

Analog Series Davit Systems

This manual applies to
50048 & 50049 Davit System

Operation & Maintenance Manual

Man-Rated for:
Work Positioning
Confined Space Entry / Retrieval
Rescue
Fall Protection





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PARTS IDENTIFICATION

See Figure 1 (Below) for parts identification.

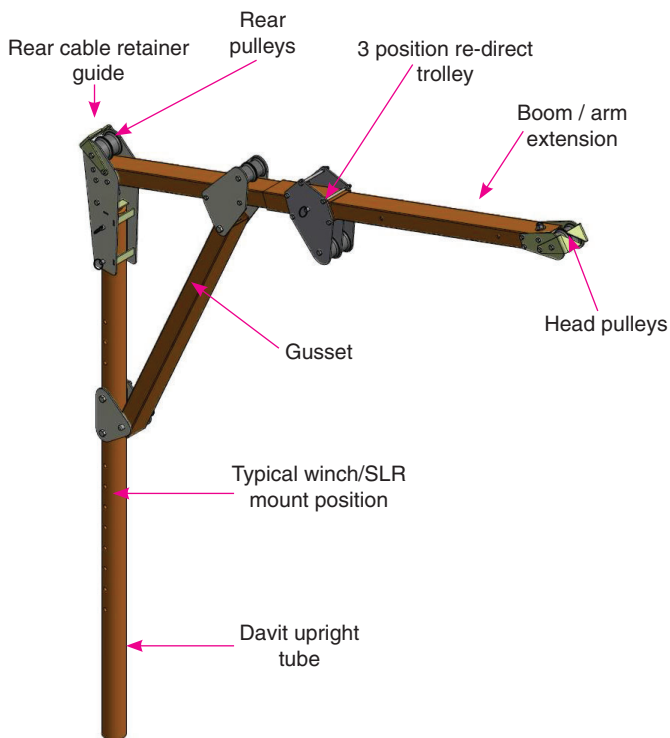


Figure 1a.

50049

Analog Davit, 900 / 1200 / 1700-2850H
(2 pcs).

Davit "Breaks" down into 2 pieces

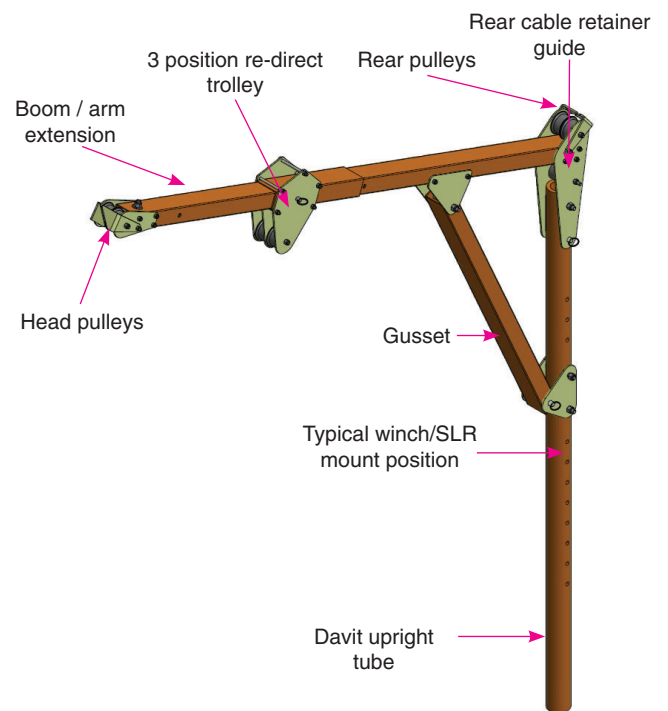


Figure 1b.

50048

Analog Davit, 900 / 1200 / 1700-2850H
(1 pcs folding).

Davit "folds" in on itself.



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1.0 INTRODUCTION TO SYSTEM APPLICATIONS

The Analog Series Davit is constructed of high quality aluminum and steel tubing for optimum performance with the lowest possible weight.

The Analog Series Davit may be equipped with a variety of Pro-Series bases, winches, self-retracting lifelines, and other accessories to meet your needs.

This product has been specifically designed and carefully manufactured to provide reliable operation in many different safety-at-heights applications. These include, but are not limited to, various combinations of:

1.1 FALL PROTECTION

The Analog Series Davit Arm is designed to be used with a variety of mounting base options to provide an engineered supporting structure for Personal Fall Arrest Systems (PFAS). Additionally, with the addition of a winch, the Davit Arm may be used as a rescue device to assist with the rescue of a worker who has fallen and is being suspended by his/her PFAS.

SRL's or other energy absorbing devices selected for use with this Davit must have a Maximum Arrest Force (MAF) rating of 4kN or less, and/or must be selected by a Qualified Person so as to maintain an acceptable factor of safety on the system. (Qualified person as defined in AS/NZS1891.4)

1.2 WORK POSITIONING

The Analog Series Davit Arm may also be equipped with a winch to be used for the suspension of a worker at an elevated position for the performance of a task. When a worker is suspended in a work seat or harness, a secondary personal fall arrest system must be used which meets applicable Australian and local requirements.

1.3 RESCUE

The Analog Series Davit Arm, base, and winch may be used employed as part of a system meeting the requirements of AS/NZS5532 & AS/NZS1891.4 for the rescue of a fallen worker.

1.4 CONFINED SPACE ENTRY / RETRIEVAL and RESCUE

The Analog Series Davit Arm, base, and winch, may be used as part of a system to facilitate access to and egress from a confined space as well as non-entry rescue in the event of an emergency. When used with an approved BTS Products mounting base and winch, the Analog Davit System meets the requirements of Safe Work Australia CONFINED SPACES Code of Practice for use as a confined space entry/retrieval and rescue device.

1.5 FALL PROTECTION WHILE CLIMBING

In situations where it is not practical to install and use a temporary or permanently installed personal fall arrest system, the Analog Series Davit Arm may be combined with a suitable BTS mounting base and winch to guard against falling while climbing a ladder or other structure. The winch line can be used as a extendable anchorage connector that moves up and down with the climber. The winch must be operated to continuously eliminate any slack in the winch line as the climber moves up and down. The winch operator must be specifically instructed in such use of this equipment. All such installations must be designed, installed, and used under the supervision of a qualified person.

1.6 MATERIAL HANDLING

The Analog Series Davit Arm, when combined with a suitable BTS mounting base and winch, may be used for the raising and lowering of tools, equipment, and other material not exceeding the rated Working Load Limit of 280kgs.

NOTE: Some Work Sites may not allow the use of the same equipment to move personnel and material. Be aware of and follow the regulations governing your workplace.

2.0 APPLICATION RESTRICTIONS

There are restrictions and limitations that must be carefully considered in the selection, installation, and operation of this type of equipment. Serious injury or death may result from failure to consider these factors.

2.1 WORKING LOAD LIMIT

The Analog Series Davit Arm is designed and rated for a maximum working load limit of 2 persons weighing a maximum of 140kg including all clothing, tools, and equipment.

Applicable local regulations must be followed in specifying limitations on any installed system.

2.2 SITE CHARACTERISTICS, PHYSICAL and ENVIRONMENTAL FACTORS

Individual work sites have associated with them any of a number of hazards related to the site itself and the activities being carried out at that site. These may include, but are not limited to:

- Poisonous or explosive atmospheric conditions
- Poisonous or corrosive chemical hazards
- Hot surfaces
- Electrical hazards
- Sharp edges
- Engulfment hazards
- Moving machinery
- High wind or adverse weather conditions

All of these factors must be taken into consideration when selecting equipment for a given application.

3.0 GENERAL SYSTEM REQUIREMENTS

The Analog Series Davit Arm is designed for use with a variety of accessories to perform many functions. There are basic requirements common to all such systems that include, but are not limited to, the following.

3.1 ANCHORAGE STRENGTH

The Analog Series Davit Arm is designed to be set up or installed, and used on a supporting surface (anchorage) capable of providing sufficient anchorage strength to support all applied loads with an acceptable margin of safety. The standards governing different situations specify various minimum requirements depending on the application, the work being performed, and other factors.



WARNING!!

Bases used to support this davit must be installed to a suitable structure using appropriate anchors to ensure that the installed base is capable of supporting a moment of 19800 N-m and a 16kN vertical load.

This is a significantly greater load rating than specified for most BTS and other similar davits, and great care must be taken to ensure only suitably installed bases are used with this equipment.

All installations MUST BE performed under the supervision of a Qualified Person.

3.2 COMPATIBILITY OF CONNECTORS

Connectors used to connect components in the system must be compatible with each other to ensure sufficient strength and eliminate the risk of accidental disengagement or rollout during use. Connectors supplied with products designed, manufactured, and/or approved by BTS will meet applicable compatibility requirements for connectors. Any connectors not supplied by BTS **MUST BE** approved by a Qualified Person, and installed, inspected, and used according to the respective manufacturer's instructions.

3.3 FULL BODY HARNESS

Use only a full body harness designed, tested, and approved for fall arrest to AS/NZS1891.1 when connecting a person to this winch. Body belts or straps do not provide adequate support to the body to prevent serious injury or death in the event of a fall.

3.4 FALL PROTECTION

Activities involving working at heights require the use of equipment to protect the worker in the event of a fall. Suitable fall protection must be provided as required by Government regulations when using the Analog Series Davit System and related equipment.

3.5 CONFINED SPACE SAFETY

When the Analog Series Davit Arm is used as part of a system involving work in a confined space, always follow an approved confined space safety plan meeting Safe Work Australia CONFINED SPACES Code of Practice.

3.6 SWING ANGLE

Care must be taken at all times to minimize the potential for swing fall when working at heights. At no time should the angle of a winch or SRL line exceed 5 degrees with respect to the vertical (see Figure 5).

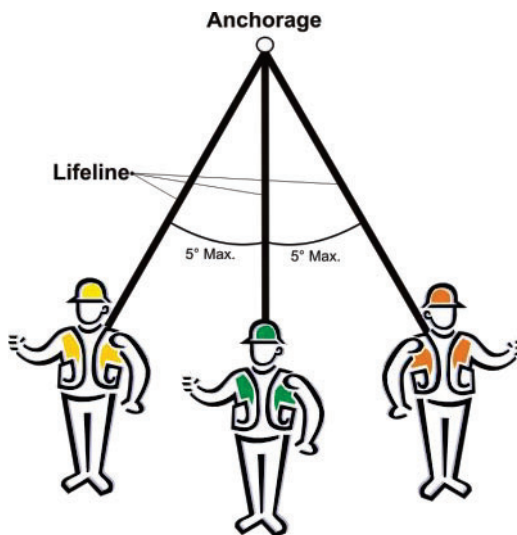


Figure 5, Maximum Swing Angle

4.0 SYSTEM SET UP & ASSEMBLY

The Analog Series Davit Arm is designed for use in conjunction with various accessories to meet different requirements. These may include winches, davits, self-retracting lifelines (SRL's) and full-body harnesses. All installations must be approved by a Qualified Person.

4.1 SET-UP / INSTALLATION OF MOUNTING BASES

The Analog Series Davit Arm is designed for use in various types of permanent mount bases depending on the given application.

Mounting bases must be set up or installed and used on an anchorage meeting the strength requirements as specified in Section 3.1.

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4.3 DAVIT INSTALLATION & ADJUSTMENT

Insert the davit into the sleeve on the base as shown in Figure 6, and check that the davit rotates freely in the sleeve.

Adjust the offset of the davit as required for the job at hand by removing the QUICK RELEASE PIN and sliding the RE-DIRECT TROLLEY into 1 of 3 positions available, reinstall QUICK RELEASE PIN.

4.4 WINCH, SRL, & ACCESSORY INSTALLATION

Please refer to the Operator's Manual provided with all BTS accessories at the time of purchase for detailed information on the installation of Winches or SRL's onto the Davit System.

SRL's or other energy absorbing devices selected for use with this Davit must have a Maximum Arrest Force (MAF) rating of 4kN or less, and/or must be selected by a Qualified Person to maintain an acceptable factor of safety on the system.

Accessories are mounted using a channel style bracket (As shown in Figure 7) which attaches to the davit post via 2 quick release pins, and to which various other adaptors may be mounted.

If you are using a BTS Pro-Series Winch and / or BTS self-retracting lifeline (SRL) with your Davit System:

- Insert the slotted tube on the back of the winch or SRL into receiver tube mounted on the tripod as shown in Figure 8a and 8b.
- Depress the 2 opposing buttons on the "BTS Klik" connector, and insert the tube until both buttons engage fully as shown in Figure 8c.

For accessories not supplied by BTS, the Qualified Person responsible for the design, installation, and use of the system must provide detailed information regarding the installation of the winch or SRL onto the system.

Install any additional accessories required for the job at hand according to the appropriate Operator's Manual or other user instructions as applicable.

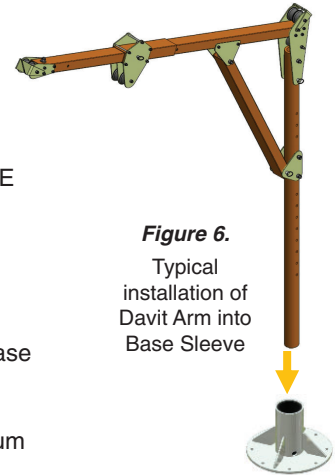


Figure 6.
Typical
installation of
Davit Arm into
Base Sleeve

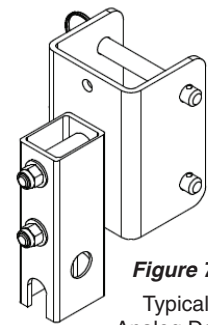
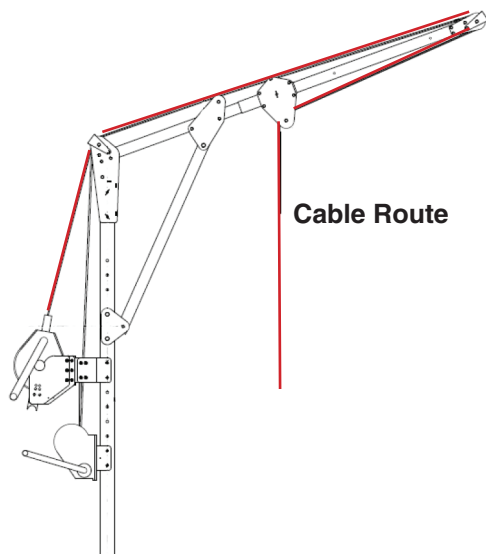


Figure 7.
Typical
Analog Davit
Accessory
Mounting
Bracket



Cable Route

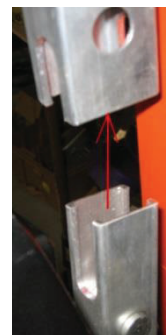


Figure 8a



Figure 8b



Figure 8c

Figure 8. BTS Winch / SRL installation



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4.5 SYSTEM OPERATION

Once all accessories have been properly installed onto the system, accessory operation is as outlined in the applicable Operator's Manual. Manuals for winches, SRL's, or other accessories provided by BTS are provided with the equipment at time of purchase. Replacement manuals are available from BTS or your local dealer. No person shall use these products without receiving proper training as outlined in Section 5. All users must fully read and understand this manual and any other instruction manual(s) related to the system being used, or have the instructions explained to them, before using this equipment.

4.6 INSPECTION

The Analog Series Davit Arm must be inspected before each use as outlined in Section 6.1.

Any problems must be reported immediately to your supervisor, and the equipment labelled to prevent further use until it has been repaired.

NOTE: Any time a winch is returned to a factory authorized service center for repair, please provide photocopies of all previous Inspection Log sheets for that winch to assist with diagnosis and processing of any warranty claims.

Please obtain a Returned Goods Authorization number from the service center before sending your winch for service.

5.0 TRAINING

Any worker using this Analog Series Davit Arm must receive appropriate training from their employer on all equipment involved prior to operating. Users must fully read and understand this manual and any other instruction manual(s) related to the system being used, or have the instructions explained to them, before using this equipment.

6.0 INSPECTION

6.1 BEFORE USE INSPECTION

The Analog Series Davit Arm must be inspected before each use as described in Sections 6.1.1 to 6.1.2. Report any problems or concerns to your supervisor, and do not use the equipment until they have approved doing so.

A sample Inspection Log is provided on Page 12 of this manual. Please make photocopies of this sample to record all inspection results.

6.1.1 Cleaning and Lubrication

If required, clean and lubricate the Analog Series Davit Arm and all its parts as outlined in Section 7. Do not use solvents or other chemicals to clean the base.

6.1.2 Physical Damage

Inspect the Davit System and all accessories for physical damage; bent parts, loose or missing hardware or parts, and missing, or illegible labels (see Figure 9). Replacement labels are available from your dealer by ordering the part number shown on each label.

Note: Not all labels shown may be present on your equipment, as some are related to standards and certifications that may not apply to your jurisdiction.

While minor cosmetic damage will not affect the structural integrity of the Analog Series Davit System, seriously damaged equipment **MUST BE** removed from service and returned to an authorized service center for repair prior to further use.

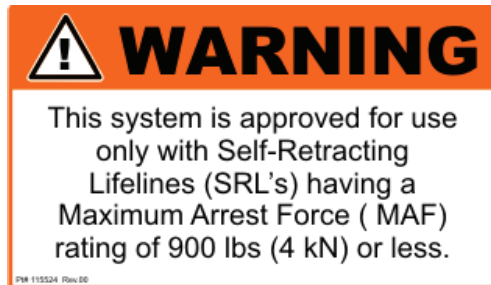
Additionally, inspect any accessories being used with the Davit System as instructed in the Operators Manual provided by the respective manufacturer at the time of purchase.

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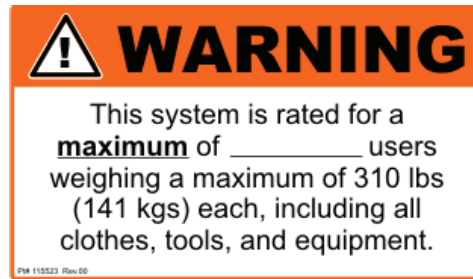
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Figure 9. BTS Analog Series Davit System Labels



Pt# 115524



Pt# 115523



Pt# 115526



Pt# 115527



Pt# 115528

Tuff Built Products Inc. Model:	
Date of Manufacture (mm/dd/yy):	
Part #:	
Serial #:	

Pt# 115281



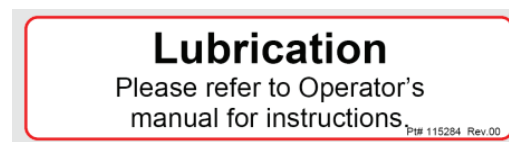
Pt# 115285



Pt# 115286



Pt# 115287



Pt# 115284



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6.2 ANNUAL INSPECTION

At least annually, and more frequently if subjected to harsh conditions or excessive use, the Analog Series Davit System **MUST** BE given a detailed inspection by a competent person as described below, and the results recorded in an Inspection Log. A sample Inspection Log is provided on Page 13 of this manual. Please make photocopies of this sample to record all inspection results.

Following the instructions for Before Use Inspection procedure contained in Section 6.1.1 to 6.1.2, inspect the equipment for physical damage and record the results in the Inspection Log.

IMPORTANT: Be sure to review any previous inspection records to be aware of existing concerns and to allow for re-inspection of any potential problem areas. Cumulative findings may lead to the need for repair or replacement when looked at together.

NOTE: Any time equipment is returned to a factory authorized Service Center for repair, please provide photocopies of all previous Inspection Log sheets for that product to assist with diagnosis and processing of any warranty claims or service issues.

Please obtain a Returned Goods Authorization number from the service center before sending your equipment for service.

7.0 MAINTENANCE, CLEANING, LUBRICATION and STORAGE

The Analog Series Davit System has been designed to provide many years of trouble free service, and requires little in the way of routine maintenance.

Any loose fasteners must be tightened, and the equipment returned to a factory authorized service center for structural repair if necessary.

Basic cleaning should be performed at least annually (as outlined in Section 6.2.1) as part of the annual inspection or more frequently as required when used in harsh conditions.

7.1 Cleaning the Analog Series Davit Arm

Use a solution of warm water and a mild detergent to clean the Analog Series Davit System and its labels. Do not use solvents or other cleaners to clean the equipment, as this may result in damage to the powder coat finish.

7.2.0 Lubrication

7.2.1 Rollers

Lubricate Rollers using a penetrating Dry Film lubricant as required.

7.2.2 Sliding Assemblies Lubrication

After cleaning and inspection as instructed in Section 6.2.3, wipe all sliding surfaces with a clean rag dampened with moisture displacing penetrating lubricant.

7.3 Storage

Store the Davit Arm and other related safety equipment out of direct sunlight in a cool, dry area away from dust, chemicals or other harmful material. Always inspect before using equipment that has been stored for any extended period of time.

7.4 Parts Considered Normal Wear and Tear for Warranty Purposes

Pulleys, Rollers, Labels, Adjuster Screws, Rubber Foot Pads (where applicable), and BTS-Klik Connectors are considered subject to normal wear and tear during use and are not covered under warranty except in cases of material or manufacturing defects.

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8.0 SPECIFICATIONS

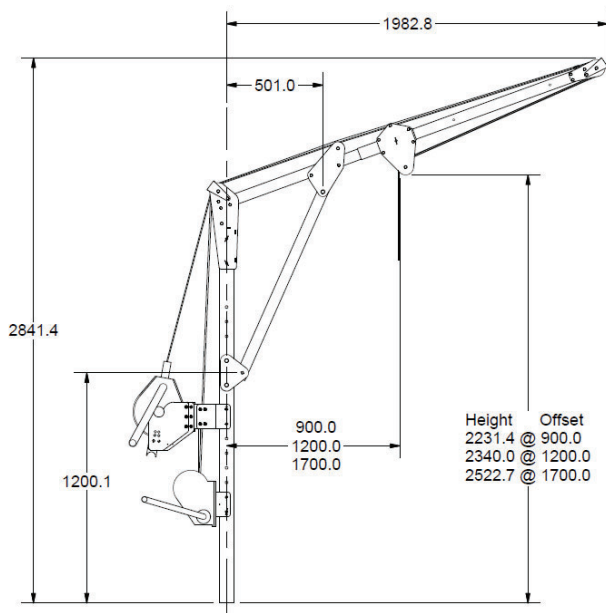
8.1 MATERIALS OF CONSTRUCTION

The Analog Series Davit assembly is principally constructed of powder coated 6061-T6 aluminum.

The Vertical Post is constructed of heavy wall 6061-T6 Aluminum.

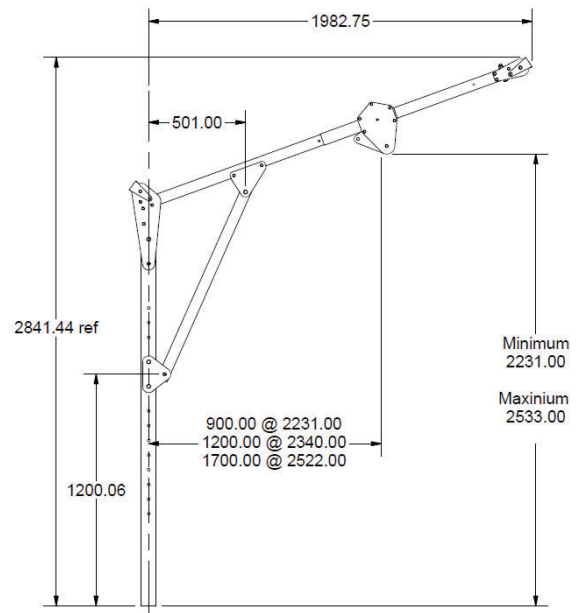
Steel hardware and connecting brackets are zinc plated and/or powder coated for corrosion resistance.

Plating conforms to ASTM B633-85, Type III, SC2.



50049 Dimensions

Shown with mechanical devices
mount to Davit upright tube
(devices are not included with system)



50048 Dimensions

ANALOG DAVIT SYSTEM INSPECTION LOG

Analog Series Davit System Model Number: _____

Analog Series Davit System Serial Number: _____

Date of Manufacture (dd/mm/yy): _____

Purchase Date (dd/mm/yy): _____

Inspection Item	PASS	FAIL	Details / Location of Damage	Disposition Repaired /Scrapped	Approved for use by
Physical Damage to structure					
Damaged, loose,corroded or missing rollers, hardware or connectors					
Missing or illegible Labels					
Sticking or corroded BTS-Klik connectors or sliding tubes					

Date of Inspection: _____

Inspected By: _____