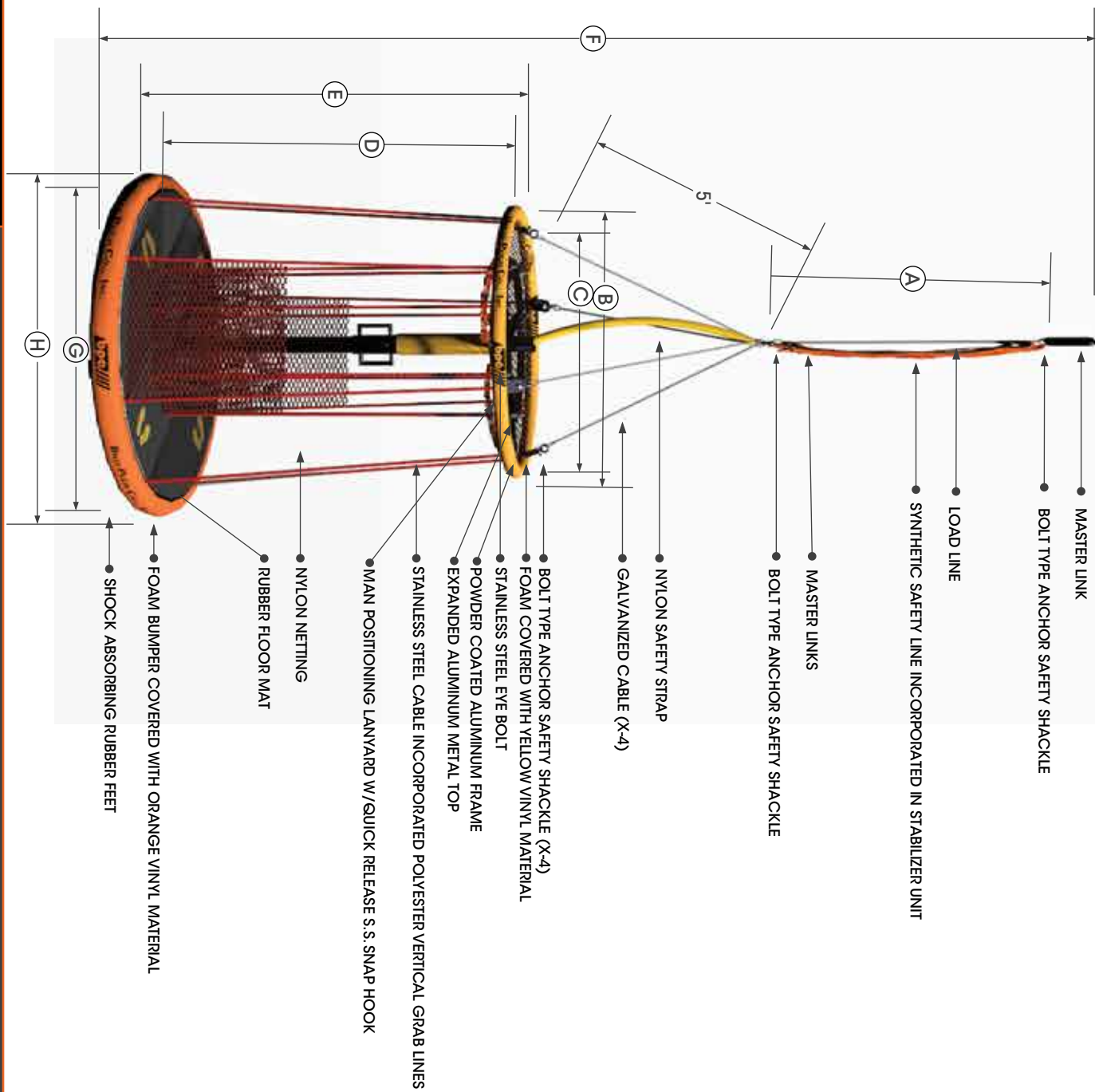
It is important that all operators and riders of the X-904 are fully briefed on its use. This can be done verbally by a qualified person or using the manufacturers short introduction video.

bpc
BILLY PUGH Co., Inc.

X-904
Assembly Instructions

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Congratulations on your purchase of the worlds safest and most trusted personnel transfer device.



MODEL-900 SERIES SPECIFICATIONS

MODEL-900 SERIES DIMENSIONS

	X-904	X-904-6	X-904-8	X-904-10	X-904-12
A	20 FT.	20 FT.	20 FT.	d:20 FT.	d:20 FT.
B	67 INS.	79.5 INS.	79.5 INS.	83 INS.	90 INS.
C	62 INS.	74.5 INS.	74.5 INS.	7 FT.	8 FT.
D	7 FT.	7 FT.	7 FT.	8 FT.	8 FT.
E	8 FT.	8 FT.	8 FT.	33 FT.	33 FT.
F	33 FT.	33 FT.	33 FT.	100 INS.	107 INS.
G	74 INS.	89 INS.	89 INS.	111 INS.	118 INS.
H	85 INS.	100 INS.	100 INS.	820 LBS.	845 LBS.

NOTES: THE 900 SERIES PERSONNEL TRANSFERS ARE POWDER COATED



1

Step #1 – Unpacking

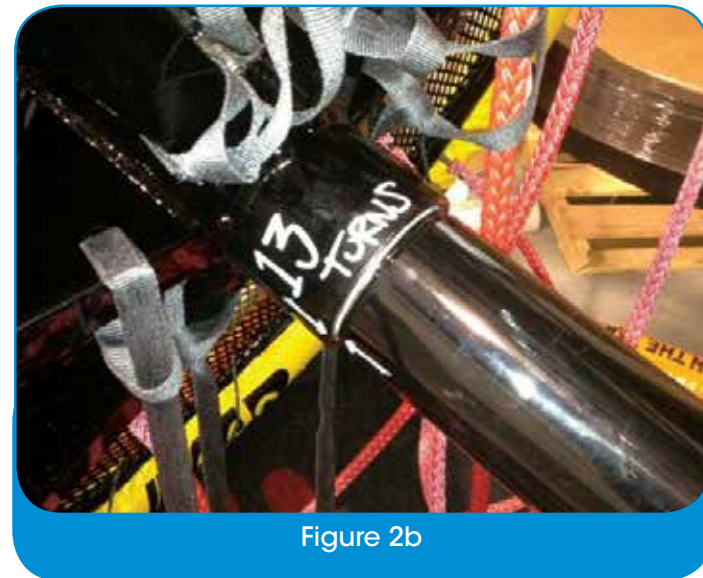
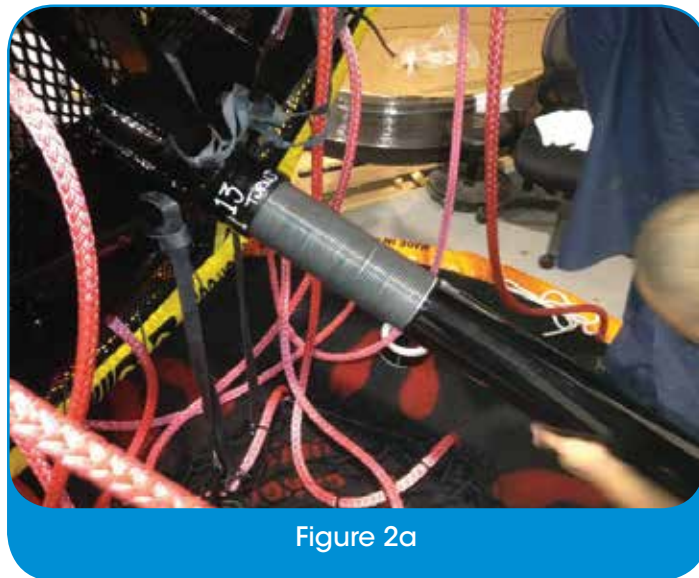
1. Carefully untie or cut rope that secures basket for shipping.
2. Remove these items from inside the basket and set aside for now.



Step #2 – Attach threaded pole to roof of basket

1. *With crane:* attach top of basket to crane hook and lift until grab lines become tight. *Without crane:* lay top of basket on side as shown in **figure 2a**.
2. Insert threaded pole and screw pole all the way until threads bottom out as shown in **figure 2b**.

2



Note: Disregard any "turn" markings until step #5.

3

Step #3 – Installing the bottom pole, Teflon bearing and coupling.

1. Insert bottom pole in receiver on bottom frame. **figure 3a**
2. Place coupling over bottom pole. Slide carefully down to the bottom of pole so as to not damage the coupling. **figure 3b**
3. Place Teflon bearing on top of bottom pole. **figure 3c**



Step #4 – Joining the top and bottom assemblies

1. Join the top and bottom poles by lifting the top assembly and placing the top pole on the bottom pole with the Teflon bearing between them.

4

continued ...



- Slide coupling over pole seams and insert the supplied bolt, nut and washer.



- Tighten bolt until snug. Do not over tighten.

Step #5 – Finishing up

5

Important note: Your X-904 is shipped with “number of turns” markings. This number is set by Billy Pugh Company engineers during assembly and is required for proper torque and safe operation of the device.

number of turns = The number of “counter clockwise” turns the center pole needs to remove the grab line “slack” required during assembly.



This number is set by Billy Pugh Company before leaving the facility.



- Starting by hand, twist the center pole counter clockwise until tight. Take note of the number of turns.
- Finish tightening coupling with boards until prescribed number of turns is achieved as indicated on top of frame.



Assembly is complete

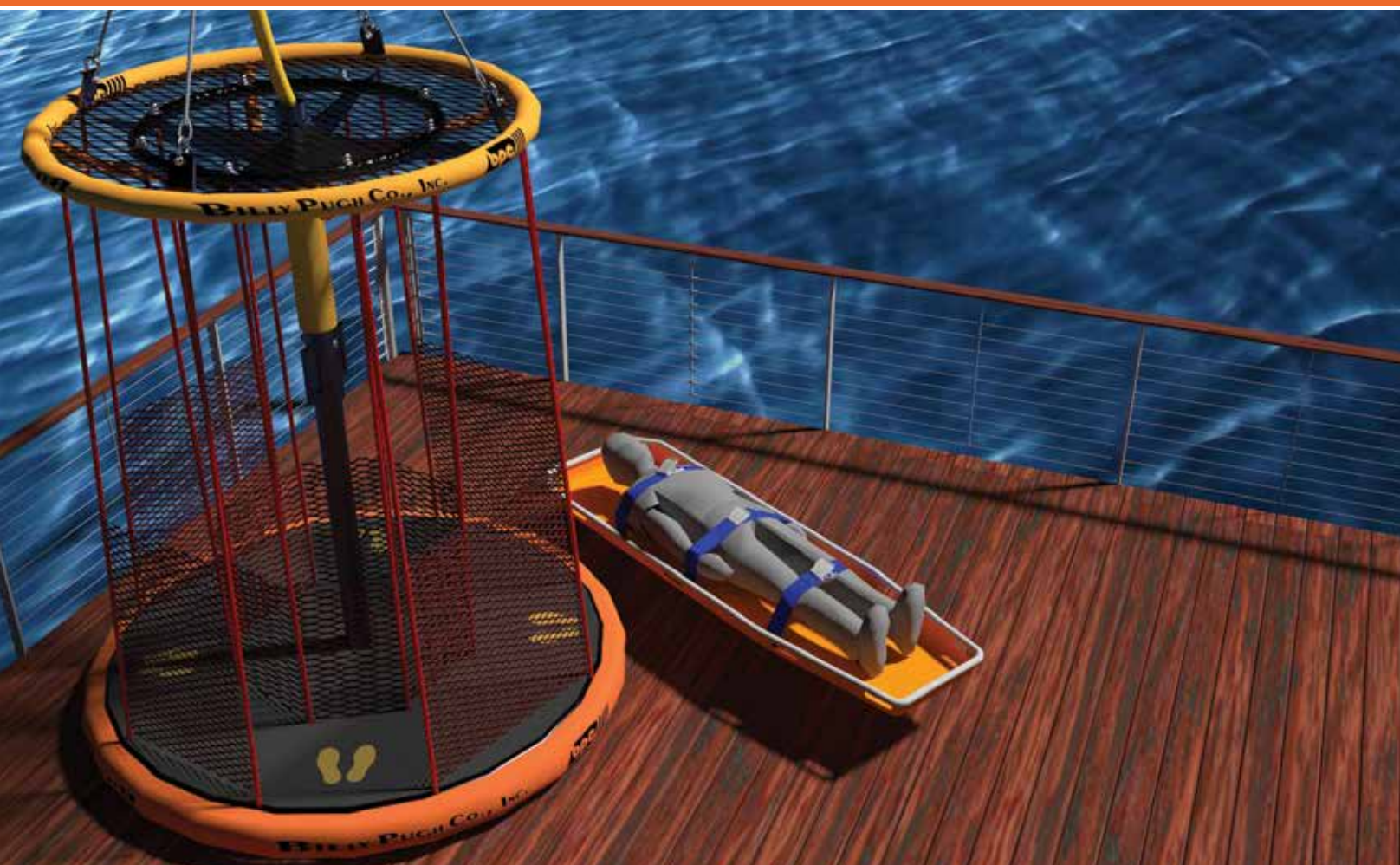




X-904

Stretcher Procedures

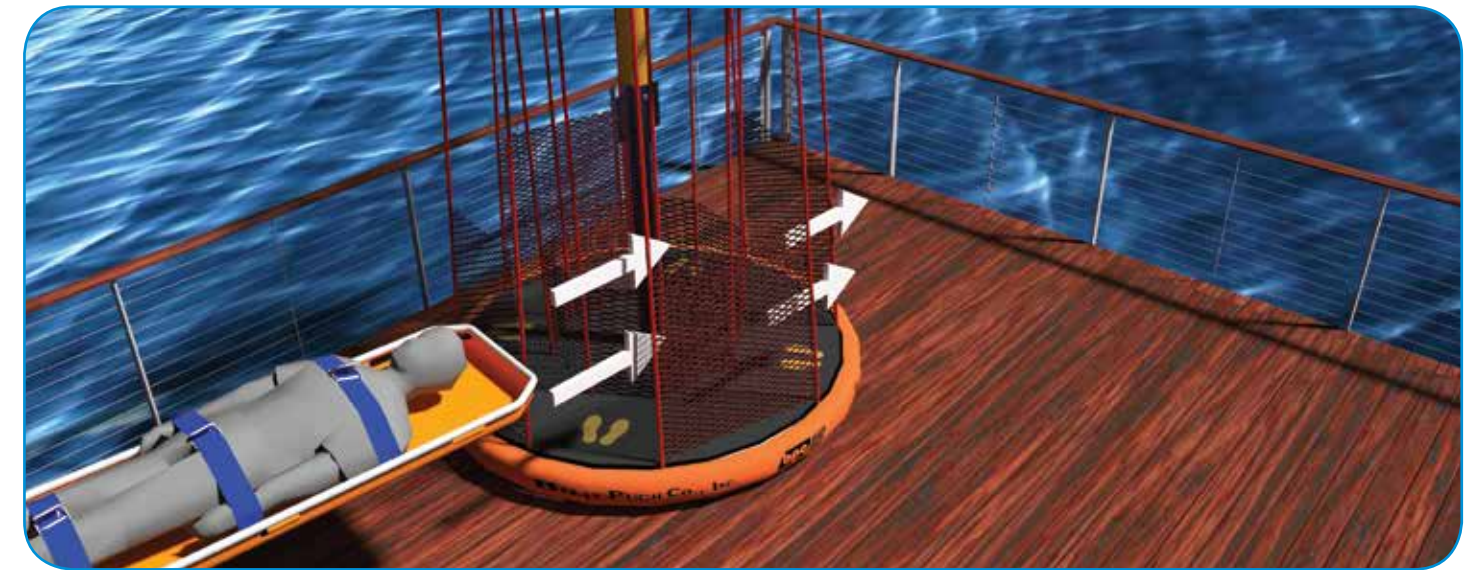
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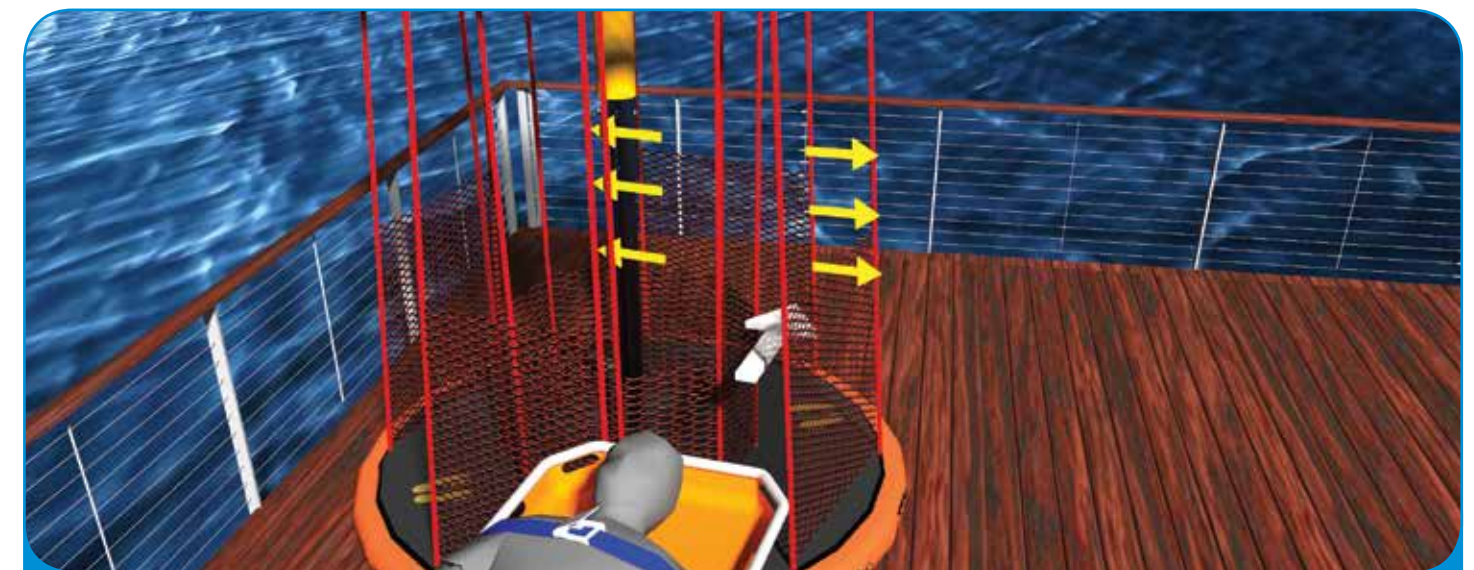
1

Step #1 – Placing the stretcher inside the X-904.

1. With X-904 in the working position, carry one end of the stretcher in through any opening and out through the adjacent opening. With the center of the stretcher inside the X-904, lower the stretcher to the floor.



2. Vertical grab lines will expand to accommodate the width of the stretcher.



Vertical grab lines expand when stretcher is carried through opening

2 Step #2 – Secure the stretcher.

1. Tie off stretcher using the X-904's outer vertical grab lines.



Stretcher tie off positions



Example using shackle

Step #3 – Boarding with stretcher.

1. Riders may accompany patient either as passengers (in the standing position) or as attendants (in the kneeling position).



Passengers



Attendants

X -904 INSPECTIONS
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X-904

Inspections

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X-904 Daily Inspection

Daily inspection of X-904 by qualified person

Serial #: _____ Date of Inspection: _____

Work Order #: _____ Signature of Qualified Person: _____

	Satisfactory	Non-Satisfactory
Check for any damage or defect on all parts of the unit.	<input type="checkbox"/>	<input type="checkbox"/>

Comments: _____

Visually inspect safety load line when attaching the X-904 to the crane hook. This includes the 4-part sling and all hardware as well as the load line and fabric covered stabilizer. Look for crimps, broken wires or excessive wear or rust. If any of these problems exist, take the unit out of service immediately and replace the sling. Inspect crane hook positive locking device for function and physical condition.	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------

Comments: _____

Visually inspect all the load bearing areas of the X-904 for excessive wear or damage, paying close attention to the rigging lines (inner and outer).	<input type="checkbox"/>	<input type="checkbox"/>
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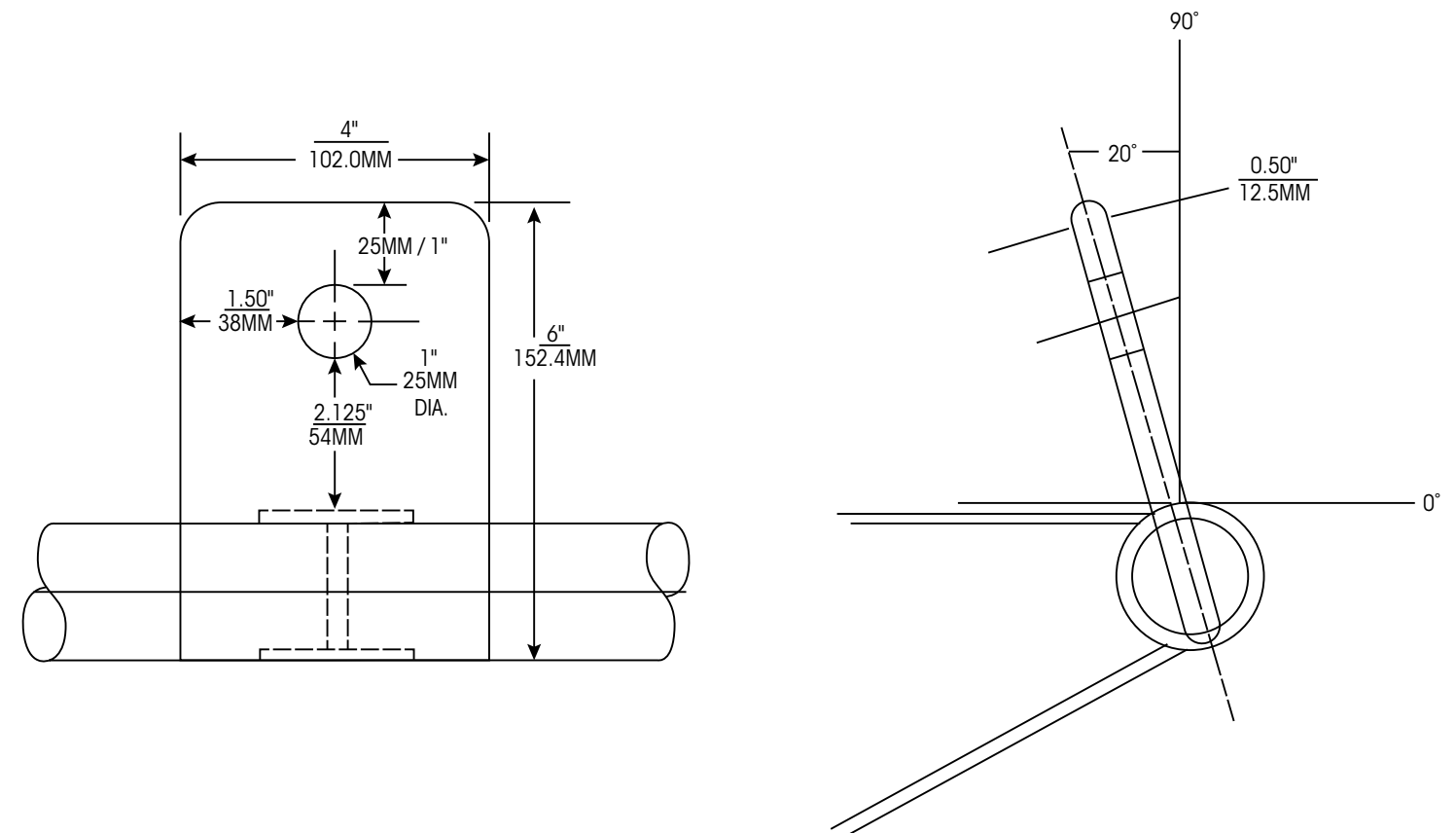
Comments: _____

Visually inspect the aluminum center section for damage, cracks, or excessive wear.	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------

Comments: _____

Inspect top and bottom of powder coated aluminum frame including top and bottom ring, expanded metal top and center pole. Look for excessive wear, cracks, or corrosion.	<input type="checkbox"/>	<input type="checkbox"/>
Comments:		
Turn center pole (at least 3 full turns) loosening and then tightening. Swab the threads with lubricant to prevent seizing.	<input type="checkbox"/>	<input type="checkbox"/>
Comments:		
Inspect top and bottom outer flotation ring covers for damage.	<input type="checkbox"/>	<input type="checkbox"/>
Comments:		
Inspect the rubber feet on the bottom frame for deterioration, damage, or missing feet.	<input type="checkbox"/>	<input type="checkbox"/>
Comments:		
Inspect for modifications or non OEM supplied components. Non OEM components or modifications should be removed.	<input type="checkbox"/>	<input type="checkbox"/>
Comments:		
Defective or worn parts should be replaced by a qualified individual as required.	<input type="checkbox"/>	<input type="checkbox"/>
Comments:		
Inspect the pad eyes on the upper ring of the X-904. There should be no cracks or damage to the welds. The hole in the pad eye should still be round and not elongated by more than 5%. The angle of the pad eye from the upper ring should be 20 degrees inside of vertical (see drawing). Some wear of the coating is expected and acceptable but there should not be excessive wear of metal.	<input type="checkbox"/>	<input type="checkbox"/>
Comments:		

API definition of "Qualified Inspector" – A person so designated by the employer who by reason of a appropriate experience and training, in addition to meeting requirements of a qualified person, has attended formal training in inspection, maintenance, and troubleshooting of cranes, rigging, and lifting devices.



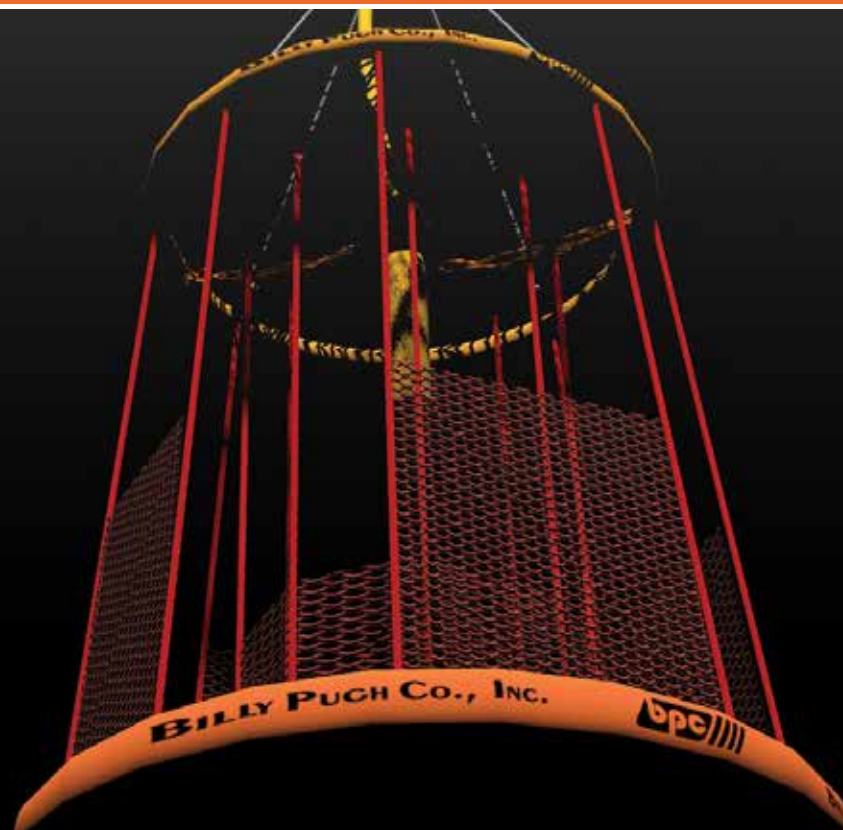
900 SERIES TRANSFER NET PAD EYES SPECIFICATIONS



X-904

Service Records

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X-904 Serial #: X-904 in service date:

X-904 Owners Company: Location (Rig/Platform/Vessel):

	Date Inspected	Next Inspection Due	Signature of Qualified Inspector
1 st 6 th Month Inspection			
2 nd 6 th Month Inspection			
3 rd 6 th Month Inspection			

	Date Refurbished	BPC Certified Refurb Co.	Refurb Serial Number
1 st 2 nd yr Refurbishment			

X-904 Serial #: X-904 in service date:

X-904 Owners Company: Location (Rig/Platform/Vessel):

	Date Inspected	Next Inspection Due	Signature of Qualified Inspector
1 st 6 th Month Inspection			
2 nd 6 th Month Inspection			
3 rd 6 th Month Inspection			

	Date Refurbished	BPC Certified Refurb Co.	Refurb Serial Number
2 nd 2-year Refurbishment			

***In Service Date is when the X-904 is removed from it's package.

X-904 Service Record Card (3)

X-904 Serial #: X-904 in service date:

X-904 Owners Company: Location (Rig/Platform/Vessel):

	Date Inspected	Next Inspection Due	Signature of Qualified Inspector
1 st 6 th Month Inspection			
2 nd 6 th Month Inspection			
3 rd 6 th Month Inspection			
	Date Refurbished	BPC Certified Refurb Co.	Refurb Serial Number
3 rd 2-year Refurbishment			

X-904 Service Record Card (4)

X-904 Serial #: X-904 in service date:

X-904 Owners Company: Location (Rig/Platform/Vessel):

	Date Inspected	Next Inspection Due	Signature of Qualified Inspector
1 st 6 th Month Inspection			
2 nd 6 th Month Inspection			
3 rd 6 th Month Inspection			

REPLACE X-904 Billy Pugh Company recommends all X-904's be refurbished after two years with a maximum of three total refurbishments before unit is replaced. These refurbishments are to be performed by an approved BPC representative. New certificates will be issued at that time.

***In Service Date is when the X-904 is removed from it's package.

***Re: Clarification of "In Service Date" for Billy Pugh Co. X-904's

X-904 personnel transfer devices are aged in terms of their "In Service Date". Manufacture dates are designated on both the sling and the X-904 but these are for reference only.

The true age, "In Service Date" of the X-904 is the date used to determine when the unit needs to have its 6 month inspection/2 year refurbishment. The "In Service Date" is the date when the X-904 is removed from its packaging. The "In Service Date" should be noted by the owner/end user of the X-904 in the operations booklet included with the X-904.

Whether the unit is new (or has come from an authorized refurbishment center for its 2 year refurbishment), when the wrapping comes off, the age of the unit is recorded and that becomes the "In Service Date". From that date, 6 months later, the unit should have its formal 6 month inspection and 2 years from the "In Service Date" it should come onshore for a full inspection and refurbishment. If the unit goes into service without an "In Service Date" recorded, then the date used for aging will refer back to the manufacture/last refurbishment date.

If an X-904 comes from a refurbishment and is stored in a warehouse for 6 months before going offshore, the owner of the unit should keep the wrapping on the unit until it is shipped. When the X-904 arrives at the offshore facility, the wrapping comes off and the "In Service Date" is designated and noted on the paperwork.

Please contact us if you have any further questions.

Thank you,
Billy Pugh Company

X -904 SERVICE RECORDS
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Recommended Practice for Crane Suspended X-904 Offshore Personnel Transfers

Purpose

This recommended practice is intended to assist all offshore employers in the development of safe work practices relative to the task of transferring personnel to-and-from offshore facilities utilizing a Billy Pugh Co. X-904 personnel transfer device. This recommended practice addresses the minimum requirements promulgated by both regulation, industry, and refined for the use of this unit. Each offshore employer is encouraged to follow these recommendations and to proactively modify or supplement them with additional beneficial practices, equipment, or environmental conditions.

Scope

This recommended practice is intended for application by offshore employers working in a marine offshore environment who transfer, move, or transport their workforce by Billy Pugh X-904 personnel carrier. The elements of this recommended practice should be applied as appropriate with due consideration made for any additional special hazards identified by the employer as a result of a thorough Job Hazard Analysis (JHA).

Responsibilities

It is the responsibility of the offshore employer to ensure this recommended practice is applied appropriately within their organizations. Management of offshore personnel transfer safety should be an integral component of the employers existing Safety and Environmental Management Plan (SEMP).

A systematic management process used to identify and control safety and environmental hazards in design, construction, start-up, operation, inspection,

and maintenance as promulgated in API RP-75

Definitions

*In Service Date: The date the X-904 is unwrapped is the "In Service Date". That date will be noted on the X-904 certificate and the yellow sticker attached to the center pole. The "In Service Date" is used as the date for aging the device for inspections and replacement. If during inspection it is found that there is not an "In Service Date" recorded, then the "In Service Date" will defer back to the "Manufacturing Date" which is noted on tags and paperwork.

Rigging

- Load lines, master links, safety slings, and hardware that attach the personnel carrier to the crane hook or block device.

Qualified Person

- A person designated by the employer who has the experience and formalized training to safely operate the crane, rigging, and associated lifting devices assigned at the work location

Qualified Inspector

- A person so designated by the employer who by reason of appropriate experience and training, in addition to meeting the requirements of a qualified person, has attended formal training in inspection, maintenance, and troubleshooting of cranes, rigging, and lifting devices.



X-904 RECOMMENDED PRACTICE
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Case for Action

Analysis of available accident/injury data reveals that offshore personnel transfers are not involved in high rates of accidents relative to the number of transfers carried out worldwide. Due to the sheer number of personnel basket transfers, the potential does exist for incidents to occur. Safe and consistent methods need to be incorporated into the procedures of those utilizing “crane assisted” transfer devices. A safety system, which addresses the specific areas of effective management relative to offshore personnel transfers, will be required so that industry can sustain and maximize overall safety performance while showing a process of continuous improvement. The X-904 is an important step in this continual improvement in “boat to rig” crane transfers.

Safety System Elements

The following are considered to be key elements of an effective safety system for management of crane suspended offshore personnel transfers.

ELEMENT 1: Minimum Training Requirements

An on-site competency based orientation & JSA on the safe use of personnel carrier devices should be administered by a qualified person before employees or visitors unfamiliar with the device are loaded or lifted. At a minimum the following elements should be included in this orientation curriculum:

- Safe loading & unloading procedures.
- Crane actions, movements, and signals.
- Body positions, pinch points, and personal stability.
- Personnel baggage loading procedures.
- Personnel protective equipment requirements.

- Exceptions or anomalies to any of the above.

In addition to the training elements, the qualified person should ascertain whether any persons are feeling ill, suffering from vertigo, or have any anxiety regarding the transfer. These individuals should be discouraged from using this form of personnel transfer. The exception would be using the X-904 stretcher capability as described in the safety DVD provided with the unit.

ELEMENT 2: Personnel Carrier Rigging Configurations

The following rigging configurations are recommended for all crane assisted personnel carrier devices:

- **Double load lines:**
Billy Pugh personnel nets as well as the X-904 have a backup fiber rope safety line contained within the stabilizer unit.
- **Snag Resistant Tag Line**
We recommend that the BPC semi-rigid, snag resistant tag line should be affixed to all of our personnel transfer devices. Tag lines should have a minimum length of 10 (3.05m). Tag line should be attached to either the center deck lashing point, or the outside bottom platform ring in such a manner that minimizes tag line damage when X-904 is resting on a surface and attach with a minimum 5/8" (190 mm) bolt type anchor shackle. Personnel transfer device tag lines should be identified by a high visibility color. These tag lines can be obtained by specifying “Billy Pugh Tag Line” followed by the length. The standard length for these items is 15 ft. This recommendation is consistent with API-RP 2D (Annex C). Our tag lines (RPTL-1 and PTL-1) both conform to this API specification and work well with all slung loads as well as personnel transfer devices.



ELEMENT 3: Inspection Procedures

All inspections should be performed by a qualified person or qualified inspector (per API). A pre-use inspection should always be completed before using the X-904. A 6 month inspection is also recommended. Documents to support these inspections are included with this booklet.

ELEMENT 4: Operational/Administrative Practices

The following minimum lifting practices are recommended for all crane assisted personnel transfer net devices:

- Any offshore facility making personnel transfers with a personnel carrier should have a written procedure for this task.
- A pre-use inspection should be conducted prior to any personnel carrier transfer.
- Cranes assigned to personnel lifting duties should be suitable for this purpose per relevant API spec.

- Crane operators assigned to personnel lifting duties should be certified and competent to perform this task.
- A snag resistant tag line should be affixed to all personnel carriers.
- Crane hooks used for personnel transfers must have a positive locking latch.
- Only approved personnel carriers should be used for lifting personnel per API specifications. Personnel carriers should not be used as a workbasket or cargo net.
- Personnel carriers should be legibly marked with the maximum number of passengers.
- The X-904 is equipped with areas designed for light luggage. Luggage should be stowed before the lift is made and easily accessible for debarkation. No large or heavy items (bigger than the storage area) should be allowed on the X-904. Large or heavy items should be transferred via cargo basket.
- Personnel carriers should not be utilized in weather, wind, or sea conditions that the qualified person considers to be unsafe.

- Before any attempt is made to lift personnel with a carrier, clear instructions should be given to all persons involved.
- No person suffering from acute seasickness or vertigo shall be transported by personnel carrier. If the transfer is necessary, the affected person should be put inside stokes stretcher and the stretcher affixed to the rigging in the area provided inside the unit. (Someone should ride with this individual on the transfer as well).
- Any individual has the right to refuse transfer by a personnel basket.
- All personnel riding on a personnel carrier should wear an approved life vest or life preserver. An approved Type I illuminated PFD maybe required for all transfers conducted at night (depending on operator/contractor policy). Many contractors incorporate Type I as well for rough sea/bad weather transfers.
- All personnel riding the X-904 should stand on the inside of the unit and grasp the inner rigging. Passenger forearms should be interlocked.
- If crane operator's view of the primary signalman is obstructed, the personnel carrier should not be moved until alternative communication or signal devices are placed in service.
- A designated primary landing zone should be marked in a safe area as determined by a Job Hazard Analysis (JHA).
- When transferring personnel, the X-904 should be lifted only high enough to clear obstructions. Then gently lowered to the deck.
- A loaded personnel carrier should not be raised or lowered directly over a vessel.
- The crane operator may refuse to lift any person who does not comply with the operator's instructions.
- An experienced escort should be provided for persons who are not confident performing a personnel carrier transfer.
- Injured, ill, or unconfident persons may ride in a sitting position, on the inside of the personnel carrier, with a qualified person as an escort.

NOTE: Depending on company policies, attaching the man positioning lanyard to the riders' PFDs may be optional during transfers on the X-904. Billy Pugh Company encourages the use of this lanyard but is not a requirement to meet this recommended practice.

References

- American Petroleum Institute (API) –“API RP-2D Recommended Practice for Operation & Maintenance of Offshore Cranes”
- International Association of Drilling Contractors (North Sea Chapter)- IMCA SEL 08/01 “Transfer of Personnel by Basket on the UK Continental Shelf”
- Moxie Media Corporation – “Personnel Basket Safety Video Training Series” June 27, 2001 Issue 1 Rev 0 7
- International Marine Contractors Association (IMCA) – “Task Risk Assessment Study 8/2000”
- National Research Council, Assembly of Engineering Marine Board –“Committee on Assessment of Safety of OCS Activities”
- Billy Pugh company, Inc. – “Procedures for Maintenance & Inspection of Personnel Baskets”
- Kennedy Wire Rope & Sling Company – “Procedures for Inspection & Maintenance of Wire Rope Slings and Rigging”
- Department of the Interior, Minerals Management Service – “Safety Alert No. 190-1/22/00 & Safety Alert No. 193-2/28/01”
- Global Drilling Leadership Initiative – “Recommended Practice #6





X-904

Tangle Resistant Tag Lines



Tangle Resistant Tag Lines

The tag line that comes with your X-904 is tangle resistant and is an additional safety feature that is recommended for personnel transfer devices.

This product is recommended for all slung loads as plain rope tag lines have a much stronger possibility of fouling, wrapping on a railing or catching on a pinch point.

Our Tangle Resistant tag lines are designed to resist fouling, wrapping or catching on obstructions on the

deck. They also have a better gripping surface than a regular rope and will last much longer.

These ropes are horizontally wrapped and then dipped in polyurethane to protect from wear and UV degradation. The most common lengths are 15 and 20 feet but can be made to any length you prefer.

Please give your Billy Pugh Co. Distributor a call for pricing information.





Date Change Purpose

2006	Added flat bar to gussets on top frame	Strengthen top frame gussets
2006	Added additional feet to outside ring on bottom frame	To better spread the loads on landings and provide for softer landings
2007	Change from washers to backing plates on feet	To better prevent tearing of feet to provide for more durable mount

2007	Added nylon safety strap	To add an additional layer of safety to most critical component of basket assembly
2008	Change to larger, more durable cargo netting	Enhance the strength of the netting
2008	Changed from 5/8" to 3/4" safety shackles	To prevent shackles from damaging pad eyes
2008	Added rubber pad eye protectors	To prevent shackles from damaging pad eyes
2008	Changed to more UV resistant materials on lanyards	To provide for more durable lanyards
2009	Changed to larger gauge, expanded metal on top frame	To strengthen top frame and add additional layer overhead protection from heavier objects
2009	Changed to nylon lock nuts on grab lines	To prevent accidental loosening of nuts
2010	Added gussets and/or plate to bottom pole receiver	To spread the landing shock loads more efficiently and add additional reinforcement to the bottom frame
2011	Changed to BP acceptable SS eye bolt	To use domestic quality eye bolt
2011	Added additional feet to intermediate ring on bottom (6, 8, 10, 12 person only)	To spread the loads during hard landings to prevent damage to the bottom frame



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