Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury, Kent. CT4 7HG. England.
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR001

Ride Type: Spin Out
Date: September 8,1998

Rides Included: All Rides
Parts Supplied: Yes

Purpose: Reservoir installation for Spin Out Base Gearboxes

Parts included:

1 - Two tank oil reservoir assembly.
1- Connector hose 20 ft.
1- Connector hose 15 ft.
1- Gearbox / hose adaptor fitting
2- Mounting Bolts
1- 3/8" Tap
1- 5/16" drill bit

Installations Instructions;

Set oil tank assembly against ride support frame just behind center safety cylinder approximately 1 foot above the floor. Assure that center cylinder has adequate clearance.

While holding in place the reservoir, mark mounting holes. Drill and tap holes to 3/8"

Mount reservoir in place.

Remove breather tube elbow from each base gearbox and install adapter fitting for hose connection on gearbox.

Connect two hoses to base gearboxes. Longer hose to front gearbox and shorter to rear. Run hoses through base frame following hydraulic hoses already in place. Connect hoses to bottom fitting of reservoir.

Wire tie up any loose hose and run any excess hose in longest loop possible.

Filling instructions:

Remove top 6 bolt cover from each gearbox and hose from fitting installed previously.

Add oil to reservoir while end of hose by gearbox is in small container. When oil starts to come out of hose, reconnect hose to gearbox.

Continue to add oil to each reservoir, one at a time until gearboxes are full. (see recommended oil types in manual)

When full, bolt cover back on and fill reservoir until it is half way on the sight glass.

Install breather cap on top of reservoir.

Run ride and monitor oil level. If level lowers add oil to reach 1/2 sight gage.

As ride operates oil will warm and expand increasing the level on the sight gauge. This is normal. In some cases hot oil may come out of the breather cap. This indicates that the reservoir is too full but will not harm gearbox. Wipe up excess oil spill and do not add additional oil until necessary. Do not fill past 1/2 sight gauge if oil is cool.

After installation of reservoirs it is necessary that oil level checks are done on a daily basis by visually checking oil level on sight gage. Occasional checks during daily operation are also recommended. As long as oil remains in sight gage gearboxes are full of oil.

Important

If oil disappears from sight gage stop ride immediately and check condition of gearbox. Look for oil leaks or reason for loss of oil. Repair leak prior to rerunning the ride. If oil loss is slight refill reservoir and monitor closely oil level.

If you have any questions please call AmTech at 817-641-5045.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Safety Bulletin

Bulletin No: SOSA001

Ride Type: Spin Out
Date: November 23,1998

Rides Included: All Rides
Parts Supplied: N/A

Purpose: Recommended tightening torque for bolts connecting vehicle arm to sweep.

It has come to the attention of **Tivoli Mfg. Ltd.** that there has been cases where the bolts connecting the vehicle arm to the sweep have become loose during operation. The cause of this has been due to insufficient tightening. To prevent this from happening in the future **Tivoli Mfg. Ltd. requires that these 16 mm bolts be tighten to a torque value of 100 Ft. Lbs.** They must be torqued to this value on set up and checked on a daily basis.

Always inspect these bolts and nuts on set up for any damage and replace any defective or deformed bolts immediately. It is still necessary that these bolts be changed every 400 hours or annually which ever comes first.

If there are any questions please call AmTech at 817-641-5045.

For Tivoli Mfg. Ltd

AmTech / Amusement Technologies Int'l. Inc.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR002

Ride Type: Spin Out
Date: January 17, 1999

Rides Included: S/N 48100230
Parts Supplied: Yes

Purpose: Tower Gusset

Tivoli Manufacturing Ltd. has issued this Service Bulletin under the direction of its structural engineering firm in order to maintain the ride's high degree of safety and structural integrity.

It is necessary to add a gusset around the "Cut-out" section of the support tower for the motor. This gusset is supplied with this Service Bulletin. Follow the instructions below for placement and welding specification of the gusset. All welding tasks must be accomplished by a Certified Welder.

This Service Bulletin has been sent to you via Certified Return Receipt Requested and you are required to confirm the completion of the work within 30 days from receipt of this bulletin and parts. If you need an extension of time, please contact our office.

Materials Supplied: Tower Gusset, 2 Aluminum Cover Inserts, 7018 welding rods, 1 piece of bar stock, Paint Primer, Pink Touch-up Paint, Drawings and Instructions.

Ride Preparation
If the ride is folded up on the trailer, you must follow the Set Up Procedures outlined in the manual to the point where the side walls are down and the cars are backed away from the racked position. The arms must still be folded in and pinned together. Proceed to Step 1.

If the ride is already set up for operation, proceed to Step 2.

Step 1: With the ride in the Manual Operating Mode, rotate the arm into the up right position.

Step 2: Note the existing clearance at positions 1 and 2 on Drawing SOSR002-2. Raise the arm so the electrical motor is away from the tower. With the ride in the raised position, the tower is easily accessible.

TURN POWER OFF AT THE MAIN SWITCH

Step 3: Grind all the welds on the tower that would interfere with the gusset laying flat on the tower. Use a wire brush to remove all paint and primer that might interfere with the weld quality.

Step 4: Remove the cover over the Resistor banks. (Note: leave the Resistors mounted to the frame for now. It is possible that only the cover will need to be modified and not the placement of the frame.) **However, extreme care must be taken when positioning the gusset and DO NOT DAMAGE THE RESISTORS.**

CAUTION: ATTACH THE WELDER GROUND LEAD DIRECTLY TO THE TOWER FRAME TO AVOID DAMAGE TO THE SLEW RING BEARINGS ON THE RIDE DURING WELDING.

Step 5: (Refer to Drawing SOSR002-1) Tack weld a piece of 1" x 1/2" bar stock so that the top edge is 9 1/2" below the lip of the cut-out. This will serve as a "stop" for the gusset to rest on before welding.

Step 6: Position the gusset so it rests on the stop and centers to the cut-out. There should be about 4 inches of over hang on each side of the tower. Be sure there is about 1 inch of clearance between the gusset and the Resistor Bank frame. Place a few small tack welds around the gusset just to hold it in position.

Step 7: Carefully lower the ride so the motor goes into the cut-out. Pay close attention to the clearance between the motor and the gusset. Remember that while using the manual control button for lowering the arm, the cylinders will not stop lowering immediately upon releasing the button. This means you must allow for the ramp time and distance required for the arm to stop lowering in order to prevent damage to the motor or guard.

Step 8: If there is sufficient clearance, go to Step 9. If there is NOT sufficient clearance, call our office for further instructions.

Step 9: Follow the Welding Specifications shown on Drawing SOSR002-1.

Step 10: (Refer to Drawing SOSR002-3) Place the triangle shaped piece of aluminum on the corner of the Resistor cover. Mark the diagonal line. Cut 4 inches into the cover as shown.

Step 11: Primer and Paint the gusset as needed with materials supplied.

If you have any questions, please consult our office.

For Tivoli Manufacturing Ltd.

AmTech / Amusement Technologies Int. Inc.
Tel: (817)-641-5045

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury, Kent. CT4 7HG. England.
Telephone: 01227 731156 Facsimile: 01227730137

SAFETY BULLETIN

RIDE: Spin Out Serial Numbers: All DATE: May 6, 1999

SUBJECT: Minimum Passenger Height BULLETIN NUMBER: SOSA002

****

Our customers have requested that the Secondary Lap Bar Locks on the Spin Out be modified so to accommadate a slightly larger passenger. The result of this modification is that a change in the Minimum Height Requirement for the **Spin Out Amusement Ride** is necessary. The new Minimum Height Limit is now **52 inches.** Please insert these new pages into your manual and discard the old pages. Instruct your ride operators on the new requirements.

Enclosed with this Safety Bulletin is a new Identification Plate with pertinent information as required in ASTM F24 Standard F 698 - 88. Please replace the old plate with the new plate. You are required to return the old plate to the address below.

Amusement Technologies Int. Inc.
3306 N. Main St.
Cleburne, Tx. 76126
Phone #: (817) 641-5045

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury, Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Safety Bulletin

Bulletin No: SOSA003

Ride Type: Spin Out
Date: August 10,1999

Rides Included: All Electric Drive Rides
Parts Supplied: At time of replacement

Purpose: Inspection and replacement of arm rotation bearing

It has come to the attention of **Tivoli Mfg. Ltd.** that there has been cases where the arm slewing ring bearing has experienced premature wear. At this time it has not been determined as to the exact cause of the wear. In order to prevent any possible problems with this bearing, Tivoli Mfg. Ltd. has chosen to replace the bearings on all the electric drive rides with the Rollix bearing (part number 07-1075-01-ZZ-10) installed. It will be necessary to contact Amtech / Amusement Tech. Int'l. Inc. to arrange a time that is convenient to have the bearing replaced. The following will be necessary to change the bearing.

1. 1 - 25 ton crane equipped with slings and straps. Approx.. 4hrs.
2. 1 - Fork lift with extension to lift off old bearing and set up new bearing.
3. 2- Laborers.
4. Various metric tools.

The whole process of changing the bearing should be accomplished in less than 8 hours.

Until the new bearing is installed it is necessary to inspect the bearing on a regular basis. Report to AmTech/Amusement Tech. Int'l Inc. if:

1. Metal filings are found in the grease around the seal of the arm bearing.
2. The space between the two main parts of the bearing where the seal rides exceeds 3/16" comparing top of bearing to bottom while ride is in loading position.

If there are any questions please call AmTech/Amusement Tech. Int'l. Inc. at 817-641-5045.

For Tivoli Mfg. Ltd
AmTech / Amusement Technologies Int'l. Inc.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR003

Ride Type: Spin Out
Date: September 7, 1999

Rides Included: All
Parts Supplied: Yes

Purpose: Replacement of output shaft assembly of base rotation gearboxes.

Tivoli Manufacturing Ltd. is issuing this Service Bulletin for all rides manufactured in 1998 and 1999. It has come to Tivoli Mfg. Ltd.'s attention that there have been two cases of output shaft bearing failure on the base rotation gearboxes of the Spin Out. In order to prevent the possibility of this happening again, Tivoli Mfg. Ltd. has decided to replace the output shaft assembly of the two base rotation gearboxes as soon as possible to prevent any further problems.

Please contact AmTech/Amusement Technologies Int'l. Inc. in order to make arrangements for the replacement of the gearbox out put shaft on your ride as soon as possible.

The output shaft assembly kit will consist of the following

2	Output shaft assemblies
2	Adapter plate kits
2	pinion spacers
2	pinion cap plates
20	Gearbox mounting bolts
2	Platform deck plate motor covers.

Please contact AmTech/Amusement Technologies Int'l. Inc. if you have any questions.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury, Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Safety Bulletin

Bulletin No: SOSA004

Ride Type: Spin Out
Date: February 18,2000

Rides Included: All Rides
Parts Supplied: At request

Purpose: Crack on rotating base frame

It has come to the attention of **Tivoli Mfg. Ltd.** from the original designers of the Spin Out, **KMG Europe BV,** that there has been cases where cracks have been detected on the center I beam of the rotating base frame as described in the accompanying drawings.
Tivoli MFG. Ltd. Requires that all rides be inspected as soon as possible to determine if any cracks are detected.

If no cracks are detected the gusset plate must still be installed as described in step 4 below.

If cracks are detected as described in the attached drawings complete repair procedures as described below by repairing crack and installing gusset plate.

1. Locate end of crack and drill a 1/4" hole through beam where crack ends.
2. Grind and clean out crack to about 1/8" of bottom of beam.
3. Weld up ground out crack and grind of weld flush with I beam.
4. Install gusset plate as described in attached drawings and weld in place.

All welding must be accomplished by a certified welder.

Make sure that all trailer air lines, electric motor, and electric lines are protected before welding.

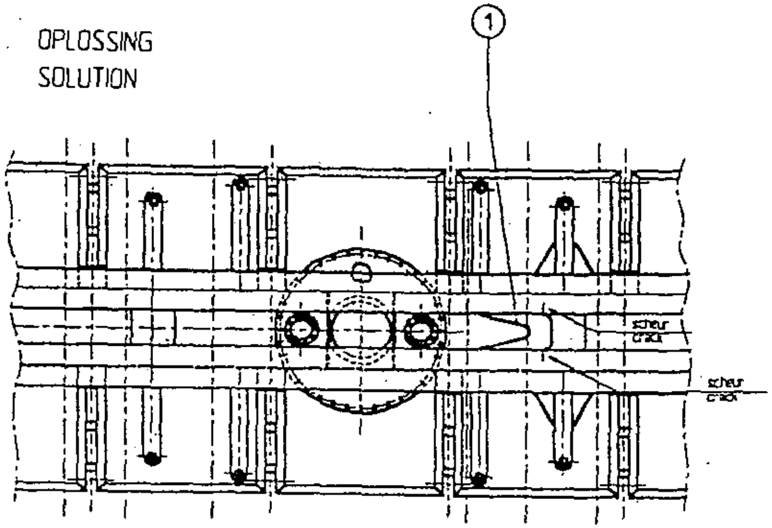
Gusset plates are available free of charge and can be ordered through Amtech / Amusement Technologies Int'l. Inc.

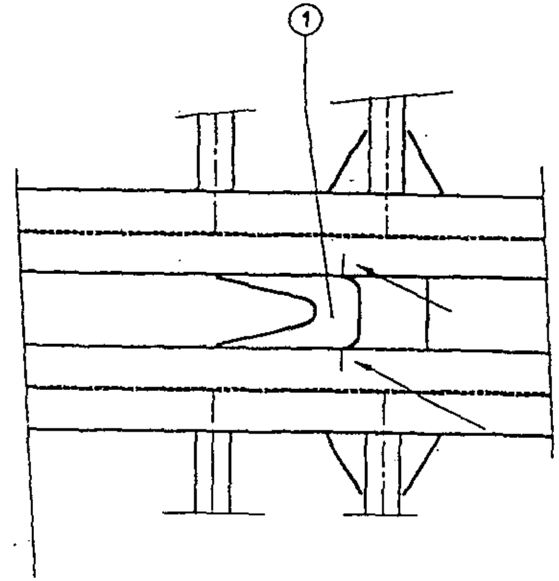
If there are any questions please call AmTech/Amusement Tech. Int'l. Inc. at 817-641-5045.

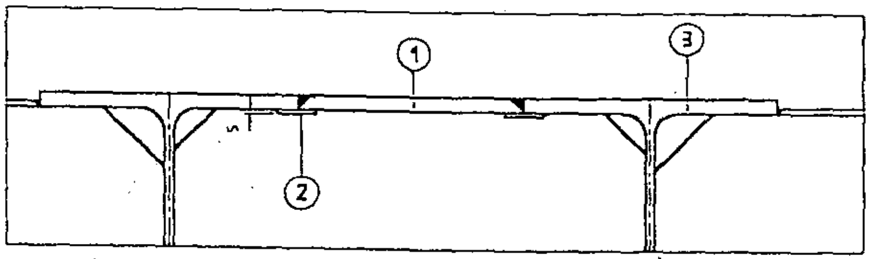
For Tivoli Mfg. Ltd
AmTech / Amusement Technologies Int'l. Inc.

KMG Europe BV
Parallelweg 35
7161 AE Neede
The Netherlands
Tel +31 (0)545 294545
Fax +31 (0)545 291306

OPLOSSING
SOLUTION

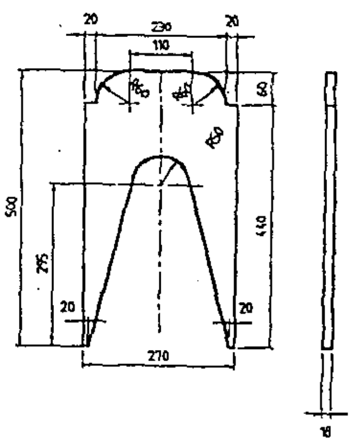






1

AFMETINGEN IN MM
MEASUREMENTS ARE IN MM



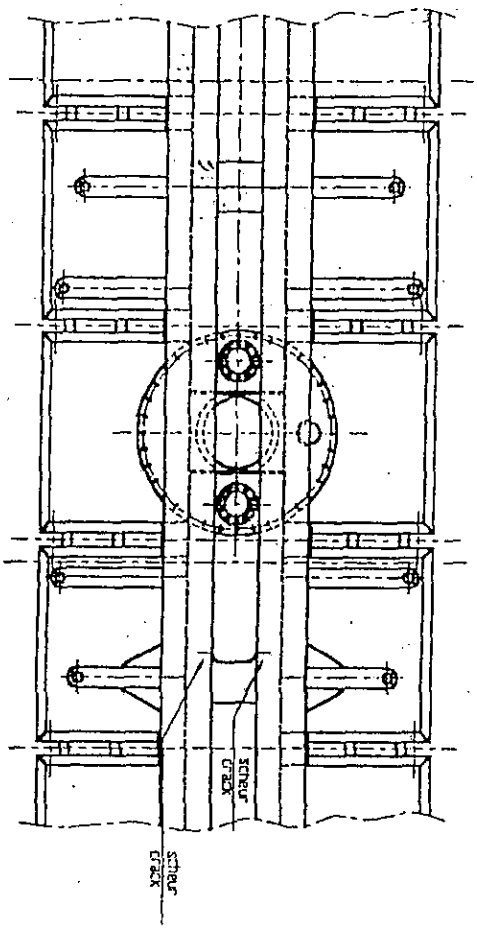
1. LAS STRIP POS. 2 ONDER DE CHASSIS BALKEN POS. 3
   WELD PLATE POS. 2 UNDER THE CHASSIS~~BALKEN~~ POS. 3
   BEAMS

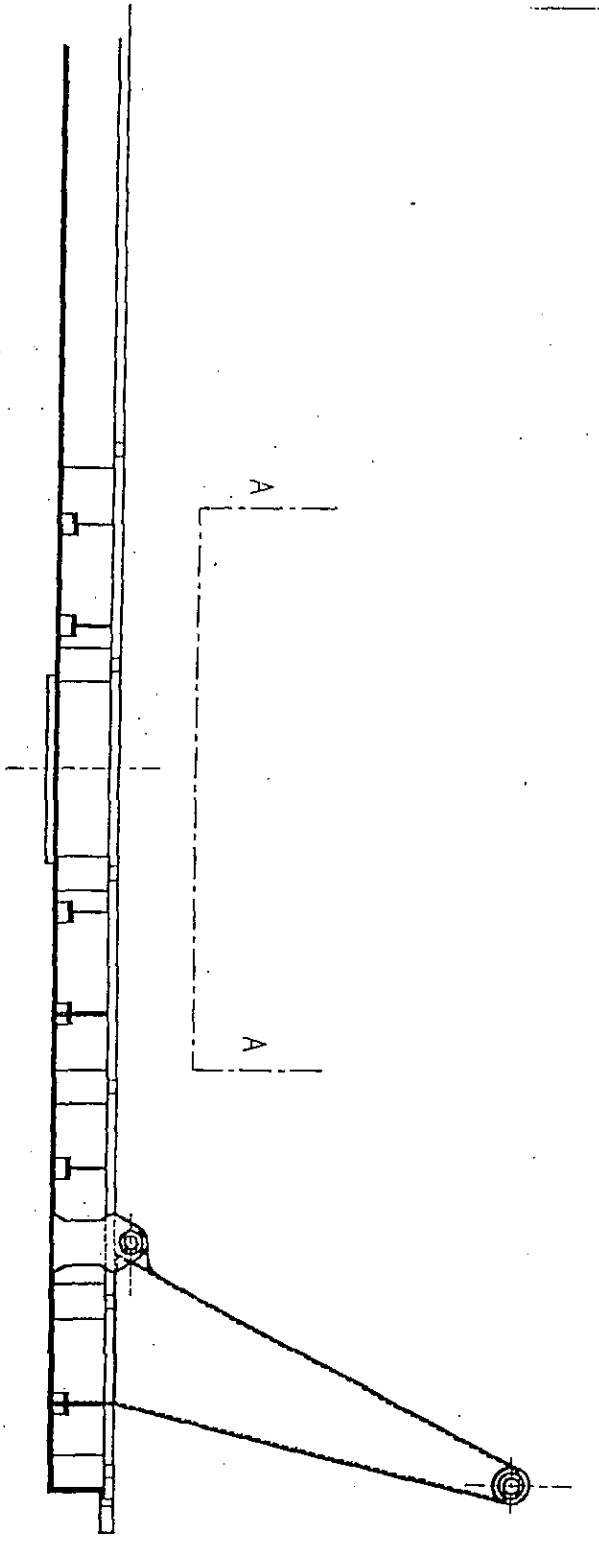
2. LAS PLAAT POS 1 IN DE TRAILER
   WELD PLATE POS. 1 IN THE TRAILER

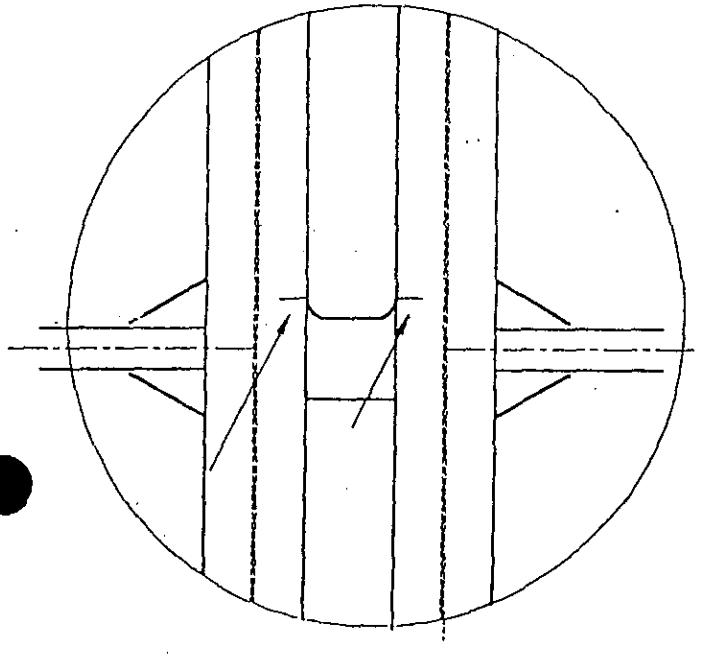
3. REPAREER DE SCHEUR. DOOR DE SHEUR UIT TE SLIJPEN EN DICHT TE LASSEN
   REPAIR THE CRACK . BY GRINDING OUT THE CRACK AND WELD THE HOLE.

KMG Europe BV
Parallelweg 35
7161 AE Neede
The Netherlands
Tel: +31 (0)545 294545
Fax: +31 (0)545 291306

AANZICHT A-A
VIEW A-A







Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR004

Ride Type: Spin Out
Date: March 8, 2000

Rides Included: All
Parts Supplied: Yes

Purpose: Inspection of base bearing attachment bolts.

Tivoli Manufacturing Ltd. is issuing this Service Bulletin for all rides manufactured from 1998 through 2000. It has come to Tivoli Mfg. Ltd.'s attention that there have been two cases where as many a 6 out of 36 of the bottom base slewing ring bearing attachment bolts which are located inside the base support frame have either become loose or broke.

As of this time the cause has not been determined. For this reason Tivoli MFG. Ltd. is requiring a weekly check of these bolts to assure that they remain tight. It is not necessary to torque these weekly. The inspector should check all bolts with a 24mm open end or box end wrench. The bolts should be tight enough that they can't be tightened further with this wrench. If loose or broken bolts are found please replace all with the following:

36 16mm x 50mm (long) partial thread, Grade 10.9 metric bolts

36 Hardened flat washers.

These bolts should be replaced in a star pattern and tightened to a torque value of:

210 ft. lb. for black finish bolts.
200 ft. lb. for Zinc plated bolts.

Bolts are available from Amtech / Amusement Technologies Int'l. Inc. at no charge if ordered within 30 days of this bulletin.

Please add a weekly visual inspection of these bolts to your regular weekly inspection procedure.

Please contact AmTech/Amusement Technologies Int'l. Inc. if you have any questions.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR005

Ride Type: Spin Out
Date: April 12, 2000

Rides Included: All Rides
Parts Supplied: N/A

Purpose: Operator's Manual Additional Information.

Tivoli Manufacturing Ltd. is requesting that the attached 2 additional inspection supplements be added to the operators manual for all Spin Out Rides.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Maintenance Inspection and Update

Ride: Spin Out

Supplement #:001
Pages: 3

Arm Slewing ring inspection and lubrication supplement

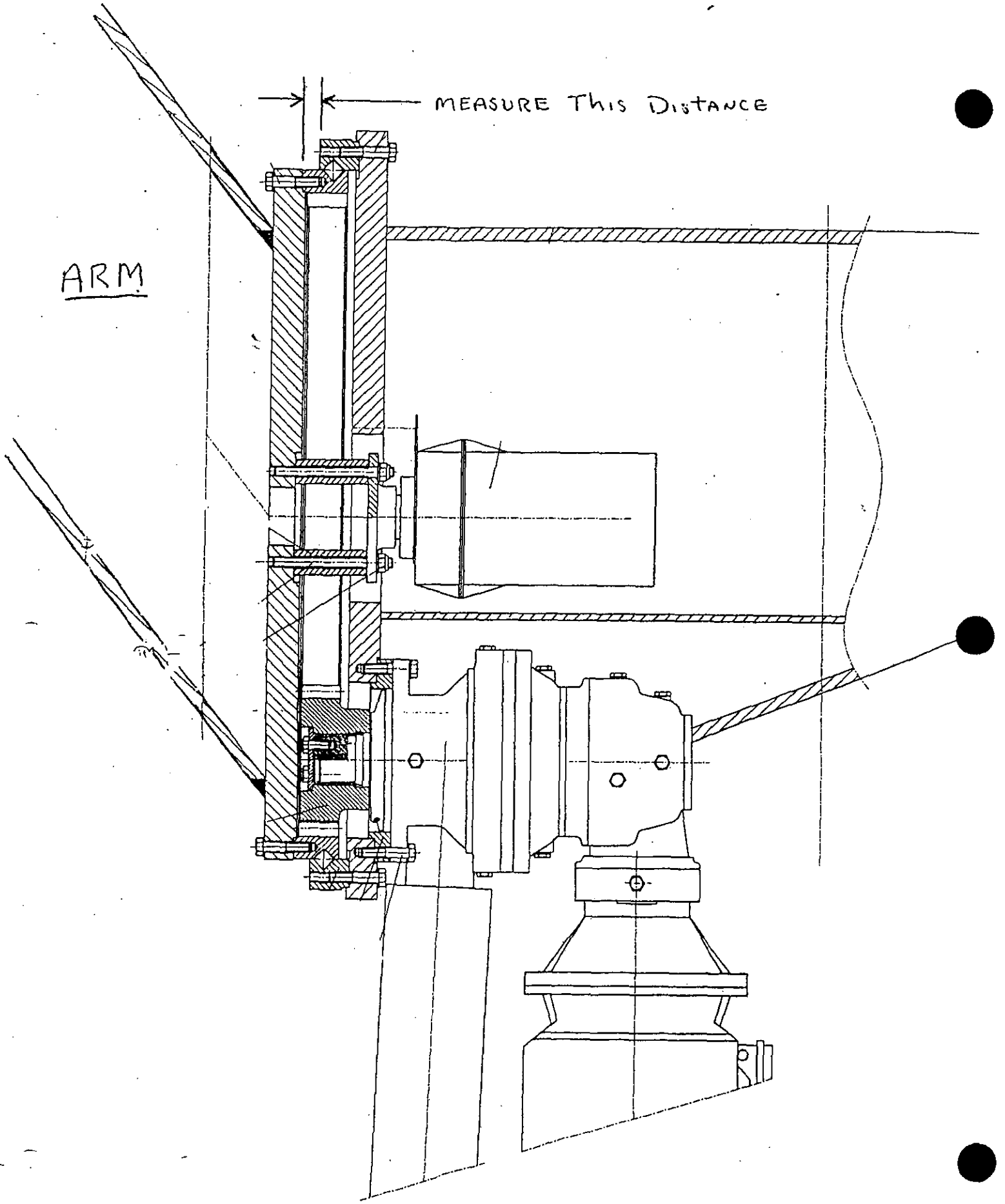
Inspection

Tivoli MFG. Ltd. requires the following inspection on the arm slewing ring to determine if bearing wear exceeds recommended tolerances.

Excessive wear can be caused by lack of lubrication, Wrong type of lubricant, or abuse. Proper lubrication is explained on page 3

Measure the distance as described on page 2 at the 12:00 O'Clock position of the arm slewing ring and record measurement in ride log book. Check this measurement on a monthly bases. If the measurement increases over 1/8" the bearing is wearing to a point that it must be replaced.

If the bearing is starting to wear metal filings will be noticeable in the grease around the seal. Inspect this on a weekly bases.


MEASURE THIS DISTANCE
ARM

Lubrication

All Slewing ring type bearings are designed to be lubricated on a daily bases. The seals on these bearings are designed to keep contamination out and not retain grease. Grease being pushed out of the seal during operation is a normal part of the bearing operation. This is why it is necessary to grease the bearing on a daily bases. As described in the manual the bearings should be greased while they are rotating (if possible) with a high grade Lithium base multi purpose high pressure grease. Use of other type grease (ie: moly) are not acceptable an can void the warranty.

Please adjust your regular maintenance to include the above.

If you have any questions please contact **AmTech** / Amusement Technologies Int'l. Inc.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Maintenance and inspection update

Ride: Spin Out

Supplement #: 002
Pages: 2

Test procedure for arm lift cylinders safety system

The following is the test procedure for testing the back up system used to prevent the arm from lowering unless the arm and sweeps are in the proper position.

1. Turn on power to ride. Start drives.
2. Turn **OFF** Key switch in control booth, then switch the control selector switch on the main control enclosure on rotating base to the **"Build"** position.
3. Using the **"Raise Arm"** button, raise arm to fullest extent.
4. Make sure that the arm is **"Locked"** (push "Arm Lock" button to be sure and visually check locking cylinder).
5. Open main control console and turn **OFF** 6CB (Filter and Locking Pump circuit breaker).
6. With filter and Locking pump OFF, close doors and press the **"Arm Lower"** button.
7. The Arm **SHOULD NOT** Lower. This indicates that the pilot check valves at the bottom of the cylinders are working properly. They require oil pressure created from the filter and locking pump in order to be activated. This test assures that they are functioning properly.
8. If the Arm does lower there is a problem with the back up system and the cause must be found and rectified before ride can be put into operation.

A. Check operation of locking cylinder and assure the plate is activating the plungers on the (2) two hydraulic valves and the valves are working properly.

B. **Do Not** remove pilot check valves unless cylinders are drained completely. Drain by installing safety hoses to reservoir and cylinder. Removing pilot valves while under pressure will cause damage to valves.

9. After test is completed, turn back on 6CB before test running of ride.

This inspection should be added to your regular daily check list.

Please contact AmTech / Amusement Technologies Int'l. Inc. at 817-641-5045 if there are any questions.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR006

Ride Type: Spin Out

Date: April 12, 2000

Rides Included: All rides with two pin sweep to center hub attachments
Parts Supplied: If Requested
Pages: 2

Purpose: To allow additional lubrication of sweep attachment pins to prevent difficultly in folding sweeps during set up and tear down.

Tivoli Manufacturing Ltd. has become aware of some rides where the hinge / attachment pins used to hold the sweep to the center hub have become tight and make folding the sweep up for set up or tear down difficult. Tivoli Manufacturing Ltd. is recommending that grease fittings be installed in the pin sweep hub of the four (4) sweeps that pivot on their pin when folding.

Installation Instructions:

1. With both pins installed in sweep, Remove the threaded collar from the bottom of the pin below the sweep hub. This requires the removal of a set screw locking the collar to the threads.

2. With the other pin slightly loosend, remove hing pin by tapping out with hammer and brass or alluminum rod.

3. After pin is removed drill a 3/16" hole through the center of the sweep bushing collar so the hole comes through between the two internal bushings.

4. After all 3/16" holes are drilled 2 per sweep, 8 total, counter bore a 21/64 hole approximately 10mm deep (3/8"). As in step 1 use a shop vac to collect filings while drilling.

5. Tap counter bore with a 1/8" pipe tap, Clean toughly.

6. After installing grease fitting lubricate with a good quality lithium grease on a weekly bases.

If there are any questions Please call AmTech / Amusement Technologies Intl. Inc. at 817-641-5045

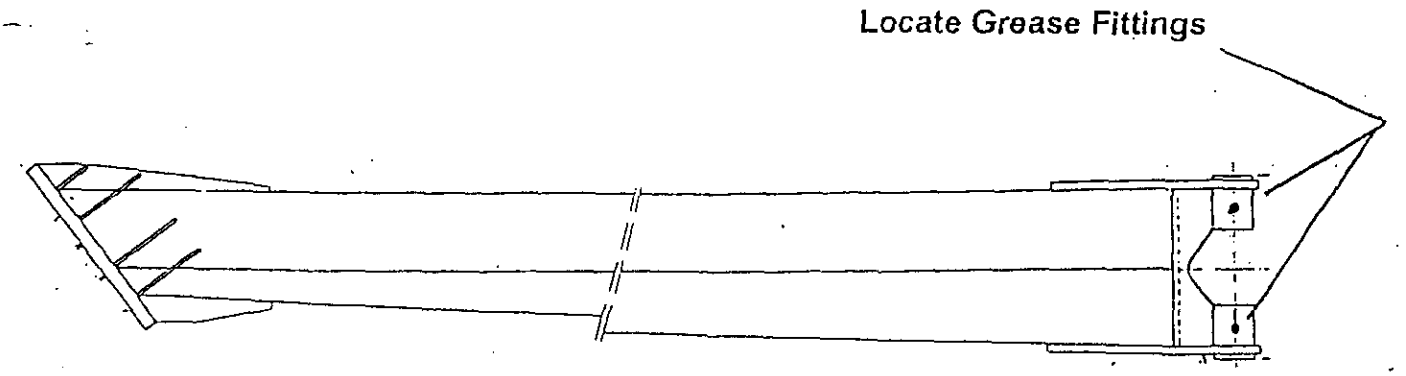


Fig. 1

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR007

Ride Type: Spin Out
Date: May 10, 2000

Rides Included: All
Parts Supplied: Available

Purpose: New Vehicle attachment Winch system.

Tivoli Manufacturing Ltd. Has become aware of an improved way to install and remove vehicles from sweep. This system was developed by **Powers Great American Midways** and is available through **AmTech** / Amusement Technologies Intl. Inc. at a reduced cost.

The kit includes:

1- Winch arm
1- 120VAC electric winch.

Also available are 24 swivel casters to be attached to existing car racks.

This kit will eliminate the need for the need for the pallet jack system presently being used.

It will also reduce set up and tear down time by as much as 1 hour.

For availability and more information please contact AmTech / amusement Technologies intl. Inc. at 817-641-5045.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR008

Ride Type: Spin Out
Date: May 10, 2000

Rides Included: All
Parts Supplied: Yes

Purpose: Center light cover hinges.

Tivoli Manufacturing Ltd. has become aware of premature wear on hinge of center flat light fixture. This is the fixture in the center of the sweeps where the control for the lap bars is located. Wear exists where bolt goes through tubing at hinge.

These reinforced hinge kits are available through AmTech / Amusement Technologies Intl. Inc. Free of charge if ordered within 60 days of this bulletin.

Tivoli recommends that these hinge kits be installed as soon a possible. Failure to do so can cause the hinge to break loose damaging the equipment.

If there are any questions please contact AmTech / amusement Technologies intl. Inc. at 817-641-5045. At 3306 N. Main St. Cleburne, Texas 76031.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR009

Ride Type: Spin Out
Date: June 20, 2000

Rides Included: All
Parts Supplied: N/A
Pages: 3

Purpose: Main incommer disconnect switch operation.

Tivoli Manufacturing Ltd. has become aware of two instances where there has been premature failure of the main incommer disconnect switch toggle mechanism on the Spin Out Amusement Ride. Tests done by the electrical department have found that improper operation of this switch is a possible cause of such a failure. In order to prevent any future failures of the toggle mechanism the factory has supplied the following 2 page operating procedure for the switch. Please add the following two pages to your operation and maintenance manual.

If there are any questions please contact AmTech / amusement Technologies intl. Inc. at 817-641-5045. At 3306 N. Main St. Cleburne, Texas 76031.

Advice on Operating Procedure - Main Switch

The main switch fitted in the **'incomer'** box is an automatic type with overload, short circuit and ground fault protection. The switch is also fitted with a **'No-Volt'** release mechanism.

The switch will automatically operate to isolate the power supply in the event of one of the following conditions: -

1) Overload
2) Short circuit
3) Ground fault
4) Loss of main power.

When the switch is activated by any of the above conditions the contacts open and isolate the main power from the ride up-stream of the switch. However the switch is not set to **'off'** but to the **'tripped'** position.

In order to reset the switch to **'on'** you must first correct the fault condition that caused the trip to occur and have the **power turned on** at source - then: -

1) Turn the operating handle from the **'tripped'** position counter-clockwise to the fully **'off'** position.
2) Turn the operating handle from the fully **'off'** position clockwise through a nominal 90 to the fully **'on'** position.

If the switch fails to switch on the most likely reason is that the fault condition that caused the trip still exists. This ***must be eliminated*** before you can proceed.

You must never attempt to force the switch to the 'on' position if the main power is off at source or if a fault condition exists. Any attempt to force the switch into the 'on' position' is likely to result in irrepariable mechanical damage to the switch.

When shutting the ride down during normal use you should always adopt the following procedure: -

1) Bring the ride to rest as normal.
2) Switch the power off at the main switch at the ride incomer.
3) Switch off the power at source.

When opening the ride always: -

1) Switch on the main power at source

2) Switch on the main switch at the ride incomer

3) Start ride as normal.

It is important that you never force the switch into the 'on' position at any time. If it does not set easily to the 'on' position any further force will cause damage.

Tivoli MFG. Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR010

Ride Type: Spin Out
Date: June 20, 2000

Rides Included: All
Parts Supplied: N/A
Pages: 1

Purpose: Ventilation of base gearboxes

It has been reported to Tivoli Manufacturing Ltd. by some operators that the base rotation gearboxes are creating an excessive heat build up due to inadequate ventilation of the gearboxes.

In order to improve the ventilation of these gearboxes Tivoli Mfg. Ltd. is recommending that vent holes be drilled through the aluminum tread plate, directly above the gearbox and electric motor, to allow for an updraft of air through the gearbox cavity.

Approximately 20 - 1/2" equally spaced holes should be drilled through the aluminum tread plate above the open cavity between the I beams of each gearbox / motor.

When drilling holes, remove tread plate from rotating platform and drill elsewhere to avoid metal filings from dropping on motor.

If there are any questions please contact AmTech / amusement Technologies intl. Inc. at 817-641-5045. At 3306 N. Main St. Cleburne, Texas 76031.

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury, Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Safety Bulletin

Bulletin No: SOSA005

Ride Type: Spin Out
(Aka. The Claw, The Maelstrom, El Nino)
Date: July 1, 2001

Rides Included: All Rides
Pages: 2
Parts Supplied: At request

Purpose: Sweep Arm Cracking

It has come to the attention of **Tivoli Mfg. Ltd.** from the original designers of the Spin Out, **KMG Europe BV,** that there has been cases where cracks have been detected on the sweep arms (see attached drawings) of Spin Out rides operating in Europe.

As of this time there has been no reports of this type cracking from operators of Spin Outs rides operating in the USA.

Tivoli Mfg. Ltd requires that all operators inspect the areas indicated on the attached drawings. If cracking is detected please report to AmTech / Amusement tech. intl. Inc. at 817-641-5045 for repair procedures and gusset kits.

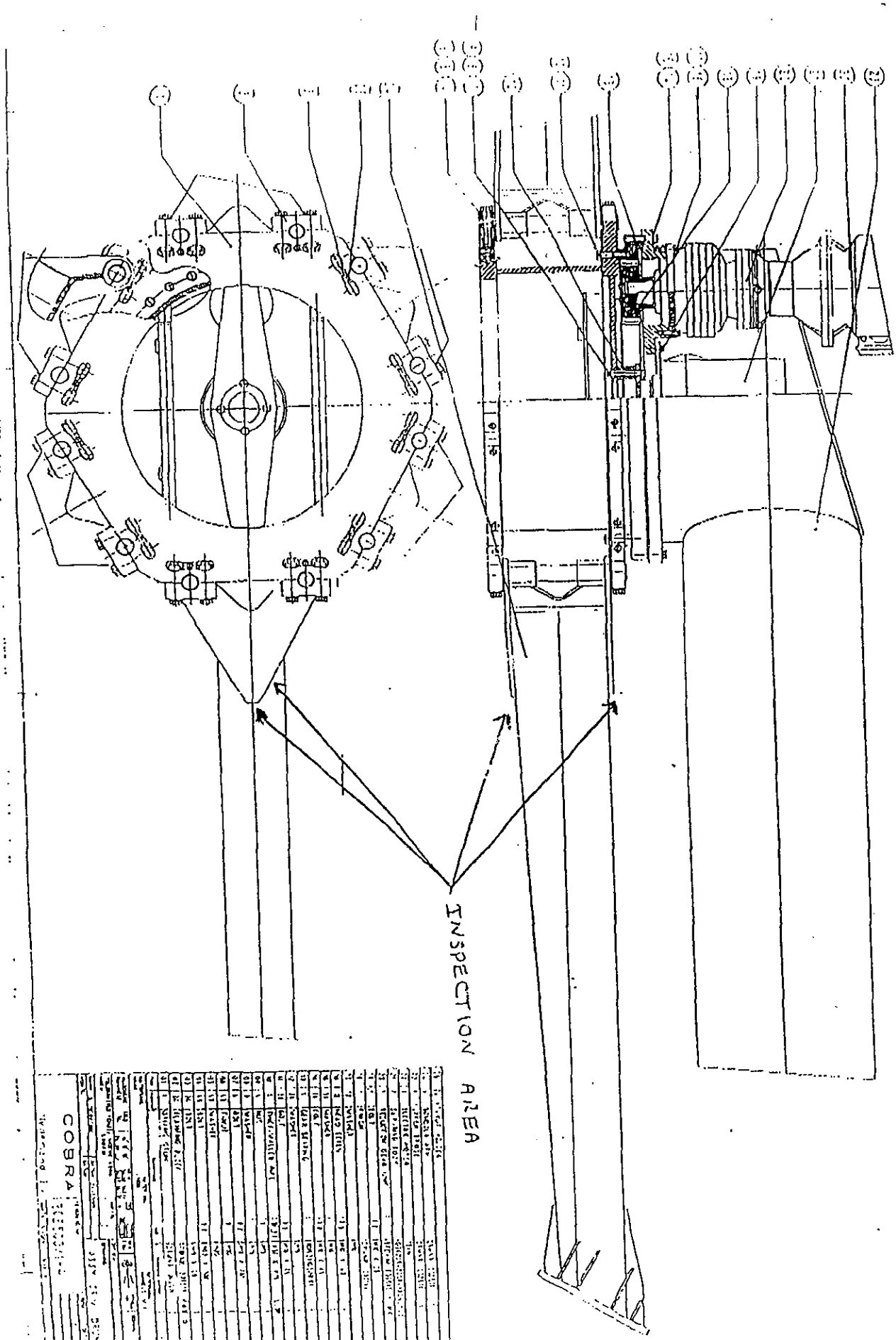
As of the date of this bulletin gusset plates are not required unless cracking is detected. Rides manufactured to operate in Europe are run at different speeds than those operated in the USA, making it possible that this problem may only be applicable to rides operating in Europe. Please report to AmTech after inspection whether cracks are detected or not so proper action can be taken.

If no cracks are detected as described in the attached drawing, a monthly inspection of this area of the sweeps should added to your existing inspection procedures.

If required, gusset plates will be made available free of charge and can be ordered through Amtech / Amusement Technologies Int'l. Inc.

If there are any questions please call AmTech/Amusement Tech. Int'l. Inc. at 817-641-5045.

For Tivoli Mfg. Ltd
AmTech / Amusement Technologies Int'l. Inc.


INSPECTION AREA

Tivoli MFG Ltd.

Howfield Lane, Chartham, Canterbury, Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Safety Bulletin

Bulletin No: SOSA005a

Ride Type: Spin Out
(Aka, The Claw, The Maelstrom, El Nino)

Date: July 10, 2001

Rides Included: All Rides
Pages: 1
Parts Supplied: At request

Purpose: Clarification of inspection procedure of sweeps

Inspection procedure for detection of cracks on sweep arms. (Re: bulletin SOSA005)

Type of Inspection:	Visual
Follow up Inspection:	If cracks are visually detected confirm with Mag particle, NDT Report any cracking to AmTech at 817-641-5045
Repair procedure:	Drill 1/4" though hole at each end of crack. grind out crack approximately 3mm deep and weld up crack using 7018 low hydrogen welding rod.
Ride operation:	Depending on extent of cracking, ride can be operated after repairs are made without gusset kit being immediately installed. Contact AmTech To determine when kit will be installed.
Gusset plate kit:	If cracks are detected contact AmTech at 817-641-5045 for kit and installation instructions

If there are any questions please call AmTech/Amusement Tech. Int'l. Inc. at 817-641-5045.

For Tivoli Mfg. Ltd
AmTech / Amusement Technologies Int'l. Inc.

Tivoli MFG. Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR012

Ride Type: Spin Out
Date: August 15, 2001

Rides Included: All
Parts Supplied: N/A
Pages: 1

Purpose: Inspection of sweep pin locking collar

It has come to the attention of Tivoli Mfg. Ltd of a possible rust and corrosion problem on the sweep attachment and hinge pins which are not removed during assembly and disassembly of the Spin Out Ride. Corrosion has been found in the area of the counter bore located in the top portion of the round threaded collar which holds the pin in place

Tivoli Recommends that these collars be removed, cleaned, and greased on a bi-monthly bases in order to prevent corrosion.

Maintenance procedure.

Apply a generous amount of penetrating type oil around the threads of the collar at least one day prior to maintenance to help in the removal of the collar.

Loosen off set screw located in side of threaded collar.

Un-screw collar using appropriate pipe wrench

Clean threads on both collar and pin.

Add a generous amount of grease to pin and collar.

Reinstall.

If there are any questions please contact AmTech / Amusement Technologies intl. Inc. at 817-641-5045. At 3306 N. Main St. Cleburne, Texas 76031.

Tivoli Mfg. Ltd.

Howfield Lane, Charthan, Canterbury, Kent, England
Tel: (1227) 731156 Fax: (1227) 731137

Safety Bulletin

Bulletin No: SOSA006

Ride Type: Spin Out
(aka. The Claw, The Maelstrom, El Nino)

Rides Included: All Rides
Pages: 3

Date: June 14, 2002

Parts Supplied: N/A

Purpose: Spin Out Ride incident on June 12, 2002

Safety Alert

On June 12, 2002 an incident happened on a Spin Out that caused the arm to be stuck in the inverted position during a ride cycle. The arm could not be rotated so passengers were unloaded in the inverted position.

At this time Tivoli Mfg. Ltd. is in the process of investigating the incident, and as of this time has not completed it's investigation. Preliminary information has been received from operators and inspectors on the scene. From this information it would appear that the arm rotation bearing had locked up possibly caused by excessive wear in the bearing.

Since the investigation is not complete Tivoli requires all operators to follow inspection procedures as outlined in the **operators manual** and service bulletin **SOSA005 of April 12, 2000** for the arm bearing. If any signs of bearing wear are detected the operator must contact Tivoli or it's representatives for further instructions.

It has also been indicated that both the emergency 24vdc arm rotation motor and the emergency shoulder bar system were not in working order. Tivoli Mfg. Ltd. requires that all these back up safety systems be tested as normal inspection procedures as outlined in the operator's manual.

Because of the incident of June 12,2002 Tivoli has chosen to issue **"Emergency Evacuation Procedures"** in the instance of a bearing or gearbox lock up causing the arm not to be allowed to rotate. These procedures are outlined on the following pages. Please add this information into your operators and management emergency evacuation training programs.

Tivoli Mfg. Ltd.

Howfield Lane, Charthan, Canterbury, Kent, England

Spin Out
Emergency Evacuation Procedures

In case of arm bearing or gearbox lock up.

If the condition arises where the rotating arm of the Spin Out becomes locked (due to bearing or gearbox failure) the following procedures must be followed to evacuate passengers.

Turn selector switch on remote console to the "Emergency" position

This will prevent the other components from being inadvertently operated from the console.

Remove the emergency lower mini hoses from the emergency box located on the top of the main enclosure.

Install hoses into reservoir return line first and then into receptacle at bottom of lift cylinders.

Allow ride to lower until the lowest part of the sweep and vehicle assembly is approximately two feet from the ride platform.

Immediately disconnect the hoses from the cylinders to stop cylinders from lowering further.

Unload passengers using the emergency power cord two seats at a time.

Follow emergency shoulder bar release procedures outlined in Operator's manual

Sweeps can be rotated bringing the seats that are higher up on the circle to the low point of the vehicle circle by using the spinners brake release handle located on the spinner drive motor and manually pushing the sweeps around.

Tivoli Mfg. Ltd.

Howfield Lane, Charthan, Canterbury, Kent, England
Tel: (1227) 731156 Fax: (1227) 731137

Safety Bulletin

Bulletin No: SOSA007

Ride Type: Spin Out
(aka. The Claw, The Maelstrom, El Nino)

Rides Included: All Rides
Pages: 3

Date: June 14, 2002

Parts supplied: by order

Purpose: Spin Out Ride incident on June 12, 2002

Safety Alert

It has come to the attention of Tivoli Mfg. Ltd. that during evacuation of the passengers in the above-described incident, the emergency shoulder bar release power supply system was inoperable. This prevented the system from being used to evacuate the passengers.

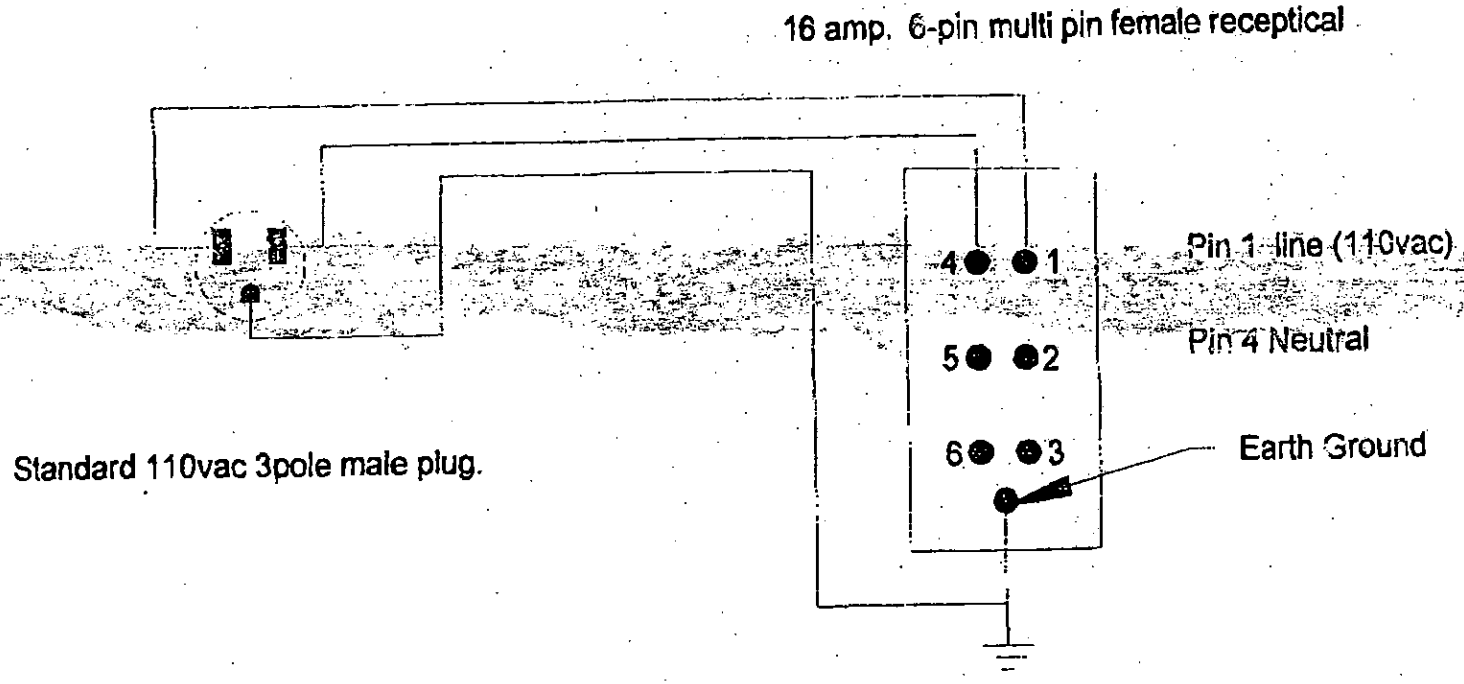
Tivoli Mfg. Ltd strongly requires that this system is tested on a regular bases as described in the operators manual. Failure of this system can delay the immediate evacuation of the passengers causing possible sever injury.

It is always Tivoli's policy to provide the highest degree of safety in their equipment. As a result of the incident of June 12,2002 Tivoli has developed a power adapter plug which can be plugged into a remote 110vac outlet and then into the emergency shoulder bar release control. This will provide a back up to the current 24vdc system that is incorporated in the ride at this time.

This power plug adapter can either be assembled by the operator according to the attached instructions or ordered through AmTech / Amusement Technologies Intl. Inc. at 817-641-5045. Or fax 817-645-9109.

Tivoli requires this plug be assembled by a qualified electrician capable of understand the function and use of the components.

110vac Adapter plug
Wireing scheme



Drawing # SOSA007A

Tivoli Mfg. Ltd.
Canterbury, England

Tivoli MFG. Ltd.

Howfield Lane, Chartham, Canterbury Kent. CT4 7HG. England
Telephone: 01227 731156 Facsimile: 01227 730137

Service Bulletin

Bulletin No: SOSR014
Ride Type: Spin Out

Date: June 14, 2002

Rides Included: All rides with 36 bolt arm slewing ring bearings
Parts Supplied: yes
Pages: 2

Purpose: Bolt up-grade for arm to bearing mounting bolts.

It has come to the attention of Tivoli Mfg. Ltd. of an instance where two of the arm to bearing attachment bolts had broken. Though this has happened on only one ride, Tivoli Mfg. Ltd in the interest of safety has decided to provide a bolt upgrade kit to be installed on all 36-bolt arm bearings.

This kit is for replacement of bolts only and does not apply to the studs located at the top of the bearing

This kit includes the following:

32	16 x 100mm Grade 10.9 bolts
32	Bolt spacers

These bolts and spacers, along with the hardened flat washers removed from the bolt removed must be installed as shown on the accompanying drawing.

Replace all bolts one at a time in a star pattern around the bearing until all 30 bolts have been replaced.

When replacing bolts make sure both bolt and hole are cleane and free from dirt and grease.

Torque all bolts to 210 ft Lbs.

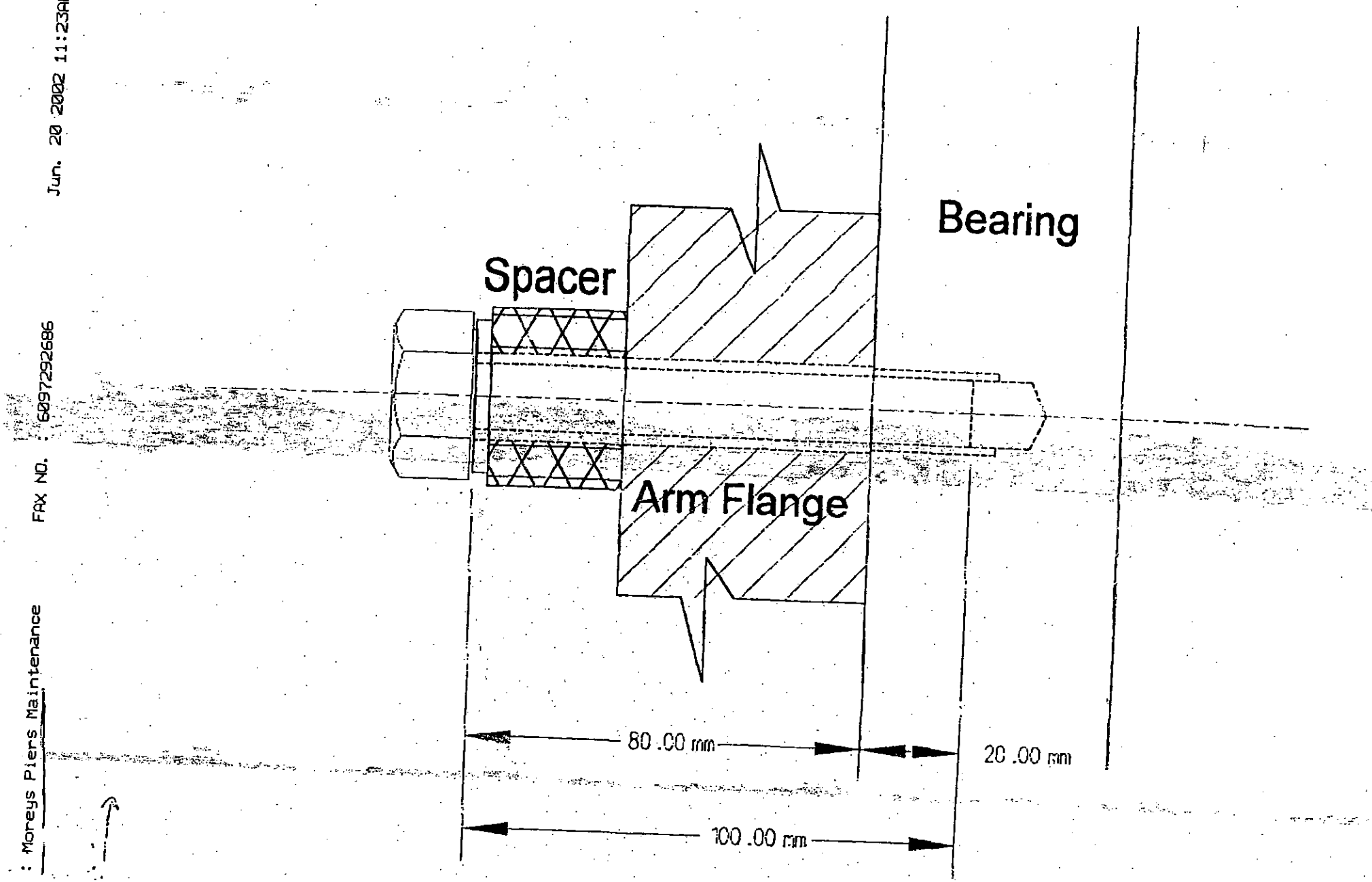
Bolt Kits are available free of charge through AmTech at 817-641-5045. 3306 N. Main St. Cleburne, Texas 76031.

Please order by part number 15-6173

Tivoli Mfg. Ltd.

FAX NO. : 6097292686

FROM : Moreys Piers Maintenance



TELEFAX

AmTech / Amusement Technologies Intl. Inc.
3306 N. Main St. Cleburne, TX 76033
Tel: 817-641-5045 * Fax: 817-645-9109
Web Site: www.Amtechintl.com
E-mail: E-mail@amtechintl.com

Date: January 3, 2003
ID #: SOO010303Z
Pages:

To: All Spin Out Owners

Safety Alert

Re: Sweep failure incident in Puerto Rico.

Tivoli Mfg. Ltd. has been informed of a structural failure, which caused the vehicle support sweep(1 of 6) to detach from the ride. This ride was being operated by Amusements of America in Puerto Rico. From information received through operators no life threatening injuries had occurred.

It is **absolutely necessary** that all vehicle support sweeps on all Spin Outs be inspected immediately according to the bulletin **SOSA005 Issued July 1, 2001.** If any cracking is detected stop operation of ride immediately until proper repairs are made.

Please notify Tivoli. Ltd. or AmTech/ Amusement Technologies Intl. Inc. the results of the inspection.

For Tivoli Mfg. Ltd.
AmTech/ Amusement Technologies Inc.

03.04
.03

Tivoli Mfg. Ltd.

Howfield Lane, Chartham, Canterbury, Kent, England
Tel: (1227) 731156 Fax: (1227) 731137

Safety Bulletin

Bulletin No: SOSA008
Ride Type: Spin Out
(Also, The Claw, The Maelstrom, El Nino)

Page: 1 of 3
Rides included: All Rides
Pages: 3

Date: January 16, 2003

Parts supplied: N/A

Purpose: Vehicle sweeps inspection.
Reference: Service bulletin SOSR005

As a result of the incident on January 3, 2003 where a vehicle sweep of a Spin Out broke away from the hinge/ attachment plates, Tivoli Mfg. Ltd. is issuing this revised inspection procedure concerning the area of the sweeps described on the attached drawing 202503/1-A.

Description of inspection areas.

Inspect area around both top and bottom hinge / attachment plates on all six sweeps located where sweeps are attached to the center hub (see drawing 202503/1-A attached)

All inspections must use nondestructive (NDT) mag-partical testing procedures carried out by a professional inspector and documented accordingly.

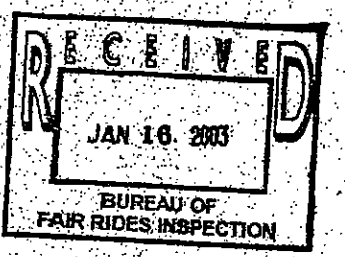
All rides must be shut down until all sweeps are properly tested.

If no cracks are detected the ride may continue to operate until a reinforcement procedure or kit is made available. Tivoli Mfg. Ltd. is in the process of investigating the incident and will notify all operators as soon as a reinforcement kit is available. **This testing procedure must be carried out every 60 days or until a reinforcement kit is developed and new testing procedures are issued by Tivoli Mfg. Ltd.**

03-04
233

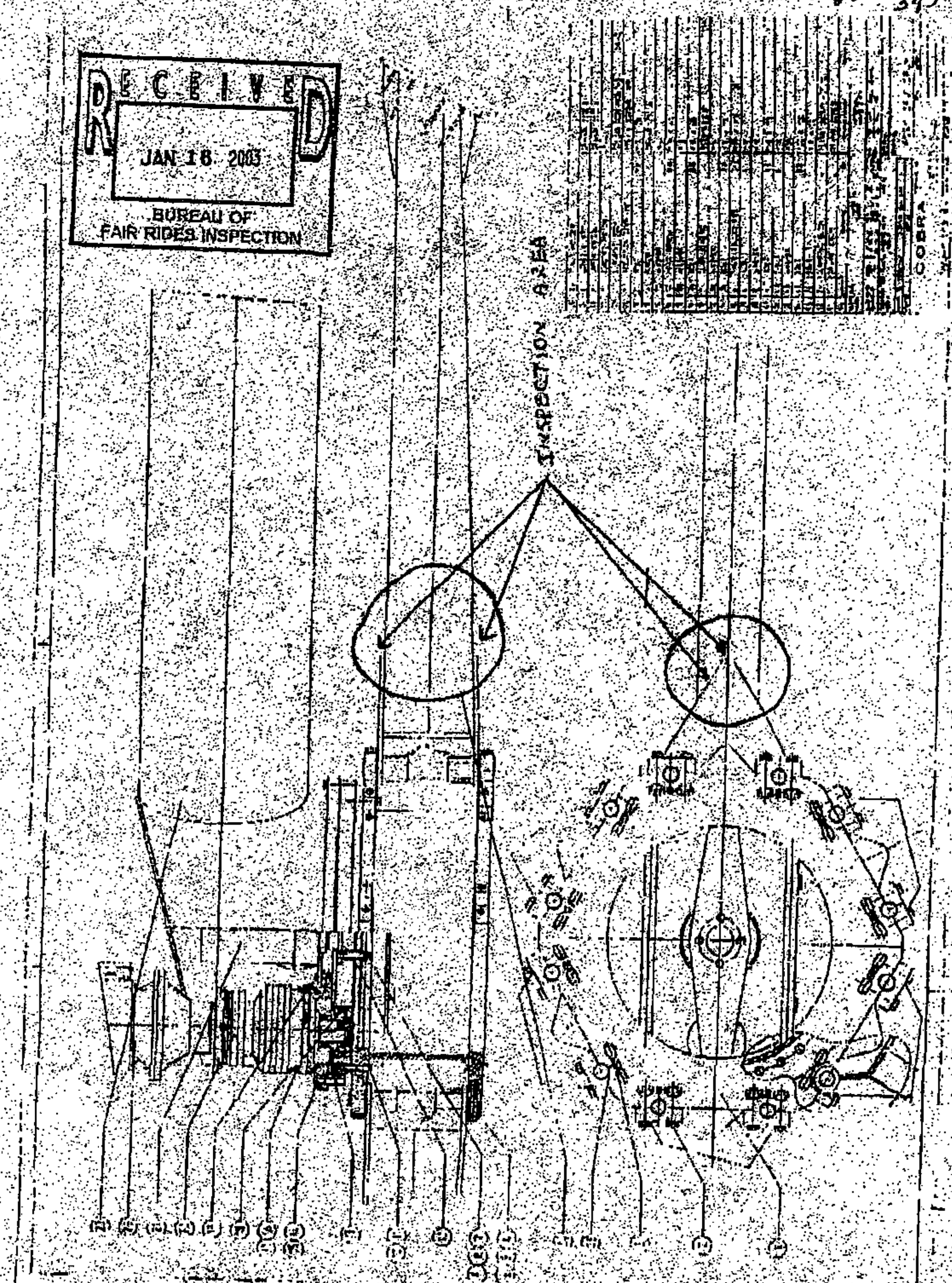
If Cracks are detected the ride must remain closed until a reinforcement procedure / kit is developed and installed.

If there are any questions please contact Tivoli Mfg. Ltd. of it's U.S. distributor Amtech / Amusement Technologies Intl. Inc. at Tel: 817-641-5045 or Fax: 817-645-9109



03-04 343

RECEIVED
JAN 16 2003
BUREAU OF
FAIR RIDES INSPECTION



Copy to:
Pat
David ✓
file

Tivoli Mfg. Ltd.

Howfield Lane, Charthan, Canterbury, Kent, England
Tel: (1227) 731156 Fax: (1227) 731137

Safety Bulletin

Bulletin No: SOSA009
Ride Type: Spin Out
(aka. The Claw, The Maelstrom, El Nino)
Date: January 22, 2003

Page: 1 of 4
Rides Included: All Rides
Pages: 4
Parts supplied: N/A

Purpose: Revised NDT requirements.

Tivoli Mfg. Ltd, in the interest of rider safety is issuing a revised requirement on the non-destructive testing of certain ride components listed below. A professional inspector must test these components with the ability to issue a certificate indicating the components have passed the inspection. This inspection certificate must be attached to the rides maintenance records.

These NDT requirements are to be included with all annual visual inspections and /or NDT requirement, which are outlined in the operator's manual.

It is necessary that all inspections be carried out by professional maintenance personal capable of understanding the function and purpose of the components.

NDT requirements

Removable sweep pins. Only pins installed and removed each time ride is set up [four (4) pins]. See drawing HATC-W003 Attached.

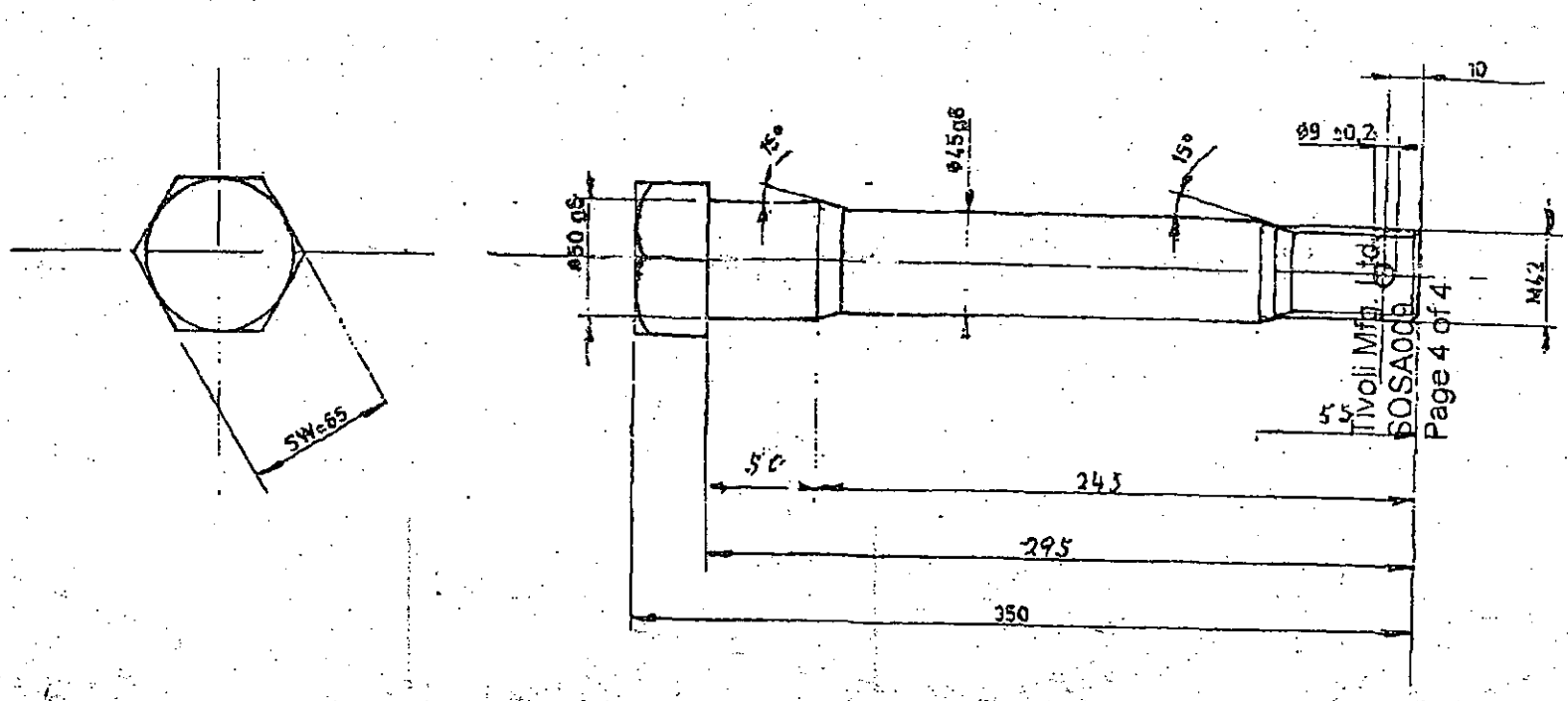
NDT test procedure: Ultrasonic and magnetic-particle
Frequency: Annually or every 450 hours, which ever comes first.

Vehicle attachment Pins. (If ride is equipped) Two pins per Vehicle (See drawing 3-203005 attached). **Note:** Earlier rides were manufactured with 10 bolt flange vehicle connections and are not included in this inspection.

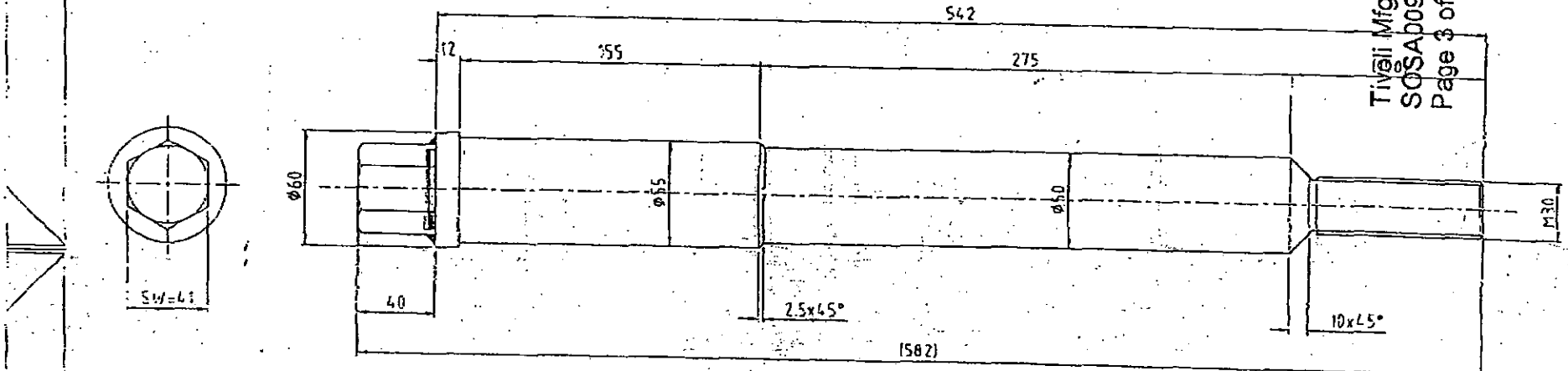
NDT test procedure:	Ultrasonic and magnetic-particle
Frequency:	Annually or every 450 hours, which ever comes first.

If there are any questions please contact Tivoli Mfg. Ltd. of it's U.S. distributor Amtech / Amusement Technologies Intl. Inc. at Tel: 817-641-5045 or Fax: 817-645-9109

Tivoli Mfg. Ltd.



MATERIAAL NAAM: C45	MATERIAAL KODE:	MATERIAAL HANDELSAFM.: zeskant SW=65	
ALGEMENE RUWHEID	NEN 3832 3834 3837 3838	NEN 3011	PROJ. AM.
SCHAAL 1 : 2			
TOLERANTIES TENZIJ ANDERS VERM. HOEK ±1° LINEAIR ±1	AANTAL	OPP. BEH.	
NAAM	DATUM	OPMERKING: PEN	
KONTR.	DATUM		
COBRA Nederland B.V. Keede	TEKENING NR. 3-203005	REV.	DATUM
	AANTAL BLADEN	BLAD NR.	



MOUNTING SHAFT

L = 542

VIRO engineering bv

HATC002A

HATC-M003

Tivoli Mfg. Ltd.

Howfield Lane, Charthan, Canterbury, Kent, England
Tel: (1227) 731156 Fax: (1227) 731137

Safety Bulletin

Bulletin No: SOSA010
Ride Type: Spin Out
(aka. The Claw, The Maelstrom, El Nino)
Date: February 18, 2003

Rides Included: All Rides
Pages: 13
Parts supplied: on request

Purpose: Installation of gusset plate on vehicle sweeps.

Tivoli Mfg. Ltd, and KMG BV. are requiring all owners / operators of Spin Out amusement rides to install a gusset kit on each of the six vehicle sweeps as illustrated in the drawings attached.

Thie bulletin supersedes bulletin SOSA050, issued July 1,2001 and SOSA008 issued January 16,2003 and establishes new NDT requirements for inspection of the Spin Out Vehicle sweeps.

Gusset kits are available in the USA from AmTech /Amusement Technologies Intl. Inc free of charge if ordered with 60 days from the Issuance of this bulletin.

Urgency of installation: These kits must be installed on all Spin Out rides as soon as possible within 60 days of last NDT inspection as outlined in Safety Bulletin SOSA008. If cracks were detected on any sweeps during this initial inspection the kits must be installed on all sweeps immediately before ride can be put back into operation. If no cracks were detected the ride must be NDT tested according to instructions in Safety Bulletin SOSA008 every 60 days to a maximum of 120 days until the kit can be installed on all sweeps.

Ordering of kits: Kits can be ordered in the USA through AmTech / Amusement Technologies Intl. Inc. 3306 N. Main St. Cleburne, Texas 76033. Tel: 817-641-5045 Fax: 817-645-9109. A drawing of the gusset plate (SO-002) is attached to this bulletin if it is more feasible for operator to have the plates made locally.

Kits include: 12 gussets for top and bottom hinge plate.
24 gussets for side of sweeps.

Installation of Kits: Welding and installation of kits must be carried out by a qualified welder with certification for this type of welding.

New NDT Requirements: After plates are installed all areas around newly installed gusset plat must be inspected every 400 hours or annually which ever comes first using a magnetic particle testing procedure. This must be accompanied by the annual visual inspection as outlined in the operator's manual.

Weld Requirements: Use low hydrogen 7018 welding rod, or a MIG welding machine (using 75% Argon -25% CO_2 shielding gas).

Installation Instructions: See Attached (Page 3.)

Tivoli Mfg. Ltd

Enclosures: Bulletin SOSA010, Pages 1,2
Installation Instructions, Pages 3,4,5
Installation drawing # SOSA010C, Page 6
Installation drawing# SOSA010E, Page 7
Top gusset plate drawing# SO-002, Page 8
Side gusset plate drawing# SOSA010D, Page 9
KMG installation instructions (4 pages), Pages 10.11.12,13

Spin Out Sweep Gusset Plate Installation Instructions

It is recommended to install gusset kits while sweeps are removed. If this is not possible please completely disconnect all electronic devices (i.e. PLC, Power supplies battery charger etc.) and turn off all circuit breakers in main enclosure and incomer enclosure before welding on ride.
Welding on ride with electronics connected can possibly damage components.

Installation of top and bottom hinge plate gussets

Step 1: Raise leveling jacks so rotating platform is as close to level as possible without interfering with fixed platform

Step 2: Remove Vehicles from Sweep and move to edge of platform. Make sure vehicles are secure and will not roll on platform.

Step3: Remove sweep light fixtures. Be aware of small spacers on mounting bolts.

Step 4: Clean off paint and around where edge of gusset plate will be welded to sweep (see fig. 1, drawing SOSA010C).

Caution

Make sure welding machine ground clamp is connected at the point where material is being welded. Welding can severely damage bearings and electronics if welding current is allowed to passes through them.

If cracks have been detected, repair according to procedure below first.

Drill small ¼ inch hole through sweep at the both ends of the crack.

Grind a ¼ inch wide grove approximately 1/8 inch deep through the center length of the crack.

Fill weld crack.

As weld cools, peen thoroughly to relieve stress.

Grind or sand weld off flush with sweep material.

Step 5: Grind weld around triangle hinge plate (See figure 1 Drawing SOSA010C) so weld is about 45°.

Step 6: lay Gusset plate approximately 1/8 inch from base of weld on Triangular hinge plate. (See figure 2 drawing SOSA010C)

Step 7: Assure plate is flat on sweep. If not clamp in place.

Step 8: Tack weld plate, dispersing tacks evenly around parameter of gusset.

Step 9; Proceed to weld 1/4" fillet around entire gusset. Weld in 6" passes in a star pattern until the plate is completely welded to the sweep. Make sure all welds over lap.

Step 10: Grind weld on vehicle side of gusset as described in figure 2 drawing SOSA010C. Grinding must be transverse of the weld axis.

Step 11: Peen weld with blunt instrument at the toe of the weld on top flat part of sweep as described in figure 2 drawing SOSA010C.

Step 12: Clean and prime all welds and gusset plate.

Step 13: Repeat on remaining 5 sweeps.

Step 14: Restore power to ride. Fold up and lock in place sweeps and rotate arm 180° to carry out same procedure on the underside of all six sweeps.

Step 15: **Turn all circuit breakers off before welding.**

Installation of side gusset plates

Step 16: Clean side of sweeps of paint where welding will take place.

Step 17: Position plates on side of sweep as described in drawing SOSA010D and tack n place.

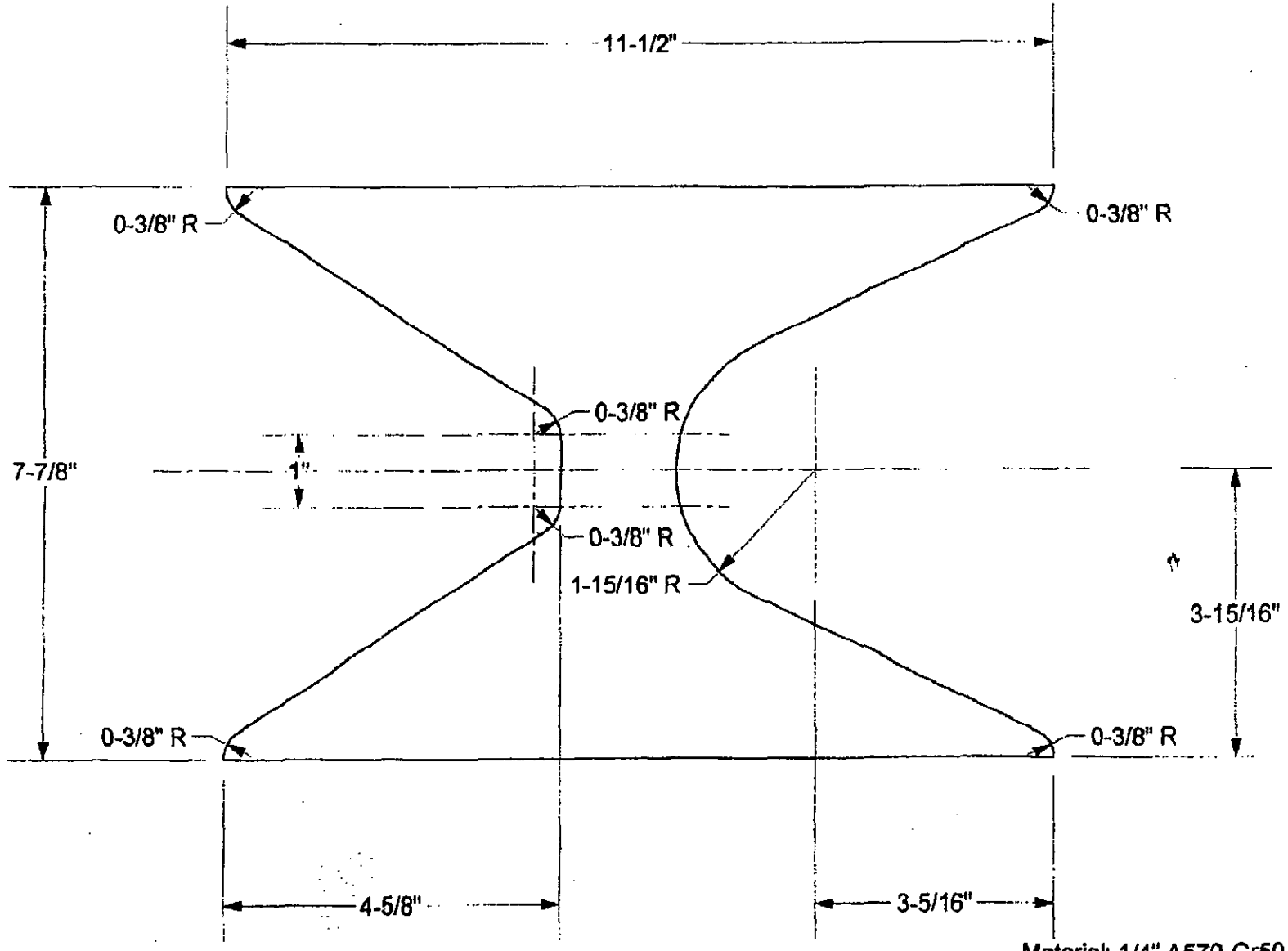
Step 18: Weld gusset in place with a ¼ " fillet weld on all sides.

Step 19: Taper weld from side point of top plate to side gusset as described in figure 1 drawing SOSA010E.

Step 20: Taper weld at end of side gusset as described in figure 2 drawing SOSA010E.

Step 21: Dress and sand all welds.

Step 22: After all work is completed, paint sweeps, reassemble ride and completely inspect and test as outlined in the operators manual before opening to public.



Material: 1/4" A570-Gr50

AmTech / Amusement Tech. Intl. Inc. 3306 N. Main St. Cleburne, TX 76031 Tel: 817-641-5045 Fax: 817-645-9109	Discription: SO-sweep gusset	Item: Plate	Drawing No: SO-002	Date: 02-19-03

Complete for both top and bottom of sweep.

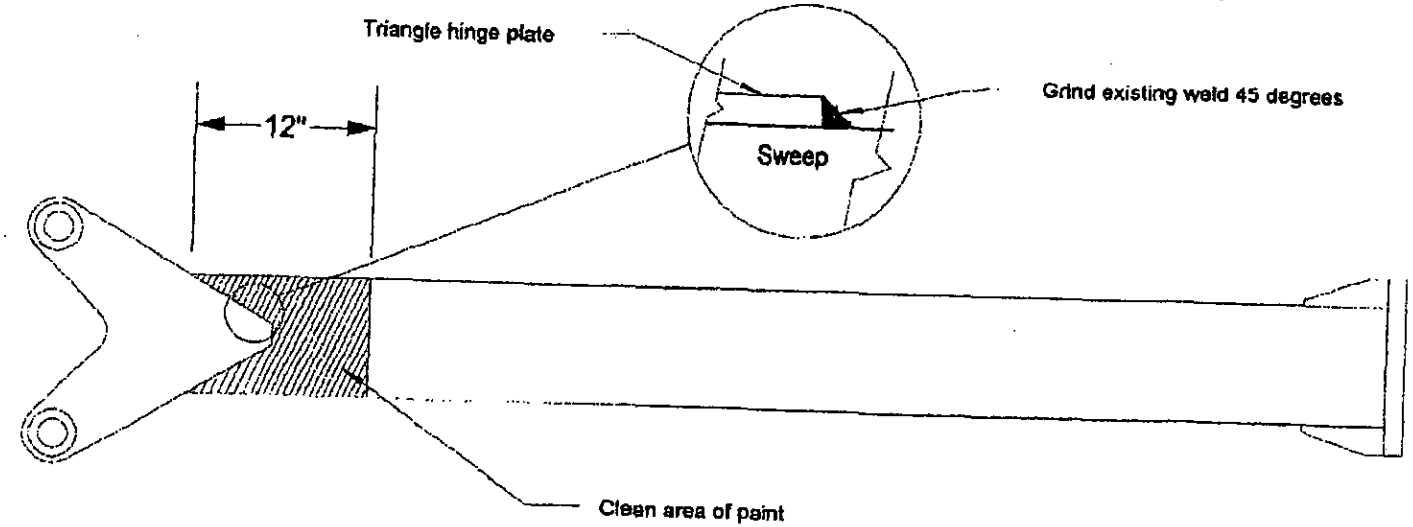


Figure 1

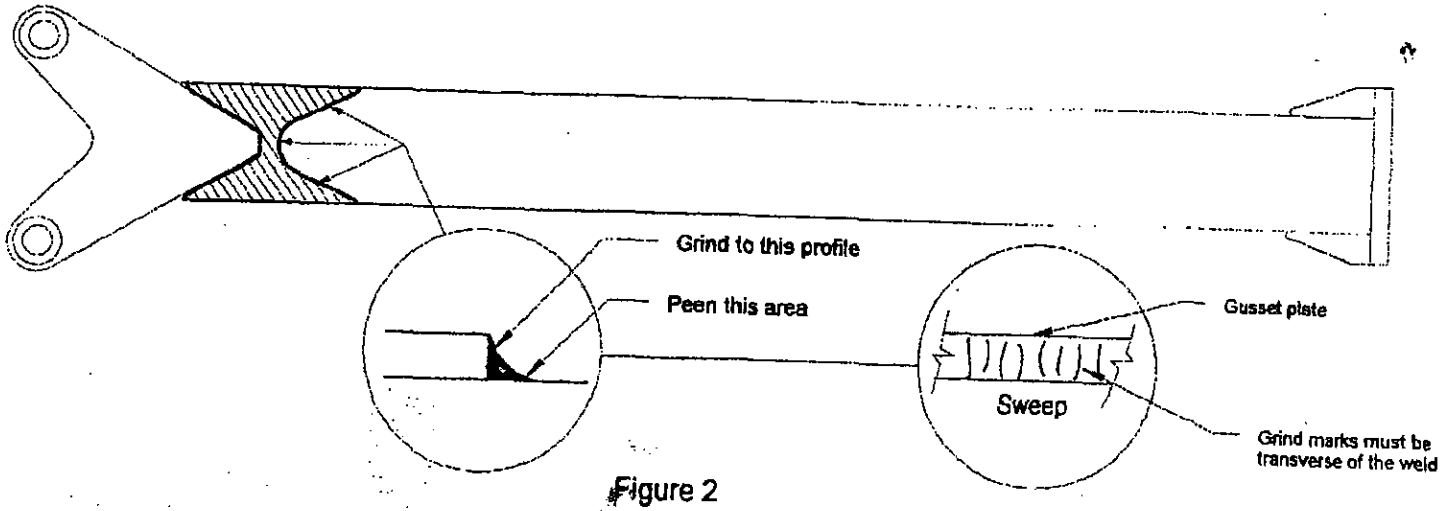
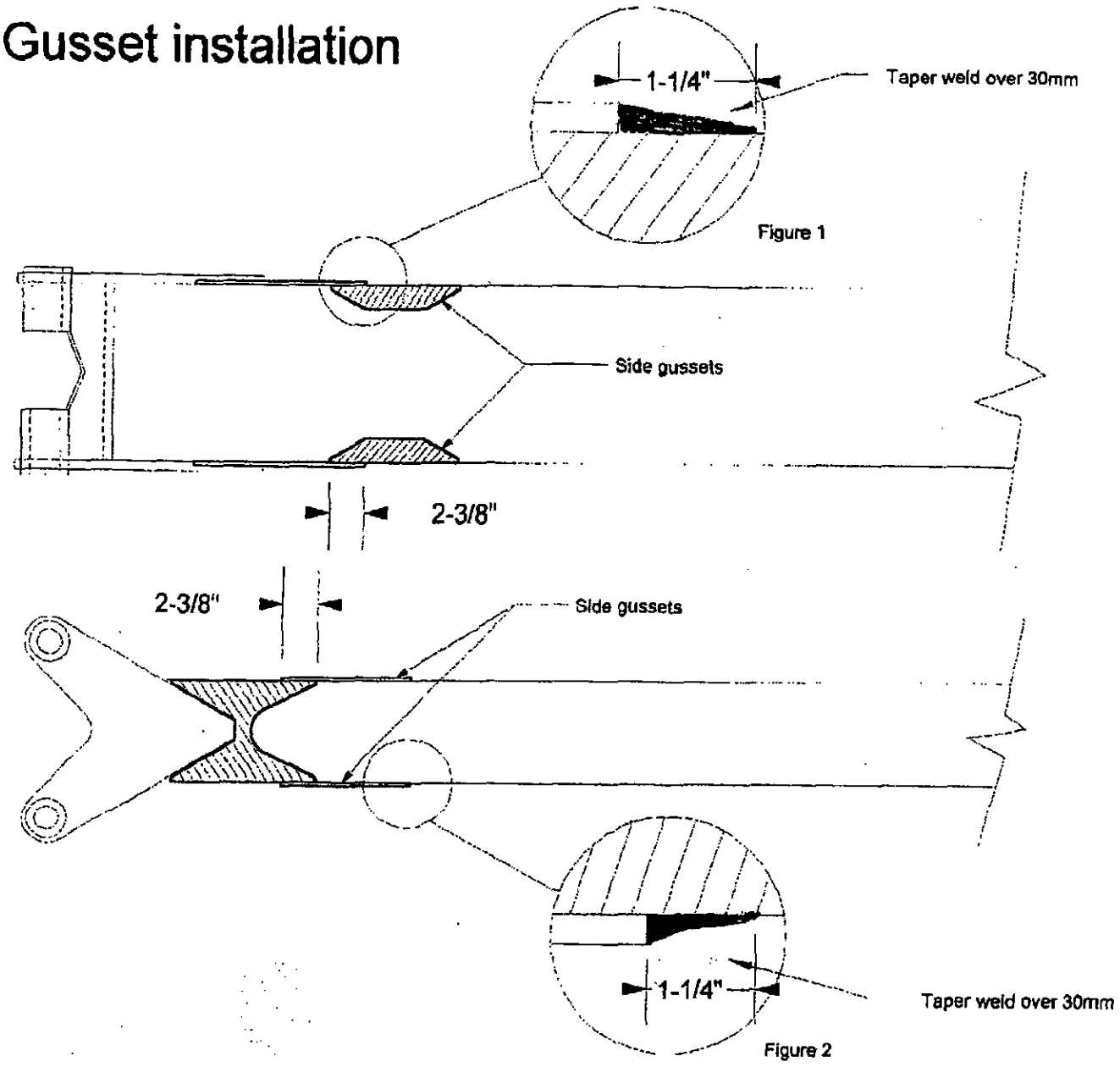


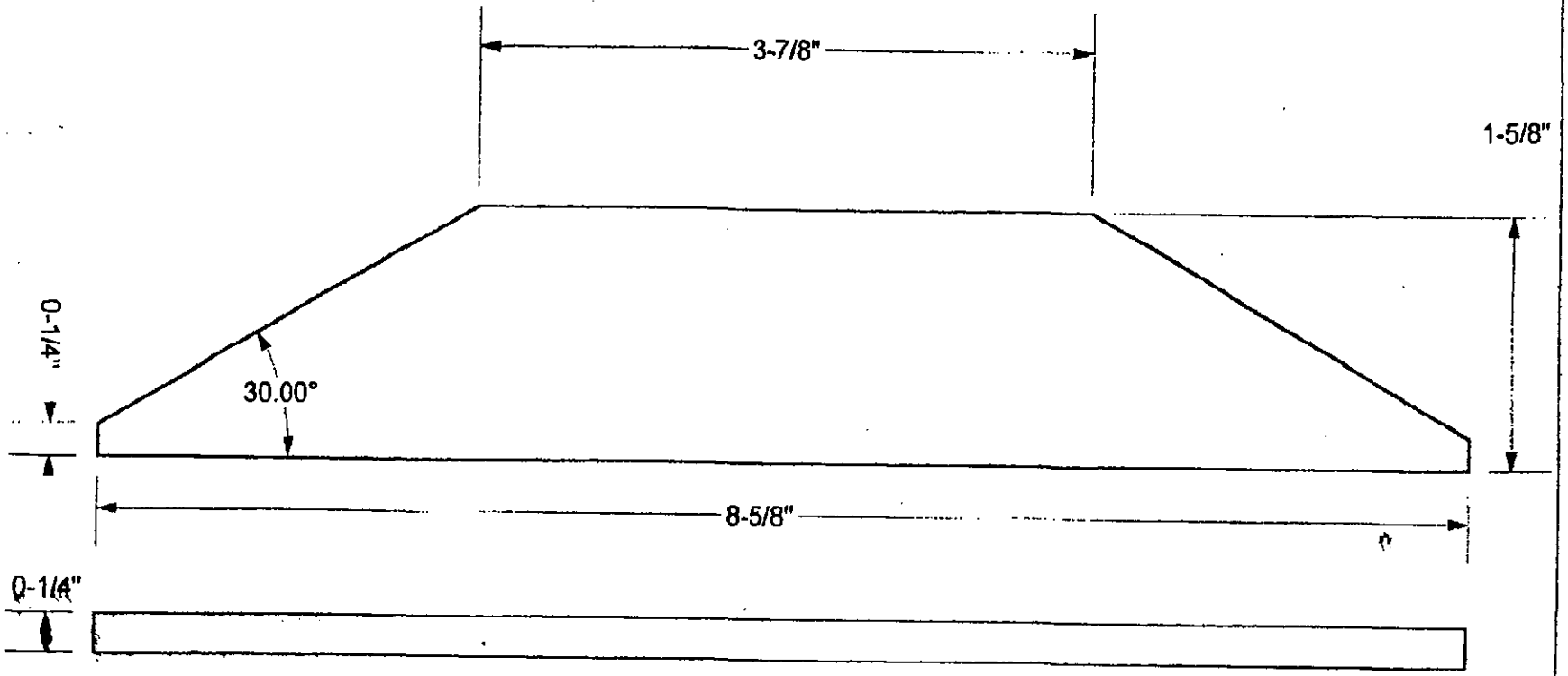
Figure 2

Tivoli Mfg. Ltd.	Description Spin Out Sweep	Part Gusset instalation	Drawing# SOSA010C	Date 02-20-03

Side Gusset installation



Tivoli Mfg. Ltd.	Description Spin Out Sweep	Part Side gusset instalation	Drawing# SOSA010E	Date 02-20-03



material A570 Gr50

Quanity: 400

Tivoli Mfg. Ltd.	Description Spin Out Sweep	Part Sweep side Gusset	Drawing# SOSA010D	Date 02-22-03

KMG PROJECT PLANNING

KMG Europe BV
Pauliaweg 35
7161 AE Neede
Tel: +31-(0)545-294545
Fax: +31-(0)545-291386
E-mail: factory@kmg.nl
Internet: www.kmg.nl

BTW NL: 8054.40.495.B01
KvK Veluwe & Twente: 08073397
ABN-AMRO Eibergen: 561500509

To	:	[redacted]
Contact person	:	
From	:	
Date	:	14-02-2003
Faxnumber	:	[redacted]
No.of pages (incl. this page)	:	4
Subject	:	repairing arm move it 24
Order number	:	

☐ For your information ☒ Urgent

FAX MESSAGE

Dear mister

For repairing the arm:

1. Grind out the cracks and reweld them Grind the welds
2. Make two plates according to page 2
3. Weld one plate on top of the arm and weld one on the bottom side of the arm.
4. Weld the plates on all sides.
5. Grind all the new welds.

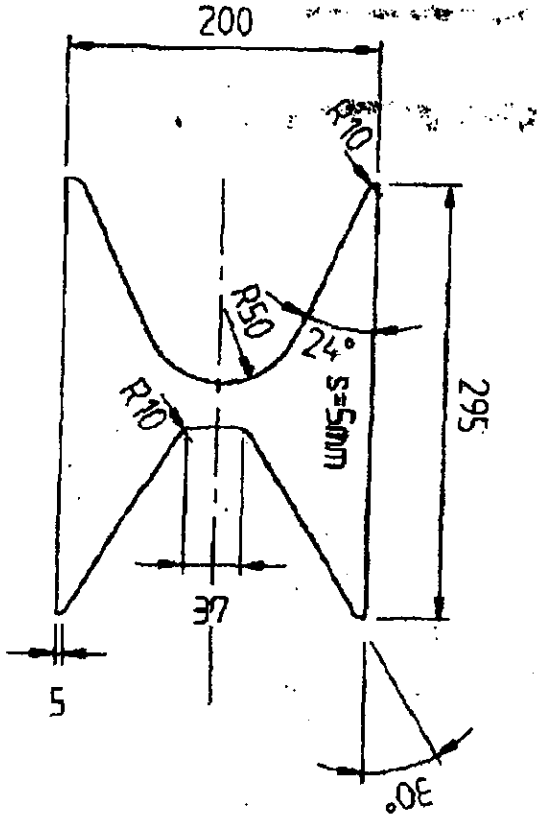
6. make four plates according to page 3
7. Weld two plates on one side of the arm and the other two plates side on the other side of the arm.
8. Grind all the new welds.
9. See also page 4 for the exact location of the plates.

With Kind Regards

Ronald Jorritsma

Material. 50D. English.
A570 GR. 50 American.

(2)



Tivoli Mfg. Ltd.

Howfield Lane, Chartham, Canterbury, Kent, England
Tel: (1227) 731156 Fax: (1227) 731137

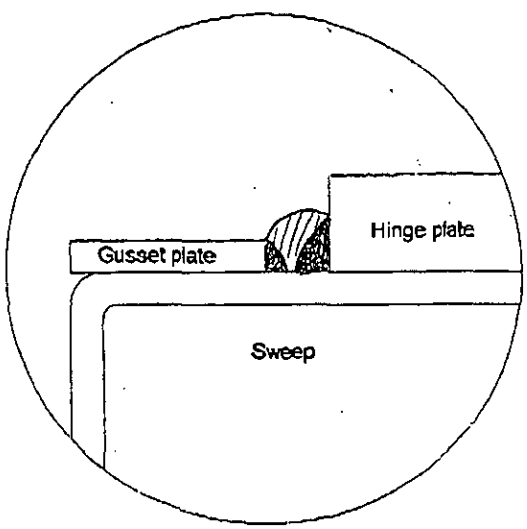
Safety Bulletin

Bulletin No: SOSA011
Ride Type: Spin Out
(aqua, The Claw, The Maelstrom, El Nino)
Date: February 11, 2004

Page: 1
Rides Included: All Rides
Pages: 1
Parts supplied: N/A

Purpose: Safety bulletin SOSA010.

During routine inspection of a Spin Out Sweep, it was found that the upper and lower "H" gussets were not welded to the triangular hinge plate properly. Tivoli Mfg. Ltd requires that the gusset plate be welded completely to the hinge plate. This may require up to 4 welding passes where the gusset plate does not meet up to the hinge plate. Please review the safety bulletin SOSA010 and confirm that the gussets have been installed correctly. Below is an example of proper welding of the gusset plate to the hinge plate where there is a gap between plates.



Tivoli Mfg. Ltd.

Tivoli Mfg. Ltd.

Howfield Lane, Chartham, Canterbury, Kent, England
Tel: (1227) 731156 Fax: (1227) 731137

Safety Bulletin

Bulletin No: SOSA012A
Ride Type: Spin Out
(aka. The Claw, The Maelstrom, El Nino)
Date: February 24, 2004

Page: 1 of 2
Rides Included: All Rides
Pages: 2
Parts supplied: N/A

Purpose: ***Structural Inspection Review.***

This bulletin supercedes bulletin SOSA012
Added time requirement

NDT (non destructive testing) requirements.

This bulletin is being issued to all operators in order to review the structural component inspection procedures for the Spin Out. The following is a list of the NDT inspection points along with procedures required to complete tests.

Sweep Assembly Pins Ref: Bulletin SOSA009

Four pins, which are removed for assembly and disassembly, are to be inspected using a magnetic particle test with a dye penetrate solution.
This is to be done every 400 hours, or one (1) year which ever comes first or when there is evidence of abuse or damage to pin that could possibly cause a fracture.

Vehicle Sweep Attachment Pins: (if equipped) Ref. Bulletin SOSA009

12 pins, 2 per vehicle are to be inspected using a magnetic particle test with a dye penetrate solution. **This is to be done every 400 hours, or one (1) year which ever comes first or when there is evidence of abuse or damage to pin that could possibly cause a fracture.**

Sweep gusset weldings Ref: SOSA010

All welding completed to install sweep gusset kits are to be inspected using a magnetic particle test with a dye penetrate solution.
This is to be done every 400 operating hours or one year, which ever comes first, or when there is evidence of abuse or damage to welded area. Removal of paint on sweeps will be left to the discretion and requirements of the testing technician.

Visual inspection requirements.

General visual Inspection, Ref: operators' manual, mechanical and structural inspections section.

All structural components of ride.
This inspection must be done every 400 or one (1) year which ever comes first. It should also be understood that routine visual inspection of ride structural components should be made a part of your regular operating inspection procedures.

Tivoli Mfg. Ltd.

U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D.C. 20207-0001

TO: ALL AMUSEMENT RIDE SAFETY OFFICIALS
IMPORTANT
AMUSEMENT RIDE SAFETY BULLETIN!
RE: Amtech/Tivoli "Spin Out" Amusement Rides
Issued March 30, 2004

The U.S. Consumer Product Safety Commission (CPSC), in cooperation with AmTech/Amusement Technologies International, Inc. of Cleburne, TX and Tivoli Mfg., Inc. of Canterbury, England is issuing the following safety bulletin and inspection guidelines to prevent serious injury or death due to failures of the sweep arms on "Spin Out" aka "The Claw, The Maelstrom, El Nino" amusement rides resulting from an incident in San Juan, Puerto Rico operated by Amusements of America, Monroe Township, NJ. The Commission and AmTech/Tivoli are aware of four (4) injuries involving a "Spin Out"; resulting from sweep arm failure. In addition, AmTech reported two (2) other "Spin Out" rides reporting cracks on sweep arms in critical areas. Currently, twenty-one (21) "Spin Out" rides operate in the United States.

The following are Amtech/Tivoli required inspection procedures for the sweep arms and sweep gusset kits:

1. Follow all Amtech/Tivoli Safety Bulletins SOSA0001 to SOSA012B. All inspections concerning the Spin Out sweep arms are as specified on Tivoli Mfg. Ltd. Safety Bulletin SOSA13. Safety Bulletin SOSA13 supercedes all previous bulletins issued by Tivoli concerning sweep arm inspection procedures.
2. Immediately inspect all welds on the "Spin Out" sweep arms as indicated on the attached drawings. Be sure to visually inspect the full sweep length, and make appropriate repairs if necessary. Pay particular attention to the hinge plate gussets and the gussets and the tips of the gusset kits (Drawing A).
3. If cracking is detected by the hinge plate gussets, or any weld along the sweep arm immediately discontinue operation of the ride and report this to AmTech or CPSC.
4. If the gusset kits have not been installed, they are required. All rides MUST have the gusset kits installed according to the procedures described in Safety Bulletin SOSA010.
5. Inspect the gusset welds every 200 hours of operation or 6 months, whichever comes first with particular attention to the tips of the gusset kit as indicated in the attached drawing. (Drawing B). These inspections shall be performed by a certified inspector, with written documentation of that inspection maintained by the ride owner/operator.
6. Every 400 hours or 12 months, whichever comes first, inspect all sweep welds in

addition to the gusset kit welds with nondestructive (NDT) inspection techniques. The 400 hour NDT test requirements can include ultrasonic, magnetic particle, or dye penetrant inspection by a certified inspector. Ride owners/operators shall maintain written records of all inspections performed.

7. If cracks are detected, the ride must remain closed and AmTech/Tivoli must be contacted for repair instructions and procedures.

For further information contact:
Jim Ziaja, Amtech Intl., Cleburne, TX
817-641-5045 or by FAX 817-645-9109
e-mail@amtechintl.com

or

Tivoli MFG. Ltd.
Canterbury, Kent, ENGLAND
01227 731156 or by FAX 01227 731137

or

J. A. DeMarco, Senior Compliance Officer
Office of Compliance
U.S. Consumer Product Safety Commission
(301) 504-0608 x1353
FAX (301) 504-0359 & email: jdemarco@cpsc.gov

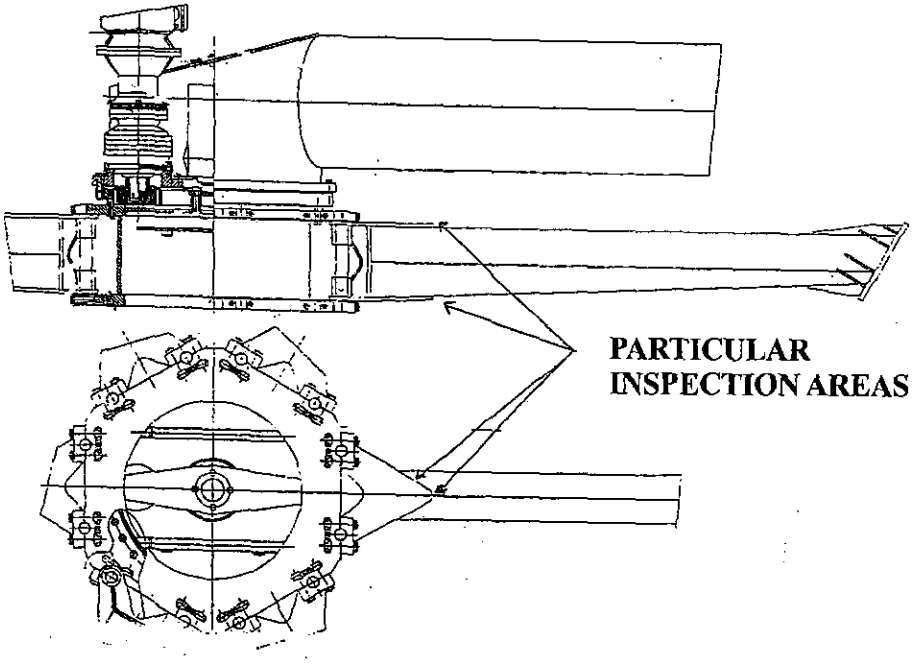


Figure A

Side Gusset installation

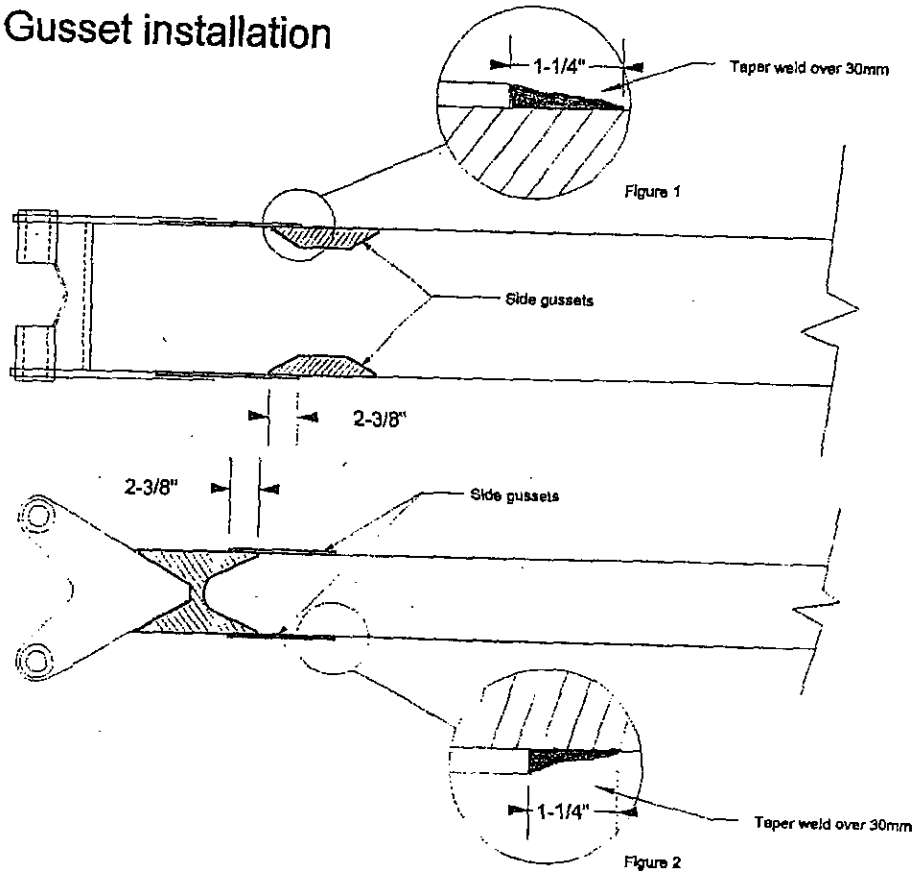


Figure B

Tivoli Mfg. Ltd.

Howfield Lane, Chartham, Canterbury, Kent, England
Tel: (1227) 731156 Fax: (1227) 731137

Safety Bulletin

Bulletin No: SOSA014
Ride Type: Spin Out
(aka. The Claw, The Maelstrom, El Nino)
Date: December 16, 2004

Page: 1 of 2
Rides Included: All Rides
Pages: 2
Parts supplied: N/A

Purpose: Installation of safety retaining key in removable sweep pins.

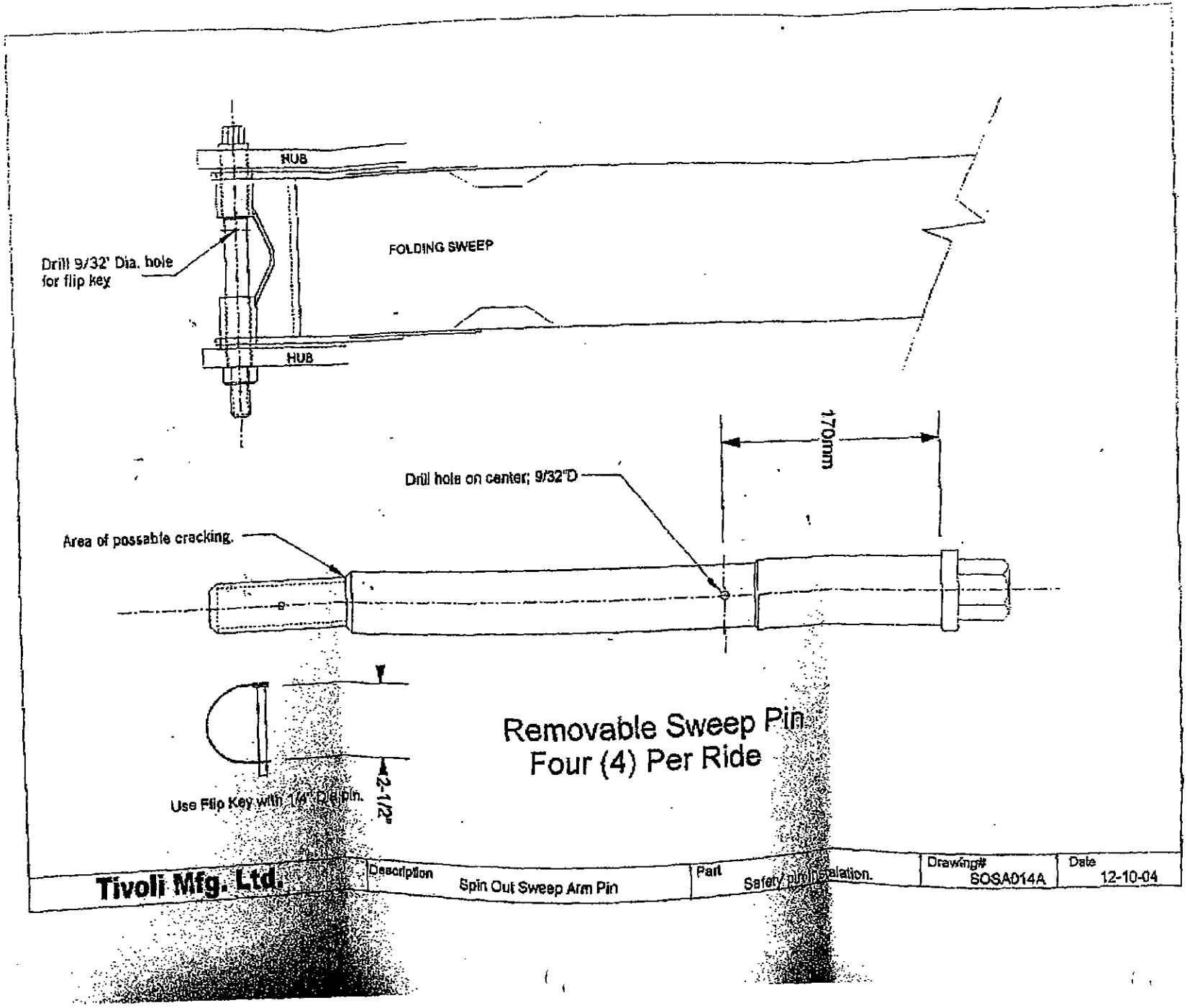
It has come to the attention of Tivoli Mfg. Ltd. that severe sweep pin bushing wear or abuse of removable sweep pins can cause these pins to crack or possibly break at the point where the threaded portion of the pin meets the shaft (see attached drawing SOSA014A for location). Even though there is a annual NDT requirement on these pins (Safety Bulletin SOSA009) Tivoli now requires the addition of a safety key to insure this pin remains in place in the remote case of pin breakage.

As illustrated on the attached drawing a 9/32" hole is to be drilled in the center of the 4 removable pins, 170mm from the underside of the head of the pin. The hole s to be de-burred to remove any sharp edges.

During ride operation a ¼" x 2- ½ " Flip Key, as described in accompanied drawing, must be Inserted through the hole and clipped in place. The key presently being inserted in the threaded area of the pin is still required.

If there are any questions please contact Tivoli MFG. Ltd. or AmTech / Amusement Technologies Intl. Inc. (817-641-5045)

Tivoli Mfg. Ltd.


HUB
FOLDING SWEEP
Drill 9/32" Dia. hole for flip key
HUB
170mm
Drill hole on center; 9/32"D
Area of possable cracking.
2-1/2"
Use Flip Key with 1/4" Dia pin.
Removable Sweep Pin
Four (4) Per Ride
Tivoli Mfg. Ltd.
Description
Spin Out Sweep Arm Pin
Part
Safety pin Explation.
Drawing#
SOSA014A
Date
12-10-04