



A.R.M. (USA) Inc.
 1506 Fernwood Rd.
 Wintersville, OH 43953
 740.264.6599
 740.266.2953 Fax

Bulletin No: SB20190215
Release Date: February 15, 2019
Effective Date: February 15, 2019
Supercedes:
Completion Date: April 12, 2019
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SERVICE BULLETIN

Manufacturer: A.R.M. (USA) Inc.
 Model(s): AB100 / AB200 / ABPK100
 Affected Production Dates: 1999 & Later

Ride Name: Ali-Baba, Rainbow, 1001
 Nachts, Typhoon, Rock Star, Sinbad,
 Magic Carpet, Flying Dutchman, Riptide

AFFECTED SERIAL NUMBERS

ABSTRACT OF ISSUE

Implementation of a Restraint System repair, Inspection, test and acceptance criteria to allow retraction of the 60-inch minimum rider height requirement, mandated in Safety Alert - SA20180827.

REASON FOR RELEASE

As a result of recent inspections, it has been brought to our attention that excess free movement in the certain locked lap bar restraints may exist due to wear on the restraint lock plate, the restraint lock pivot bar and/or wear on the pivot block. While the ride has only positive G forces which act to keep riders in their seats during the ride cycle, the free movement is deemed unacceptable.

ACTION TO BE TAKEN

The restraint and lock system must be inspected and any necessary repairs made, prior to permitted operation using a 42-inch minimum rider height. It is required that all inspections be performed by a person with current NAARSO or AIMS Level II Certification. Please adhere to the following criteria:

1. Visually inspect the restraints for any physical damage or distortion. Make a comparison of neighboring restraints shapes and placement for reference and report any discrepancies on your restraints to A.R.M. (USA) Inc.
2. Inspect Lap Bar Restraint for free play movement with the lap bar lowered and locked. **See page 2 for instructions.**
3. Visually inspect all lock plate and lock block surfaces for wear or damage. Repair as necessary. **See page 3 for instructions.**
4. Visually inspect the restraint / lock bar pivot blocks and lock bar actuator linkages for wear, make any necessary repairs. **See page 4 for instructions.**
5. Detailed Documentation of all inspections and/or repair procedures performed is required. Inspection and or repair documentation must be available at the ride for review by all state and third-party inspectors. Preserve these documents for the life of the ride.

DETAIL OF ISSUE

Wear on the restraint lock plate, restraint lock block, restraint lock bar or restraint lock pivot block, may be present due to extended use, misuse during ride operation, misuse during repair, assembly or dis-assembly, or improper lubrication. These can result in unacceptable free play of the restraint and increased gap between the restraint and fiberglass seat.

NOTICE

ONLY COMPONENTS SPECIFIED, AUTHORIZED, OR PROVIDED BY A.R.M. (USA) INC. SHALL BE USED
 A.R.M. (USA), INC. SPECIFICALLY DISCLAIMS ANY LIABILITY ASSOCIATED WITH THE USE OF
 UNAUTHORIZED COMPONENTS OR MODIFICATIONS AND/OR ALTERATIONS OF AUTHORIZED COMPONENTS.

AB108/01/14/99USA
 AB109/03/01/99USA
 AB110/05/01/99USA
 AB111/04/15/99USA
 AB112/08/15/99USA
 AB113/03/15/00USA
 AB114/06/01/00USA
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Restraint Free Play Inspection

All restraint systems must meet the following inspection criteria before operation with a 42-inch minimum rider height can be permitted: It is required that all inspections be performed by a person with current NAARSO or AIMS Level II Certification.

With the restraint lowered and locked, pull upward on each restraint, applying only enough force to remove potential gaps in the lock system components due to extended use, misuse during ride operation, misuse during repair, assembly or disassembly, or improper lubrication. While pulling upward, measure between the top of the fiberglass seat hump and the bottom of the stainless-steel loop on the bottom of the restraint cross bar. (See Illustrations below for reference. The use of a device specifically measuring 2.5 inches is suggested.) If the opening allows the passing of a measuring device, 2.5 inches in dimension, continued operation of that seat is **Prohibited**. For any measurement under 2.5 inches, (where the device cannot pass) operation may be permitted with a Minimum Rider Height Requirement of 42 inches, providing the inspection instructions for the lock plate and lock block have been satisfactorily carried out, as outlined on page 3.

1. The above inspection of the restraint is required weekly prior to operation with patrons. Detailed Documentation of all inspections and or repair procedures is required. Reference to inspection and or repair documentation may be used for all third-party inspection bodies.

Illustration #1



ACCEPTABLE

Illustration #2



NOT ACCEPTABLE

Note:

A measurement ball, as seen in the illustrations above is available from the A.R.M. Parts Department.



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Restraint Lock Plate / Lock Block Inspection

All restraint Lock Plates and Lock Blocks must be inspected before operation with a 42-inch minimum rider height can be permitted. It is required that all inspections be performed by a person with current NAARSO or AIMS Level II Certification.

1. In the unlocked state, visually inspect the underside of the lock plate for damage or wear. As a result of misuse, specifically by placing the restraint in the locked state while the restraint is not in the lowered position, wear and or damage, can occur to the underside of the lock plate and corner of the lock plate face. If signs of wear are detected, repair is needed. Please contact A.R.M. for a repair procedure. An example of the described wear and damage is seen in Illustration # 3 below.

2. In the unlocked state, visually inspect the mating face of the lock plate for signs of wear and or damage. As a result of normal cycles and or lack of lubrication, wear or damage may occur to the lock plate face. The face of the lock plate must have a squared-parallel edge to the lock block. If signs of wear and or damage are detected, repair is needed. Please contact A.R.M. for a repair procedure. An example of the described wear and damage is seen in Illustration # 3 below.

With the restraint lowered and in the locked state, measurement may be taken between the mating surfaces of the lock plate and lock block of the restraint. A maximum gap of .040 inch is allowable. A gauge may be used as a measuring tool. If the gauge fits into the gap between the lock plate and lock block, repair must be made to the mating surface of the lock plate. An example of this measurement method may be seen in Illustration # 4. A gauge, as shown in Illustration #4 is available from the A.R.M. Parts Department.

3. In the unlocked state, visually inspect the mating face of the lock block for signs of wear and or damage. As a result of normal cycles and or lack of lubrication, wear or damage may occur to the lock block face. The face of the lock block must have a squared-parallel edge to the lock plate. An example of a squared-parallel fit may be seen in Illustration # 5 and Illustration # 6. If signs of wear, placing the lock plate outside the allowable conditions mentioned above, and or damage are detected, repair is needed. Please contact A.R.M. for a repair procedure.

4..Lubrication of the Lock Plate Face is to be performed on a Monthly Schedule using a NLGI No. 2 Grease.

5. Detailed Documentation of all inspections and or repair procedures is required. Reference to inspection and or repair documentation may be used for all third-party inspection bodies.

Illustration #3

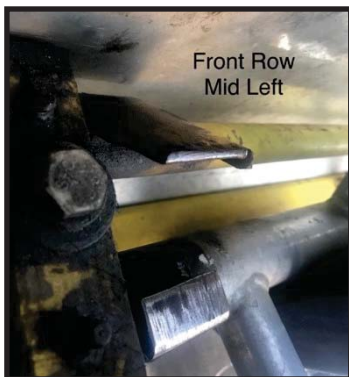


Illustration #4

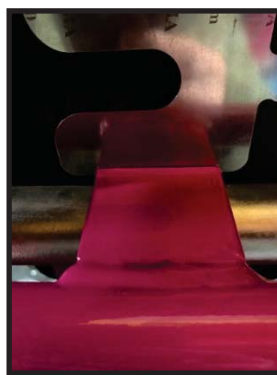


Illustration #5



Illustration #6





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Restraint Pivot Blocks

All Restraint Pivot Blocks must be inspected before operation with a 42-inch minimum rider height can be permitted. It is required that all inspections be performed by a person with current NAARSO or AIMS Level II Certification.

1. Visually inspect the Restraint System Pivot Block, where the Lock bar passes thru the bore of the pivot block (Illustration # 7, box A), for indications of lateral movement.
2. If indications of lateral movement are evident and measurements of movement exceed 1/16 inch, an inspection of the mating surfaces are necessary and repairs made. Please contact A.R.M. for a repair procedure. Lubrication of the Restraint Pivot Block is to be performed on a Monthly Schedule using a NLGI No. 2 Grease.
3. Visually inspect the Restraint System Pivot Block, where the Restraint bar passes thru the bore of the pivot block (Illustration # 7, box B), for indications of lateral movement. If indications of lateral movement are evident and measurements exceed 1/16 inch, an inspection of the mating surfaces are necessary and repairs made. Please contact A.R.M. for a repair procedure. Lubrication of the Restraint Pivot Block is to be performed on a Monthly Schedule using a NLGI No. 2 Grease.
4. Visually inspect the Restraint Lock Actuator and Linkage Connections, (Operated by pneumatic cylinder(s)), for signs of wear and or damage at all connection points. Disassembly may be required. If signs of wear and or damage are detected, repair is needed. Please contact A.R.M. for replacement components.
Note: The Pneumatic Restraint Lock System, as operated from the operators control panel, is the primary mode of operation. Manual actuation of the Restraint Lock System is intended for Emergency conditions only and not for use as a standard mode of actuation during regular ride cycles.
5. Confirm operation of the Restraint Lock Safety Switches. The Restraint Lock Safety Switches are intended to only permit the start of a ride cycle, with the Restraints in the complete lowered position and the Restraint Lock Bar / Lock Plates in the certain locked position (Illustration #8).
6. Detailed Documentation of all inspections and or repair procedures is required. Reference to inspection and or repair documentation may be used for all third-party inspection bodies.

Illustration #7

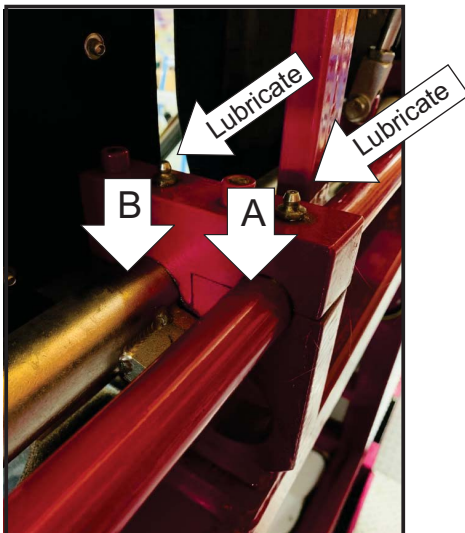
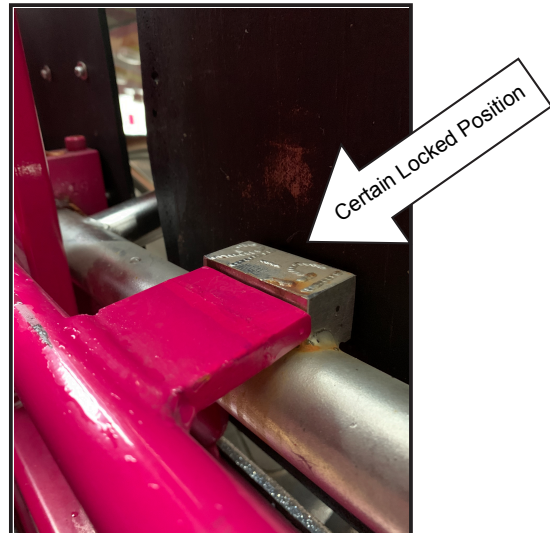


Illustration #8





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A.R.M. (USA) Inc. now offers an optional Safety Belt Kit, which includes instructions and all necessary components to add a safety belt between the fiberglass seat and the passenger restraint bar.

The Safety Belt Kit is optional for all Ride Serial Numbers listed on page 1 and is not a Mandatory Requirement.

Contact A.R.M. parts department for kit or further details.
Ph: 740-264-6599 Ext.123



Optional Restraint Belt



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CERTIFICATION OF COMPLIANCE
To Be Executed And Submitted Prior To Service Bulletin Completion Date

It is required that all inspections outlined in this Service Bulletin, are completed by an Inspector holding a current
NAARSO or AIMS Level II Certification.

By signature below, I confirm the following.

- 1.) All inspections required in this Service Bulletin have been completed and documented Per Instructions.
- 2.) I am a current Certified inspector with either a **NAARSO or AIMS Level II certification.**
- 3.) Any Irregularities Have Been Repaired And Documented.
- 4.) These inspection criteria will be incorporated into future inspection protocol and irregularities will be reported to the manufacturer.

Ride Serial Number

Date of Inspection

Inspector Printed Name

Inspector Signature

Submit to A.R.M. (USA) INC. via:

Email armbulletin@armrides.com

Fax 740.266.2953

Postal Service A.R.M. (USA) Inc.
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